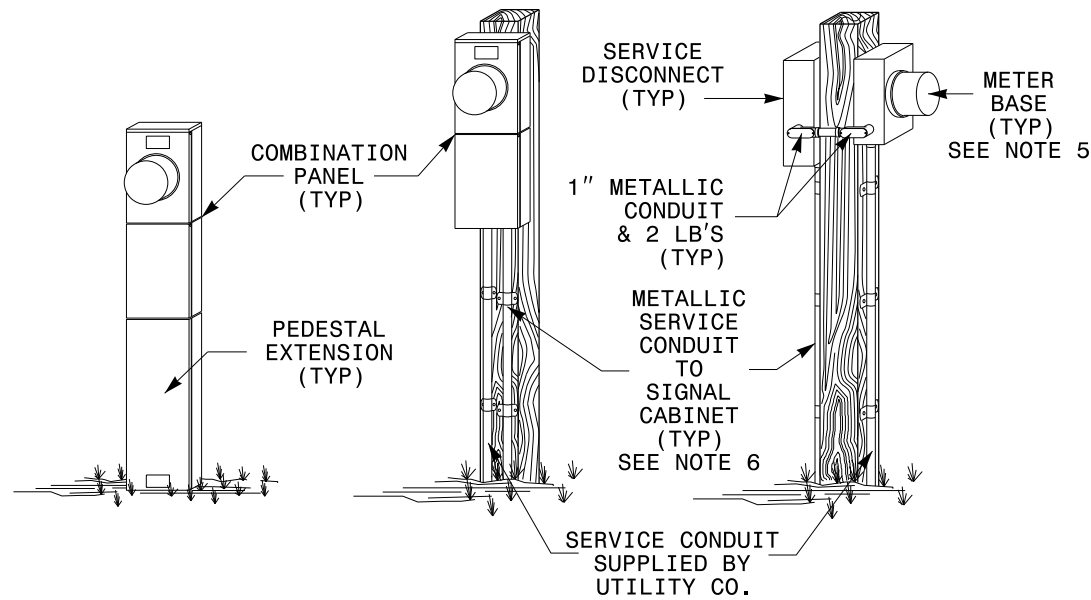


**GROUND MOUNTED SERVICE EQUIPMENT OPTIONS  
FOR UNDERGROUND ELECTRICAL SERVICE**



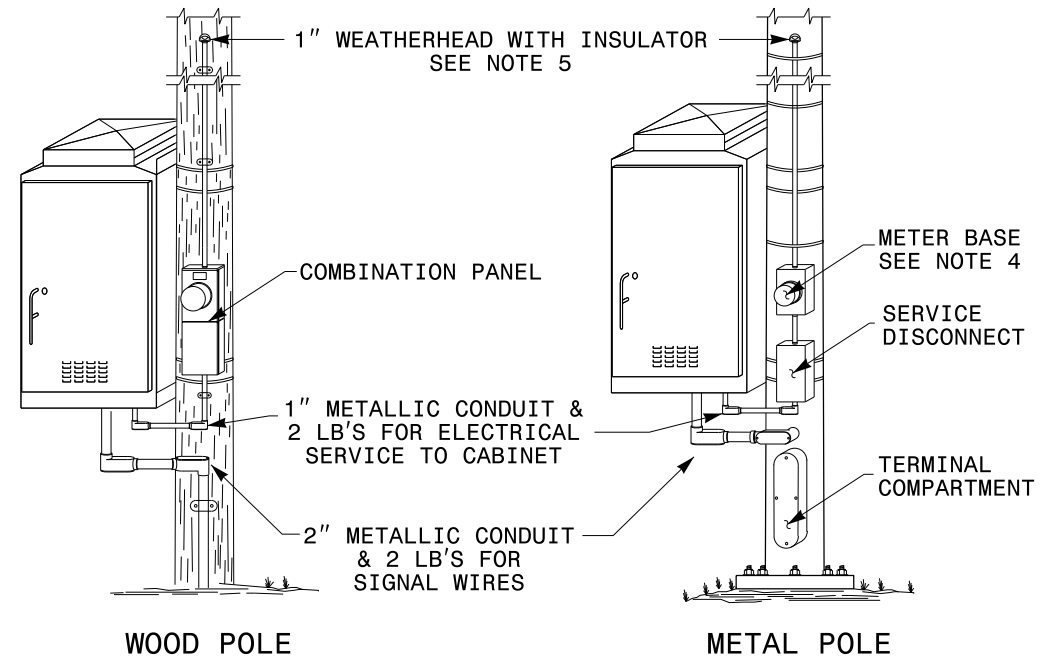
COMBINATION PANEL WITH PEDESTAL EXTENSION

COMBINATION PANEL OR METER BASE AND DISCONNECT SURFACE MOUNTED ON 6\"X6\" TREATED WOOD POST

**NOTES**

1. LOCATE THE SERVICE EQUIPMENT NEAR THE SIGNAL CABINET IN A MANNER THAT WILL ALLOW EASY ACCESS TO THE SERVICE DISCONNECT. LOCATE SERVICE EQUIPMENT SO AS NOT TO OBSTRUCT SIGHT DISTANCE OF VEHICLES TURNING RIGHT ON RED.
2. FOR GROUND MOUNTED ELECTRICAL SERVICE INSTALLATIONS WHEN POST MOUNTING IS CHOSEN, INSTALL TREATED WOOD POSTS A MINIMUM OF 3 FEET INTO THE GROUND.
3. INSTALL ALL METER BASES MOUNTED IN PEDESTALS AT A HEIGHT NOT TO EXCEED 5 FEET AS MEASURED FROM THE CENTER OF THE METER. INSTALL ALL OTHER METER BASES AT A HEIGHT BETWEEN 4 FEET AND 5 FEET AS MEASURED FROM THE CENTER OF THE METER. SEAL ANY UNUSED MOUNTING HOLES ON COMBINATION PANELS, METER BASES AND SERVICE DISCONNECTS.
4. INSTALL OVERHEAD ELECTRICAL SERVICE ON POLES AS SHOWN WHEN UNDERGROUND SOURCE IS NOT AN OPTION. COMBINATION PANELS, OR METER BASES AND SERVICE DISCONNECTS, MAY BE INSTALLED ON POLES WHEN POLE MOUNTED SIGNAL CABINETS ARE REQUIRED FOR THE INSTALLATION. DO NOT ROUTE UNFUSED OVERHEAD ELECTRICAL SERVICE CONDUCTOR INSIDE OF METAL POLES.
5. TYPICAL POINT OF DELIVERY FOR UNDERGROUND SERVICE IS INSIDE OF METER BASE. TYPICAL POINT OF DELIVERY FOR OVERHEAD SERVICE IS AT THE WEATHERHEAD ENTRANCE AT THE TOP OF THE SERVICE RISER.
6. THE ABOVE GROUND PORTION OF ELECTRICAL SERVICE CONDUIT TO THE SIGNAL CABINET MUST BE METALLIC. THE BELOW GROUND PORTION MAY BE METALLIC OR PVC.

**POLE MOUNTED SERVICE EQUIPMENT OPTIONS FOR  
OVERHEAD ELECTRICAL SERVICE**



WOOD POLE

METAL POLE

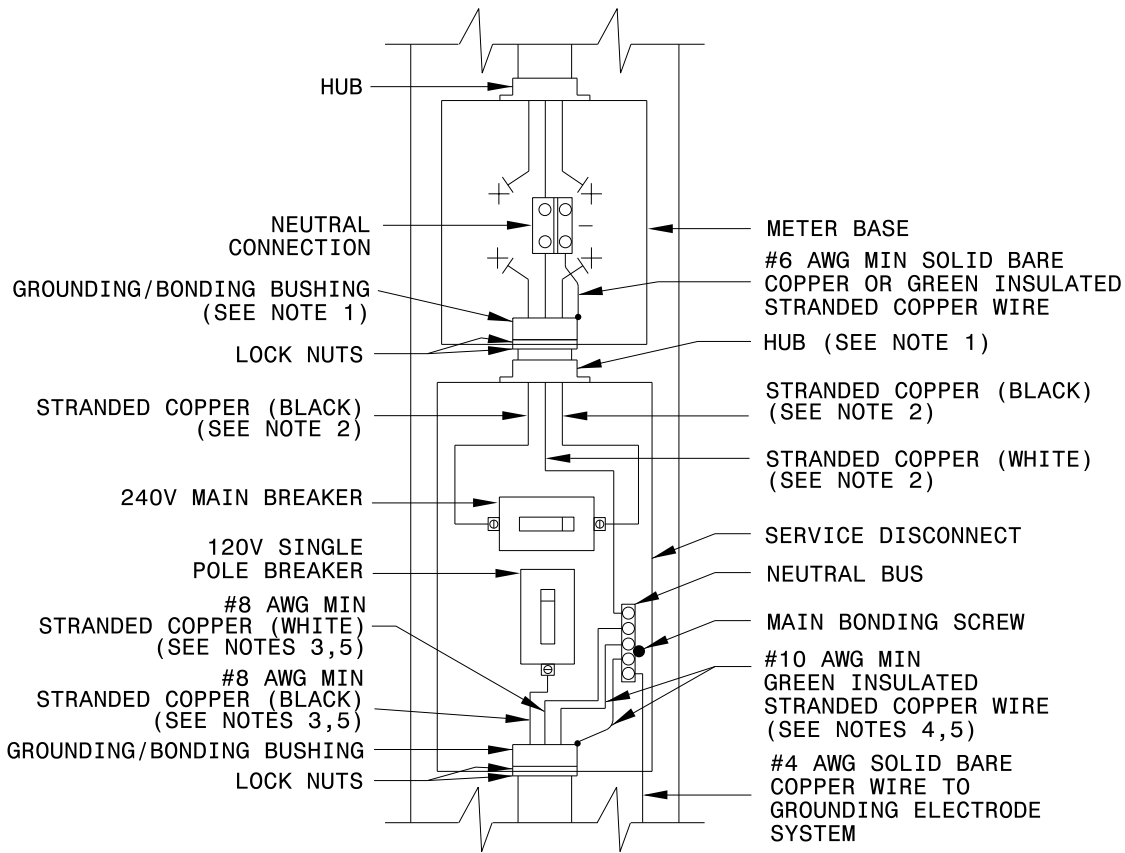
ENGLISH STANDARD DRAWING FOR

**ELECTRICAL SERVICE OPTIONS**

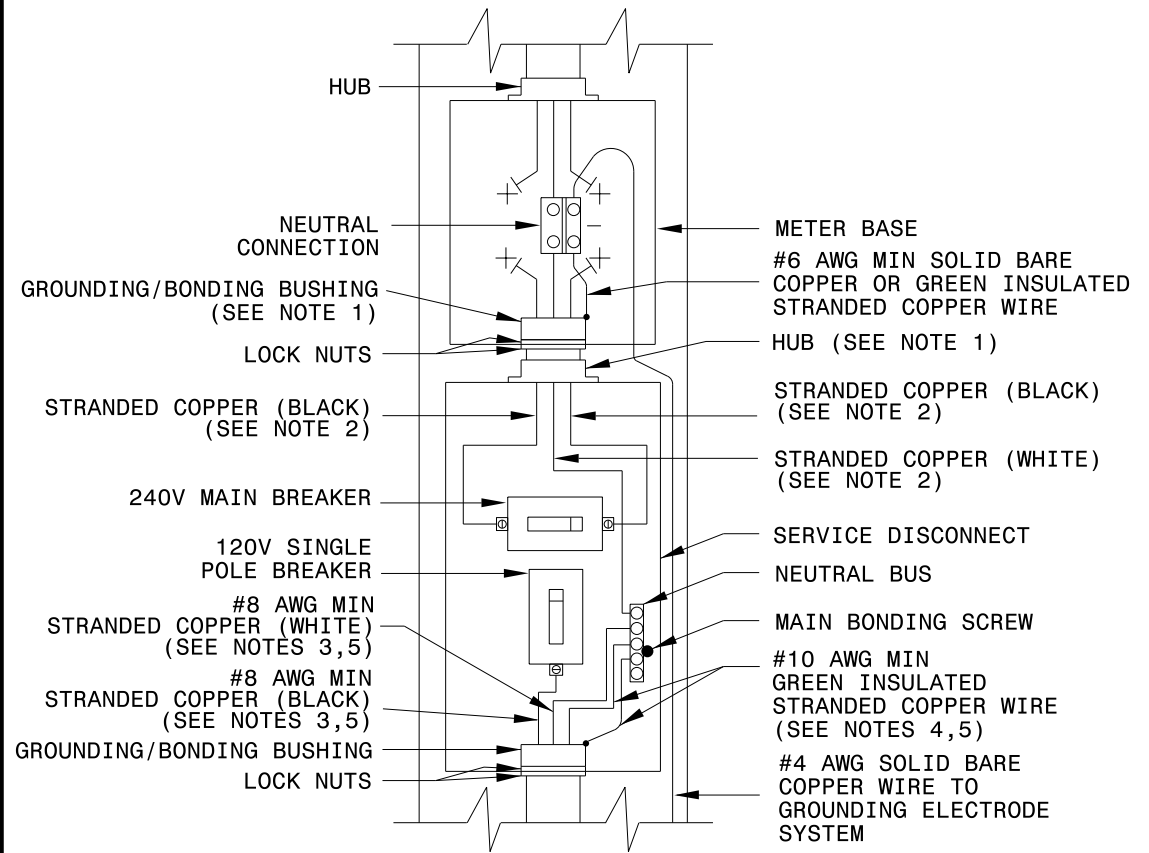
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TYPICAL ELECTRICAL CONNECTION DETAIL FOR  
OVERHEAD SERVICE INSTALLATION  
SERVICE DISCONNECT WITH MAIN BREAKER  
(SHOWN WITH METER BASE/SERVICE DISCONNECT OPTION AND WITH  
GROUNDING ELECTRODE CONDUCTOR TERMINATED IN DISCONNECT)



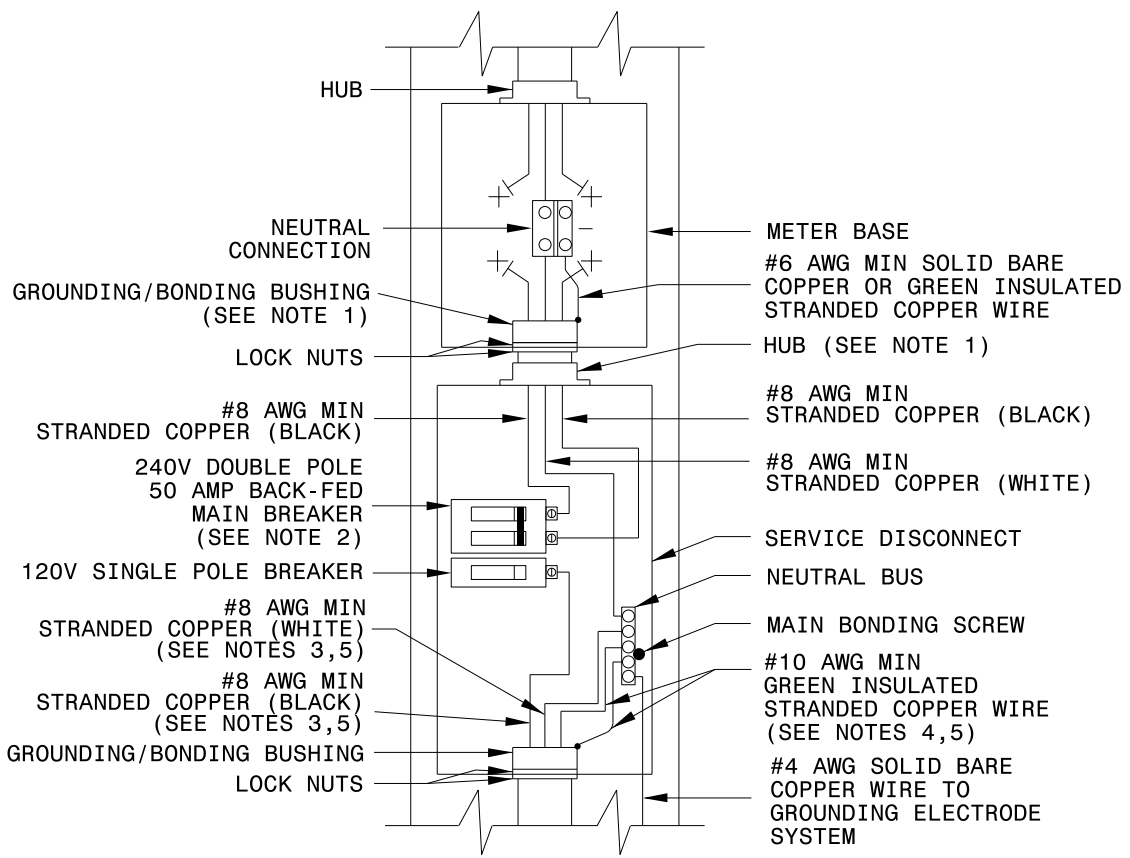
ALTERNATE ELECTRICAL CONNECTION DETAIL FOR  
OVERHEAD SERVICE INSTALLATION  
SERVICE DISCONNECT WITH MAIN BREAKER  
(SHOWN WITH METER BASE/SERVICE DISCONNECT OPTION AND WITH  
GROUNDING ELECTRODE CONDUCTOR TERMINATED IN METER)



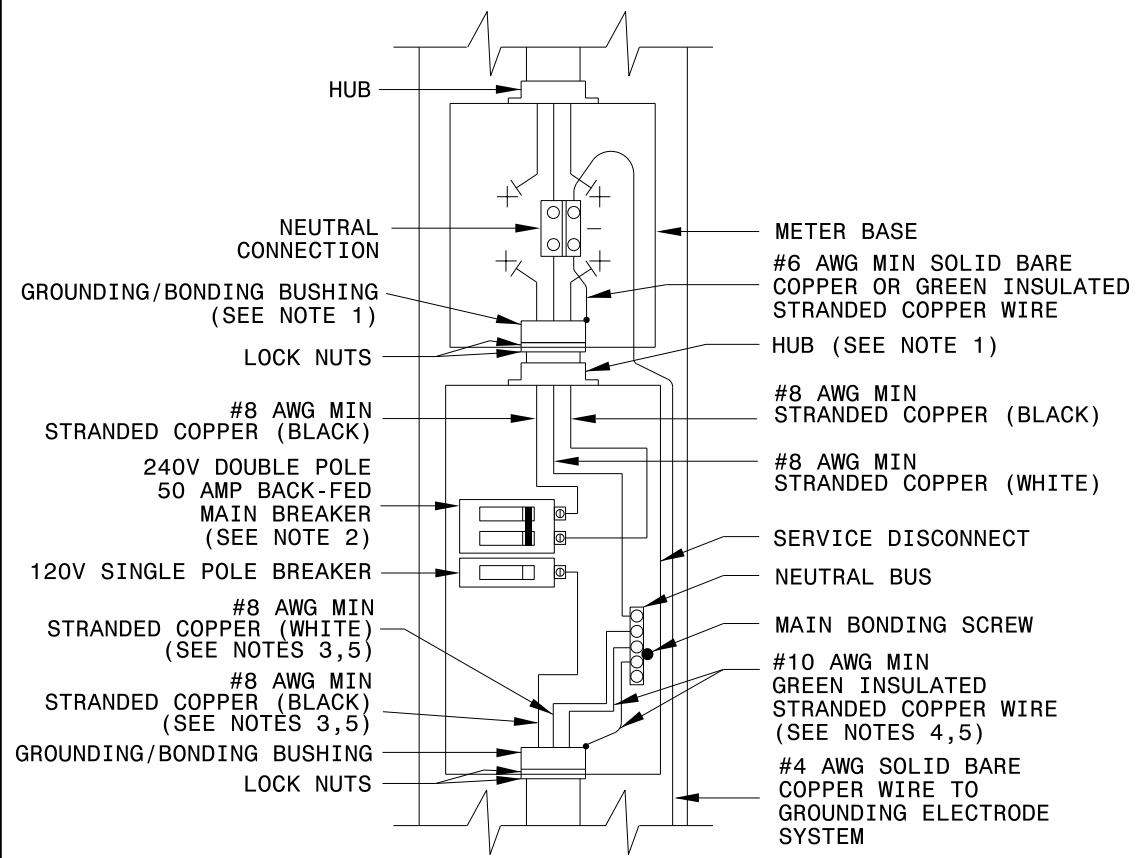
NOTES

1. WHEN USING A HUB LISTED AS A GROUNDING HUB (UL TYPES DWTT AND KDER), THE BONDING BUSHING IN THE METER BASE IS NOT NECESSARY.
2. SERVICE-ENTRANCE CONDUCTORS SHALL BE SIZED ACCORDING TO THE NEC.
3. WIRE SIZE FOR THESE CONDUCTORS SHALL BE #8 AWG MINIMUM FOR A 50 AMP CIRCUIT AND #10 AWG MINIMUM FOR A 30 AMP CIRCUIT.
4. FOR TRAFFIC SIGNAL INSTALLATIONS, THIS CONDUCTOR SHALL BE #10 AWG MIN STRANDED COPPER WITH INSULATION THAT IS GREEN WITH ONE OR MORE YELLOW STRIPES.
5. THE AMPACITIES LISTED HERE DO NOT TAKE INTO ACCOUNT ANY VOLTAGE DROP CONSIDERATIONS OR TEMPERATURE COMPATIBILITY WITH THE CONNECTION POINTS.

TYPICAL ELECTRICAL CONNECTION DETAIL FOR  
OVERHEAD SERVICE INSTALLATION  
SERVICE DISCONNECT WITH BACK-FED MAIN BREAKER  
(SHOWN WITH METER BASE/SERVICE DISCONNECT OPTION AND WITH  
GROUNDING ELECTRODE CONDUCTOR TERMINATED IN DISCONNECT)



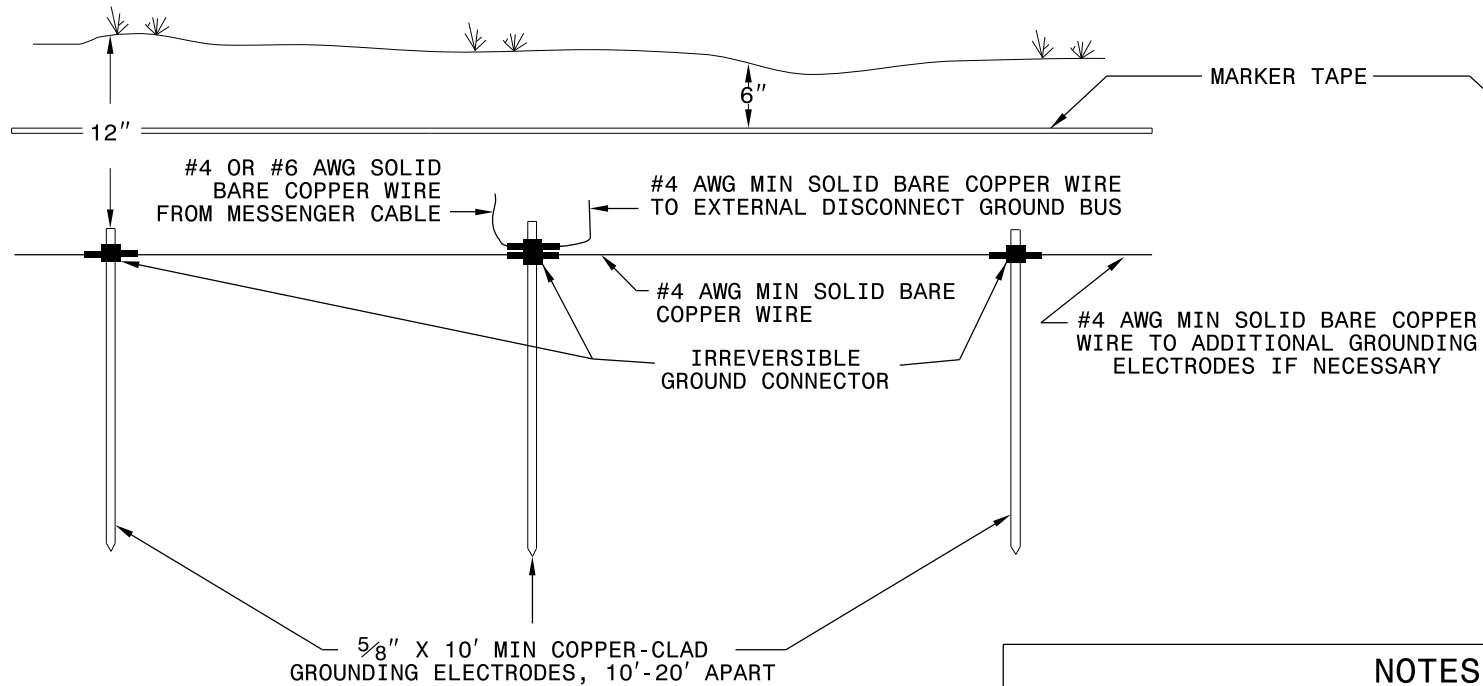
ALTERNATE ELECTRICAL CONNECTION DETAIL FOR  
OVERHEAD SERVICE INSTALLATION  
SERVICE DISCONNECT WITH BACK-FED MAIN BREAKER  
(SHOWN WITH METER BASE/SERVICE DISCONNECT OPTION AND WITH  
GROUNDING ELECTRODE CONDUCTOR TERMINATED IN METER)



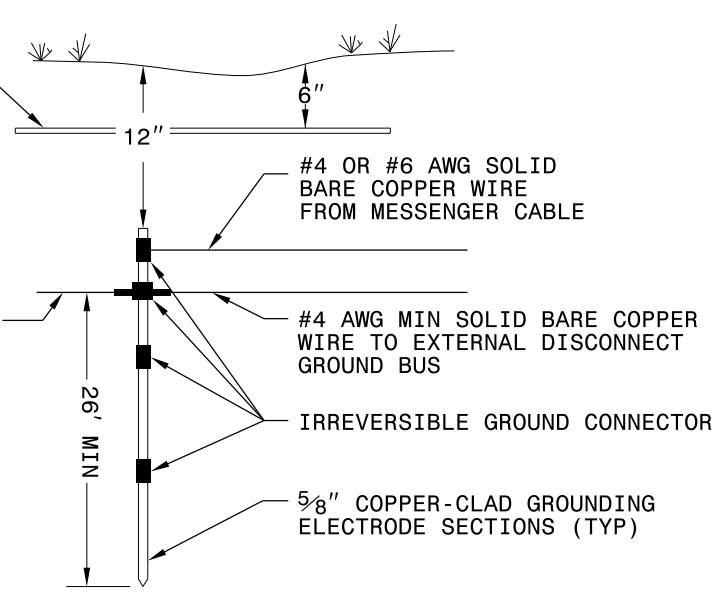
NOTES

1. WHEN USING A HUB LISTED AS A GROUNDING HUB (UL TYPES DWTT AND KDER), THE BONDING BUSHING IN THE METER BASE IS NOT NECESSARY.
2. BACK-FED MAIN BREAKER MUST BE SECURED BY AN ADDITIONAL FASTENER. BARRIERS SHALL BE INSTALLED TO PREVENT INADVERTENT CONTACT.
3. WIRE SIZE FOR THESE CONDUCTORS SHALL BE #8 AWG MINIMUM FOR A 50 AMP CIRCUIT AND #10 AWG MINIMUM FOR A 30 AMP CIRCUIT.
4. FOR TRAFFIC SIGNAL INSTALLATIONS, THIS CONDUCTOR SHALL BE #10 AWG MIN STRANDED COPPER WITH INSULATION THAT IS GREEN WITH ONE OR MORE YELLOW STRIPES.
5. THE AMPACITIES LISTED HERE DO NOT TAKE INTO ACCOUNT ANY VOLTAGE DROP CONSIDERATIONS OR TEMPERATURE COMPATIBILITY WITH THE CONNECTION POINTS.

**MULTIPLE ELECTRODES**



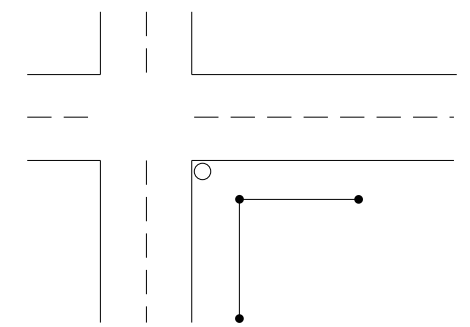
**SECTIONAL ELECTRODES**



**NOTES**

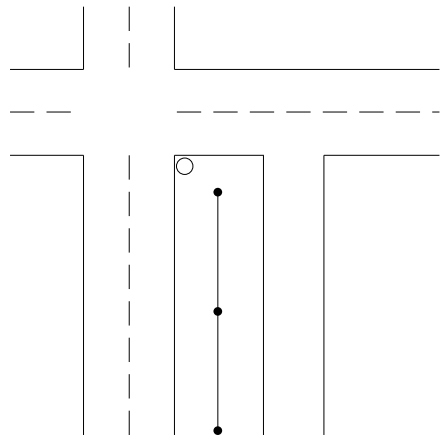
1. FOR GROUND RODS INSTALLED IN AREAS WHERE THE SLOPE IS GREATER THAN 4:1, THE TOP OF THE GROUND RODS SHALL BE A MINIMUM OF 24" BELOW FINISHED GRADE.

**UNRESTRICTED SHOULDER**



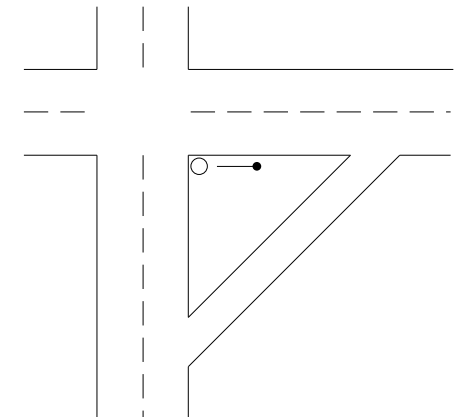
PLACE GROUNDING ELECTRODES AT 90°

**LIMITED SHOULDER**

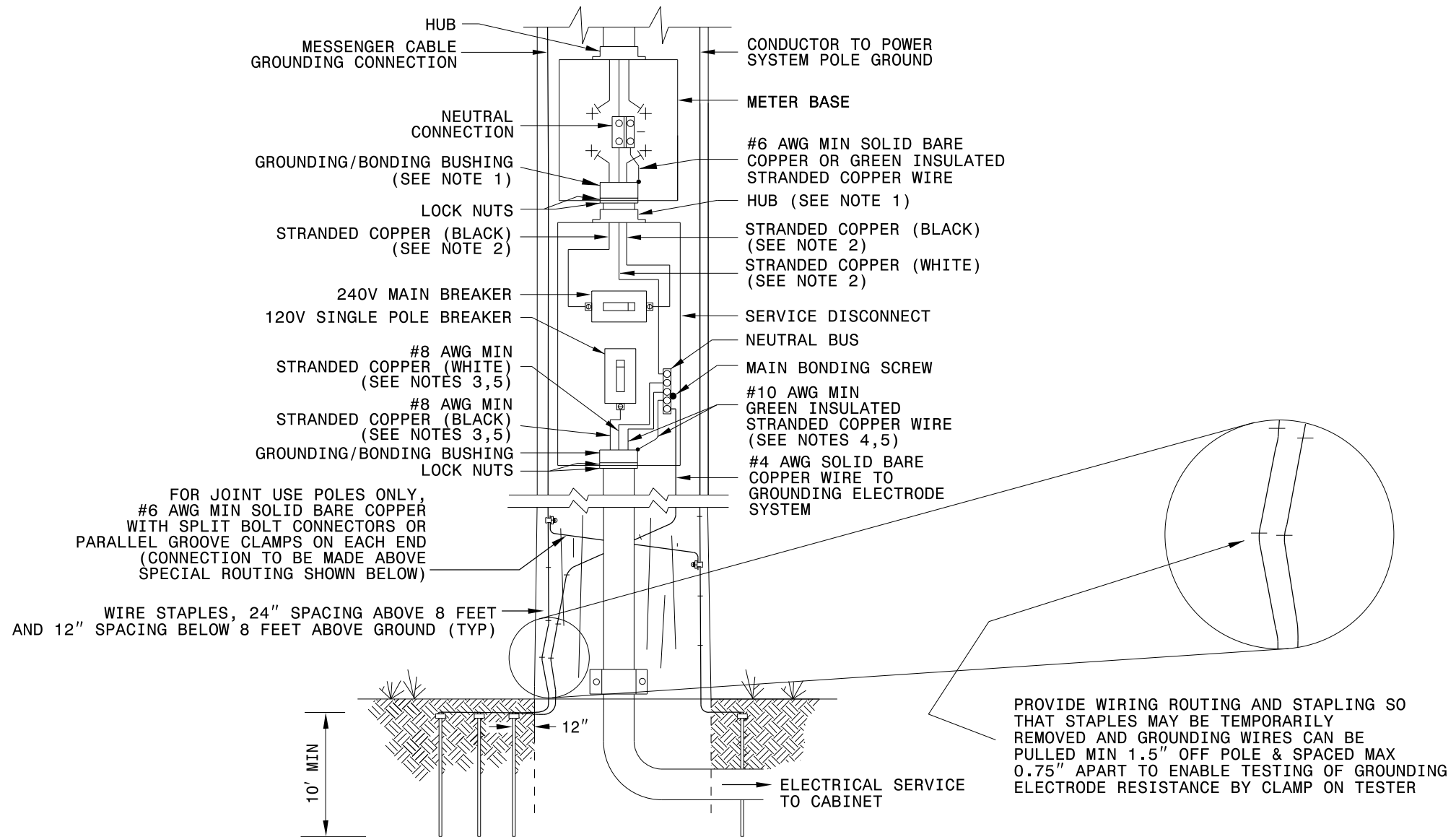


PLACE GROUNDING ELECTRODES IN A STRAIGHT LINE

**RESTRICTED SPACE**



ENGLISH STANDARD DRAWING FOR  
**ELECTRICAL SERVICE GROUNDING**  
GROUNDING AND BONDING - WOOD POLES



FOR JOINT USE POLES ONLY,  
#6 AWG MIN SOLID BARE COPPER  
WITH SPLIT BOLT CONNECTORS OR  
PARALLEL GROOVE CLAMPS ON EACH END  
(CONNECTION TO BE MADE ABOVE  
SPECIAL ROUTING SHOWN BELOW)

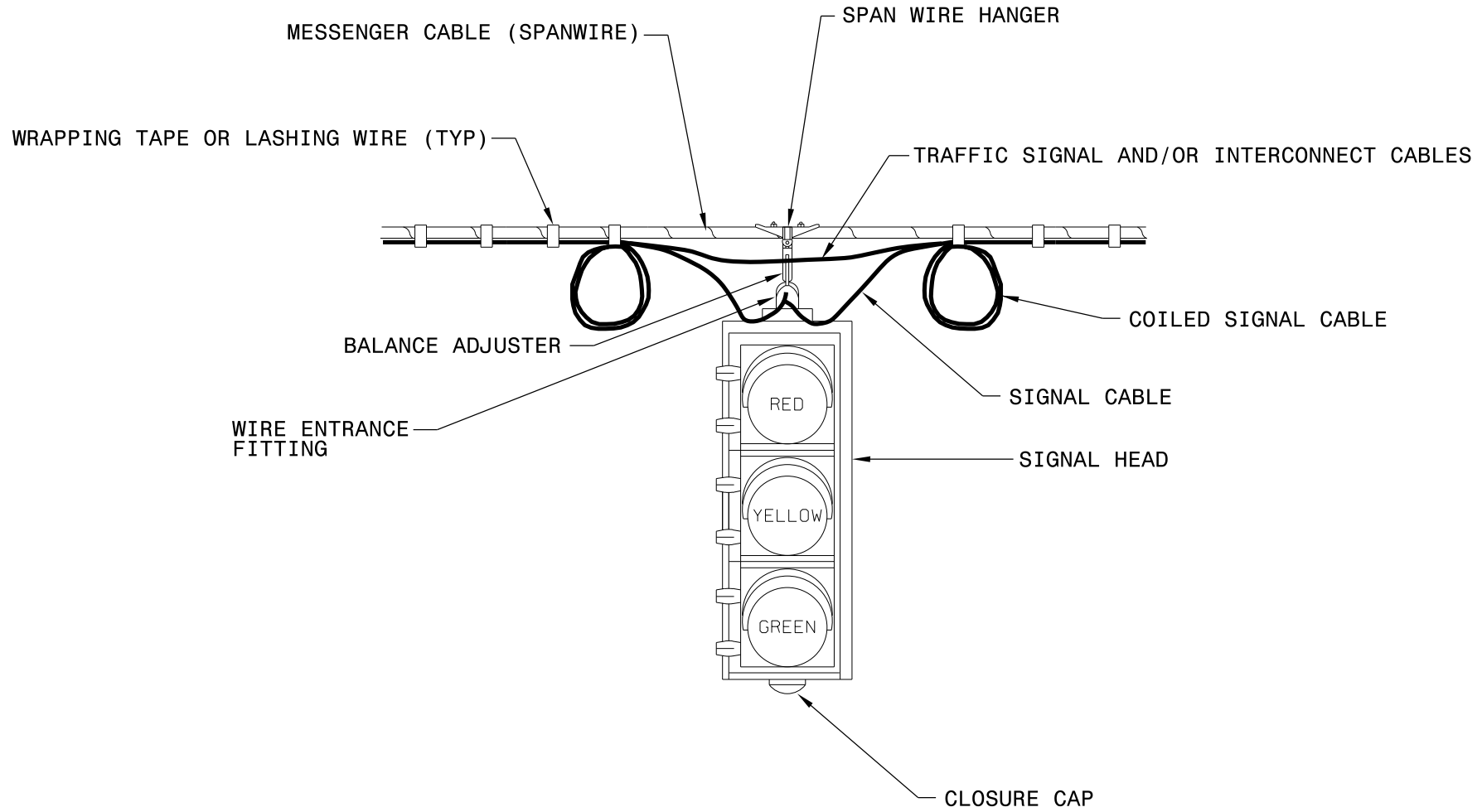
WIRE STAPLES, 24" SPACING ABOVE 8 FEET  
AND 12" SPACING BELOW 8 FEET ABOVE GROUND (TYP)

PROVIDE WIRING ROUTING AND STAPLING SO  
THAT STAPLES MAY BE TEMPORARILY  
REMOVED AND GROUNDING WIRES CAN BE  
PULLED MIN 1.5" OFF POLE & SPACED MAX  
0.75" APART TO ENABLE TESTING OF GROUNDING  
ELECTRODE RESISTANCE BY CLAMP ON TESTER

5/8" DIA COPPER CLAD STEEL GROUNDING  
ELECTRODES, WITH CONNECTIONS THAT  
ARE MADE WITH AN IRREVERSIBLE  
GROUND CONNECTOR

**NOTES**

1. WHEN USING A HUB LISTED AS A GROUNDING HUB (UL TYPES DWTT AND KDER), THE BONDING BUSHING IN THE METER BASE IS NOT NECESSARY.
2. SERVICE-ENTRANCE CONDUCTORS SHALL BE SIZED ACCORDING TO THE NEC.
3. WIRE SIZE FOR THESE CONDUCTORS SHALL BE #8 AWG MINIMUM FOR A 50 AMP CIRCUIT AND #10 AWG MINIMUM FOR A 30 AMP CIRCUIT.
4. FOR TRAFFIC SIGNAL INSTALLATIONS, THIS CONDUCTOR SHALL BE #10 AWG MIN STRANDED COPPER WITH INSULATION THAT IS GREEN WITH ONE OR MORE YELLOW STRIPES.
5. THE AMPACITIES LISTED HERE DO NOT TAKE INTO ACCOUNT ANY VOLTAGE DROP CONSIDERATIONS OR TEMPERATURE COMPATIBILITY WITH THE CONNECTION POINTS.



# STANDARD SIGNAL FACE CLEARANCES

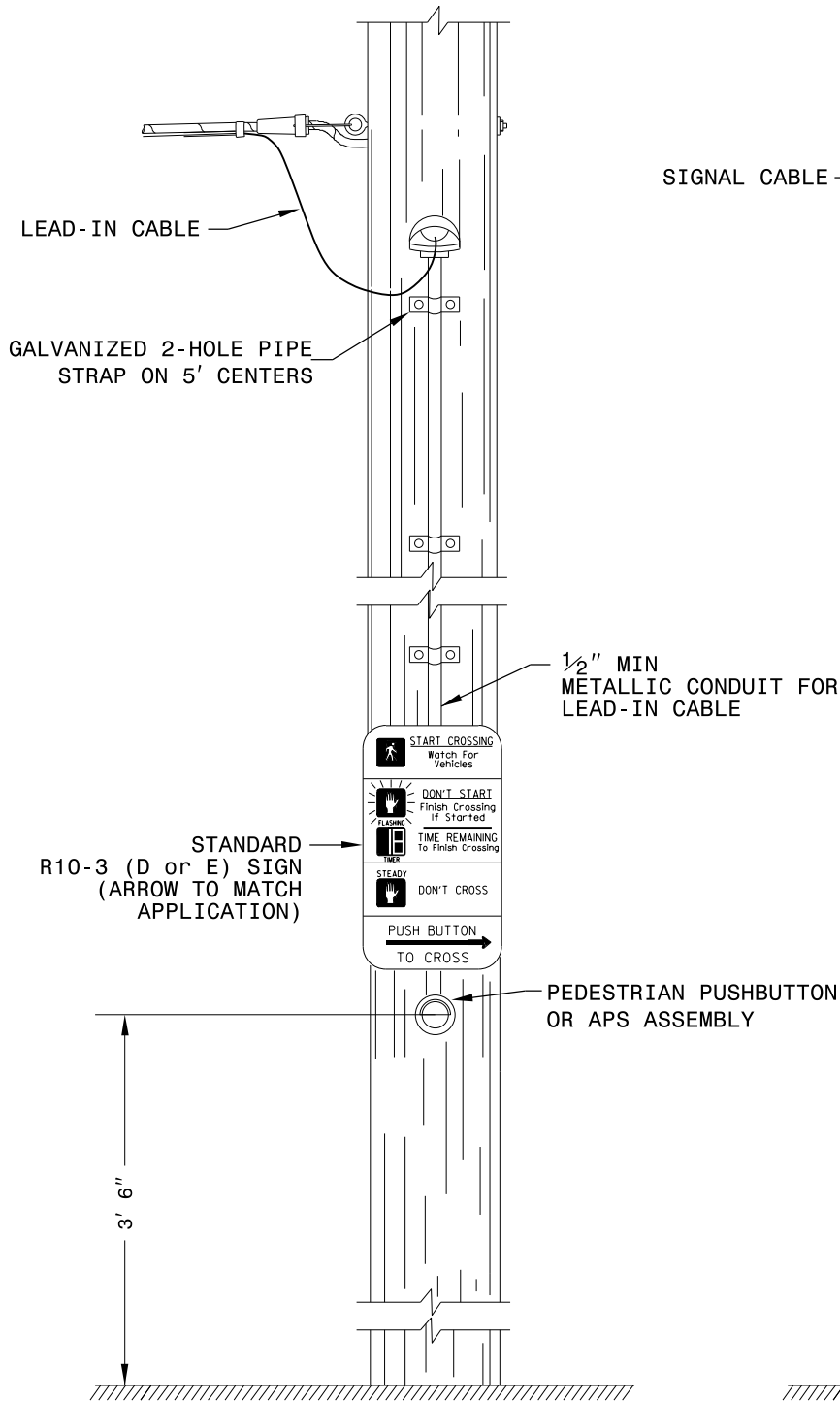
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		G		F <sub>Y</sub>		G		R		←		→		G		G		R		F <sub>Y</sub>		R		⤴		⤵		WALK		DON'T WALK		OFF		ON				-		🚲		R 🚲															
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	F <sub>Y</sub>			F <sub>Y</sub>	F <sub>Y</sub>								F <sub>Y</sub>	F <sub>Y</sub>										⤴	⤵																																
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- G - GREEN
- Y - YELLOW
- R - RED
- W - WALK
- FDW - FLASHING DON'T WALK
- DW - DON'T WALK
- ← - ARROW
- F<sub>Y</sub> - FLASHING YELLOW ARROW
- - GO
- ▲ - PREPARE TO STOP
- █ - STOP
- 🚲 - BICYCLE DISPLAY

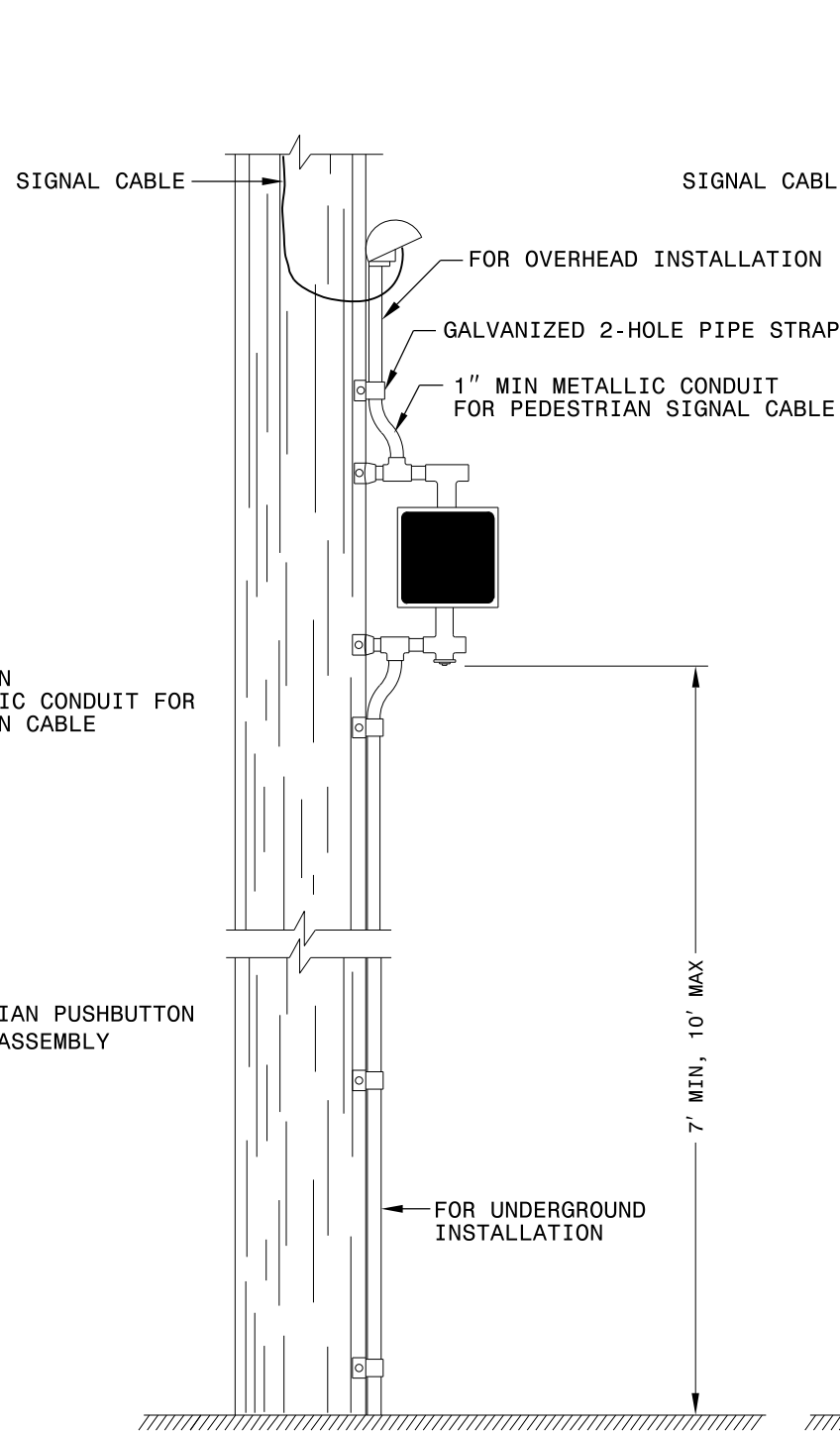
RIGHT OF WAY PHASE

CLEARANCE PHASES

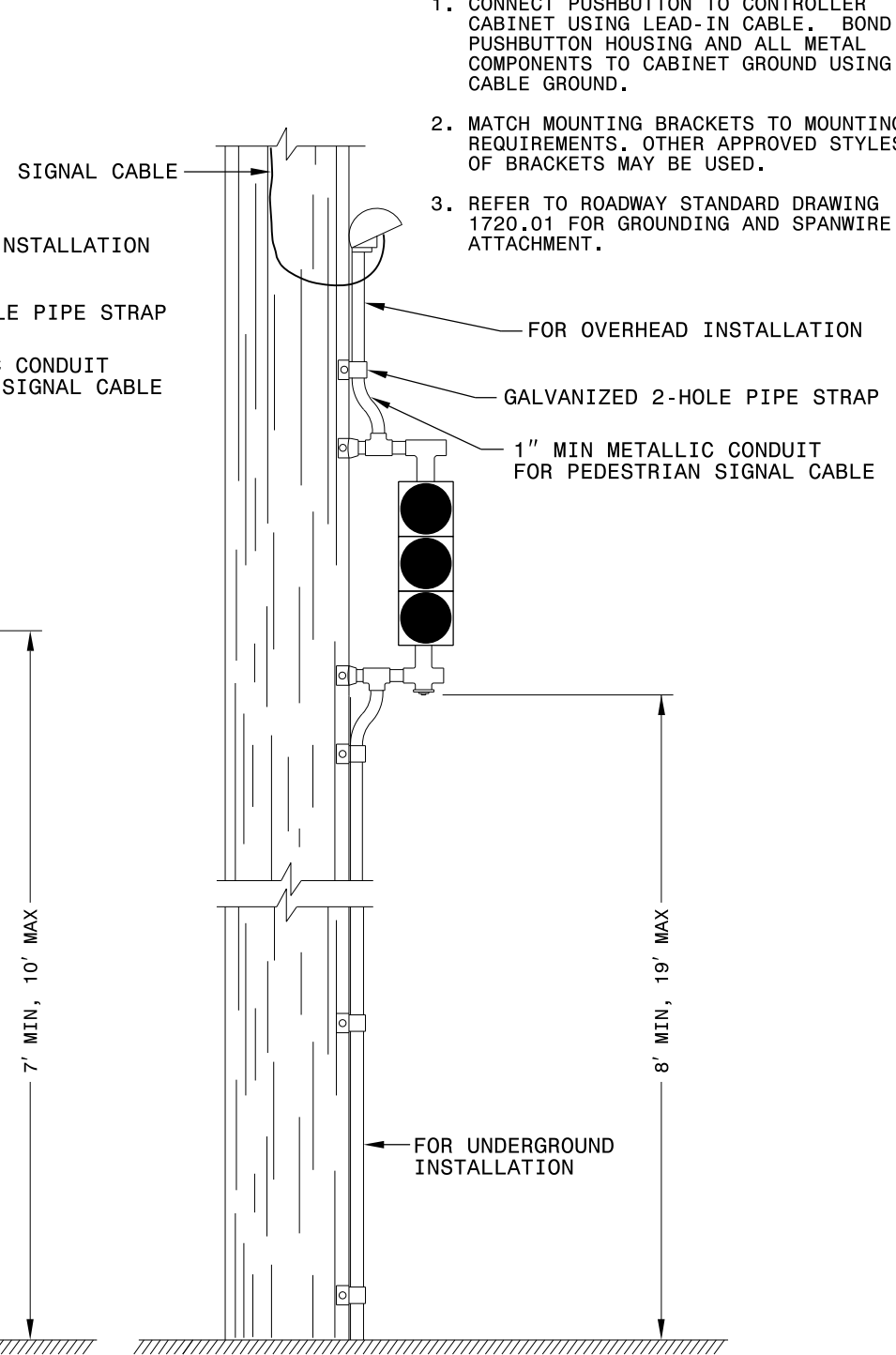
**FRONT VIEW**



**SIDE VIEW**



**SIDE VIEW**



**NOTES**

1. CONNECT PUSHBUTTON TO CONTROLLER CABINET USING LEAD-IN CABLE. BOND PUSHBUTTON HOUSING AND ALL METAL COMPONENTS TO CABINET GROUND USING CABLE GROUND.
2. MATCH MOUNTING BRACKETS TO MOUNTING REQUIREMENTS. OTHER APPROVED STYLES OF BRACKETS MAY BE USED.
3. REFER TO ROADWAY STANDARD DRAWING 1720.01 FOR GROUNDING AND SPANWIRE ATTACHMENT.

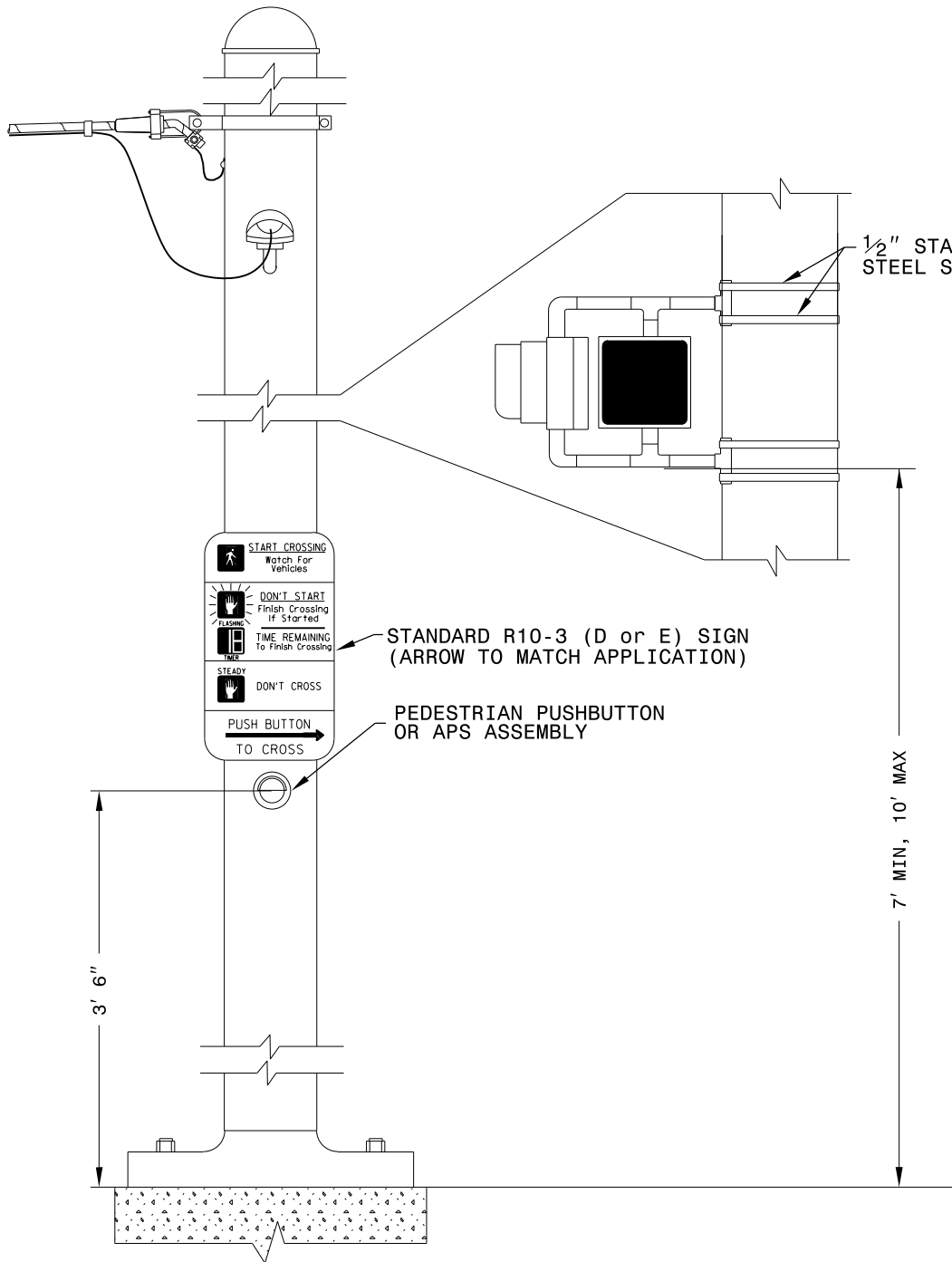
STATE OF  
 NORTH CAROLINA  
 DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 RALEIGH, N.C.

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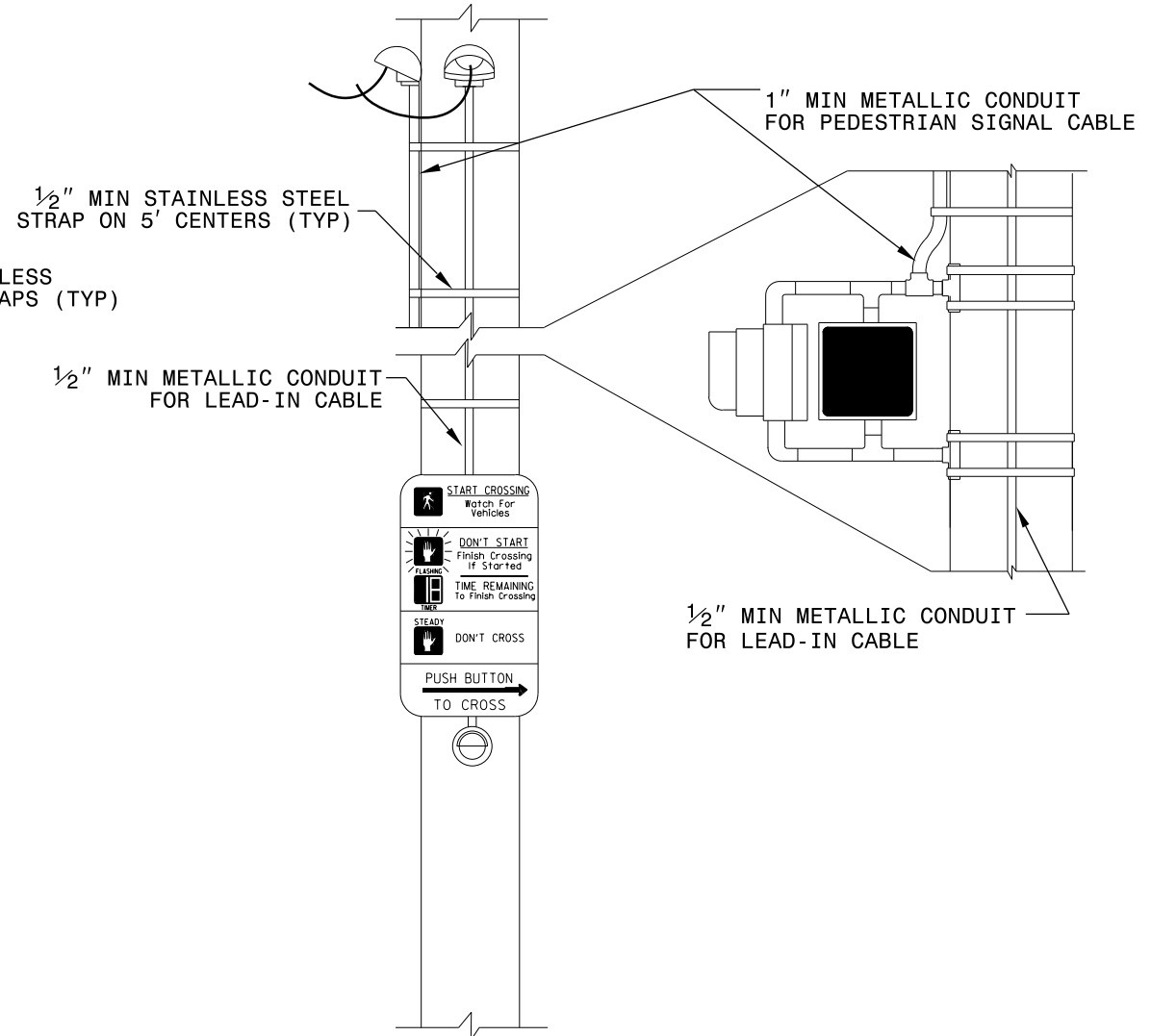
ROADWAY STANDARD DRAWING FOR  
**SIGNAL HEADS**  
 WOOD POLE MOUNTING



**PREFERRED**



**ALTERNATE**



**NOTES**

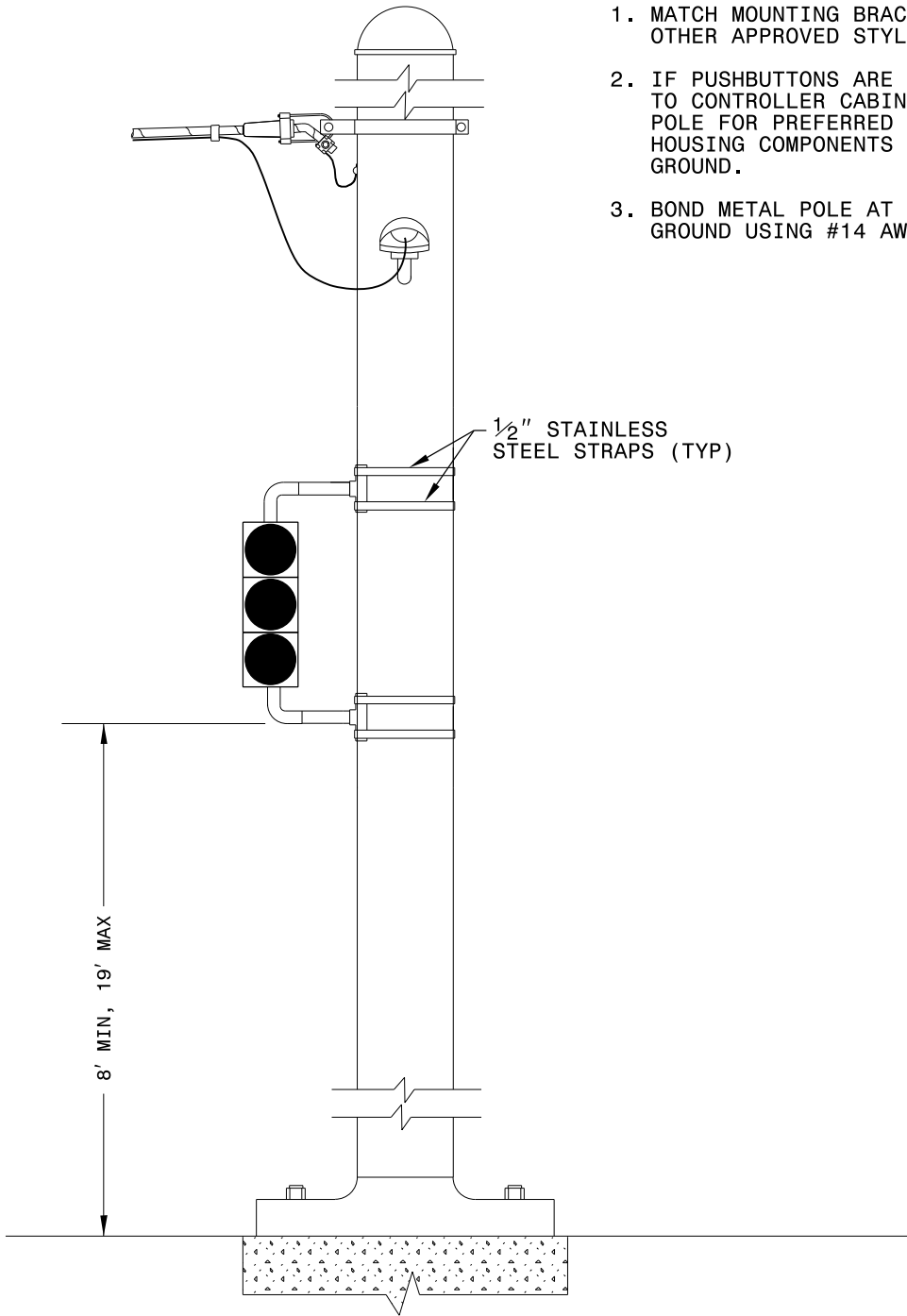
1. CONNECT PUSHBUTTON TO CONTROLLER CABINET USING LEAD-IN CABLE (INSIDE POLE FOR PREFERRED MOUNTING). BOND PUSHBUTTON HOUSING TO CABINET GROUND USING CABLE GROUND.
2. BOND METAL POLE AT CABINET LOCATION TO CABINET GROUND USING #14 AWG TYPE THWN.
3. MATCH MOUNTING BRACKETS TO MOUNTING REQUIREMENTS. OTHER APPROVED STYLES OF BRACKETS MAY BE USED.

PREFERRED

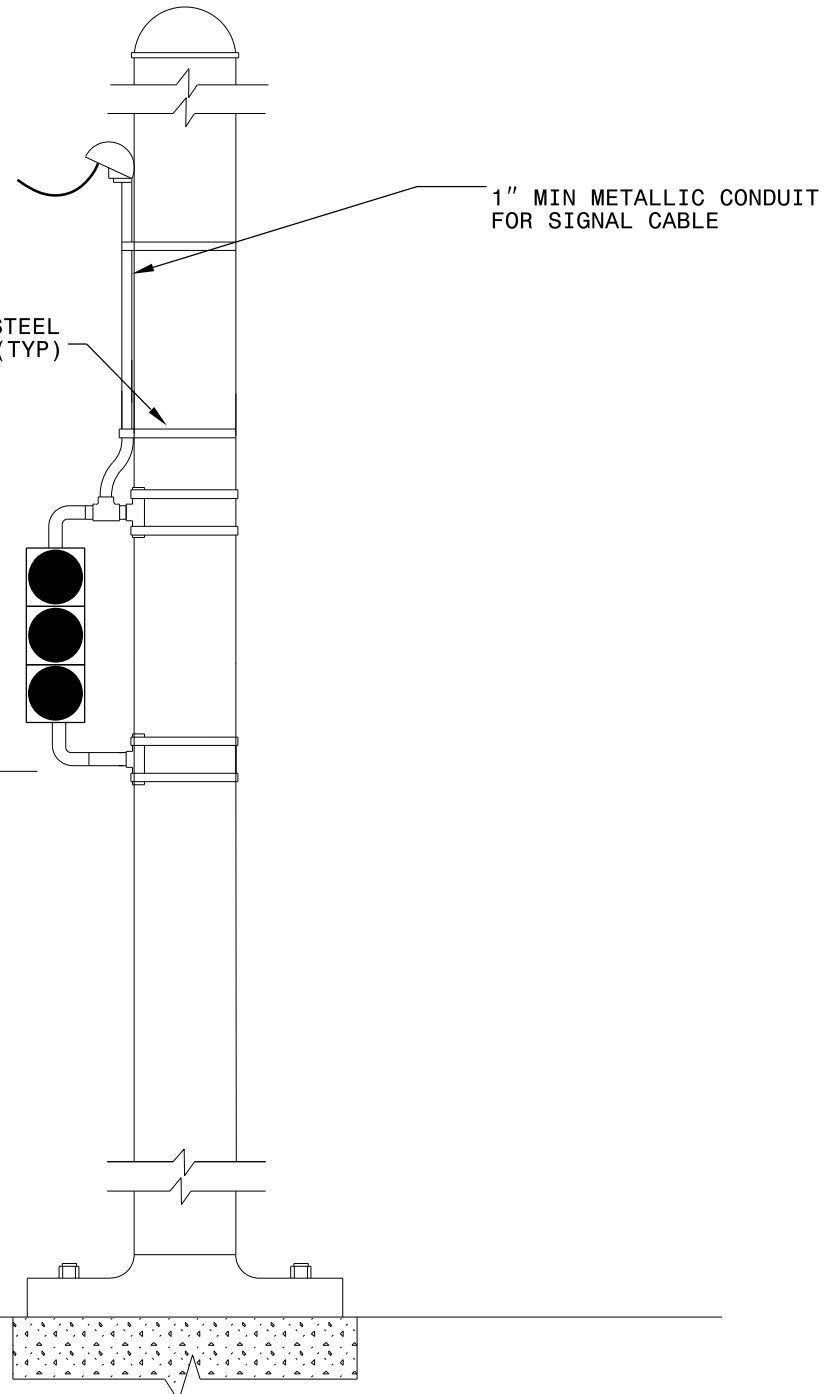
NOTES

ALTERNATE

1. MATCH MOUNTING BRACKETS TO MOUNTING REQUIREMENTS. OTHER APPROVED STYLES OF BRACKETS MAY BE USED.
2. IF PUSHBUTTONS ARE INSTALLED, CONNECT PUSHBUTTON TO CONTROLLER CABINET USING LEAD-IN CABLE (INSIDE POLE FOR PREFERRED MOUNTING). BOND PUSHBUTTON HOUSING COMPONENTS TO CABINET GROUND USING CABLE GROUND.
3. BOND METAL POLE AT CABINET LOCATION TO CABINET GROUND USING #14 AWG TYPE THWN.



1/2" MIN STAINLESS STEEL STRAP ON 5' CENTERS (TYP)

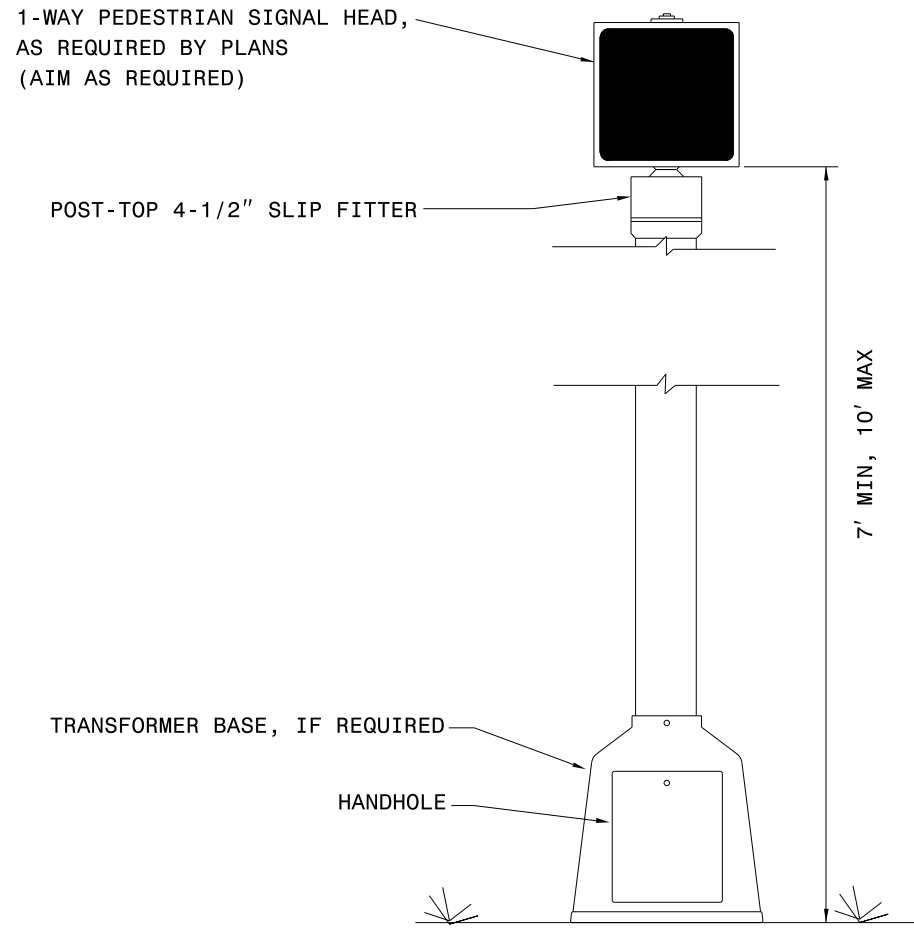
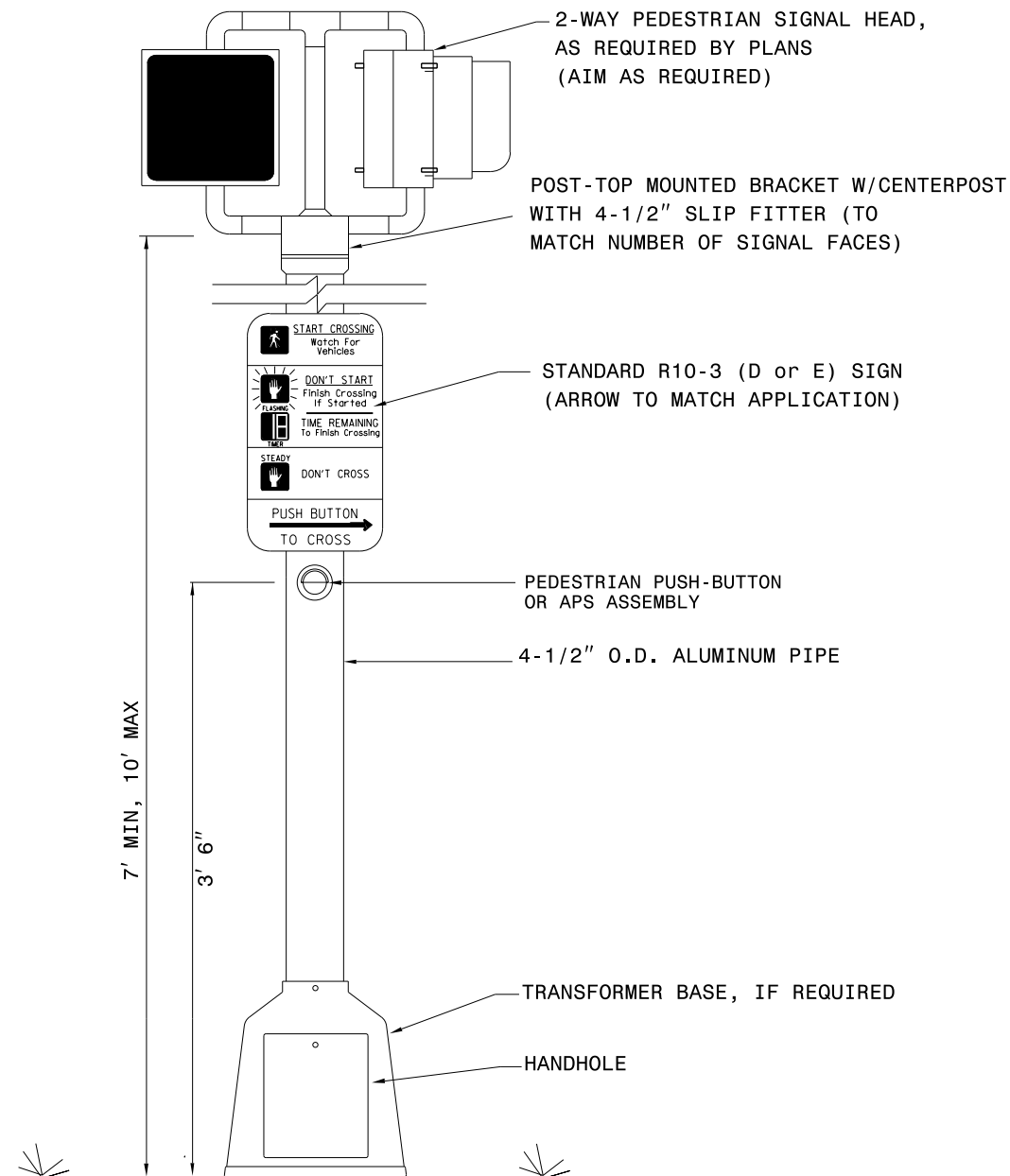


1" MIN METALLIC CONDUIT FOR SIGNAL CABLE

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DIVISION OF HIGHWAYS  
RALEIGH, N.C.

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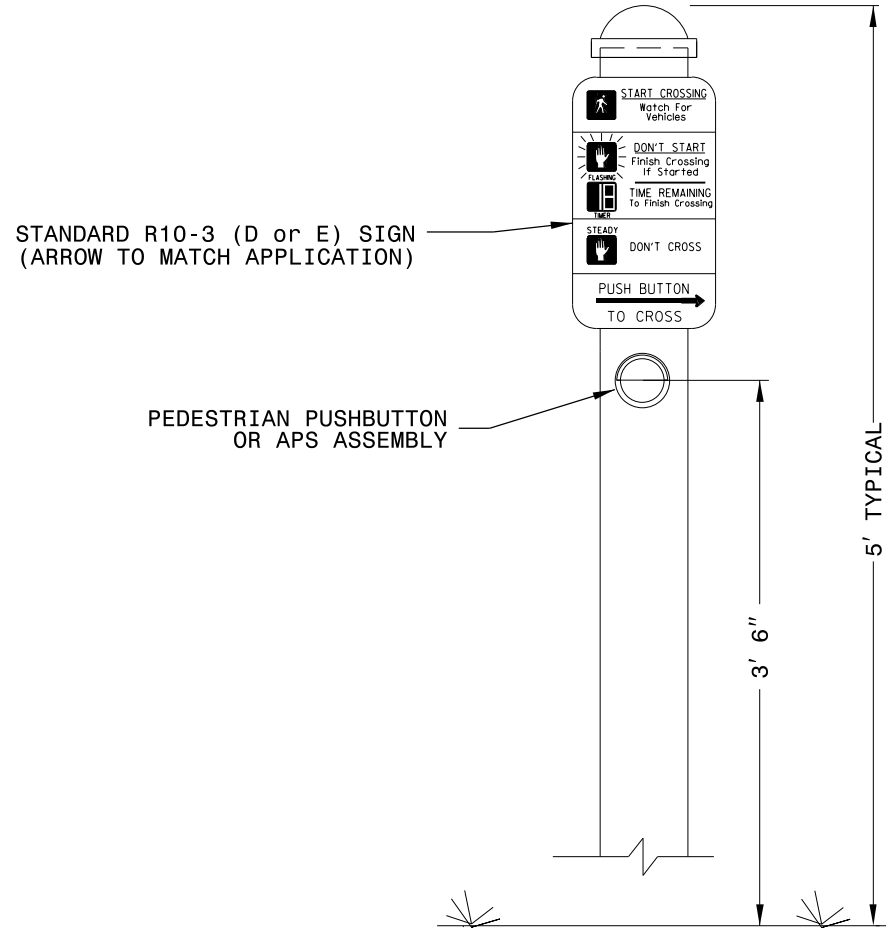
ROADWAY STANDARD DRAWING FOR  
**SIGNAL HEADS**  
VEHICLE ASSEMBLIES - STEEL POLE MOUNTING



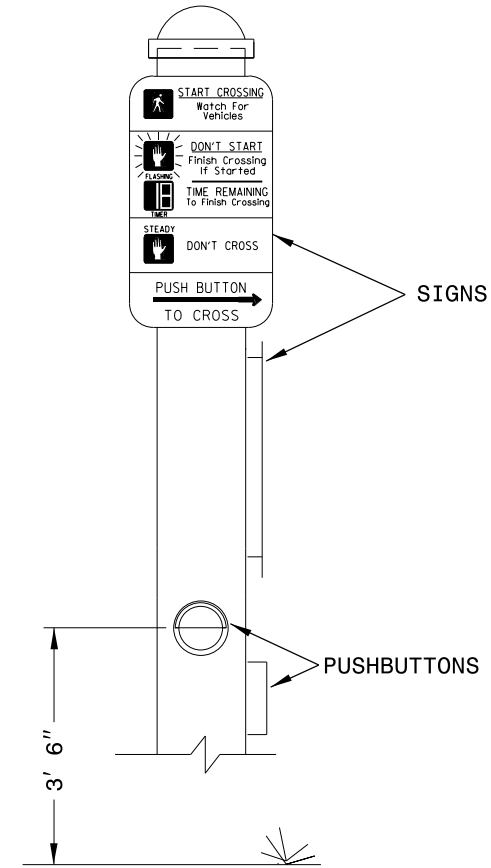
**NOTE**

1. CONNECT PUSHBUTTON TO CONTROLLER CABINET USING LEAD-IN CABLE. BOND PUSHBUTTON HOUSING AND ALL METAL COMPONENTS TO CABINET GROUND USING CABLE GROUND.
2. BOND PEDESTAL ASSEMBLY TO CABINET GROUND WITH #14 AWG TYPE THWN.
3. REFER TO ROADWAY STANDARD DRAWING 1743 FOR PEDESTAL INFORMATION.

### SINGLE PUSHBUTTON

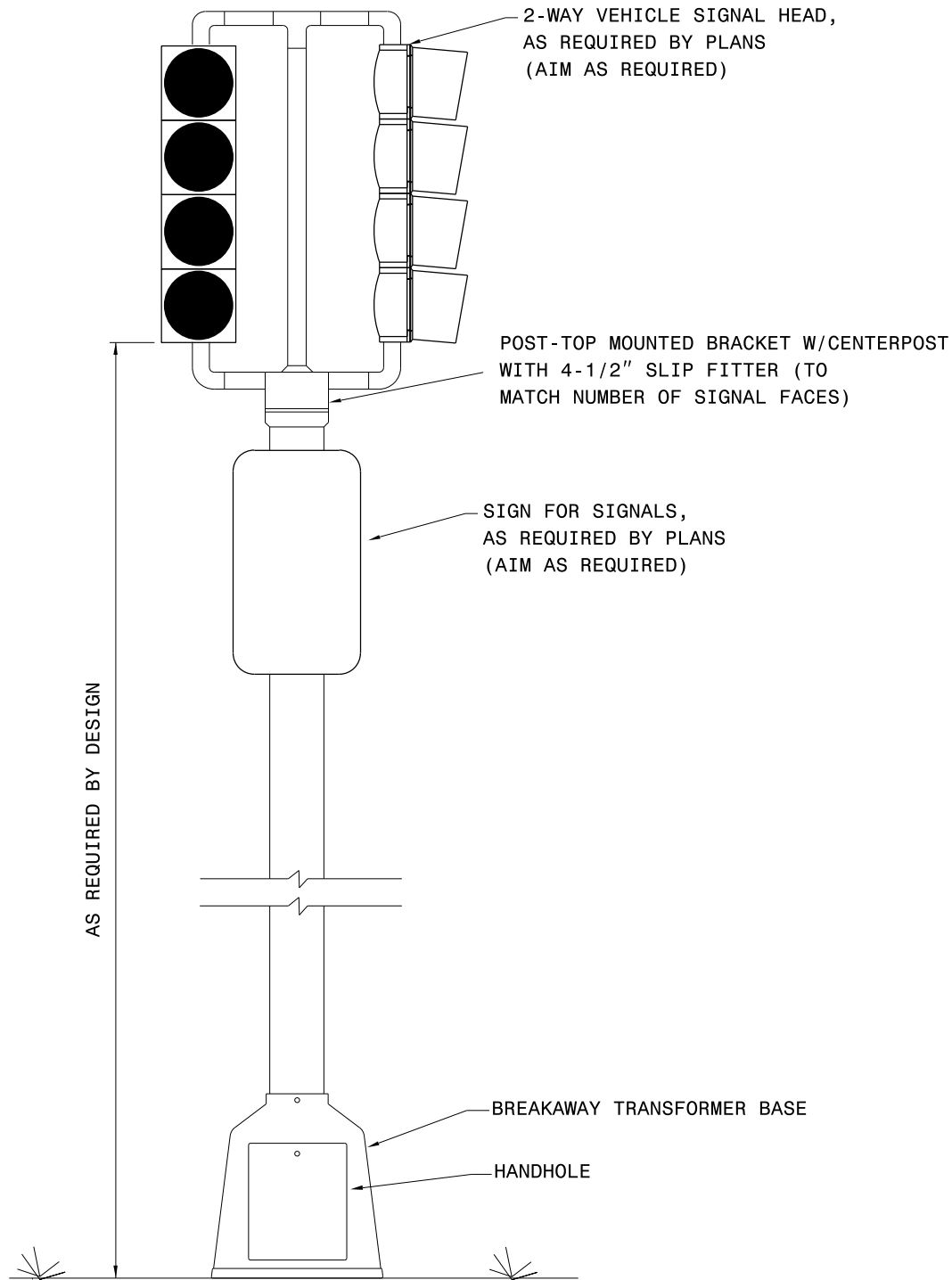


### DUAL PUSHBUTTON



### NOTES

1. CONNECT PUSHBUTTON TO CONTROLLER CABINET USING LEAD-IN CABLE. BOND PUSHBUTTON HOUSING AND ALL METAL COMPONENTS TO CABINET GROUND USING CABLE GROUND.
2. REFER TO ROADWAY STANDARD DRAWING 1743 FOR PEDESTAL INFORMATION.



1-WAY VEHICLE SIGNAL HEAD,  
AS REQUIRED BY PLANS  
(AIM AS REQUIRED)

POST-TOP 4-1/2" SLIP FITTER

SIGN FOR SIGNALS,  
AS REQUIRED BY PLANS  
(AIM AS REQUIRED)

BREAKAWAY TRANSFORMER BASE

HANDHOLE

AS REQUIRED BY DESIGN

### NOTES

1. IF PUSHBUTTONS ARE INSTALLED, CONNECT PUSHBUTTON TO CONTROLLER CABINET USING LEAD-IN CABLE. BOND PUSHBUTTON HOUSING TO CABINET GROUND USING CABLE GROUND.
2. BOND PEDESTAL ASSEMBLY TO CABINET GROUND WITH #14 AWG TYPE THWN.
3. SIGNAL HEAD MOUNTING OPTIONS SHOWN ARE GRAPHICAL DEPICTIONS ONLY AND DO NOT REFLECT THE TYPE OF PEDESTAL THAT MAY BE REQUIRED FOR A SPECIFIC LOAD APPLICATION. REFER TO ROADWAY STANDARD DRAWING 1743.02 FOR PEDESTAL INFORMATION AND LOAD LIMITATIONS.

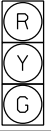



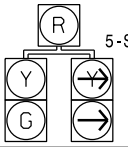

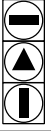



















ROADWAY STANDARD DRAWING FOR

## SIGNAL HEADS

VEHICLE ASSEMBLIES-PEDESTAL MOUNTING

1-24

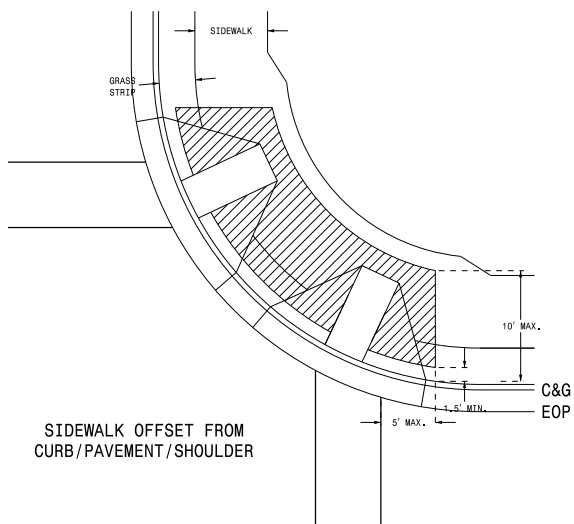
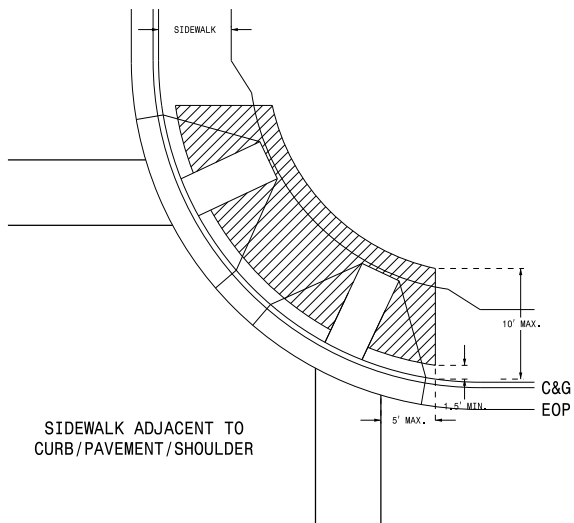
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INDICATION TYPE/COLOR									
WIRE COLOR	 3-SECTION CIRCULAR	 3-SECTION ARROW	 3-SECTION FYA	 4-SECTION FYA	 5-SECTION	 HYBRID BEACON	 TRANSIT SIGNAL	 BICYCLE SIGNAL	 PEDESTRIAN
RED	R				R	R (LEFT)	— STOP	R 	 DON'T WALK
YELLOW	Y				Y	Y	▲ PREPARE TO STOP	Y 	
GREEN	G				G	R (RIGHT)	■ GO		 WALK
RED-BLACK STRIPE									
YELLOW-BLACK STRIPE									
GREEN-BLACK STRIPE									
WHITE	NEUTRAL								

- 1) SOLID OR STRIPED COLORS MAY BE USED ON HEADS WITH MIXED INDICATION TYPES. WHERE PRACTICAL, COORDINATE WIRE COLOR WITH INDICATION COLOR. WHERE INSULATION COLOR DOES NOT MATCH THE INDICATION COLOR OF VEHICULAR DISPLAYS, WRAP APPROPRIATELY COLORED TAPE OVER INSULATION NEAR TERMINATION POINTS.
- 2) THE SPARE GREEN WIRE IN THE 4-CONDUCTOR SIGNAL CABLE BUNDLE MAY BE USED FOR THE SECOND RED INDICATION IN THE HYBRID BEACON. WRAP APPROPRIATELY COLORED TAPE OVER INSULATION NEAR TERMINATION POINTS.

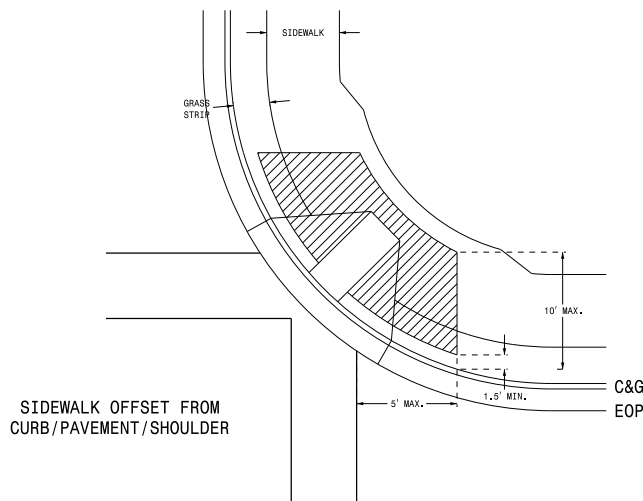
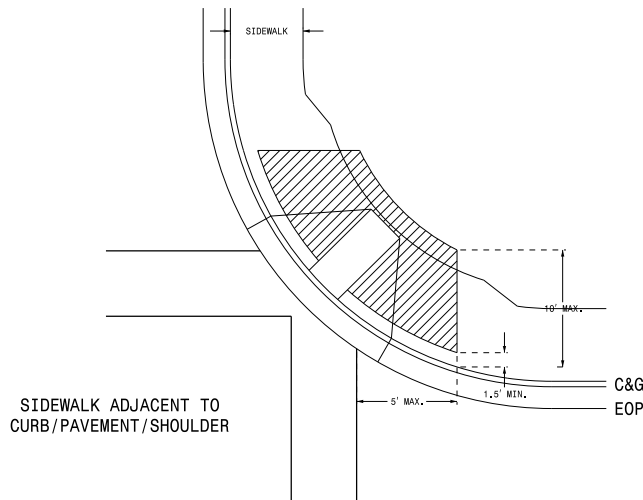
**PUSHBUTTON PLACEMENT**

SEPARATE CURB RAMPS



**PUSHBUTTON PLACEMENT**

SHARED CURB RAMP










**NOTES**

1. Pushbutton pedestals should not be located further than 10 feet from the edge of curb, shoulder, or pavement.
2. The face of the pushbutton should be parallel to the applicable crosswalk.
3. Separate pushbuttons used on the same corner should be separated by a distance of at least 10 feet.
4. Pushbuttons shall be installed adjacent to a level surface with a maximum reach distance of 10 inches.
5. Maintain 4 feet of clearance around pedestal if located in sidewalk.
6. Refer to section 1705 of the 2018 NCDOT Roadway Standard Drawings for Pushbutton Assembly details.
7. Refer to section 1743 of the 2018 NCDOT Roadway Standard Drawings for Pedestal details.
8. Contact Division Traffic Engineer for pushbutton location approval prior to installation.
9. Curb ramps are for symbolic use only and may not reflect actual design or field conditions.

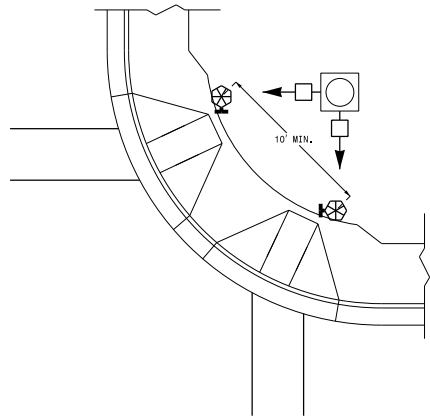
**LEGEND**

PROPOSED

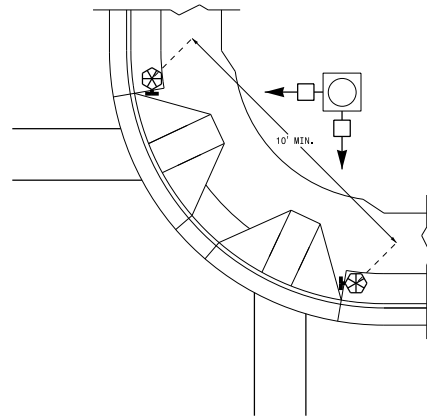
-  Signal Pole
-  Type I Pushbutton Post
-  Type II Signal Pedestal
-  Pushbutton & Sign
-  Pedestrian Signal Head
-  Curb Ramp
-  Pushbutton Location Area

**TYPICAL PUSHBUTTON LOCATIONS (CASE I)**

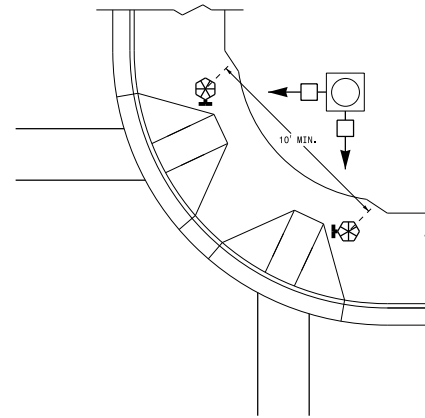
SEPARATE CURB RAMPS W/ TYPE I PEDESTALS



BACK OF SIDEWALK IS WITHIN 10' OF CURB OR PAVEMENT/SHOULDER










GRASS STRIP PLACEMENT IF BACK OF SIDEWALK EXCEEDS 10' FROM CURB OR PAVEMENT/SHOULDER



PUSHBUTTON PLACEMENT IN WIDE SIDEWALK

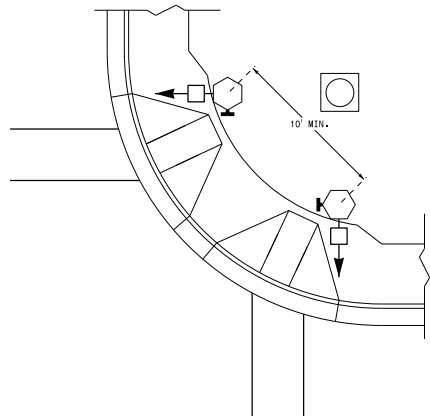
**PROPOSED**

**LEGEND**

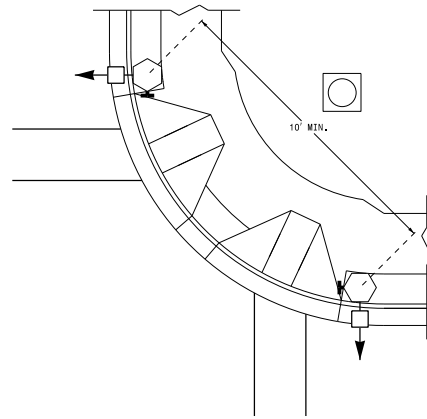
-  Signal Pole
-  Type I Pushbutton Post
-  Type II Signal Pedestal
-  Pushbutton & Sign
-  Pedestrian Signal Head
-  Curb Ramp
-  Pushbutton Location Area

**TYPICAL PUSHBUTTON LOCATIONS (CASE II)**

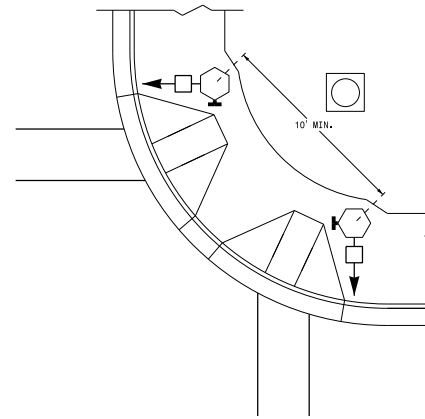
SEPARATE CURB RAMPS W/ TYPE II PEDESTALS



BACK OF SIDEWALK IS WITHIN 10' OF CURB OR PAVEMENT/SHOULDER



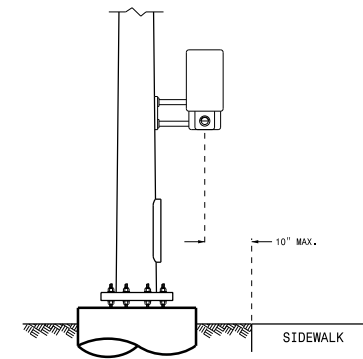
GRASS STRIP PLACEMENT IF BACK OF SIDEWALK EXCEEDS 10' FROM CURB OR PAVEMENT/SHOULDER



PUSHBUTTON PLACEMENT IN WIDE SIDEWALK

**OPTIONAL PUSHBUTTON EXTENSION**

FACE OF PUSHBUTTON PARALLEL TO APPLICABLE CROSSWALK



ROADWAY STANDARD DRAWING FOR

**SIGNAL HEADS**

PEDESTRIAN PUSHBUTTON PLACEMENT

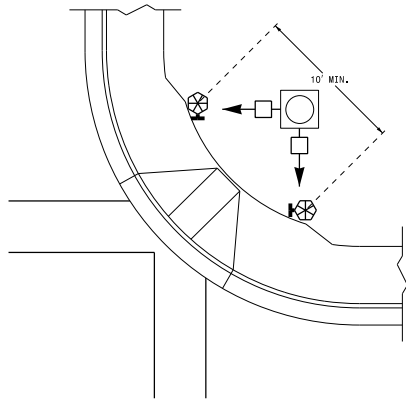
1-24

STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

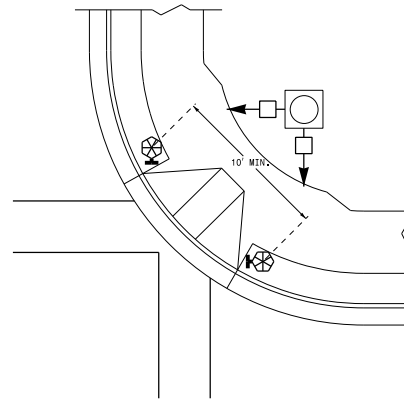


**TYPICAL PUSHBUTTON LOCATIONS (CASE III)**

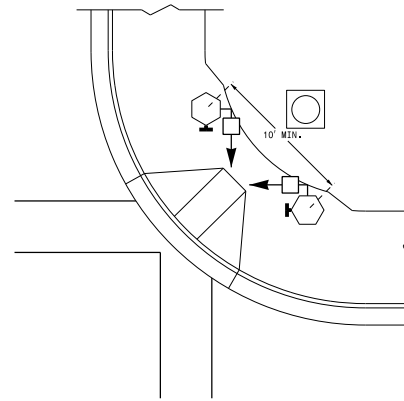
SHARED CURB RAMPS



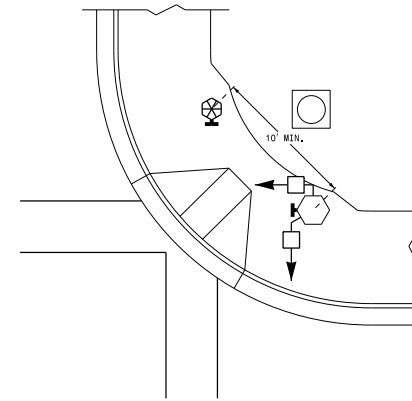
BACK OF SIDEWALK IS WITHIN 10' OF CURB OR PAVEMENT/SHOULDER



GRASS STRIP PLACEMENT IF BACK OF SIDEWALK EXCEEDS 10' FROM CURB OR PAVEMENT/SHOULDER

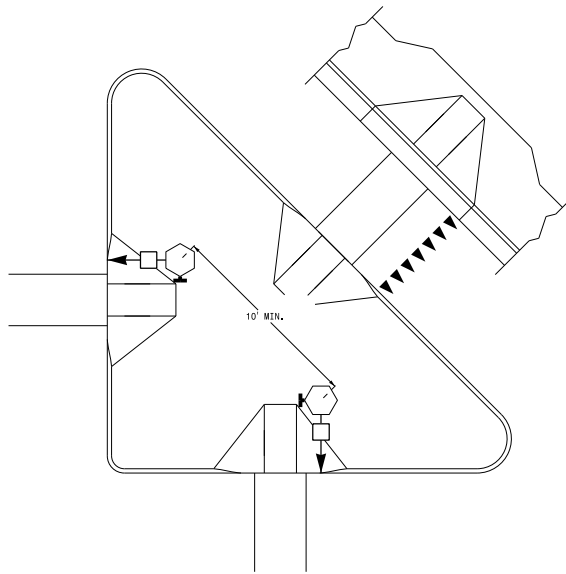


PUSHBUTTON PLACEMENT IN WIDE SIDEWALK (CORRESPONDING PUSHBUTTONS AND SIGNAL HEADS ON DIFFERENT PEDESTALS)

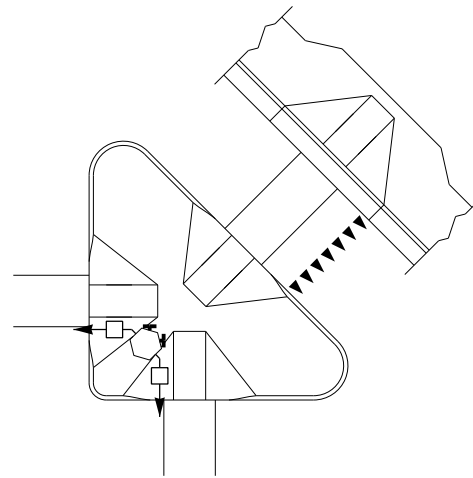


PUSHBUTTON PLACEMENT WITH SHARED TYPE II SIGNAL PEDESTAL AND TYPE I PUSHBUTTON POST

**TRAFFIC ISLAND PUSHBUTTON LOCATIONS**



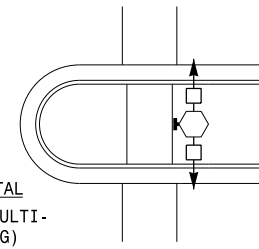
PUSHBUTTON PLACEMENT IN LARGE "PORK CHOP ISLAND" WITH SEPARATE PEDESTALS



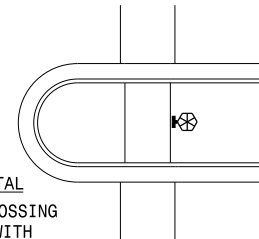
PUSHBUTTON PLACEMENT IN SMALL "PORK CHOP ISLAND" WITH SHARED PEDESTAL

**PUSHBUTTON PLACEMENT IN MEDIAN**

**TYPE II PEDESTAL**  
(FOR STAGED OR MULTI-PHASE CROSSING)



**TYPE I PEDESTAL**  
(FOR COMPLETE CROSSING CURB TO CURB WITH OPTIONAL REFUGE)

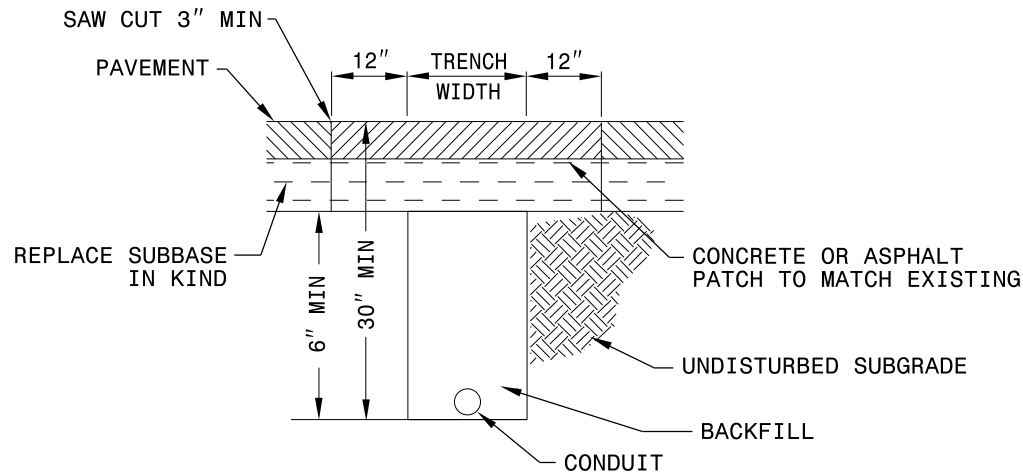


**PROPOSED**

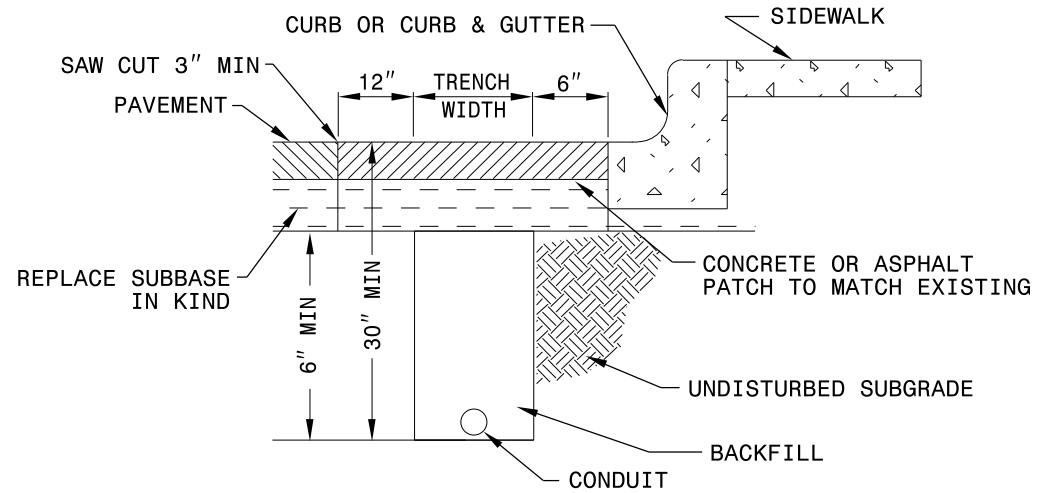
**LEGEND**

- Signal Pole
- Type I Pushbutton Post
- Type II Signal Pedestal
- Pushbutton & Sign
- Pedestrian Signal Head
- Curb Ramp
- Pushbutton Location Area

**IN EXISTING PAVEMENT  
(NOT AT GUTTER)**

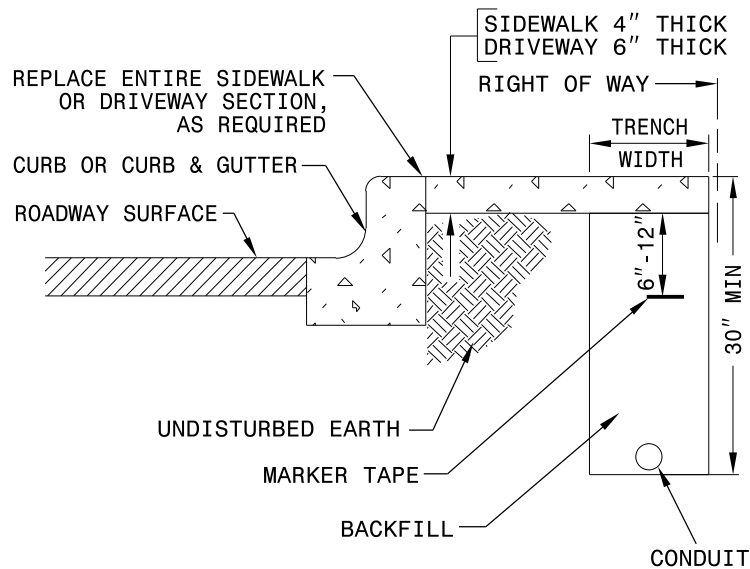


**IN EXISTING PAVEMENT  
(AT GUTTER)**

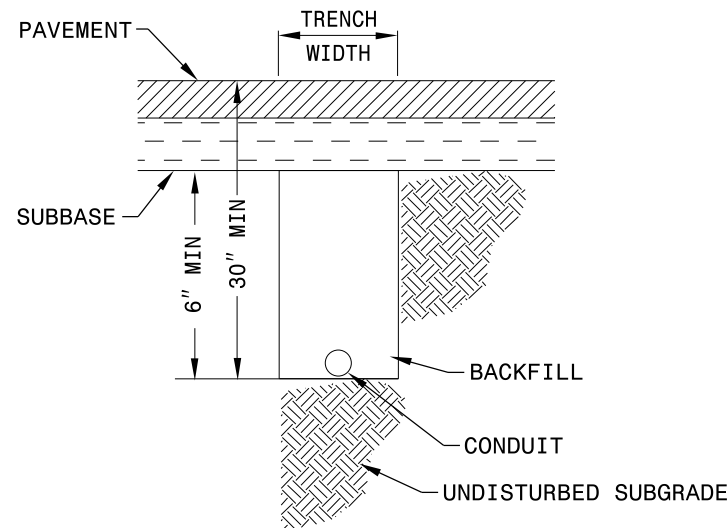


THE REMOVAL OF PAVEMENT BEYOND THE EDGES OF THE TRENCH, AS SHOWN, WILL NOT BE REQUIRED IF SAID EDGES ARE SAW CUT AND MAINTAINED NEATLY WITH NO SHATTER.

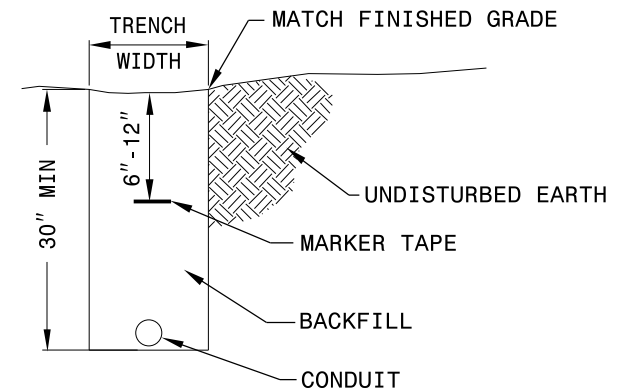
**IN SIDEWALK OR DRIVEWAY**



**IN NEW PAVEMENT**



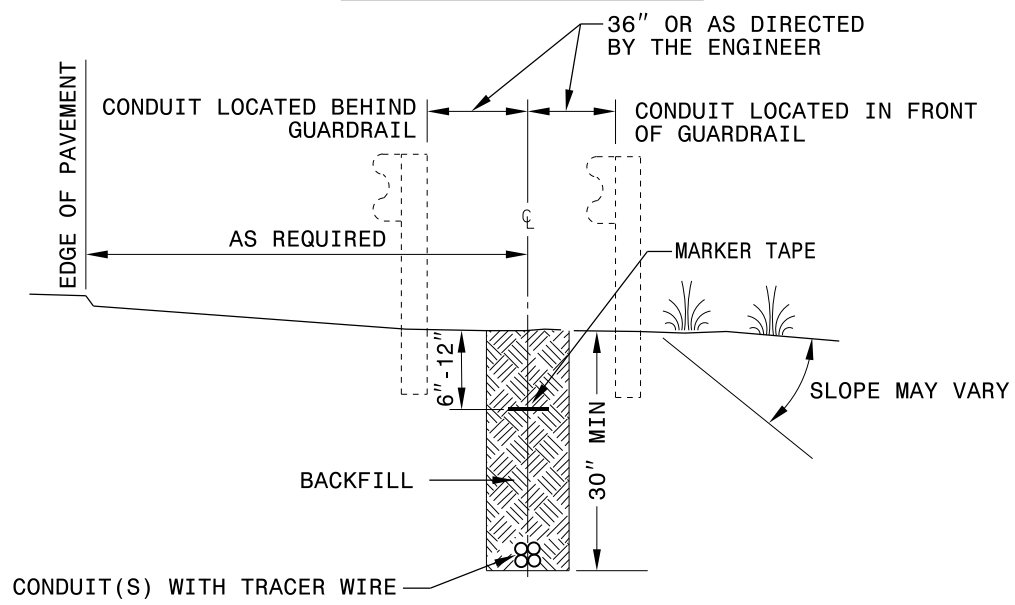
**IN EARTH**



**NOTE**

DIG TRENCH WIDE ENOUGH TO ACCEPT THE REQUIRED CONDUITS AND TO PERMIT PROPER COMPACTION.

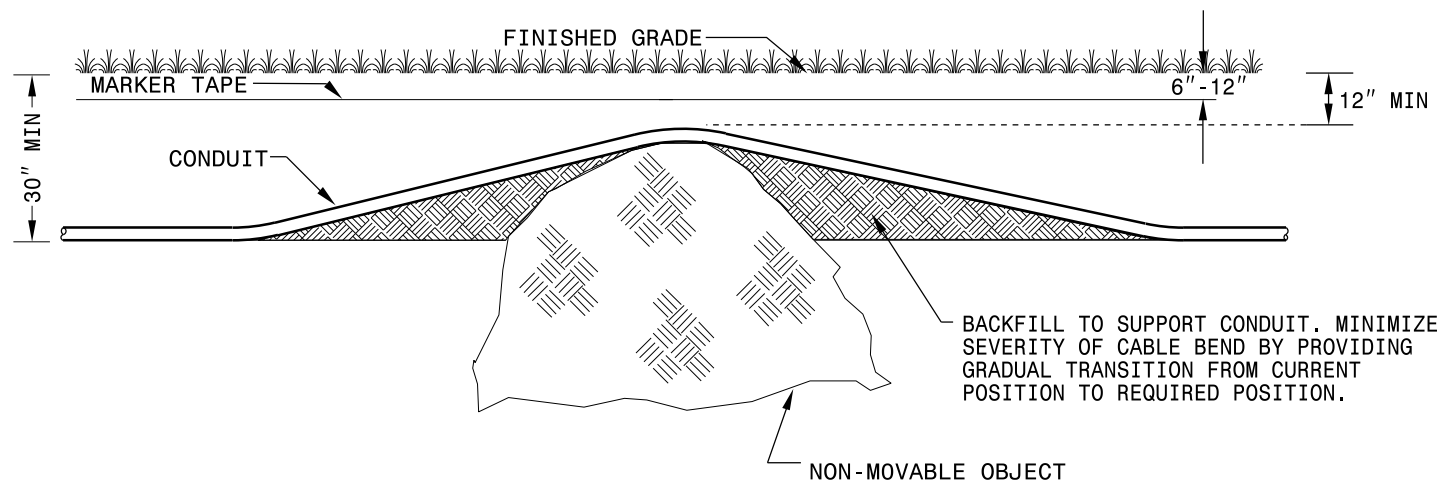
**CONDUIT TRENCHING**



**NOTE**

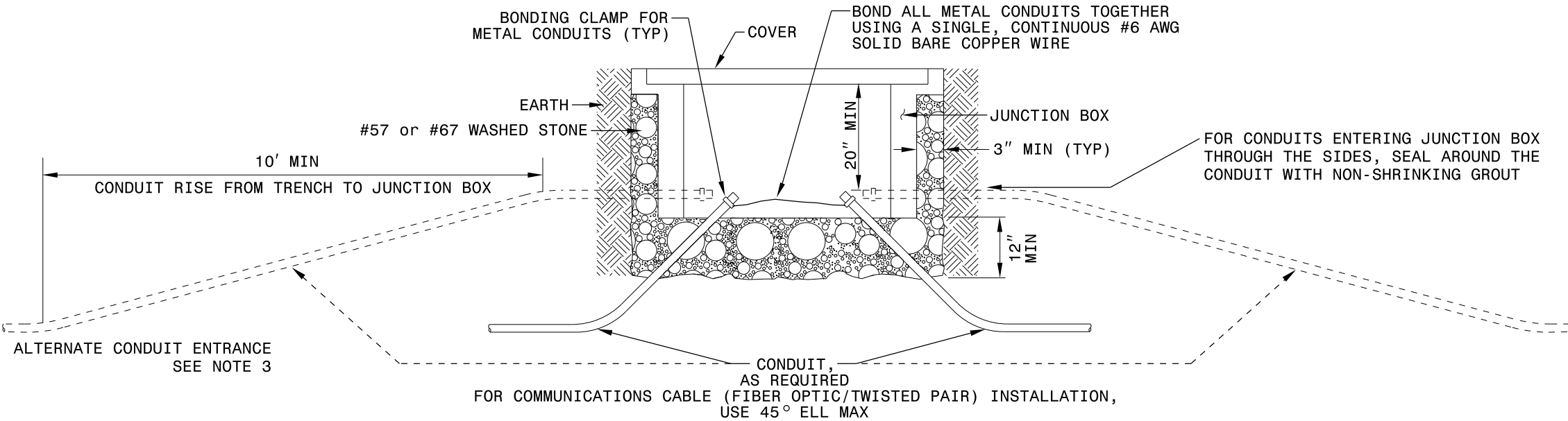
THE CONTRACTOR, WITH APPROVAL FROM THE ENGINEER, MAY ADJUST FINAL BURIAL DEPTH OF CONDUIT(S) IN ORDER TO TRAVERSE NON-MOVABLE OBJECTS.

**CONDUIT TRENCHING AROUND NON-MOVABLE OBJECT**



# INSTALLATION CROSS-SECTION

## JUNCTION BOX OVER-SIZED AND SPECIAL OVER-SIZED

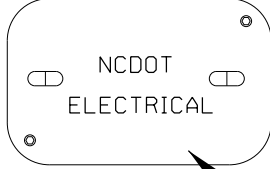


### TOP VIEW OF COVER

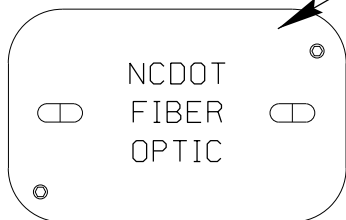
TRAFFIC SIGNAL  
STANDARD SIZE  
JUNCTION BOX



ITS  
STANDARD SIZE  
JUNCTION BOX



EMBOSSED, IMPRESSED, MOLDED  
OR ENGRAVED LETTERS  
MIN 1/2" HIGH

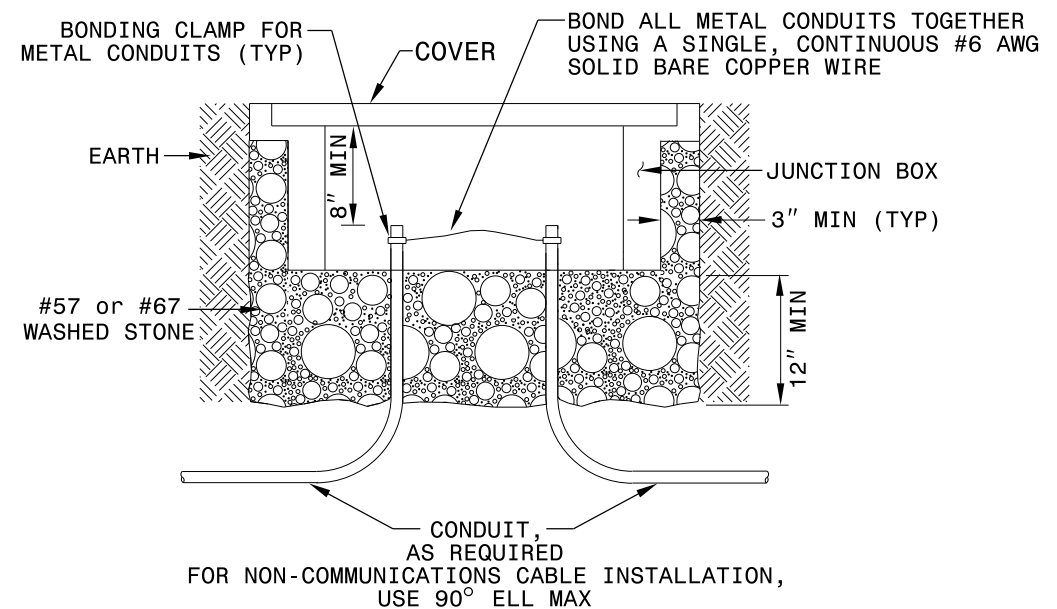


OVER-SIZED AND SPECIAL OVER-SIZED  
JUNCTION BOX

### NOTES

1. OTHER STYLES OF JUNCTION BOXES WILL BE ACCEPTABLE PROVIDED THEY SATISFY REQUIREMENTS OF SECTION 1716 OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
2. SECURE COVER WITH TWO HEX BOLTS.
3. INSTALL CONDUIT THROUGH BOTTOM OF JUNCTION BOX. AS AN ALTERNATIVE, CONDUIT MAY ENTER THROUGH "MOUSE HOLE" INTO SIDE OF JUNCTION BOX ACCORDING TO THE PLANS OR WITH ENGINEER'S APPROVAL.
4. FOR CURB AND GUTTER SECTIONS, LOCATE JUNCTION BOXES A MINIMUM OF 6" BEHIND BACK OF CURB AND FOR PAVEMENT SECTIONS A MINIMUM OF 2' FROM PAVEMENT EDGE OR WITHIN RIGHT OF WAY.
5. COIL AND STORE 10' OF TRACER WIRE IN ALL JUNCTION BOXES WITH FIBER OPTIC CABLE.
6. INSTALL ALL JUNCTION BOXES A MINIMUM OF 4' FROM THE CENTERLINE OF ANY DITCH.

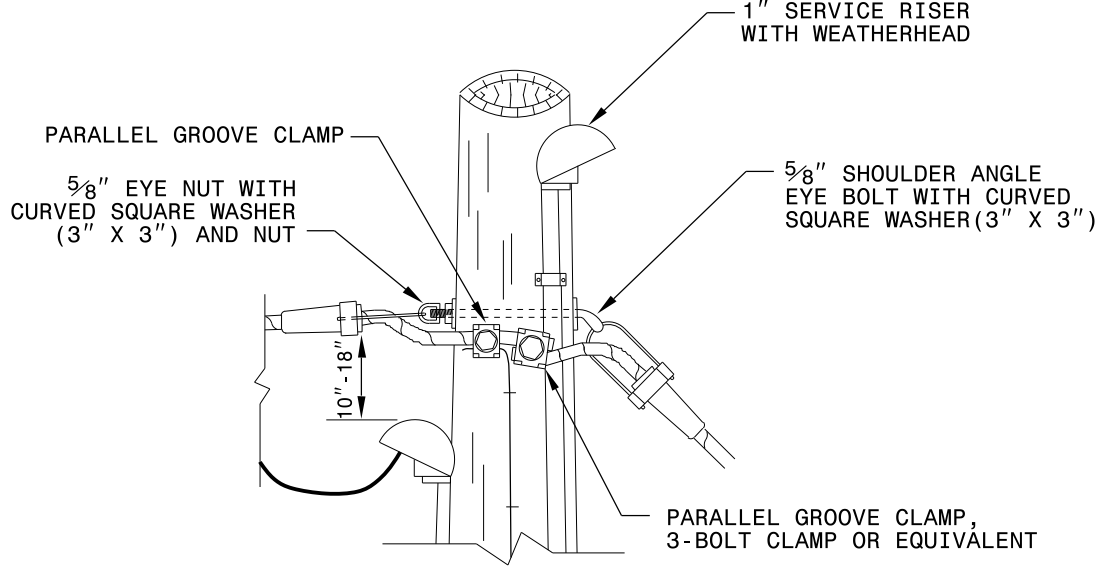
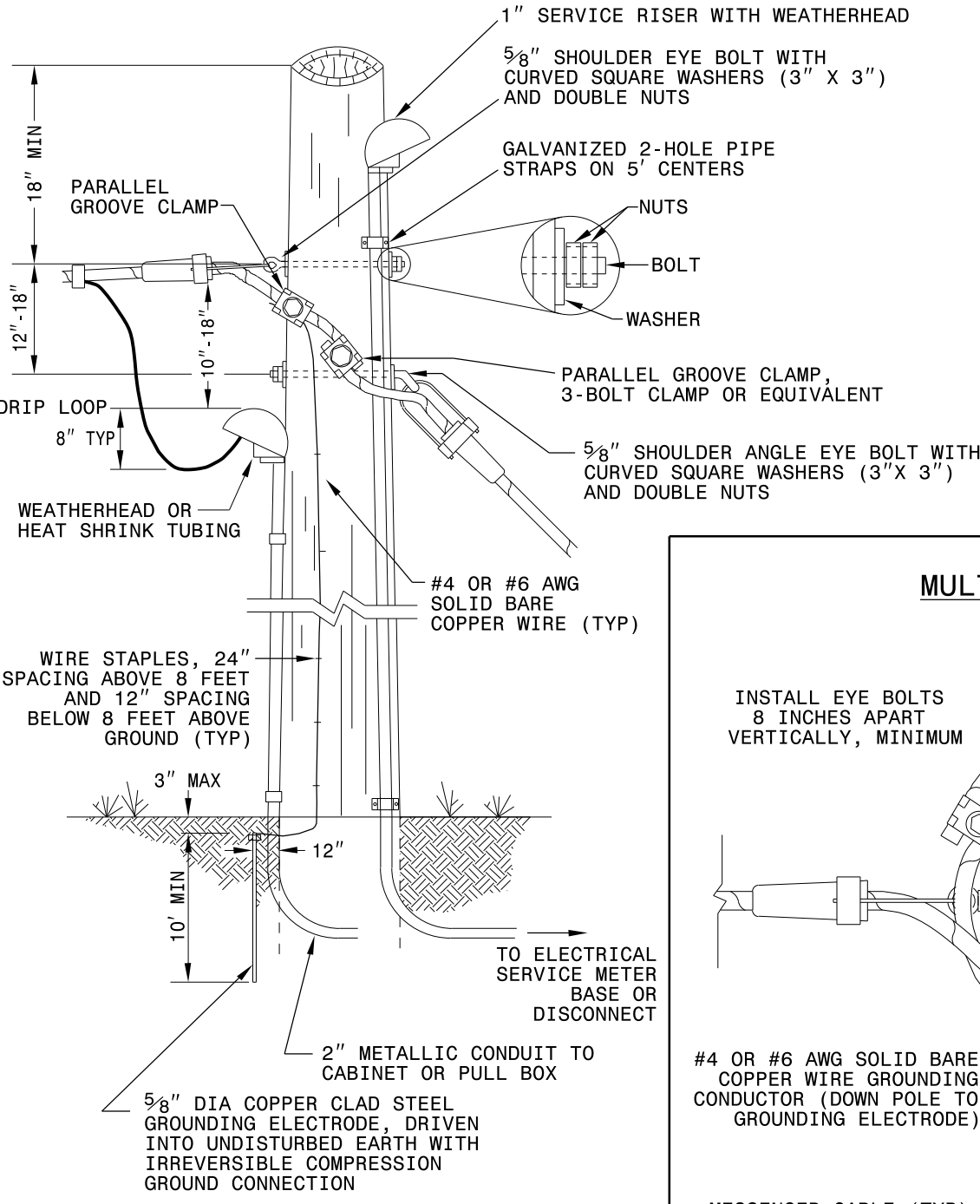
### JUNCTION BOX STANDARD SIZE



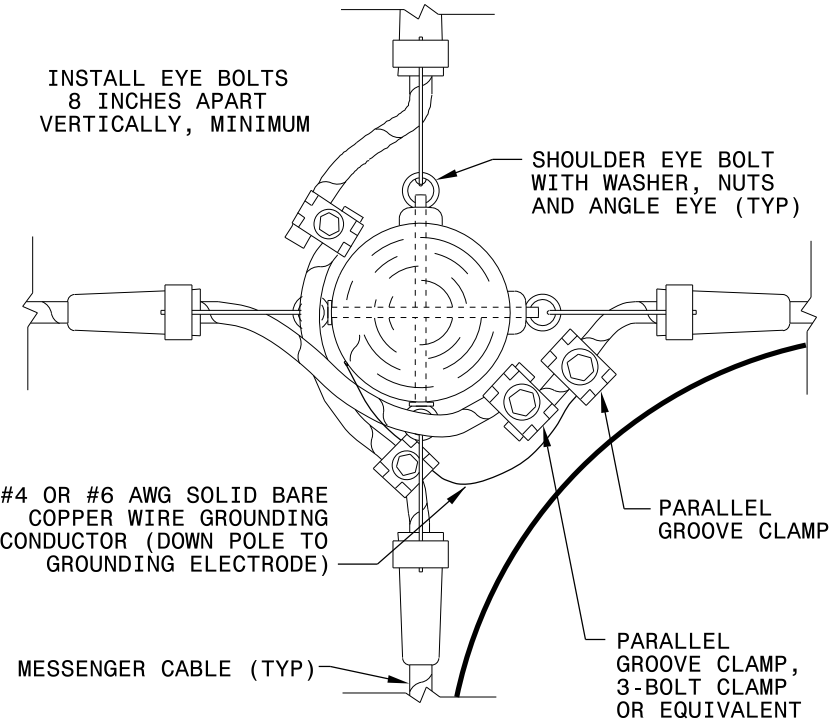
**TWO-BOLT METHOD (PREFERRED)**

**ONE-BOLT METHOD**

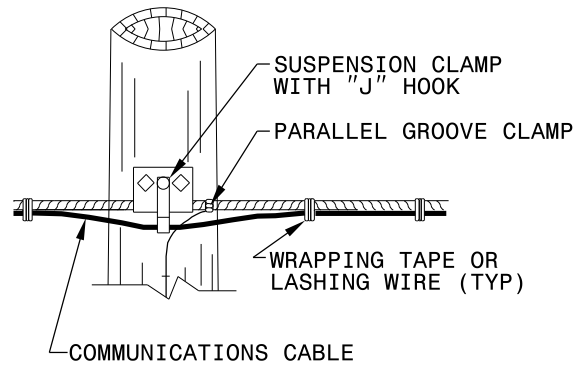
1-24



**MULTIPLE SPANS**



**COMMUNICATIONS CABLE AT INTERMEDIATE POLE**

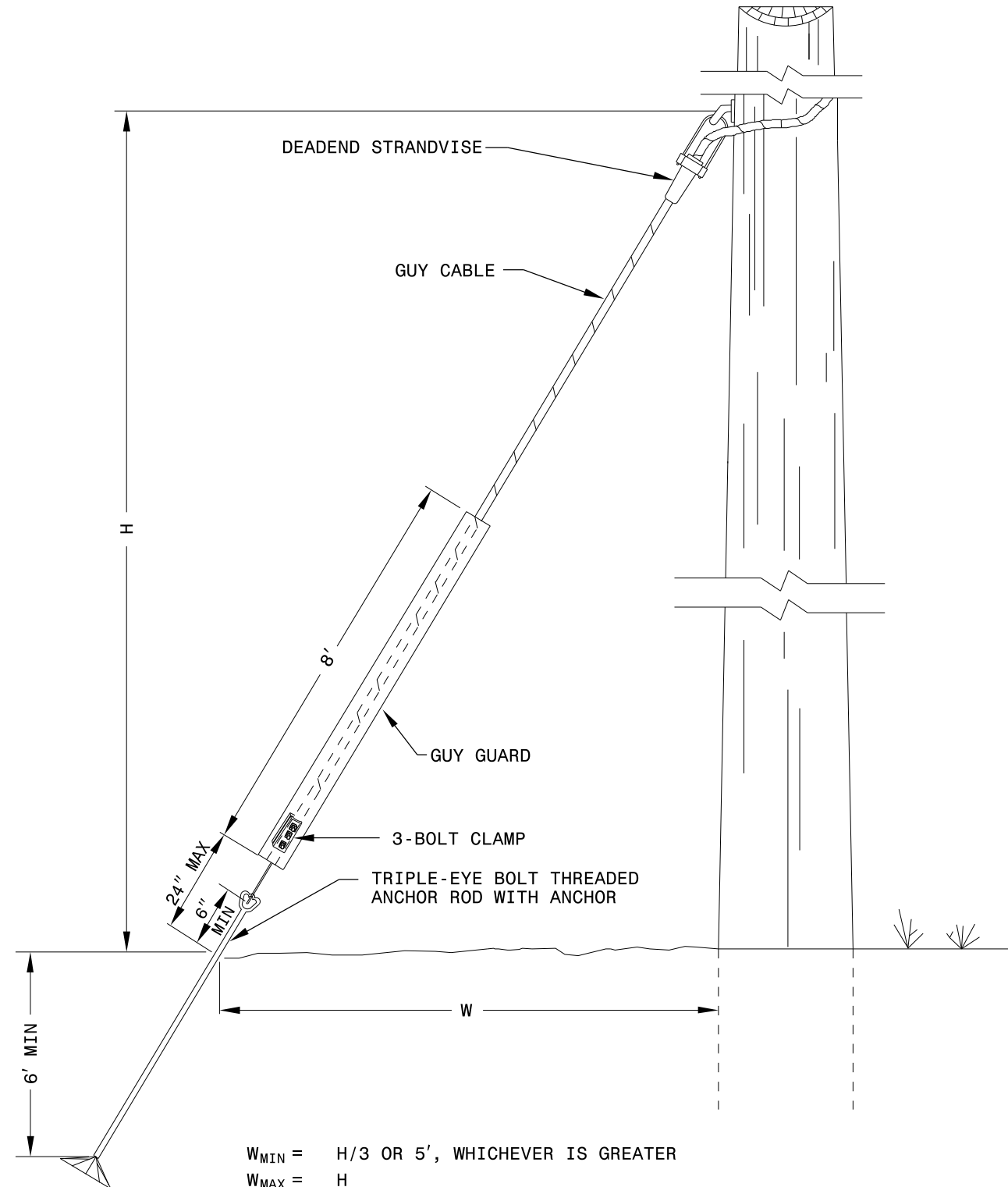


**NOTE**

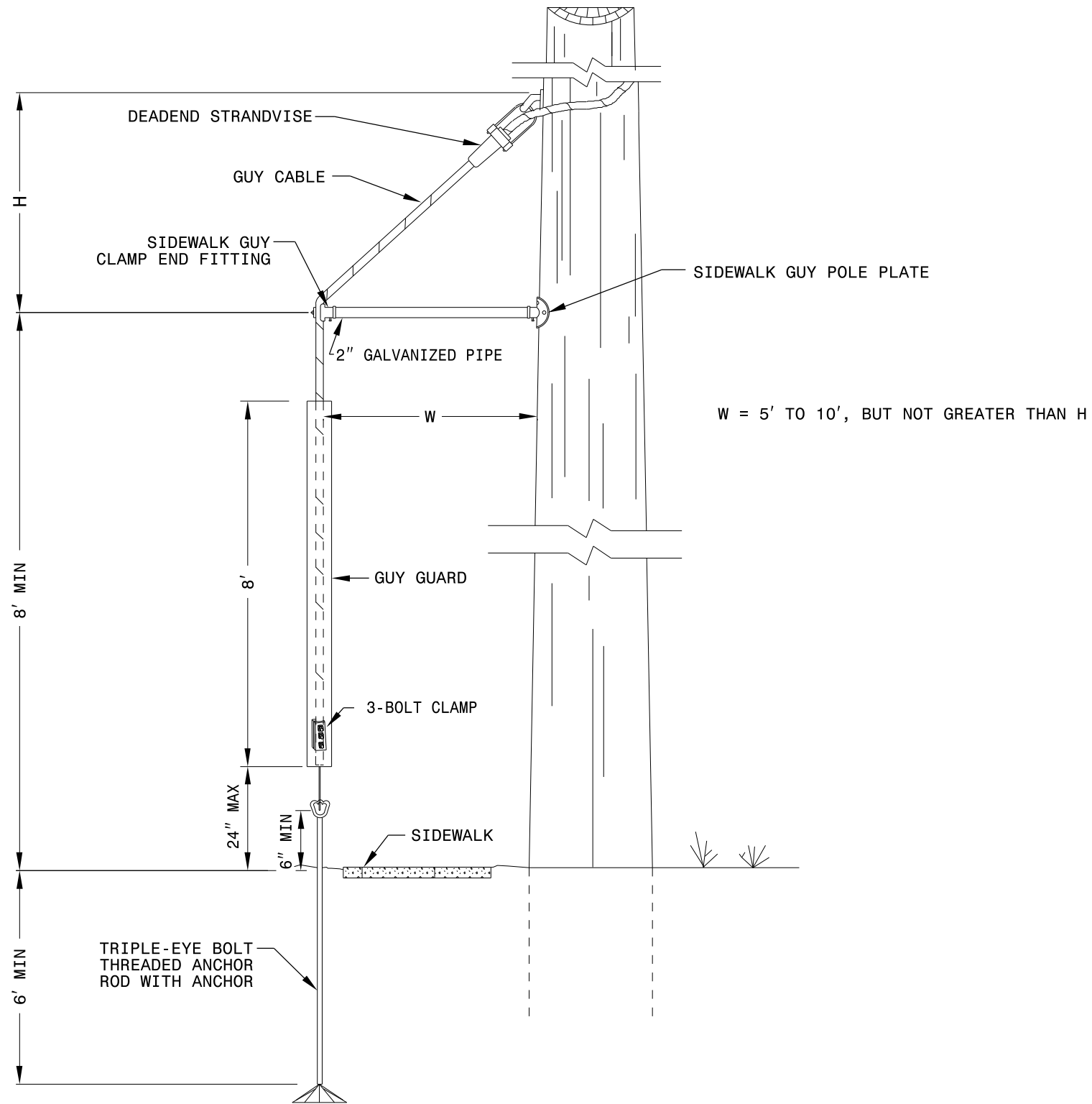
FOR CONNECTING MESSENGER TO MESSENGER, USE PARALLEL GROOVE CLAMP, 3-BOLT CLAMP OR EQUIVALENT. FOR CONNECTING COPPER WIRE TO MESSENGER, USE PARALLEL GROOVE CLAMP.

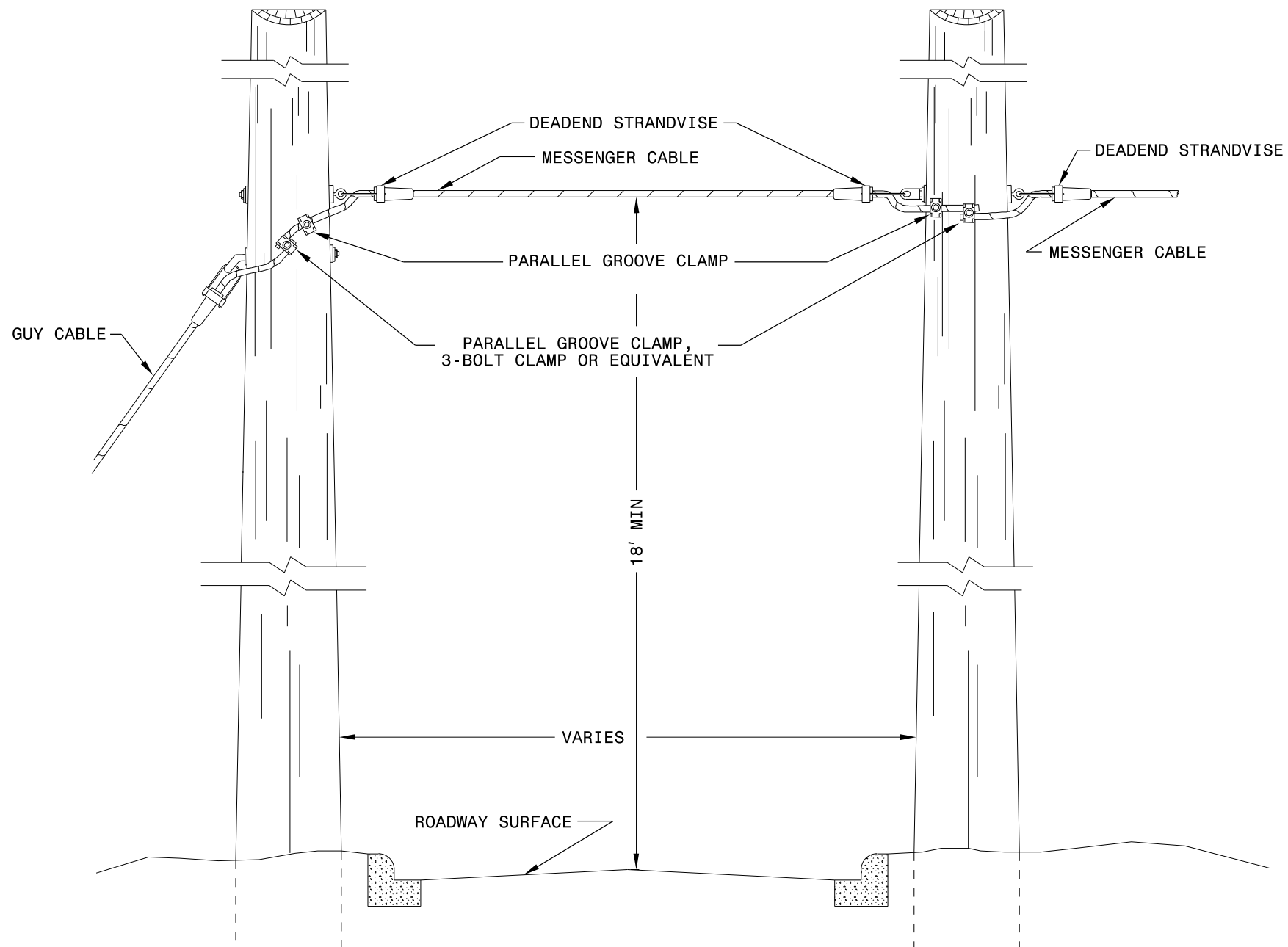
**GENERAL NOTES**

1. GUY EACH SPAN SEPARATELY.
2. USE EYE HARDWARE (EYE BOLTS, EYE NUTS, ANGLE EYES, EYES, TRIPLE-EYE BOLT ANCHOR RODS) WITH ROUNDED GROOVES IN THE EYES. PROVIDE A SEPARATE GROOVE FOR EACH CABLE TO BE TERMINATED.
3. SEE ROADWAY STANDARD DRAWING 1720 FOR METHODS OF ATTACHMENT AND GROUNDING.



$W_{MIN} = H/3 \text{ OR } 5', \text{ WHICHEVER IS GREATER}$   
 $W_{MAX} = H$





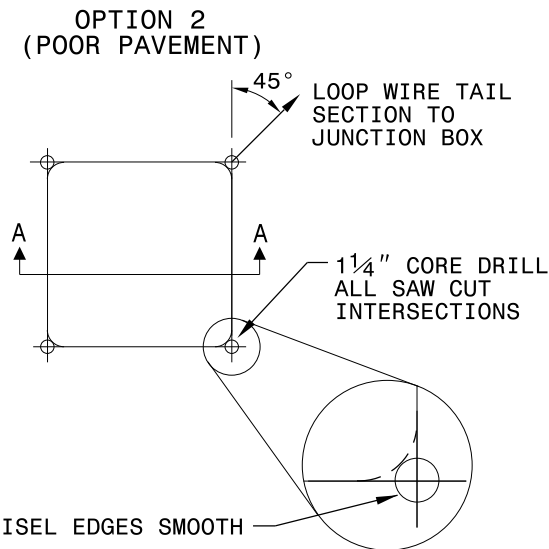
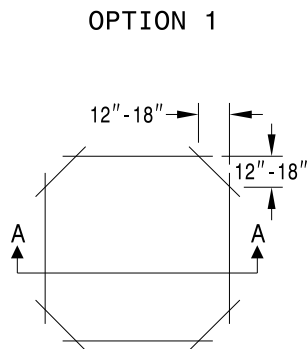
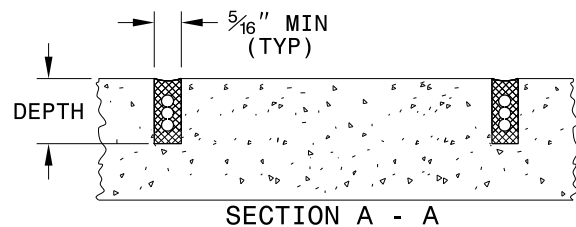


## CONVENTIONAL 4-SIDED LOOP

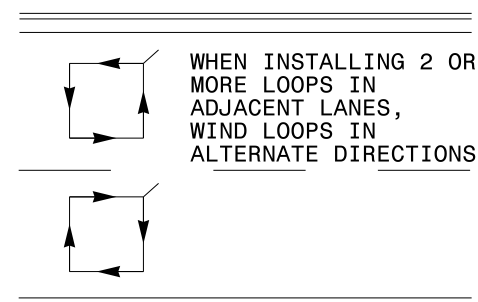
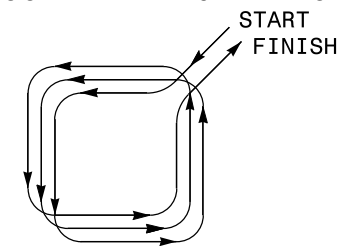
### SAW CUT OPTIONS

### SAW SLOT DEPTH CHART

DEPTH (IN)	NO. OF WIRE TURNS				
	2	3	4	5	6
CONCRETE	2.0	2.0	2.5	2.5	3.0
ASPHALT	2.0	2.5	3.0	3.0	3.0



### LOOP WINDING METHOD



### LOOP WIRE TWISTING METHOD

INCORRECT WAY TO TWIST WIRE



CORRECT WAY TO TWIST WIRE

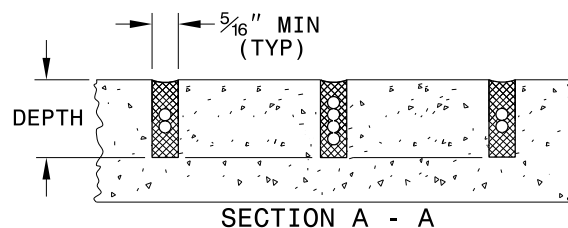
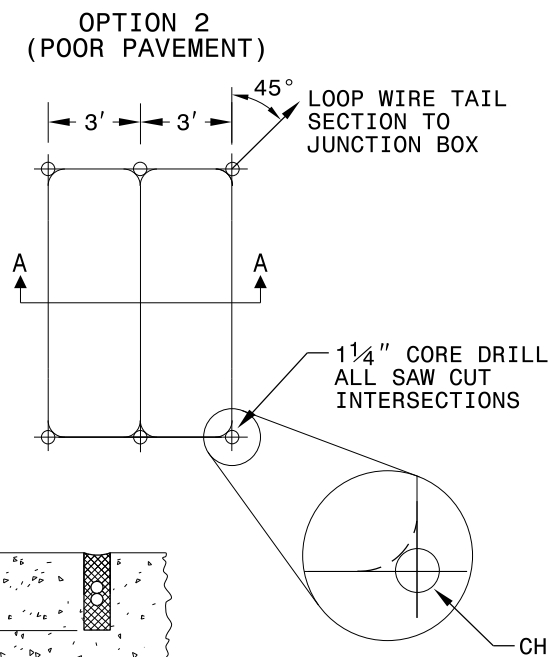
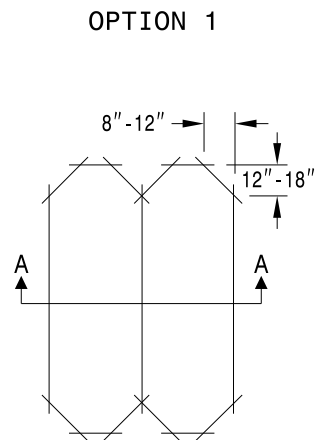


### NOTES

- OVERLAP SAW CUTS AT CORNERS AND INTERSECTION POINTS TO ENSURE UNIFORM SAW SLOT DEPTH.
- MAINTAIN 12" SPACING BETWEEN LOOP WIRE TAIL SECTIONS.
- WIRE LOOPS CONNECTED TO THE SAME DETECTOR CHANNEL IN SERIES.
- LOCATE LOOPS IN CENTER OF LANES UNLESS OTHERWISE SHOWN ON PLANS OR APPROVED BY ENGINEER.

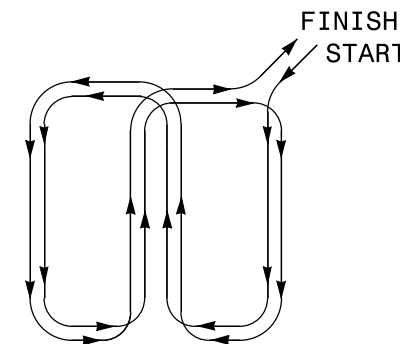
## QUADRUPOLE LOOP

### SAW CUT OPTIONS



DEPTH IS 2.5" FOR CONCRETE AND 3.0" FOR ASPHALT

### LOOP WINDING METHOD



ROADWAY STANDARD DRAWING FOR

**INDUCTIVE DETECTION LOOPS**

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STATE OF

NORTH CAROLINA

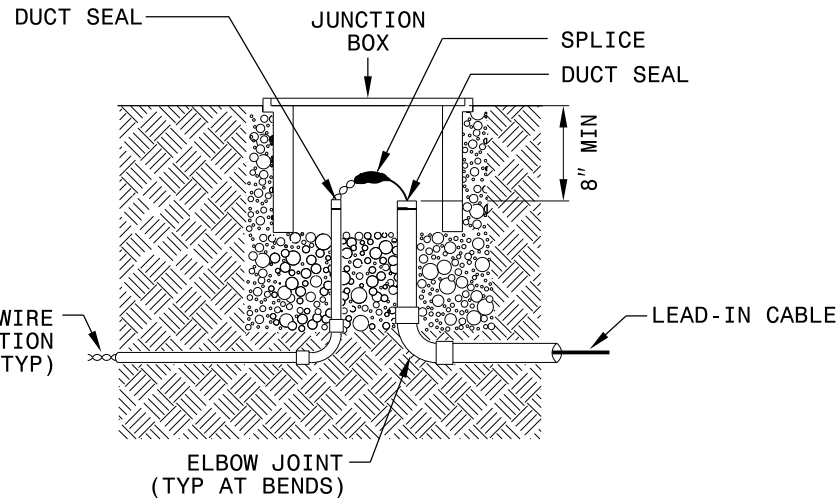
DEPT. OF TRANSPORTATION

DIVISION OF HIGHWAYS

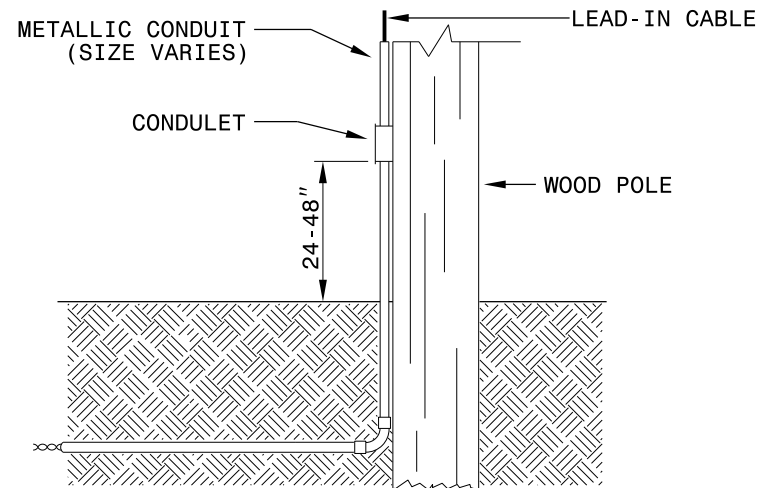
RALEIGH, N.C.

# LOOP WIRE SPLICE POINT DETAILS

## LOOP WIRE AT JUNCTION BOX



## LOOP WIRE AT POLE

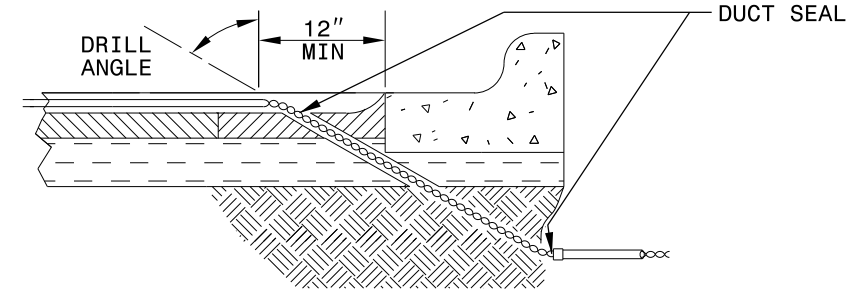


### NOTE

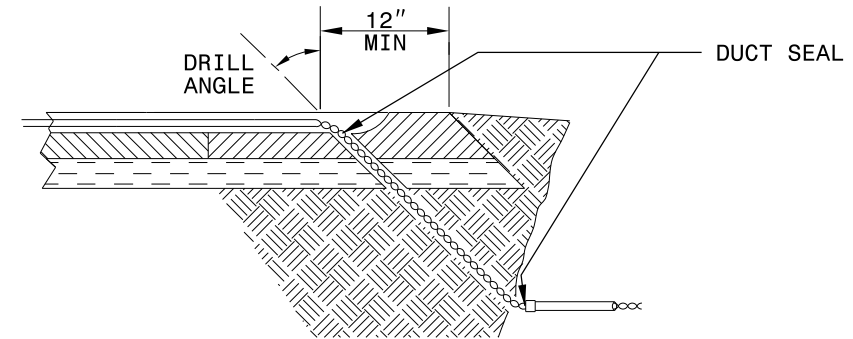
SPLICE ALL LOOP WIRE TAIL SECTIONS/LEAD-IN CABLE IN JUNCTION BOXES OR APPROVED CONDULETS.

# LOOP WIRE PAVEMENT EDGE DETAILS

## LOOP WIRE AT CURB & GUTTER SECTION



## LOOP WIRE AT PAVEMENT SECTION



### NOTES

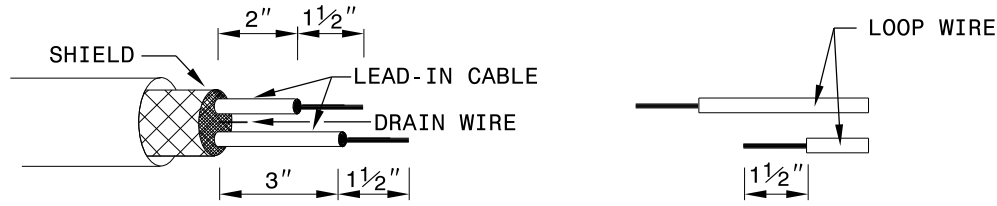
1. DO NOT EXCAVATE UNDER CURB AND GUTTER SECTIONS FOR CONDUIT INSTALLATION.
2. TWIST LOOP WIRE TAIL SECTIONS FROM WHERE LOOP WIRE TAIL LEAVES SAW CUT TO JUNCTION BOX, INCLUDING THROUGH CONDUIT.
3. BEFORE SEALING LOOPS, INSTALL DUCT SEAL WHERE LOOP WIRE TAIL SECTION LEAVES SAW CUT IN PAVEMENT AND AT ENTRANCE OF CONDUIT TO JUNCTION BOX.

STATE OF  
NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

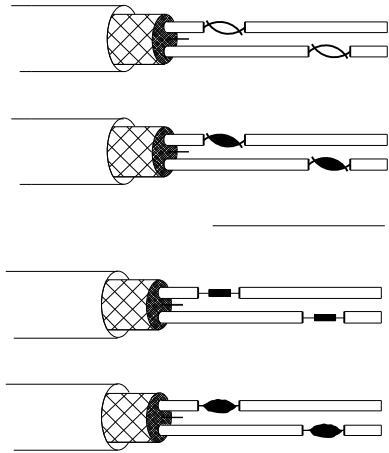
1-24

ROADWAY STANDARD DRAWING FOR  
**INDUCTIVE DETECTION LOOPS**  
LOOP WIRE DETAILS

STEP 1. STRIP LOOP WIRE AND LEAD-IN CABLE



STEP 2. CONNECT AND SOLDER



TWIST BARE CONDUCTORS TOGETHER AND SOLDER WITH RESIN CORE SOLDER

OR

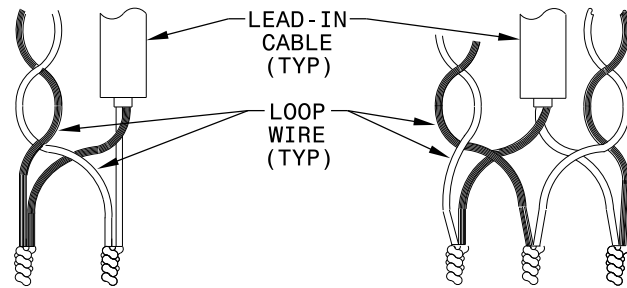
CRIMP BARE CONDUCTORS TOGETHER WITH AN UNINSULATED BUTT CONNECTOR AND SOLDER WITH RESIN CORE SOLDER

BOND SHIELD DRAIN WIRE AT SPLICE SECTIONS (DO NOT GROUND)

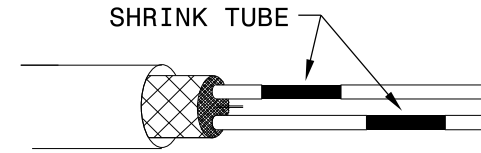
LOOP WIRE AND LEAD-IN CABLE CONNECTION DETAILS

SINGLE CONNECTION

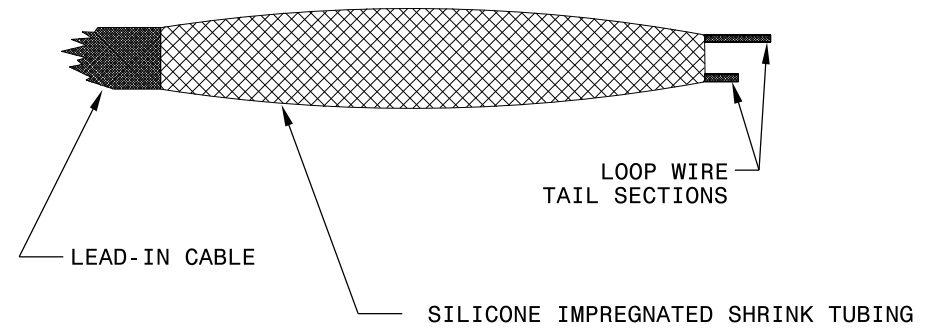
SERIES CONNECTION



STEP 3. INSULATE EACH SOLDER JOINT SEPARATELY



STEP 4. ENVIRONMENTALLY PROTECT SPLICE



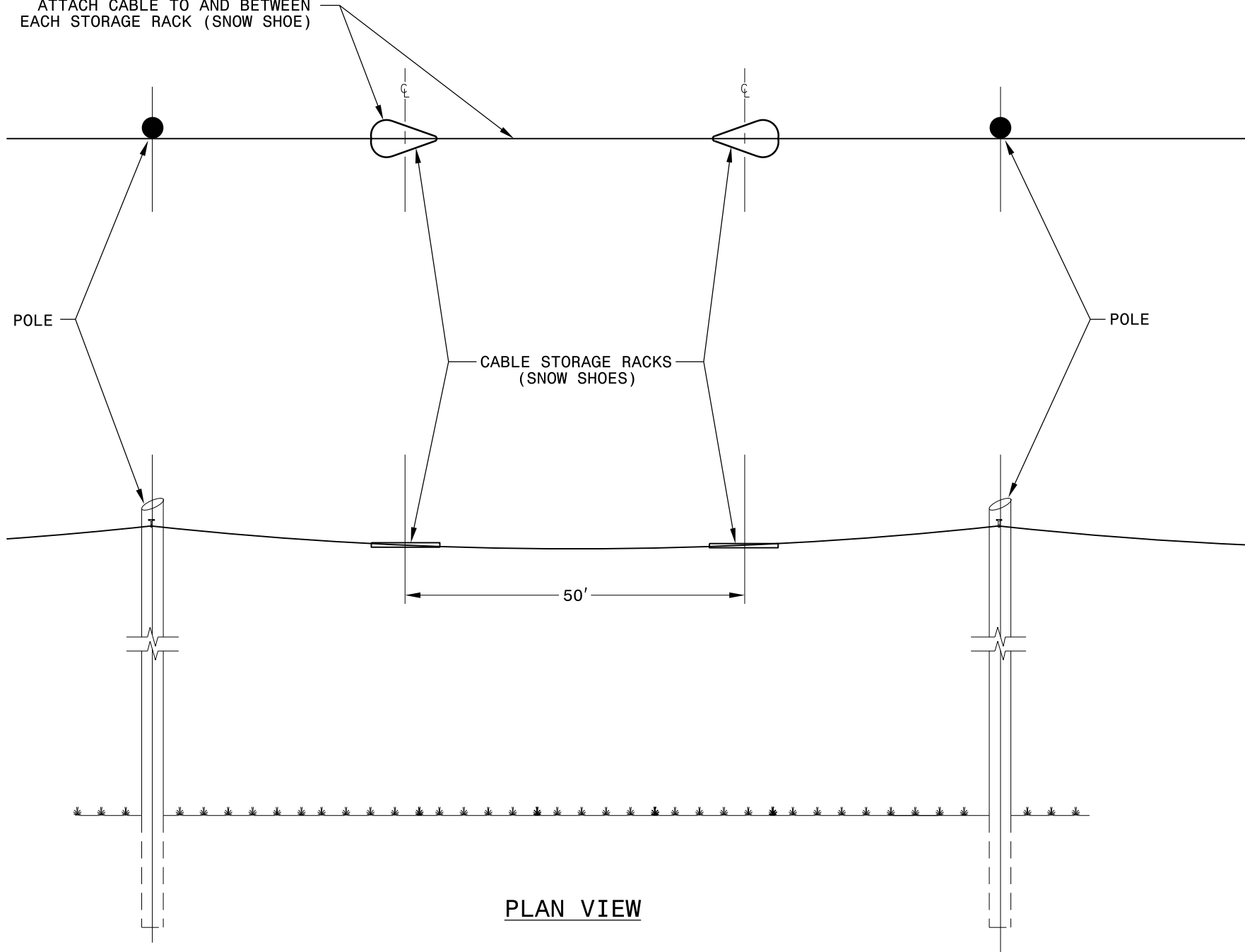
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

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ROADWAY STANDARD DRAWING FOR  
**INDUCTIVE DETECTION LOOPS**  
SPLICING FOR LEAD-IN CABLE AND LOOP WIRE

TOP VIEW

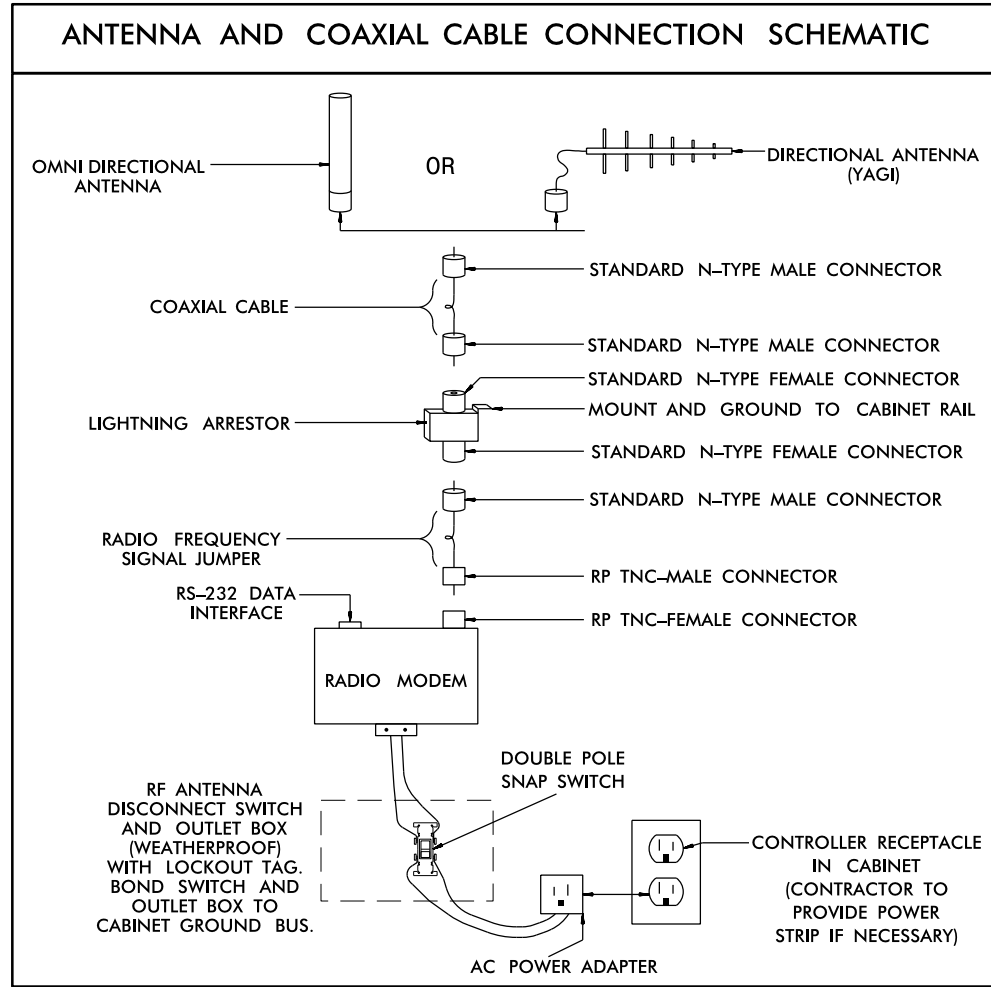
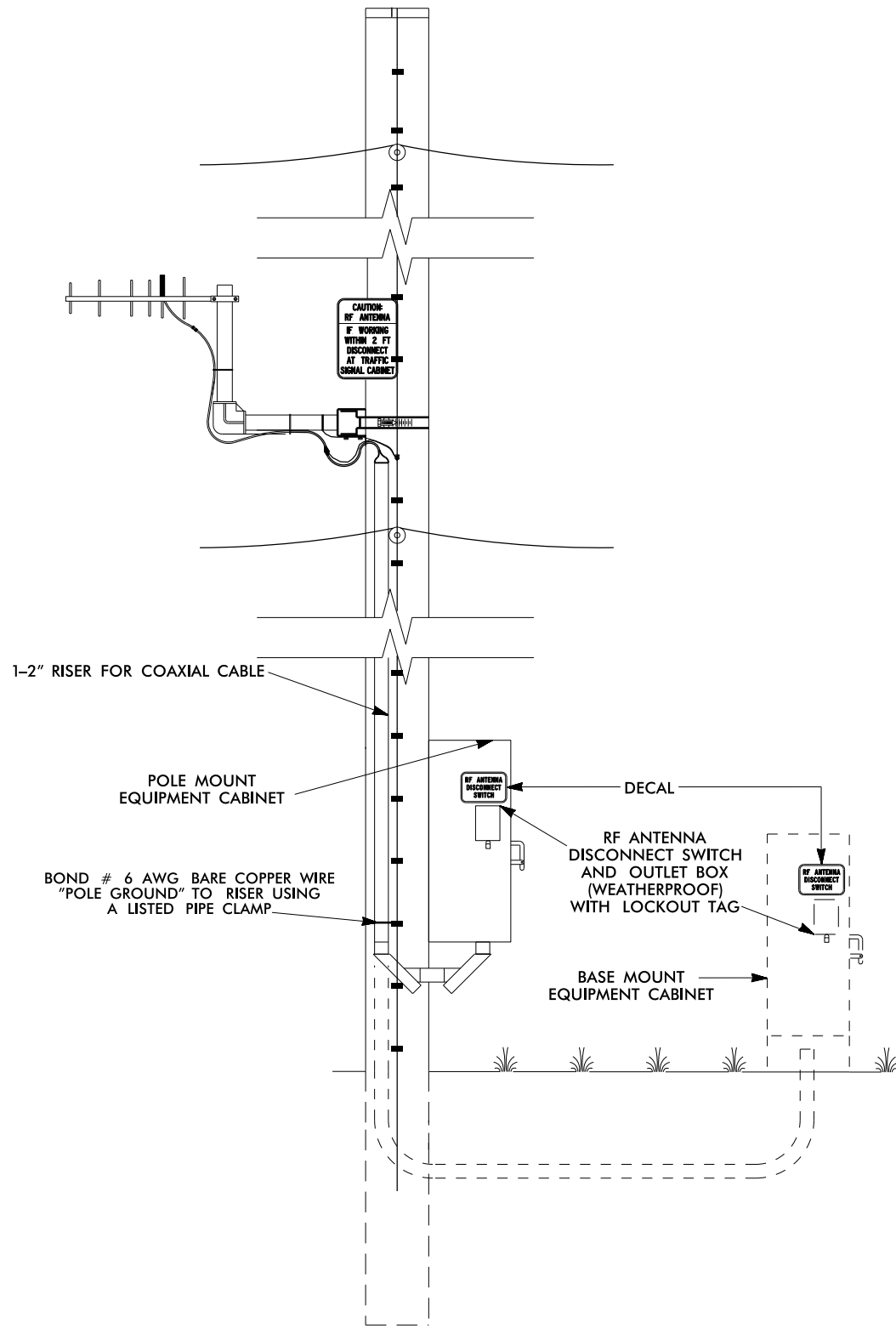
ATTACH CABLE TO AND BETWEEN  
EACH STORAGE RACK (SNOW SHOE)



PLAN VIEW

1-24 STATE OF  
NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR  
**FIBER-OPTIC CABLE**  
SPARE CABLE STORAGE



**NOTES**

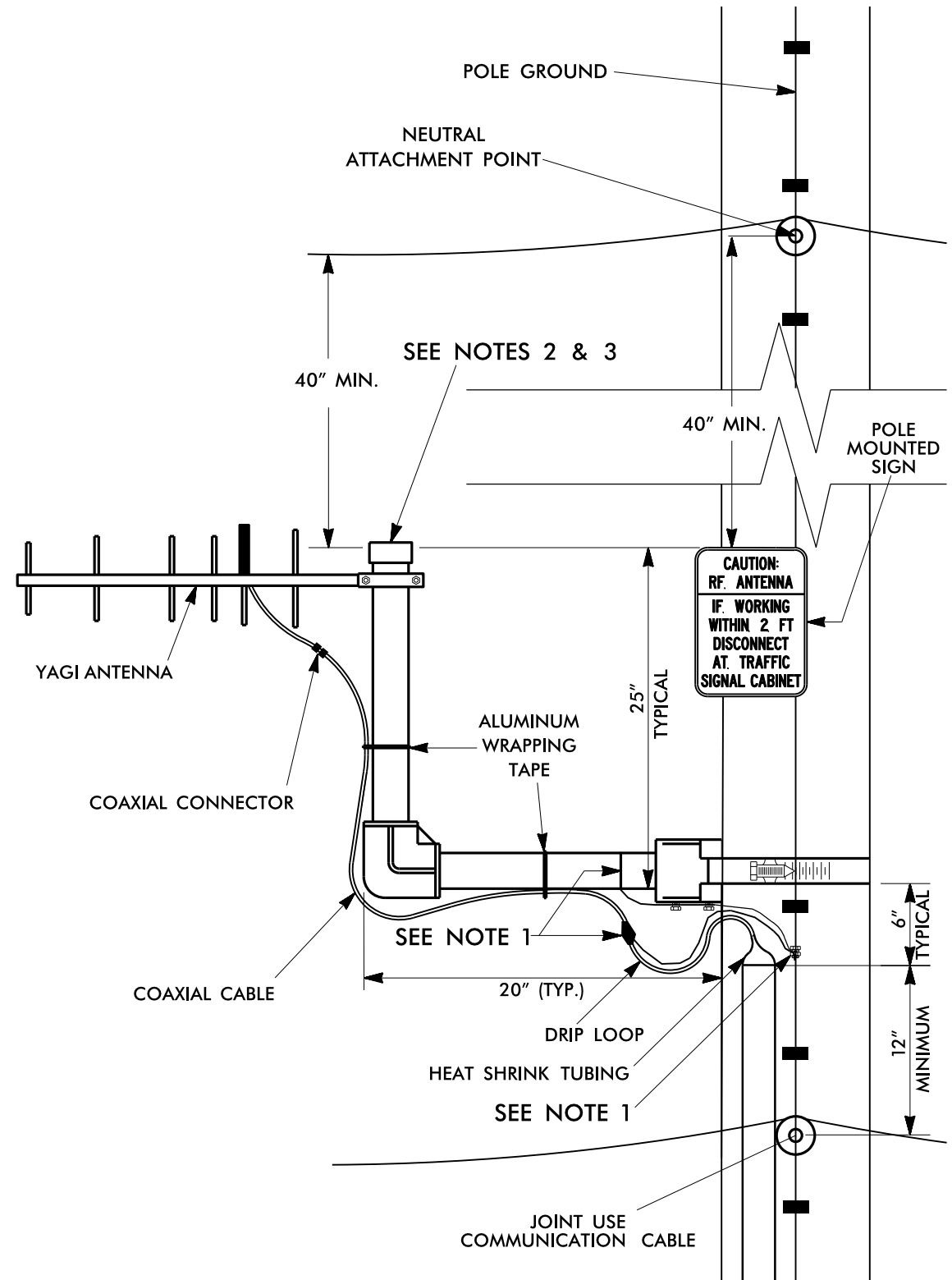
1. WOOD POLE — BOND # 6 AWG SOLID BARE COPPER WIRE TO ANTENNA SUPPORT USING LISTED PIPE CLAMP. BOND OTHER END OF # 6 AWG SOLID BARE COPPER WIRE TO THE POLE GROUND USING A SPLIT BOLT CONNECTOR. BOND SHIELD OF COAXIAL CABLE WITH AN APPROVED GROUNDING SYSTEM (USING #6 AWG STRANDED COPPER WIRE) BONDED TO THE POLE GROUND. WEATHERPROOF THE CONNECTION ONCE THE GROUNDING SYSTEM IS INSTALLED. ENSURE "POLE GROUND" IS IN PLACE.

METAL POLE — BOND # 6 AWG SOLID BARE COPPER WIRE TO ANTENNA SUPPORT USING LISTED PIPE CLAMP. BOND OTHER END OF # 6 AWG SOLID BARE COPPER WIRE TO THE POLE OR EXISTING SYSTEM GROUND USING A METHOD APPROVED BY THE ENGINEER. BOND SHIELD OF COAXIAL CABLE WITH AN APPROVED GROUNDING SYSTEM (USING #6 AWG STRANDED COPPER WIRE) BONDED TO THE POLE BY A METHOD APPROVED BY THE ENGINEER. WEATHERPROOF THE CONNECTION ONCE THE GROUNDING SYSTEM IS INSTALLED. ENSURE "SYSTEM GROUND" IS IN PLACE.

2. TO CONSERVE VERTICAL SPACING ON THE POLE (JOINT-USE OR SIGNAL POLE) WITH REGARDS TO THE SURROUNDING UTILITIES, INSTALL THE ANTENNA MOUNTING HARDWARE USING ONE OF THE TWO METHODS LISTED BELOW: (ENSURE THAT THE MOUNTING METHOD DOES NOT DEGRADE THE ANTENNA'S SIGNAL INTEGRITY)

- A) ROTATE THE VERTICAL SUPPORT ARM 90 DEGREES SUCH THAT THE ANTENNA IS AT THE SAME HEIGHT AS THE HORIZONTAL SUPPORT ARM.
- B) ELIMINATE THE VERTICAL SUPPORT ARM AND MOUNT THE ANTENNA TO THE HORIZONTAL SUPPORT ARM.
- C) ANTENNA, ANTENNA SUPPORT ARM, AND SIGN TO MAINTAIN A 40" SEPARATION FROM NEUTRAL /POWER AND 12" FROM OTHER UTILITIES.

3. INSTALL AN END CAP TO SEAL THE EXPOSED END OF THE MOUNTING PIPE.



1-24

# DECAL

SIGN NUMBER: SP05224

BACKG COLOR: Yellow

TYPE: DECAL

COPY COLOR: Black

QUANTITY:

SYMBOL	X	Y	WID	HT

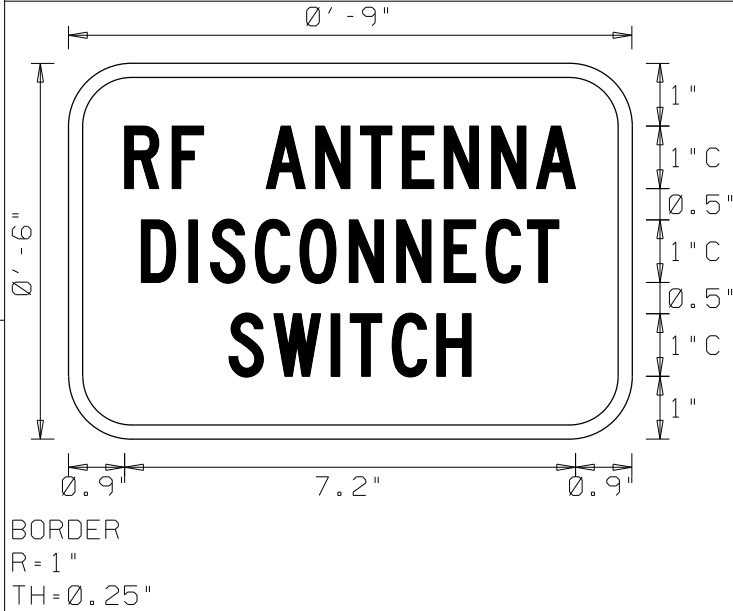
SIGN WIDTH: 0'-9"  
 HEIGHT: 0'-6"  
 TOTAL AREA: 0.4 Sq.Ft.

BORDER TYPE: FLUSH  
 RECESS: 0"  
 WIDTH: 0.25"  
 RADII: 1"

NO. Z BARS:  
 LENGTH:

MAT'L: 0.063" (1.6 mm) ALUMINUM

DESIGN BY: S PIOTROWSKI    DATE: Revised M.Manriquez 5/23/2017    CHECKED BY: SUSAN B. KUNZ  
 PROJECT ID: ID    DIV: INTELLIGENT TRANSPORTATION SYSTEM



NOTE:  
 THIS  
 SIGN  
 SHALL  
 BE  
 PRODUCED  
 AS  
 A  
 DECAL

USE NOTES:

- Legend and border shall be direct applied non-reflective sheeting.
- Background shall be Grade C reflective sheeting.

LETTER POSITIONS

Letter spacings are to start of next letter

Letter spacings are to start of next letter												Series/Size	
	R	F		A	N	T	E	N	N	A			Text Length
	0.9	0.8	0.5	1	0.8	0.7	0.7	0.7	0.8	0.7	0.6	0.9	7.2
	D	I	S	C	O	N	N	E	C	T			C1
	1.2	0.8	0.3	0.7	0.7	0.8	0.8	0.8	0.7	0.7	0.5	1.2	6.7
	S	W	I	T	C	H							C1
	2.6	0.7	0.9	0.3	0.7	0.7	0.5	2.6					3.9

Spacing Factor is 1 unless specified otherwise

# POLE MOUNTED SIGN

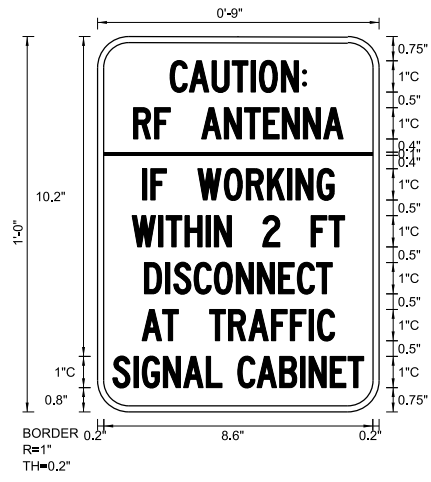
SIGN NUMBER: SP05223  
 TYPE: D  
 QUANTITY:  
 SIGN WIDTH: 0'-9"  
 HEIGHT: 1'-0"  
 TOTAL AREA: 0.8 Sq.Ft.  
 BORDER TYPE: FLUSH  
 RECESS: 0"  
 WIDTH: 0.2"  
 RADII: 1"  
 NO. Z BARS:  
 LENGTH:

BACKG COLOR: Yellow  
 COPY COLOR: Black

SYMBOL	X	Y	WID	HT
BAR	0.2	8.2	8.6	1.0

MAT'L: 0.063" (1.6 mm) ALUMINUM

DESIGN BY: M. TRACEY DATE: Revised M.Manriquez 5/23/2017 CHECKED BY: SUSAN KUNZ  
 PROJECT ID: DIV: INTELLIGNET TRANSPORTATION SYSTEMS



0.60 SPACING FACTOR

USE NOTES:  
 1. Legend and border shall be direct applied non-reflective sheeting.  
 2. Background shall be Grade C reflective sheeting.

LETTER POSITIONS

Letter spacings are to start of next letter

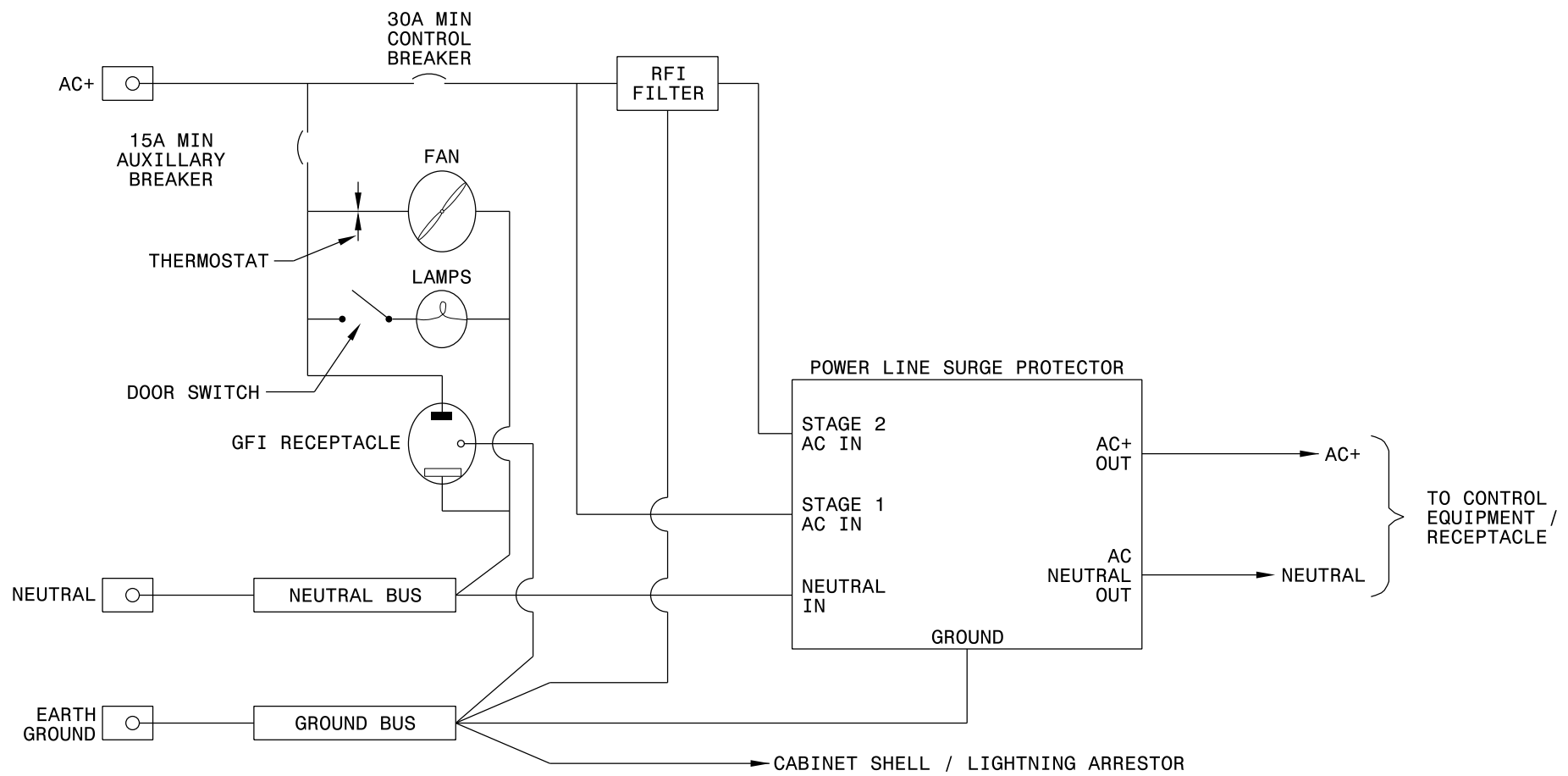
																Series/Size	
																Text Length	
		C	A	U	T	I	O	N	:							C	
		2.3	0.6	0.7	0.6	0.6	0.3	0.7	0.7	0.1	2.3					4.4	
		R	F		A	N	T	E	N	N	A					C	
		1.1	0.7	0.5	1	0.7	0.6	0.6	0.6	0.7	0.6	0.6	1.1			6.7	
		I	F		W	O	R	K	I	N	G					C	
		1.4	0.3	0.5	1	0.8	0.7	0.7	0.6	0.3	0.7	0.5	1.4			6.1	
		W	I	T	H	I	N		2		F	T				C	
		1.1	0.9	0.2	0.6	0.7	0.3	0.5	1	0.5	1	0.6	0.5	1.1		6.8	
		D	I	S	C	O	N	N	E	C	T					C	
		1.5	0.7	0.3	0.6	0.6	0.7	0.7	0.7	0.6	0.6	0.5	1.5			6	
		A	T		T	R	A	F	F	I	C					C	
		1.4	0.7	0.5	1	0.6	0.6	0.7	0.6	0.6	0.3	0.6	1.4			6.2	
		S	I	G	N	A	L		C	A	B	I	N	E	T	C	
		0.5	0.7	0.3	0.7	0.6	0.7	0.5	0.4	0.6	0.7	0.7	0.3	0.7	0.6	0.5	7.9

STATE OF NORTH CAROLINA  
 DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 RALEIGH, N.C.

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ROADWAY STANDARD DRAWING FOR  
**SPREAD SPECTRUM RADIO**  
 RF ANTENNA WARNING SIGN

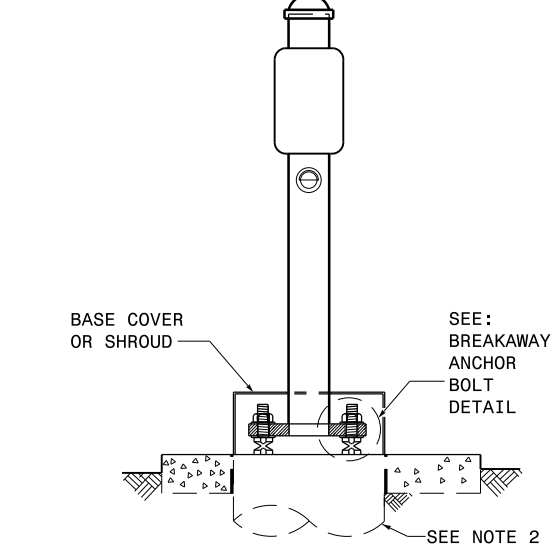
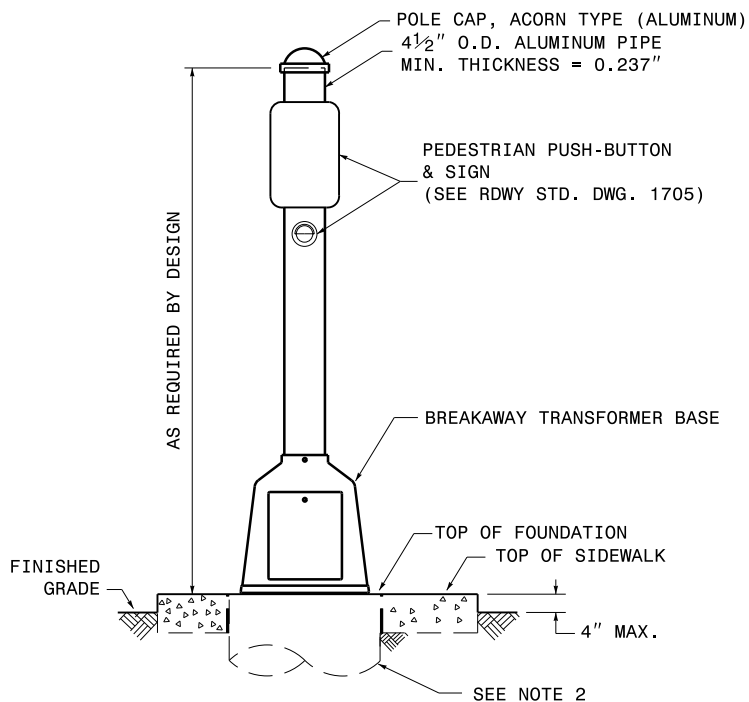




ROADWAY STANDARD DRAWING FOR  
**SPREAD SPECTRUM RADIO**  
 POWER, GROUND AND AUXILIARY POWER SYSTEMS  
 FOR STANDALONE REPEATER CABINET

1-24

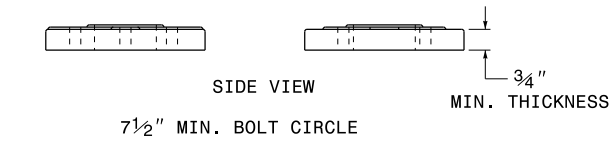
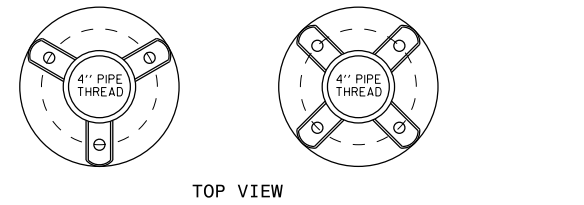
STATE OF  
 NORTH CAROLINA  
 DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 RALEIGH, N.C.



**PUSHBUTTON POST ON FLANGE BASE WITH BREAKAWAY ANCHOR BOLTS**

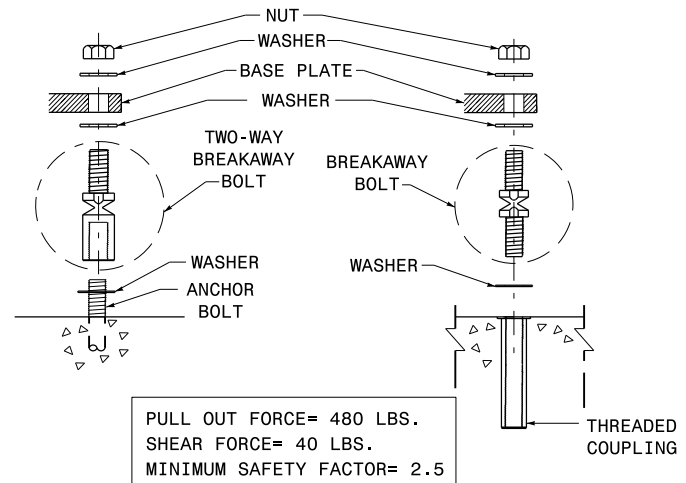
**NOTES:**

1. CONSTRUCT POSTS ON FHWA APPROVED BREAKAWAY BASES OR ANCHORS.
2. CONSTRUCT POST FOUNDATIONS IN ACCORDANCE WITH STANDARD DRAWING 1743.04.
3. PUSHBUTTON POSTS ARE DESIGNED FOR USE IN ALL WIND ZONE REGIONS. BASE REACTIONS FOR 2 PUSHBUTTONS AND 2 9"X12" PEDESTRIAN SIGNS ARE:  
 AXIAL LOAD: 60 LBS  
 SHEAR LOAD: 120 LBS  
 MOMENT LOAD: 435 FT LBS
4. BASE REACTIONS ARE BASED ON A DESIGN LOADING FOR 2 PUSHBUTTONS AND 2 PEDESTRIAN SIGNS. DO NOT EXCEED THE DESIGN LOADING WITHOUT APPROVAL.
5. ALL ELECTRICAL CONDUCTORS INSIDE OF BREAKAWAY SUPPORTS SHOULD SHEAR OR BECOME DISCONNECTED AS CLOSE TO THE FOUNDATION BASE AS POSSIBLE DURING A KNOCKDOWN. REFER TO ELECTRICAL CONDUCTOR SHEAR DEVICE DETAIL.
6. FLANGE BASE WITH BREAKAWAY BOLT OPTION MAY ONLY BE USED FOR TYPE I PEDESTRIAN PUSHBUTTON POSTS.



**THREADED FLANGE BASE STYLES**

TO BE USED WITH BREAKAWAY ANCHORS ONLY

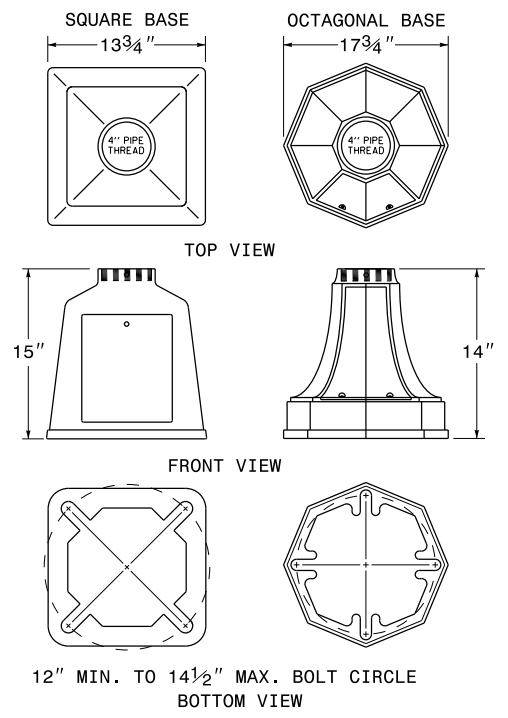


OPTION-1 OPTION-2

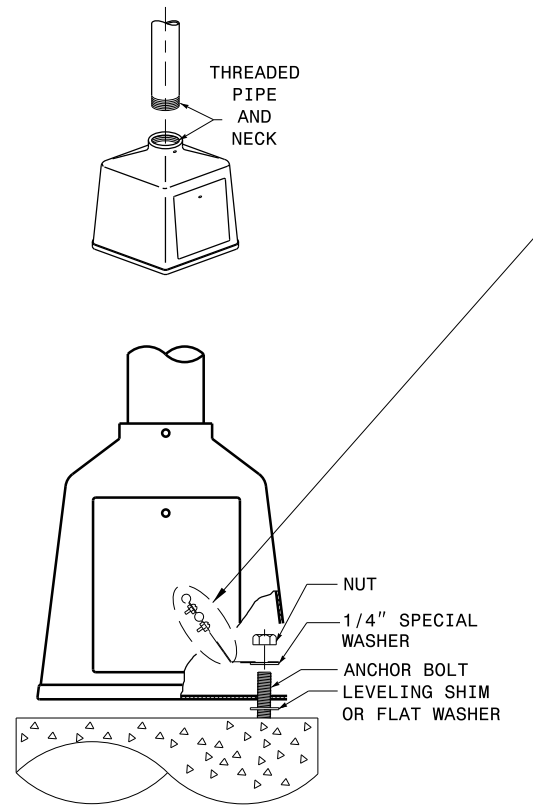
**BREAKAWAY ANCHOR BOLT DETAIL**

TO BE USED WITH THREADED FLANGE BASES ONLY

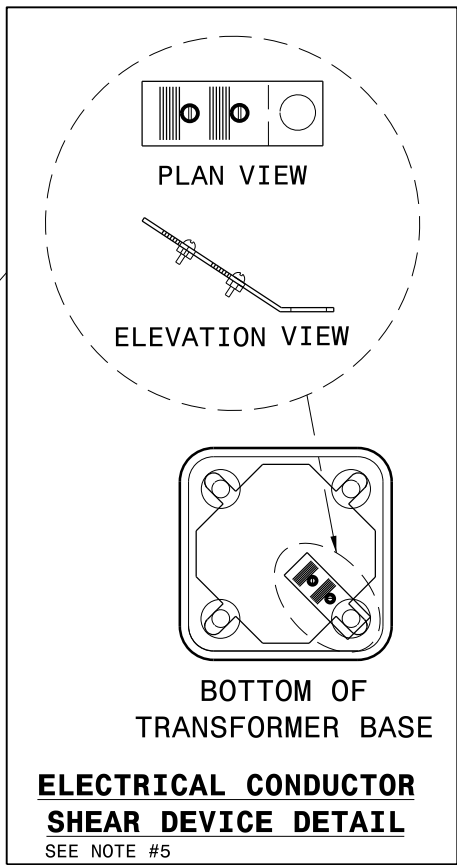
**PUSHBUTTON POST ON BREAKAWAY TRANSFORMER BASE**

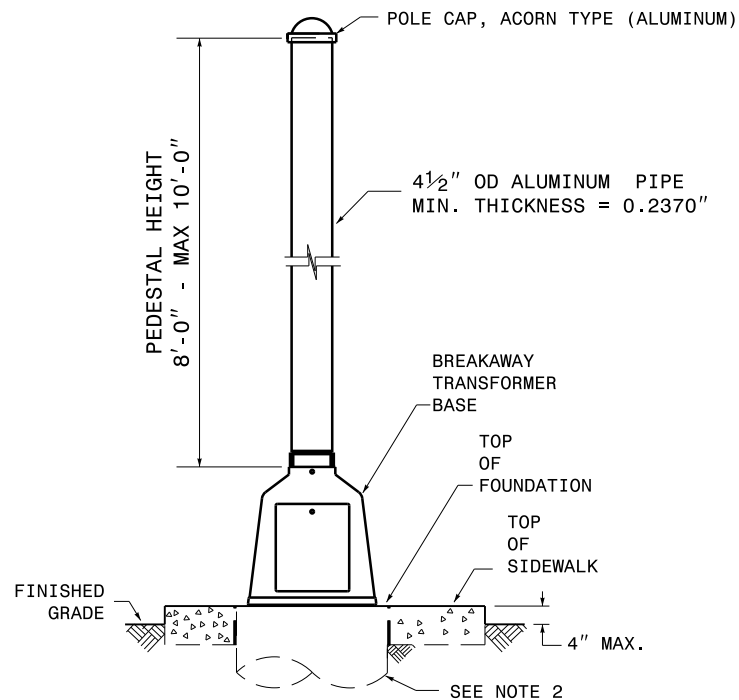


**NORMAL DUTY TRANSFORMER BASE STYLES**

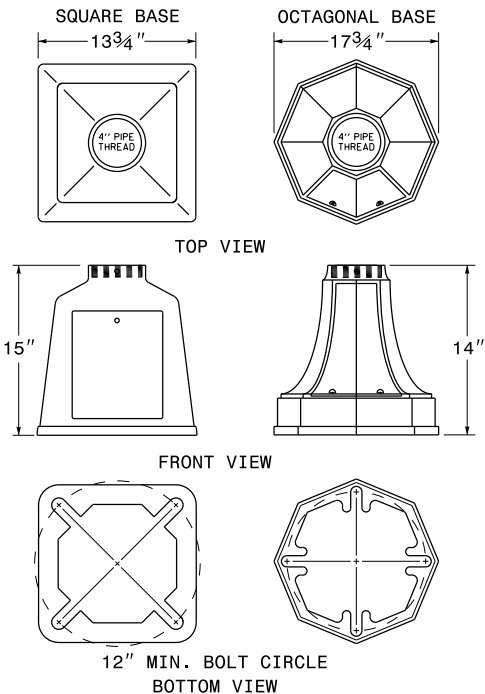


**TRANSFORMER BASE ANCHORING DETAIL**

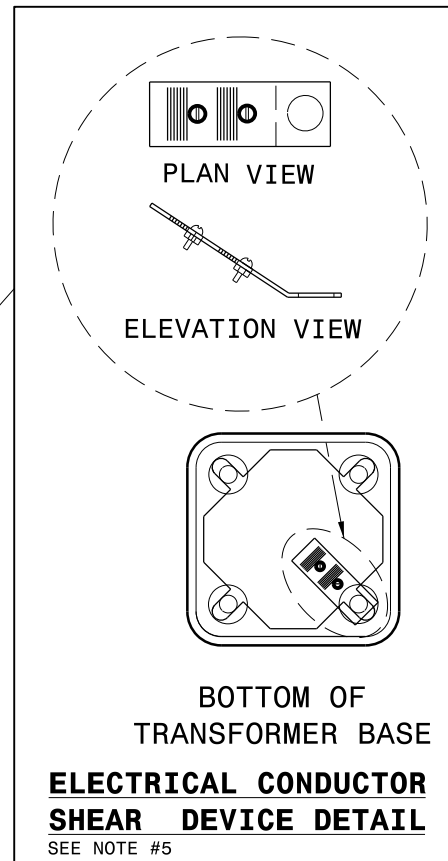
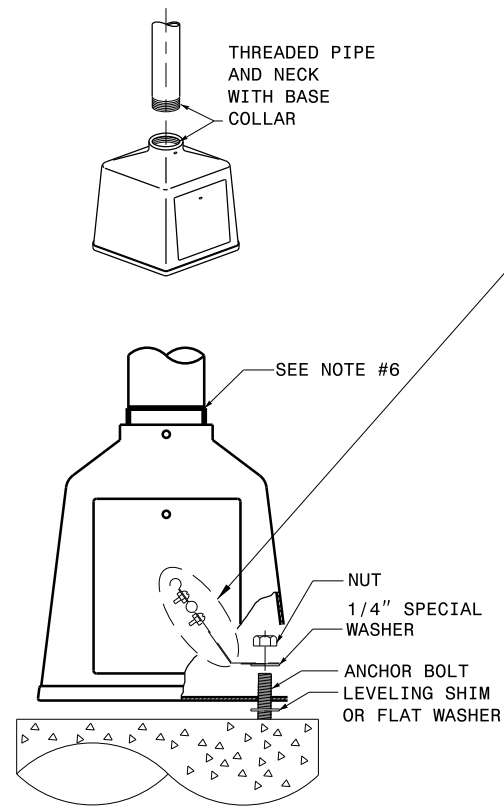




**NORMAL DUTY PEDESTAL ON  
BREAKAWAY TRANSFORMER BASE**

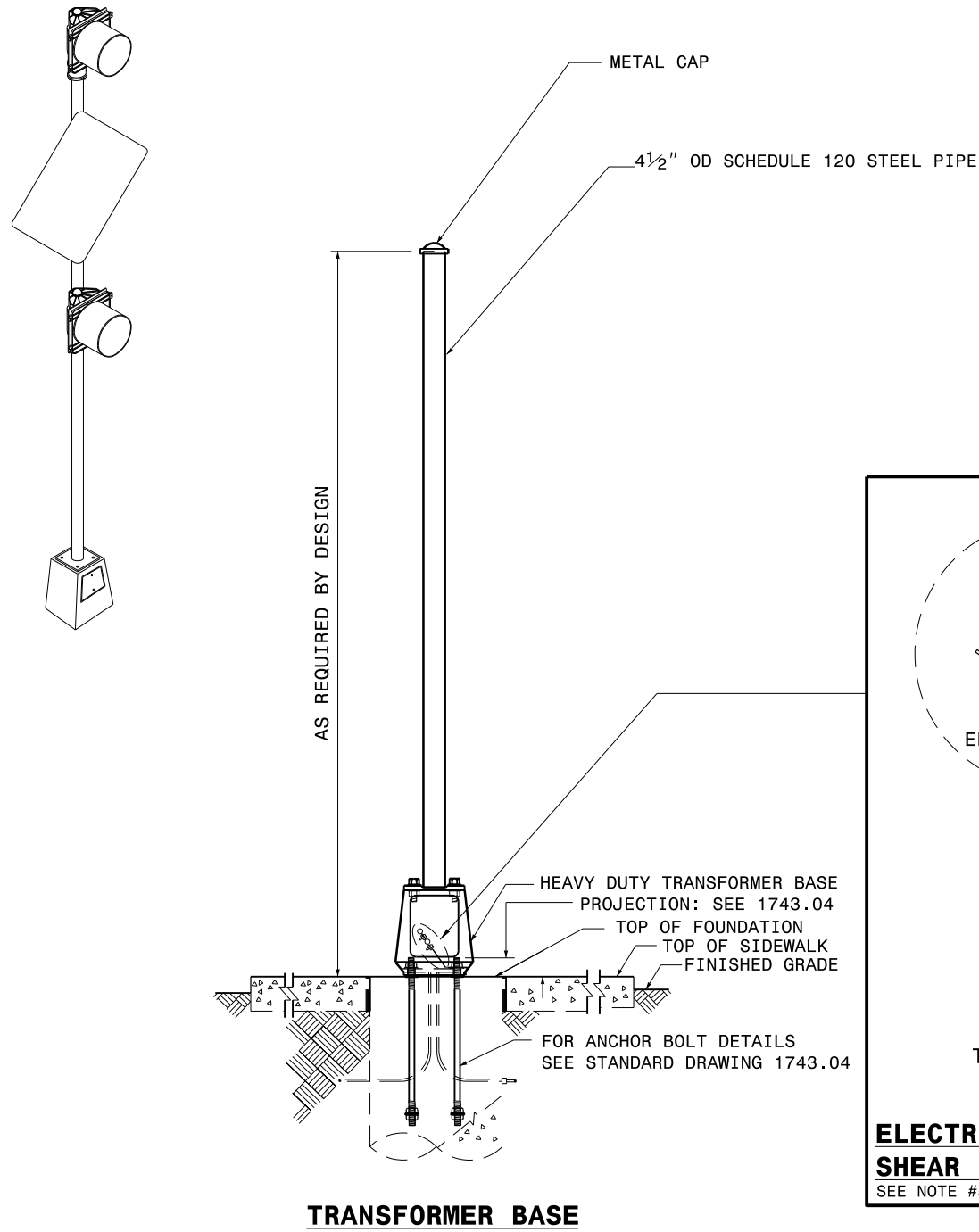


**NORMAL DUTY  
TRANSFORMER BASE STYLES**

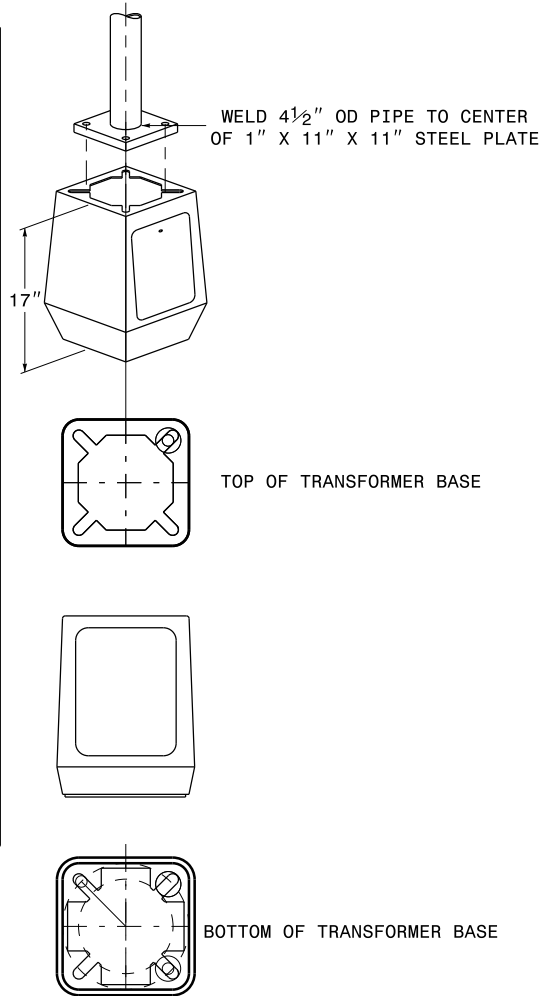
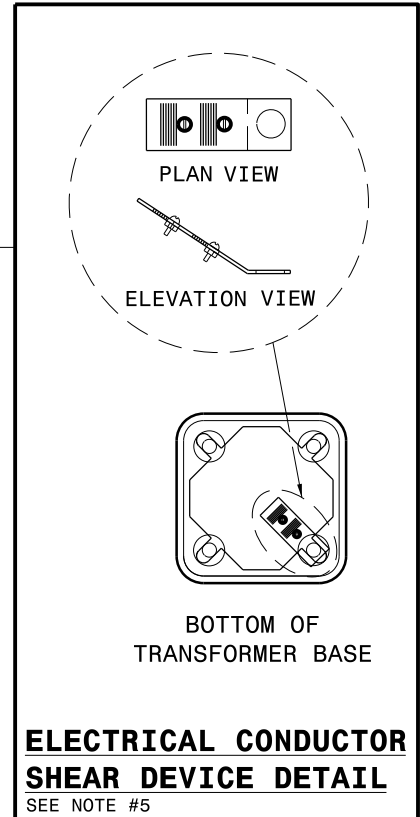


**NOTES:**

1. CONSTRUCT PEDESTALS ON FHWA APPROVED BREAKAWAY BASES OR ANCHORS.
2. CONSTRUCT PEDESTAL FOUNDATIONS IN ACCORDANCE WITH STANDARD DRAWING 1743.04.
3. NORMAL DUTY PEDESTALS ARE DESIGNED FOR A WIDE VARIETY OF TRAFFIC SIGNAL AND PEDESTRIAN SIGNAL APPLICATIONS IN ALL WIND ZONE REGIONS AS LONG AS THE DESIGN CAN BE ACCOMPLISHED USING AN 8' OR 10' ALUMINUM POST AND:
  - WHEN USED EXCLUSIVELY FOR PEDESTRIAN SIGNAL APPLICATIONS WHERE THE DESIGN LOADING DOES NOT EXCEED: 2 PEDESTRIAN SIGNALS, 2 9"X12" PEDESTRIAN SIGNS AND 2 PUSHBUTTONS.
  - WHEN USED EXCLUSIVELY FOR VEHICLE SIGNAL APPLICATIONS WHERE THE DESIGN LOADING DOES NOT EXCEED: 2 3-SECTION 12" POST TOP MOUNTED SIGNAL HEADS.
  - WHEN USED FOR BOTH PEDESTRIAN AND VEHICLE SIGNAL APPLICATIONS WHERE THE DESIGN LOADING DOES NOT EXCEED: 1 3-SECTION 12" POST TOP MOUNTED SIGNAL HEAD, 1 PEDESTRIAN SIGNAL, 1 9"X12" PEDESTRIAN SIGN, AND 1 PUSHBUTTON.
4. DO NOT USE A FLANGE BASE WITH BREAKAWAY ANCHOR BOLTS ON A TYPE II PEDESTAL.
5. ALL ELECTRICAL CONDUCTORS INSIDE OF BREAKAWAY SUPPORTS SHOULD SHEAR OR BECOME DISCONNECTED AS CLOSE TO THE FOUNDATION BASE AS POSSIBLE DURING A KNOCKDOWN. REFER TO ELECTRICAL CONDUCTOR SHEAR DEVICE DETAIL. IF ALTERNATIVES ARE AVAILABLE, THEY CAN BE USED PER APPROVAL OF THE ENGINEER.
6. PROVIDE POLE AND BASE COLLAR ASSEMBLY.

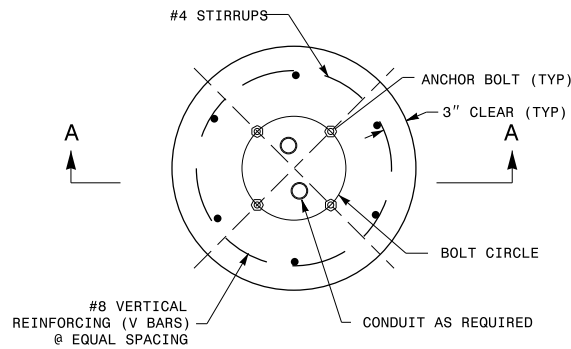


**TRANSFORMER BASE**

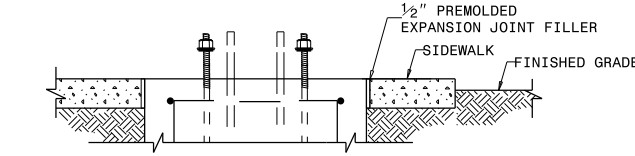


**NOTES:**

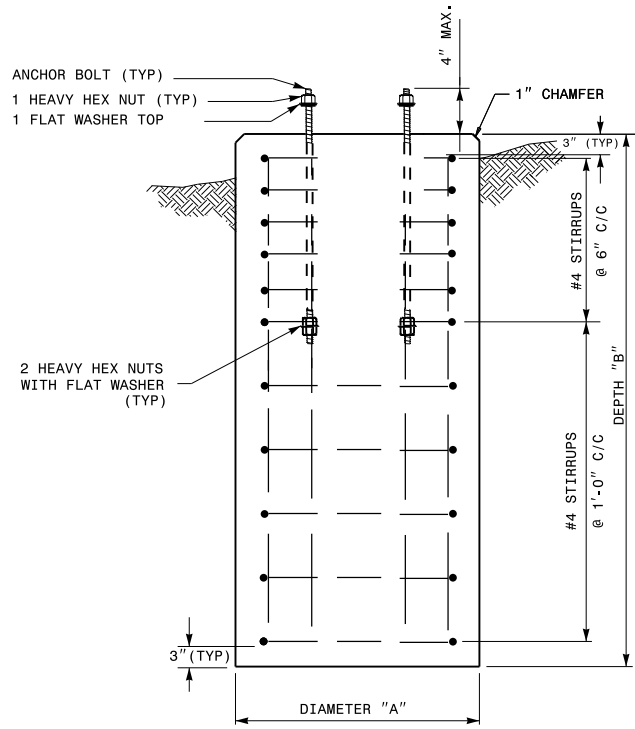
1. CONSTRUCT PEDESTALS ON FHWA APPROVED BREAKAWAY BASES OR ANCHORS.
2. CONSTRUCT PEDESTAL FOUNDATIONS IN ACCORDANCE WITH STANDARD DRAWING 1743.04.
3. HEAVY DUTY PEDESTALS ARE DESIGNED FOR USE IN ALL WIND ZONE REGIONS. PEDESTAL BASE REACTIONS, USING 4 1/2" OD SCHEDULE 120 GALVANIZED STEEL PIPE, ARE:  
 AXIAL LOAD: 600 LBS  
 SHEAR LOAD: 1,500 LBS  
 MOMENT LOAD: 14,500 FT-LBS
4. BASE REACTIONS ARE BASED ON A DESIGN LOADING FOR 2 - 12" SIGNALS AND A 48" X 48" SIGN. DO NOT EXCEED DESIGN LOADING WITHOUT APPROVAL.
5. ALL ELECTRICAL CONDUCTORS INSIDE OF BREAKAWAY SUPPORTS SHOULD SHEAR OR BECOME DISCONNECTED AS CLOSE TO THE FOUNDATION BASE AS POSSIBLE DURING A KNOCKDOWN. REFER TO ELECTRICAL CONDUCTOR SHEAR DEVICE DETAIL. IF ALTERNATIVES ARE AVAILABLE, THEY CAN BE USED PER APPROVAL OF THE ENGINEER.
6. DO NOT USE BREAKAWAY ANCHOR BOLTS WITH THIS TYPE OF PEDESTAL.



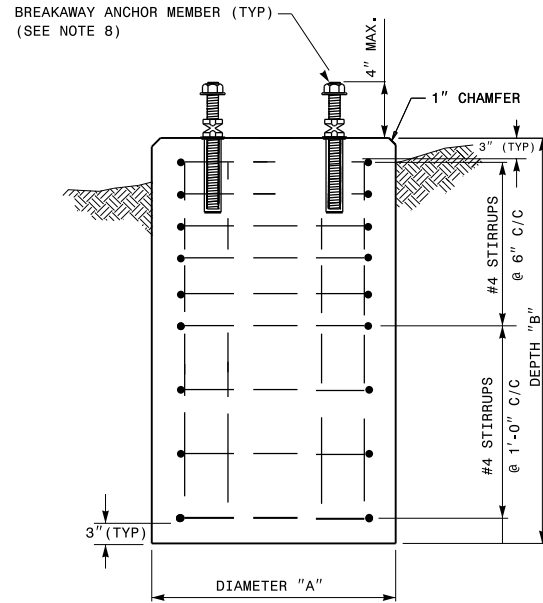
**PEDESTAL FOUNDATION - PLAN VIEW**



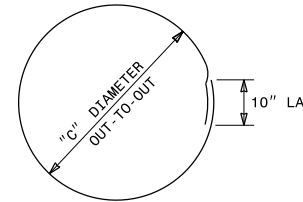
**PEDESTAL FOUNDATION DETAILS FOR SIDEWALK**



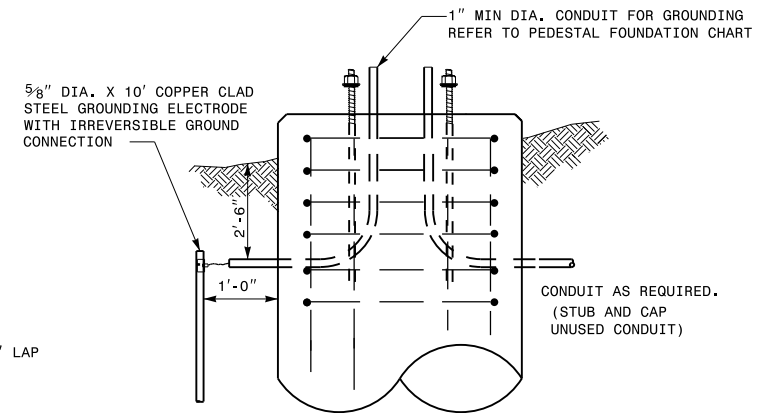
**TYPES I, II & III  
SECTION A-A**



**TYPES I & II ONLY  
SECTION A-A**



**CLOSED HOOPS**



**GROUNDING & CONDUIT DETAIL**

**NOTES:**

- CAST FOUNDATION AGAINST UNDISTURBED SOIL WHEREVER CONDITIONS PERMIT. IN UNSTABLE SOIL, CAST-IN-PLACE TUBE FORMS ARE ALLOWED WITH APPROVAL.
- COMPLY WITH APPLICABLE PROVISIONS OF SECTION 825 FOR CONCRETE CONSTRUCTION.
- USE CLASS "A" CONCRETE THAT MEETS THE REQUIREMENTS OF SECTION 1000 WITH A COMPRESSION STRENGTH AT 28 DAYS OF  $F'c = 3000$  PSI (MIN.).
- USE ASTM GRADE 60 DEFORMED BARS FOR ALL REINFORCING STEEL.
- GRADE IS ASSUMED TO BE (8H:1V) OR FLATTER. FOUNDATION SIZE AND DEPTHS ARE BASED ON THE FOLLOWING SOIL DESIGN PARAMETERS:
  - SANDY TYPE SOIL
  - NO GROUND WATER WITHIN 5'-0" OF SURFACE ELEVATION
  - WIND SPEED NOT TO EXCEED 140 MPH
 IF ACTUAL CONDITIONS VARY SUBSTANTIALLY FROM THOSE ASSUMED, THE FOUNDATION DEPTH MAY BE ADJUSTED. IN THIS CASE, CONTACT THE ENGINEER.
- MAINTAIN AT LEAST 3" COVER ON ALL REINFORCEMENT.
- ORIENT CONDUIT AS REQUIRED BY THE DESIGN OR AS DICTATED BY FIELD CONDITIONS.
- USE ADHESIVE ANCHOR FOR THREADED COUPLING INSERT. FOR TYPE I MINIMUM DEPTH NECESSARY IS 0'-4 1/2" AND FOR TYPE II MINIMUM DEPTH NECESSARY IS 0'-6 5/8". FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS.

**PEDESTAL FOUNDATION TYPE AND SIZE**

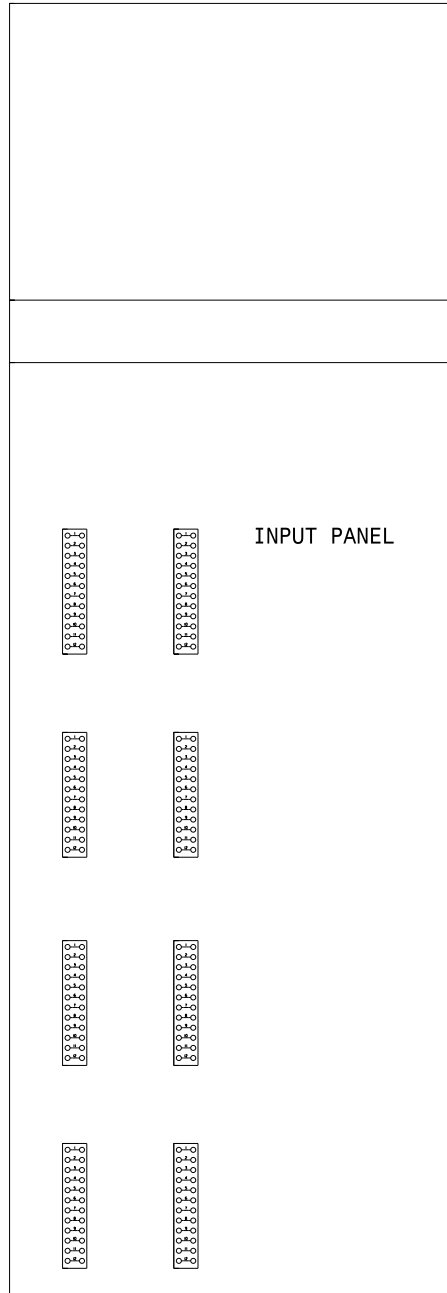
TYPE	PEDESTAL DESCRIPTION	SIZE			ANCHOR BOLT		INSTALL GROUNDING SYSTEM (YES/NO)
		DIAMETER "A" FT	DEPTH "B" FT	CONCRETE VOLUME CY	DIAMETER (MIN.) IN	LENGTH FT-IN	
I	PEDESTRIAN PUSHBUTTON	2'-0"	3'-6"	.41	1/2	1'-6"	NO
II	NORMAL-DUTY	2'-0"	5'-0"	.58	3/4	2'-0"	YES
III	HEAVY-DUTY	2'-6"	7'-0"	1.27	1	4'-0"	YES

**REINFORCING STEEL SCHEDULE**

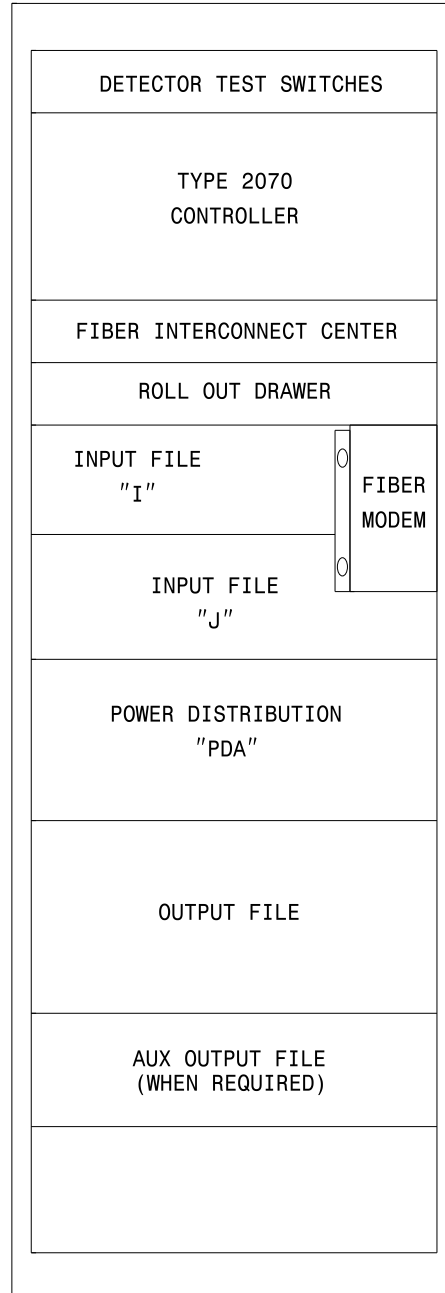
TYPE	V-BAR				STIRRUP							TOTAL STEEL WEIGHT LBS	
	SIZE #	QTY	LENGTH	WEIGHT LBS	QUANTITY			LENGTH	DIAMETER "C" FT	OVERLAP MIN.	WEIGHT LBS		
					VERTICAL ON 6" CENTERS	SPACING ON 12" CENTERS	TOTAL						
I	8	6	3'-0"	56	4	0	4	5'-7"	1'-6"	0'-10"	15	71	
II	8	6	4'-6"	86	4	5	3	8	5'-7"	1'-6"	0'-10"	30	116
III	8	6	6'-6"	122	4	7	4	11	7'-2"	2'-0"	0'-10"	53	175

**NOTE**

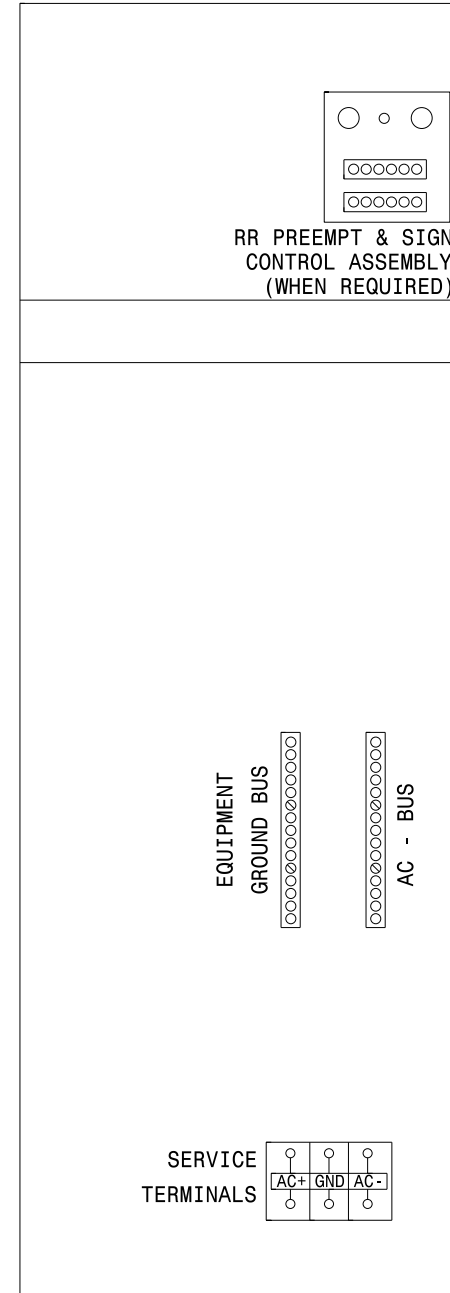
PROVIDE 2" SPACE BETWEEN CONTROLLER AND ROLL OUT DRAWER TO ACCOMMODATE FIBER INTERCONNECT CENTER.



332 CABINET  
LEFT SIDE  
REAR VIEW



332 CABINET  
REAR VIEW

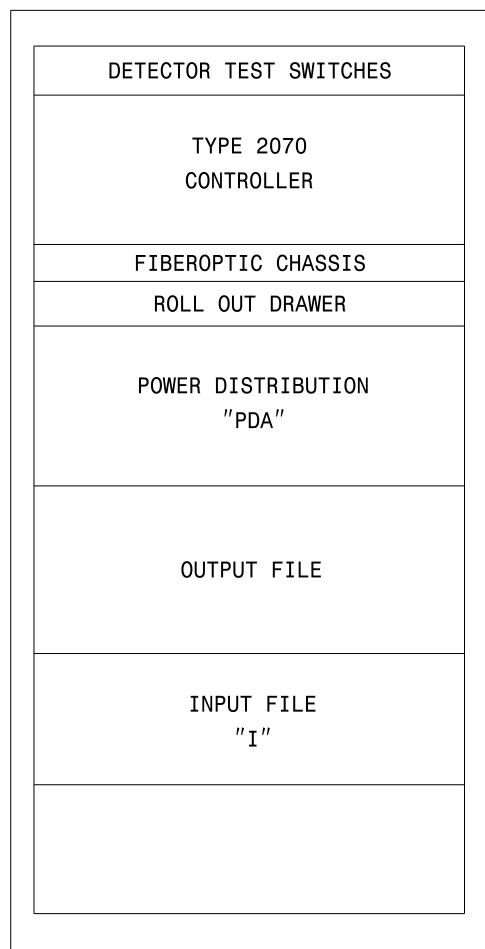


332 CABINET  
RIGHT SIDE  
REAR VIEW

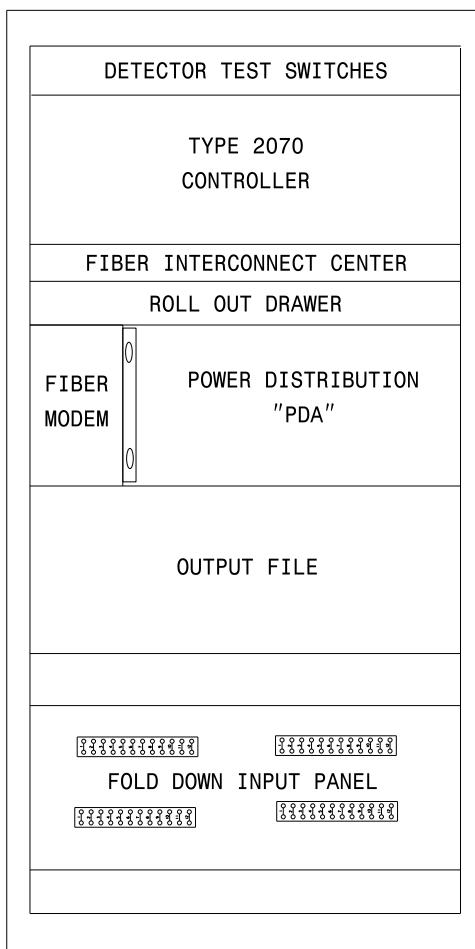
1-24

ROADWAY STANDARD DRAWING FOR  
**CONTROLLERS AND CABINETS**  
CABINET COMPONENT LAYOUT (BASEMOUNT)  
170 CABINET MODEL 332 WITH 2070 CONTROLLER

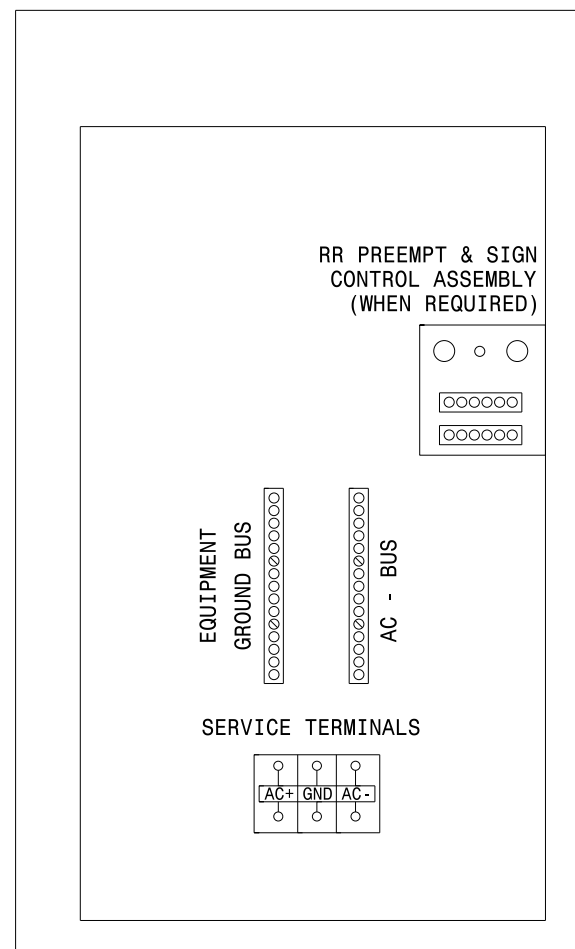
STATE OF  
NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.



336S CABINET  
FRONT VIEW



336S CABINET  
REAR VIEW



336S CABINET  
RIGHT SIDE  
REAR VIEW

**NOTE**

PROVIDE 2" SPACE BETWEEN  
CONTROLLER AND ROLL OUT  
DRAWER TO ACCOMMODATE  
FIBER INTERCONNECT CENTER.

1-24

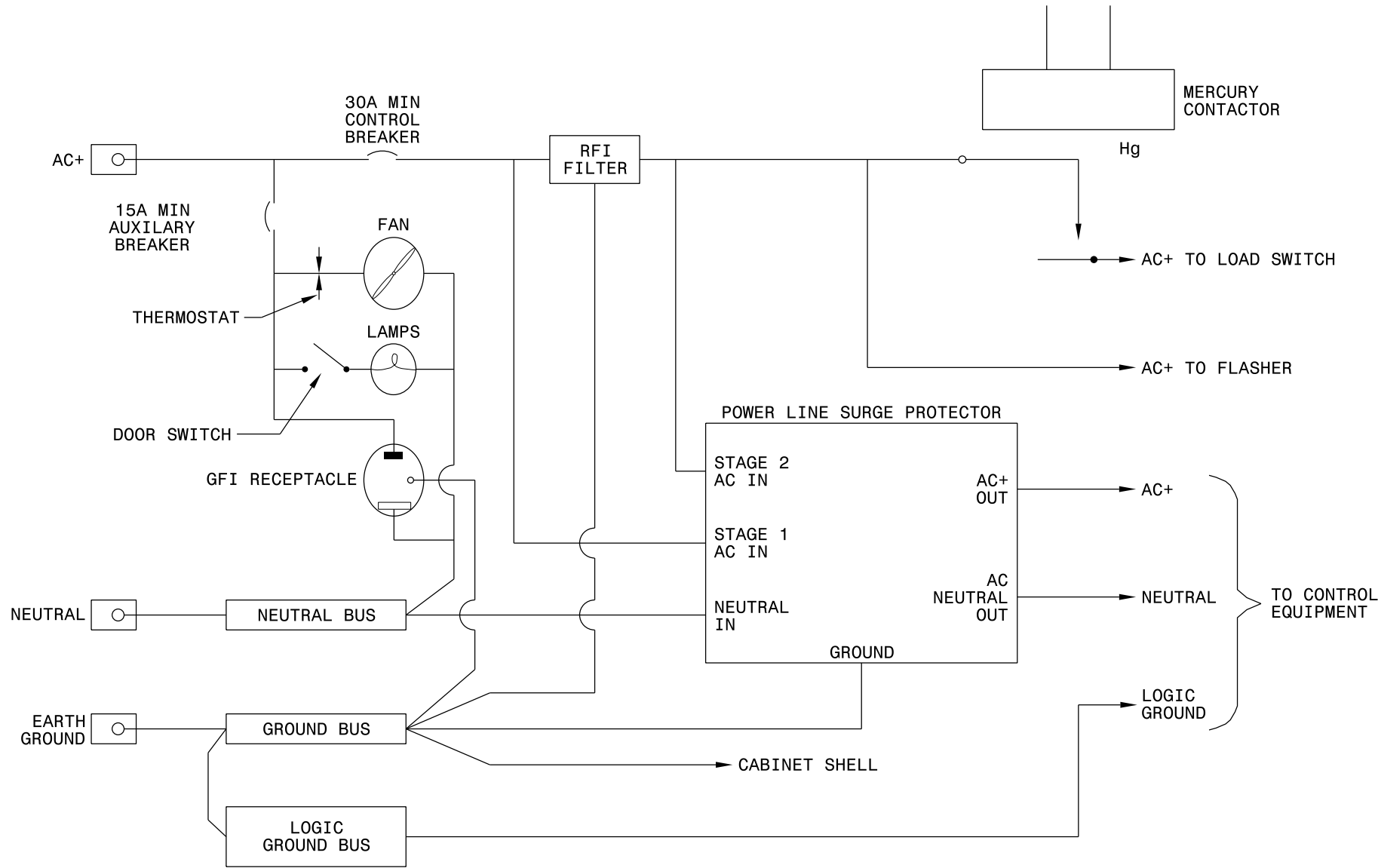
ROADWAY STANDARD DRAWING FOR

**CONTROLLERS AND CABINETS**

CABINET COMPONENT LAYOUT (POLE MOUNT)

170 CABINET MODEL 336S WITH 2070 CONTROLLER

STATE OF  
NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.



ROADWAY STANDARD DRAWING FOR  
**CONTROLLERS AND CABINETS**  
 POWER, GROUND, AND AUXILIARY POWER SYSTEMS  
 NEMA TS-2

1-24 STATE OF  
 NORTH CAROLINA  
 DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 RALEIGH, N.C.