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VIRGINIA DEPARTMENT OF TRANSPORTATION



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ROAD AND BRIDGE STANDARDS

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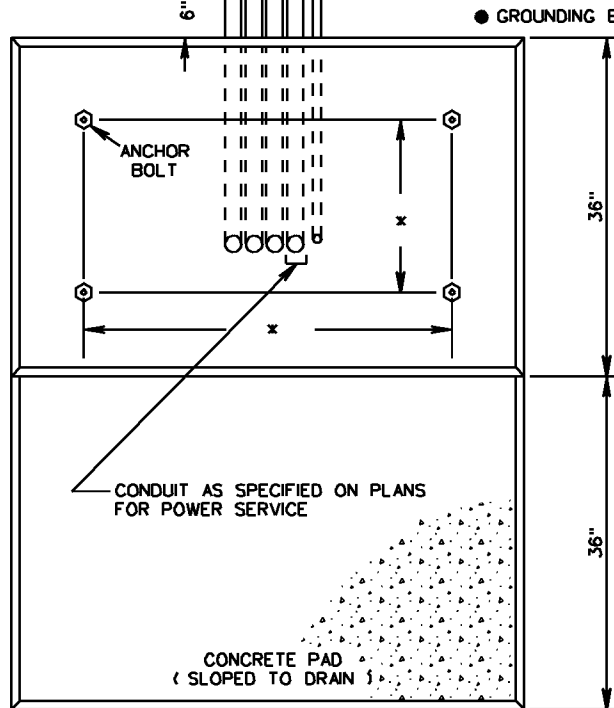
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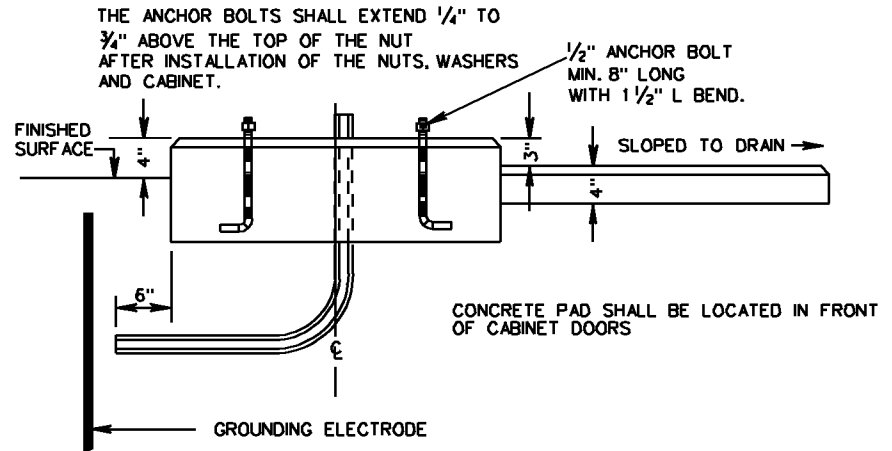
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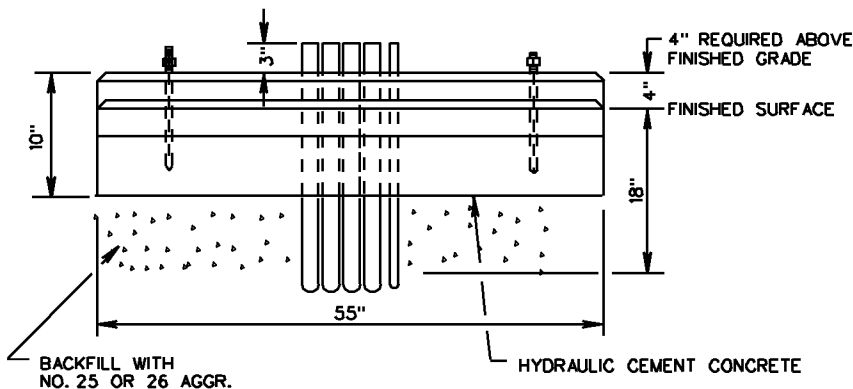
TOP VIEW
 SIZE AND NUMBER AS REQUIRED BY PLANS
 2- 2" CONDUITS REQUIRED FOR FUTURE USE SHALL BE STUBBED OUT AND CAPPED. NOTE THAT ADDITIONAL SPARE CONDUITS MAY BE REQUIRED BY THE PLANS.
 1- 1" CONDUIT REQUIRED FOR GROUNDING CONDUCTOR



SIDE VIEW



FRONT VIEW



NOTES:

OPEN ENDS OF CONDUITS WITH CONDUCTORS INSTALLED SHALL BE SEALED WITH AN APPROVED SOFT, PLIABLE, AND EASILY REMOVABLE WATERPROOF SEALANT. THE SEALANT SHALL NOT HAVE A DELETERIOUS EFFECT ON CABLE COVERINGS.

IN ADDITION TO ELECTRICAL SERVICE GROUNDING ELECTRODE SYSTEM, EACH STRUCTURE SHALL UTILIZE ITS OWN GROUNDING ELECTRODE.

ALL EXPOSED CONCRETE SURFACE EDGES SHALL BE CHAMFERED 3/4".

* ANCHOR BOLTS AND BOLT CIRCLE TEMPLATE SHALL BE FURNISHED WITH CABINET.

CABINET SHALL BE CENTERED ON FOUNDATION.

EACH FOUNDATION SHALL BE PERMANENTLY MARKED TO INDICATE ALL SIDES FROM WHICH CONDUITS PASS. THIS MARK SHALL BE MADE WITH A TROWEL WHEN FINISHING THE CONCRETE AND SHALL BE 1/4" DEEP AND 4" TO 6" LONG.

THE CONTROLLER CABINET AT THE INSIDE AND OUTSIDE FOUNDATION JOINTS SHALL BE SEALED WITH A SILICONE SEALANT.

BELL ENDS SHALL BE INSTALLED ON EACH END OF PVC CONDUITS.

EMPTY CONDUITS SHALL BE PLUGGED TO PREVENT MOISTURE AND RODENT ENTRY.

GROUNDING BUSHINGS SHALL BE INSTALLED ON EACH END OF METAL CONDUITS.

TWO - 1/2" DIAMETER WEEPHOLES SHALL BE PROVIDED IN THE FOUNDATION AND LOCATED 2" INSIDE OF THE BACK OR SIDE EDGES OF THE CONTROLLER CABINET. WEEPHOLES SHALL BE SLOPED TO ALLOW OUTLET TO BE 3" BELOW TOP OF FOUNDATION. TWO INCHES OF THE OUTLET END SHALL BE FIBER FILLED.

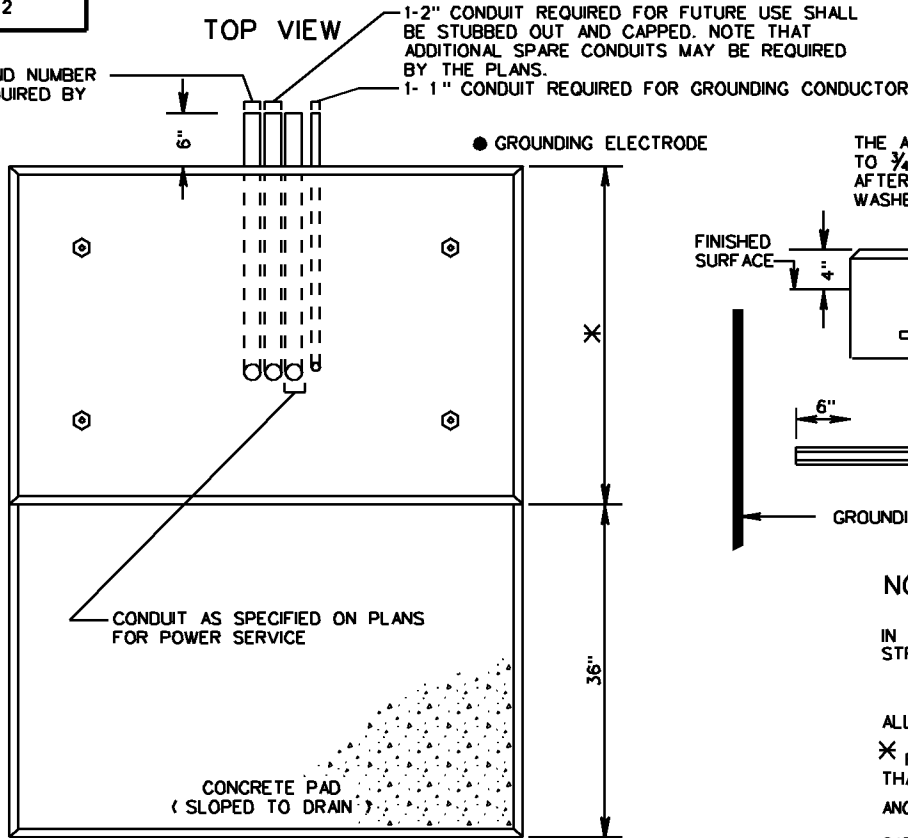
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CONTROLLER CABINET FOUNDATION
CABINET PLACEMENT DETAILS
 VIRGINIA DEPARTMENT OF TRANSPORTATION

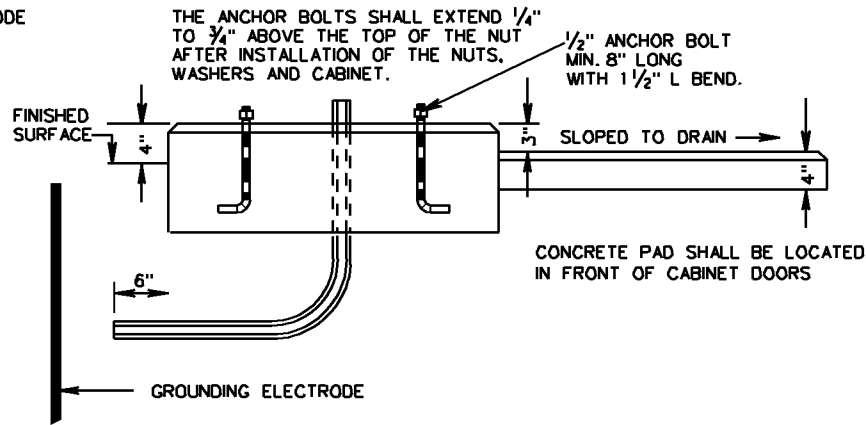
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SIZE AND NUMBER AS REQUIRED BY PLANS

TOP VIEW



SIDE VIEW



NOTES:

IN ADDITION TO ELECTRICAL SERVICE GROUNDING ELECTRODE SYSTEM, EACH STRUCTURE SHALL UTILIZE ITS OWN GROUNDING ELECTRODE.

ALL EXPOSED CONCRETE SURFACE EDGES SHALL BE CHAMFERED 3/4".

* FOUNDATION LENGTH AND WIDTH SHALL BE AS REQUIRED TO PROJECT NO LESS THAN A MINIMUM 4" BEYOND ALL SIDES OF THE CABINET.

ANCHOR BOLTS AND BOLT CIRCLE TEMPLATE SHALL BE FURNISHED WITH CABINET.

CABINET SHALL BE CENTERED ON FOUNDATION.

EACH FOUNDATION SHALL BE PERMANENTLY MARKED TO INDICATE ALL SIDES FROM WHICH CONDUITS PASS. THIS MARK SHALL BE MADE WITH A TROWEL WHEN FINISHING THE CONCRETE AND SHALL BE 1/4" DEEP AND 4" TO 6" LONG.

THE CONTROL CENTER CABINET AT THE INSIDE AND OUTSIDE FOUNDATION JOINTS SHALL BE SEALED WITH A SILICONE SEALANT.

BELL ENDS SHALL BE INSTALLED ON EACH END OF PVC CONDUITS.

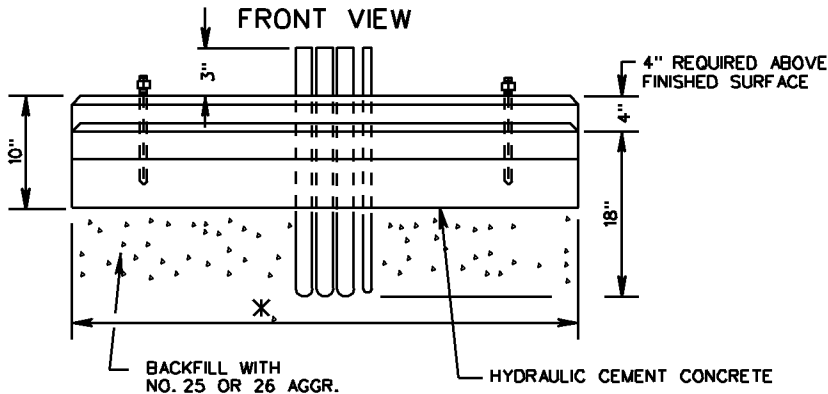
EMPTY CONDUITS SHALL BE PLUGGED TO PREVENT MOISTURE AND RODENT ENTRY.

GROUNDING BUSHINGS SHALL BE INSTALLED ON EACH END OF METAL CONDUITS.

TWO - 1/2" DIAMETER WEEPHOLES SHALL BE PROVIDED IN THE FOUNDATION AND LOCATED 2" INSIDE THE BACK OR SIDE EDGES OF THE CONTROLLER CABINET. WEEPHOLES SHALL BE SLOPED TO ALLOW OUTLET TO BE 3" BELOW THE TOP OF THE FOUNDATION. TWO INCHES OF THE OUTLET END SHALL BE FIBER FILLED.

OPEN ENDS OF CONDUITS WITH CONDUCTORS INSTALLED SHALL BE SEALED WITH AN APPROVED SOFT, PLIABLE, AND EASILY REMOVABLE WATERPROOF SEALANT. THE SEALANT SHALL NOT HAVE A DELETERIOUS EFFECT ON CABLE COVERINGS.

FRONT VIEW



ROAD AND BRIDGE STANDARDS

CONTROL CENTER CABINET FOUNDATION

CABINET PLACEMENT DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE

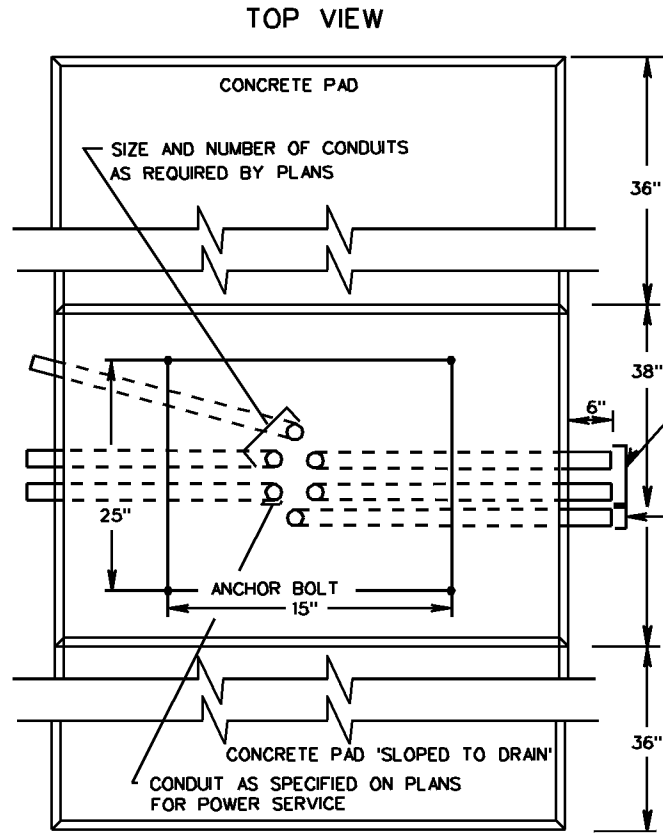
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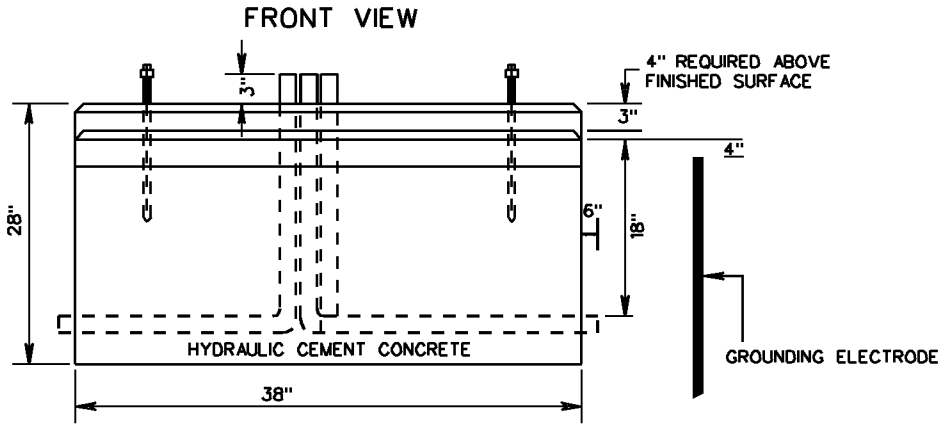
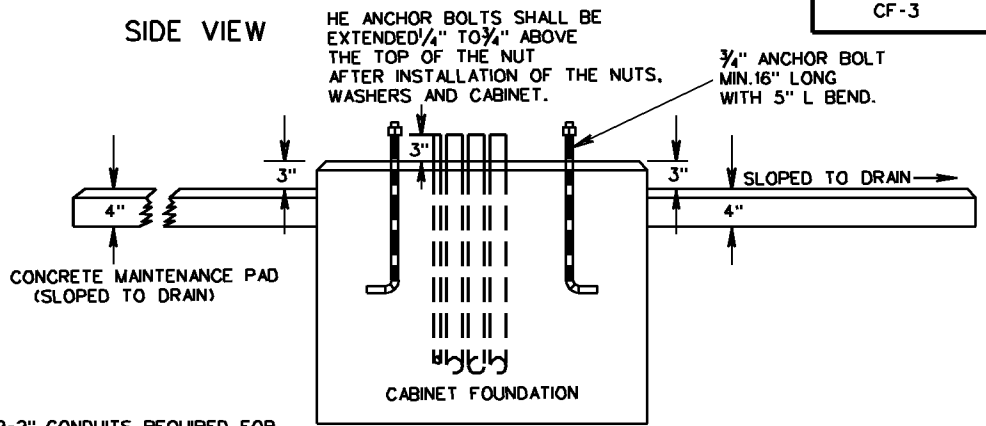
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SIDE VIEW



2-2" CONDUITS REQUIRED FOR FUTURE USE SHALL BE STUBBED AND CAPPED.
NOTE THAT ADDITIONAL SPARE CONDUITS MAY BE REQUIRED BY THE PLANS.
1-1" CONDUIT REQUIRED FOR GROUNDING CONDUCTOR.

CONCRETE PAD SHALL BE LOCATED IN FRONT OF CABINET DOORS

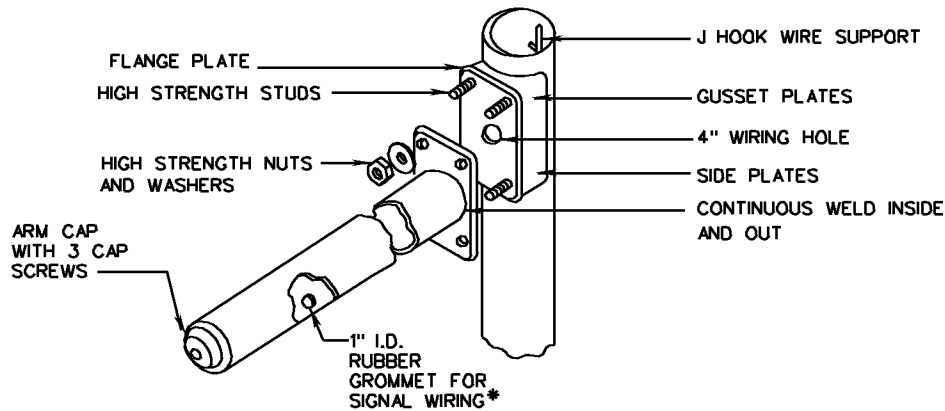
NOTES:

- IN ADDITION TO ELECTRICAL SERVICE GROUNDING ELECTRODE SYSTEM, EACH STRUCTURE SHALL UTILIZE ITS OWN GROUNDING ELECTRODE.
- ALL EXPOSED CONCRETE SURFACE EDGES SHALL BE CHAMFERED 3/4".
- ANCHOR BOLTS, BOLT CIRCLE TEMPLATE AND METAL RISER SHALL BE FURNISHED WITH CABINET.
- CABINET SHALL BE CENTERED ON FOUNDATION WITH RISER ATTACHED TO FOUNDATION & CABINET ON METAL RISER.
- CONDUITS ENTERING THE FOUNDATION SHALL BE ARRANGED IN A CIRCULAR PATTERN. THE CONTRACTOR SHALL SUBMIT A CONDUIT ARRANGEMENT PLAN FOR APPROVAL PRIOR TO PLACEMENT.
- EACH FOUNDATION SHALL BE PERMANENTLY MARKED TO INDICATE ALL SIDES FROM WHICH CONDUIT PASS. THIS MARK SHALL BE MADE WITH A TROWEL WHEN FINISHING THE CONCRETE AND SHALL BE 1/4" DEEP AND 4" TO 6" LONG.
- THE CONTROLLER CABINET AT THE INSIDE AND OUTSIDE FOUNDATION JOINTS SHALL BE SEALED WITH A SILICONE SEALANT.
- BELL ENDS SHALL BE INSTALLED ON EACH END OF PVC CONDUITS.
- EMPTY CONDUITS SHALL BE PLUGGED TO PREVENT MOISTURE AND RODENT ENTRY.
- GROUNDING BUSHINGS SHALL BE ON EACH END OF METAL CONDUITS.
- TWO- 1/2" DIAMETER WEEPHOLES SHALL BE PROVIDED IN THE FOUNDATION AND LOCATED 2" INSIDE OF THE BACK OR SIDE EDGES OF THE CONTROLLER CABINET. WEEPHOLES SHALL BE SLOPED TO ALLOW OUTLET TO BE 3" BELOW TOP OF FOUNDATION. TWO INCHES OF THE OUTLET END SHALL BE FIBER FILLED.
- OPEN ENDS OF CONDUITS WITH CONDUCTORS INSTALLED SHALL BE SEALED WITH AN APPROVED SOFT, PLIABLE, AND EASILY REMOVABLE WATERPROOF SEALANT. THE SEALANT SHALL NOT HAVE A DELETERIOUS EFFECT ON CABLE COVERINGS.

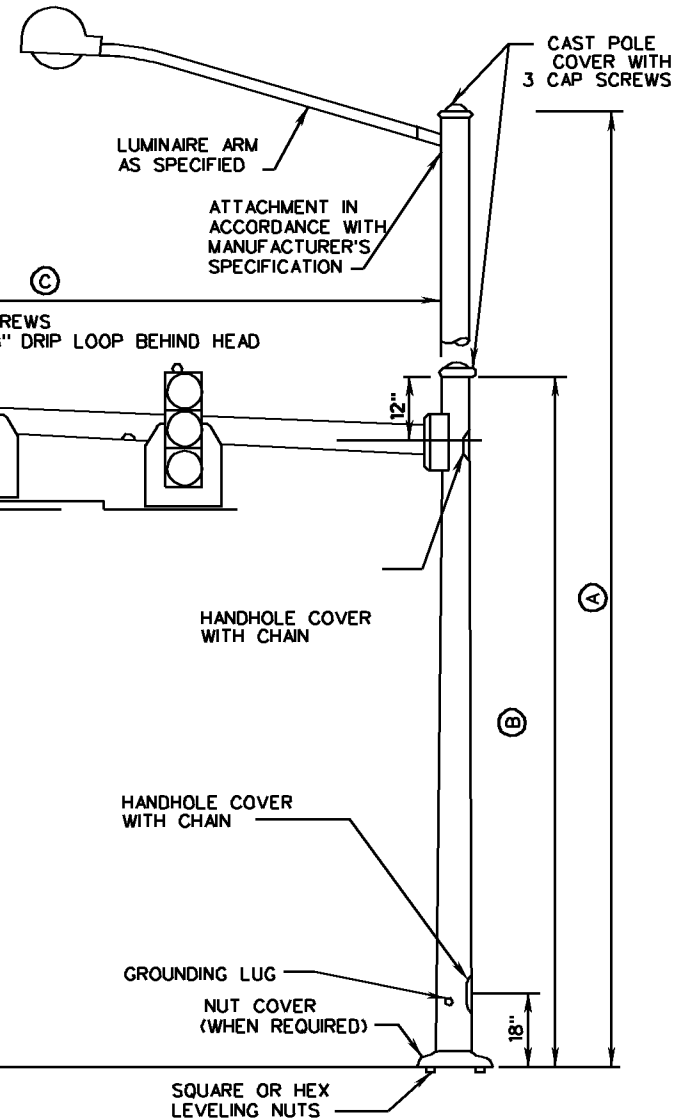
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CONTROLLER CABINET FOUNDATION
CABINET PLACEMENT DETAILS
VIRGINIA DEPARTMENT OF TRANSPORTATION

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ARM AND SIGNAL ATTACHMENT



NOTES:

(A) POLE SHAFT LENGTH AND MAST ARM MOUNTING HEIGHT SHALL BE AS REQUIRED TO OBTAIN SPECIFIED MOUNTING HEIGHT OF TRAFFIC SIGNAL HEADS AND LUMINAIRES

(B) AS REQUIRED BY PLANS (HEIGHT INCLUDES TRANSFORMER BASE WHEN REQUIRED).

(C) AS REQUIRED BY PLANS.

* HOLE AND GROMMET FOR SIGNAL WIRING SHALL BE LOCATED ON THE SIDE OF THE ARM DIRECTLY BEHIND THE HANGER ASSEMBLY WHEN STANDARD SM-3 HANGER ASSEMBLIES ARE REQUIRED. SIGNAL WIRING SHALL BE CONCEALED IN THE STANDARD SM-3 HANGER ASSEMBLIES.

THE ALIGNMENT OF THE LUMINAIRE ARM SHALL BE AS SHOWN ON THE PLANS.

REFER TO STANDARD MP-2 FOR GROUNDING LUG DETAIL.



ROAD AND BRIDGE STANDARDS

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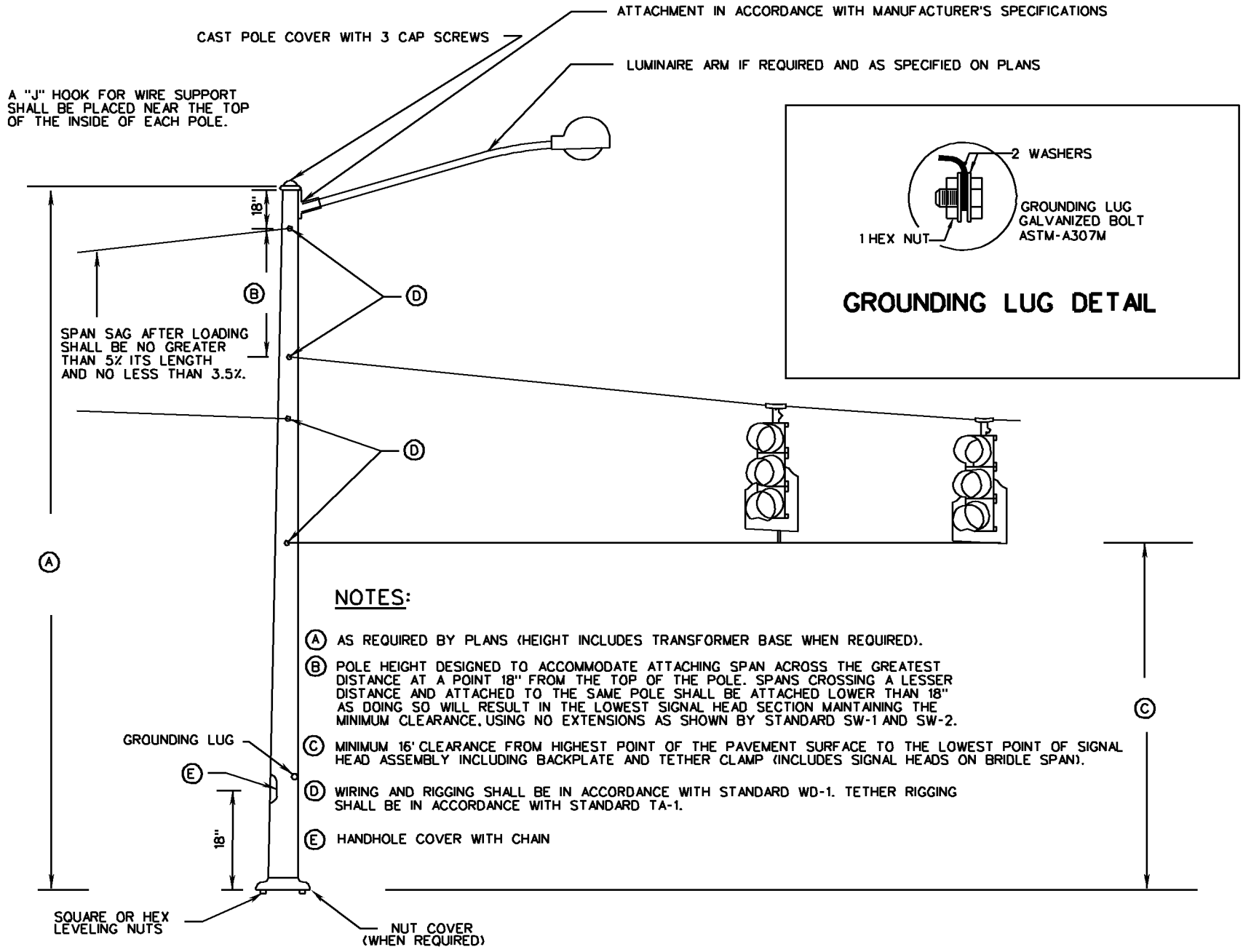
SIGNAL POLE DETAILS

MAST ARM AND COMBINATION LUMINAIRE MAST ARM POLE

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE

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NOTES:

- (A) AS REQUIRED BY PLANS (HEIGHT INCLUDES TRANSFORMER BASE WHEN REQUIRED).
- (B) POLE HEIGHT DESIGNED TO ACCOMMODATE ATTACHING SPAN ACROSS THE GREATEST DISTANCE AT A POINT 18" FROM THE TOP OF THE POLE. SPANS CROSSING A LESSER DISTANCE AND ATTACHED TO THE SAME POLE SHALL BE ATTACHED LOWER THAN 18" AS DOING SO WILL RESULT IN THE LOWEST SIGNAL HEAD SECTION MAINTAINING THE MINIMUM CLEARANCE, USING NO EXTENSIONS AS SHOWN BY STANDARD SW-1 AND SW-2.
- (C) MINIMUM 16' CLEARANCE FROM HIGHEST POINT OF THE PAVEMENT SURFACE TO THE LOWEST POINT OF SIGNAL HEAD ASSEMBLY INCLUDING BACKPLATE AND TETHER CLAMP (INCLUDES SIGNAL HEADS ON BRIDLE SPAN).
- (D) WIRING AND RIGGING SHALL BE IN ACCORDANCE WITH STANDARD WD-1. TETHER RIGGING SHALL BE IN ACCORDANCE WITH STANDARD TA-1.
- (E) HANDHOLE COVER WITH CHAIN

SPECIFICATION REFERENCE	<h2 style="margin: 0;">SIGNAL POLE DETAILS</h2> <h3 style="margin: 0;">STRAIN AND COMBINATION LUMINAIRE STRAIN POLE</h3> <p style="margin: 0;">VIRGINIA DEPARTMENT OF TRANSPORTATION</p>	<p style="margin: 0;">ROAD AND BRIDGE STANDARDS</p>				
700		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">REVISION DATE</td> <td style="width: 50%;">SHEET 1 OF 1</td> </tr> <tr> <td style="text-align: center;">06-15-2009</td> <td style="text-align: center;">1302.20</td> </tr> </table>	REVISION DATE	SHEET 1 OF 1	06-15-2009	1302.20
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NOTES:

EACH FOUNDATION SHALL BE PERMANENTLY MARKED TO INDICATE ALL SIDES FROM WHICH CONDUITS PASS. THIS MARK SHALL BE MADE WITH A TROWEL WHEN FINISHING THE CONCRETE AND SHALL BE $\frac{1}{4}$ " DEEP AND 4" TO 6" LONG.

WHEN FOUNDATION EXTENDS 2" ABOVE FINISHED GRADE, ALL EDGES SHALL BE CHAMFERED $\frac{3}{4}$ ".

GROUNDING BUSHINGS SHALL BE INSTALLED ON EACH END OF METAL CONDUITS.

EMPTY CONDUITS SHALL BE PLUGGED TO PREVENT MOISTURE AND RODENT ENTRY.

BELL ENDS SHALL BE INSTALLED ON EACH END OF PVC CONDUITS.

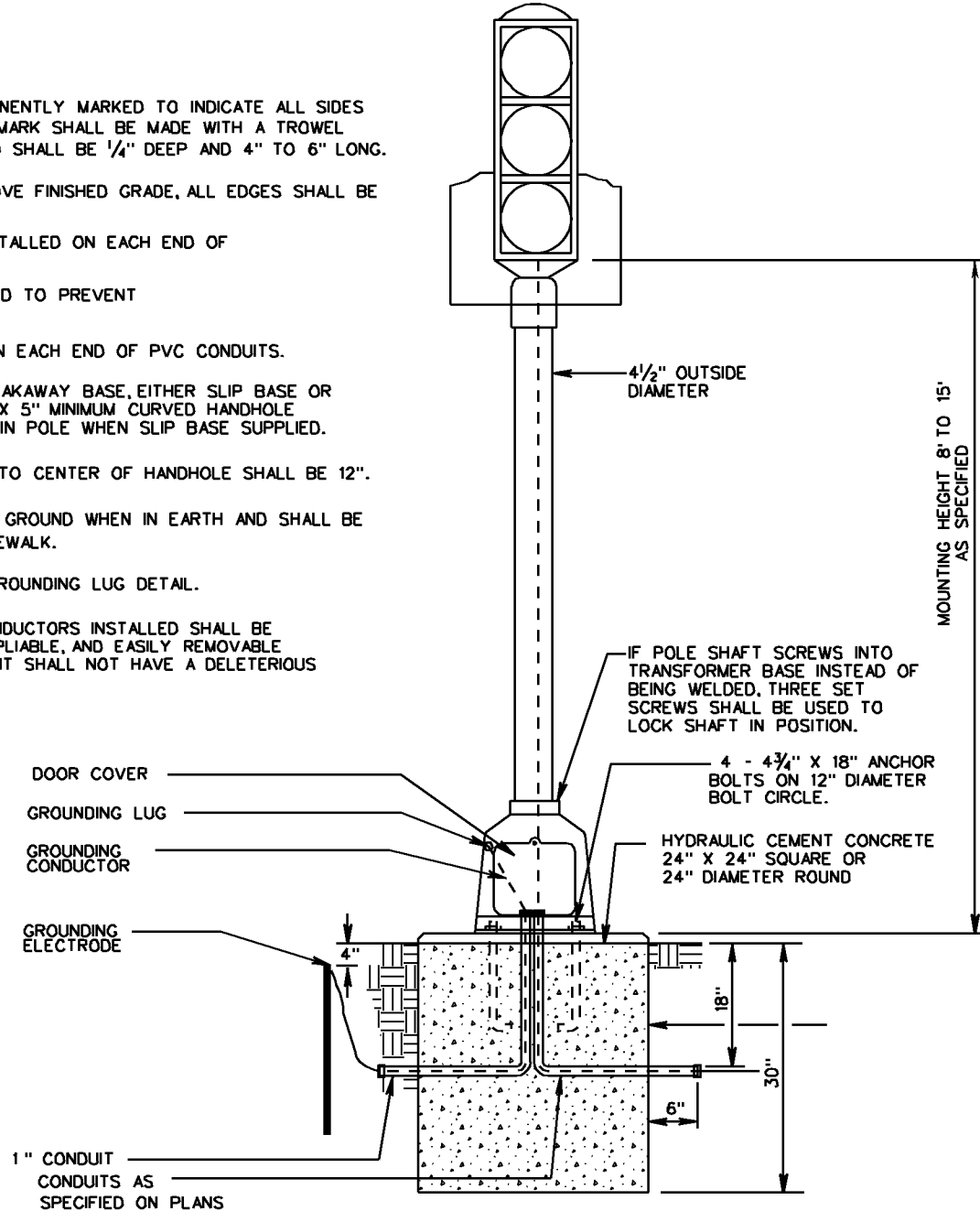
PEDESTAL POLE SHALL HAVE A BREAKAWAY BASE, EITHER SLIP BASE OR FRANGIBLE TRANSFORMER TYPE, 3" X 5" MINIMUM CURVED HANDHOLE WITH FRAME AND COVER REQUIRED IN POLE WHEN SLIP BASE SUPPLIED.

DISTANCE FROM BOTTOM OF POLE TO CENTER OF HANDHOLE SHALL BE 12".

FOUNDATION TO EXTEND 2" ABOVE GROUND WHEN IN EARTH AND SHALL BE FLUSH WITH SURFACE WHEN IN SIDEWALK.

REFER TO STANDARD MP-2 FOR GROUNDING LUG DETAIL.

OPEN ENDS OF CONDUITS WITH CONDUCTORS INSTALLED SHALL BE SEALED WITH AN APPROVED SOFT, PLIABLE, AND EASILY REMOVABLE WATERPROOF SEALANT. THE SEALANT SHALL NOT HAVE A DELETERIOUS EFFECT ON CABLE COVERINGS.

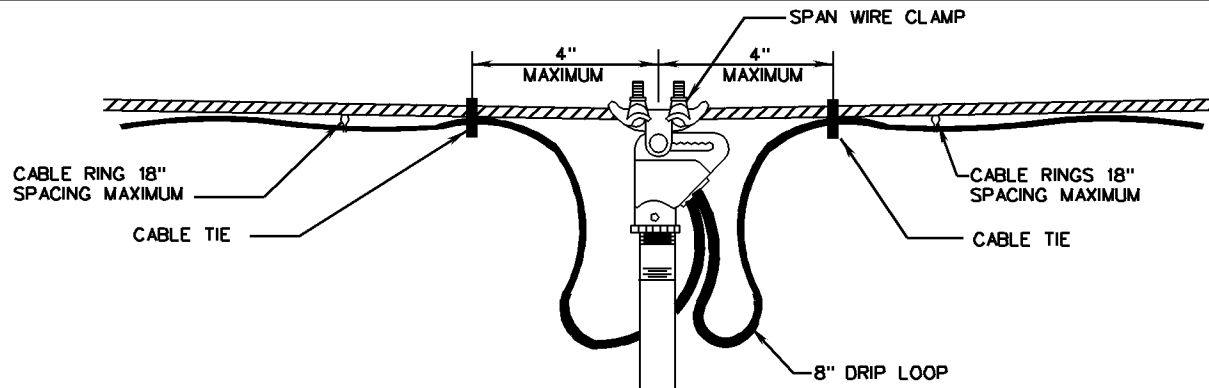


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PEDESTAL POLE AND FOUNDATION DETAILS

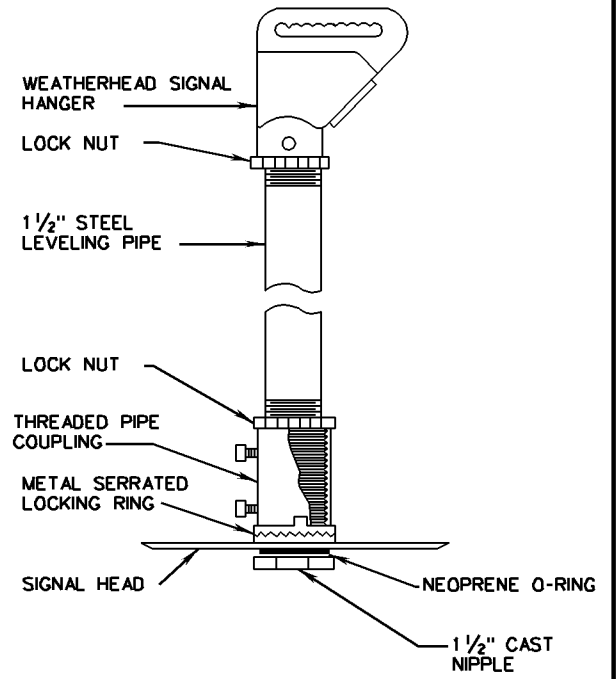
VIRGINIA DEPARTMENT OF TRANSPORTATION

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A WATERPROOF SEALANT SHALL BE APPLIED TO THE THREAD AREA ABOVE THE PIPE COUPLING BEFORE THE LOCK NUT IS SCREWED DOWN.

AN EASILY REMOVABLE WATERPROOF SEALANT SHALL BE APPLIED ON THE CONNECTION BETWEEN THE HANGAR ASSEMBLY AND SIGNAL HEAD ASSEMBLY



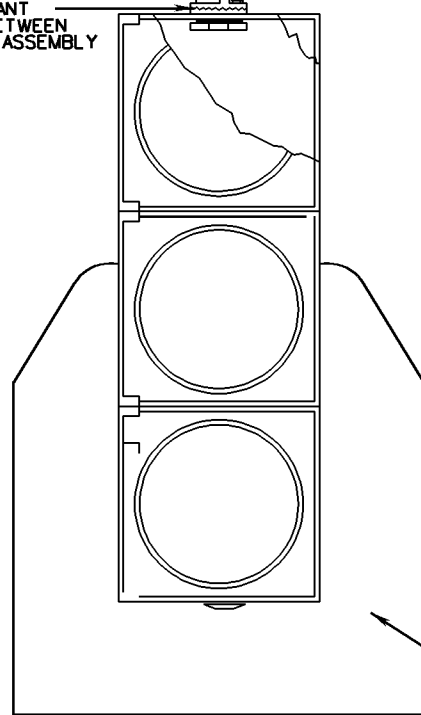
NOTES:

SIGNAL HEADS MOUNTED ON THE SAME SPAN WIRE SHALL BE INSTALLED SO THE BOTTOM SECTIONS ARE ON A LEVEL PLANE OR NO GREATER THAN 12" ABOVE THE BOTTOM OF THE LOWEST SIGNAL HEAD.

SIGNAL HEAD CABLES SHALL BE CONTINUOUS FROM THE CONTROLLER TO THE NEAREST SIGNAL HEAD TO WHICH IT APPLIES EXCEPT CABLE TERMINATIONS MAY BE ALLOWED ON THE POLE TERMINAL STRIP WHEN REQUIRED BY THE PLANS. THE CABLE SHALL ALSO BE CONTINUOUS FROM THE FIRST SIGNAL HEAD TO ANY ADDITIONAL HEADS WITH TERMINATION TERMINALS WITHIN THE SIGNAL HEAD HOUSING.

SPACERS SHALL BE INSTALLED BETWEEN THE EYELET OF THE HANGER ASSEMBLY AND THE INSIDE OF THE SPAN WIRE CLAMP TO ELIMINATE ANY GAP.

WEATHERHEAD SIGNAL HANGER, STEEL LEVELING PIPE AND THREADED PIPE COUPLING SHALL BE GALVANIZED OR PAINTED FLAT BLACK OR YELLOW



BACKPLATE

SPECIFICATION REFERENCE
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SIGNAL HEAD MOUNTING DETAILS
SPAN WIRE

VIRGINIA DEPARTMENT OF TRANSPORTATION

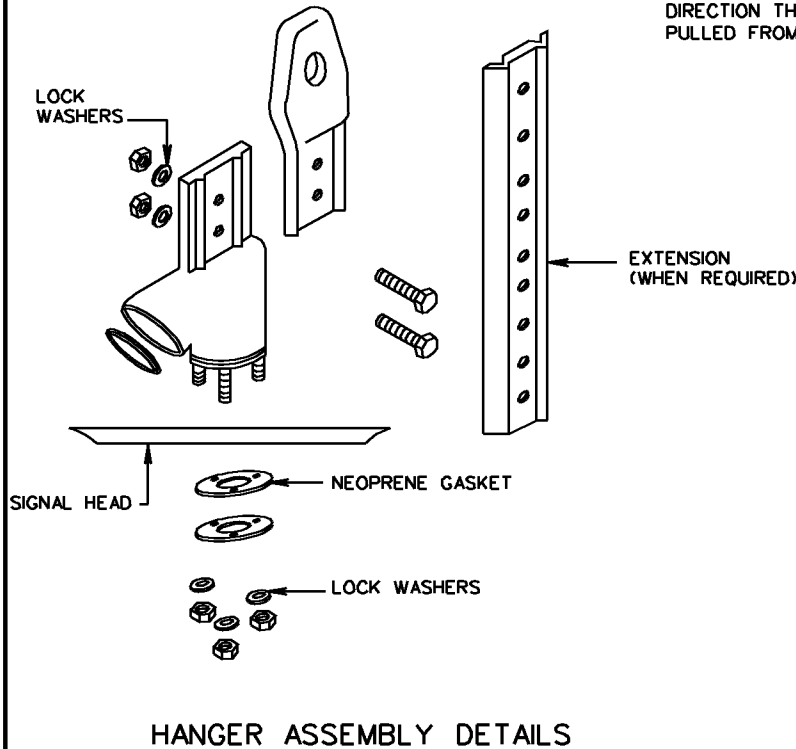
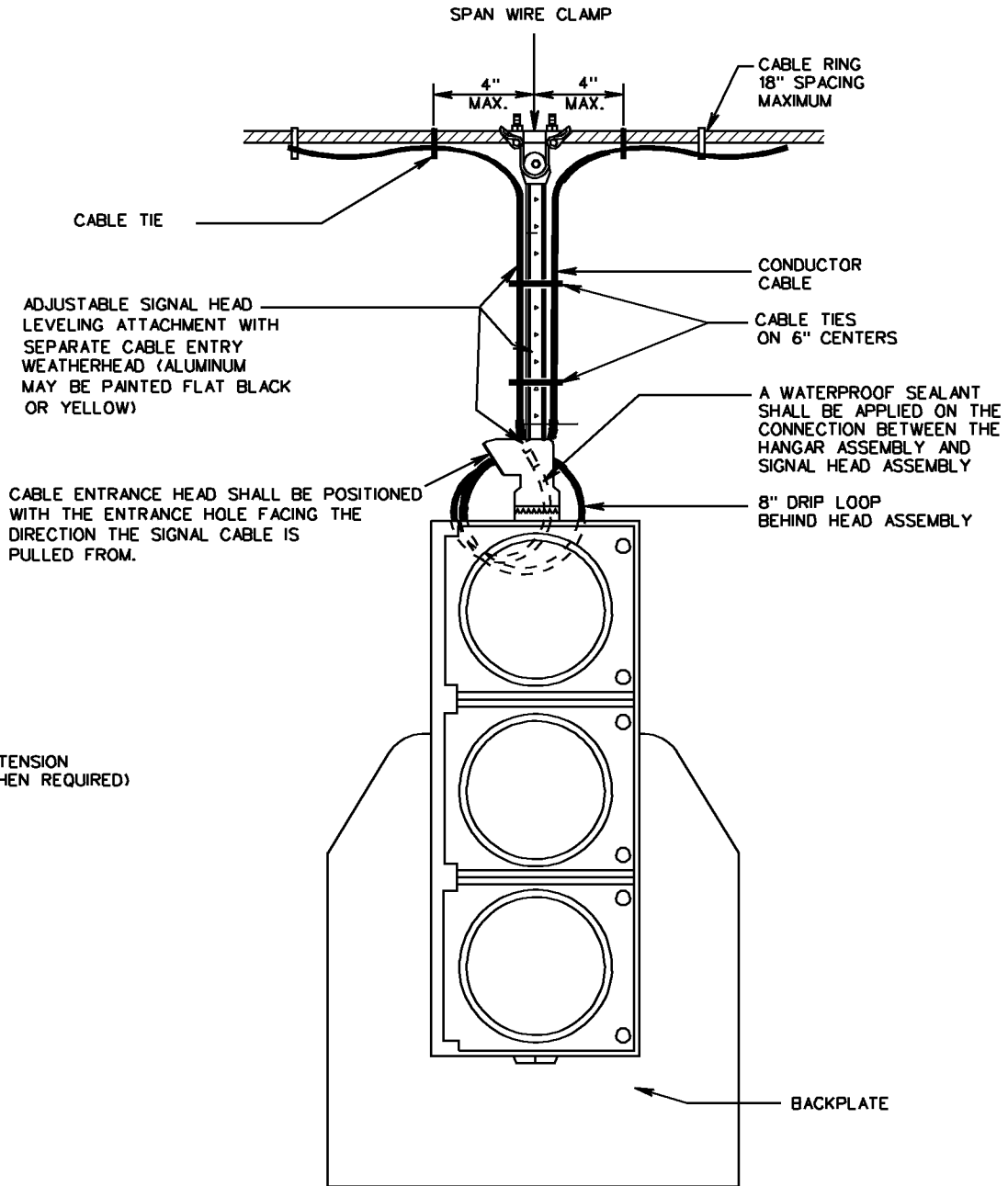
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SIGNAL HEAD CABLES SHALL BE CONTINUOUS FROM THE CONTROLLER TO THE NEAREST SIGNAL HEAD TO WHICH IT APPLIES EXCEPT CABLE TERMINATIONS MAY BE ALLOWED ON THE POLE TERMINAL STRIP WHEN REQUIRED BY THE PLANS. THE CABLE SHALL ALSO BE CONTINUOUS FROM THE FIRST SIGNAL HEAD TO ANY ADDITIONAL HEADS WITH TERMINATION ON THE TERMINALS WITHIN THE SIGNAL HEAD HOUSING. ALL MISCELLANEOUS HARDWARE SHALL BE STAINLESS STEEL.

SPACERS SHALL BE INSTALLED BETWEEN THE EYELET OF THE HANGER ASSEMBLY AND THE INSIDE OF THE SPAN WIRE CLAMP TO ELIMINATE ANY GAP.



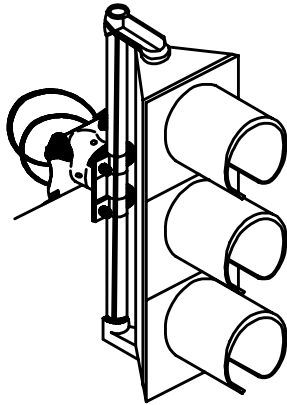
SIGNAL HEAD MOUNTING DETAILS
SPAN WIRE

VIRGINIA DEPARTMENT OF TRANSPORTATION

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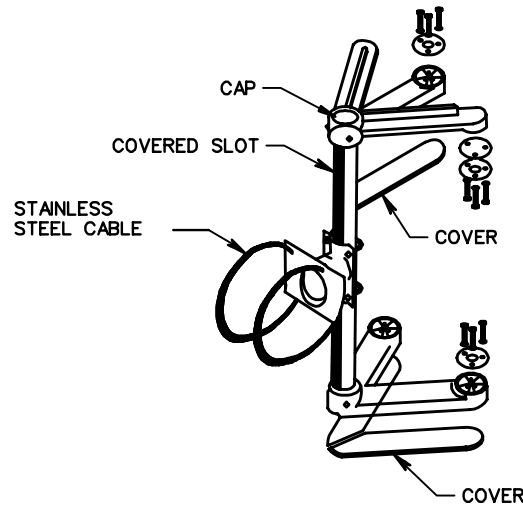


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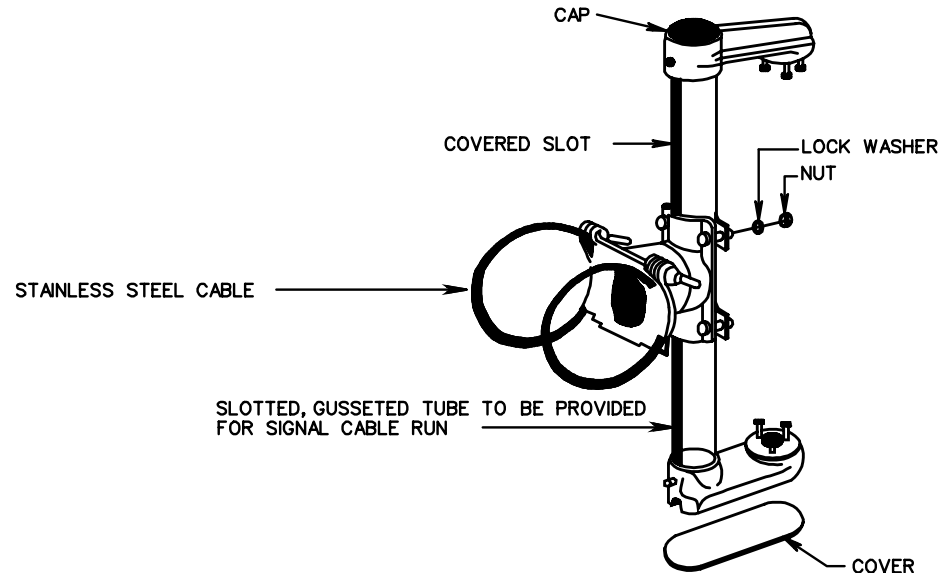
SIGNAL HEAD CABLES SHALL BE CONTINUOUS FROM THE CONTROLLER TO THE NEAREST SIGNAL HEAD TO WHICH IT APPLIES EXCEPT CABLE TERMINATIONS MAY BE ALLOWED ON THE POLE TERMINAL STRIP WHEN REQUIRED BY THE PLANS. THE CABLE SHALL ALSO BE CONTINUOUS FROM THE FIRST SIGNAL HEAD TO ANY ADDITIONAL HEADS WITH TERMINATION ON THE TERMINALS WITHIN THE SIGNAL HEAD HOUSING.

**POLE AND HANGER ASSEMBLY
HARDWARE REQUIREMENTS**

POLE TYPE	HARDWARE TYPE
GALVANIZED STEEL	ALUMINUM OR GALVANIZED IRON
STEEL PAINTED ALUMINUM	ALUMINUM, GALVANIZED IRON OR IRON PAINTED ALUMINUM
STEEL PAINTED OTHER THAN ALUMINUM	ALUMINUM OR IRON PAINTED TO MATCH POLE



**5 SECTION CLUSTER
MOUNTING DETAIL**



RIGID MAST ARM MOUNTING DETAILS

SPECIFICATION
REFERENCE

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**SIGNAL HEAD MOUNTING DETAILS
MAST ARM**

VIRGINIA DEPARTMENT OF TRANSPORTATION

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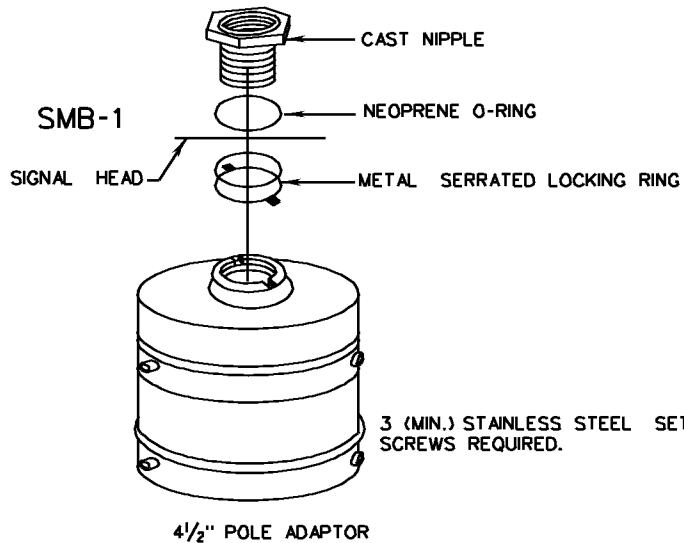
ROAD AND BRIDGE STANDARDS

REVISION DATE

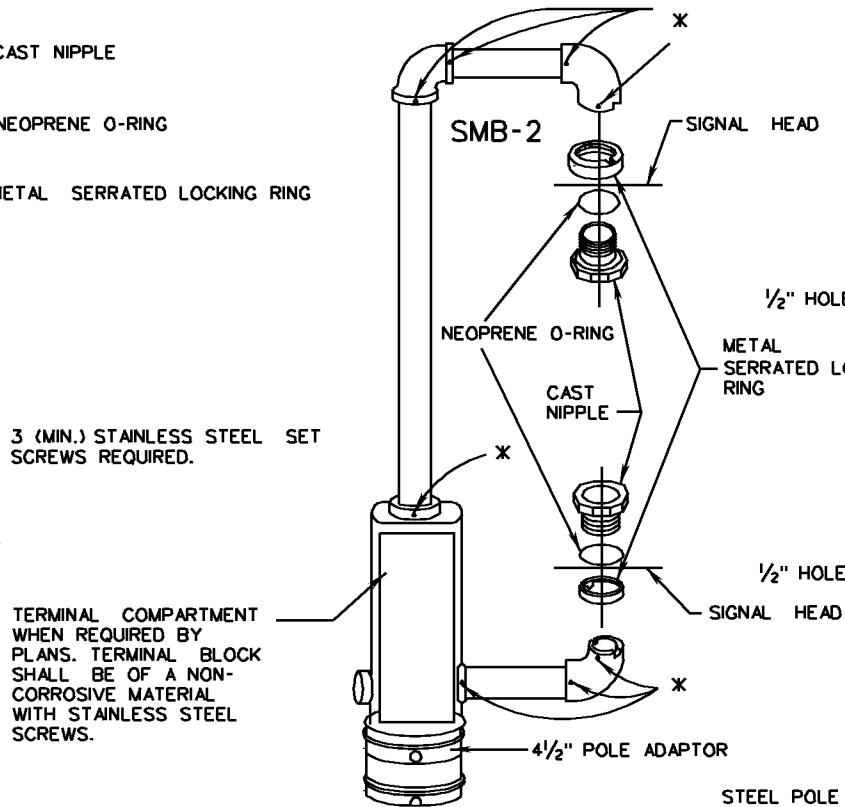
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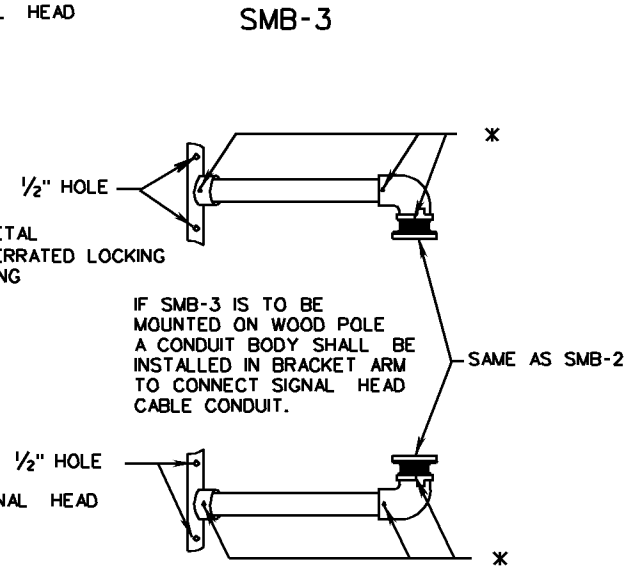
POLE TOP MOUNTING CAST ALUMINUM
SIGNAL HEADS ONLY



POLE TOP MOUNTING CAST ALUMINUM
OR POLYCARBONATE SIGNAL HEADS



POLE BRACKET MOUNTING CAST ALUMINUM
OR POLYCARBONATE SIGNAL HEADS



STEEL POLE SHALL BE DRILLED AND TAPPED AND MOUNTING ACCOMPLISHED UTILIZING 1/2" STAINLESS STEEL BOLTS.

NOTES:

IF PEDESTRIAN SIGNALS ARE BEING INSTALLED, THE MOUNTING ATTACHMENTS (SMB-1,2,3) SHALL BE A TYPE SPECIFICALLY MANUFACTURED FOR THAT PURPOSE.

SMB-1, 2 AND 3 SHOWN ARE TYPICAL AND FOR ONE-WAY SIGNAL DISPLAY. OTHER DESIGNS MAY BE SUBMITTED FOR APPROVAL BY THE ENGINEER. MULTI-WAY ASSEMBLIES, WHEN REQUIRED, SHALL BE OF SIMILAR APPROPRIATE DESIGN.

SMB-3 BRACKETS MAY BE MOUNTED TO POLE WITH STAINLESS STEEL BANDS

* SET SCREWS SHALL BE STAINLESS STEEL



ROAD AND BRIDGE STANDARDS

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06-15-2009

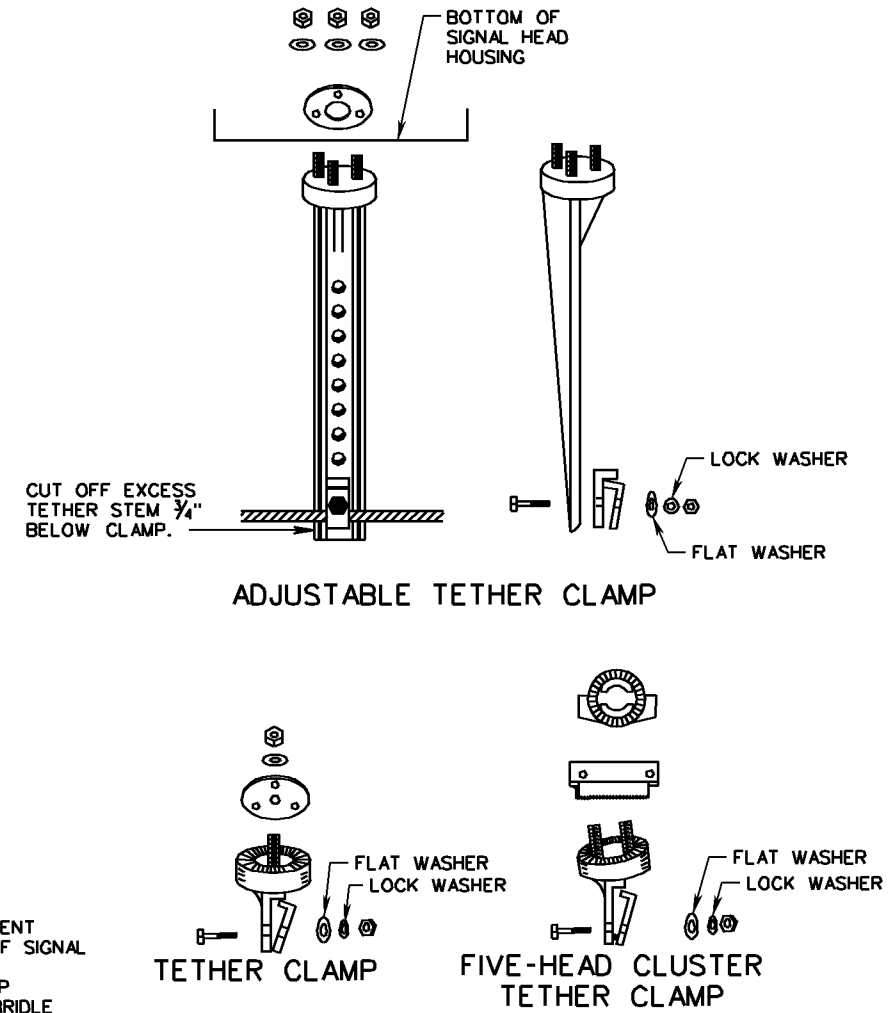
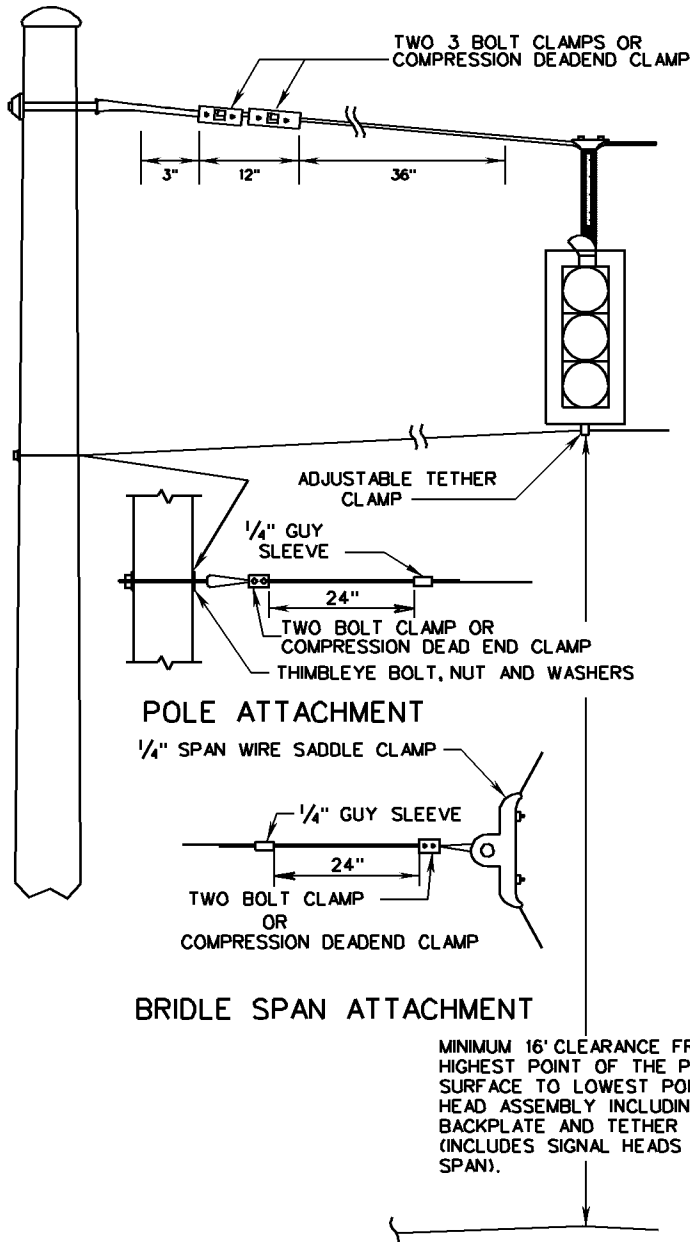
SIGNAL HEAD MOUNTING DETAILS

POLE TOP AND BRACKET

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION
REFERENCE

703



SPECIFICATION REFERENCE
703

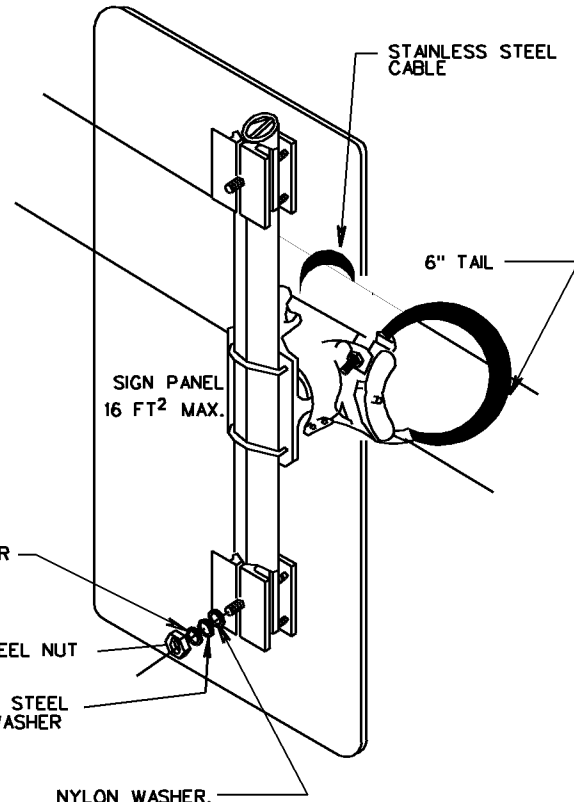
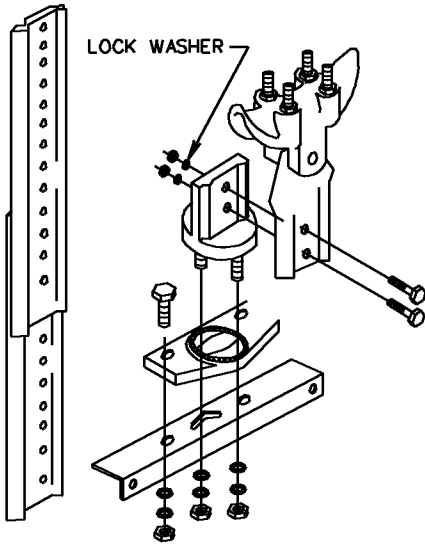
TETHER WIRE DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

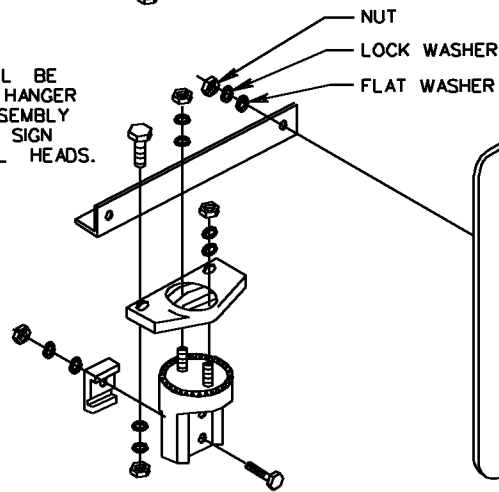
VDOT	
ROAD AND BRIDGE STANDARDS	
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SPAN WIRE INSTALLATION

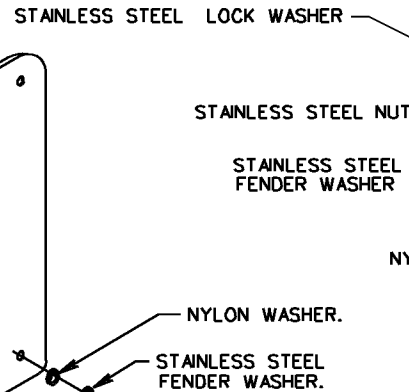
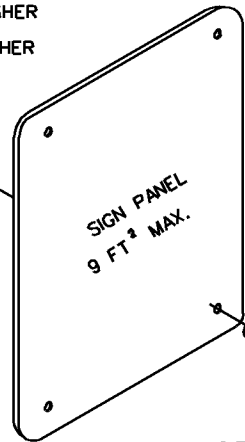
MAST ARM INSTALLATION



EXTENSION SHALL BE USED WITH THE HANGER AND TETHER ASSEMBLY TO CENTER THE SIGN WITH THE SIGNAL HEADS.



SMD-1



SMD-2

NOTES:

NUTS AND BOLTS USED FOR ATTACHMENT OF SIGN PANEL SHALL BE STAINLESS STEEL AND 3/4" IN DIAMETER.

A 1 1/4" NYLON AND STAINLESS STEEL FENDER WASHER SHALL BE USED ON THE FRONT OF SIGN PANEL WHERE BOLT PASSES THROUGH SIGN PANEL.

ALL NUTS, BOLTS AND WASHERS SHALL BE STAINLESS STEEL OR GALVANIZED STEEL UNLESS OTHERWISE INDICATED

SPACERS SHALL BE INSTALLED BETWEEN THE EYELET OF THE SIGN HANGAR AND THE SPAN WIRE CLAMP TO ELIMINATE ANY GAP.



ROAD AND BRIDGE STANDARDS

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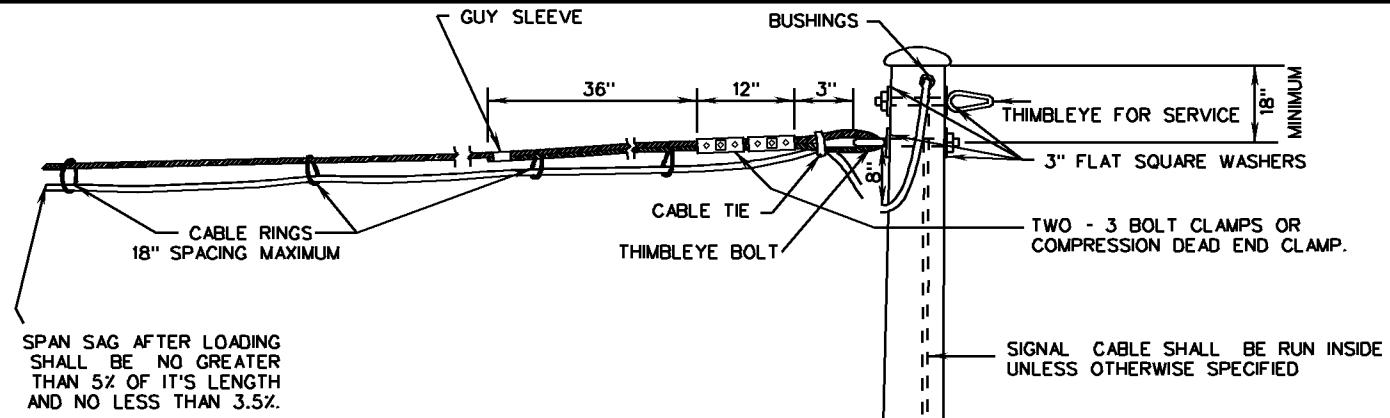
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SIGN MOUNTING DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE

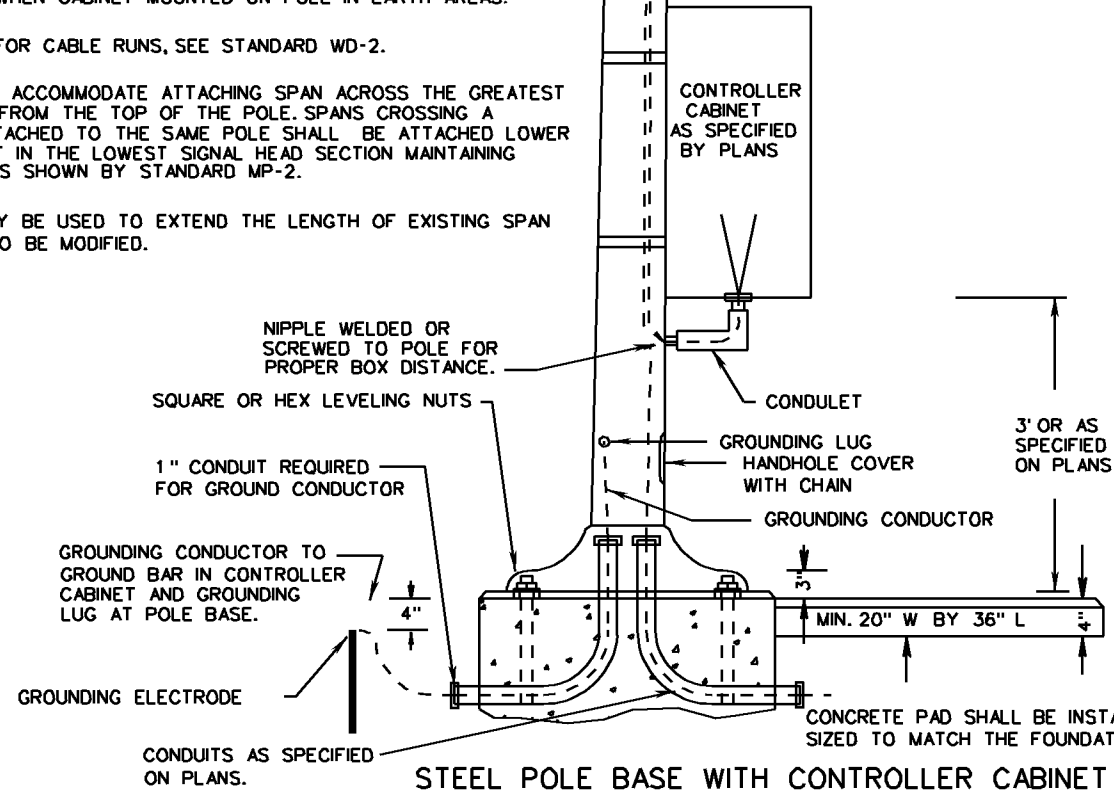
703



SPAN SAG AFTER LOADING SHALL BE NO GREATER THAN 5% OF IT'S LENGTH AND NO LESS THAN 3.5%.

NOTES:

- REFER TO STANDARD MP-2 FOR GROUNDING LUG DETAIL.
- CONCRETE PAD REQUIRED WHEN CABINET MOUNTED ON POLE IN EARTH AREAS.
- FOR METHODS APPROVED FOR CABLE RUNS, SEE STANDARD WD-2.
- POLE HEIGHT DESIGNED TO ACCOMMODATE ATTACHING SPAN ACROSS THE GREATEST DISTANCE AT A POINT 18" FROM THE TOP OF THE POLE. SPANS CROSSING A LESSOR DISTANCE AND ATTACHED TO THE SAME POLE SHALL BE ATTACHED LOWER THAN 18" AS WILL RESULT IN THE LOWEST SIGNAL HEAD SECTION MAINTAINING THE MINIMUM CLEARANCE, AS SHOWN BY STANDARD MP-2.
- A STRAIN INSULATOR(S) MAY BE USED TO EXTEND THE LENGTH OF EXISTING SPAN WIRE IF A SPAN PULL IS TO BE MODIFIED.



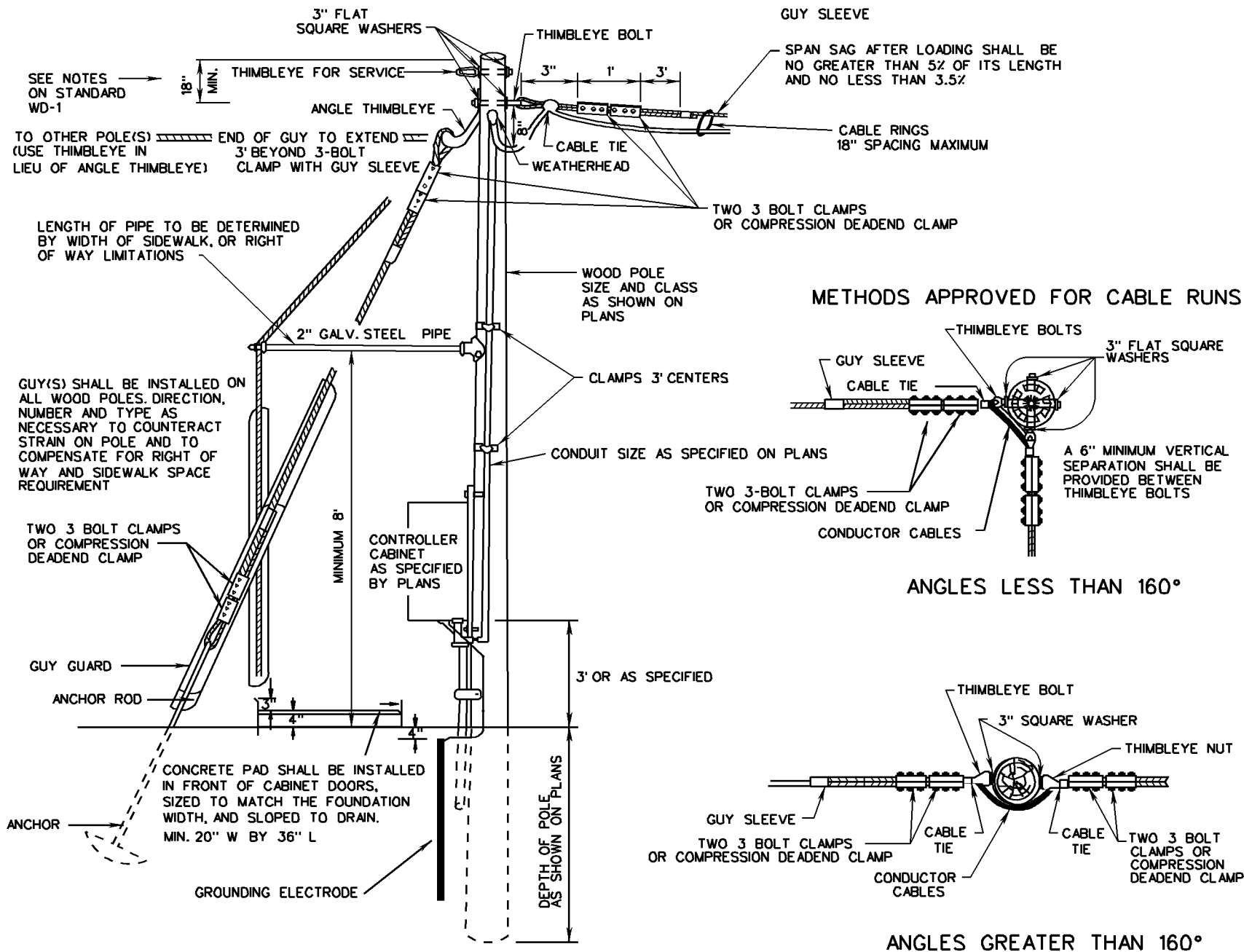
STEEL POLE BASE WITH CONTROLLER CABINET

SPECIFICATION REFERENCE
700

STEEL SIGNAL POLE WIRING AND RIGGING DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT	
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ROAD AND BRIDGE STANDARDS

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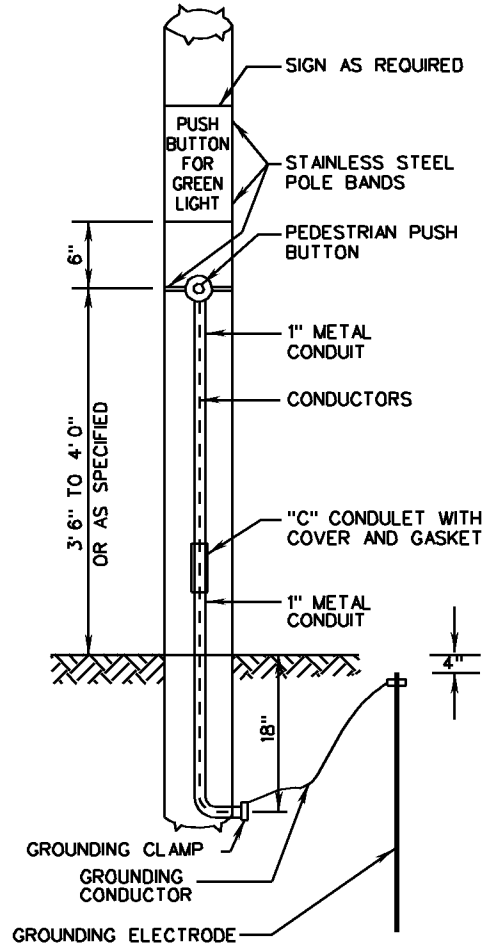
06-15-2009

WOOD POLE WIRING AND RIGGING DETAILS

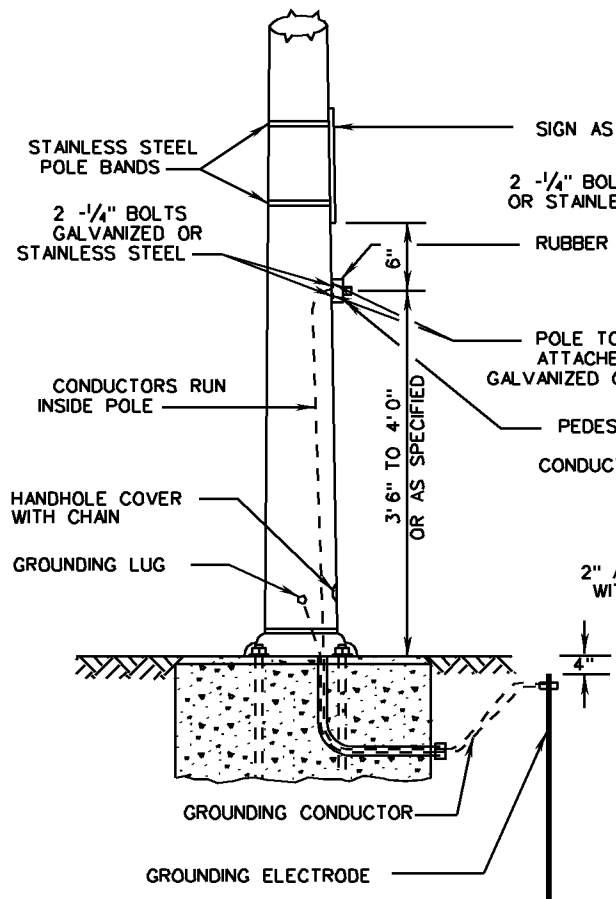
VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION
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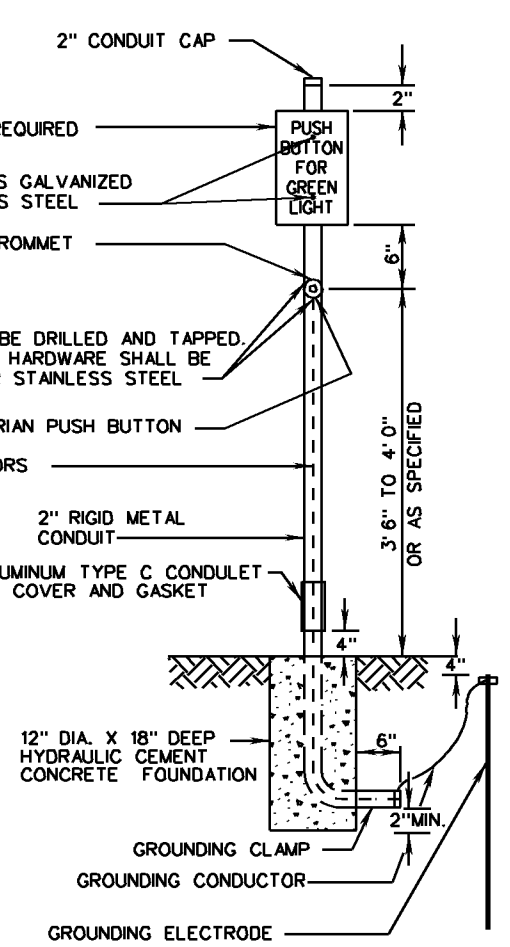
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703



PA-1
WOOD/CONCRETE POLE



PA-2
SIGNAL/PEDESTAL POLE



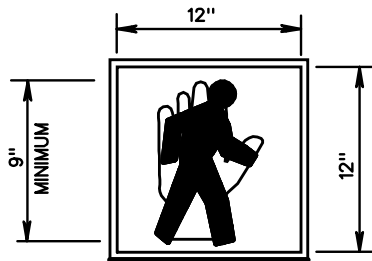
PA-3
METAL

NOTE:

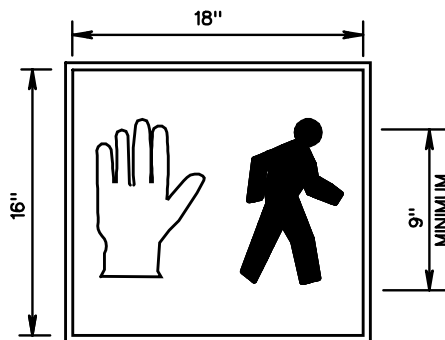
REFER TO STANDARD MP-2 FOR GROUNDING LUG DETAIL.
"C" CONDULET WITH GASKET AND COVER.

SPECIFICATION REFERENCE 700 703	<h2 style="margin: 0;">PEDESTRAIN ACTUATION</h2> <h3 style="margin: 0;">DETAILS</h3> <p style="margin: 0;">VIRGINIA DEPARTMENT OF TRANSPORTATION</p>	ROAD AND BRIDGE STANDARDS REVISION DATE 04/09 06-15-2009	SHEET 1 OF 1 1307.10
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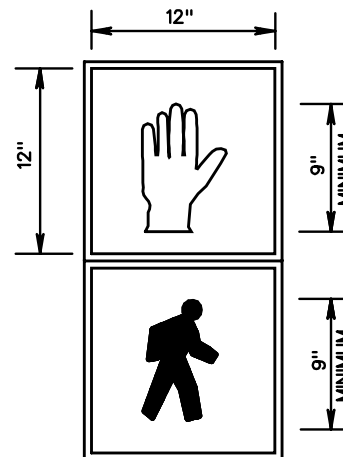
SP-5,6,7,8,9



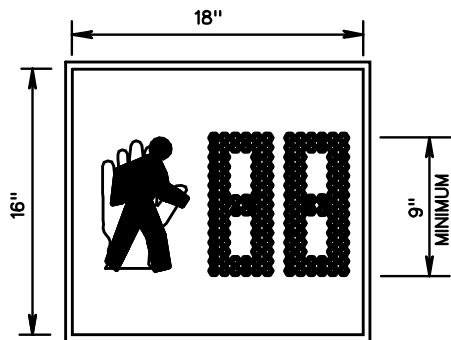
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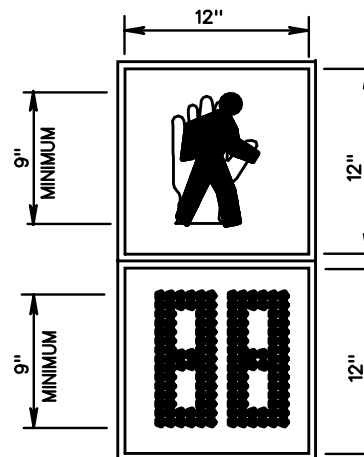
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SP-7



SP-8



SP-9



ROAD AND BRIDGE STANDARDS

SHEET 1 OF 1

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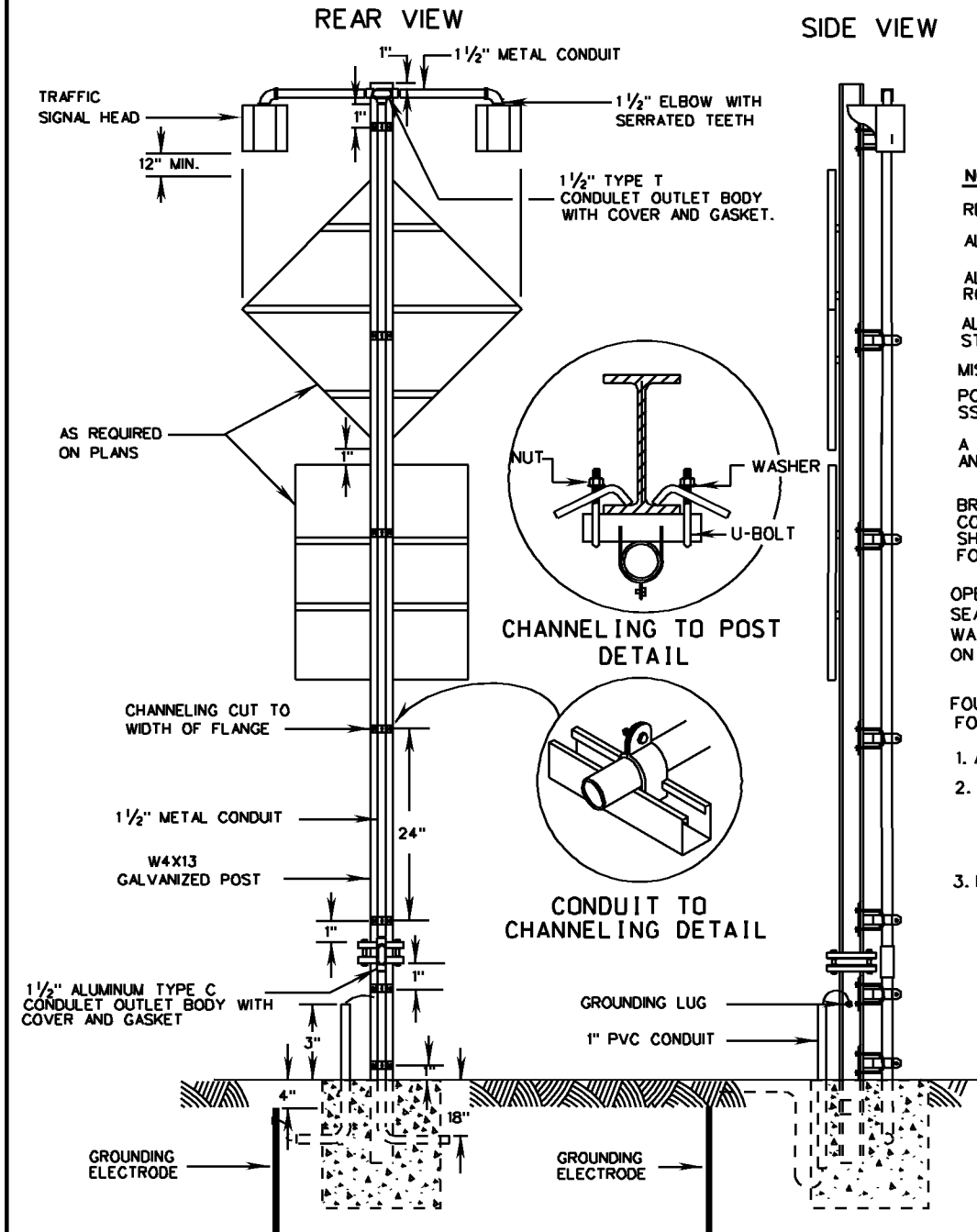
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PEDESTRIAN SIGNAL INDICATION DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION
REFERENCE

703
238



NOTES:

- REFER TO STANDARD MP-2 FOR GROUNDING LUG DETAIL.
- ALL SIGNAL LENSES SHALL BE YELLOW AND SHALL BE 12" DIAMETER.
- ALL ELBOWS AND CONDULETS SHALL HAVE SET SCREWS TO PREVENT ROTATION.
- ALL CHANNELING AND CLAMPS SHALL BE GALVANIZED OR STAINLESS STEEL.
- MISCELLANEOUS HARDWARE SHALL BE STAINLESS STEEL.
- POST AND SIGN PANELS SHALL BE INSTALLED IN ACCORDANCE WITH SSP-VA
- A WATERPROOF SEALANT SHALL BE UTILIZED BETWEEN ELBOWS AND SIGNAL HEADS.
- BREAKAWAY CONNECTORS SHALL BE INSTALLED ON THE SIGNAL CONDUCTORS WITH THE TYPE C CONDULET. BREAKAWAY CONNECTORS SHALL BE FUSED FOR THE HOT CONDUCTOR AND NONFUSED FOR THE GROUND CONDUCTOR.
- OPEN ENDS OF CONDUITS WITH CONDUCTORS INSTALLED SHALL BE SEALED WITH AN APPROVED SOFT, PLIABLE, AND EASILY REMOVABLE, WATERPROOF SEALANT. THE SEALANT SHALL NOT HAVE A DELETERIOUS ON CABLE COVERINGS
- FOUNDATION SHALL BE IN ACCORDANCE WITH SSP-VA FOR A 4'6" X 1'9" FOUNDATION EXCEPT FOR THE FOLLOWING:
 1. A 1 1/2" METAL CONDUIT SHALL BE INSTALLED FOR ELECTRICAL POWER.
 2. A 1" PVC CONDUIT, NO. 6 GROUNDING CONDUCTOR AND GROUNDING ELECTRODE SHALL BE INSTALLED FOR GROUNDING PURPOSES. STUB POST SHALL BE SUPPLIED WITH A GROUNDING LUG WELDED TO POST WEB.
 3. FLASHING BEACON INSTALLED ON UNDIVIDED HIGHWAYS SHALL BE OF THE MEDIAN TYPE INSTALLED IN ACCORDANCE WITH STANDARD SSP-VA.

SPECIFICATION REFERENCE
700 703

**FLASHING BEACON
INSTALLATION DETAILS**

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT	
ROAD AND BRIDGE STANDARDS	
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TOP VIEW

OPTION: TOP 12" MIN. OF THE FOUNDATION MAY BE FORMED SQUARE

BOLT CIRCLE

GROUNDING ELECTRODE

6"

BOLT PROJECTION AS REQUIRED BY SIGNAL POLE MANUFACTURER, HOWEVER DISTANCE BETWEEN BOTTOM OF BASE PLATE AND TOP OF PEDESTAL SHALL BE NO GREATER THAN THE DIAMETER OF ANCHOR BOLT PLUS ONE INCH.

SQUARE OR HEX NUTS UNDER BASE CASTING SERVE AS A MEANS OF LEVELING OR RAKING POLE

CONDUITS TO EXTEND 8" ABOVE FOUNDATION

ALL CONDUITS AS SPECIFIED ON PLANS. IN ADDITION ONE 1" CONDUIT REQUIRED FOR GROUNDING CONDUCTOR. 2 - 2" PVC CONDUITS REQUIRED FOR FUTURE USE. NOTE THAT ADDITIONAL SPARE CONDUITS MAY BE REQUIRED BY PLANS

GROUNDING CONDUCTOR

GROUNDING ELECTRODE

FOUNDATION TO EXTEND 4" ABOVE GROUND WHEN IN EARTH AND SHALL BE FLUSH WITH SURFACE WHEN IN SIDEWALK.

WELDED WIRE FABRIC AS REQUIRED BY FOUNDATION DESIGNER

HYDRAULIC CEMENT CONCRETE

ANCHOR RODS/BOLTS

NOTES:

ANCHOR BOLTS AND BOLT PATTERN SHALL BE FURNISHED WITH POLE. POLE SHALL BE CENTERED ON FOUNDATION.

EACH FOUNDATION SHALL BE PERMANENTLY MARKED TO INDICATE ALL SIDES FROM WHICH CONDUITS PASS. THIS MARK SHALL BE MADE WITH A TROWEL WHEN FINISHING THE CONCRETE AND SHALL BE 1/4" DEEP AND 4" TO 6" LONG. LOCATIONS OF EMPTY CONDUITS SHALL HAVE AN ADDITIONAL 2" LONG MARK MADE PERPENDICULAR TO AND CENTERED ON THIS MARKING.

WHEN FOUNDATION EXTENDS 4" ABOVE FINISHED GRADE ALL EDGES SHALL BE CHAMFERED 3/4" AND FOR SIDEWALKS SHALL BE FLUSH.

GROUNDING BUSHINGS SHALL BE INSTALLED ON EACH END OF METAL CONDUITS.

EMPTY CONDUITS SHALL BE PLUGGED TO PREVENT MOISTURE AND RODENT ENTRY.

BELL ENDS SHALL BE INSTALLED ON EACH END OF PVC CONDUITS.

OPEN ENDS OF CONDUITS WITH CONDUCTORS INSTALLED SHALL BE SEALED WITH AN APPROVED SOFT, PLIABLE, AND EASILY REMOVABLE WATERPROOF SEALANT. THE SEALANT SHALL NOT HAVE A DELETERIOUS EFFECT ON CABLE COVERINGS.

NO MORTAR, GROUT, OR CONCRETE SHALL BE PLACED BETWEEN BOTTOM OF BASE PLATE AND TOP OF FOUNDATION.

HEIGHT, WIDTH, AND DEPTH OF FOUNDATION SHALL BE AS REQUIRED BY FOUNDATION DESIGNER

SIDE VIEW

CIRCULAR FOUNDATION



ROAD AND BRIDGE STANDARDS

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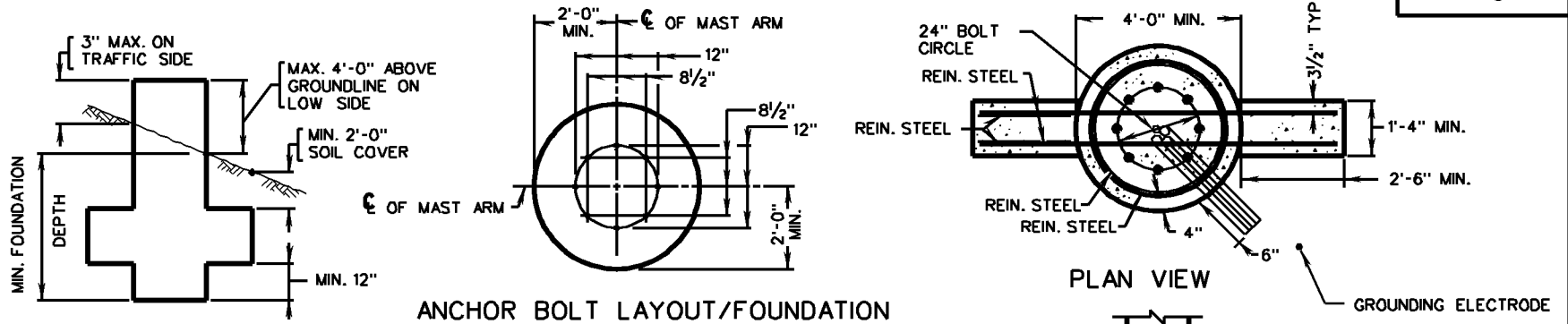
SIGNAL POLE FOUNDATION

INSTALLATION DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE

700



NOT TO SCALE

ANCHOR BOLT LAYOUT/FOUNDATION

NOTES:

ANCHOR BOLTS SHALL HAVE A THREADED PLATE OR A PLATE WITH NUT AND WASHER ON THE END OF BOLT EMBEDDED IN FOUNDATION.

ANCHOR BOLT LAYOUT SHALL BE CHECKED AGAINST LATEST APPROVED STRUCTURE DRAWINGS. WHEN EIGHT ANCHOR BOLTS ARE REQUIRED, MINIMUM OF 5'-0" AND 7'-6" EMBEDMENT LENGTHS SHALL BE USED ALTERNATING IN BOLT CIRCLE.

MINIMUM REINFORCEMENT SHOWN, DESIGNER SHALL VERIFY.

ALL CONDUITS AS SPECIFIED ON PLANS. IN ADDITION 1" CONDUIT REQUIRED FOR GROUNDING CONDUCTOR, 2 - 2" PVC CONDUITS REQUIRED FOR FUTURE USE. NOTE THAT ADDITIONAL SPARE CONDUITS MAY BE REQUIRED BY PLANS.

BOLT PROJECTION AS REQUIRED BY SIGNAL POLE MANUFACTURER; HOWEVER, DISTANCE BETWEEN BOTTOM OF BASE PLATE AND TOP OF PEDESTAL SHALL BE NO GREATER THAN THE DIAMETER OF ANCHOR BOLT PLUS ONE INCH.

SQUARE OR HEX NUTS UNDER BASE SERVE AS A MEANS OF LEVELING OR RAKING POLE.

WINGS SHALL BE USED FOR TORSIONAL RESISTANCE.

ANCHOR BOLTS AND BOLT PATTERN SHALL BE FURNISHED WITH POLE. POLE SHALL BE CENTERED ON FOUNDATION.

EACH FOUNDATION SHALL BE PERMANENTLY MARKED TO INDICATE ALL SIDES FROM WHICH CONDUITS PASS. THIS MARK SHALL BE MADE WITH A TROWEL WHEN FINISHING THE CONCRETE AND SHALL BE 1/4" DEEP AND 4" TO 6" LONG. LOCATIONS OF EMPTY CONDUITS SHALL HAVE AN ADDITIONAL 2" LONG MARK MADE PERPENDICULAR TO AND CENTERED ON THIS MARKING.

WHEN FOUNDATION EXTENDS 4" ABOVE FINISHED GRADE ALL EDGES SHALL BE CHAMFERED 3/4" AND FOR SIDEWALKS SHALL BE FLUSH.

GROUNDING BUSHINGS SHALL BE INSTALLED ON EACH END OF METAL CONDUITS.

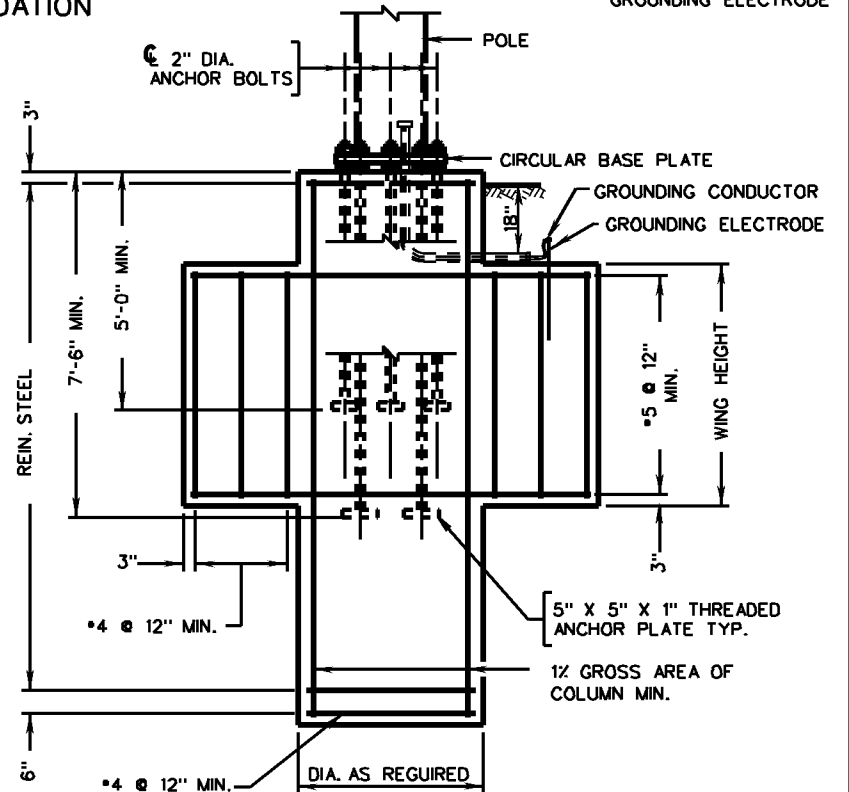
EMPTY CONDUITS SHALL BE PLUGGED TO PREVENT MOISTURE AND RODENT ENTRY.

BELL ENDS SHALL BE INSTALLED ON EACH END OF PVC CONDUITS.

OPEN ENDS OF CONDUITS WITH CONDUCTORS INSTALLED SHALL BE SEALED WITH AN APPROVED SOFT, PLIABLE, AND EASILY REMOVABLE WATERPROOF SEALANT. THE SEALANT SHALL NOT HAVE A DELETERIOUS EFFECT ON CABLE COVERINGS.

NO MORTAR, GROUT, OR CONCRETE SHALL BE PLACED BETWEEN BOTTOM OF BASE PLATE AND TOP OF FOUNDATION.

HEIGHT, WIDTH, AND DEPTH OF FOUNDATION SHALL BE AS REQUIRED BY FOUNDATION DESIGNER



ELEVATION



CAGE REINFORCING STEEL

SPECIFICATION REFERENCE	700	<h1>SIGNAL POLE FOUNDATION</h1> <h2>INSTALLATION DETAILS</h2> <p>VIRGINIA DEPARTMENT OF TRANSPORTATION</p>	<p>ROAD AND BRIDGE STANDARDS</p>	
			REVISION DATE NEW 04/09 06/15/2009	SHEET 1 OF 1 1310.11

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ROAD AND BRIDGE STANDARDS

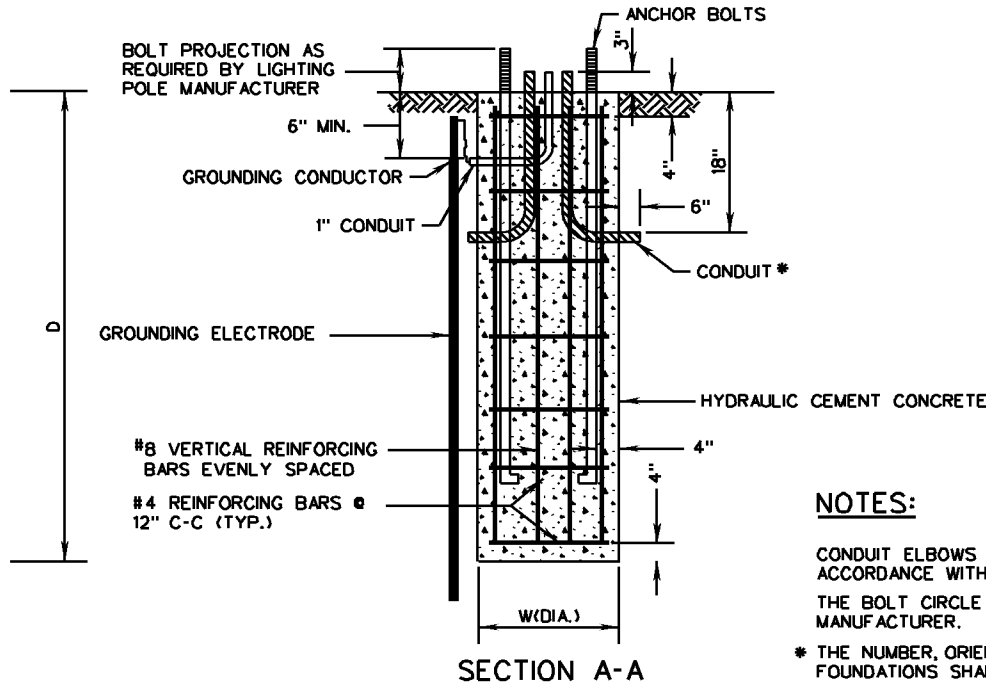
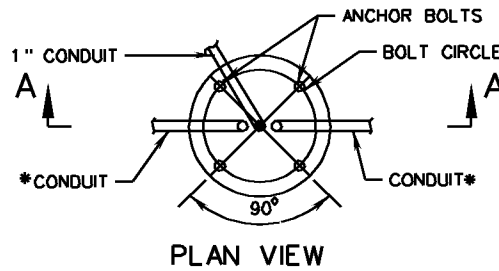
SHEET 1 OF 1

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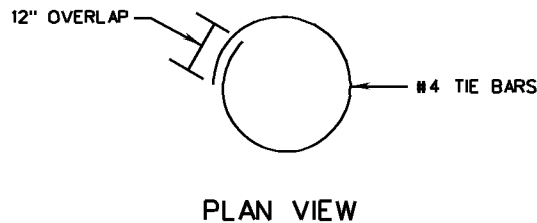
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VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION
REFERENCE



TYPE	W	D	VERTICAL BARS
A	2' 6"	8'	8 - # 8



NOTES:

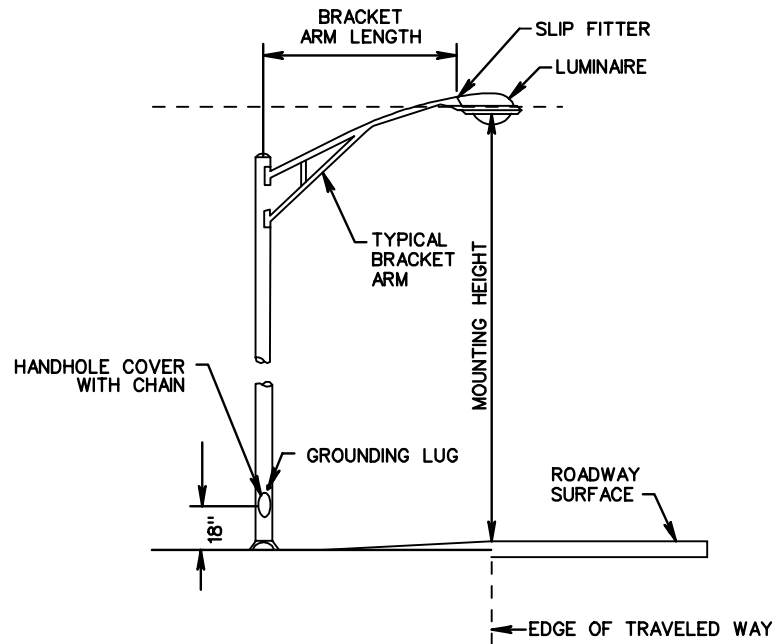
- CONDUIT ELBOWS SHALL HAVE A 90° BEND. THE BEND RADIUS SHALL BE IN ACCORDANCE WITH THE N.E.C.
- THE BOLT CIRCLE TEMPLATE SHALL BE FURNISHED BY THE LIGHTING POLE MANUFACTURER.
- * THE NUMBER, ORIENTATION AND SIZE OF CONDUITS ENTERING AND EXITING FOUNDATIONS SHALL BE AS SHOWN ON THE PLANS.
- NO MORTAR, GROUT, OR CONCRETE SHALL BE PLACED BETWEEN BOTTOM OF BASE PLATE AND TOP OF FOUNDATION.
- GROUNDING BUSHINGS SHALL BE INSTALLED ON EACH END OF METAL CONDUITS.
- EMPTY CONDUITS SHALL BE PLUGGED TO PREVENT MOISTURE AND RODENT ENTRY.
- BELL ENDS SHALL BE INSTALLED ON EACH END OF PVC CONDUITS.
- OPEN ENDS OF CONDUITS WITH CONDUCTORS INSTALLED SHALL BE SEALED WITH AN APPROVED SOFT, PLIABLE, AND EASILY REMOVABLE WATERPROOF SEALANT. THE SEALANT SHALL NOT HAVE A DELETERIOUS EFFECT ON CABLE COVERINGS.

SPECIFICATION REFERENCE
700

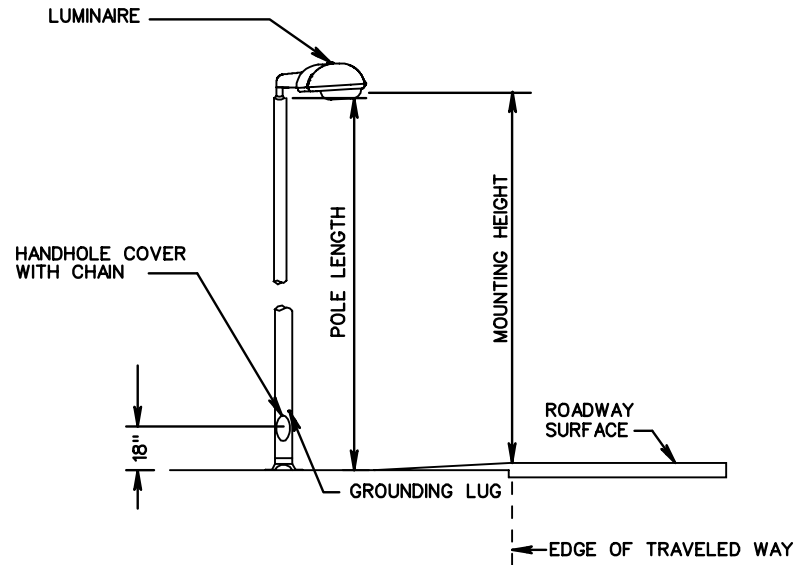
LIGHTING POLE FOUNDATION
INSTALLATION DETAILS
VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT ROAD AND BRIDGE STANDARDS	
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LP-1



LP-2



POLE LENGTH (FEET)	BOLT CIRCLE DIAMETER	ANCHOR BOLT DIAMETER
A (5-17)	12"	1"
B (18-22)	12"	1"
C (23-27)	12"	1"
D (28-32)	12"	1"
E (33-37)	15"	1"
F (38-42)	15"	1"
G (43-47)	15"	1"
H (48-52)	16"	1"
I (53-57)	16"	1 1/4"
J (58-62)	16"	1 1/4"

NOTES:

THE MOUNTING HEIGHT SHOWN ON THE PLANS SHALL BE ADHERED TO WITHIN A TOLERANCE OF 12" AND IN NO CASE LESS THAN THE MOUNTING HEIGHT SHOWN.

GROUNDING ELECTRODE SHALL BE COVERED 4-18" FROM FINISHED GRADE.

REFER TO STANDARD MP-2 FOR GROUNDING LUG DETAIL.

NOTES:

GROUNDING ELECTRODE SHALL BE COVERED 4-18" FROM FINISHED GRADE.

REFER TO STANDARD MP-2 FOR GROUNDING LUG DETAIL.



ROAD AND BRIDGE STANDARDS

SHEET 1 OF 1

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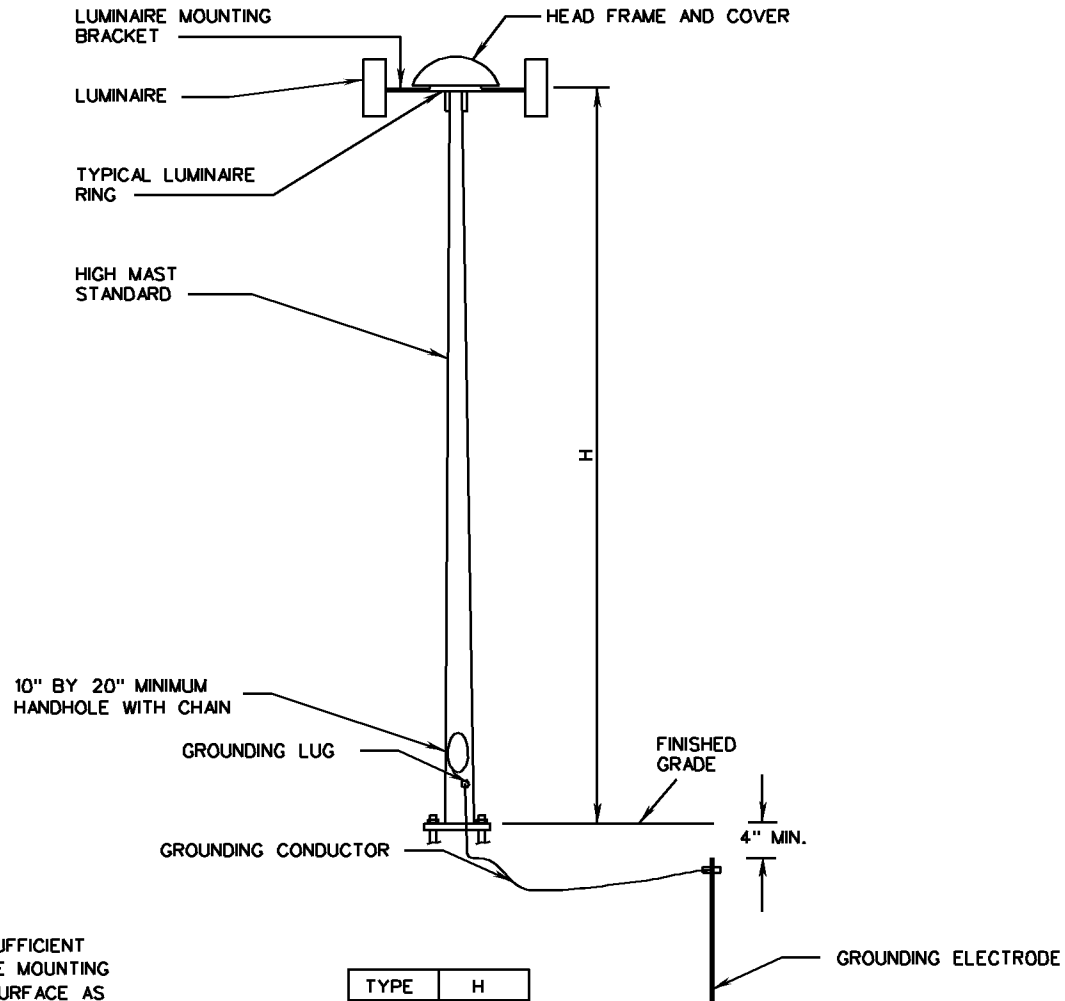
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LIGHTING POLE
INSTALLATION DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION
REFERENCE

700



NOTES:

WINCH ASSEMBLY AND CIRCUIT BREAKER TO BE ACCESSIBLE FROM HAND HOLE

TYPE 9 POLES SHALL BE OF SUFFICIENT HEIGHT TO PROVIDE A LUMINAIRE MOUNTING HEIGHT ABOVE THE ROADWAY SURFACE AS INDICATED ON THE PLANS.

THE MOUNTING HEIGHTS SHOWN ON THE PLANS FOR A TYPE 9 POLE SHALL BE ADHERED TO WITHIN A TOLERANCE OF 3 FEET AND IN NO CASE BE LESS THAN THE MOUNTING HEIGHT SHOWN.

REFER TO STANDARD MP-2 FOR GROUNDING LUG DETAIL.

TYPE	H
1	70'
2	80'
3	90'
4	100'
5	110'
6	120'
7	130'
8	140'
9	VARIABLE

SPECIFICATION REFERENCE

700
705

**HIGH MAST LIGHT POLE
DETAILS**

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT

ROAD AND BRIDGE STANDARDS

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NOTES:

NO OTHER CONDUCTORS SHALL BE RUN IN THE SAME CONDUIT WITH ELECTRICAL SERVICE CABLE.

CONCRETE PAD REQUIRED WHEN CABINET MOUNTED ON POLE IN EARTH AREAS. (SEE STANDARD CF-1 FOR PAD DETAIL).

GROUNDING BUSHINGS SHALL BE INSTALLED ON EACH END OF METAL CONDUITS.

BELL ENDS SHALL BE INSTALLED ON EACH END OF PVC CONDUITS.

OPEN ENDS OF CONDUITS WITH CONDUCTORS INSTALLED SHALL BE SEALED WITH AN APPROVED SOFT PLIABLE, AND EASILY REMOVABLE WATERPROOF SEALANT. THE SEALANT SHALL NOT HAVE A DELETERIOUS EFFECT ON CABLE COVERINGS.

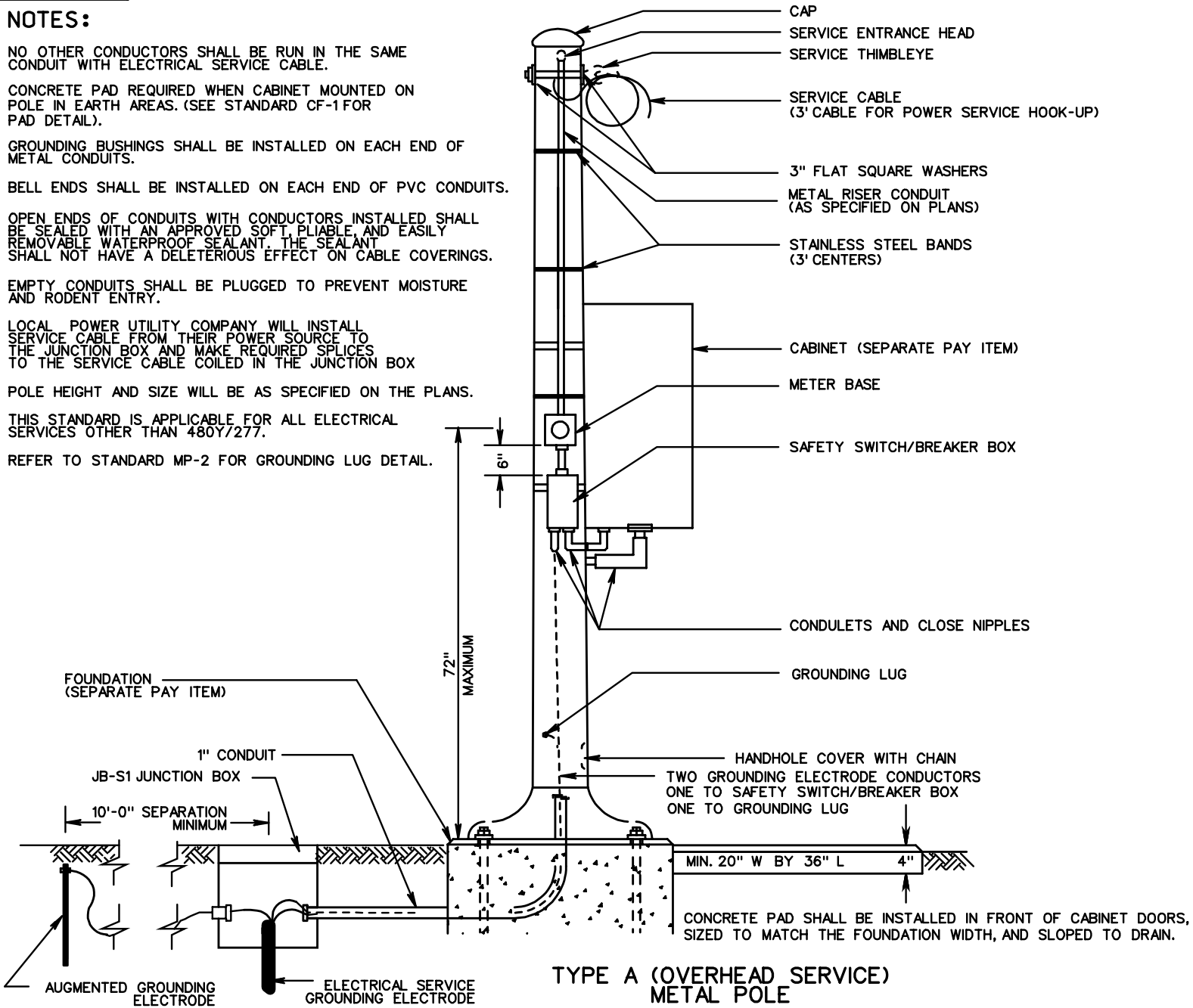
EMPTY CONDUITS SHALL BE PLUGGED TO PREVENT MOISTURE AND RODENT ENTRY.

LOCAL POWER UTILITY COMPANY WILL INSTALL SERVICE CABLE FROM THEIR POWER SOURCE TO THE JUNCTION BOX AND MAKE REQUIRED SPLICES TO THE SERVICE CABLE COILED IN THE JUNCTION BOX

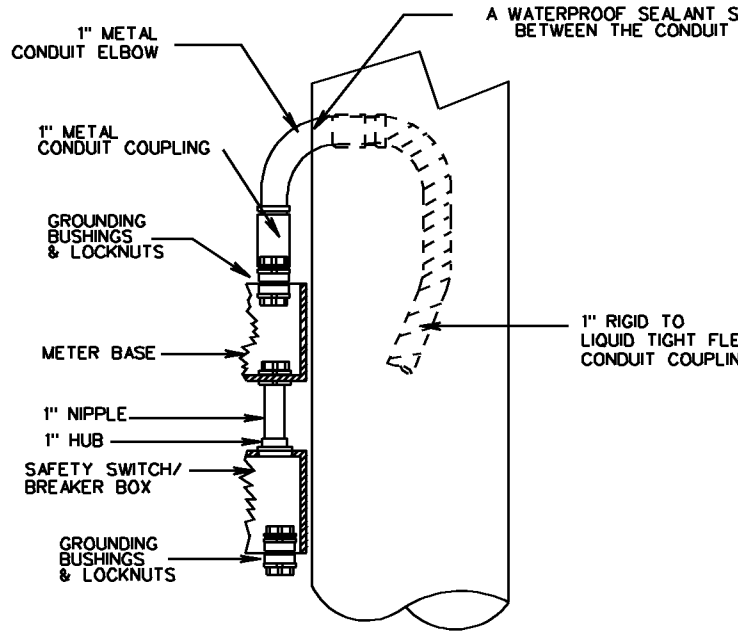
POLE HEIGHT AND SIZE WILL BE AS SPECIFIED ON THE PLANS.

THIS STANDARD IS APPLICABLE FOR ALL ELECTRICAL SERVICES OTHER THAN 480Y/277.

REFER TO STANDARD MP-2 FOR GROUNDING LUG DETAIL.



TYPE A (OVERHEAD SERVICE) METAL POLE



DETAIL FOR CONNECTION OF CONDUIT TO METER BASE

NOTES:

NO OTHER CONDUCTORS SHALL BE RUN IN THE SAME CONDUIT WITH ELECTRICAL SERVICE CABLE.

LOCAL POWER UTILITY COMPANY WILL INSTALL SERVICE CABLE FROM THEIR POWER SOURCE TO THE JUNCTION BOX AND MAKE REQUIRED SPLICES TO THE SERVICE CABLE COILED IN THE JUNCTION BOX.

EMPTY CONDUITS SHALL BE PLUGGED TO PREVENT MOISTURE AND RODENT ENTRY.

CONCRETE PAD SHALL BE INSTALLED IN FRONT OF CABINET DOORS, SIZED TO MATCH THE FOUNDATION WIDTH, AND SLOPED TO DRAIN. (MIN. 20" W BY 36" L, 4" DEPTH)

GROUNDING BUSHINGS SHALL BE INSTALLED ON EACH END OF METAL CONDUITS.

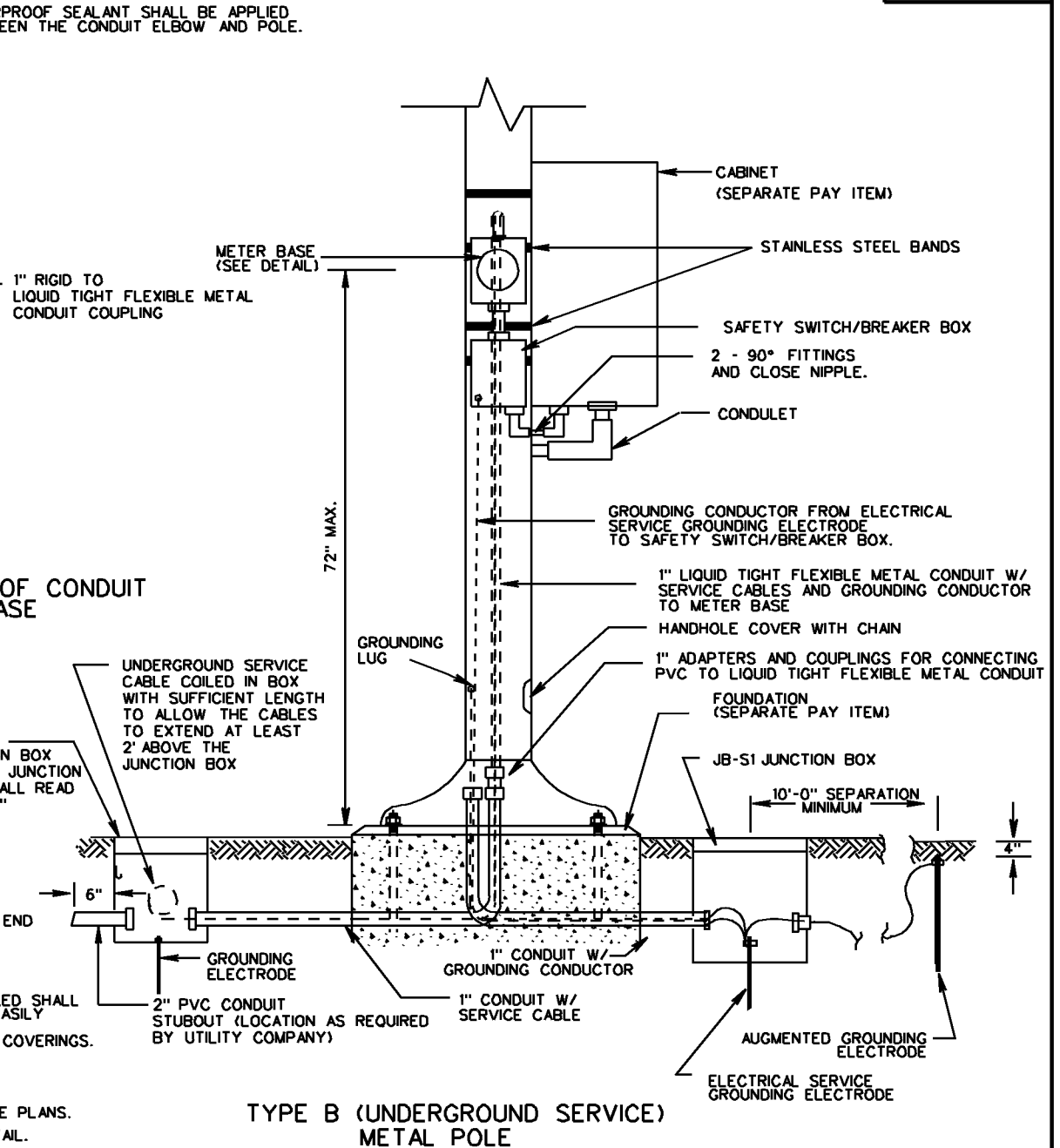
BELL ENDS SHALL BE INSTALLED ON EACH END OF PVC CONDUITS.

OPEN ENDS OF CONDUITS WITH CONDUCTORS INSTALLED SHALL BE SEALED WITH AN APPROVED SOFT, PLIABLE, AND EASILY REMOVABLE WATERPROOF SEALANT. THE SEALANT SHALL NOT HAVE A DELETERIOUS EFFECT ON CABLE COVERINGS.

THIS STANDARD IS APPLICABLE FOR ALL ELECTRICAL SERVICES OTHER THAN 480Y/277.

POLE HEIGHT AND SIZE WILL BE AS SPECIFIED ON THE PLANS.

REFER TO STANDARD MP-2 FOR GROUNDING LUG DETAIL.



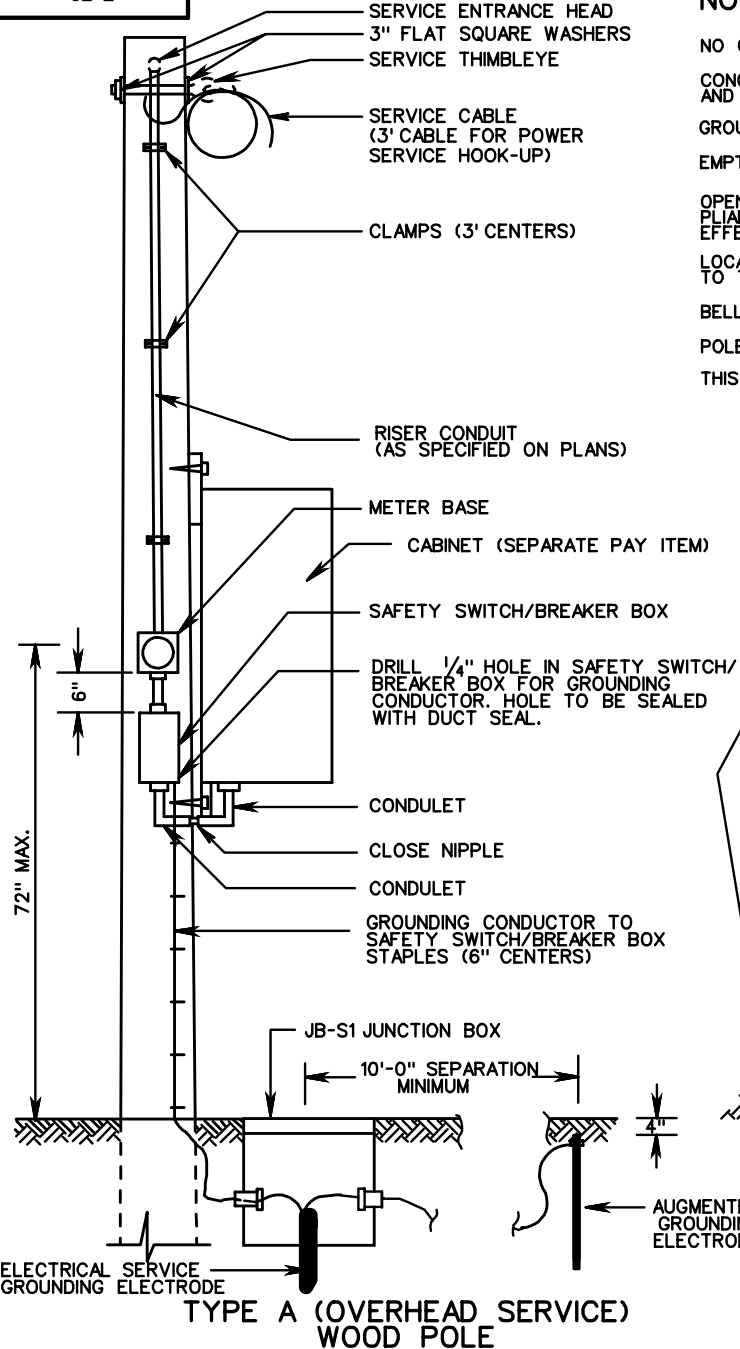
TYPE B (UNDERGROUND SERVICE) METAL POLE

SPECIFICATION REFERENCE
700

**ELECTRICAL SERVICE
INSTALLATION DETAILS**
VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT	
ROAD AND BRIDGE STANDARDS	
REVISION DATE	SHEET 2 OF 2
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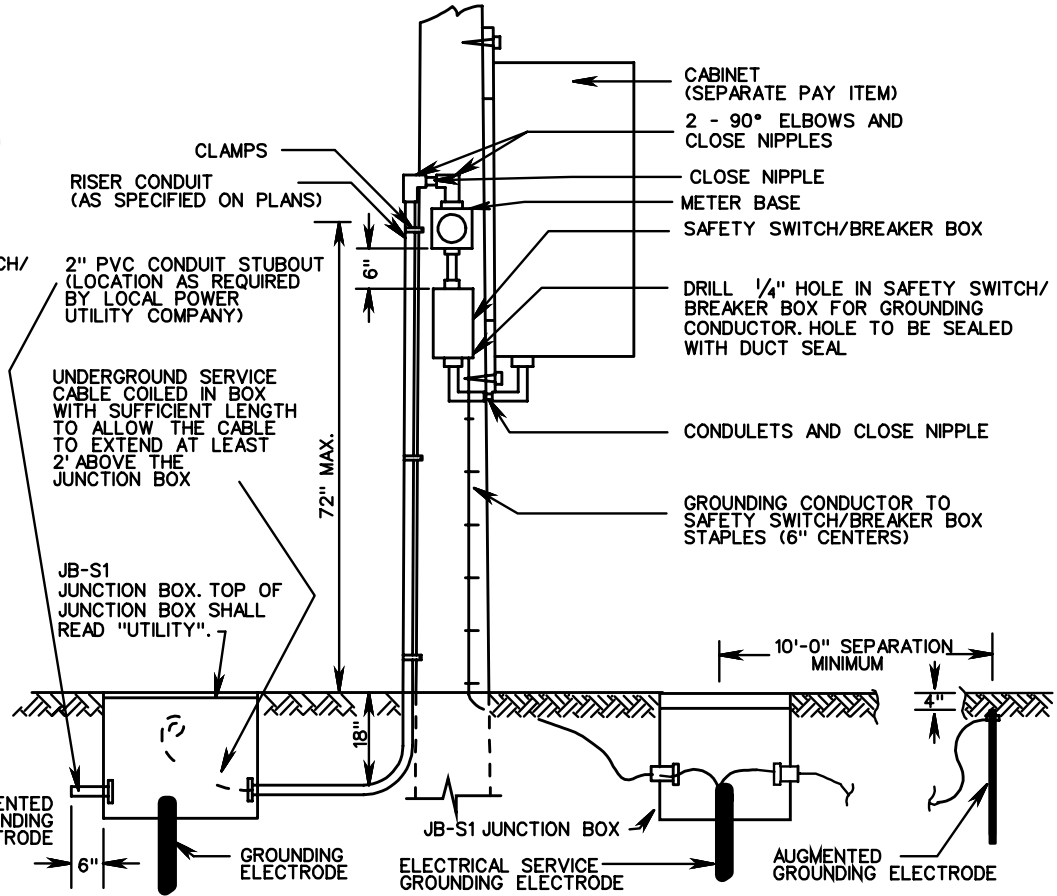
SE-2



TYPE A (OVERHEAD SERVICE)
WOOD POLE

NOTES:

- NO OTHER CONDUCTORS SHALL BE RUN IN THE SAME CONDUIT WITH ELECTRICAL SERVICE CABLE.
- CONCRETE PAD SHALL BE INSTALLED IN FRONT OF CABINET DOORS, SIZED TO MATCH THE FOUNDATION WIDTH, AND SLOPED TO DRAIN (MIN. 20" W BY 36" L, 4" DEPTH)
- GROUNDING BUSHINGS SHALL BE INSTALLED ON EACH END OF METAL CONDUITS.
- EMPTY CONDUITS SHALL BE PLUGGED TO PREVENT MOISTURE AND RODENT ENTRY.
- OPEN ENDS OF CONDUITS WITH CONDUCTORS INSTALLED SHALL BE SEALED WITH AN APPROVED SOFT, PLIABLE, AND EASILY REMOVABLE WATERPROOF SEALANT. THE SEALANT SHALL NOT HAVE A DELETERIOUS EFFECT ON CABLE COVERINGS.
- LOCAL POWER UTILITY COMPANY WILL INSTALL SERVICE POWER UTILITY CABLE FROM THEIR POWER SOURCE TO THE JUNCTION BOX AND MAKE REQUIRED SPLICES TO THE SERVICE CABLE COILED IN THE JUNCTION BOX.
- BELL ENDS SHALL BE INSTALLED ON EACH END OF PVC CONDUITS.
- POLE HEIGHT AND SIZE WILL BE AS SPECIFIED ON THE PLANS.
- THIS STANDARD IS APPLICABLE FOR ALL ELECTRICAL SERVICES OTHER THAN 480Y/277.



TYPE B (UNDERGROUND SERVICE)
WOOD POLE



ROAD AND BRIDGE STANDARDS

SHEET 1 OF 1

REVISION DATE

1312.20

**ELECTRICAL SERVICE
INSTALLATION DETAILS**

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION
REFERENCE

700

NOTES:

NO OTHER CONDUCTORS SHALL BE RUN IN THE SAME CONDUIT WITH ELECTRICAL SERVICE CABLE.

CONCRETE PAD SHALL BE INSTALLED IN FRONT OF CABINET DOORS, SIZED TO MATCH THE FOUNDATION WIDTH, AND SLOPED TO DRAIN (MIN. 20" W BY 36" L, 4" DEPTH)

GROUNDING BUSHINGS SHALL BE INSTALLED ON EACH END OF METAL CONDUITS. EMPTY CONDUITS SHALL BE PLUGGED TO PREVENT MOISTURE AND RODENT ENTRY.

OPEN ENDS OF CONDUITS WITH CONDUCTORS INSTALLED SHALL BE SEALED WITH AN APPROVED SOFT, PLIABLE, AND EASILY REMOVABLE WATERPROOF SEALANT. THE SEALANT SHALL NOT HAVE A DELETERIOUS EFFECT ON CABLE COVERINGS.

LOCAL POWER UTILITY COMPANY WILL INSTALL SERVICE POWER UTILITY CABLE FROM THEIR POWER SOURCE TO THE JUNCTION BOX AND MAKE REQUIRED SPLICES TO THE SERVICE CABLE COILED IN THE JUNCTION BOX.

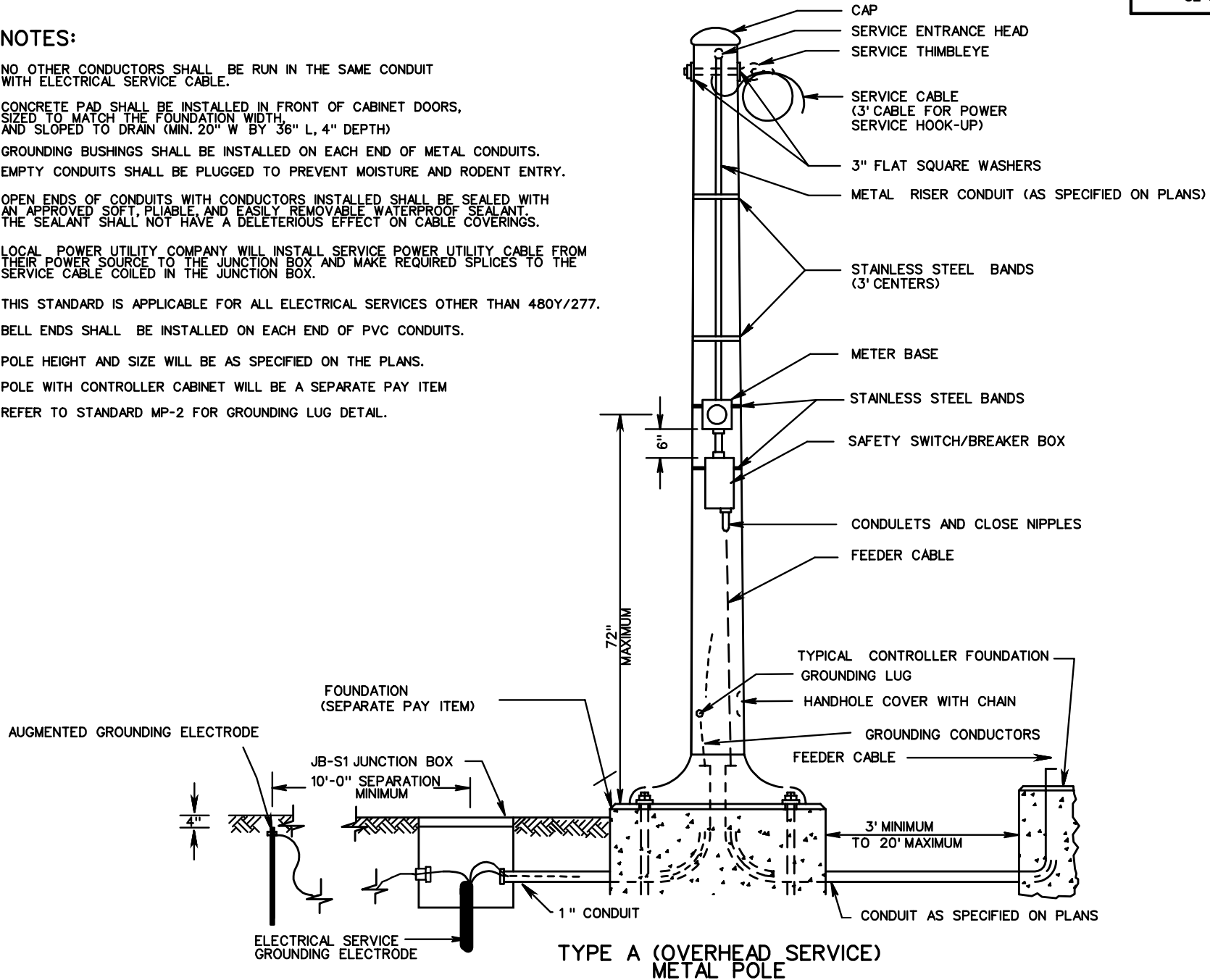
THIS STANDARD IS APPLICABLE FOR ALL ELECTRICAL SERVICES OTHER THAN 480Y/277.

BELL ENDS SHALL BE INSTALLED ON EACH END OF PVC CONDUITS.

POLE HEIGHT AND SIZE WILL BE AS SPECIFIED ON THE PLANS.

POLE WITH CONTROLLER CABINET WILL BE A SEPARATE PAY ITEM

REFER TO STANDARD MP-2 FOR GROUNDING LUG DETAIL.



TYPE A (OVERHEAD SERVICE) METAL POLE

SPECIFICATION REFERENCE
700

**ELECTRICAL SERVICE
INSTALLATION DETAILS**
VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT ROAD AND BRIDGE STANDARDS	
REVISION DATE	SHEET 1 OF 2
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NOTES:

LOCAL POWER UTILITY POWER COMPANY WILL INSTALL SERVICE CABLE FROM THEIR POWER SOURCE TO THE JUNCTION BOX AND MAKE REQUIRED SPLICES TO THE SERVICE CABLE COILED IN THE JUNCTION BOX.

NO OTHER CONDUCTORS SHALL BE RUN IN THE SAME CONDUIT WITH ELECTRICAL SERVICE CABLE.

CONCRETE PAD SHALL BE INSTALLED IN FRONT OF CABINET DOORS, SIZED TO MATCH THE FOUNDATION WIDTH, AND SLOPED TO DRAIN (MIN. 20" W BY 36" L, 4" DEPTH)

GROUNDING BUSHINGS SHALL BE INSTALLED ON EACH END OF METAL CONDUITS.

EMPTY CONDUITS SHALL BE PLUGGED TO PREVENT MOISTURE AND RODENT ENTRY.

OPEN ENDS OF CONDUITS WITH CONDUCTORS INSTALLED SHALL BE SEALED WITH AN APPROVED SOFT, PLIABLE, AND EASILY REMOVABLE WATERPROOF SEALANT. THE SEALANT SHALL NOT HAVE A DELETERIOUS EFFECT ON CABLE COVERINGS.

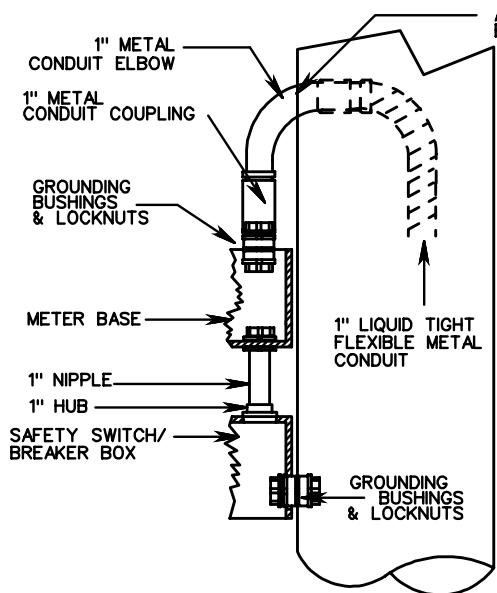
LOCAL POWER UTILITY COMPANY WILL INSTALL SERVICE POWER UTILITY CABLE FROM THEIR POWER SOURCE TO THE JUNCTION BOX AND MAKE REQUIRED SPLICES TO THE SERVICE CABLE COILED IN THE JUNCTION BOX.

BELL ENDS SHALL BE INSTALLED ON EACH END OF PVC CONDUITS.

THIS STANDARD IS APPLICABLE FOR ALL ELECTRICAL SERVICES OTHER THAN 480Y/277.

POLE HEIGHT AND SIZE WILL BE AS SPECIFIED ON THE PLANS.

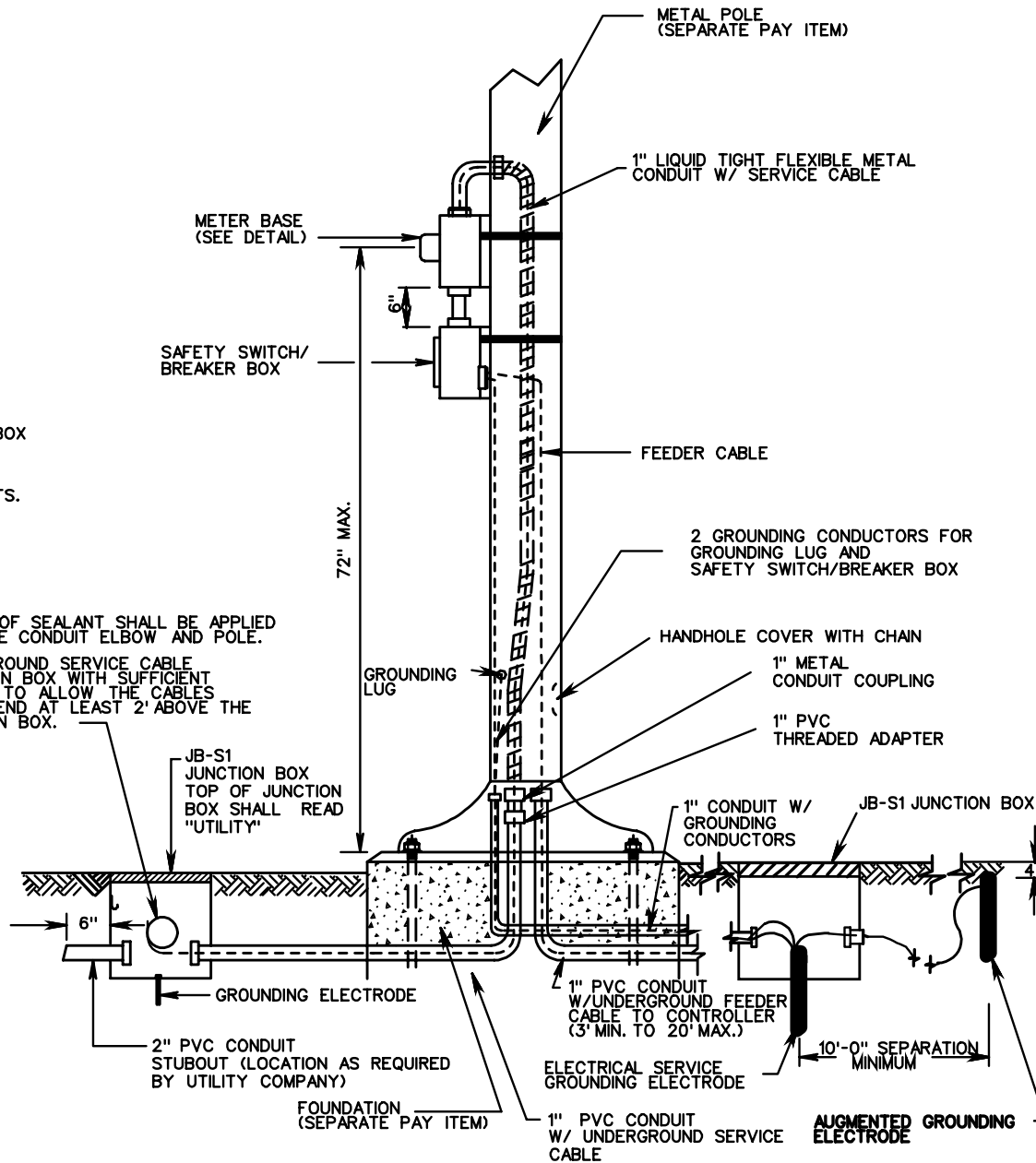
REFER TO STANDARD MP-2 FOR GROUNDING LUG DETAIL.



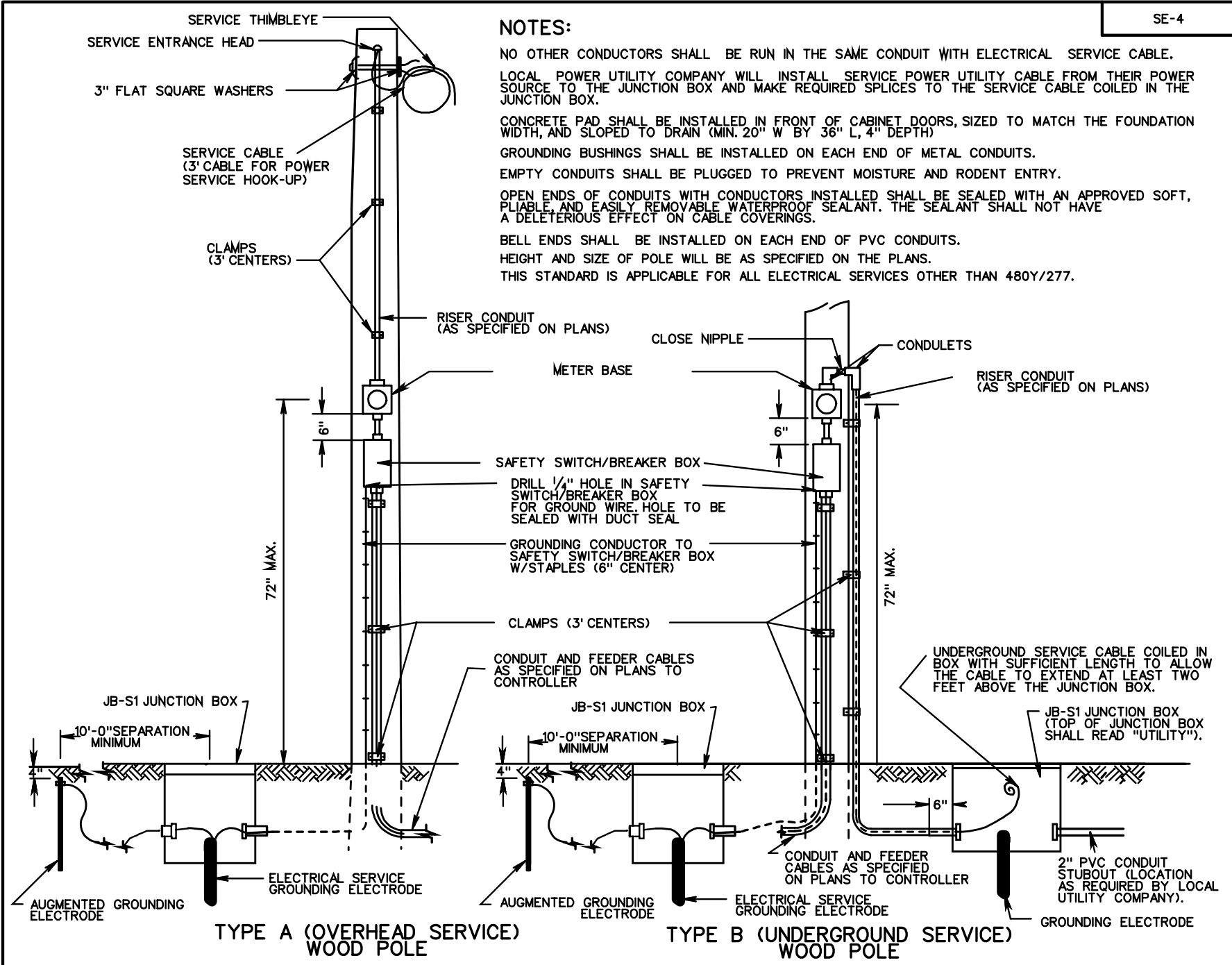
DETAIL FOR CONNECTION OF CONDUIT TO METER BASE

A WATERPROOF SEALANT SHALL BE APPLIED BETWEEN THE CONDUIT ELBOW AND POLE.

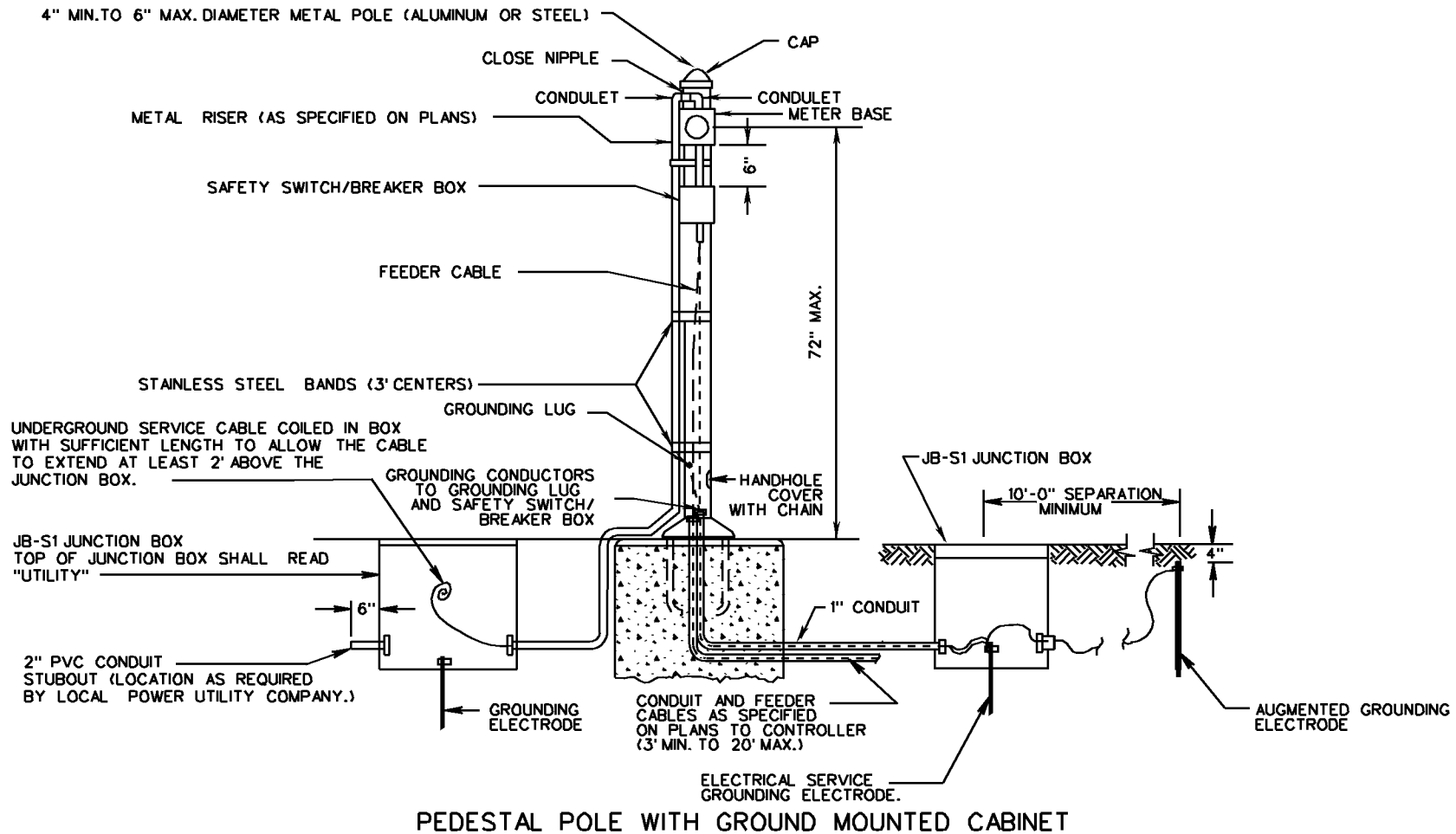
UNDERGROUND SERVICE CABLE COILED IN BOX WITH SUFFICIENT LENGTH TO ALLOW THE CABLES TO EXTEND AT LEAST 2' ABOVE THE JUNCTION BOX.



TYPE B (UNDERGROUND SERVICE) METAL POLE



SPECIFICATION REFERENCE	700	<h2>ELECTRICAL SERVICE</h2> <h3>INSTALLATION DETAILS</h3> <p>VIRGINIA DEPARTMENT OF TRANSPORTATION</p>	<p>ROAD AND BRIDGE STANDARDS</p>	
			REVISION DATE	SHEET 1 OF 1
		1312.40		



NOTES:

NO OTHER CONDUCTORS SHALL BE RUN IN THE SAME CONDUIT WITH ELECTRICAL SERVICE CABLE.

LOCAL POWER UTILITY COMPANY WILL INSTALL SERVICE POWER UTILITY CABLE FROM THEIR POWER SOURCE TO THE JUNCTION BOX AND MAKE REQUIRED SPLICES TO THE SERVICE CABLE COILED IN THE JUNCTION BOX.

FOUNDATION SHALL BE CLASS A3 CONCRETE, 18" DIAMETER X 18" DEEP, AND COST OF FOUNDATION SHALL BE INCLUDED WITH THE PAY ITEM FOR ELECTRICAL SERVICE.

ANCHOR BOLTS AND BOLT CIRCLE TEMPLATE SHALL BE FURNISHED BY POLE MANUFACTURER.

THIS STANDARD IS APPLICABLE FOR ALL ELECTRICAL SERVICES OTHER THAN 480Y/277.

GROUNDING BUSHINGS SHALL BE INSTALLED ON EACH END OF METAL CONDUITS.

EMPTY CONDUITS SHALL BE PLUGGED TO PREVENT MOISTURE AND RODENT ENTRY.

OPEN ENDS OF CONDUITS WITH CONDUCTORS INSTALLED SHALL BE SEALED WITH AN APPROVED SOFT, PLIABLE, AND EASILY REMOVABLE WATERPROOF SEALANT. THE SEALANT SHALL NOT HAVE A DELETERIOUS EFFECT ON CABLE COVERINGS.

BELL ENDS SHALL BE INSTALLED ON EACH END OF PVC CONDUITS.

STAINLESS STEEL BANDS REQUIRED FOR METER BASE AND SAFETY SWITCH/BREAKER BOX

REFER TO STANDARD MP-2 FOR GROUNDING LUG DETAILS.

VDOT

ROAD AND BRIDGE STANDARDS

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1312.50

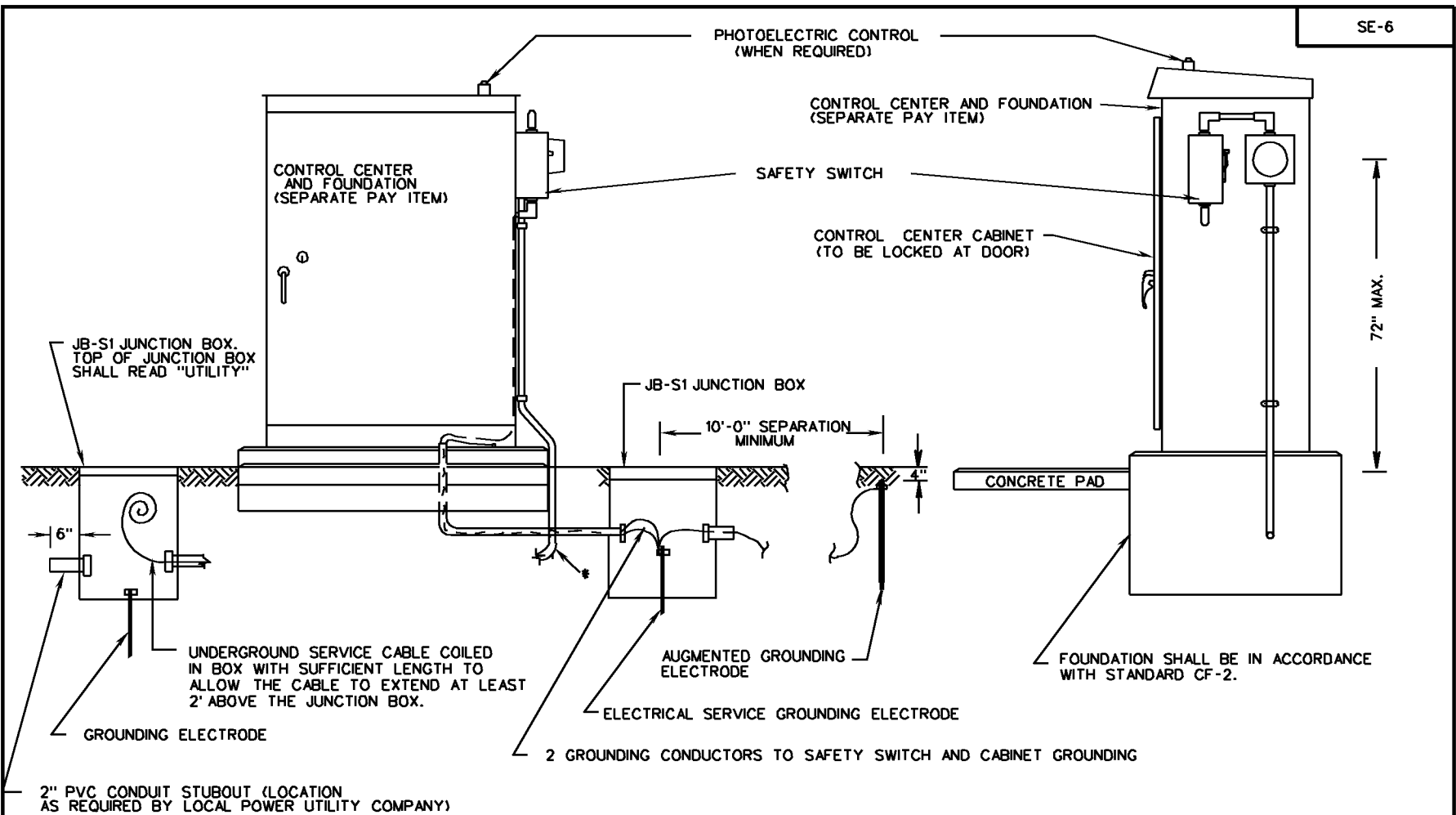
06-15-2009

ELECTRICAL SERVICE
INSTALLATION DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION
REFERENCE

700



NOTES:

- * THE CONDUIT AND SERVICE CABLE SHALL EXTEND FROM THE CABINET TO THE UTILITY JUNCTION BOX.
- THE CONTROL CENTER CABINET AT THE INSIDE AND OUTSIDE FOUNDATION JOINTS SHALL BE SEALED WITH A SILICONE SEALANT
- OPEN ENDS OF CONDUITS WITH CONDUCTORS INSTALLED SHALL BE SEALED WITH AN APPROVED SOFT, PLIABLE, AND EASILY REMOVABLE WATERPROOF SEALANT. THE SEALANT SHALL NOT HAVE A DELETERIOUS EFFECT ON CABLE COVERINGS.
- GROUNDING BUSHINGS SHALL BE INSTALLED ON EACH END OF METAL CONDUITS.
- CONCRETE PAD SHALL BE INSTALLED IN FRONT OF CABINET DOORS, SIZED TO MATCH THE FOUNDATION WIDTH, AND SLOPED TO DRAIN (MIN. 20" W BY 36" L, 4" DEPTH)

- EMPTY CONDUITS SHALL BE PLUGGED TO PREVENT MOISTURE AND RODENT ENTRY.
- WHEN 200 AMP OR GREATER SERVICE IS REQUIRED, SERVICE SHALL ENTER METER BASE ACCORDING TO UTILITY COMPANY STANDARD.
- NO OTHER CONDUCTORS SHALL BE RUN IN THE SAME CONDUIT WITH ELECTRICAL SERVICE CABLE.
- LOCAL POWER UTILITY COMPANY WILL INSTALL SERVICE POWER UTILITY CABLE FROM THEIR POWER SOURCE TO THE JUNCTION BOX AND MAKE REQUIRED SPLICES TO THE SERVICE CABLE COILED IN THE JUNCTION BOX.
- THIS STANDARD IS APPLICABLE FOR ALL ELECTRICAL SERVICES OTHER THAN 480Y/277.
- BELL ENDS SHALL BE INSTALLED ON EACH END OF PVC CONDUITS.

SPECIFICATION REFERENCE
700

**ELECTRICAL SERVICE
INSTALLATION DETAILS**
VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT ROAD AND BRIDGE STANDARDS	
REVISION DATE	SHEET 1 OF 1
06-15-2009	1312.60

NOTES:

THIS STANDARD IS APPLICABLE FOR ALL ELECTRICAL SERVICES OTHER THAN 480Y/277.

NO OTHER CONDUCTORS SHALL BE RUN IN THE SAME CONDUIT WITH ELECTRICAL SERVICE CABLE.

WHEN 200 AMP OR GREATER SERVICE IS REQUIRED, SERVICE SHALL ENTER METER BASE ACCORDING TO UTILITY COMPANY STANDARD.

LOCAL POWER UTILITY COMPANY WILL INSTALL SERVICE POWER UTILITY CABLE FROM THEIR POWER SOURCE TO THE JUNCTION BOX AND MAKE REQUIRED SPLICES TO THE SERVICE CABLE COILED IN THE JUNCTION BOX.

OPEN ENDS OF CONDUITS WITH CONDUCTORS INSTALLED SHALL BE SEALED WITH AN APPROVED SOFT, PLIABLE, AND EASILY REMOVABLE WATERPROOF SEALANT. THE SEALANT SHALL NOT HAVE A DELETERIOUS EFFECT ON CABLE COVERINGS.

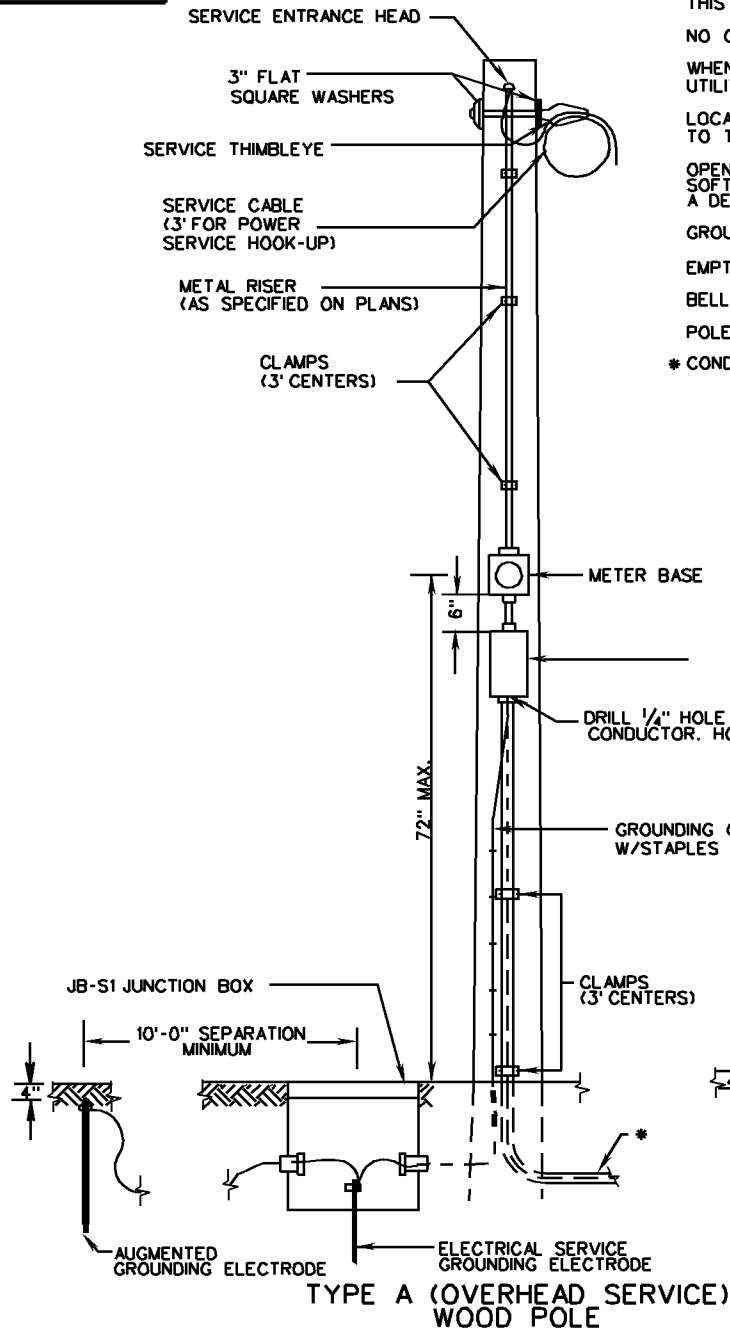
GROUNDING BUSHINGS SHALL BE INSTALLED ON EACH END OF METAL CONDUITS.

EMPTY CONDUITS SHALL BE PLUGGED TO PREVENT MOISTURE AND RODENT ENTRY.

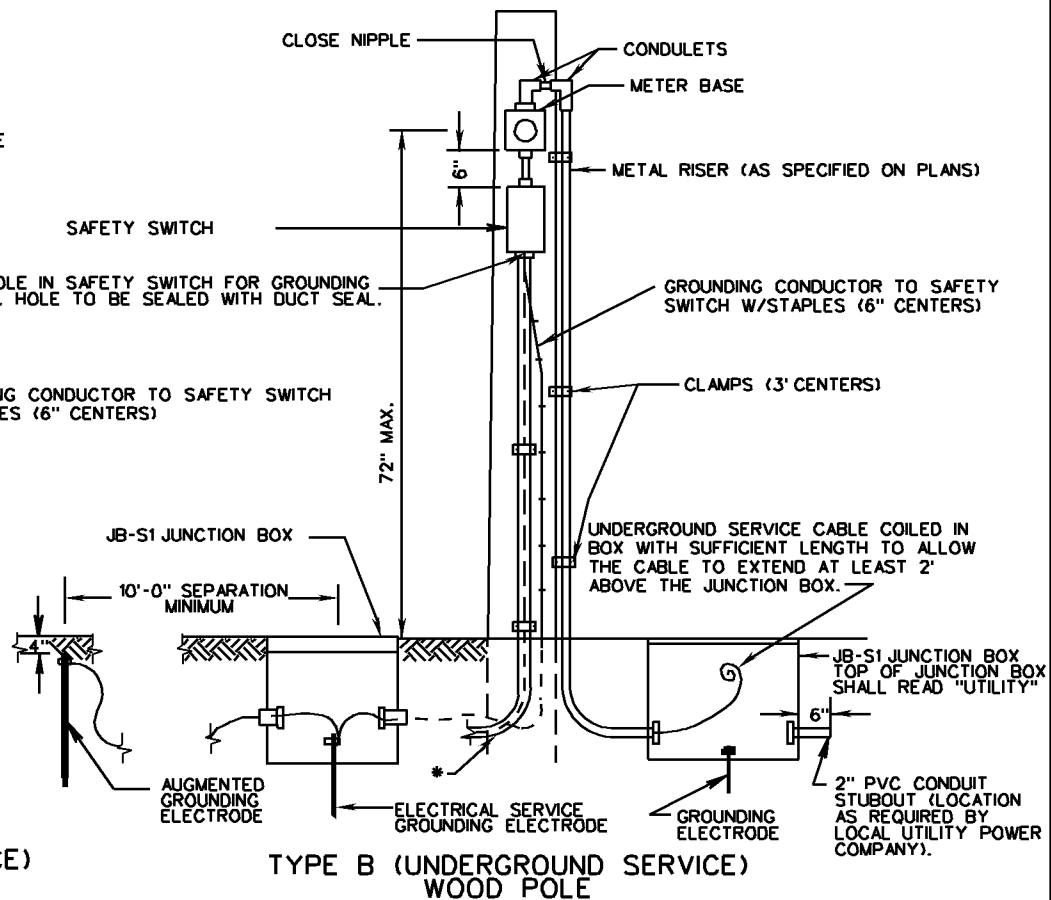
BELL ENDS SHALL BE INSTALLED ON EACH END OF PVC CONDUITS.

POLE HEIGHT AND SIZE WILL BE AS SPECIFIED ON THE PLANS.

* CONDUCTOR CABLES AND CONDUIT AS SPECIFIED ON PLANS.



**TYPE A (OVERHEAD SERVICE)
WOOD POLE**



**TYPE B (UNDERGROUND SERVICE)
WOOD POLE**



ROAD AND BRIDGE STANDARDS

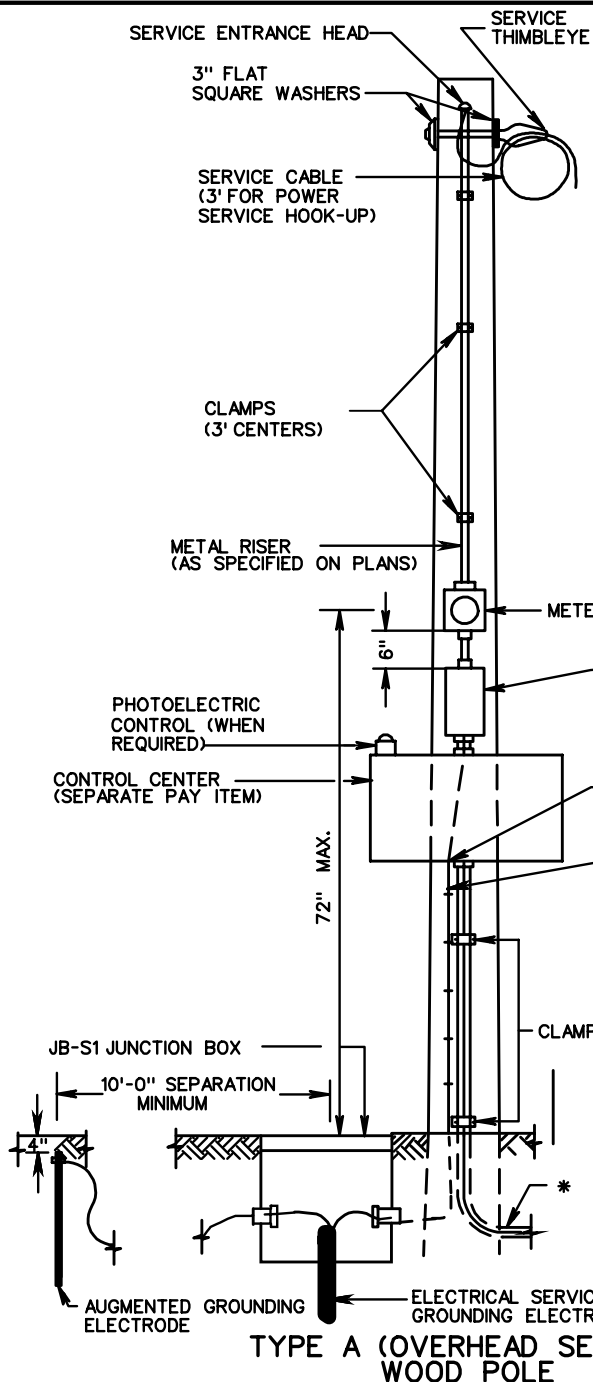
SHEET 1 OF 1 REVISION DATE
1312.70 06-15-2009

**ELECTRICAL SERVICE
INSTALLATION DETAILS**

VIRGINIA DEPARTMENT OF TRANSPORTATION

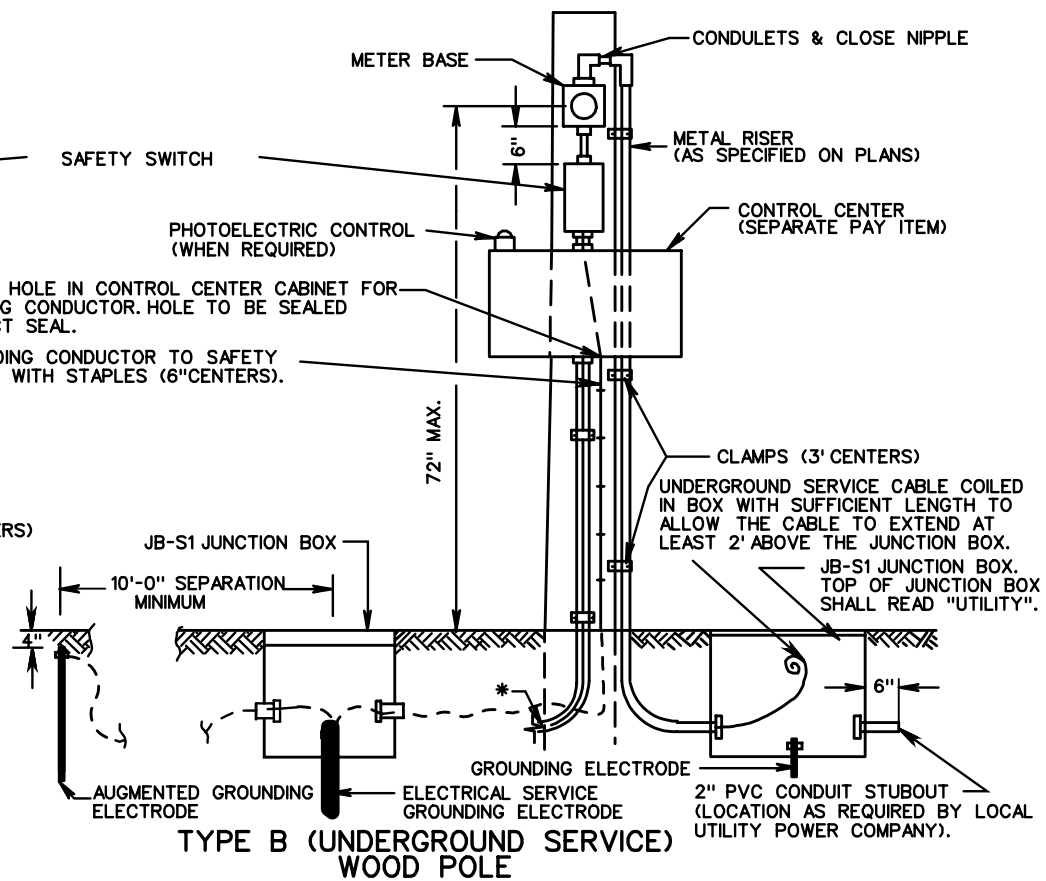
SPECIFICATION
REFERENCE

700



NOTES:

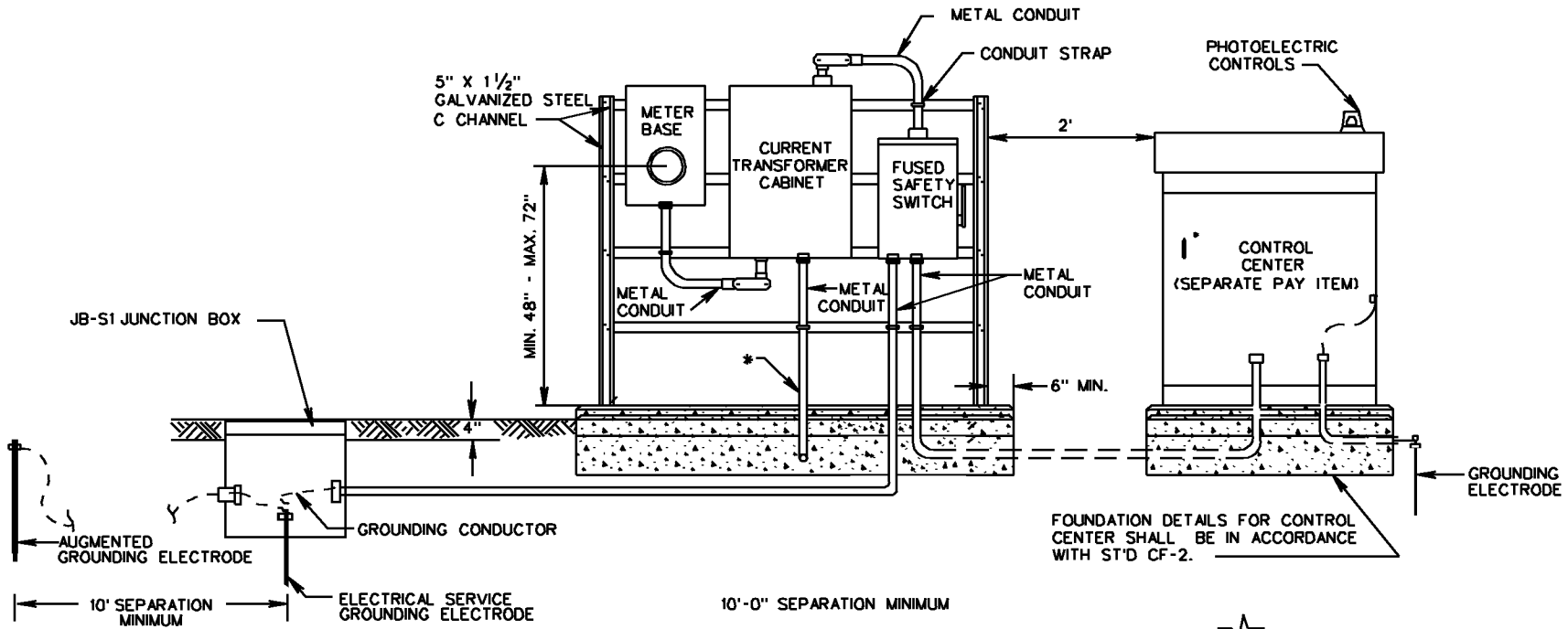
POLE HEIGHT AND SIZE WILL BE AS SPECIFIED IN THE PLANS.
 THIS STANDARD IS APPLICABLE FOR ALL ELECTRICAL SERVICES OTHER THAN 480Y/277.
 NO OTHER CONDUCTORS SHALL BE RUN IN THE SAME CONDUIT WITH ELECTRICAL SERVICE CABLE.
 WHEN 200 AMP OR GREATER SERVICE IS REQUIRED, SERVICE SHALL ENTER METER BASE ACCORDING TO UTILITY COMPANY STANDARD.
 LOCAL POWER UTILITY COMPANY WILL INSTALL SERVICE POWER UTILITY CABLE FROM THEIR POWER SOURCE TO THE JUNCTION BOX AND MAKE REQUIRED SPLICES TO THE SERVICE CABLE COILED IN THE JUNCTION BOX.
 OPEN ENDS OF CONDUITS WITH CONDUCTORS INSTALLED SHALL BE SEALED WITH AN APPROVED SOFT, PLIABLE AND EASILY REMOVABLE WATERPROOF SEALANT. THE SEALANT SHALL NOT HAVE A DELETERIOUS EFFECT ON CABLE COVERINGS.
 GROUNDING BUSHINGS SHALL BE INSTALLED ON EACH END OF METAL CONDUITS.
 EMPTY CONDUITS SHALL BE PLUGGED TO PREVENT MOISTURE AND RODENT ENTRY.
 CONCRETE PAD SHALL BE INSTALLED IN FRONT OF CABINET DOORS, SIZED TO MATCH THE FOUNDATION WIDTH, AND SLOPED TO DRAIN (MIN. 20" W BY 36" L, 4" DEPTH)
 BELL ENDS SHALL BE INSTALLED ON EACH END OF PVC CONDUITS.
 * THE CONDUIT AND CONDUCTOR CABLE SHALL BE AS SPECIFIED ON THE PLANS.



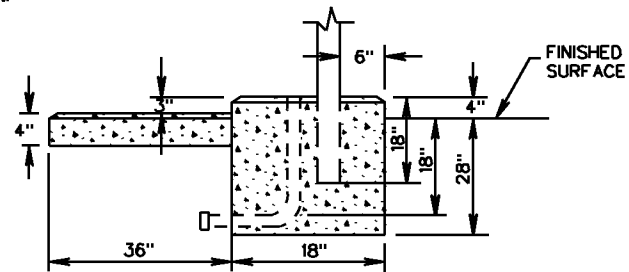
SPECIFICATION REFERENCE
700

**ELECTRICAL SERVICE
 INSTALLATION DETAILS**
 VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT	
ROAD AND BRIDGE STANDARDS	
REVISION DATE	SHEET 1 OF 1
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TYPE A



SERVICE ENTRANCE FOUNDATION DETAIL

NOTES:

THIS STANDARD IS APPLICABLE FOR 480Y/277 ELECTRICAL SERVICE ONLY.

NO OTHER CONDUCTORS SHALL BE RUN IN THE SAME CONDUIT WITH ELECTRICAL SERVICE CABLE.

ALL EXPOSED CONCRETE EDGES SHALL BE CHAMFERED 3/4".

GROUNDING BUSHINGS SHALL BE INSTALLED ON EACH END OF METAL CONDUITS.

EMPTY CONDUITS SHALL BE PLUGGED TO PREVENT MOISTURE AND RODENT ENTRY.

BELL ENDS SHALL BE INSTALLED ON THE ENDS OF PVC CONDUITS.

LOCAL POWER COMPANY WILL INSTALL SERVICE CABLE FROM THEIR POWER SOURCE TO THE CURRENT TRANSFORMER CABINET AND METER BASE.

OPEN ENDS OF CONDUITS WITH CONDUCTORS INSTALLED SHALL BE SEALED WITH AN APPROVED SOFT, PLIABLE, AND EASILY REMOVABLE WATERPROOF SEALANT. THE SEALANT SHALL NOT HAVE A DELETERIOUS EFFECT ON CABLE COVERINGS.

SAFETY SWITCH, METER BASE, WIREWAY, CURRENT TRANSFORMER CABINET AND CONTROL CENTER SHALL BE ATTACHED TO THE CHANNELING WITH 3/8" GALVANIZED BOLTS, LOCK WASHERS AND NUTS. FOUR CROSS CHANNELS SHALL BE UTILIZED.

EACH FOUNDATION SHALL BE PERMANENTLY MARKED TO INDICATE ALL SIDES FROM WHICH CONDUITS PASS. THIS MARK SHALL BE MADE WITH A TROWEL WHEN FINISHING THE CONCRETE AND SHALL BE 1/4" DEEP AND 4" TO 6" LONG.

THE CONTRACTOR SHALL LEAVE A SUFFICIENT AMOUNT OF CONDUCTOR CABLE COILED INSIDE THE CURRENT TRANSFORMER CABINET TO PERMIT THE LOCAL POWER COMPANY TO MAKE THEIR CONNECTION.

CONCRETE PAD SHALL BE INSTALLED IN FRONT OF CABINET DOORS, SIZED TO MATCH THE FOUNDATION WIDTH, AND SLOPED TO DRAIN (MIN. 20" X 36")

* CONDUIT SHALL BE STUBBED OUT 6" PAST CONCRETE FOUNDATION PAD. LOCATION OF THE STUBBED CONDUIT SHALL BE AS REQUIRED BY THE LOCAL POWER COMPANY.



ROAD AND BRIDGE STANDARDS

SHEET 1 OF 2

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1312.90

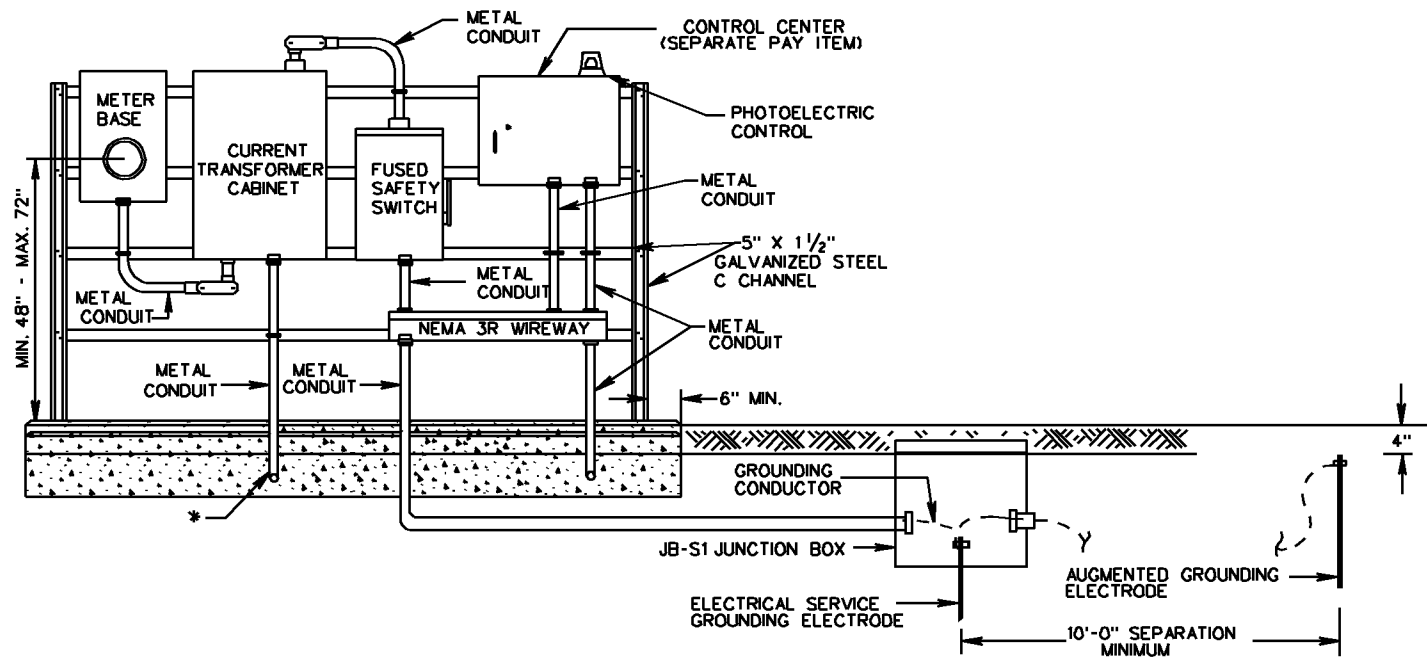
06-15-2009

**ELECTRICAL SERVICE
INSTALLATION DETAILS**

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION
REFERENCE

700



TYPE B

NOTES:

THIS STANDARD IS APPLICABLE FOR 480Y/277 ELECTRICAL SERVICE ONLY.

NO OTHER CONDUCTORS SHALL BE RUN IN THE SAME CONDUIT WITH ELECTRICAL SERVICE CABLE.

ALL EXPOSED CONCRETE EDGES SHALL BE CHAMFERED $\frac{3}{4}$ ".

GROUNDING BUSHINGS SHALL BE INSTALLED ON EACH END OF METAL CONDUITS.

EMPTY CONDUITS SHALL BE PLUGGED TO PREVENT MOISTURE AND RODENT ENTRY.

BELL ENDS SHALL BE INSTALLED ON THE ENDS OF PVC CONDUITS.

LOCAL POWER COMPANY WILL INSTALL SERVICE CABLE FROM THEIR POWER SOURCE TO THE CURRENT TRANSFORMER CABINET AND METER BASE.

OPEN ENDS OF CONDUITS WITH CONDUCTORS INSTALLED SHALL BE SEALED WITH AN APPROVED SOFT, PLIABLE, AND EASILY REMOVABLE WATERPROOF SEALANT. THE SEALANT SHALL NOT HAVE A DELETERIOUS EFFECT ON CABLE COVERINGS.

SAFETY SWITCH, METER BASE, WIREWAY, CURRENT TRANSFORMER CABINET AND CONTROL CENTER SHALL BE ATTACHED TO THE CHANNELING WITH $\frac{3}{4}$ " GALVANIZED BOLTS, LOCK WASHERS AND NUTS. FOUR CROSS CHANNELS SHALL BE UTILIZED.

EACH FOUNDATION SHALL BE PERMANENTLY MARKED TO INDICATE ALL SIDES FROM WHICH CONDUITS PASS. THIS MARK SHALL BE MADE WITH A TROWEL WHEN FINISHING THE CONCRETE AND SHALL BE $\frac{1}{4}$ " DEEP AND 4" TO 6" LONG.

THE CONTRACTOR SHALL LEAVE A SUFFICIENT AMOUNT OF CONDUCTOR CABLE COILED INSIDE THE CURRENT TRANSFORMER CABINET TO PERMIT THE LOCAL POWER COMPANY TO MAKE THEIR CONNECTION.

CONCRETE PAD SHALL BE INSTALLED IN FRONT OF CABINET DOORS, SIZED TO MATCH THE FOUNDATION WIDTH, AND SLOPED TO DRAIN (MIN. 20" X36")

* CONDUIT SHALL BE STUBBED OUT 6" PAST CONCRETE FOUNDATION PAD. LOCATION OF THE STUBBED CONDUIT SHALL BE AS REQUIRED BY THE LOCAL POWER COMPANY.

SPECIFICATION
REFERENCE

700

ELECTRICAL SERVICE INSTALLATION DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT

ROAD AND BRIDGE STANDARDS

REVISION DATE

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SHEET 2 OF 2

1312.91

OPEN ENDS OF CONDUITS WITH CONDUCTORS INSTALLED SHALL BE SEALED WITH AN APPROVED SOFT, PLIABLE, AND EASILY REMOVABLE WATERPROOF SEALANT. THE SEALANT SHALL NOT HAVE A DELETERIOUS EFFECT ON CABLE COVERINGS.

* THE CONDUIT AND CONDUCTOR CABLE SHALL BE AS SPECIFIED ON THE PLANS.

THIS STANDARD IS APPLICABLE FOR ALL ELECTRICAL SERVICES OTHER THAN 480Y/277.

NO OTHER CONDUCTORS SHALL BE RUN IN THE SAME CONDUIT WITH ELECTRICAL SERVICE CABLE.

WHEN 200 AMP OR GREATER SERVICE IS REQUIRED, SERVICE SHALL ENTER METER BASE ACCORDING TO UTILITY COMPANY STANDARD.

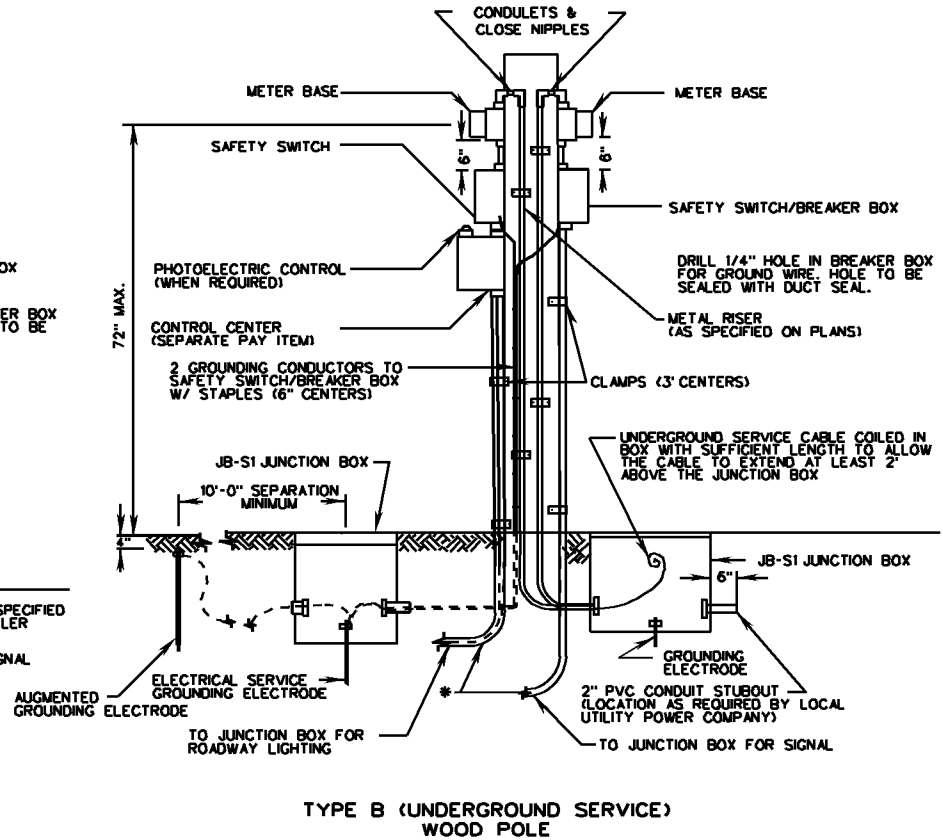
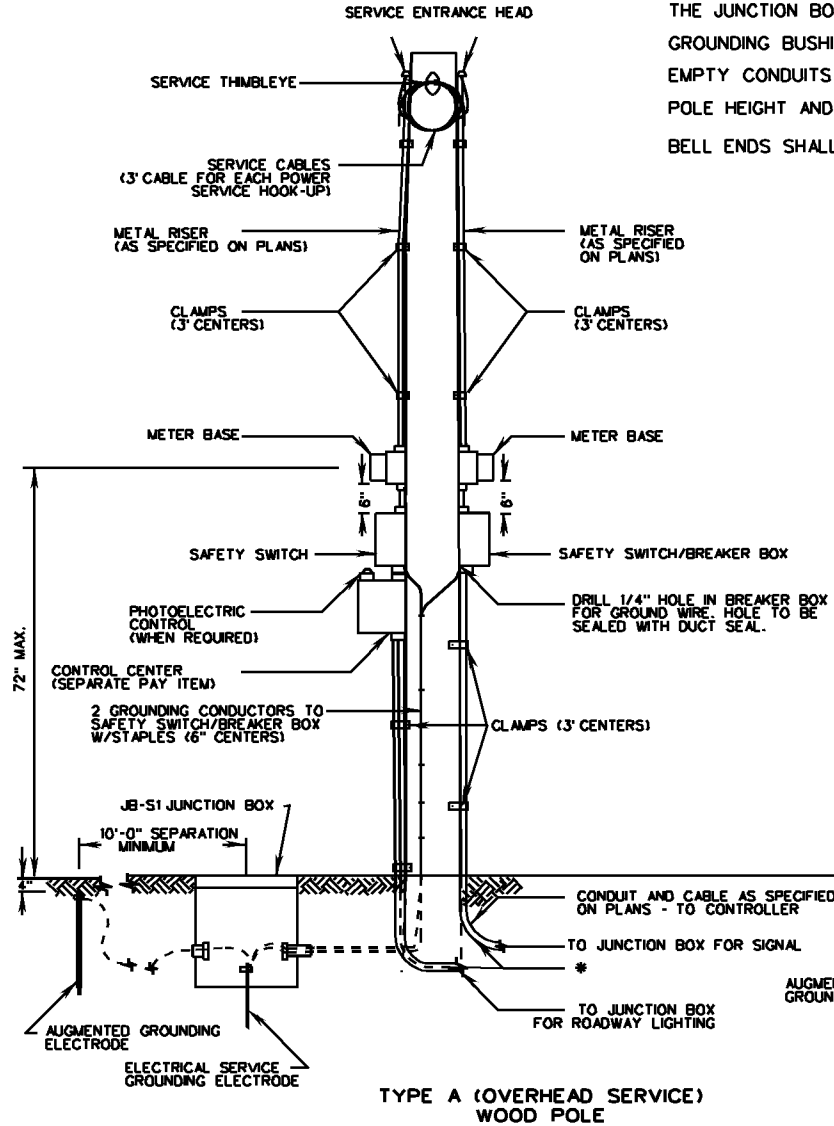
LOCAL POWER UTILITY COMPANY WILL INSTALL SERVICE POWER UTILITY CABLE FROM THEIR POWER SOURCE TO THE JUNCTION BOX AND MAKE REQUIRED SPLICES TO THE SERVICE CABLE COILED IN THE JUNCTION BOX.

GROUNDING BUSHINGS SHALL BE INSTALLED ON EACH END OF METAL CONDUITS.

EMPTY CONDUITS SHALL BE PLUGGED TO PREVENT MOISTURE AND RODENT ENTRY.

POLE HEIGHT AND SIZE WILL BE AS SPECIFIED IN THE PLANS.

BELL ENDS SHALL BE INSTALLED ON EACH END OF PVC CONDUITS.



SPECIFICATION REFERENCE
700

ELECTRICAL SERVICE INSTALLATION DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT	
ROAD AND BRIDGE STANDARDS	
REVISION DATE	SHEET 1 OF 1
06-15-2009	1313.10

NOTES:

POLE HEIGHT AND SIZE WILL BE AS SPECIFIED ON THE PLANS.

NO OTHER CONDUCTORS SHALL BE RUN IN THE SAME CONDUIT WITH ELECTRICAL SERVICE CABLE.

THIS STANDARD IS APPLICABLE FOR ALL ELECTRICAL SERVICES OTHER THAN 480Y/277.

WHEN 200 AMP OR GREATER SERVICE IS REQUIRED, SERVICE SHALL ENTER METER BASE ACCORDING TO UTILITY COMPANY STANDARD.

LOCAL POWER UTILITY COMPANY WILL INSTALL SERVICE POWER UTILITY CABLES FROM THEIR POWER SOURCE TO THE JUNCTION BOX AND MAKE REQUIRED SPLICES TO THE SERVICE CABLES COILED IN THE JUNCTION BOX.

GROUNDING BUSHINGS SHALL BE INSTALLED ON EACH END OF METAL CONDUITS.

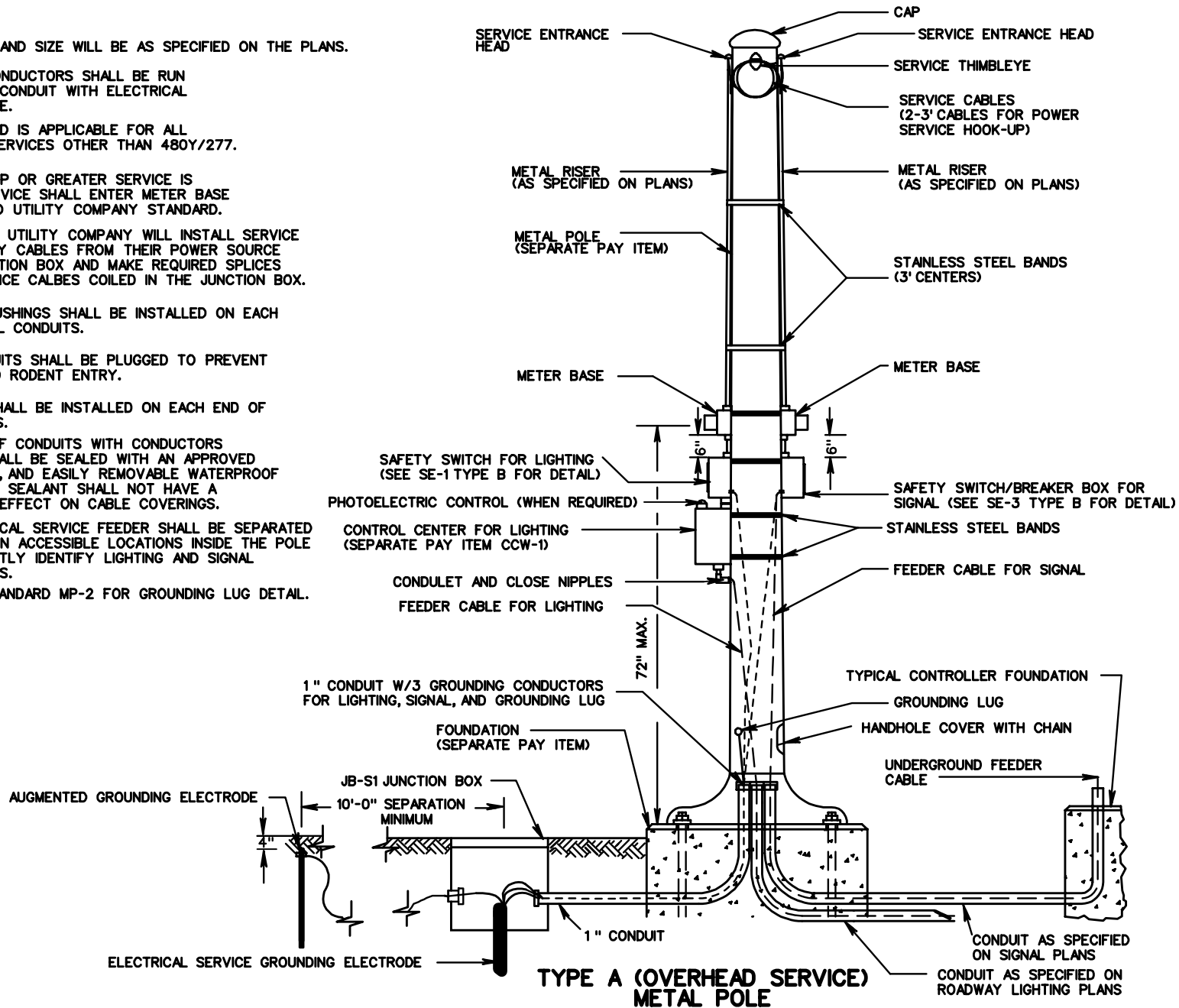
EMPTY CONDUITS SHALL BE PLUGGED TO PREVENT MOISTURE AND RODENT ENTRY.

BELL ENDS SHALL BE INSTALLED ON EACH END OF PVC CONDUITS.

OPEN ENDS OF CONDUITS WITH CONDUCTORS INSTALLED SHALL BE SEALED WITH AN APPROVED SOFT, PLIABLE, AND EASILY REMOVABLE WATERPROOF SEALANT. THE SEALANT SHALL NOT HAVE A DELETERIOUS EFFECT ON CABLE COVERINGS.

EACH ELECTRICAL SERVICE FEEDER SHALL BE SEPARATED AND TAGGED IN ACCESSIBLE LOCATIONS INSIDE THE POLE TO PERMANENTLY IDENTIFY LIGHTING AND SIGNAL POWER CABLES.

REFER TO STANDARD MP-2 FOR GROUNDING LUG DETAIL.



TYPE A (OVERHEAD SERVICE) METAL POLE



ROAD AND BRIDGE STANDARDS

SHEET 1 OF 2

REVISION DATE

1313.20

**ELECTRICAL SERVICE
INSTALLATION DETAILS**

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION
REFERENCE

700

NOTES:

NO OTHER CONDUCTORS SHALL BE RUN IN THE SAME CONDUIT WITH ELECTRICAL SERVICE CABLE.

THIS STANDARD IS APPLICABLE FOR ALL ELECTRICAL SERVICES OTHER THAN 480Y/277.

WHEN 200 AMP OR GREATER SERVICE IS REQUIRED, SERVICE SHALL ENTER METER BASE ACCORDING TO UTILITY COMPANY STANDARD.

LOCAL POWER UTILITY COMPANY WILL INSTALL SERVICE POWER UTILITY CABLES FROM THEIR POWER SOURCE TO THE JUNCTION BOX AND MAKE REQUIRED SPLICES TO THE SERVICE CABLES COILED IN THE JUNCTION BOX.

GROUNDING BUSHINGS SHALL BE INSTALLED ON EACH END OF METAL CONDUITS.

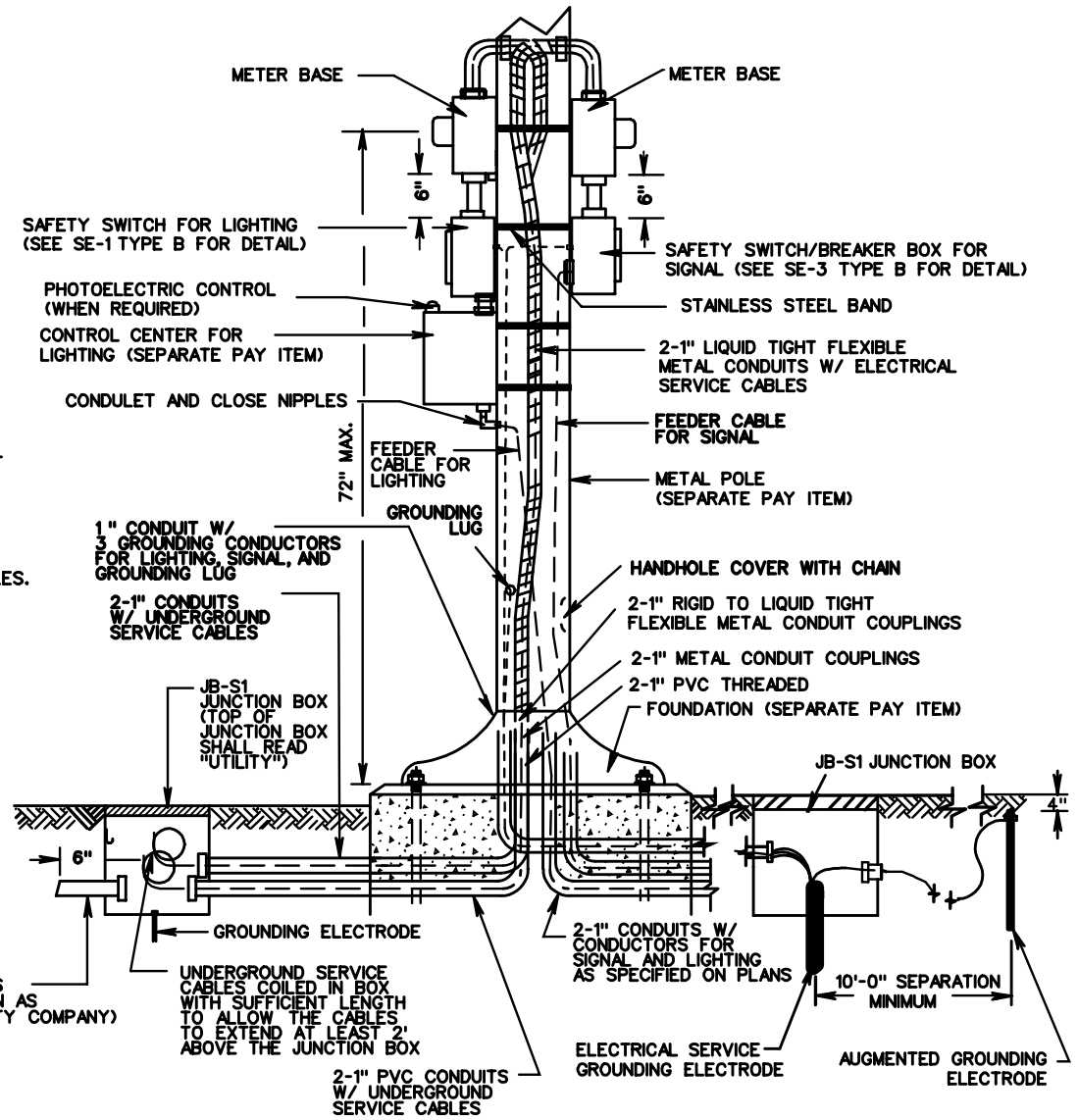
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EACH ELECTRICAL SERVICE FEEDER SHALL BE SEPARATED AND TAGGED IN ACCESSIBLE LOCATIONS INSIDE THE POLE TO PERMANENTLY IDENTIFY LIGHTING AND SIGNAL POWER CABLES.

POLE HEIGHT AND SIZE WILL BE AS SPECIFIED ON THE PLANS. REFER TO STANDARD MP-2 FOR GROUNDING LUG DETAIL.

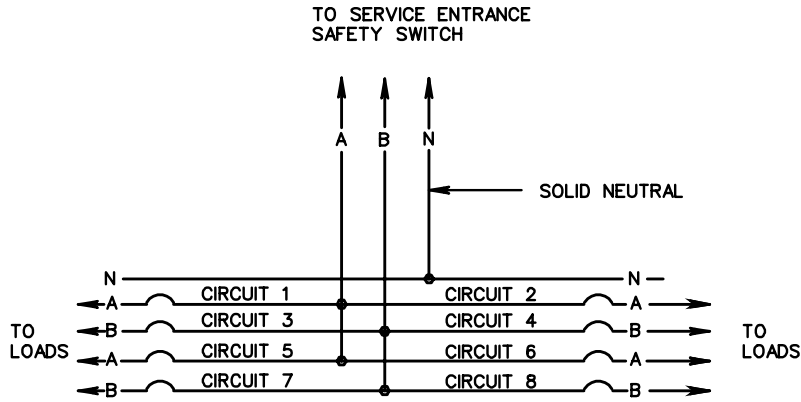


**TYPE B
(UNDERGROUND SERVICE)
METAL POLE**

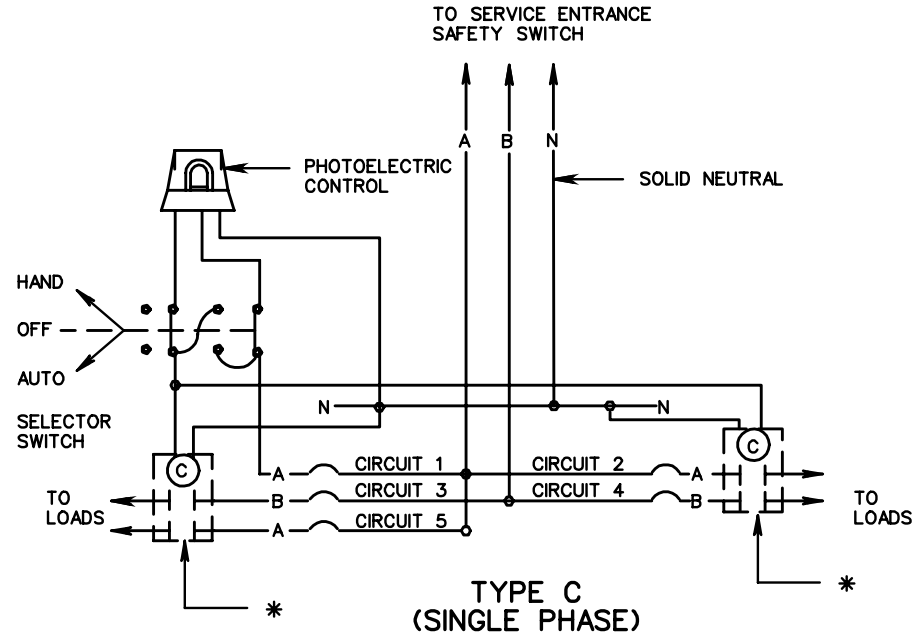
SPECIFICATION REFERENCE
700

**ELECTRICAL SERVICE
INSTALLATION DETAILS**
VIRGINIA DEPARTMENT OF TRANSPORTATION

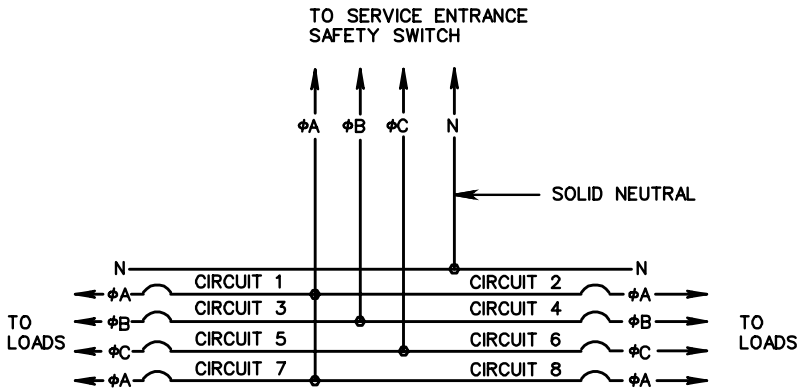
VDOT	
ROAD AND BRIDGE STANDARDS	
REVISION DATE	SHEET 2 OF 2
1313.21	



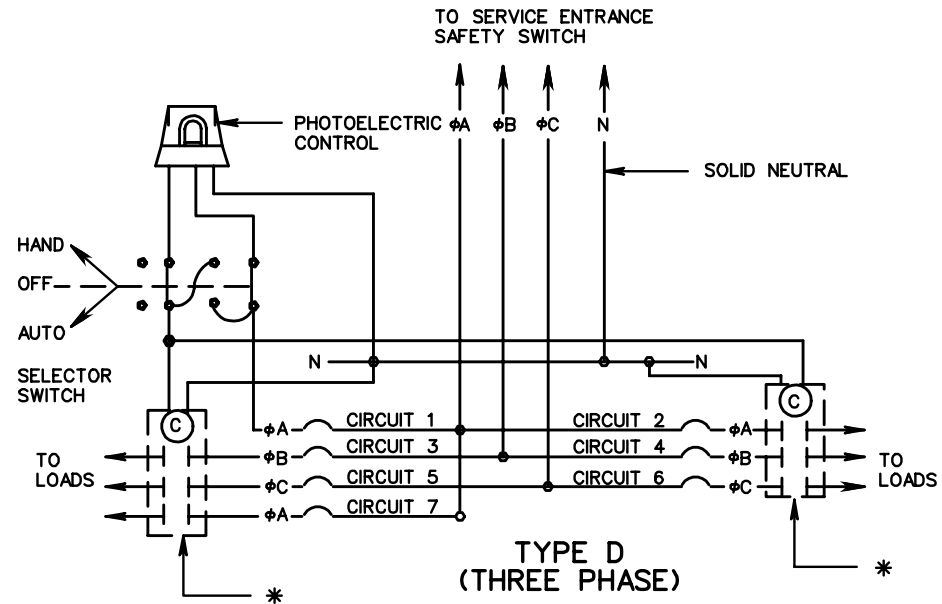
**TYPE A
(SINGLE PHASE)**



**TYPE C
(SINGLE PHASE)**



**TYPE B
(THREE PHASE)**



**TYPE D
(THREE PHASE)**

NOTES:

ALL CIRCUIT BREAKERS SHALL BE SINGLE POLE.

VOLTAGE AND AMPERAGE RATINGS OF CONTACTORS AND BREAKERS SHALL BE AS INDICATED ON THE PLANS.

NUMBER OF CIRCUITS SHOWN ARE TYPICAL. EXACT NUMBER REQUIRED SHALL BE AS INDICATED ON THE PLANS.

* CONTACTORS SHALL BE 2 POLES FOR SINGLE PHASE AND 3 POLES FOR THREE PHASE SERVICES. NUMBER OF CONTACTORS SHALL BE AS REQUIRED TO HANDLE THE NUMBER OF CIRCUITS ACTUALLY BEING UTILIZED.



ROAD AND BRIDGE STANDARDS

SHEET 1 OF 4

REVISION DATE

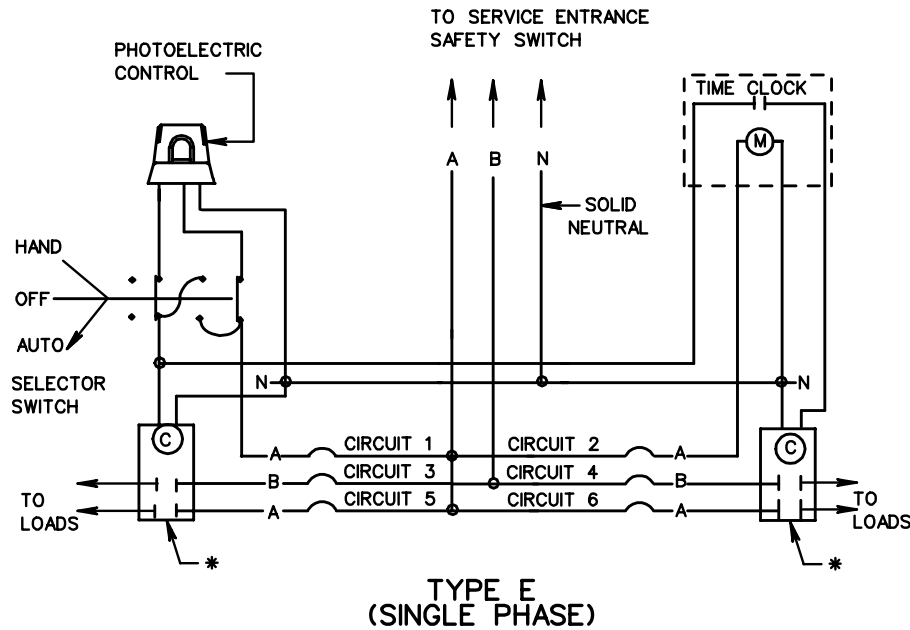
1314.10

**CONTROL CENTER WIRING
DETAILS**

VIRGINIA DEPARTMENT OF TRANSPORTATION

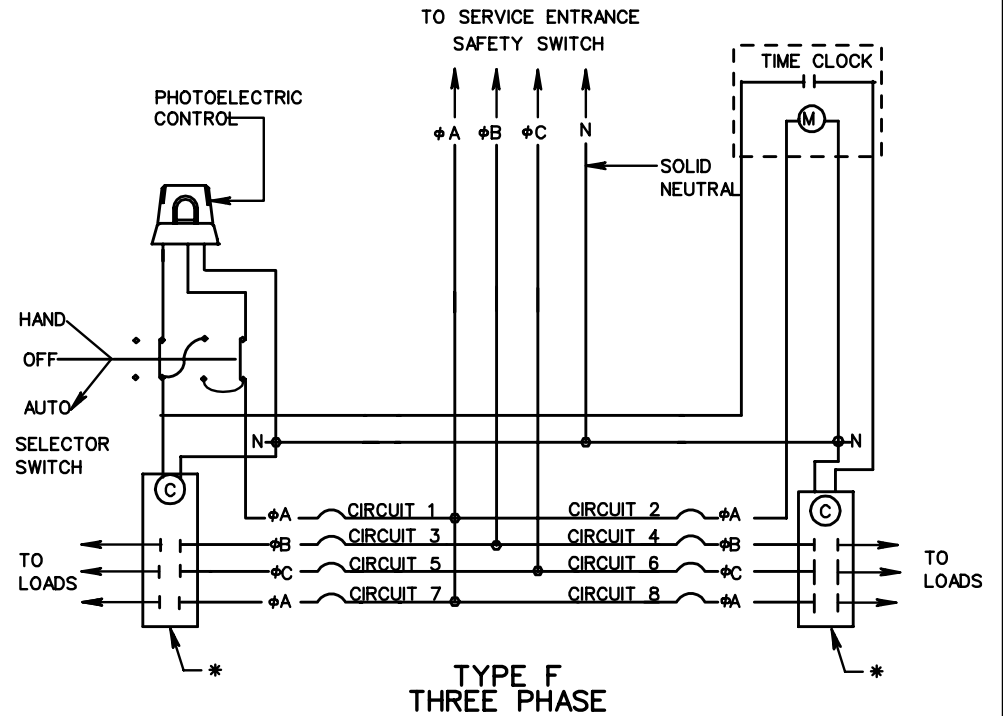
SPECIFICATION
REFERENCE

700
705



NOTES:

- ALL CIRCUIT BREAKERS SHALL BE SINGLE POLE.
- VOLTAGE AND AMPERAGE RATINGS OF CONTACTORS AND BREAKERS SHALL BE AS INDICATED ON THE PLANS.
- NUMBER OF CIRCUITS SHOWN ARE TYPICAL. EXACT NUMBER REQUIRED SHALL BE AS INDICATED ON THE PLANS.
- * CONTACTORS SHALL BE 2 POLES FOR SINGLE PHASE AND 3 POLES FOR THREE PHASE SERVICES. NUMBER OF CONTACTORS SHALL BE AS REQUIRED TO HANDLE THE NUMBER OF CIRCUITS ACTUALLY BEING UTILIZED.



SPECIFICATION REFERENCE

700
705

**CONTROL CENTER WIRING
DETAILS**

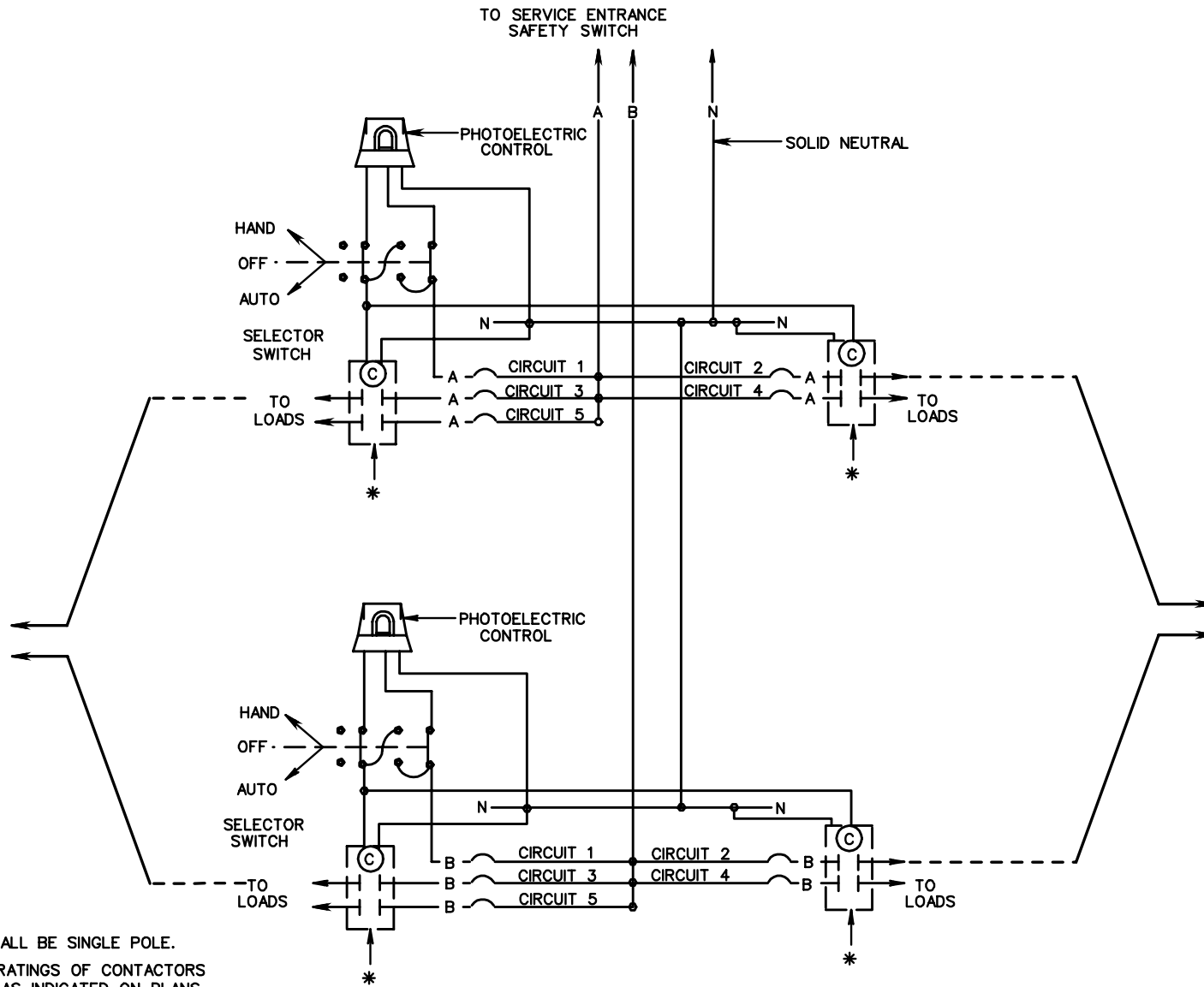
VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT

ROAD AND BRIDGE STANDARDS

REVISION DATE SHEET 2 OF 4

1314.11



**TYPE G
(SINGLE PHASE)**

NOTES:

ALL CIRCUIT BREAKERS SHALL BE SINGLE POLE.
VOLTAGE AND AMPERAGE RATINGS OF CONTACTORS
AND BREAKERS SHALL BE AS INDICATED ON PLANS.

NUMBER OF CIRCUITS SHOWN ARE TYPICAL. EXACT
NUMBER REQUIRED SHALL BE AS INDICATED ON THE PLANS.

* CONTACTOR SHALL BE 2 POLES FOR SINGLE
PHASE AND 3 POLES FOR THREE PHASE SERVICES.

NUMBER OF CONTACTORS SHALL BE AS REQUIRED TO
HANDLE THE NUMBER OF CIRCUITS ACTUALLY BEING UTILIZED.



ROAD AND BRIDGE STANDARDS

SHEET 3 OF 4 REVISION DATE

1314.12

CONTROL CENTER WIRING DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION
REFERENCE

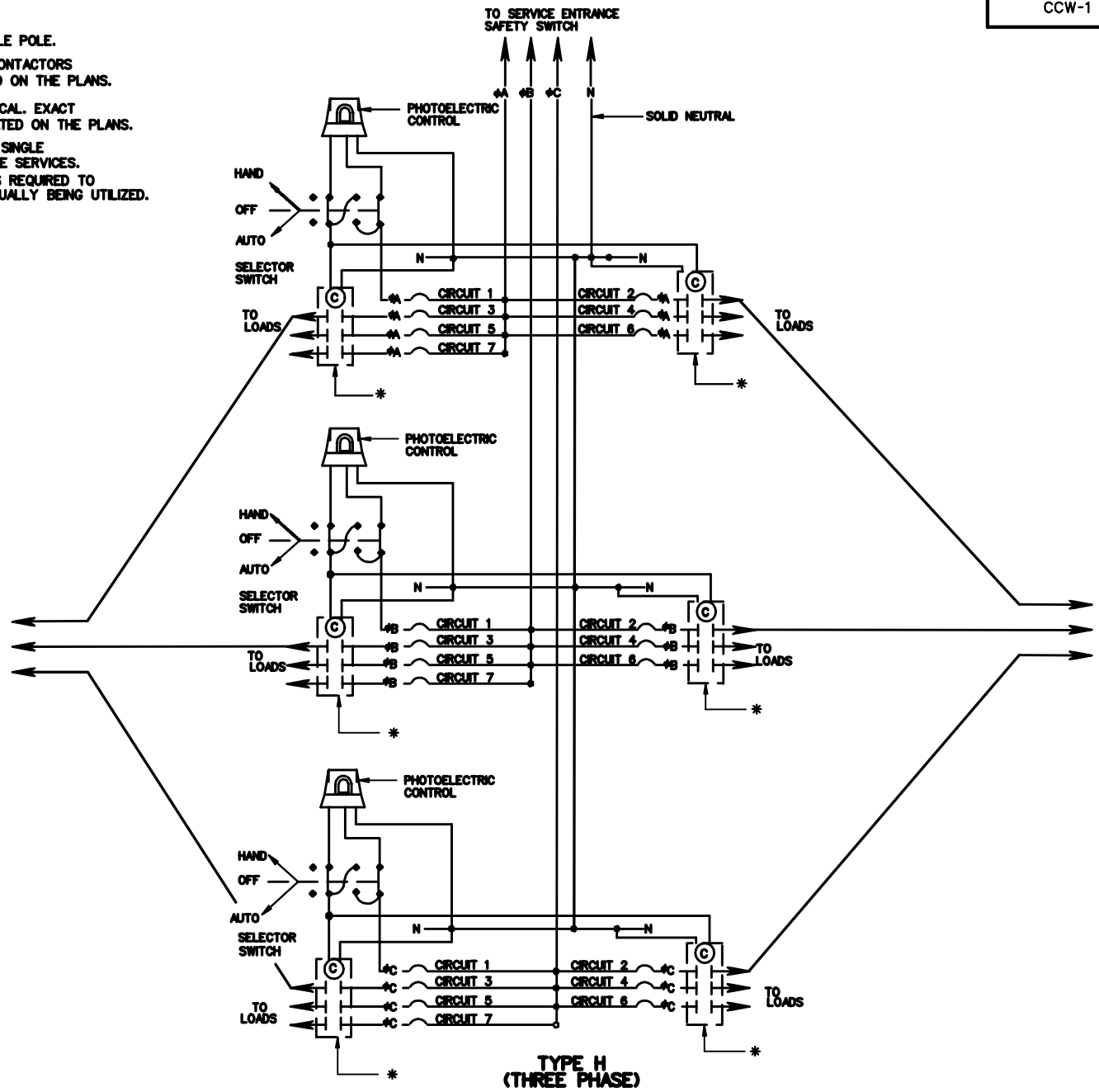
700
705

NOTES:

ALL CIRCUIT BREAKERS SHALL BE SINGLE POLE.
 VOLTAGE AND AMPERAGE RATING OF CONTACTORS
 AND BREAKERS SHALL BE AS INDICATED ON THE PLANS.

NUMBER OF CIRCUITS SHOWN ARE TYPICAL. EXACT
 NUMBER REQUIRED SHALL BE AS INDICATED ON THE PLANS.

* CONTACTORS SHALL BE 2 POLES FOR SINGLE
 PHASE AND 3 POLES FOR THREE PHASE SERVICES.
 NUMBER OF CONTACTORS SHALL BE AS REQUIRED TO
 HANDLE THE NUMBER OF CIRCUITS ACTUALLY BEING UTILIZED.



SPECIFICATION
 REFERENCE

700
 705

CONTROL CENTER WIRING DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

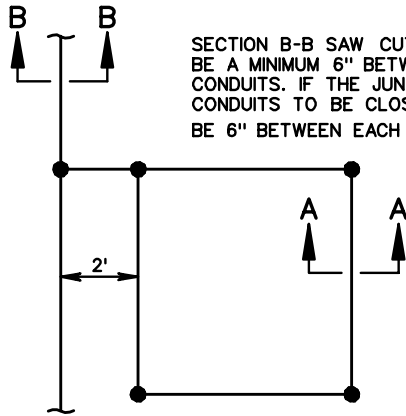
VDOT

ROAD AND BRIDGE STANDARDS

REVISION DATE

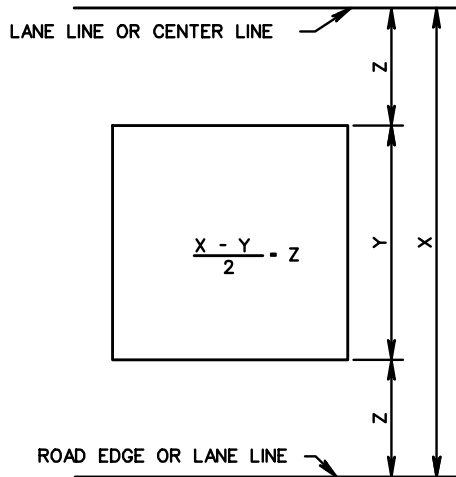
SHEET 4 OF 4

1314.13

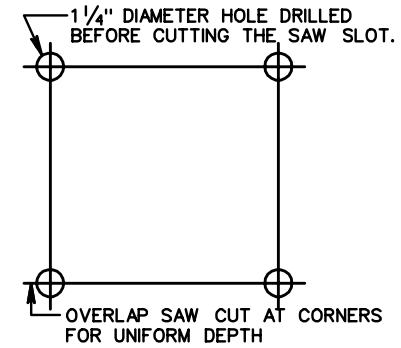


SECTION B-B SAW CUTS AND METAL CONDUITS SHALL BE A MINIMUM 6" BETWEEN ADJACENT SAW CUTS AND CONDUITS. IF THE JUNCTION BOX WIDTH REQUIRES THE CONDUITS TO BE CLOSER THAN 6", THE CONDUITS SHALL BE 6" BETWEEN EACH OTHER AT THE END OF THE SAW CUT AND THEN TAPERED TO THE REQUIRED SPACING AT THE JUNCTION BOX.

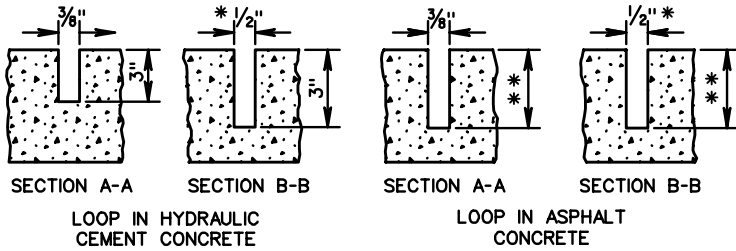
TYPICAL LOOP WIRE PLAN



TYPICAL LANE COVERAGE DIAGRAM



TYPICAL SAW CUT DIAGRAM



* SAW SLOT SHALL BE 5/8" WHEN LOOP DETECTOR CABLE ENCLOSED IN TUBING IS INSTALLED.

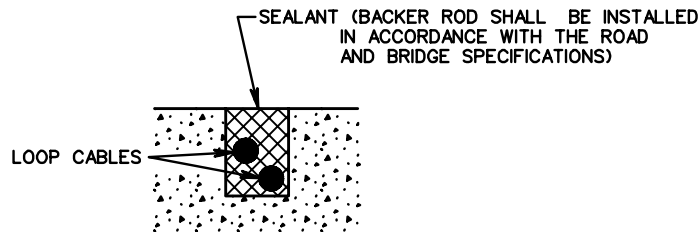
IN NEW ASPHALT CONCRETE ROADWAYS, SAW SLOTS SHALL BE CUT INTO THE BASE COURSE TO A DEPTH OF 3".

IN EXISTING ASPHALT CONCRETE ROADWAYS WHICH ARE TO BE PLANNED, SAW SLOTS SHALL BE CUT INTO THE POST MILLING SURFACE TO A DEPTH OF 3".

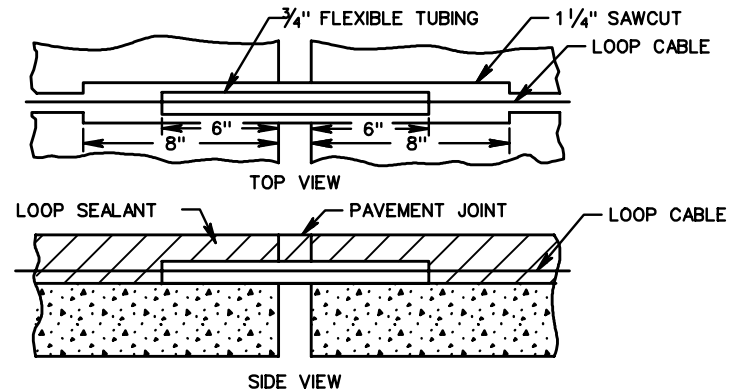
IN EXISTING ASPHALT CONCRETE ROADWAYS WHICH ARE NOT TO BE PLANNED, SAW SLOTS SHALL BE CUT INTO THE EXISTING SURFACE TO A DEPTH OF 4".

DEPTH OF SAW CUT SHALL BE MEASURED FROM PAVEMENT SURFACE AT TIME OF INSTALLATION. NOT NECESSARILY FINISHED GRADE.

TYPICAL SAW SLOT DETAIL



CROSS SECTION TYPICAL SEALED SLOT



INSTALLATION OF LOOP CABLE ACROSS HYDRAULIC CEMENT CONCRETE PAVEMENT JOINTS



ROAD AND BRIDGE STANDARDS

LOOP DETECTOR INSTALLATION DETAIL

SPECIFICATION REFERENCE

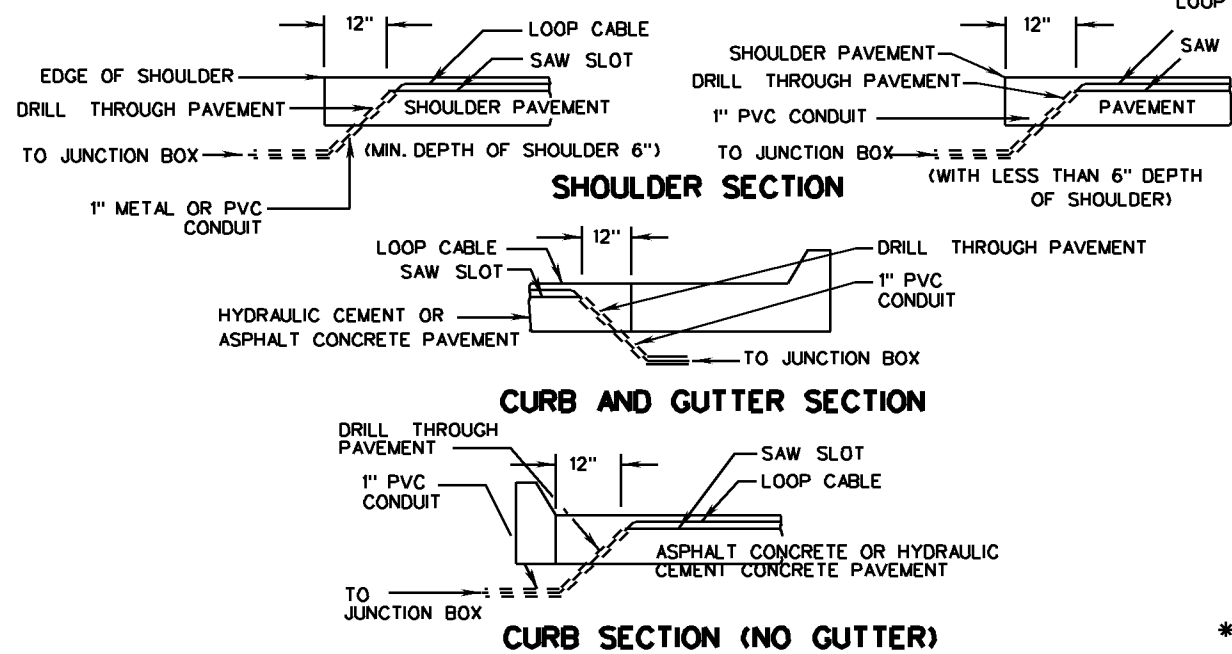
SHEET 1 OF 2

REVISION DATE

VIRGINIA DEPARTMENT OF TRANSPORTATION

703

1315.10



NOTES:

THE TOP OF THE 1" PVC CONDUITS SHALL BE INSTALLED 1" BELOW THE BOTTOM OF THE SAW CUTS.

PLASTIC BUSHINGS SHALL BE INSTALLED ON THE ENDS OF THE CONDUITS IN THE PAVEMENT. DUCT SEAL SHALL BE APPLIED TO THE OPEN END OF THE BUSHING.

SAW SLOTS SHALL INTERSECT WITH THE HOLES DRILLED FOR INSTALLATION OF THE CONDUITS AND LOOP CABLES.

DRILLED HOLES SHALL BE NO LARGER THAN REQUIRED FOR INSTALLATION OF THE CONDUIT AND PLASTIC BUSHING.

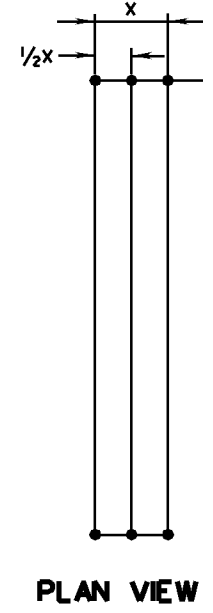
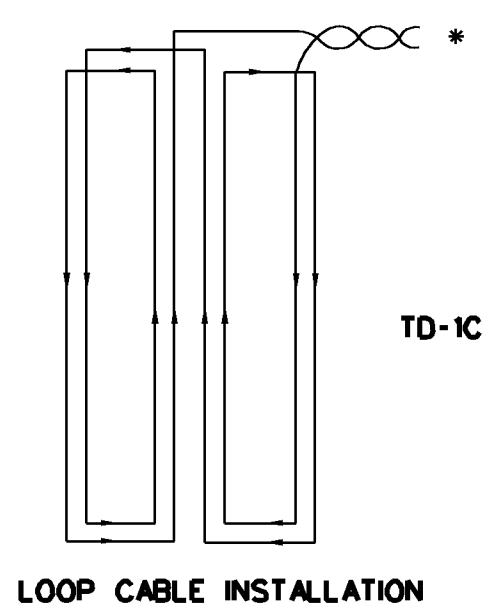
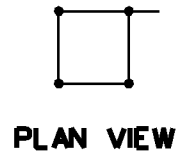
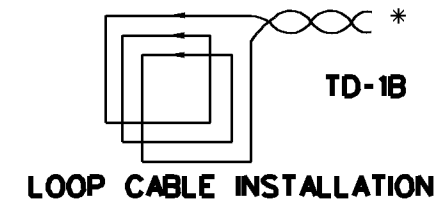
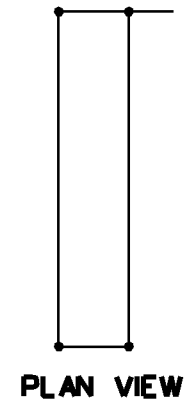
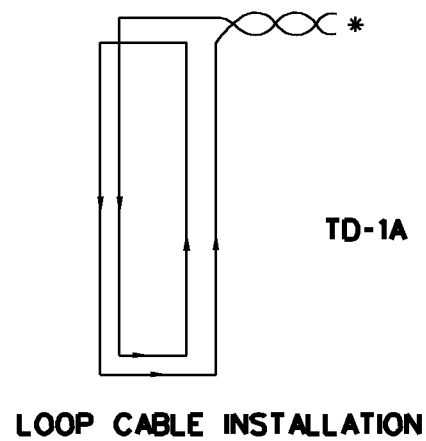
REMOVAL OF LARGE SECTIONS OF PAVEMENT TO PERFORM THIS WORK WILL NOT BE ALLOWED.

ONE PVC CONDUIT SHALL BE PROVIDED FOR EACH SAW SLOTS.

ANGLE OF DRILL FOR INSTALLATION OF CONDUIT AND LOOP CABLE SHALL BE APPROXIMATELY 45°.

ALL DIMENSIONS NOT SHOWN SHALL BE AS SPECIFIED ON THE PLANS.

* TWISTED TOGETHER WITH A MINIMUM OF TWO TURNS PER RUNNING FOOT.

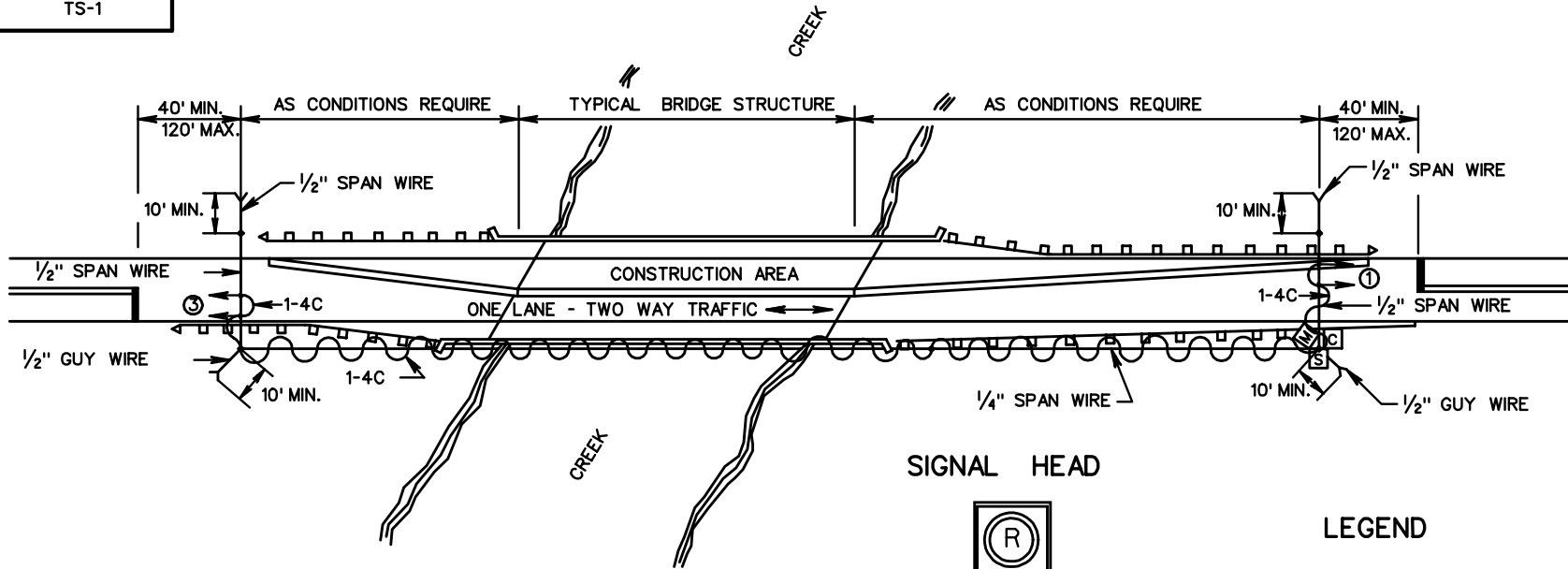


SPECIFICATION REFERENCE
703

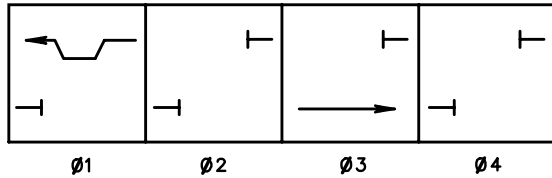
**LOOP DETECTOR
 INSTALLATION DETAIL**

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT	
ROAD AND BRIDGE STANDARDS	
REVISION DATE 6-15-09	SHEET 2 OF 2
1315.11	



PHASING DIAGRAM



COLOR SEQUENCE CHART

SIGNAL	Ø1		Ø2		Ø3		Ø4		FLASH
	Ry	Ry	Ry	Ry	Ry	Ry	Ry	Ry	
1	G	Y	R	R	R	R	R	R	R
3	R	R	R	R	R	R	G	Y	R

SIGNAL HEAD



LEGEND

- [M]** METER BASE (IF REQUIRED)
- [C]** CONTROLLER
- [S]** BREAKER BOX OR SAFETY SWITCH

NOTES:

CONTROLLER SHALL BE POLE MOUNTED OR GROUND MOUNTED NEXT TO THE WOOD POLE CLOSEST TO THE POWER SOURCE.

PLACEMENT OF POLES ARE TYPICAL. EXACT DISTANCES FOR POLE PLACEMENTS, STOP BAR LOCATIONS, ETC. SHALL BE DETERMINED BY THE ENGINEER AT THE TIME OF INSTALLATION.

SIGNAL AHEAD SIGNS SHALL BE INSTALLED WHEN SIGHT DISTANCE IS LIMITED.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND IMPLEMENTING SIGNAL TIMINGS UNLESS OTHERWISE SPECIFIED.

SIGNAL HEADS SHALL BE INSTALLED IN ACCORDANCE WITH STANDARDS SW-1 OR 2 AND TA-1.

WOOD POLE WIRING AND RIGGING FOR SPAN WIRE SHALL BE IN ACCORDANCE WITH STANDARD WD-2.

ELECTRICAL SERVICE SHALL BE IN ACCORDANCE WITH STANDARD SE-2 UNLESS A GENERATOR IS USED.

WHEN AN INTERSECTION IS LOCATED BETWEEN THE STOP LINES FOR THE TWO APPROACHES, ADDITIONAL PHASING AND SIGNALS SHALL BE PROVIDED TO ACCOMMODATE THOSE TRAFFIC MOVEMENTS.

IF REQUIRED BY PLANS, ENTRANCES LOCATED BETWEEN THE STOP LINES FOR THE TWO APPROACHES SHALL BE PROVIDED WITH ADDITIONAL PHASING AND SIGNALS TO ACCOMMODATE THOSE TRAFFIC MOVEMENTS.

VEHICLE DETECTION OF EACH APPROACH SHALL BE PROVIDED UNLESS OTHERWISE SPECIFIED.



ROAD AND BRIDGE STANDARDS

SHEET 1 OF 1

REVISION DATE

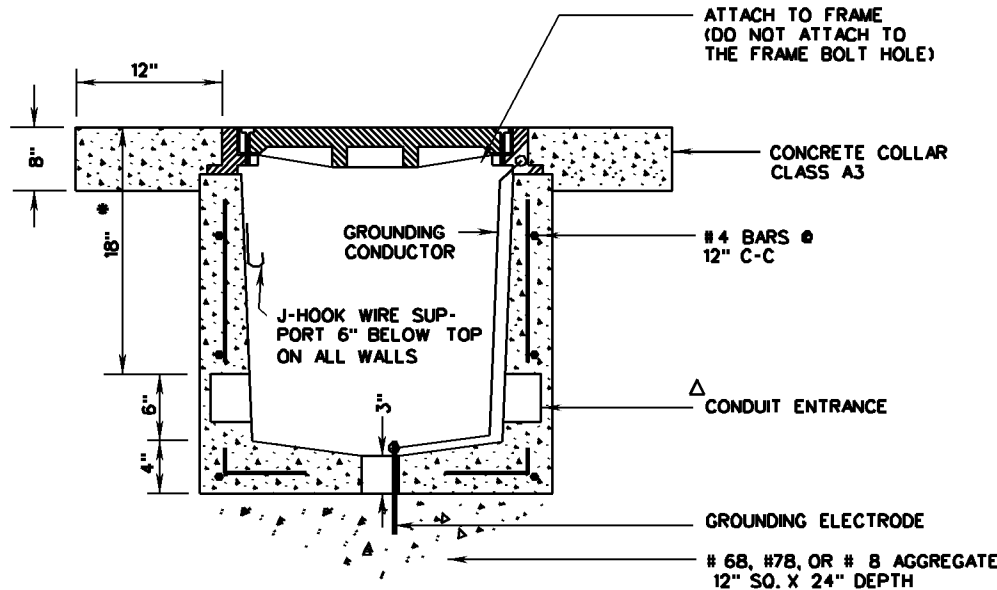
1316.10

TYPICAL ONE-WAY BRIDGE SIGNAL
TEMPORARY INSTALLATION DETAIL

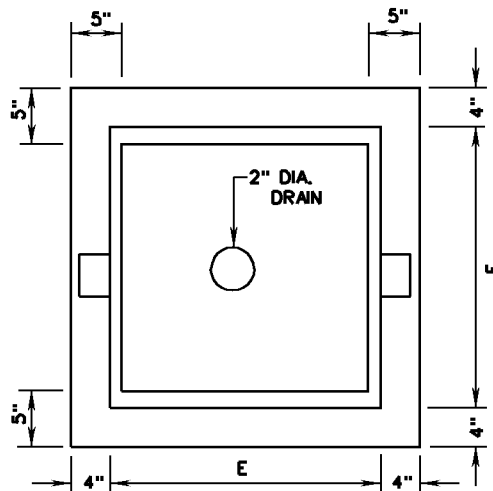
VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE

703
512



STANDARD	DIMENSIONS	
	E	F
JB-R1	20"	20"
JB-R2	27"	27"



PLAN VIEW
(FRAME AND COVER REMOVED)

NOTES:

J-HOOK WIRE SUPPORTS SHALL BE SECURELY ATTACHED TO THE JUNCTION BOX WITH A BOLT AND NUT WITH A NEOPRENE WASHER OR AN EXPANSION FITTING.

CONDUIT ENTRANCES SHALL BE LOCATED AS SHOWN ON THE PLANS. CONDUITS SHALL EXTEND 2" MIN. TO 3" MAX. INTO THE INSIDE WALL OF THE JUNCTION BOX.

BELL ENDS SHALL BE INSTALLED ON THE ENDS OF PVC CONDUITS. GROUNDING BUSHINGS SHALL BE INSTALLED ON THE ENDS OF METAL CONDUITS.

CONDUITS AND BUSHINGS SHALL BE PLUGGED TO PREVENT MOISTURE & RODENT ENTRY.

* DEPTH OF CONDUIT ENTRANCES FOR MAGNETIC DETECTORS SHALL BE IN ACCORDANCE WITH THE PLANS.

ALL REINFORCING STEEL SHALL HAVE A MINIMUM 1/2" CONCRETE COVER. ANY REINFORCING STEEL IN CONFLICT WITH CONDUIT SHALL BE CUT A MINIMUM OF 1/2" FROM CONDUIT.

THE JUNCTION BOX MAY BE PRECAST OR CAST IN PLACE CONCRETE.

△ A MINIMUM 2" DIAMETER CONDUIT ENTRANCE IS REQUIRED UNLESS OTHERWISE SPECIFIED ON PLANS.

A CONCRETE COLLAR IS REQUIRED ONLY WHEN JUNCTION BOX IS INSTALLED IN EARTH AREAS.

HIGH STRENGTH GROUT CONFORMING TO THE ROAD & BRIDGE SPECIFICATIONS SHALL BE USED TO SECURE THE FRAME TO THE JUNCTION BOX.

ALL JUNCTION BOXES SHALL BE INSTALLED WITH A GROUNDING ELECTRODE

VOIDS RESULTING FROM ENTRANCE OF CONDUITS INTO JUNCTION BOX SHALL BE COMPLETELY FILLED WITH HYDRAULIC CEMENT GROUT CONFORMING TO THE ROAD & BRIDGE SPECIFICATIONS.

SPECIFICATION REFERENCE

700

JUNCTION BOX
FOR TRAFFIC USE

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT

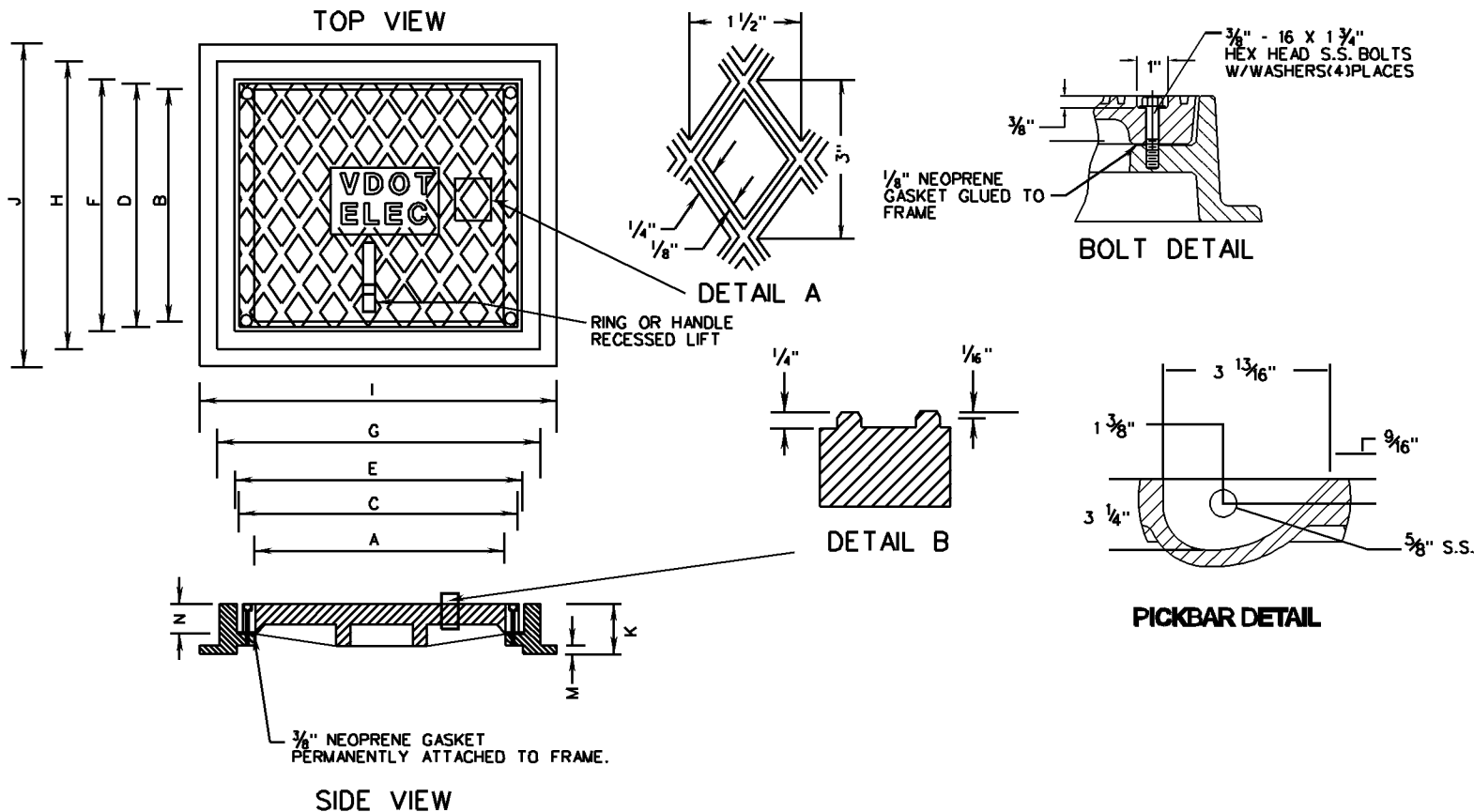
ROAD AND BRIDGE STANDARDS

REVISION DATE

06-15-2009

SHEET 1 OF 2

1317.10



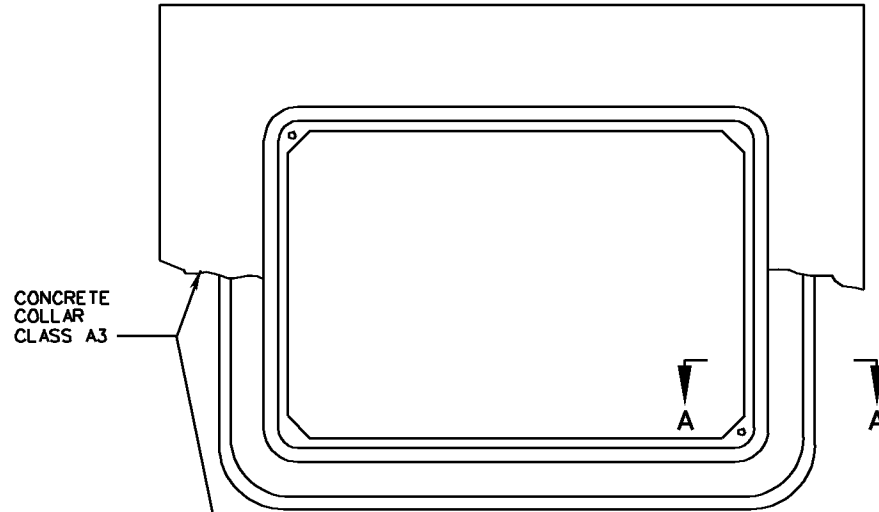
STANDARD	DIMENSIONS												
	A	B	C	D	E	F	G	H	I	J	K	M	N
JB-R1	18"	18"	19"	19"	20"	20"	21"	21"	24"	24"	4"	5/8"	1"
JB-R2	24"	24"	26"	26"	27"	27"	28"	28"	33"	33"	4"	5/8"	1"

NOTES:

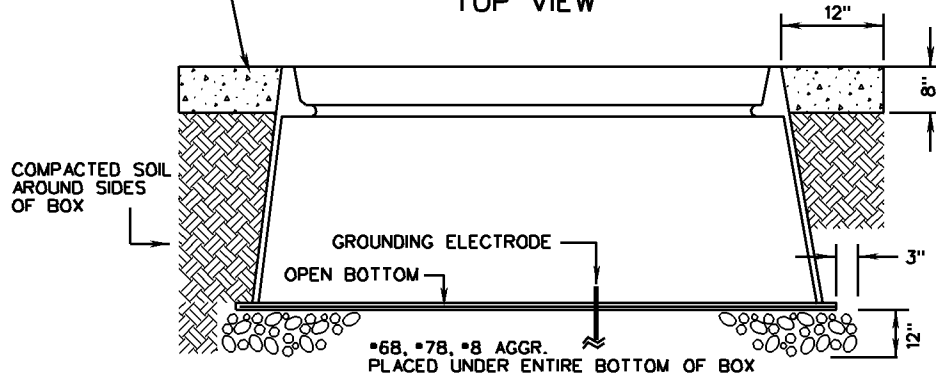
THE COVER SHALL HAVE A NON-SKID SURFACE WITH LETTERS CAST IN THE DEPRESSION ON TOP. THE LETTERS "VDOT ELEC", "VDOT TRAFF", "VDOT COMM" OR "UTILITY" AS APPLICABLE ARE TO BE ONE (1) INCH WIDE AND RAISED 1/4" HIGH. COVERS USED FOR JUNCTION BOXES INSTALLED WITHIN MUNICIPALITIES AND NOT MAINTAINED BY VDOT SHALL NOT REQUIRE THE VDOT REFERENCE.

FOUR RECESSED 3/8" HEX BOLTS ARE REQUIRED FOR EACH COVER.

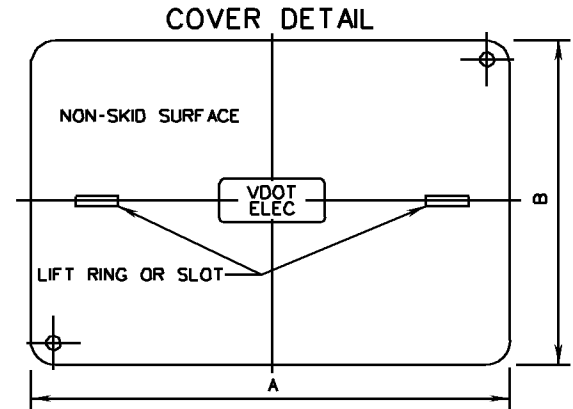
CASTINGS SHALL MEET ALL REQUIREMENTS OF AASHTO M306 AND AASHTO M105



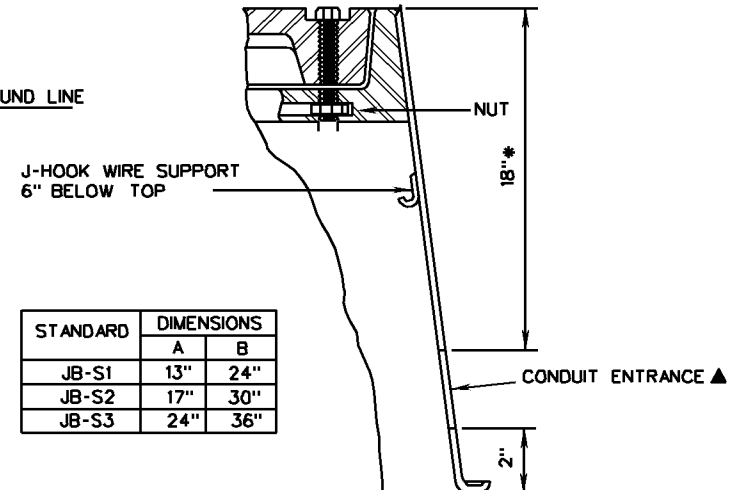
TOP VIEW



SECTION VIEW



SECTION A-A



STANDARD	DIMENSIONS	
	A	B
JB-S1	13"	24"
JB-S2	17"	30"
JB-S3	24"	36"

NOTES:

- JUNCTION BOXES MAY BE STRAIGHT OR FLARED WALL IN DESIGN. MATERIALS SHALL CONFORM TO SECTION 238 OF THE ROAD & BRIDGE SPECIFICATIONS.
- BELL ENDS SHALL BE INSTALLED ON THE ENDS OF PVC CONDUITS.
- GROUNDING BUSHINGS SHALL BE INSTALLED ON THE ENDS OF METAL CONDUITS.
- BELL ENDS AND BUSHINGS SHALL BE PLUGGED TO PREVENT MOISTURE AND RODENT ENTRY.
- *DEPTH OF CONDUIT ENTRANCE FOR USE OF MAGNETIC DETECTORS SHALL BE IN ACCORDANCE WITH STANDARD TD-2.
- CONDUIT ENTRANCES SHALL BE LOCATED AS SHOWN ON THE PLANS.
- THE COVER SHALL HAVE A NON-SKID SURFACE WITH LETTERS CAST IN THE DEPRESSION ON TOP. THE LETTERS "VDOT ELEC", "VDOT TRAF", "VDOT COMM" OR UTILITY AS APPLICABLE ARE TO BE 1" WIDE. COVERS USED FOR JUNCTION BOXES INSTALLED WITHIN MUNICIPALITIES AND NOT MAINTAINED BY VDOT SHALL NOT REQUIRE THE VDOT REFERENCE.
- ALL JUNCTION BOXES SHALL BE INSTALLED WITH A GROUNDING ELECTRODE

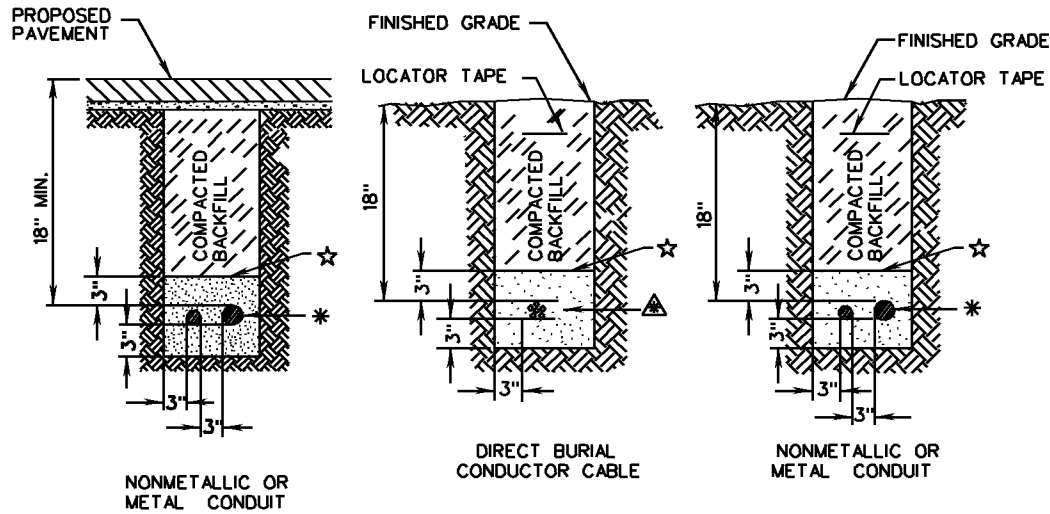
- TWO RECESSED 3/8" S.S. HEX HEAD BOLTS ARE REQUIRED FOR EACH COVER.
- ▲ A MINIMUM 2" DIAMETER CONDUIT ENTRANCE IS REQUIRED, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
- J-HOOK WIRE SUPPORTS SHALL BE SECURELY ATTACHED TO THE JUNCTION BOX WITH A BOLT AND NUT WITH A NEOPRENE WASHER OR AN EXPANSION FITTING.
- CONDUITS SHALL EXTEND 2" TO 3" MAX. INTO THE INSIDE WALL OF THE JUNCTION BOX.
- THE JUNCTION BOX MAY BE A TWO PIECE DESIGN WITH THE TOP SECTION NO LESS THAN 17" IN DEPTH.
- VOIDS RESULTING FROM ENTRANCE OF CONDUITS INTO JUNCTION BOXES SHALL BE COMPLETELY FILLED WITH AN APPROVED MATERIAL.

SPECIFICATION REFERENCE
700 238

JUNCTION BOX
FOR NON-DELIBERATE TRAFFIC USE
VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT	
ROAD AND BRIDGE STANDARDS	
REVISION DATE 6-15-09	SHEET 1 OF 1
1317.20	

ECI-1



NON - PAVEMENT AND PROPOSED PAVEMENT AREA INSTALLATION

NOTES:

CONTRACTOR SHALL INSTALL A 4" MINIMUM TO 6" MAXIMUM WIDE RED PLASTIC LOCATOR TAPE 6" TO 8" BELOW FINISHED GRADE AND DIRECTLY ABOVE BURIED CONDUIT OR CONDUCTOR CABLES, EXCEPT UNDER PAVEMENT.

CONDUIT INSTALLED UNDER EXISTING OR PROPOSED ROADWAYS FOR DIRECT BURIED CABLES SHALL EXTEND 24" BEYOND THE PAVED SURFACE AND/OR SIDEWALK.

WHERE CONDUIT FOR POWER AND CONDUIT FOR COMMUNICATION ARE TO BE INSTALLED IN CLOSE PROXIMITY TO EACH OTHER, CONDUITS SHALL BE PLACED PARALLEL IN A COMMON TRENCH WITH NO LESS THAN 6" OF SEPARATION BETWEEN CONDUIT SYSTEMS.

☆ BACKFILL MATERIAL BELOW THIS LEVEL SHALL BE SANDY FILL (FREE OF ANY STONES, CINDERS, WOOD, ROOTS, DEBRIS, ETC.)

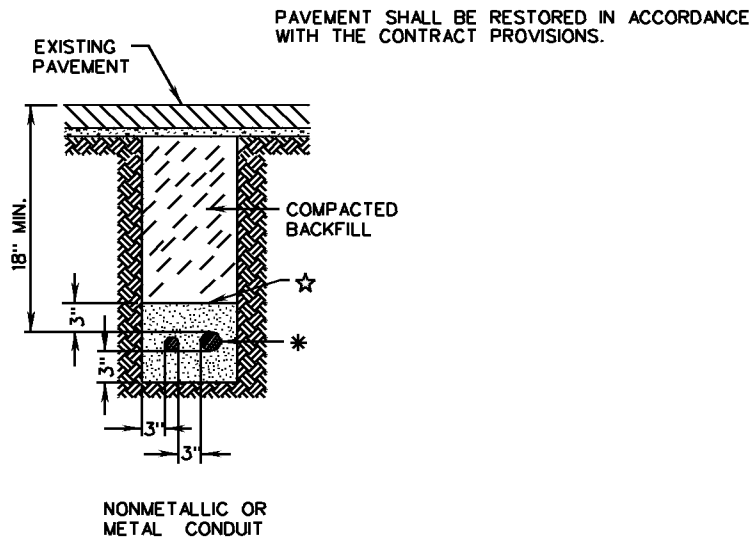
* ONE OR MORE CONDUITS AS REQUIRED.

▲ ONE OR MORE CONDUCTOR CABLES AS REQUIRED.

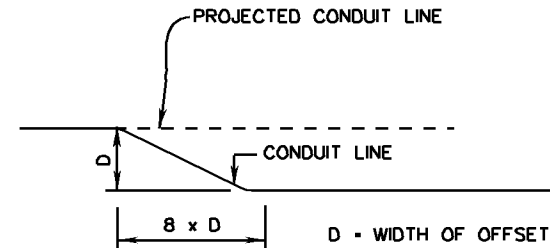
OFFSETTING OF CONDUIT MAY BE USED FOR TIEING INTO EXISTING CONDUIT SYSTEMS OR BYPASSING OBSTRUCTIONS AS DIRECTED BY THE ENGINEER.

WHEN OFFSETTING CONDUIT TO BYPASS AN OBSTRUCTION, THE CONDUIT SHALL MAINTAIN A MINIMUM CLEARANCE OF 12" FROM THE CLOSEST POINT OF THE OBSTRUCTION.

ECI-2



EXISTING PAVEMENT AREA INSTALLATION



METHOD OF OFFSETTING CONDUIT



ROAD AND BRIDGE STANDARDS

ELECTRICAL CONDUIT AND CONDUCTOR CABLE

SPECIFICATION REFERENCE

SHEET 1 OF 1

REVISION DATE

UNDERGROUND INSTALLATION

700

1318.10

06-15-2009

VIRGINIA DEPARTMENT OF TRANSPORTATION

PROCEDURE FOR USING TABLES FOR STANDARDS WSP-1 AND STP-1:

1. SELECT MINIMUM MOUNTING HEIGHT TO BE USED (5'-0" OR 7'-0").
2. DECIDE ON NUMBER OF POSTS TO BE USED (SINGLE, TWO OR THREE).
3. CALCULATE THE AREA OF EACH SIGN PANEL ($A_1, A_2, A_3, \dots A_n$).
4. CALCULATE THE CENTROIDAL DISTANCE FOR EACH SIGN PANEL ($H_1, H_2, H_3, \dots H_n$).

- A_1 = AREA OF SIGN PANEL 1
- A_2 = AREA OF SIGN PANEL 2
- A_3 = AREA OF SIGN PANEL 3
- H_1 = CENTROIDAL DISTANCE FROM SIGN PANEL 1 TO GROUND LINE THROUGH REFERENCE POINT
- H_2 = CENTROIDAL DISTANCE FROM SIGN PANEL 2 TO GROUND LINE THROUGH REFERENCE POINT
- H_3 = CENTROIDAL DISTANCE FROM SIGN PANEL 3 TO GROUND LINE THROUGH REFERENCE POINT

THE CENTROIDAL DISTANCE IS THE VERTICAL DISTANCE FROM THE REFERENCE POINT ON THE GROUND LINE TO THE CENTER OF EACH SIGN PANEL.

5. CALCULATE THE CENTROIDAL DISTANCE (H) FOR THE ENTIRE SIGN PANEL GROUP:

$$H = \frac{(A_1 \times H_1 + A_2 \times H_2 + A_3 \times H_3 + \dots A_n \times H_n)}{(A_1 + A_2 + A_3 + \dots A_n)}$$

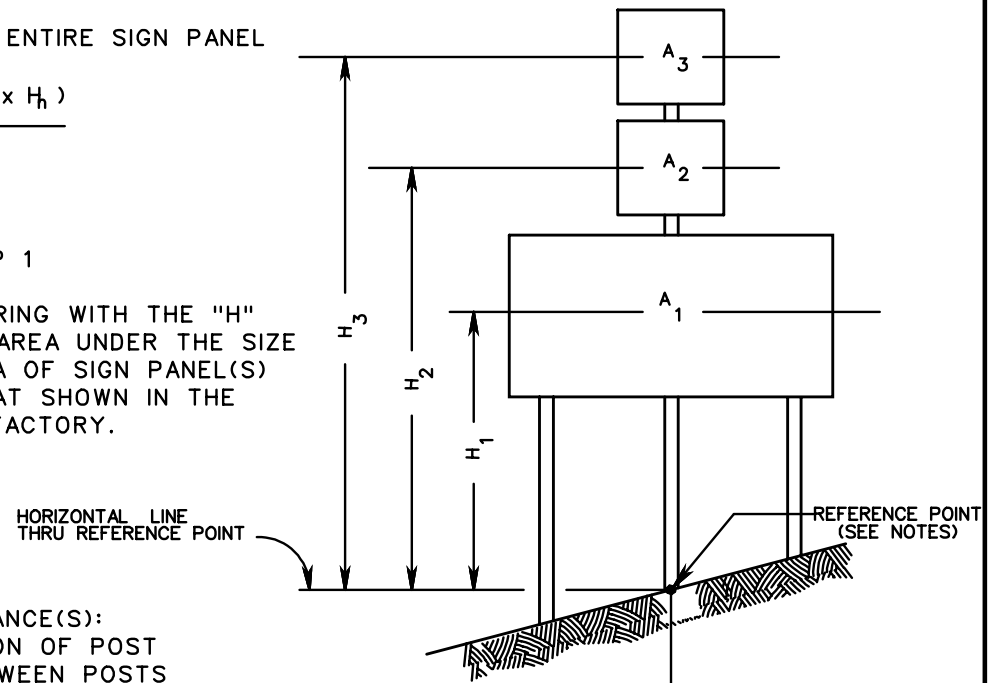
6. ENTER THE APPROPRIATE TABLE BASED ON:

THE MINIMUM MOUNTING HEIGHT SELECTED IN STEP 1

PICK THE POST SIZE(S) TO BE REVIEWED, AND ENTERING WITH THE "H" VALUE CALCULATED IN STEP 5, READ THE MAXIMUM AREA UNDER THE SIZE OF POSTS SELECTED IN STEP 3. IF THE TOTAL AREA OF SIGN PANEL(S) TO BE SUPPORTED IS LESS THAN OR EQUAL TO THAT SHOWN IN THE TABLE(S), THE SIZE OF THE POST(S) WILL BE SATISFACTORY.

NOTES:

- REFERENCE POINT FOR CALCULATING CENTROIDAL DISTANCE(S):
- FOR SINGLE POST: ON GROUND LINE AT INTERSECTION OF POST
- FOR TWO-POSTS: ON GROUND LINE, HALF-WAY BETWEEN POSTS
- FOR THREE POSTS: ON GROUND LINE AT INTERSECTION OF CENTER POST

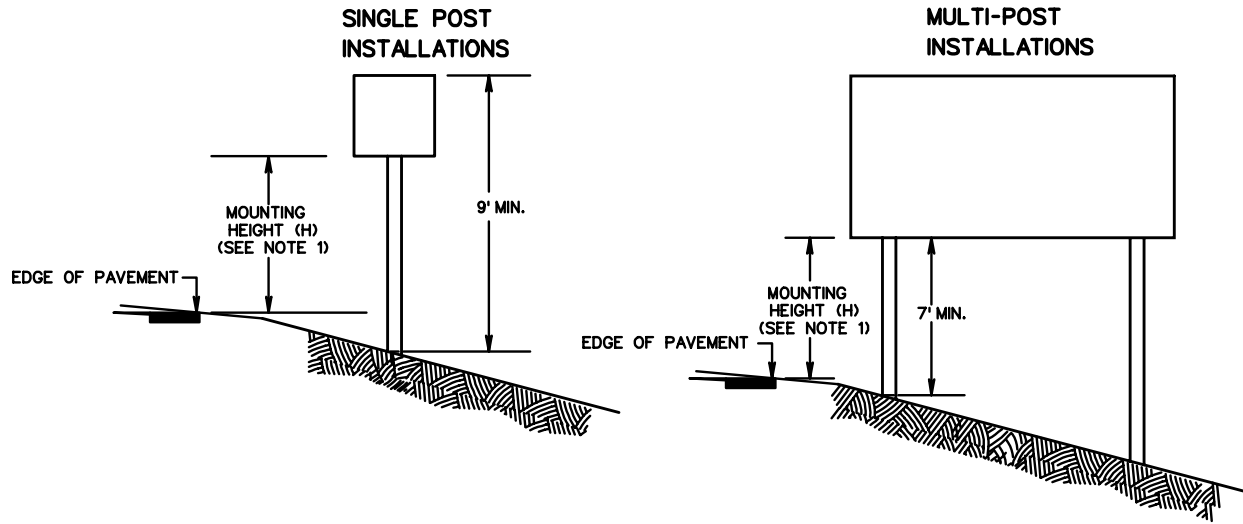


SPECIFICATION REFERENCE
701

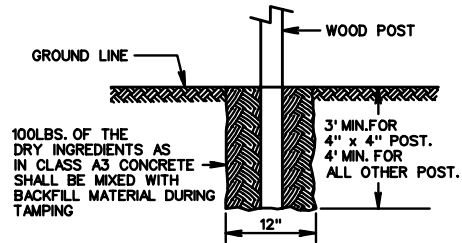
**PROCEDURES FOR CALCULATING CENTROID
AND TOTAL SQUARE FOOTAGE OF SIGN PANEL**

VIRGINIA DEPARTMENT OF TRANSPORTATION

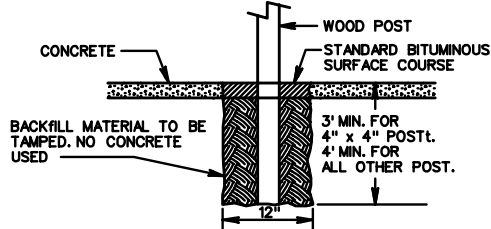
VDOT	
ROAD AND BRIDGE STANDARDS	
REVISION DATE	SHEET 1 OF 1
1319.10	



SET IN EARTH



SET IN CONCRETE



INSTALLATION DETAILS

NOTES:

MINIMUM SPACING BETWEEN TWO 4" x 4" WOOD POSTS SHALL BE 3'. MINIMUM SPACING BETWEEN ANY OTHER TWO SIZE POST SHALL BE 8'.

SIGN PANEL SHALL BE IN ACCORDANCE WITH SPD-5.

CONSTRUCTION SIGN INSTALLATIONS				
MINIMUM MOUNTING HEIGHT (H) (SEE NOTE 1)				
SIGN TYPES	LIMITED ACCESS HIGHWAYS		NON- LIMITED ACCESS HIGHWAYS	
	SIGNS LOCATED LESS THAN 30' FROM THE EDGE OF TRAVEL LANE	SIGNS LOCATED 30' OR MORE FROM THE EDGE OF TRAVEL LANE	RURAL AREAS	URBAN AREAS
CONSTRUCTION SIGNS	7'	7'	7'	7'
SECONDARY SIGNS (SEE NOTE 2)	6' (SEE NOTE 3)	6' (SEE NOTE 3)	6'	6'

1. MOUNTING HEIGHT (H) MAY NEED TO BE GREATER THAN INDICATED IN CHART TO PROVIDE THE MINIMUM HEIGHT TO THE TOP OF THE SIGN FOR SINGLE POST INSTALLATIONS AND THE MINIMUM HEIGHT TO THE BOTTOM OF THE SIGN FOR MULTI-POST INSTALLATIONS.
2. A SECONDARY SIGN IS CONSIDERED TO BE A SIGN MOUNTED BELOW ANOTHER SIGN.
3. MOUNTING HEIGHT (H) OF THE MAJOR SIGN ABOVE THE SECONDARY SIGN SHALL BE 8' MINIMUM.



ROAD AND BRIDGE STANDARDS

WOOD POST SIGN STRUCTURES FOR CONSTRUCTION ZONES

SPECIFICATION REFERENCE

SHEET 1 OF 3

REVISION DATE

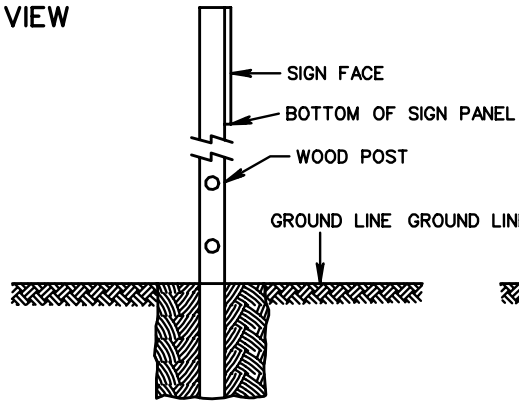
VIRGINIA DEPARTMENT OF TRANSPORTATION

1320.10

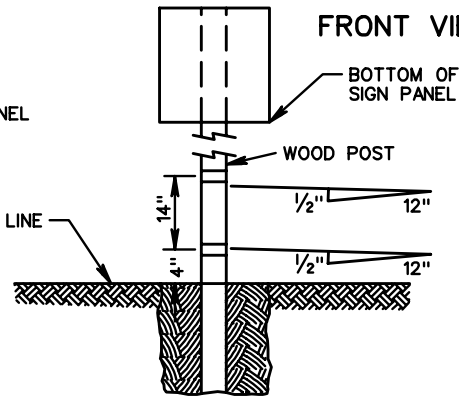
700
701

METHOD OF POST DRILLING

SIDE VIEW



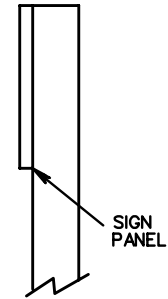
FRONT VIEW



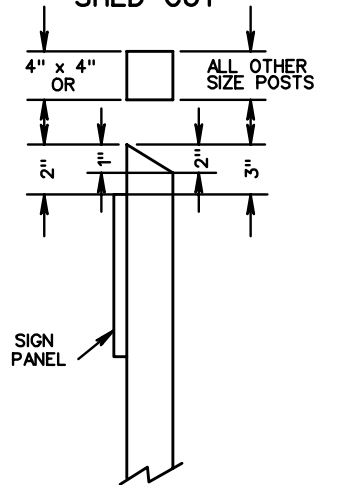
6" X 6" WOOD POST REQUIRES TWO 2" BORE HOLES.

6" X 8" WOOD POST REQUIRES TWO 3" BORE HOLES. POSTS LESS THAN 6" X 6" DO NOT REQUIRE BORE HOLES.

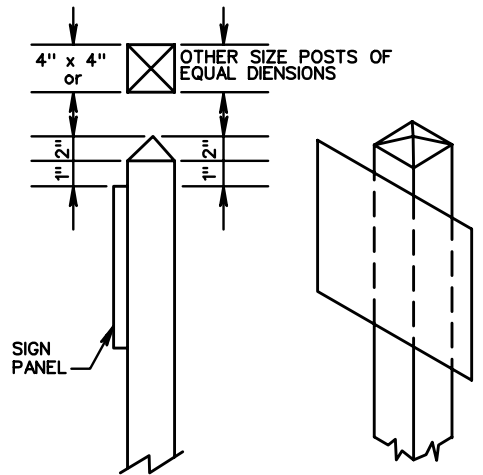
FLAT CUT



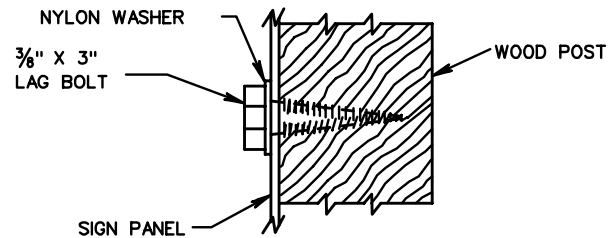
SHED CUT



PYRAMIDAL CUT



SIGN PANEL ATTACHMENT DETAILS



NOTES:

NYLON WASHER SHALL BE 1/8" THICK MINIMUM WITH AN OUTSIDE DIAMETER OF 1" AND AN INSIDE DIAMETER OF 7/16".

SIGN PANEL DESIGN SHALL BE IN ACCORDANCE WITH ST'D. SPD-5.

SPECIFICATION REFERENCE

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WOOD POST SIGN STRUCTURES
FOR CONSTRUCTION ZONES
VIRGINIA DEPARTMENT OF TRANSPORTATION

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ROAD AND BRIDGE STANDARDS

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DESIGN TABLE FOR WOOD POST

SIZE OF POST	CENTROID	MAXIMUM AREA (TOTAL OF SIGN PANELS) (FT ²)		
		SINGLE-POST	TWO-POSTS	THREE-POSTS
4" x 4" **	8	7	13	20
	10	5	11	16
	12	4	9	13
4" x 6" (*)	8	18	37	55
	10	15	29	44
	12	12	25	37
5" x 5"	8	15	31	46
	10	12	24	37
	12	10	20	31
6" x 6"	8	29	58	87
	10	23	46	69
	12	19	39	58
6" x 8" (*)	8	52	103	155
	10	41	83	124
	12	34	69	103
	14	22	44	66

CENTROID SHALL BE DETERMINED IN ACCORDANCE WITH STANDARD PCS-1.

** FOR A SINGLE 4X4 POST THE MAXIMUM TOTAL SIGN PANEL CAN BE INCREASED TO 16 SQUARE FEET PROVIDED:

1. THE MAXIMUM CLEARANCE BETWEEN THE GROUND LEVEL AND BOTTOM OF THE SIGN PANEL DOES NOT EXCEED 7'-6" WHILE MAINTAINING A 7"-0" MINIMUM MOUNTING HEIGHT BETWEEN THE BOTTOM OF THE SIGN AND THE TOP OF THE PAVEMENT AT THE EDGE OF THE PAVEMENT.
2. CONTRACTOR SUPPLIES DEPARTMENT WITH MATERIALS CERTIFICATION FOR WOOD POSTS TO ENSURE CONFORMANCE WITH SECTION 236 OF THE ROAD & BRIDGE SPECIFICATIONS.

* LARGER DIMENSION IN DIRECTION OF (PARALLEL TO) TRAFFIC.



ROAD AND BRIDGE STANDARDS

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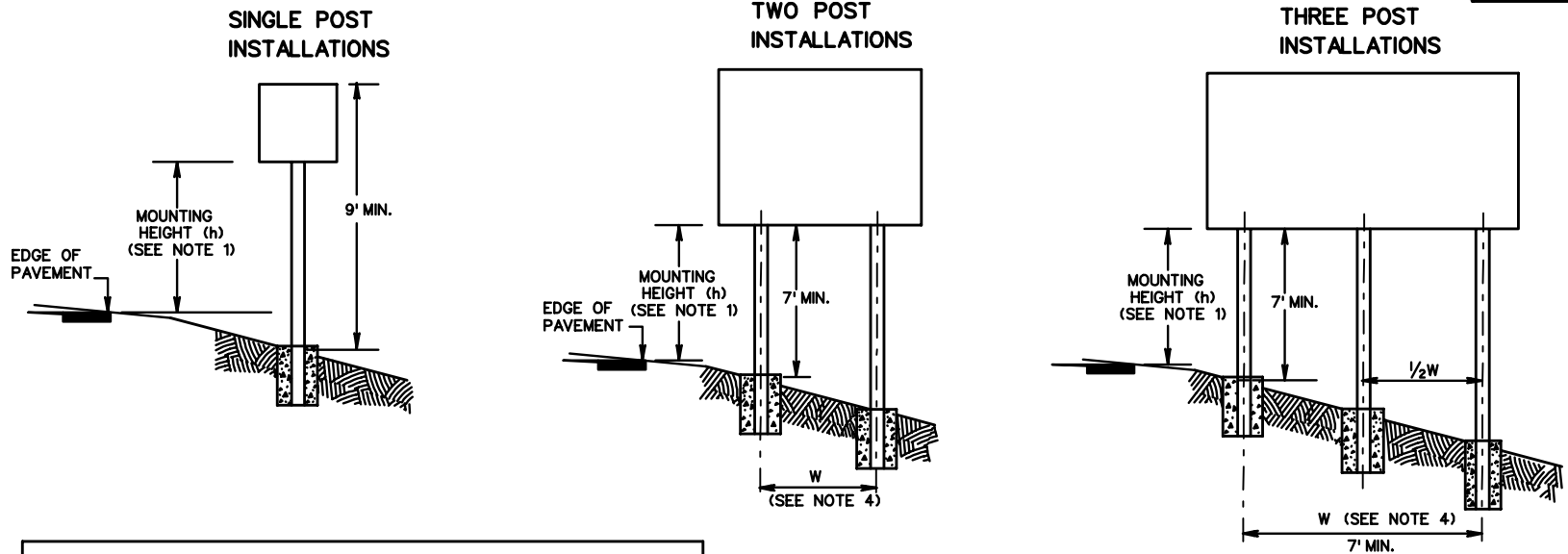
1320.12

WOOD POST SIGN STRUCTURES FOR CONSTRUCTION ZONES

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION
REFERENCE

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MINIMUM MOUNTING HEIGHT (h) (SEE NOTE 1)				
SIGN TYPES	LIMITED ACCESS HIGHWAY		NON-LIMITED ACCESS HIGHWAYS	
	SIGNS LOCATED LESS THAN 30' FROM THE EDGE OF TRAVEL LANE	SIGNS LOCATED 30' OR MORE FROM THE EDGE OF TRAVEL LANE	RURAL AREAS	URBAN AREAS
DIRECTIONAL SIGNS	7'	5'	5'	7'
ROUTE MARKERS, WARNING AND REGULATORY SIGNS	6'	5'	5'	7'
SECONDARY SIGNS (SEE NOTE 2)	5' (SEE NOTE 3)	5' (SEE NOTE 3)	4'	6'

1. MOUNTING HEIGHT MAY NEED TO BE GREATER THAN INDICATED IN CHART TO PROVIDE THE MINIMUM HEIGHT TO THE TOP OF THE SIGN FOR SINGLE POST INSTALLATIONS AND THE MINIMUM HEIGHT TO THE BOTTOM OF THE SIGN FOR MULTI-POST INSTALLATIONS.
2. A SECONDARY SIGN IS CONSIDERED TO BE A SIGN MOUNTED BELOW ANOTHER SIGN, EXCEPT A ROUTE MARKING ASSEMBLY CONSISTING OF A ROUTE MARKER WITH AN AUXILIARY PLATE IS CONSIDERED TO BE A SINGLE SIGN.
3. MOUNTING HEIGHT (h) OF THE MAJOR SIGN ABOVE THE SECONDARY SIGN SHALL BE 8' MINIMUM.
4. W = (0.60) X (SIGN PANEL WIDTH)
5. STRUCTURAL DESIGN SHALL BE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4TH EDITION 2001 WITH A WIND LOAD OF 120 MPH.
6. SQUARE TUBE SIGN POST LARGER THAN 2 INCHES SHALL HAVE AN FHWA APPROVED BREAKWAY SUPPORT SYSTEM CONFORMING TO AASHTO'S STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS.
7. SIGN PANEL SHALL BE IN ACCORDANCE WITH SPD-5.

SIZE OF POST	CENTROID	MAXIMUM AREA (TOTAL OF SIGN PANELS) (FT ²)		
		SINGLE-POST	TWO-POST	THREE-POST
2 INCH 12 GA.	8	7.29	14.58	21.87
	10	6.86	13.72	20.58
	12	6.48	12.96	19.44
2 3/16 INCH 10 GA.	8	10.23	20.46	30.69
	10	8.19	16.38	24.57
	12	6.82	13.64	20.46
2 1/2 INCH 10 GA.	8	13.69	27.38	41.07
	10	10.95	21.90	32.85
	12	9.12	18.24	27.36
2 3/16 INCH & 2 1/2 INCH 10 GA.	8	23.92	47.84	71.76
	10	19.14	38.28	57.42
	12	15.95	31.90	47.85

* THE INNER POST SHALL BE NO LESS THAN 6 FEET IN LENGTH.
CENTROID SHALL BE DETERMINED IN ACCORDANCE WITH PCS-1.

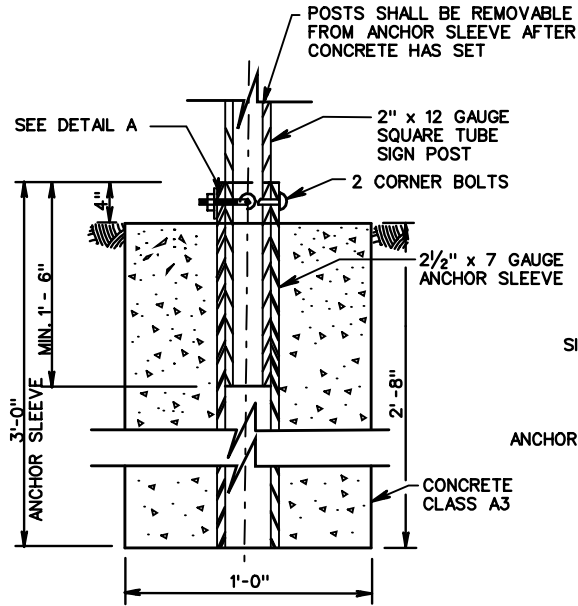
SPECIFICATION REFERENCE
700

SQUARE TUBE SIGN POST

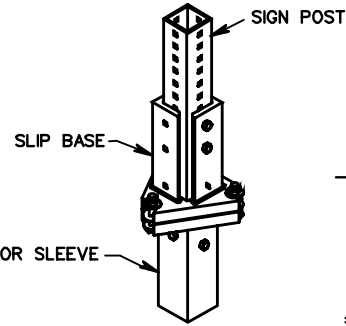
VIRGINIA DEPARTMENT OF TRANSPORTATION

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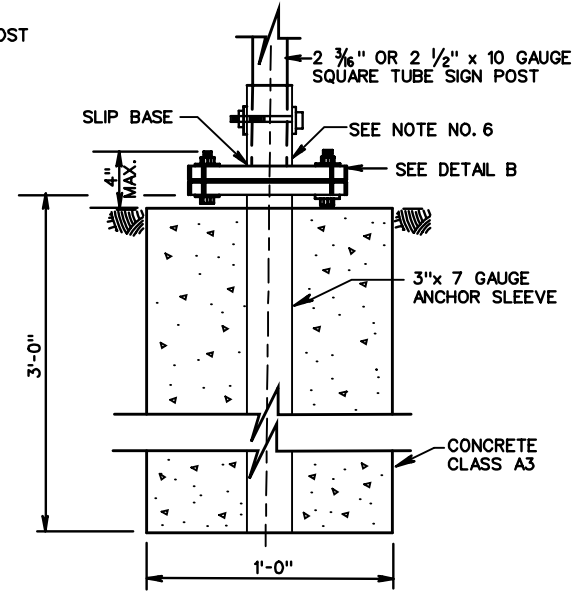
FOUNDATION DETAILS



DETAIL A

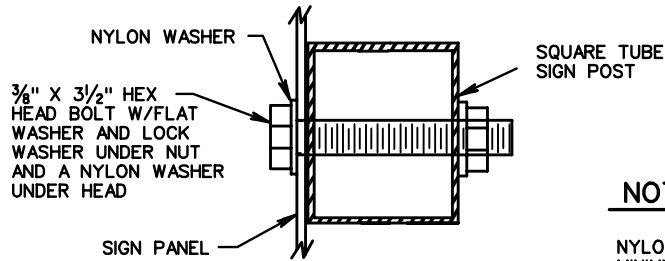


DETAIL B



SIGN POST TO BE INSTALLED ON SLIP BASE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS

SIGN PANEL ATTACHMENT DETAILS



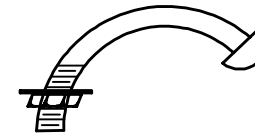
NOTES:

NYLON WASHER SHALL BE 1/16" THICK MINIMUM WITH AN OUTSIDE DIAMETER OF 1" AND AN INSIDE DIAMETER OF 7/16".

TOP OF SIGN PANEL SHALL BE FLUSH WITH THE TOP OF THE POST.

SIGN PANEL DESIGN SHALL BE IN ACCORDANCE WITH STANDARD SPD-5.

CORNER BOLT



CORNER BOLTS SHALL BE 5/16" DIA. CARRIAGE HEAD BOLT WITH SERRATED FLANGE NUT.

CORNER BOLTS SHALL BE USED FOR ATTACHING THE SQUARE TUBE SIGN POST TO THE ANCHOR SLEEVE OR SLIP BASE.



ROAD AND BRIDGE STANDARDS

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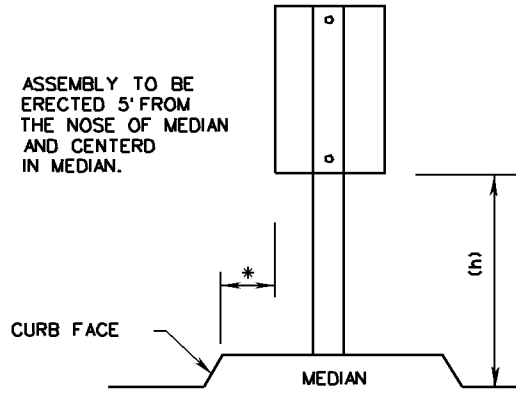
SQUARE TUBE SIGN POST

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE

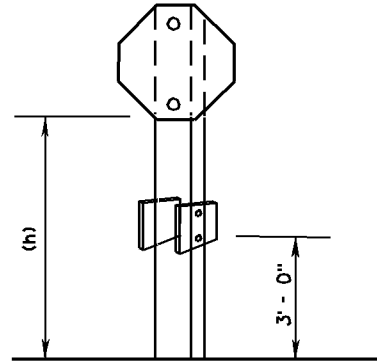
700

ASSEMBLY TO BE
ERECTED 5' FROM
THE NOSE OF MEDIAN
AND CENTERED
IN MEDIAN.

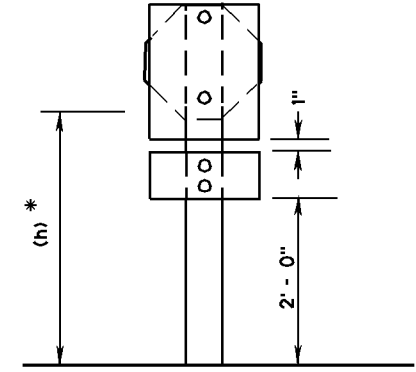


* 2' MINIMUM FOR MEDIANS OVER 10' IN WIDTH. 12" FOR MEDIANS 10' OR LESS IN WIDTH UNLESS SHOWN OTHERWISE ON THE PLANS.

SINGLE POST
MEDIAN INSTALLATIONS

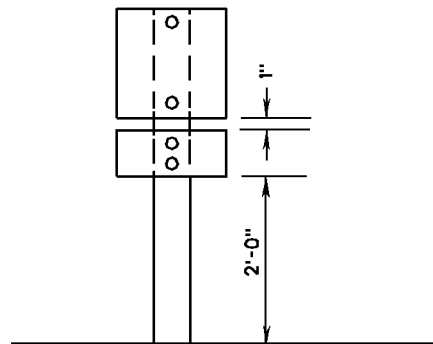


ONE WAY SIGNS
ON EXIT RAMP
WITH STOP SIGN

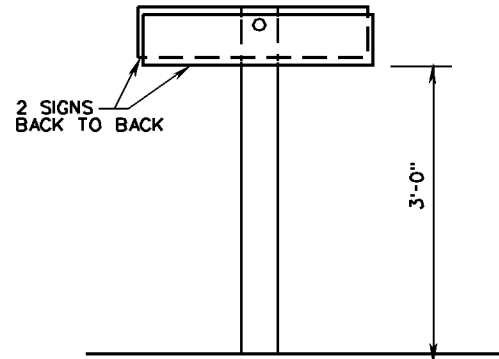


* TO BOTTOM OF STOP SIGN
OR YIELD SIGN

STOP OR YIELD SIGNS AND
DO NOT ENTER SIGN
AT EXIT RAMP



WRONG WAY SIGN
AND DO NOT ENTER SIGN
ON EXIT RAMP



ONE WAY SIGNS
ON EXIT RAMP

SPECIFICATION
REFERENCE

700

SQUARE TUBE SIGN POST

VIRGINIA DEPARTMENT OF TRANSPORTATION

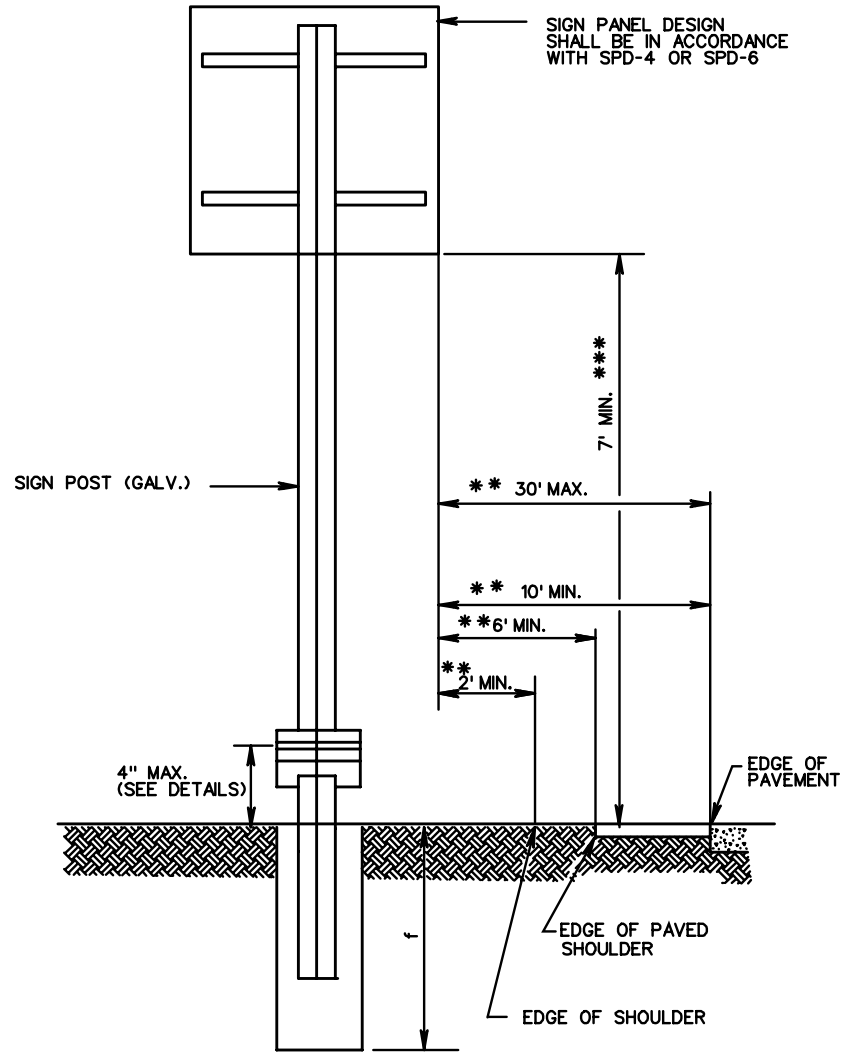
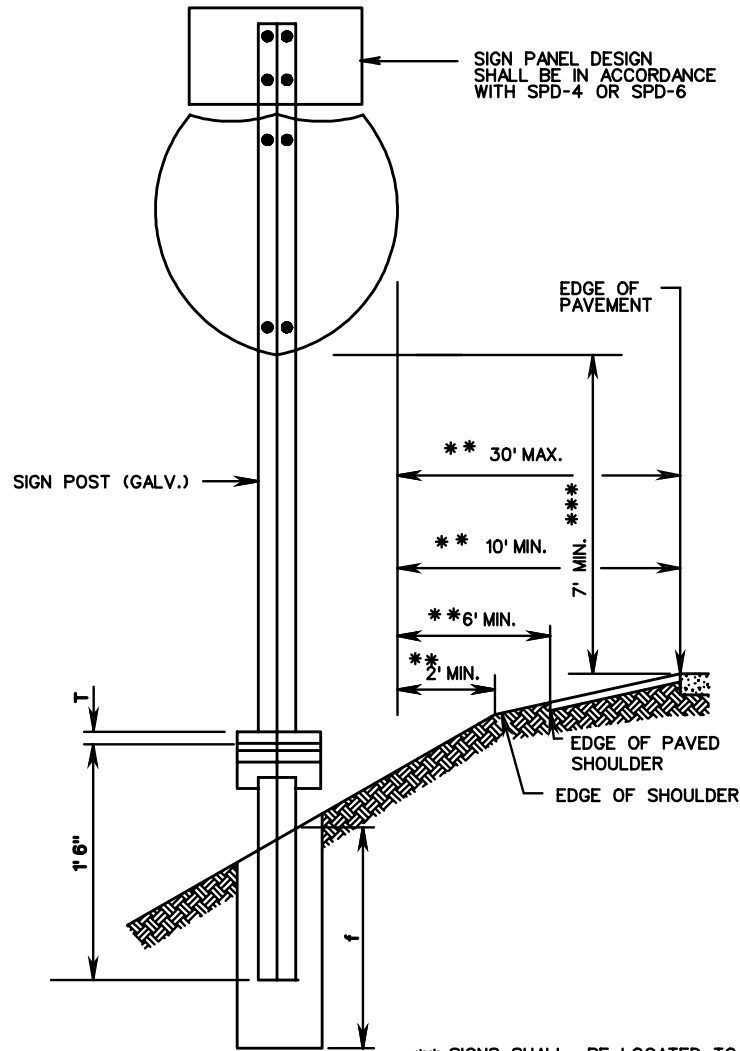
VDOT

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** SIGNS SHALL BE LOCATED TO PROVIDE OPTIMUM VIEWING AND SAFETY WITHIN THE INDICATED LIMITS FOR LATERAL PLACEMENT.

*** IN CUT SLOPES, THE MINIMUM DISTANCE BETWEEN THE TOP OF THE SIGN AND THE GROUND SHALL BE 9' FOR ANY TOP MAST SIGN WITHIN THE CLEAR ZONE. THIS REQUIREMENT WILL NOT APPLY TO SIGNS LOCATED MORE THAN 10' UP A SLOPE GREATER THAN 3:1.



ROAD AND BRIDGE STANDARDS

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VA SIGN STRUCTURE INSTALLATION DETAILS

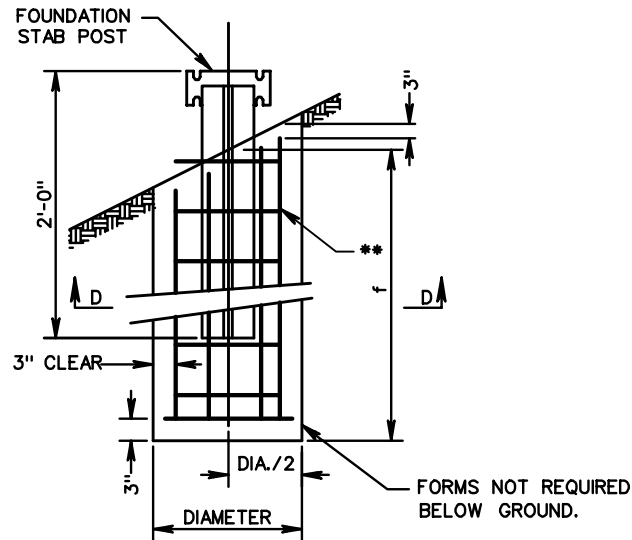
VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION
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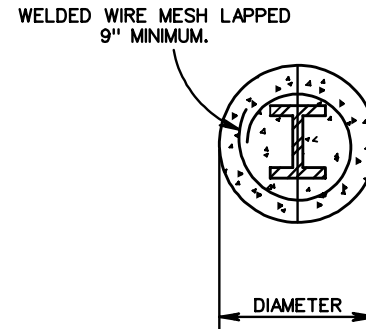
700

FOUNDATION

ELEVATION



SECTION D-D



** 6 x 6 - MW5.5 x MW5.5
OR
6 X 6 - 2/2 WELDED WIRE MESH
[TWO OFFSET LAYERS REQUIRED]

SIGN POST AND FOUNDATION DETAILS

STRUCTURE TYPE	SIGN PANEL DIMENSIONS		SIGN POST	* POST LENGTH DIMENSIONS SLOPE 3:1 TO 2:1	FOUNDATION DIMENSIONS		WELDED WIRE MESH		STEEL BASE PLATE T (THICKNESS)
	W	H			f	DIAMETER	LENGTH	SQ. FT.	
VA-A	3'	3'	S3 x 5.7	12'-3"	3'-0"	1'-0"	2'-6"	5	1/2"
VA-B	4'	4'	W4 x 13	12'-3"	4'-6"	1'-9"	4'-4"	20	1"
VA-C	4'	5'		13'-3"					
VA-D	5'	3'		12'-9"					
VA-E	6'	5'		13'-9"					
VA-F	4'	-		13'-9"					
VA-G	5'	-		13'-0"					
VA-K	4'	5'		17'-3"					
VA-K	4'	4'		-					
VA-L	6'	6'		14'-6"					
VA-M	5'	5'		13'-9"					
VA-A2	6'	3'	W6 x 12	13'-9"					

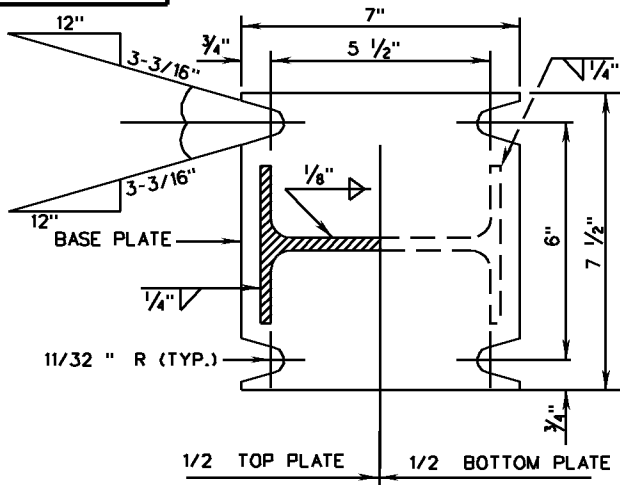
* ALL POST LENGTHS SHALL BE FIELD CHECKED BY CONTRACTOR PRIOR TO FABRICATION.

SPECIFICATION REFERENCE
700

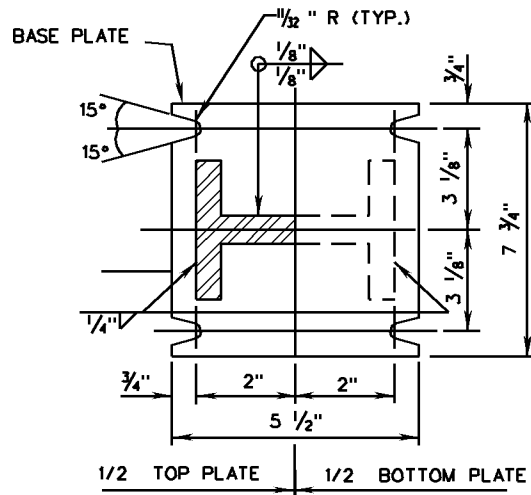
VA SIGN STRUCTURE
INSTALLATION DETAILS
VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT ROAD AND BRIDGE STANDARDS	
REVISION DATE	SHEET 2 OF 4
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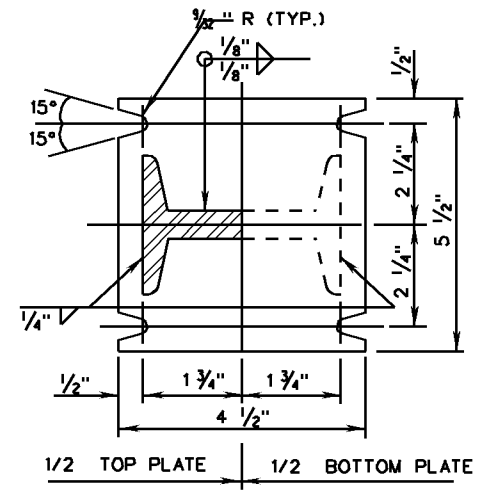
SSP-VA



SECTION A-A
FOR W6 x 12 POST

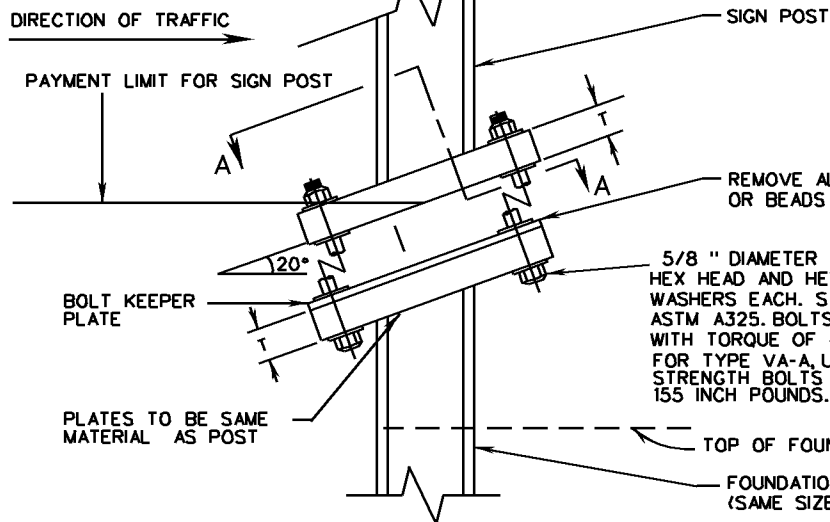


SECTION A-A
FOR W4 x 13 POST

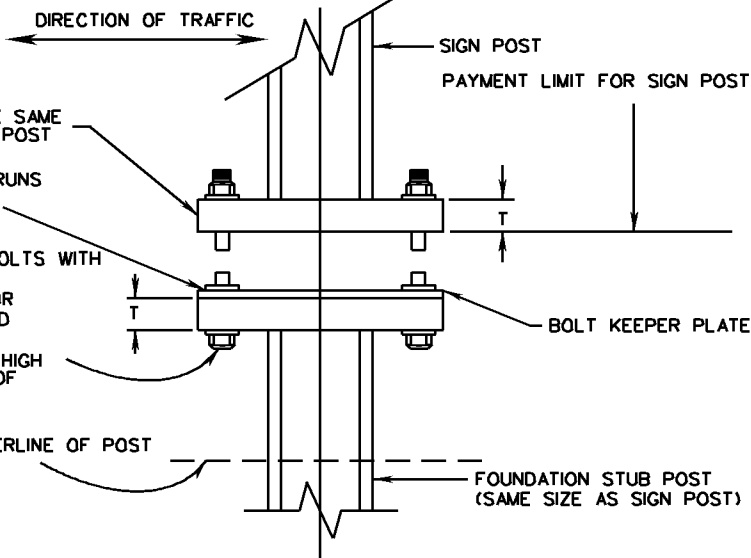


SECTION A-A
FOR S3 x 5.7 POST

STANDARD INSTALLATION



MEDIAN ONLY INSTALLATION



5/8 " DIAMETER HIGH STRENGTH BOLTS WITH HEX HEAD AND HEX NUT AND 3 WASHERS EACH. STAINLESS STEEL OR ASTM A325. BOLTS TO BE INSTALLED WITH TORQUE OF 450 INCH LBS. FOR TYPE VA-A, USE 1/2" DIAMETER HIGH STRENGTH BOLTS WITH A TORQUE OF 155 INCH POUNDS.

TOP OF FOUNDATION AT CENTERLINE OF POST
FOUNDATION STUB POST (SAME SIZE AS SIGN POST)

FOUNDATION STUB POST (SAME SIZE AS SIGN POST)



ROAD AND BRIDGE STANDARDS

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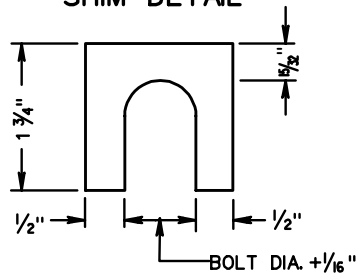
VA SIGN STRUCTURE
INSTALLATION DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE

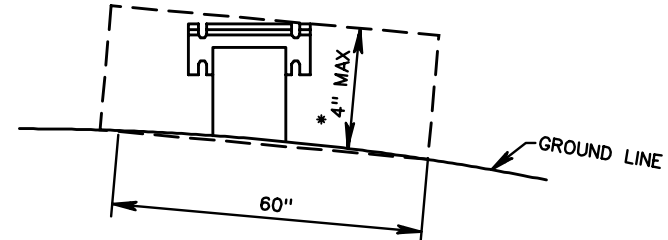
700

SHIM DETAIL



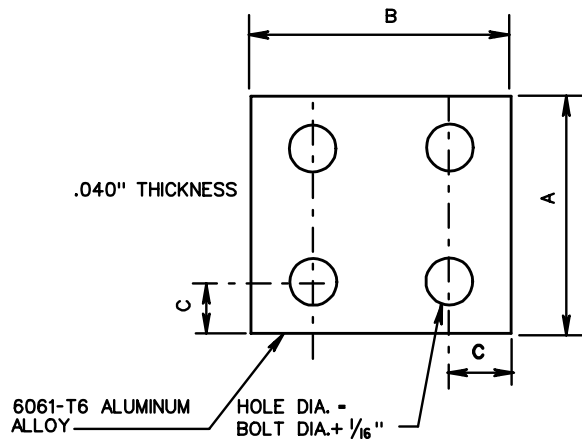
FURNISH 2 EACH .063"± AND 2 EACH .032"± THICK SHIMS PER POLE. SHIMS SHALL BE FABRICATED FROM BRASS CONFORMING TO ASTM B36 OR FROM STAINLESS STEEL WITH A MINIMUM CHROMIUM CONTENT OF 11.5% NO MORE THAN 2 SHIMS SHALL BE USED PER BOLT WITH A MAXIMUM OF 4 SHIMS PER POST.

METHOD TO DETERMINE MAXIMUM PROJECTION OF FOUNDATION STUB POST

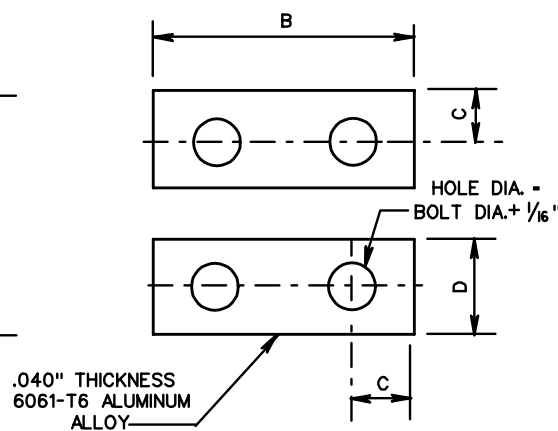


* 4" MAXIMUM PROJECTION WHEN MEASURED ABOVE A 60" CHORD ALIGNED RADIALLY TO THE CENTERLINE OF THE HIGHWAY AND CONNECTING ANY POINT WITHIN THE LENGTH OF THE CHORD, ON THE GROUND SURFACE ON THE OTHER SIDE.

BOLT KEEPER PLATE



ALTERNATE BOLT KEEPER PLATE



BOLT KEEPER PLATE DATA

POST SHAPE	A	B	C	D
S3 x 5.7	5 1/2"	4 1/2"	1/2"	1"
W4x 13	7 3/4"	5 1/2"	3/4"	1 1/2"
W6 x 12	7 1/2"	7"	3/4"	1 1/2"

SPECIFICATION REFERENCE

700

VA SIGN STRUCTURE
INSTALLATION DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT

ROAD AND BRIDGE STANDARDS

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THE SPACING BETWEEN SIGN POSTS SHALL BE A MINIMUM OF 8' CENTER TO CENTER.

* SIGNS SHALL BE LOCATED TO PROVIDE OPTIMUM VIEWING AND SAFETY WITHIN THE INDICATED VIEW LIMITS FOR LATERAL PLACEMENT.

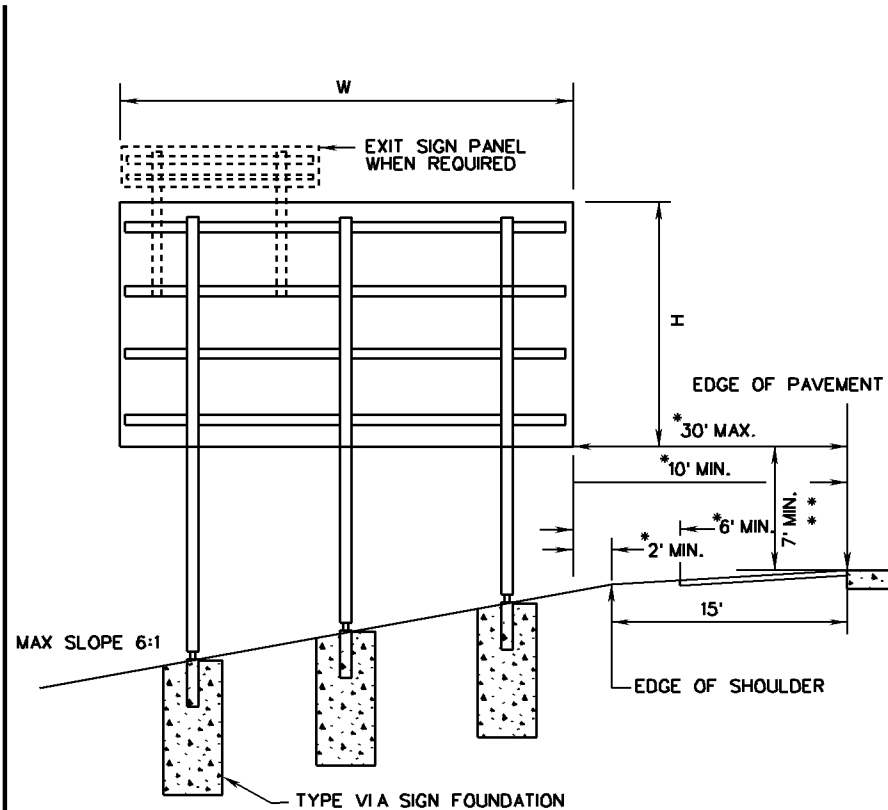
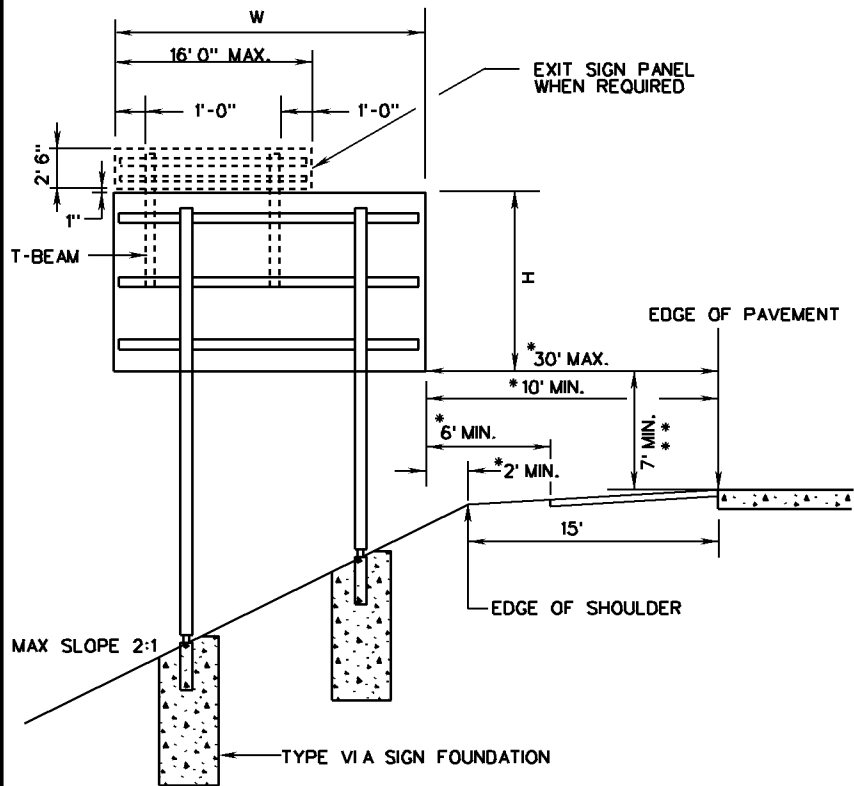
** IN CUT SLOPES, THE MINIMUM CLEARANCE BETWEEN THE BOTTOM OF THE SIGN AND THE GROUND SHALL BE 7'-0" FOR ANY PORTION OF THE SIGN WITHIN THE CLEAR ZONE. THIS REQUIREMENT WILL NOT APPLY TO SIGNS OR PORTIONS OF SIGNS LOCATED MORE THAN 10'-0" UP A SLOPE GREATER THAN 3:1.

SIGN PANEL SHALL BE DESIGNED IN ACCORDANCE WITH SPD-2, SPD-3 OR SPD-7

THE VERTICAL T-BEAM SHALL BE 2"W X 2"D X 1/4" THICK STRUCTURAL ALUMINUM ALLOY 6061-T6 AT A MINIMUM LENGTH OF 6'-0" AND EXTENDED TO THE NEXT HORIZONTAL SUPPORT BAR ON THE SSP-VIA STRUCTURE

THE T-BEAM SHALL BE ATTACHED TO THE SSP-VIA STRUCTURE BY THE FOLLOWING METHODS:

1. T-BEAM FOR THE SPD-2 SIGN PANEL SHALL BE ATTACHED BY USING POST CLIP BOLTS A MINIMUM OF TWO AT EACH CROSS MEMBER.
2. T-BEAM FOR THE SPD-3 SIGN PANEL SHALL BE ATTACHED BY USING TWO ASTM F593, ALLOY 304 STAINLESS STEEL 3/8" DIAMETER-16 UNC BOLT WITH STAINLESS STEEL NUT AND FLAT WASHER AT ZEE BAR CONNECTIONS AND TWO POST CLAMP AND BOLT AT EACH TEE-BAR CONNECTION.
3. T-BEAM FOR THE SPD-7 SIGN PANEL SHALL BE ATTACHED BY USING POST CLAMP AND POST CLAMP BOLTS, A MINIMUM OF TWO AT EACH STIFFENER.



ROAD AND BRIDGE STANDARDS

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4/09

INTERSTATE SIGN STRUCTURE

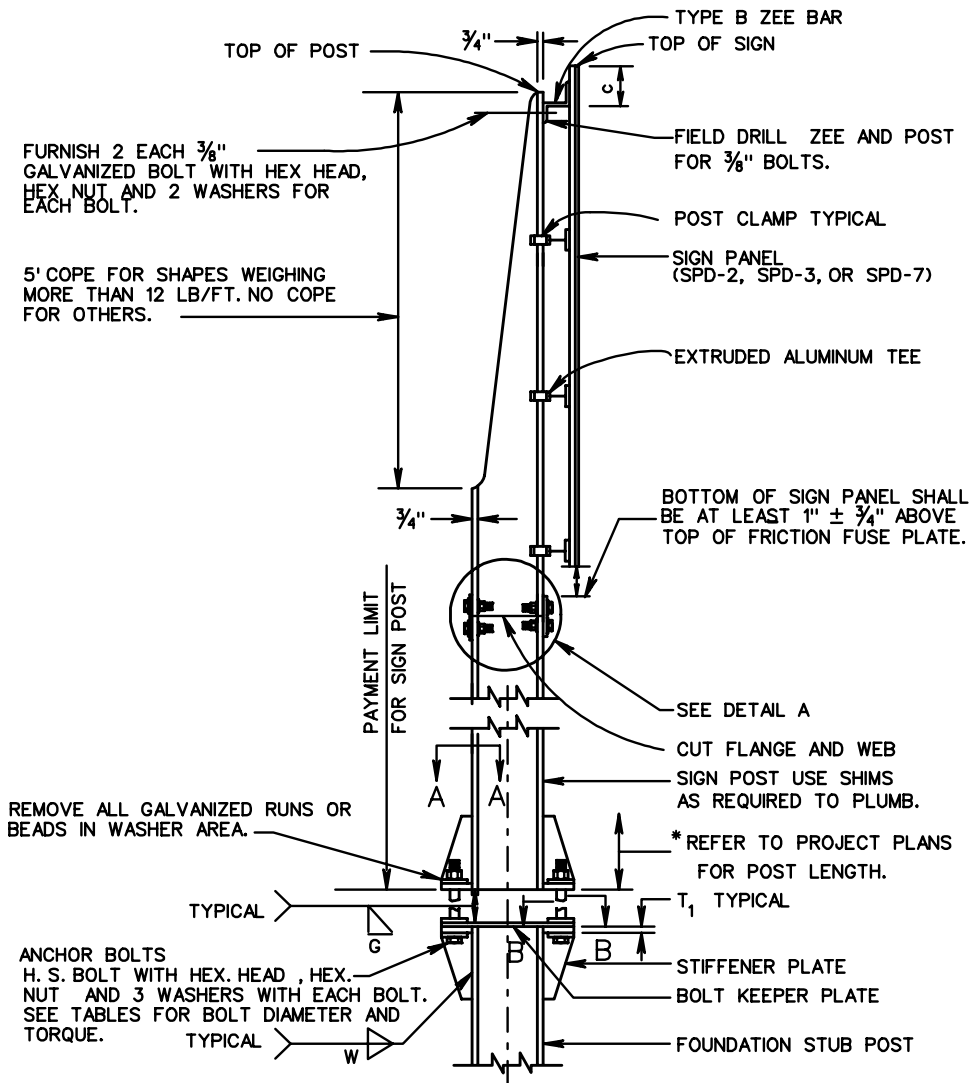
INSTALLATION DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE

700

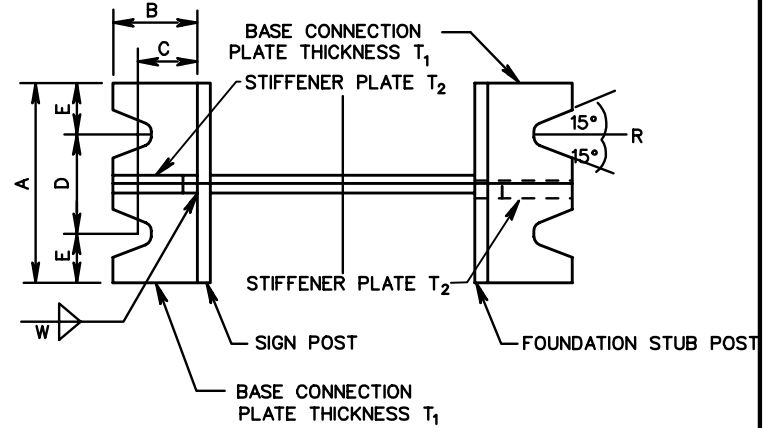
SIGN POST AND FOUNDATION STUB POST ELEVATION



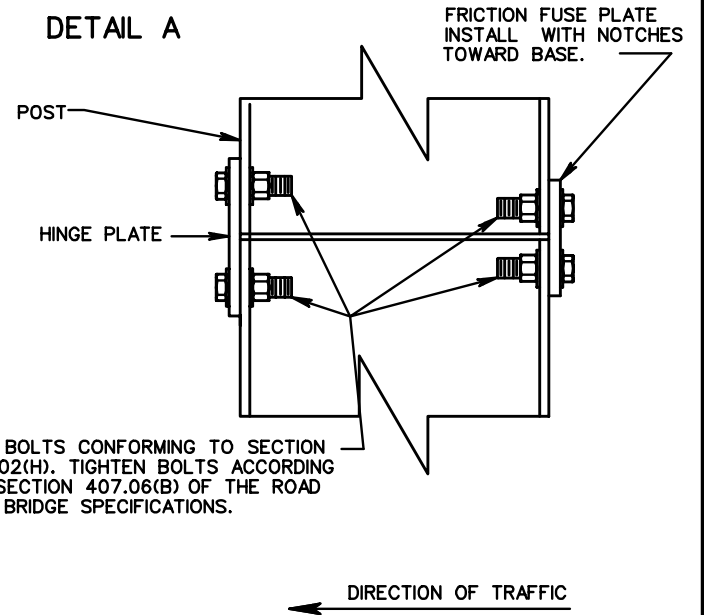
* ALL POST LENGTHS SHALL BE FIELD CHECKED BY CONTRACTOR PRIOR TO FABRICATION.

SECTION A-A

SECTION B-B



DETAIL A



SPECIFICATION REFERENCE

700

INTERSTATE SIGN STRUCTURE
INSTALLATION DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT

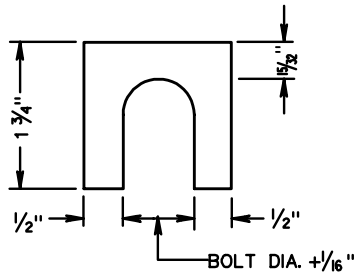
ROAD AND BRIDGE STANDARDS

REVISION DATE

SHEET 2 OF 10

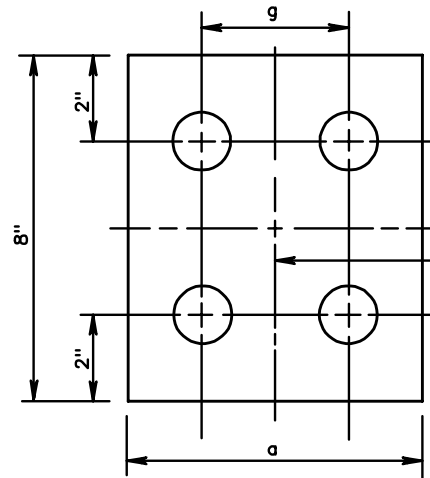
1323.11

SHIM DETAIL

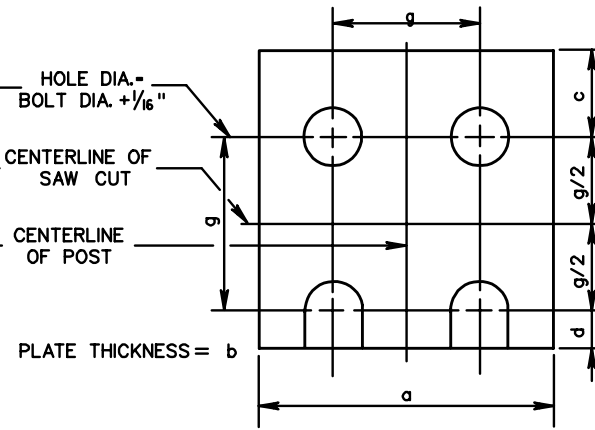


FURNISH 2 EACH .063"± AND 2 EACH .032"± THICK SHIMS PER POLE. SHIMS SHALL BE FABRICATED FROM BRASS CONFORMING TO ASTM B36 OR FROM STAINLESS STEEL WITH A MINIMUM CHROMIUM CONTENT OF 11.50%. NO MORE THAN 2 SHIMS SHALL BE USED PER BOLT WITH A MAXIMUM OF 4 SHIMS PER POST.

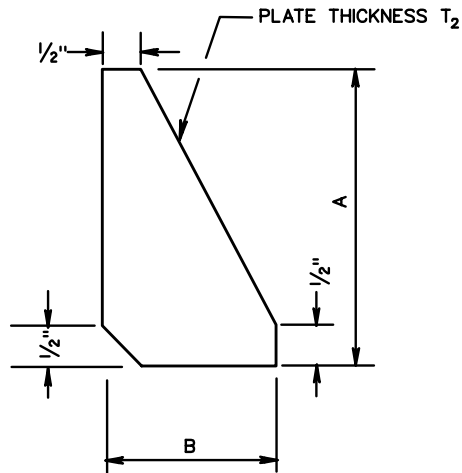
HINGE PLATE DETAIL



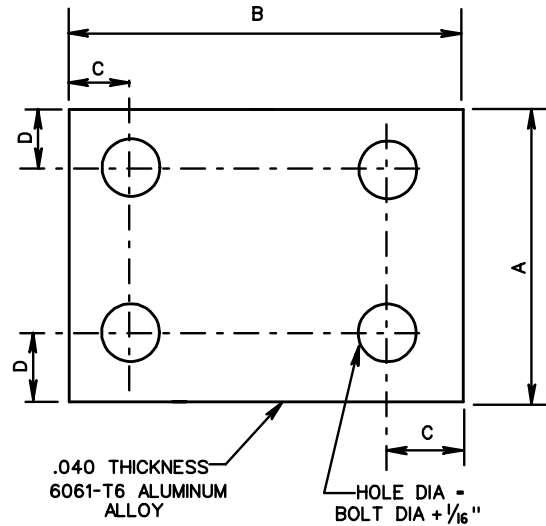
FUSE PLATE DETAIL



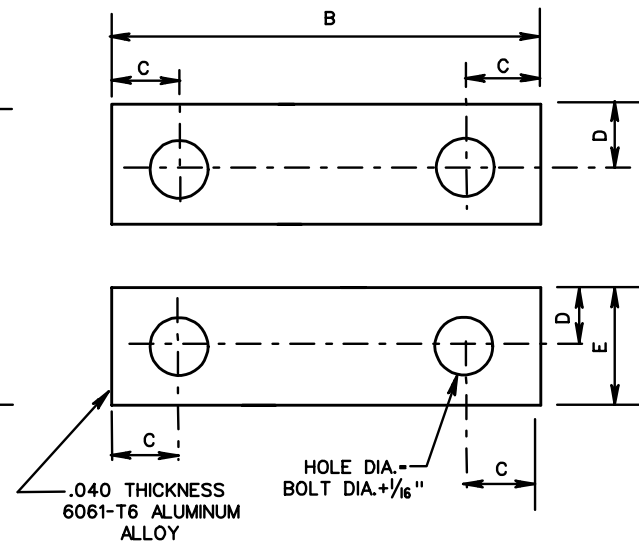
STIFFENER PLATE



BOLT KEEPER PLATE



ALTERNATE BOLT KEEPER PLATE



ROAD AND BRIDGE STANDARDS

SHEET 3 OF 10

REVISION DATE

1323.12

INTERSTATE SIGN STRUCTURE
INSTALLATION DETAILS

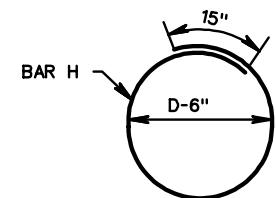
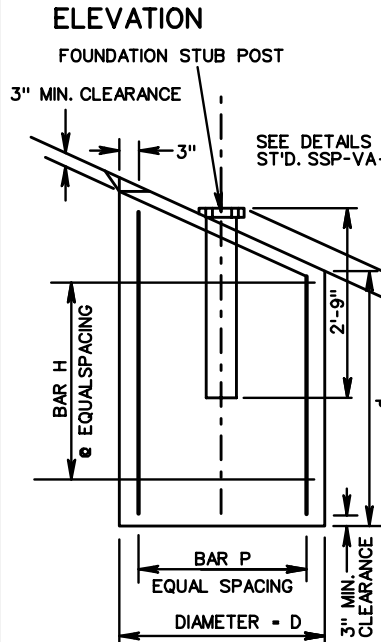
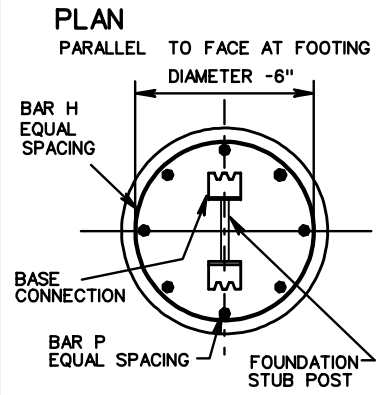
VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION
REFERENCE

700

TYPE VIA	FOOTING DIMENSIONS		BAR P			BAR H		
	D	d	LENGTH	BAR SIZE	NO.	BAR SIZE	NO.	LENGTH
A	2'-3"	4'-0"	3'-7"	# 4	8	# 4	5	6'-7"
B	2'-3"	4'-0"	3'-7"	# 4	8	# 4	5	6'-7"
C	2'-3"	4'-0"	3'-7"	# 4	8	# 4	5	6'-7"
D	2'-3"	4'-0"	3'-7"	# 4	8	# 4	5	6'-7"
E	2'-3"	4'-6"	4'-1"	# 4	8	# 4	5	6'-7"
F	2'-9"	4'-6"	4'-1"	# 4	8	# 4	5	8'-2"
G	2'-9"	5'-0"	4'-7"	# 4	8	# 4	6	8'-2"
H	2'-9"	5'-6"	5'-1"	# 5	8	# 4	6	8'-2"
J	3'-0"	5'-6"	5'-1"	# 5	8	# 4	6	9'-0"
K	3'-0"	6'-0"	5'-7"	# 5	8	# 4	7	9'-0"
L	3'-0"	6'-6"	6'-1"	# 5	8	# 4	7	9'-0"
M	3'-6"	6'-6"	6'-1"	# 5	8	# 4	7	10'-7"
N	3'-6"	7'-0"	6'-7"	# 5	8	# 4	8	10'-7"
O	3'-6"	7'-0"	6'-7"	# 6	8	# 4	8	10'-7"
P	3'-6"	7'-6"	7'-1"	# 6	8	# 4	8	10'-7"
Q	2'-9"	4'-6"	4'-1"	# 4	8	# 4	5	8'-2"
R	2'-9"	5'-0"	4'-7"	# 4	8	# 4	6	8'-2"
S	2'-9"	5'-6"	5'-1"	# 4	8	# 4	6	8'-2"
T	2'-9"	6'-0"	5'-7"	# 5	8	# 4	7	8'-2"
U	2'-9"	6'-6"	6'-1"	# 5	8	# 4	7	8'-2"
V	3'-0"	6'-6"	6'-1"	# 5	8	# 4	7	9'-0"
W	3'-0"	7'-0"	6'-7"	# 6	8	# 4	8	9'-0"
X	3'-0"	7'-6"	7'-1"	# 6	8	# 4	8	9'-0"
Y	3'-6"	7'-6"	7'-1"	# 6	8	# 4	8	10'-7"
Z	3'-6"	8'-0"	7'-7"	# 6	8	# 4	9	10'-7"
AA	3'-6"	8'-6"	8'-1"	# 7	8	# 4	9	10'-7"
BB	3'-6"	9'-0"	8'-7"	# 7	8	# 4	10	10'-7"
CC	2'-9"	5'-6"	5'-1"	# 5	8	# 4	6	8'-2"
DD	2'-9"	6'-6"	6'-1"	# 5	8	# 4	7	8'-2"
EE	2'-9"	7'-0"	6'-7"	# 6	8	# 4	8	8'-2"
FF	3'-0"	7'-0"	6'-7"	# 6	8	# 4	8	9'-0"
GG	3'-6"	7'-6"	7'-1"	# 6	8	# 4	8	10'-7"
HH	3'-6"	8'-0"	7'-7"	# 6	8	# 4	9	10'-7"
JJ	3'-6"	8'-6"	8'-1"	# 7	8	# 4	9	10'-7"
KK	3'-6"	9'-0"	8'-7"	# 7	8	# 4	10	10'-7"
LL	3'-6"	9'-6"	9'-1"	# 7	8	# 4	10	10'-7"
MM	3'-6"	10'-0"	9'-7"	# 8	8	# 4	11	10'-7"
NN	3'-6"	10'-0"	9'-7"	# 8	8	# 4	11	10'-7"

TYPE VIA	FOOTING DIMENSIONS		BAR P			BAR H		
	D	d	LENGTH	BAR SIZE	NO.	BAR SIZE	NO.	LENGTH
OO	2'-9"	5'-6"	5'-1"	# 4	8	# 4	6	8'-2"
PP	2'-9"	6'-0"	5'-7"	# 5	8	# 4	7	8'-2"
QQ	2'-9"	6'-6"	6'-1"	# 5	8	# 4	7	8'-2"
RR	3'-0"	7'-0"	6'-7"	# 5	8	# 4	8	9'-0"
SS	3'-0"	7'-0"	6'-7"	# 6	8	# 4	8	9'-0"
TT	3'-0"	8'-0"	7'-7"	# 6	8	# 4	9	9'-0"
UU	3'-6"	8'-0"	7'-7"	# 6	8	# 4	9	10'-7"
VV	3'-6"	8'-0"	7'-7"	# 6	8	# 4	9	10'-7"
WW	3'-6"	8'-6"	8'-1"	# 7	8	# 4	9	10'-7"
XX	3'-6"	9'-0"	8'-7"	# 7	8	# 4	10	10'-7"
YY	3'-6"	9'-6"	9'-1"	# 8	8	# 4	10	10'-7"
ZZ	3'-0"	7'-0"	6'-7"	# 6	8	# 4	8	9'-0"
AB	3'-0"	7'-6"	7'-1"	# 6	8	# 4	8	9'-0"
AC	3'-6"	8'-0"	7'-7"	# 6	8	# 4	9	10'-7"
AD	3'-6"	8'-6"	8'-1"	# 7	8	# 4	9	10'-7"
AE	3'-6"	9'-0"	8'-7"	# 7	8	# 4	10	10'-7"
AF	3'-6"	9'-6"	9'-1"	# 7	8	# 4	10	10'-7"
AG	3'-6"	10'-0"	9'-7"	# 8	8	# 4	11	10'-7"
AH	4'-0"	10'-0"	9'-7"	# 8	8	# 4	11	12'-1"
AJ	4'-0"	10'-6"	10'-1"	# 8	8	# 4	11	12'-1"
AK	4'-0"	11'-0"	10'-7"	# 8	8	# 4	12	12'-1"
AL	4'-0"	7'-6"	7'-1"	# 6	8	# 4	8	12'-1"
AM	4'-0"	8'-0"	7'-7"	# 6	8	# 4	9	12'-1"
AN	4'-0"	9'-0"	8'-7"	# 7	8	# 4	10	12'-1"
AO	4'-0"	9'-6"	9'-1"	# 7	8	# 4	10	12'-1"
AP	4'-0"	10'-0"	9'-7"	# 8	8	# 4	11	12'-1"
AQ	4'-0"	10'-6"	10'-1"	# 8	8	# 4	11	12'-1"
AR	4'-0"	11'-0"	10'-7"	# 8	8	# 4	12	12'-1"
AS	4'-0"	11'-6"	11'-1"	# 9	8	# 4	12	12'-1"
AT	4'-0"	12'-0"	11'-1"	# 9	8	# 4	13	12'-1"
AU	4'-0"	9'-0"	8'-7"	# 7	8	# 4	10	12'-1"
AV	4'-0"	9'-6"	9'-1"	# 7	8	# 4	10	12'-1"
AW	4'-0"	10'-0"	9'-7"	# 8	8	# 4	11	12'-1"
AX	4'-0"	11'-0"	10'-7"	# 8	8	# 4	12	12'-1"
AY	4'-0"	11'-6"	11'-1"	# 9	8	# 4	12	12'-1"
AZ	4'-0"	12'-0"	11'-7"	# 9	8	# 4	13	12'-1"
BC	4'-0"	13'-0"	12'-7"	# 10	8	# 4	14	12'-1"
BD	4'-0"	13'-6"	13'-1"	# 10	8	# 4	14	12'-1"



SPECIFICATION REFERENCE
700

**INTERSTATE SIGN STRUCTURE
INSTALLATION DETAILS**
VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT
ROAD AND BRIDGE STANDARDS
REVISION DATE SHEET 4 OF 10
1323.13

SIGN STRUCTURE TYPE VIA	SIGN PANEL DIMENSIONS		POST SHAPE	POST LENGTH			ANCHOR BOLTS	
				NO. 1	NO. 2	NO. 3	DIA.	TORQUE IN.-LBS.
	W	H						
A	---	---	---	---	---	---	---	---
B	12'	4'	W10X12	13'-1"	16'-5"	---	1/2"	200
C	11'	5'	W10X12	14'-1"	16'-7"	---	1/2"	200
D	---	---	---	---	---	---	---	---
E	10'	6'	W10X12	15'-0"	17'-9"	---	1/2"	200
F	12'	6'	W12X14	15'-5"	18'-5"	---	5/8"	600
G	14'	6'	W12X16	15'-9"	19'-1"	---	5/8"	600
H	16'	6'	W12X19	15'-8"	20'-2"	---	5/8"	600
J	18'	6'	W12X19	15'-11"	20'-11"	---	3/4"	900
K	20'	6'	W12X22	16'-2"	21'-8"	---	3/4"	900
L	22'	6'	W14X26	16'-4"	22'-6"	---	3/4"	900
M	24'	6'	W14X26	16'-7"	23'-3"	---	7/8"	1000
N	26'	6'	W14X26	16'-9"	24'-0"	---	7/8"	1000
O	28'	6'	W16X31	17'-1"	24'-10"	---	7/8"	1000
P	30'	6'	W16X31	17'-3"	25'-7"	---	7/8"	1000
Q	---	---	---	---	---	---	---	---
R	10'	8'	W12X14	16'-8"	19'-4"	---	5/8"	600
S	12'	8'	W12X16	16'-9"	20'-1"	---	5/8"	600
T	14'	8'	W12X19	17'-0"	20'-10"	---	3/4"	900
U	16'	8'	W12X22	17'-2"	21'-8"	---	3/4"	900
V	18'	8'	W14X22	17'-5"	22'-5"	---	3/4"	900
W	20'	8'	W14X26	17'-8"	23'-2"	---	7/8"	1000
X	22'	8'	W16x26	17'-10"	24'-0"	---	7/8"	1000
Y	24'	8'	W16X31	18'-1"	24'-9"	---	7/8"	1000
Z	26'	8'	W14X34	18'-4"	25'-6"	---	1"	1500



ROAD AND BRIDGE STANDARDS

SHEET 5 OF 10

REVISION DATE

1323.14

INTERSTATE SIGN STRUCTURE INSTALLATION DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION
REFERENCE

700

SIGN STRUCTURE TYPE VIA	SIGN PANEL DIMENSIONS		POST SHAPE	POST LENGTH			ANCHOR BOLTS	
				NO. 1	NO. 2	NO. 3	DIA.	TORQUE IN.-LBS.
	W	H						
AA	28'	8'	W18X35	18'-6"	26'-3"	---	1"	1500
BB	30'	8'	W18X40	18'-9"	27'-1"	---	1"	1500
CC	10'	10'	W12X19	18'-6"	21'-3"	---	5/8"	600
DD	12'	10'	W14X22	18'-9"	22'-1"	---	3/4"	900
EE	14'	10'	W14X22	19'-0"	22'-10"	---	3/4"	900
FF	16'	10'	W14X26	19'-2"	23'-8"	---	7/8"	1000
GG	18'	10'	W16X31	19'-5"	24'-5"	---	7/8"	1000
HH	20'	10'	W16X31	19'-8"	25'-2"	---	1"	1500
JJ	22'	10'	W18X35	19'-10"	26'-0"	---	1"	1500
KK	24'	10'	W18X40	20'-1"	26'-9"	---	1"	1500
LL	26'	10'	W21X44	20'-4"	27'-6"	---	1"	1500
MM	28'	10'	W21X44	20'-6"	28'-3"	---	1"	1500
NN	30'	10'	W21X44	21'-0"	28'-9"	---	1 1/8"	2540
OO	10'	9'	W12X16	17'-6"	20'-3"	---	5/8"	600
PP	12'	9'	W12X19	17'-9"	21'-1"	---	3/4"	900
QQ	14'	9'	W12X22	18'-0"	21'-10"	---	3/4"	900
RR	16'	9'	W14X26	18'-2"	22'-8"	---	3/4"	900
SS	18'	9'	W14X26	18'-5"	23'-5"	---	7/8"	1000
TT	20'	9'	W16X31	18'-8"	24'-2"	---	7/8"	1000
UU	22'	9'	W16X31	18'-10"	25'-0"	---	7/8"	1000
VV	24'	9'	W18X35	19'-1"	25'-9"	---	1"	1500
WW	26'	9'	W18X35	19'-4"	26'-6"	---	1"	1500
XX	28'	9'	W18X40	19'-10"	27'-0"	---	1"	1500
YY	30'	9'	W21X44	20'-4"	27'-6"	---	1"	1500
ZZ	12'	12'	W14X26	20'-9"	24'-1"	---	7/8"	1000

SPECIFICATION
REFERENCE

700

INTERSTATE SIGN STRUCTURE INSTALLATION DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION



ROAD AND BRIDGE STANDARDS

REVISION DATE

SHEET 6 OF 10

1323.15

SIGN STRUCTURE TYPE VIA	SIGN PANEL DIMENSIONS							
			POST	POST LENGTH			ANCHOR BOLTS	
	W	H	SHAPE	NO. 1	NO. 2	NO. 3	DIA.	TORQUE IN.-LBS.
AB	14'	12'	W16X26	21'-0"	24'-10"	---	7/8"	1000
AC	16'	12'	W16X31	21'-2"	25'-8"	---	7/8"	1000
AD	18'	12'	W14X34	21'-5"	26'-5"	---	1"	1500
AE	20'	12'	W16X40	21'-5"	26'-11"	---	1"	1500
AF	22'	12'	W18X40	21'-7"	27'-9"	---	1 1/8"	2540
AG	24'	12'	W21X44	21'-10"	28'-6"	---	1 1/8"	2540
AH	26'	12'	W18X35	19'-5"	20'-11"	22'-5"	1"	1500
AJ	28'	12'	W18X35	19'-6"	21'-2"	22'-9"	1"	1500
AK	30'	12'	W18X40	19'-6"	21'-3"	23'-0"	1"	1500
AL	14'	14'	W16X31	23'-0"	26'-10"	---	1"	1500
AM	16'	14'	W18X35	23'-2"	27'-8"	---	1"	1500
AN	18'	14'	W18X40	23'-5"	28'-5"	---	1"	1500
AO	20'	14'	W21X44	23'-8"	29'-2"	---	1 1/8"	2540
AP	22'	14'	W16X40	21'-4"	22'-8"	23'-11"	1"	1500
AQ	24'	14'	W18X35	21'-4"	22'-9"	24'-2"	1"	1500
AR	26'	14'	W18X40	21'-5"	22'-11"	24'-5"	1"	1500
AS	28'	14'	W21X44	21'-6"	23'-2"	24'-9"	1"	1500
AT	30'	14'	W21X44	21'-6"	23'-3"	25'-0"	1"	1500
AU	16'	16'	W18X40	25'-2"	29'-8"	---	1 1/8"	2540
AV	18'	16'	W21X44	25'-5"	30'-5"	---	1 1/8"	2540
AW	20'	16'	W18X35	23'-1"	24'-4"	25'-7"	1"	1500
AX	22'	16'	W18X40	23'-4"	24'-8"	25'-11"	1"	1500
AY	24'	16'	W21X44	23'-6"	24'-10"	26'-2"	1"	1500
AZ	26'	16'	W21X44	23'-6"	25'-0"	26'-6"	1"	1500
BC	28'	16'	W21X44	23'-6"	25'-2"	26'-9"	1"	1500
BD	30'	16'	W21X44	23'-6"	25'-3"	27'-0"	1 1/8"	2540



ROAD AND BRIDGE STANDARDS

SHEET 7 OF 10

REVISION DATE

1323.16

INTERSTATE SIGN STRUCTURE INSTALLATION DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION
REFERENCE

700

SIGN STRUCTURE TYPE VIA	SUPPORT																					
	BASE CONNECTION DATA TABLE									FUSE AND HINGE PLATE DATA TABLE							BOLT KEEPER PLATE DATA TABLE					
	A	B	C	D	E	T ₁	T ₂	W	R	BOLT DIA.	a	b	c	d	g	g/2	BOLT DIA.	A	B	C	D	E
A	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
B	5"	2"	1/4"	2 3/4"	1/8"	5/8"	1/2"	1/4"	5/32"	1/2"	4"	3/16"	1/16"	5/8"	2/4"	1/8"	1/2"	5"	13 7/8"	3/4"	1/8"	2/4"
C	5"	2"	1/4"	2 3/4"	1/8"	5/8"	1/2"	1/4"	5/32"	1/2"	4"	3/16"	1/16"	5/8"	2/4"	1/8"	1/2"	5"	13 7/8"	3/4"	1/8"	2/4"
D	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
E	5"	2"	1/4"	2 3/4"	1/8"	5/8"	1/2"	1/4"	5/32"	1/2"	4"	3/16"	1/16"	5/8"	2/4"	1/8"	1/2"	5"	13 7/8"	3/4"	1/8"	2/4"
F	5"	2"	1/4"	2 3/4"	1/8"	3/4"	1/2"	1/4"	1/32"	1/2"	4"	1/4"	1/16"	5/8"	2/4"	1/8"	5/8"	5"	15 7/8"	3/4"	1/8"	2/4"
G	5"	2"	1/4"	2 3/4"	1/8"	3/4"	1/2"	1/4"	1/32"	1/2"	4"	1/4"	1/16"	5/8"	2/4"	1/8"	5/8"	5"	16"	3/4"	1/8"	2/4"
H	6"	2 1/4"	1 3/8"	3 1/2"	1/4"	7/8"	5/8"	1/4"	1/32"	1/2"	4"	3/8"	1/16"	5/8"	2/4"	1/8"	5/8"	6"	16 5/8"	7/8"	1/4"	2 1/2"
J	6"	2 1/4"	1 3/8"	3 1/2"	1/4"	7/8"	5/8"	1/4"	5/32"	1/2"	4"	3/8"	1/16"	5/8"	2/4"	1/8"	3/4"	6"	16 5/8"	7/8"	1/4"	2 1/2"
K	6"	2 1/4"	1 3/8"	3 1/2"	1/4"	7/8"	5/8"	1/4"	5/32"	5/8"	4"	7/16"	7/8"	3/4"	2 1/4"	1/8"	3/4"	6"	16 3/4"	7/8"	1/4"	2 1/2"
L	7"	2 3/4"	2"	4"	1/2"	1"	3/4"	5/16"	5/32"	5/8"	5"	7/16"	7/8"	3/4"	2 3/4"	1 3/8"	3/4"	7"	19 3/8"	3/4"	1/2"	3"
M	7"	2 3/4"	2"	4"	1/2"	1"	3/4"	5/16"	5/32"	5/8"	5"	7/16"	7/8"	3/4"	2 3/4"	1 3/8"	7/8"	7"	19 3/8"	3/4"	1/2"	3"
N	7"	2 3/4"	2"	4"	1/2"	1"	3/4"	5/16"	5/32"	5/8"	5"	7/16"	7/8"	3/4"	2 3/4"	1 3/8"	7/8"	7"	19 3/8"	3/4"	1/2"	3"
O	7"	2 3/4"	2"	4"	1/2"	1 1/8"	3/4"	5/16"	5/32"	5/8"	5 1/2"	7/16"	7/8"	3/4"	2 3/4"	1 3/8"	7/8"	7"	21 3/8"	3/4"	1/2"	3"
P	7"	2 3/4"	2"	4"	1/2"	1 1/8"	3/4"	5/16"	5/32"	5/8"	5 1/2"	7/16"	7/8"	3/4"	2 3/4"	1 3/8"	7/8"	7"	21 3/8"	3/4"	1/2"	3"
Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
R	5"	2"	1/4"	2 3/4"	1/8"	3/4"	1/2"	1/4"	1/32"	1/2"	4"	1/4"	1/16"	5/8"	2/4"	1/8"	5/8"	5"	15 7/8"	3/4"	1/8"	2 1/4"
S	5"	2"	1/4"	2 3/4"	1/8"	3/4"	1/2"	1/4"	1/32"	1/2"	4"	1/4"	1/16"	5/8"	2/4"	1/8"	5/8"	5"	16"	7/8"	1/8"	2 1/4"
T	6"	2 1/4"	1 3/8"	3 1/2"	1/4"	7/8"	5/8"	1/4"	5/32"	5/8"	4"	3/8"	7/8"	3/4"	2 1/4"	1/8"	3/4"	6"	16 5/8"	7/8"	1/4"	2 1/2"
U	6"	2 1/4"	1 3/8"	3 1/2"	1/4"	7/8"	5/8"	1/4"	5/32"	3/4"	4"	7/16"	1/16"	7/8"	2 1/4"	1/8"	3/4"	6"	16 3/4"	7/8"	1/4"	2 1/2"
V	6"	2 1/4"	1 3/8"	3 1/2"	1/4"	7/8"	5/8"	1/4"	5/32"	3/4"	5"	5/16"	1/16"	7/8"	2 3/4"	1 3/8"	3/4"	6"	18 1/4"	3/4"	1/4"	2 1/2"
W	7"	2 3/4"	2"	4"	1/2"	1"	3/4"	5/16"	5/32"	3/4"	5"	7/16"	1/16"	7/8"	2 3/4"	1 3/8"	7/8"	7"	19 3/8"	3/4"	1/2"	3"
X	7"	2 3/4"	2"	4"	1/2"	1"	3/4"	5/16"	5/32"	3/4"	5 1/2"	3/8"	1/16"	7/8"	2 3/4"	1 3/8"	7/8"	7"	21 1/4"	3/4"	1/2"	3"
Y	7"	2 3/4"	2"	4"	1/2"	1 1/8"	3/4"	5/16"	5/32"	3/4"	5 1/2"	7/16"	1/16"	7/8"	2 3/4"	1 3/8"	7/8"	7"	21 3/8"	3/4"	1/2"	3"
Z	7"	2 3/4"	2"	4"	1/2"	1 1/8"	3/4"	5/16"	1/32"	3/4"	6 3/4"	7/16"	1/16"	7/8"	3 1/2"	1 3/4"	1"	7"	19 1/2"	3/4"	1/2"	3"

SPECIFICATION REFERENCE
700

**INTERSTATE SIGN STRUCTURE
INSTALLATION DETAILS**
VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT ROAD AND BRIDGE STANDARDS	
REVISION DATE	SHEET 8 OF 10
	1323.17

SUPPORT

SIGN STRUCTURE TYPE VIA	BASE CONNECTION DATA TABLE																				FUSE AND HINGE PLATE DATA TABLE					BOLT KEEPER PLATE DATA TABLE				
	A	B	C	D	E	T ₁	T ₂	W	R	BOLT DIA.	a	b	c	d	g	g/2	BOLT DIA.	A	B	C	D	E								
	AA	7"	2 ³ / ₄ "	2"	4"	1 ¹ / ₂ "	1 ¹ / ₈ "	3 ¹ / ₄ "	5 ¹ / ₁₆ "	1 ⁷ / ₃₂ "	3 ¹ / ₄ "	6"	7 ¹ / ₁₆ "	1 ¹ / ₁₆ "	7 ⁷ / ₈ "	3 ¹ / ₂ "	1 ³ / ₄ "	1"	7"	23 ¹ / ₄ "	3 ³ / ₄ "	1 ¹ / ₂ "	3"							
BB	7"	2 ³ / ₄ "	2"	4"	1 ¹ / ₂ "	1 ¹ / ₈ "	3 ¹ / ₄ "	5 ¹ / ₁₆ "	1 ⁷ / ₃₂ "	3 ¹ / ₄ "	6"	1 ¹ / ₂ "	1 ¹ / ₁₆ "	7 ⁷ / ₈ "	3 ¹ / ₂ "	1 ³ / ₄ "	1"	7"	23 ³ / ₈ "	7 ⁷ / ₈ "	1 ¹ / ₂ "	3"								
CC	6"	2 ¹ / ₄ "	1 ³ / ₈ "	3 ¹ / ₂ "	1 ¹ / ₄ "	7 ⁷ / ₈ "	5 ⁷ / ₈ "	1 ¹ / ₄ "	1 ¹ / ₃₂ "	5 ⁷ / ₈ "	4"	3 ³ / ₈ "	7 ⁷ / ₈ "	3 ³ / ₄ "	2 ¹ / ₄ "	1 ¹ / ₈ "	5 ⁷ / ₈ "	6"	16 ⁵ / ₈ "	7 ⁷ / ₈ "	1 ¹ / ₄ "	2 ¹ / ₂ "								
DD	6"	2 ¹ / ₄ "	1 ³ / ₈ "	3 ¹ / ₂ "	1 ¹ / ₄ "	7 ⁷ / ₈ "	5 ⁷ / ₈ "	1 ¹ / ₄ "	1 ¹ / ₃₂ "	3 ¹ / ₄ "	5"	5 ¹ / ₁₆ "	1 ¹ / ₁₆ "	7 ⁷ / ₈ "	2 ³ / ₄ "	1 ³ / ₈ "	3 ³ / ₄ "	6"	18 ¹ / ₄ "	7 ⁷ / ₈ "	1 ¹ / ₄ "	2 ¹ / ₂ "								
EE	6"	2 ¹ / ₄ "	1 ³ / ₈ "	3 ¹ / ₂ "	1 ¹ / ₄ "	7 ⁷ / ₈ "	5 ⁷ / ₈ "	1 ¹ / ₄ "	1 ¹ / ₃₂ "	3 ¹ / ₄ "	5"	5 ¹ / ₁₆ "	1 ¹ / ₁₆ "	7 ⁷ / ₈ "	2 ³ / ₄ "	1 ³ / ₈ "	3 ³ / ₄ "	6"	18 ¹ / ₄ "	3 ³ / ₄ "	1 ¹ / ₄ "	2 ¹ / ₂ "								
FF	7"	2 ³ / ₄ "	2"	4"	1 ¹ / ₂ "	1"	3 ¹ / ₄ "	5 ¹ / ₁₆ "	1 ⁵ / ₃₂ "	3 ¹ / ₄ "	5"	7 ¹ / ₁₆ "	1 ¹ / ₁₆ "	7 ⁷ / ₈ "	2 ³ / ₄ "	1 ³ / ₈ "	7 ⁷ / ₈ "	7"	19 ³ / ₈ "	3 ³ / ₄ "	1 ¹ / ₂ "	3"								
GG	7"	2 ³ / ₄ "	2"	4"	1 ¹ / ₂ "	1 ¹ / ₈ "	3 ¹ / ₄ "	5 ¹ / ₁₆ "	1 ⁵ / ₃₂ "	3 ¹ / ₄ "	5 ¹ / ₂ "	7 ¹ / ₁₆ "	1 ¹ / ₁₆ "	7 ⁷ / ₈ "	2 ³ / ₄ "	1 ³ / ₈ "	7 ⁷ / ₈ "	7"	21 ³ / ₈ "	3 ³ / ₄ "	1 ¹ / ₂ "	3"								
HH	7"	2 ³ / ₄ "	2"	4"	1 ¹ / ₂ "	1 ¹ / ₈ "	3 ¹ / ₄ "	5 ¹ / ₁₆ "	1 ⁷ / ₃₂ "	7 ⁷ / ₈ "	5 ¹ / ₂ "	7 ¹ / ₁₆ "	1 ¹ / ₄ "	1"	2 ³ / ₄ "	1 ³ / ₈ "	1"	7"	21 ³ / ₈ "	3 ³ / ₄ "	1 ¹ / ₂ "	3"								
JJ	7"	2 ³ / ₄ "	2"	4"	1 ¹ / ₂ "	1 ¹ / ₈ "	3 ¹ / ₄ "	5 ¹ / ₁₆ "	1 ⁷ / ₃₂ "	7 ⁷ / ₈ "	6"	7 ¹ / ₁₆ "	1 ¹ / ₄ "	1"	3 ¹ / ₂ "	1 ³ / ₄ "	1"	7"	23 ¹ / ₄ "	3 ³ / ₄ "	1 ¹ / ₂ "	3"								
KK	7"	2 ³ / ₄ "	2"	4"	1 ¹ / ₂ "	1 ¹ / ₈ "	3 ¹ / ₄ "	5 ¹ / ₁₆ "	1 ⁷ / ₃₂ "	7 ⁷ / ₈ "	6"	1 ¹ / ₂ "	1 ¹ / ₄ "	1"	3 ¹ / ₂ "	1 ³ / ₄ "	1"	7"	23 ³ / ₈ "	3 ³ / ₄ "	1 ¹ / ₂ "	3"								
LL	8"	3"	2 ¹ / ₄ "	4 ¹ / ₂ "	1 ³ / ₄ "	1 ¹ / ₄ "	3 ³ / ₄ "	3 ³ / ₈ "	1 ⁷ / ₃₂ "	7 ⁷ / ₈ "	6 ¹ / ₂ "	7 ¹ / ₁₆ "	1 ¹ / ₄ "	1"	3 ¹ / ₂ "	1 ³ / ₄ "	1"	8"	26 ⁵ / ₈ "	3 ³ / ₄ "	1 ³ / ₄ "	3 ¹ / ₂ "								
MM	8"	3"	2 ¹ / ₄ "	4 ¹ / ₂ "	1 ³ / ₄ "	1 ¹ / ₄ "	3 ³ / ₄ "	3 ³ / ₈ "	1 ⁷ / ₃₂ "	7 ⁷ / ₈ "	6 ¹ / ₂ "	7 ¹ / ₁₆ "	1 ¹ / ₄ "	1"	3 ¹ / ₂ "	1 ³ / ₄ "	1"	8"	26 ⁵ / ₈ "	3 ³ / ₄ "	1 ³ / ₄ "	3 ¹ / ₂ "								
NN	8"	3"	2 ¹ / ₄ "	4 ¹ / ₂ "	1 ³ / ₄ "	1 ¹ / ₄ "	3 ³ / ₄ "	3 ³ / ₈ "	1 ⁹ / ₃₂ "	7 ⁷ / ₈ "	6 ¹ / ₂ "	7 ¹ / ₁₆ "	1 ¹ / ₄ "	1"	3 ¹ / ₂ "	1 ³ / ₄ "	1 ¹ / ₈ "	8"	26 ⁵ / ₈ "	3 ³ / ₄ "	1 ³ / ₄ "	3 ¹ / ₂ "								
OO	5"	2"	1 ¹ / ₄ "	2 ³ / ₄ "	1 ¹ / ₈ "	3 ³ / ₄ "	1 ¹ / ₂ "	1 ¹ / ₄ "	1 ¹ / ₃₂ "	5 ⁷ / ₈ "	4"	1 ¹ / ₄ "	7 ⁷ / ₈ "	3 ³ / ₄ "	2 ¹ / ₄ "	1 ¹ / ₈ "	5 ⁷ / ₈ "	5"	16"	3 ³ / ₄ "	1 ¹ / ₈ "	2 ¹ / ₄ "								
PP	6"	2 ¹ / ₄ "	1 ³ / ₈ "	3 ¹ / ₂ "	1 ¹ / ₄ "	7 ⁷ / ₈ "	5 ⁷ / ₈ "	1 ¹ / ₄ "	1 ¹ / ₃₂ "	3 ¹ / ₄ "	4"	3 ³ / ₈ "	1 ¹ / ₁₆ "	7 ⁷ / ₈ "	2 ¹ / ₄ "	1 ¹ / ₈ "	3 ³ / ₄ "	6"	16 ⁵ / ₈ "	7 ⁷ / ₈ "	1 ¹ / ₄ "	2 ¹ / ₂ "								
QQ	6"	2 ¹ / ₄ "	1 ³ / ₈ "	3 ¹ / ₂ "	1 ¹ / ₈ "	7 ⁷ / ₈ "	5 ⁷ / ₈ "	1 ¹ / ₄ "	1 ¹ / ₃₂ "	3 ¹ / ₄ "	4"	7 ¹ / ₁₆ "	1 ¹ / ₁₆ "	7 ⁷ / ₈ "	2 ¹ / ₄ "	1 ¹ / ₈ "	3 ³ / ₄ "	6"	16 ³ / ₄ "	7 ⁷ / ₈ "	1 ¹ / ₄ "	2 ¹ / ₂ "								
RR	7"	2 ³ / ₄ "	2"	4"	1 ¹ / ₂ "	1"	3 ¹ / ₄ "	5 ¹ / ₁₆ "	1 ¹ / ₃₂ "	3 ¹ / ₄ "	5"	7 ¹ / ₁₆ "	1 ¹ / ₁₆ "	7 ⁷ / ₈ "	2 ³ / ₄ "	1 ³ / ₈ "	3 ³ / ₄ "	7"	19 ³ / ₈ "	3 ³ / ₄ "	1 ¹ / ₂ "	3"								
SS	7"	2 ³ / ₄ "	2"	4"	1 ¹ / ₂ "	1"	3 ¹ / ₄ "	5 ¹ / ₁₆ "	1 ⁵ / ₃₂ "	3 ¹ / ₄ "	5"	7 ¹ / ₁₆ "	1 ¹ / ₁₆ "	7 ⁷ / ₈ "	2 ³ / ₄ "	1 ³ / ₈ "	7 ⁷ / ₈ "	7"	19 ³ / ₈ "	3 ³ / ₄ "	1 ¹ / ₂ "	3"								
TT	7"	2 ³ / ₄ "	2"	4"	1 ¹ / ₂ "	1 ¹ / ₈ "	3 ¹ / ₄ "	5 ¹ / ₁₆ "	1 ⁵ / ₃₂ "	3 ¹ / ₄ "	5 ¹ / ₂ "	7 ¹ / ₁₆ "	1 ¹ / ₁₆ "	7 ⁷ / ₈ "	2 ³ / ₄ "	1 ³ / ₈ "	7 ⁷ / ₈ "	7"	21 ³ / ₈ "	3 ³ / ₄ "	1 ¹ / ₂ "	3"								
UU	7"	2 ³ / ₄ "	2"	4"	1 ¹ / ₂ "	1 ¹ / ₈ "	3 ¹ / ₄ "	5 ¹ / ₁₆ "	1 ⁵ / ₃₂ "	3 ¹ / ₄ "	5 ¹ / ₂ "	7 ¹ / ₁₆ "	1 ¹ / ₁₆ "	7 ⁷ / ₈ "	2 ³ / ₄ "	1 ³ / ₈ "	7 ⁷ / ₈ "	7"	21 ³ / ₈ "	3 ³ / ₄ "	1 ¹ / ₂ "	3"								
VV	7"	2 ³ / ₄ "	2"	4"	1 ¹ / ₂ "	1 ¹ / ₈ "	3 ¹ / ₄ "	5 ¹ / ₁₆ "	1 ⁷ / ₃₂ "	3 ¹ / ₄ "	6"	7 ¹ / ₁₆ "	1 ¹ / ₁₆ "	7 ⁷ / ₈ "	3 ¹ / ₂ "	1 ³ / ₄ "	1"	7"	23 ¹ / ₄ "	3 ³ / ₄ "	1 ¹ / ₂ "	3"								
WW	7"	2 ³ / ₄ "	2"	4"	1 ¹ / ₂ "	1 ¹ / ₈ "	3 ¹ / ₄ "	5 ¹ / ₁₆ "	1 ⁷ / ₃₂ "	3 ¹ / ₄ "	6"	7 ¹ / ₁₆ "	1 ¹ / ₁₆ "	7 ⁷ / ₈ "	3 ¹ / ₂ "	1 ³ / ₄ "	1"	7"	23 ¹ / ₄ "	3 ³ / ₄ "	1 ¹ / ₂ "	3"								
XX	7"	2 ³ / ₄ "	2"	4"	1 ¹ / ₂ "	1 ¹ / ₄ "	3 ¹ / ₄ "	5 ¹ / ₁₆ "	1 ⁷ / ₃₂ "	3 ¹ / ₄ "	6"	1 ¹ / ₂ "	1 ¹ / ₁₆ "	7 ⁷ / ₈ "	3 ¹ / ₂ "	1 ³ / ₄ "	1"	7"	23 ³ / ₈ "	3 ³ / ₄ "	1 ¹ / ₂ "	3"								
YY	8"	3"	2 ¹ / ₄ "	4 ¹ / ₂ "	1 ³ / ₄ "	1 ¹ / ₄ "	3 ³ / ₄ "	3 ³ / ₈ "	1 ⁷ / ₃₂ "	3 ¹ / ₄ "	6 ¹ / ₂ "	7 ¹ / ₁₆ "	1 ¹ / ₁₆ "	7 ⁷ / ₈ "	3 ¹ / ₂ "	1 ³ / ₄ "	1"	8"	26 ⁵ / ₈ "	3 ³ / ₄ "	1 ³ / ₄ "	3 ¹ / ₂ "								
ZZ	7"	2 ³ / ₄ "	2"	4"	1 ¹ / ₂ "	1"	3 ¹ / ₄ "	5 ¹ / ₁₆ "	1 ⁵ / ₃₂ "	7 ⁷ / ₈ "	6 ¹ / ₂ "	7 ¹ / ₁₆ "	1 ¹ / ₄ "	1"	2 ³ / ₄ "	1 ³ / ₈ "	7 ⁷ / ₈ "	7"	19 ³ / ₈ "	3 ³ / ₄ "	1 ¹ / ₂ "	3"								



ROAD AND BRIDGE STANDARDS

SHEET 9 OF 10

REVISION DATE

1323.18

INTERSTATE SIGN STRUCTURE INSTALLATION DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION
REFERENCE

700

SIGN STRUCTURE TYPE VIA	SUPPORT																							
	BASE CONNECTION DATA TABLE									FUSE AND HINGE PLATE DATA TABLE							BOLT KEEPER PLATE DATA TABLE							
	A	B	C	D	E	T ₁	T ₂	W	R	BOLT DIA.	a	b	c	d	g	g/2	BOLT DIA.	A	B	C	D	E		
AB	7"	2¾"	2"	4"	1½"	1"	¾"	5/16"	7/32"	7/8"	5½"	3/8"	1/4"	1"	2¾"	1¾"	7/8"	7"	21/4"	¾"	1½"	3"		
AC	7"	2¾"	2"	4"	1½"	1/8"	¾"	5/16"	7/32"	7/8"	5½"	7/16"	1/4"	1"	2¾"	1¾"	7/8"	7"	21¾"	¾"	1½"	3"		
AD	7"	2¾"	2"	4"	1½"	1/8"	¾"	5/16"	7/32"	1"	6¾"	7/16"	1/16"	1/8"	3½"	1¾"	1"	7"	19½"	¾"	1½"	3"		
AE	7"	2¾"	2"	4"	1½"	1/8"	¾"	5/16"	7/32"	1"	6¾"	1/2"	1/16"	1/8"	3½"	1¾"	1"	7"	21½"	¾"	1½"	3"		
AF	7"	2¾"	2"	4"	1½"	1/4"	¾"	5/16"	7/32"	1"	7"	1/2"	1/16"	1/8"	3½"	1¾"	1/8"	7"	23¾"	¾"	1½"	3"		
AG	8"	3"	2¼"	4½"	1¾"	1/4"	¾"	3/8"	7/32"	1"	6½"	7/16"	1/16"	1/8"	3½"	1¾"	1/8"	8"	265/8"	¾"	1¾"	3½"		
AH	7"	2¾"	2"	4"	1½"	1/8"	¾"	5/16"	7/32"	7/8"	6"	7/16"	1/4"	1"	3½"	1¾"	1"	7"	23¼"	¾"	1½"	3"		
AJ	7"	2¾"	2"	4"	1½"	1/8"	¾"	5/16"	7/32"	7/8"	6"	7/16"	1/4"	1"	3½"	1¾"	1"	7"	23¼"	¾"	1½"	3"		
AK	7"	2¾"	2"	4"	1½"	1/4"	¾"	5/16"	7/32"	7/8"	6"	1/2"	1/4"	1"	3½"	1¾"	1"	7"	23¾"	¾"	1½"	3"		
AL	7"	2¾"	2"	4"	1½"	1/8"	¾"	5/16"	7/32"	7/8"	5½"	7/16"	1/4"	1"	2¾"	1¾"	1"	7"	21¾"	¾"	1½"	3"		
AM	7"	2¾"	2"	4"	1½"	1/8"	¾"	5/16"	7/32"	7/8"	6"	7/16"	1/4"	1"	3½"	1¾"	1"	7"	23¼"	¾"	1½"	3"		
AN	7"	2¾"	2"	4"	1½"	1/4"	¾"	5/16"	7/32"	7/8"	6"	1/2"	1/4"	1"	3½"	1¾"	1"	7"	23¾"	¾"	1½"	3"		
AO	8"	3"	2¼"	4½"	1¾"	1/4"	¾"	3/8"	7/32"	1/8"	6½"	7/16"	1/8"	1/4"	3½"	1¾"	1/8"	8"	265/8"	¾"	1¾"	3½"		
AP	7"	2¾"	2"	4"	1¾"	1/8"	¾"	5/16"	7/32"	7/8"	7"	1/2"	1/4"	1"	3½"	1¾"	1"	7"	21½"	¾"	1½"	3"		
AQ	7"	2¾"	2"	4"	1½"	1/8"	¾"	5/16"	7/32"	7/8"	6"	7/16"	1/4"	1"	3½"	1¾"	1"	7"	23¼"	¾"	1½"	3"		
AR	7"	2¾"	2"	4"	1½"	1/4"	¾"	5/16"	7/32"	1"	6"	1/2"	1/16"	1/8"	3½"	1¾"	1"	7"	23¾"	¾"	1½"	3"		
AS	8"	3"	2¼"	4½"	1¾"	1/4"	¾"	3/8"	7/32"	1"	6½"	7/16"	1/16"	1/8"	3½"	1¾"	1"	8"	265/8"	¾"	1¾"	3½"		
AT	8"	3"	2¼"	4½"	1¾"	1/4"	¾"	3/8"	7/32"	1"	6½"	7/16"	1/16"	1/8"	3½"	1¾"	1"	8"	265/8"	¾"	1¾"	3½"		
AU	7"	2¾"	2"	4"	1½"	1/4"	¾"	5/16"	7/32"	1/8"	6"	1/2"	1/8"	1/4"	3½"	1¾"	1/8"	7"	23¾"	¾"	1½"	3"		
AV	8"	3"	2¼"	4½"	1¾"	1/4"	¾"	3/8"	7/32"	1/8"	6½"	7/16"	1/8"	1/4"	3½"	1¾"	1/8"	8"	265/8"	¾"	1¾"	3½"		
AW	7"	2¾"	2"	4"	1½"	1/8"	¾"	5/16"	7/32"	1"	6"	7/16"	1/16"	1/8"	3½"	1¾"	1"	7"	23¼"	¾"	1½"	3"		
AX	7"	2¾"	2"	4"	1½"	1/8"	¾"	5/16"	7/32"	1"	6"	1/2"	1/16"	1/8"	3½"	1¾"	1"	7"	23¾"	¾"	1½"	3"		
AY	7"	2¾"	2"	4"	1½"	1/8"	¾"	3/8"	7/32"	1"	6½"	7/16"	1/16"	1/8"	3½"	1¾"	1"	7"	265/8"	¾"	1½"	3"		
AZ	8"	3"	2¼"	4½"	1¾"	1/4"	¾"	3/8"	7/32"	1"	6½"	7/16"	1/16"	1/8"	3½"	1¾"	1"	8"	265/8"	¾"	1¾"	3½"		
BC	8"	3"	2¼"	4½"	1¾"	1/4"	¾"	3/8"	7/32"	1"	6½"	7/16"	1/16"	1/8"	3½"	1¾"	1"	8"	265/8"	¾"	1¾"	3½"		
BD	8"	3"	2¼"	4½"	1¾"	1/4"	¾"	3/8"	7/32"	1/8"	6½"	7/16"	1/8"	1/4"	3½"	1¾"	1/8"	8"	265/8"	¾"	1¾"	3½"		

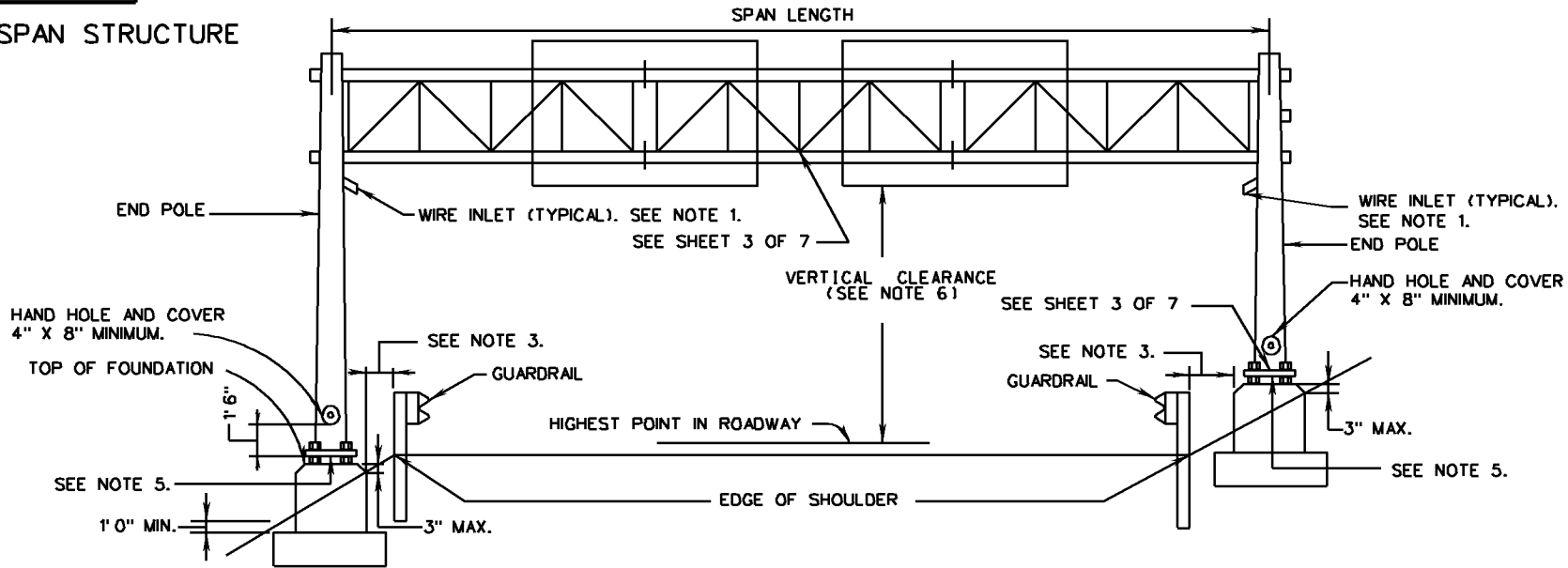
SPECIFICATION
REFERENCE

700

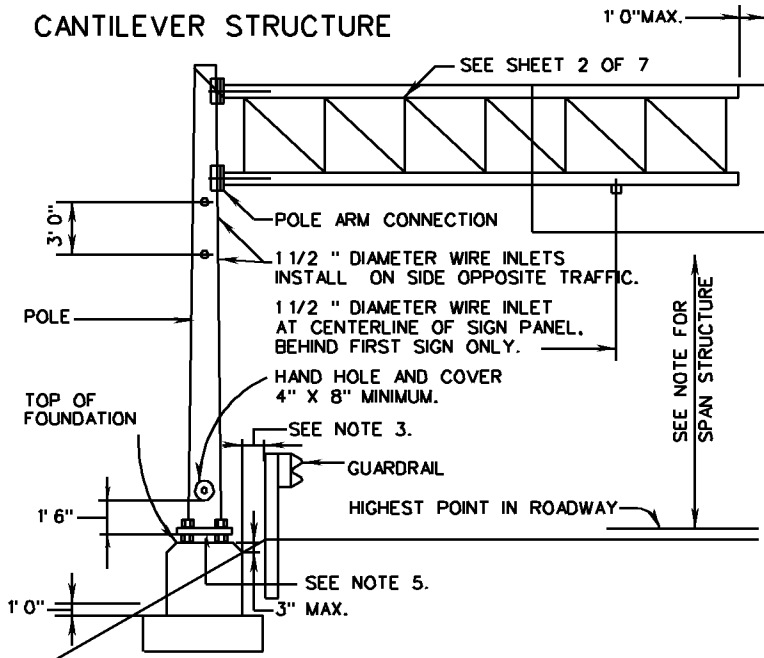
INTERSTATE SIGN STRUCTURE
INSTALLATION DETAILS
VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT
ROAD AND BRIDGE STANDARDS
REVISION DATE SHEET 10 OF 10
1323.19

SPAN STRUCTURE



CANTILEVER STRUCTURE



NOTES:

1. 1 1/2" DIAMETER WIRE INLETS SHALL BE PROVIDED AT THE FOLLOWING LOCATIONS:
 - A. ON SPAN STRUCTURES ON THE FRONT LEG OF END POLE 12" BELOW BOTTOM CHORD.
 - B. ON CANTILEVER STRUCTURES ON POLE 12" BELOW BOTTOM CHORD.
 - C. ON SPAN STRUCTURES BELOW BOTTOM CHORD AT CENTERLINE BEHIND FIRST SIGN PANEL FROM EACH END POLE.
 - D. ON CANTILEVER STRUCTURES BELOW BOTTOM CHORD AT CENTERLINE BEHIND FIRST SIGN PANEL FROM POLE.
2. ALL UNUSED WIRE INLETS SHALL BE CAPPED WATER TIGHT.
3. DISTANCE SHALL BE NO LESS THAN THE MINIMUM INDICATED IN GUARDRAIL STANDARDS.
4. NO MORTAR, GROUT, OR CONCRETE SHALL BE PLACED BETWEEN BOTTOM OF BASE PLATE AND TOP OF PEDESTAL.
5. THE MAXIMUM SPACE BETWEEN THE BOTTOM OF THE BASE PLATE AND THE TOP OF THE FOUNDATION SHALL BE NO MORE THAN THE DIAMETER OF THE ANCHOR BOLT PLUS ONE INCH.
6. VERTICAL CLEARANCE FOR OVERHEAD AND BRIDGE MOUNTED SIGN STRUCTURES SHALL BE NO LESS THAN 19 FEET 0 INCH AND NO MORE THAN 21 FEET 0 INCH FROM THE BOTTOM OF THE LOWEST MOUNTED SIGN PANEL TO THE CROWN OF THE ROADWAY, UNLESS OTHERWISE SPECIFIED ON THE PLANS. LUMINAIRE ASSEMBLIES SHALL HAVE A VERTICAL CLEARANCE OF NO LESS THAN 17 FEET SIX INCHES FROM THE BOTTOM OF THE ASSEMBLY TO THE CROWN OF THE ROADWAY.



ROAD AND BRIDGE STANDARDS

SHEET 1 OF 7

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04/09

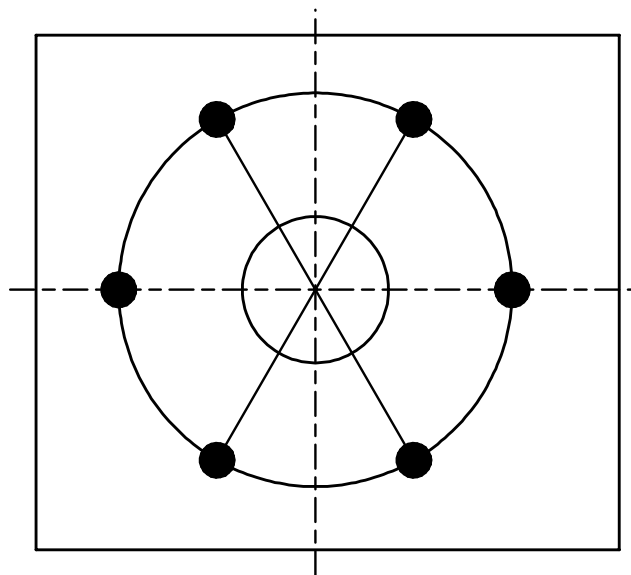
OVERHEAD SIGN STRUCTURE

TYPICAL DETAILS

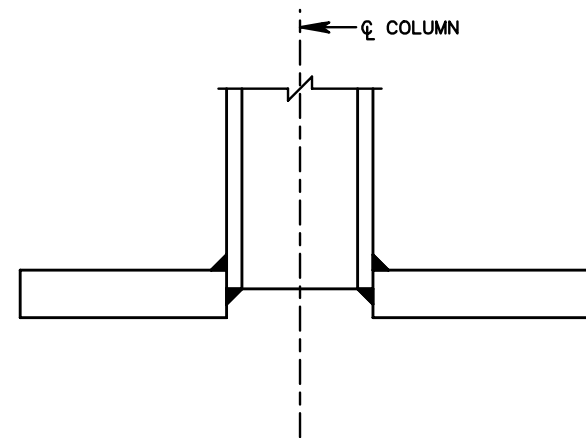
VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE

700



PLAN



ELEVATION

TYPICAL SOCKETED BASE PLATE CONNECTION

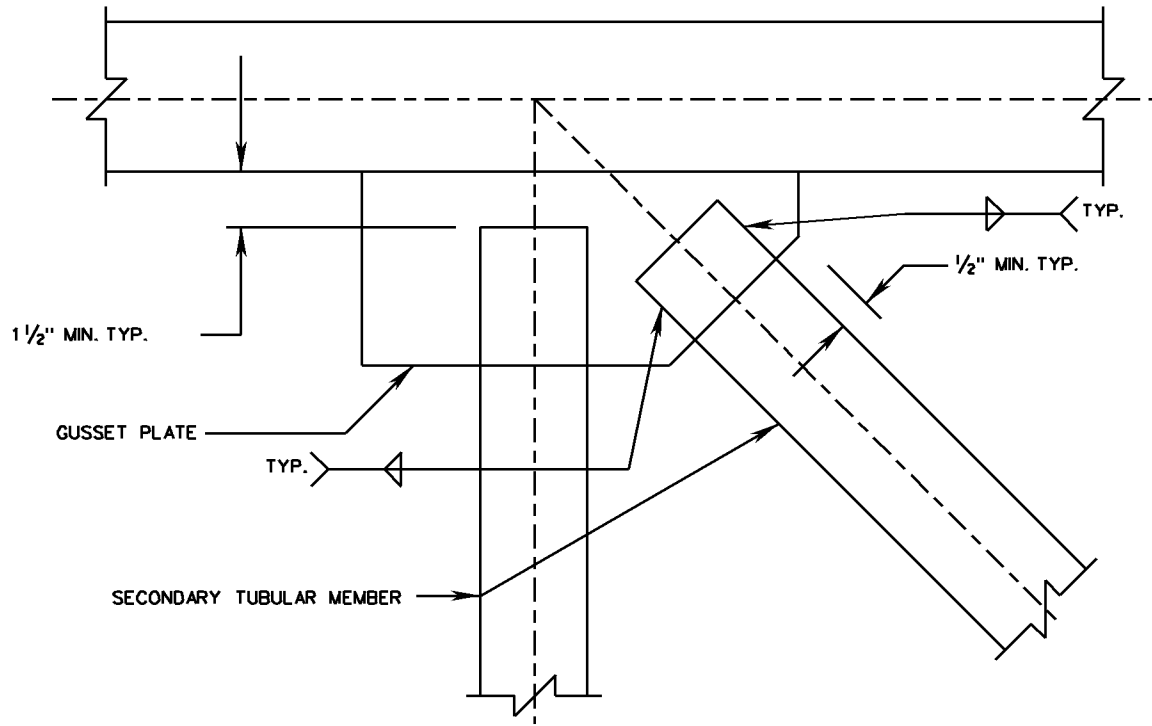
NOTES:

1. ALL POLES/UPRIGHTS OF OVERHEAD SIGN STRUCTURES INCLUDING "BUTTERFLY" STRUCTURES SHALL HAVE A MINIMUM OF SIX ANCHOR BOLTS, EACH HAVING A MINIMUM DIAMETER OF 1½".
2. THE MINIMUM BASE PLATE THICKNESS FOR ALL TYPES OF SIGN STRUCTURES SHALL BE 2".
3. ALL END POLE COLUMNS SHALL BE JOINED TO THE BASE PLATE USING A SOCKETED CONNECTION.

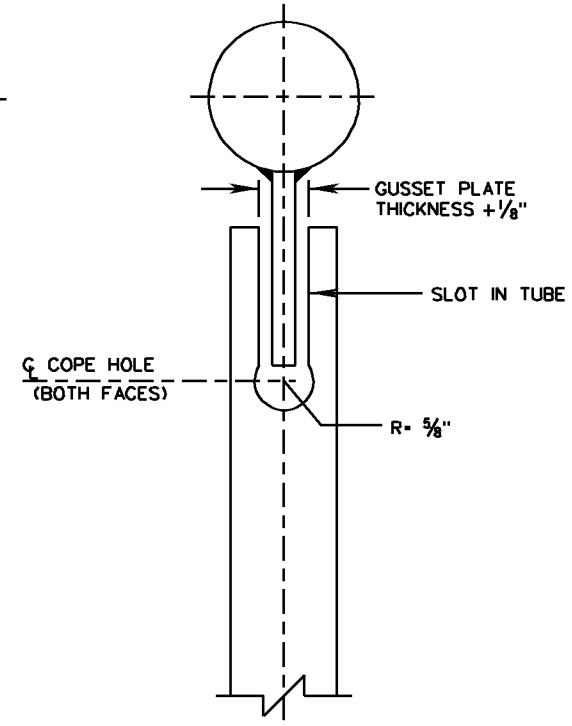
SPECIFICATION REFERENCE
700

OVERHEAD SIGN STRUCTURE
SOCKETED BASE PLATE CONNECTION
 VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT ROAD AND BRIDGE STANDARDS	
REVISION DATE	SHEET 2 OF 7
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TYPICAL GUSSET PLATE CONNECTION



SECTION VIEW

NOTES:

1. ALL SECONDARY MEMBERS IN BOTH TUBULAR AND NON-TUBULAR STRUCTURES IN THE OVERHEAD TRUSS AND THE END POLE SUPPORTS SHALL BE JOINED TO PRIMARY MEMBERS USING A GUSSET CONNECTION PLATE.
2. CONTRACTOR SHALL SPECIFY THE WIDTH, LENGTH, AND THICKNESS OF GUSSET PLATE.
3. CONTRACTOR SHALL SPECIFY THE MINIMUM WELD SIZE AND LENGTH OF WELD.
4. COPE HOLES TO BE PROVIDED AT BOTH ENDS AND BOTH FACES OF ALL SECONDARY MEMBER CONNECTIONS.



ROAD AND BRIDGE STANDARDS

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OVERHEAD SIGN STRUCTURE

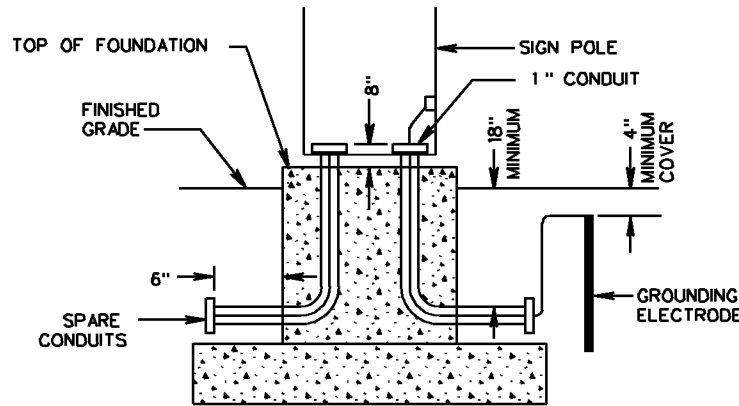
GUSSET PLATE CONNECTION

VIRGINIA DEPARTMENT OF TRANSPORTATION

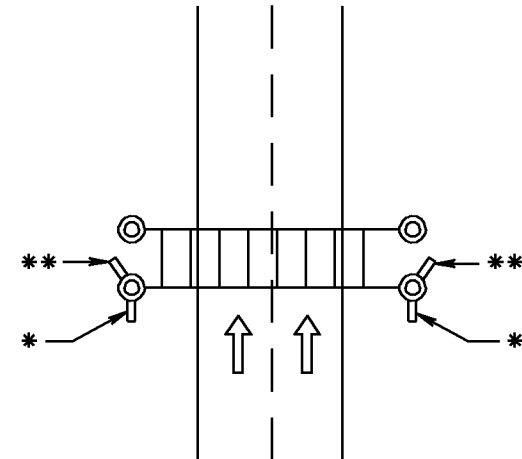
SPECIFICATION REFERENCE

700

TYPICAL SIGN FOOTING DETAIL WITH CONDUIT



LOCATION OF FUTURE USE CONDUITS FOR DOUBLE END POLE STRUCTURES



* FUTURE USE CONDUITS PLACED PARALLEL TO THE ROADWAY

** FUTURE USE CONDUITS PLACED AT AN ANGLE TO MISS THE BACK FOUNDATION OR ANCHOR BOLTS IN A SPREAD FOOTING FOUNDATION.

NOTES:

THE TYPE, SIZE, NUMBER AND ORIENTATION OF CONDUITS ENTERING AND EXITING FOOTINGS MAY VARY PER SIGN LOCATION.

IN ADDITION TO THE CONDUITS SPECIFIED ON THE PLANS, ONE - 1" CONDUIT REQUIRED FOR GROUND WIRE AND TWO - 2" PVC HEAVY WALL CONDUITS REQUIRED FOR FUTURE USE. FUTURE USE CONDUITS SHALL BE STUBBED OUT AND CAPPED. FUTURE USE CONDUITS SHALL BE ORIENTED TO RUN PARALLEL TO THE ROADWAY. FOR LOCATION OF FUTURE USE CONDUITS IN FOUNDATIONS FOR DOUBLE END POLE STRUCTURES, SEE DRAWING AT RIGHT.

EACH FOUNDATION SHALL BE PERMANENTLY MARKED TO INDICATE ALL SIDES FROM WHICH CONDUITS PASS. THIS MARK SHALL BE MADE WITH A TROWEL WHEN FINISHING THE CONCRETE AND SHALL BE 1/4" DEEP AND 4" TO 6" LONG. LOCATIONS OF EMPTY CONDUITS SHALL HAVE AN ADDITIONAL 2" LONG MARK MADE PERPENDICULAR TO AND CENTERED ON THIS MARK.

FOUNDATIONS ABOVE FINISHED GRADE SHALL BE CHAMFERED 3/4" ON ALL EDGES.

GROUNDING BUSHINGS SHALL BE INSTALLED ON EACH END OF METAL CONDUITS.

BELL ENDS SHALL BE INSTALLED ON EACH END OF PVC CONDUITS.

BELL ENDS & BUSHINGS OF EMPTY CONDUITS SHALL BE PLUGGED TO PREVENT MOISTURE AND RODENT ENTRY.

VOIDS REMAINING AFTER CONDUCTORS EXIT OR ENTER BELL ENDS OR BUSHINGS OF CONDUITS SHALL BE SEALED WITH SILICONE TO PREVENT MOISTURE AND RODENT ENTRY.

NO MORTAR, GROUT, OR CONCRETE SHALL BE PLACED BETWEEN BOTTOM OF BASE PLATE AND TOP OF FOUNDATION.

THE MAXIMUM SPACE BETWEEN THE BOTTOM OF THE BASE PLATE AND THE TOP OF THE FOUNDATION SHALL BE NO GREATER THAN THE DIAMETER OF THE ANCHOR BOLT PLUS ONE INCH.

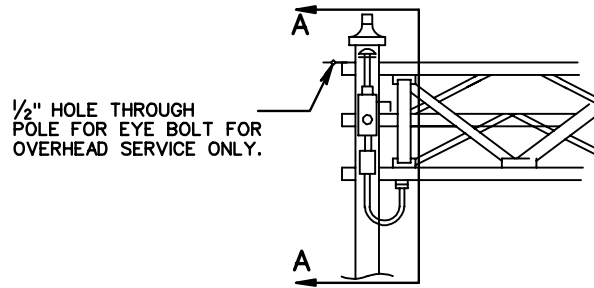
OVERHEAD SIGN STRUCTURES INCLUDING "BUTTERFLY" STRUCTURES SHALL HAVE A MINIMUM OF SIX ANCHOR BOLTS, EACH HAVING A MINIMUM DIAMETER OF 1 1/2".

<p>SPECIFICATION REFERENCE</p>	<p>OVERHEAD SIGN STRUCTURE FOUNDATION DETAILS VIRGINIA DEPARTMENT OF TRANSPORTATION</p>	<p>VDOT ROAD AND BRIDGE STANDARDS</p>
<p>700</p>		<p>REVISION DATE SHEET 4 OF 7 06-15-2009 1324.13</p>

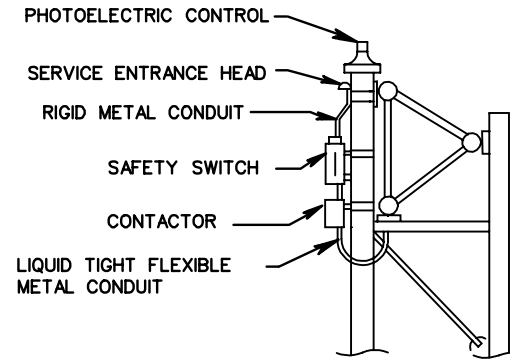
ELECTRIC DETAILS FOR SIGN LIGHTING

SPAN SIGN STRUCTURE

FRONT VIEW

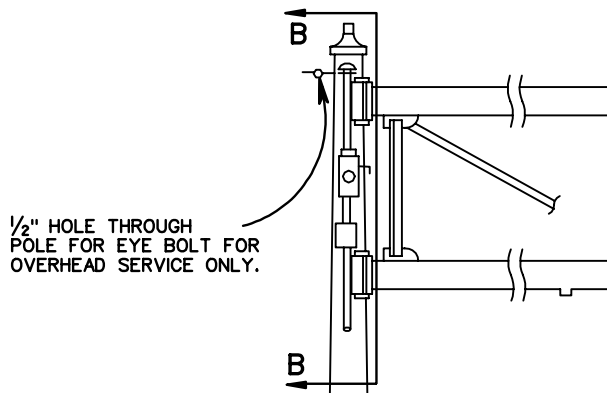


SECTION A-A

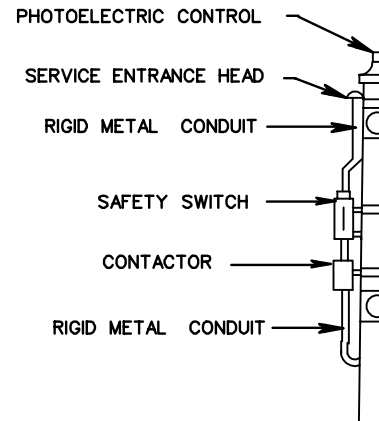


CANTILEVER SIGN STRUCTURE

FRONT VIEW



SECTION B-B



NOTE:

A SAFETY SWITCH SHALL BE INSTALLED ON ALL SIGN STRUCTURES REQUIRING ELECTRICAL POWER. ELECTRICAL SERVICE FOR SIGN STRUCTURES NOT CONTROLLED BY A CONTROL CENTER SHALL HAVE A PHOTOCELL AND A PHOTOCELL CONTROLLED CONTACTOR TO CONTROL THE ELECTRICAL POWER TO LUMINAIRES. THE CONTACTOR SHALL BE IN A NEMA 3R ENCLOSURE LOCATED WITHIN 24 INCHES OF THE SAFETY SWITCH.

ALL CONDUIT LOCATED IN OR ON OVERHEAD SIGN STRUCTURE SHALL BE 3/4" MINIMUM.



ROAD AND BRIDGE STANDARDS

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OVERHEAD SIGN STRUCTURE

ELECTRICAL DETAILS FOR SIGN LIGHTING

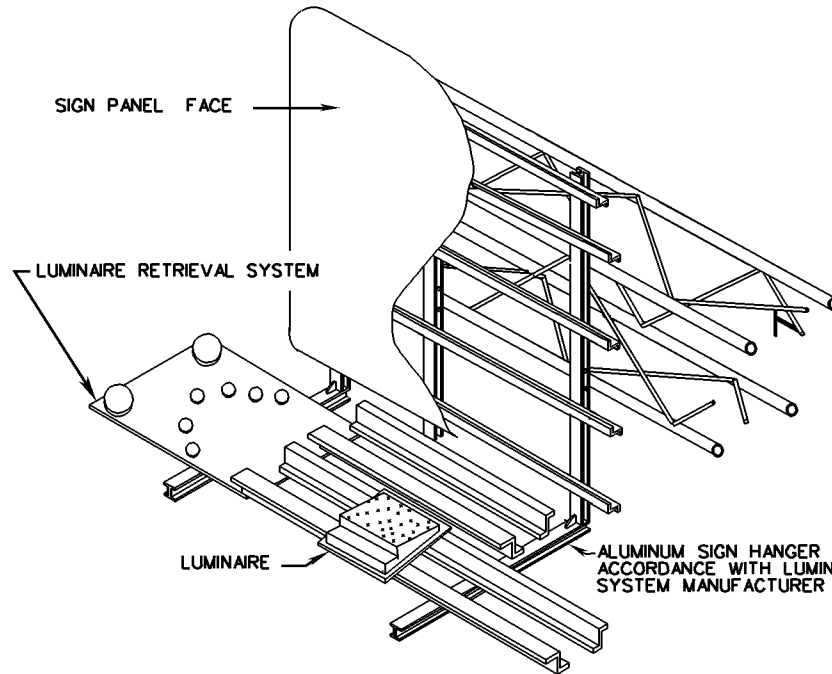
VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE

700

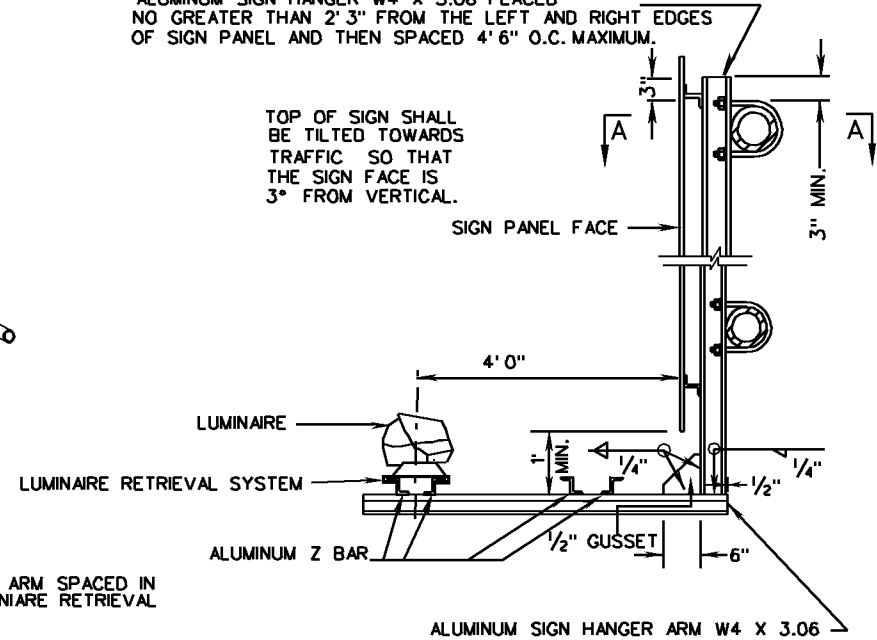
SIGN HANGER ERECTION DETAIL WITH LUMINAIRE RETRIEVAL SYSTEM

OSS-1



ALUMINUM SIGN HANGER W4 X 3.06 PLACED NO GREATER THAN 2' 3" FROM THE LEFT AND RIGHT EDGES OF SIGN PANEL AND THEN SPACED 4' 6" O.C. MAXIMUM.

TOP OF SIGN SHALL BE TILTED TOWARDS TRAFFIC SO THAT THE SIGN FACE IS 3° FROM VERTICAL.

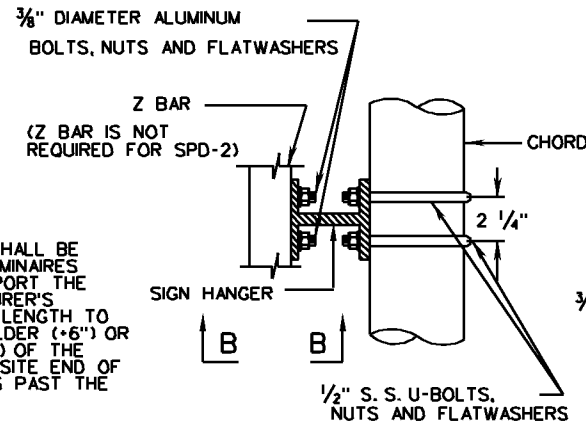


NOTE:

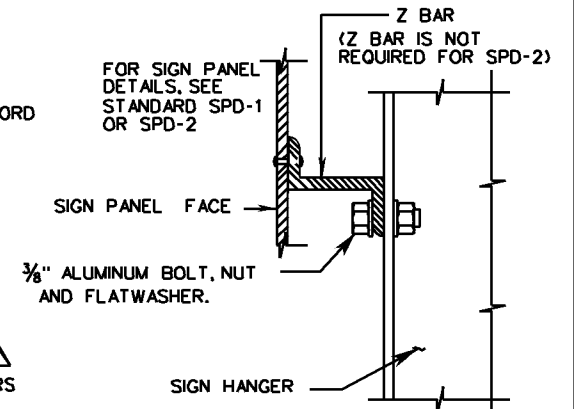
LUMINAIRE RETRIEVAL SYSTEM INCLUDING ELECTRICAL SYSTEM SHALL BE EQUAL TO "LUMI-TRAK" AND DESIGNED FOR THE NUMBER OF LUMINAIRES INDICATED ON THE PLANS. SPACING OF HANGERS USED TO SUPPORT THE RETRIEVAL SYSTEM SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. TURNABLE END SHALL BE OF SUFFICIENT LENGTH TO ALIGN WITH THE VERTICAL EDGE OF THE OUTSIDE PAVED SHOULDER (+6") OR SHALL BE EXTENDED 5 FEET BEYOND THE VERTICAL EDGE (+6") OF THE OUTERMOST SIGN LUMINAIRE, WHICHEVER IS GREATER. THE OPPOSITE END OF THE RETRIEVAL SYSTEM SHALL EXTEND A MINIMUM OF 6 INCHES PAST THE OUTERMOST VERTICAL EDGE OF THE SIGN HANGER ARM.

LUMINAIRES AND LUMINAIRE RETRIEVAL SYSTEM REQUIRED ONLY WHERE INDICATED ON THE PLANS.

SECTION A-A



SECTION B-B



SPECIFICATION REFERENCE

700

OVERHEAD SIGN STRUCTURE SIGN HANGER AND LUMINAIRE RETRIEVAL DETAIL

VIRGINIA DEPARTMENT OF TRANSPORTATION

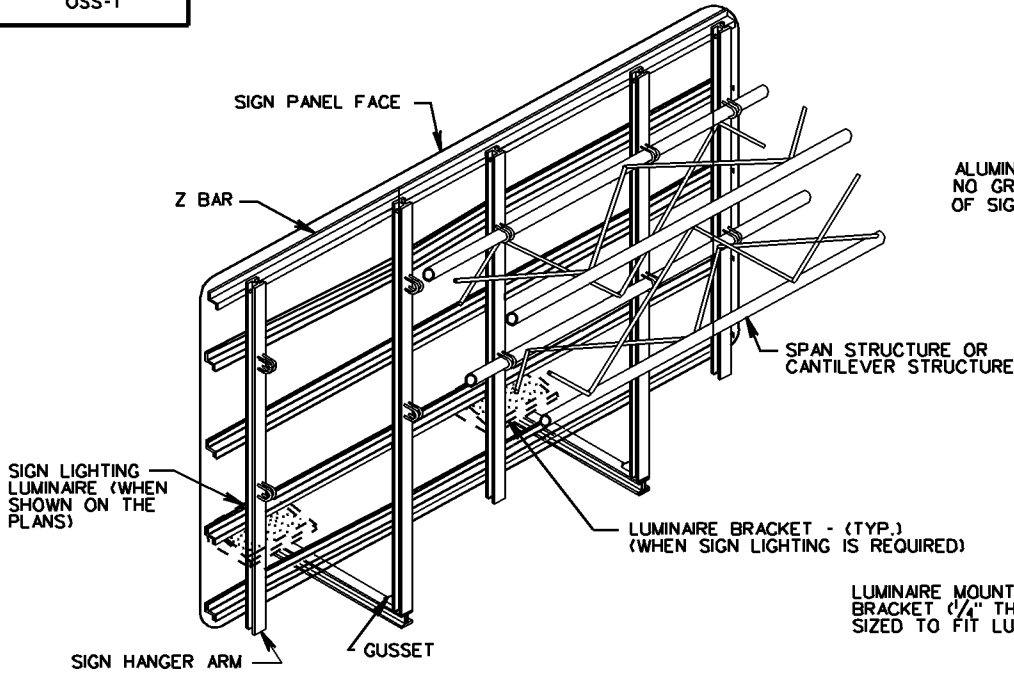
VDOT

ROAD AND BRIDGE STANDARDS

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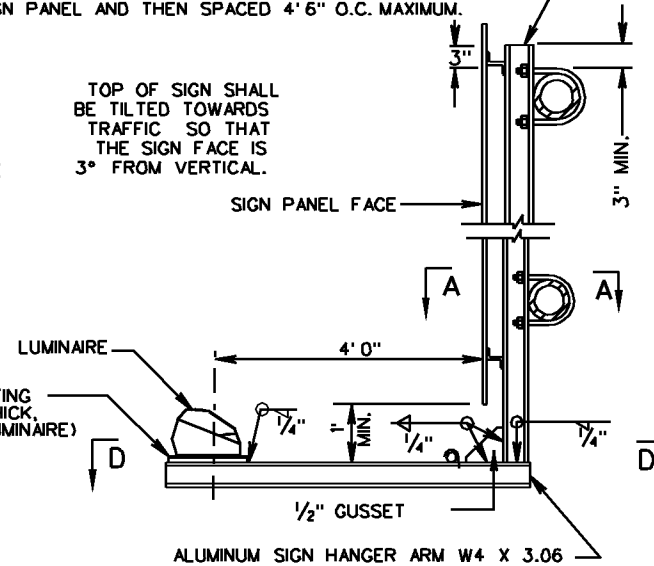
SIGN ATTACHMENT TO TRUSS-TYPE STRUCTURES

SIGN HANGER ERECTION DETAIL WITH LUMINAIRE

(WHEN NO LUMINAIRE RETRIEVAL SYSTEM IS REQUIRED)

ALUMINUM SIGN HANGER W4 X 3.06 PLACED NO GREATER THAN 2' 3" FROM THE LEFT AND RIGHT EDGES OF SIGN PANEL AND THEN SPACED 4' 6" O.C. MAXIMUM.

TOP OF SIGN SHALL BE TILTED TOWARDS TRAFFIC SO THAT THE SIGN FACE IS 3° FROM VERTICAL.

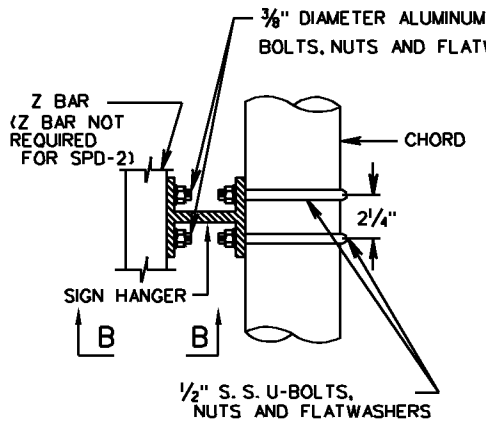


NOTE

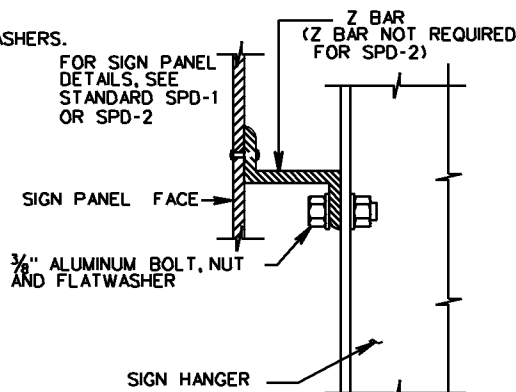
LUMINAIRES REQUIRED WHERE INDICATED ON THE PLANS.

LUMINAIRE TO BE ATTACHED TO MOUNTING BRACKET WITH FOUR, 3/8" DIA. GALVANIZED CAP SCREWS, LOCKWASHERS AND NUTS.

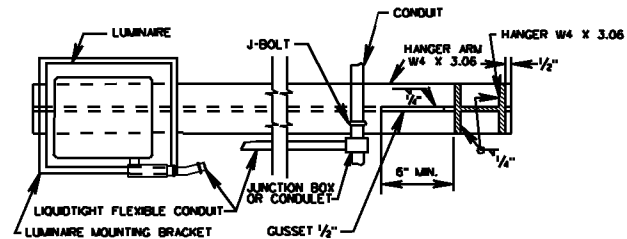
SECTION A-A



SECTION B-B



SECTION D-D



ROAD AND BRIDGE STANDARDS

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6-15-09

1324.16

OVERHEAD SIGN STRUCTURE

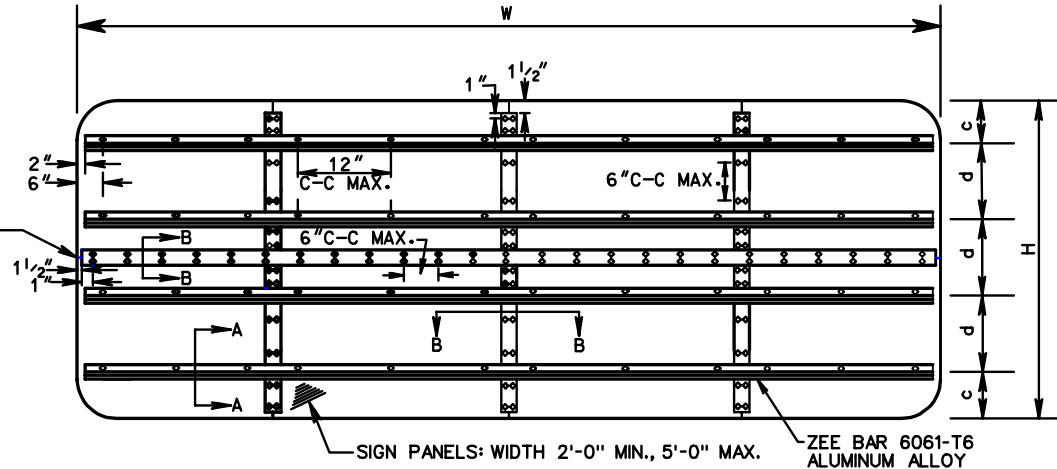
HANGER AND LUMINAIRE DETAIL

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION
REFERENCE

700

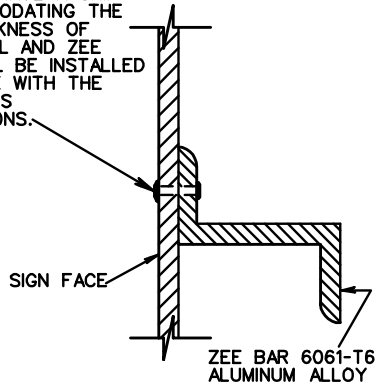
SIGNS HAVING A HEIGHT GREATER THAN 10' MAY HAVE ONE HORIZONTAL JOINT. HORIZONTAL JOINT SHALL BE BETWEEN LINES OF MESSAGE.



SECTION A-A

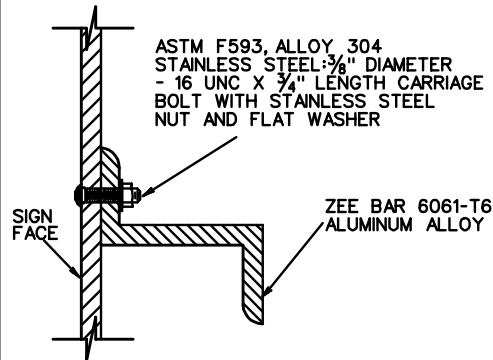
ALL INSTALLATIONS EXCEPT TOP AND BOTTOM ZEE BARS ON OVERHEAD SIGNS

3/16" DIAMETER RIVET - RIVETS SHALL BE DOME HEAD, BREAK MANDREL, BLIND RIVETS CONFORMING TO INDUSTRIAL FASTENERS INSTITUTE STANDARD IFI-114, STYLE 1, GRADES 10 OR 11 EXCEPT THAT THE MINIMUM ULTIMATE TENSILE STRENGTH SHALL BE 360 POUNDS. RIVETS SHALL HAVE A GRIP RANGE ACCOMMODATING THE COMBINED THICKNESS OF THE SIGN PANEL AND ZEE BAR AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

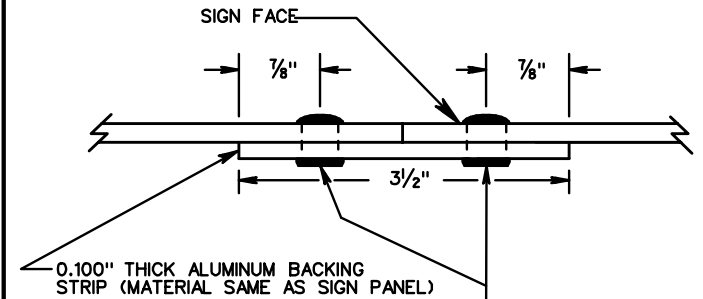


TOP AND BOTTOM ZEE BAR INSTALLATION ON OVERHEAD SIGNS

ASTM F593, ALLOY 304 STAINLESS STEEL: 3/8" DIAMETER - 16 UNC X 3/4" LENGTH CARRIAGE BOLT WITH STAINLESS STEEL NUT AND FLAT WASHER



SECTION B-B



RIVET (SAME AS USED FOR CONNECTING SIGN TO ZEE BAR). IN LIEU OF USING RIVETS, TAPE EQUAL TO 3M'S VHB DOUBLE COATED ACRYLIC FOAM TAPE MAY BE USED EXCEPT ON HORIZONTAL BACKING STRIP. TAPE SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

SPECIFICATION REFERENCE

701

SIGN PANEL DESIGN

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT

ROAD AND BRIDGE STANDARDS

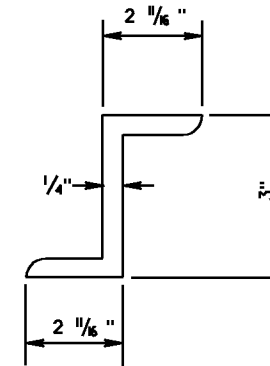
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SHEET 1 OF 2

1325.10

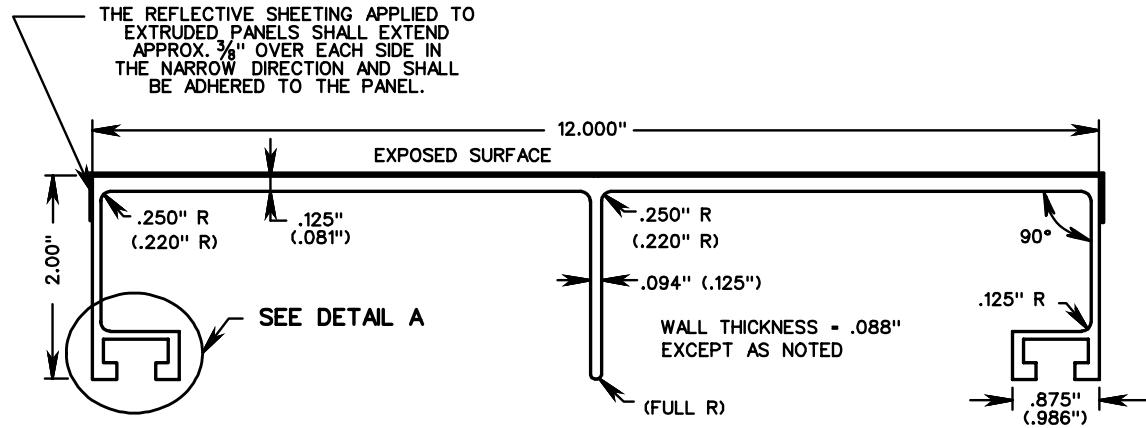
SIGN PANEL DIMENSIONS					ZEE BAR	SIGN PANEL DIMENSIONS					ZEE BAR
W	H	c	d	NO.		W	H	c	d	NO.	
12'	4'	14"	20"	2		26'	10'	18"	3'-6"	3	
11'	5'	16"	28"	2		28'	10'	18"	3'-6"	3	
10'	6'	12"	4'-0"	2		30'	10'	18"	3'-6"	3	
12'	6'	12"	4'-0"	2		10'	9'	18"	3'-0"	3	
14'	6'	12"	4'-0"	2		12'	9'	18"	3'-0"	3	
16'	6'	12"	4'-0"	2		14'	9'	18"	3'-0"	3	
18'	6'	12"	4'-0"	2		16'	9'	18"	3'-0"	3	
20'	6'	12"	4'-0"	2		18'	9'	18"	3'-0"	3	
22'	6'	12"	4'-0"	2		20'	9'	18"	3'-0"	3	
24'	6'	12"	4'-0"	2		22'	9'	18"	3'-0"	3	
26'	6'	12"	4'-0"	2		24'	9'	18"	3'-0"	3	
28'	6'	12"	4'-0"	2		26'	9'	18"	3'-0"	3	
30'	6'	12"	4'-0"	2		28'	9'	18"	3'-0"	3	
10'	8'	12"	3'-0"	3		30'	9'	18"	3'-0"	3	
12'	8'	12"	3'-0"	3		12'	12'	18"	3'-0"	4	
14'	8'	12"	3'-0"	3		14'	12'	18"	3'-0"	4	
16'	8'	12"	3'-0"	3		16'	12'	18"	3'-0"	4	
18'	8'	12"	3'-0"	3		18'	12'	18"	3'-0"	4	
20'	8'	12"	3'-0"	3		20'	12'	21"	4'-3"	3	
22'	8'	12"	3'-0"	3		22'	12'	21"	4'-3"	3	
24'	8'	12"	3'-0"	3		24'	12'	21"	4'-3"	3	
26'	8'	12"	3'-0"	3		26'	12'	21"	4'-3"	3	
28'	8'	12"	3'-0"	3		28'	12'	21"	4'-3"	3	
30'	8'	12"	3'-0"	3		30'	12'	21"	4'-3"	3	
10'	10'	18"	3'-6"	3		14'	14'	18"	3'-8"	4	
12'	10'	18"	3'-6"	3		16'	14'	18"	3'-8"	4	
14'	10'	18"	3'-6"	3		18'	14'	18"	3'-8"	4	
16'	10'	18"	3'-6"	3		20'	14'	18"	3'-8"	4	
18'	10'	18"	3'-6"	3		22'	14'	18"	3'-8"	4	
20'	10'	18"	3'-6"	3		24'	14'	18"	3'-8"	4	
22'	10'	18"	3'-6"	3		26'	14'	18"	3'-8"	4	
24'	10'	18"	3'-6"	3		28'	14'	18"	3'-8"	4	

SIGN PANEL DIMENSIONS					ZEE BAR
W	H	c	d	NO.	
30'	14'	18"	3'-8"	4	
16'	16'	18"	3'-3"	5	
18'	16'	18"	3'-3"	5	
20'	16'	18"	3'-3"	5	
22'	16'	18"	3'-3"	5	
24'	16'	18"	3'-3"	5	
26'	16'	18"	3'-3"	5	
28'	16'	18"	3'-3"	5	
30'	16'	18"	3'-3"	5	
VARIES	2'-6'	9"	12"	2	

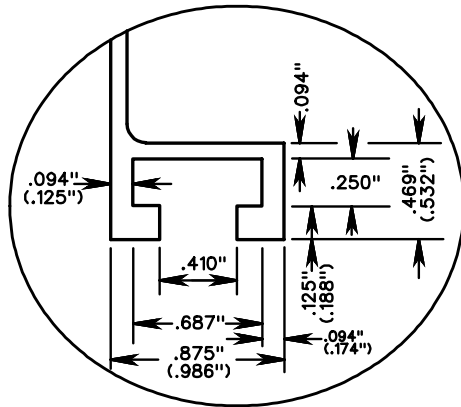


ZEE BAR

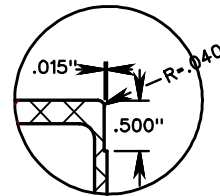
SIGN PANEL DESIGN



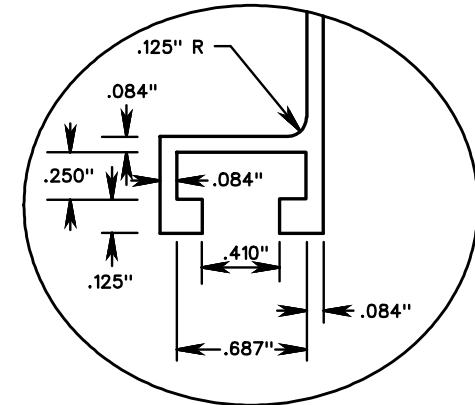
FULL PANEL



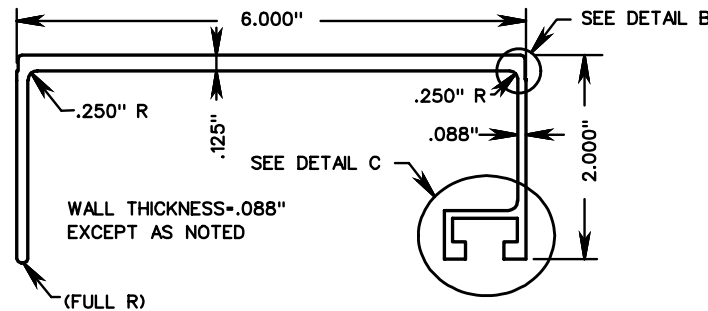
DETAIL A



DETAIL B



DETAIL C



HALF PANEL

NOTES:

1. ALUMINUM PANELS MAY HAVE SQUARE CORNERS OR NOTCHED CORNERS AS SHOWN. NO OTHER TYPE CORNERS ARE ACCEPTABLE.
2. ALTERNATE DIMENSIONS INDICATED IN PARENTHESES ARE ACCEPTABLE.

SPECIFICATION REFERENCE

701

EXTRUDED SIGN PANEL DESIGN

VIRGINIA DEPARTMENT OF TRANSPORTATION

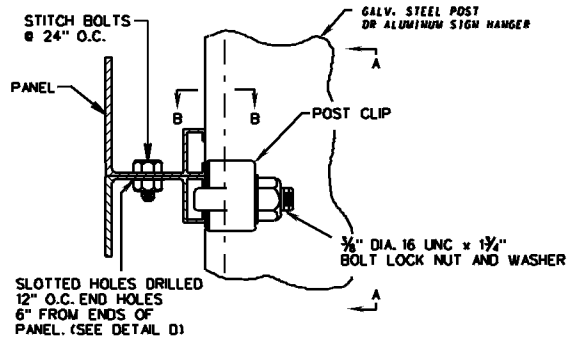
VDOT

ROAD AND BRIDGE STANDARDS

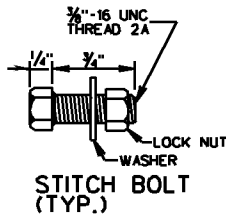
REVISION DATE

SHEET 1 OF 2

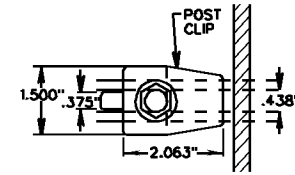
1325.20



SIGN PANEL ASSEMBLY

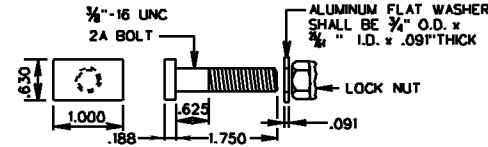


STITCH BOLT (TYP.)

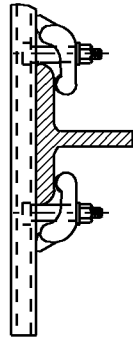


SECTION A-A

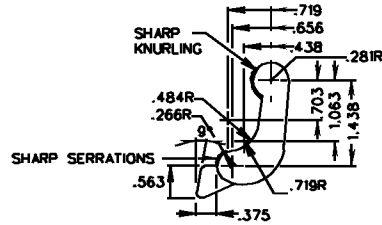
SLOTTED HOLES DRILLED 12\"/>



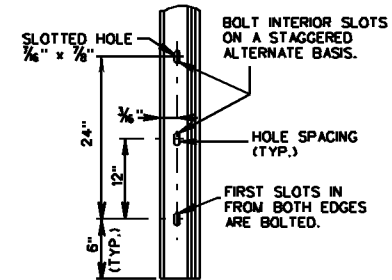
POST CLIP BOLT (TYP.)



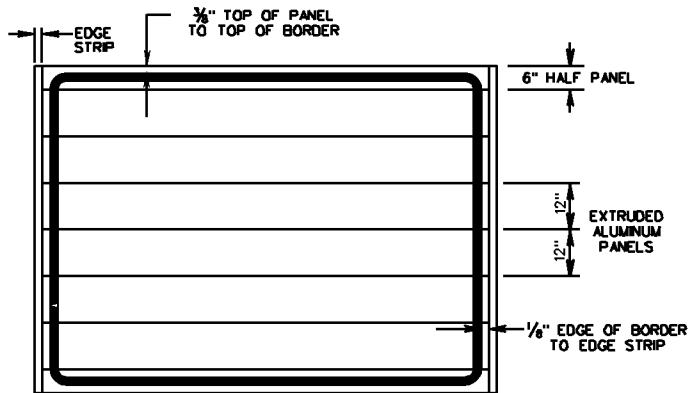
SECTION B-B



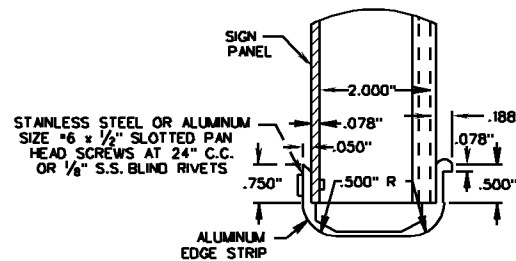
POST CLIP (TYP.)



DETAIL D



BORDER DETAIL



DETAIL OF EDGE STRIP

NOTE:

EDGE STRIP SHALL BE PLACED ON BOTH SIDES OF ALL EXTRUDED PANEL SIGNS.

DOUBLE POST CLIPS SHALL BE INSTALLED ON ALL SIGN HANGERS.

ALL SIGN PANELS INSTALLED ON OVERHEAD SIGN STRUCTURES SHALL BE BOLTED DIRECTLY TO THE SIGN HANGER MEMBERS AT THE BOTTOM AND TOP ROW AND POST CLIPS SHALL BE USED AT ALL OTHER MOUNTING POINTS.



ROAD AND BRIDGE STANDARDS

SHEET 2 OF 2

REVISION DATE

1325.21

4/09

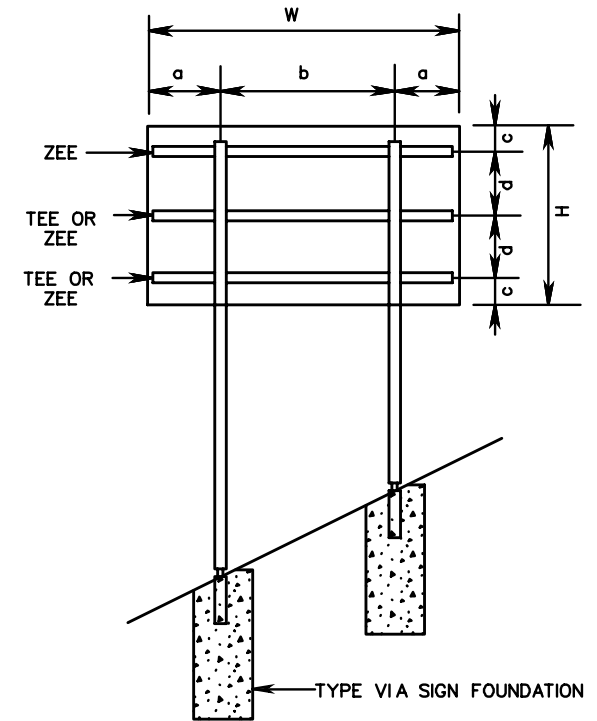
EXTRUDED SIGN PANEL DESIGN

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE

701

SIGN PANEL DIMENSIONS		SIGN PANEL ATTACHMENT DETAILS							
		a	b	c	d	ZEE BAR		TEE	CLAMPS
W	H					NO.	SIZE	NO.	NO.
12'	4'	2'-0"	8'-0"	14"	20"	2	B	0	0
11'	5'	1'-6"	8'-0"	16"	28"	2	B	0	0
10'	6'	1'-0"	8'-0"	12"	4'-0"	1	B	1	4
12'	6'	2'-0"	8'-0"	12"	4'-0"	1	B	1	4
14'	6'	3'-0"	8'-0"	12"	4'-0"	2	B	0	0
16'	6'	3'-6"	9'-0"	12"	4'-0"	2	C	0	0
18'	6'	4'-0"	10'-0"	12"	4'-0"	2	C	0	0
20'	6'	4'-6"	11'-0"	12"	4'-0"	2	D	0	0
22'	6'	4'-10"	12'-4"	12"	4'-0"	2	E	0	0
24'	6'	5'-4"	13'-4"	12"	4'-0"	2	E	0	0
26'	6'	5'-10"	14'-4"	12"	4'-0"	2	E	0	0
28'	6'	6'-3"	15'-6"	12"	4'-0"	2	E	0	0
30'	6'	6'-8"	16'-8"	12"	4'-0"	2	E	0	0
10'	8'	1'-0"	8'-0"	12"	3'-0"	1	B	2	8
12'	8'	2'-0"	8'-0"	12"	3'-0"	1	B	2	8
14'	8'	3'-0"	8'-0"	12"	3'-0"	1	B	2	8
16'	8'	3'-6"	9'-0"	12"	3'-0"	3	B	0	0
18'	8'	4'-0"	10'-0"	12"	3'-0"	3	C	0	0
20'	8'	4'-6"	11'-0"	12"	3'-0"	3	C	0	0
22'	8'	4'-10"	12'-4"	12"	3'-0"	3	D	0	0
24'	8'	5'-4"	13'-4"	12"	3'-0"	3	D	0	0
26'	8'	5'-10"	14'-4"	12"	3'-0"	3	D	0	0
28'	8'	6'-3"	15'-6"	12"	3'-0"	3	E	0	0
30'	8'	6'-8"	16'-8"	12"	3'-0"	3	E	0	0
10'	10'	1'-0"	8'-0"	18"	3'-6"	1	B	2	8
12'	10'	2'-0"	8'-0"	18"	3'-6"	1	B	2	8
14'	10'	3'-0"	8'-0"	18"	3'-6"	1	B	2	8
16'	10'	3'-6"	9'-0"	18"	3'-6"	1	B	2	8
18'	10'	4'-0"	10'-0"	18"	3'-6"	3	C	0	0
20'	10'	4'-6"	11'-0"	18"	3'-6"	3	C	0	0
22'	10'	4'-10"	12'-4"	18"	3'-6"	3	C	0	0



SPECIFICATION REFERENCE

701

SIGN PANEL DESIGN

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT

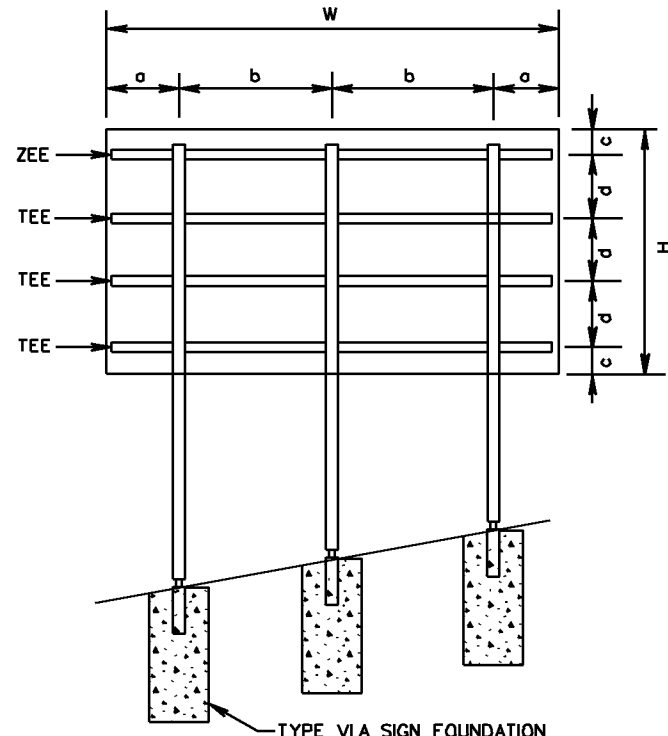
ROAD AND BRIDGE STANDARDS

REVISION DATE

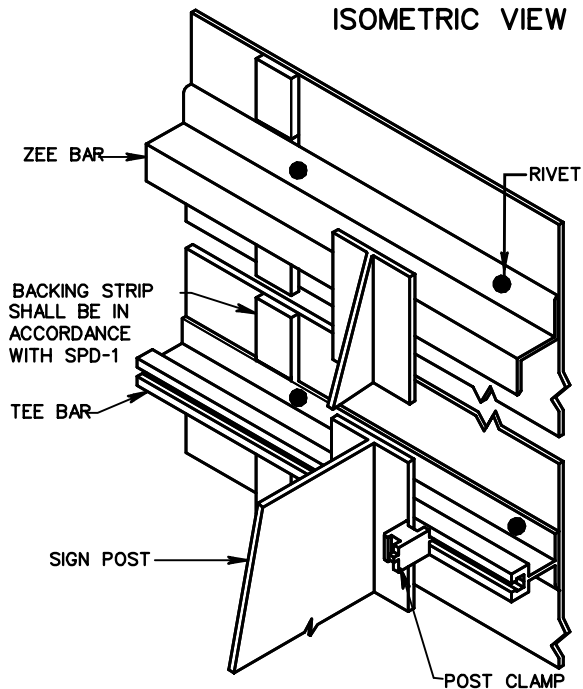
SHEET 1 OF 3

1325.30

SIGN PANEL DIMENSIONS		SIGN PANEL ATTACHMENT DETAILS								SIGN PANEL DIMENSIONS		SIGN PANEL ATTACHMENT DETAILS											
		a	b	c	d	ZEE BAR		TEE				CLAMPS		a	b	c	d	ZEE BAR		TEE		CLAMPS	
						NO.	SIZE	NO.	NO.			NO.	NO.					NO.	NO.	NO.	NO.	NO.	NO.
24'	10'	5'-4"	13'-4"	18"	3'-6"	3	D	0	0	28'	14'	4'-2"	9'-10"	18"	3'-8"	1	B	3	18				
26'	10'	5'-10"	14'-4"	18"	3'-6"	3	D	0	0	30'	14'	4'-6"	10'-6"	18"	3'-8"	1	B	3	18				
28'	10'	6'-3"	15'-6"	18"	3'-6"	3	D	0	0	16'	16'	3'-6"	9'-0"	18"	3'-3"	1	B	4	16				
30'	10'	7'-3"	15'-6"	18"	3'-6"	3	D	0	0	18'	16'	4'-0"	10'-0"	18"	3'-3"	1	B	4	16				
10'	9'	1'-0"	8'-0"	18"	3'-0"	1	B	2	8	20'	16'	2'-0"	8'-0"	18"	3'-3"	1	B	4	24				
12'	9'	2'-0"	8'-0"	18"	3'-0"	1	B	2	8	22'	16'	3'-0"	8'-0"	18"	3'-3"	1	B	4	24				
14'	9'	3'-0"	8'-0"	18"	3'-0"	1	B	2	8	24'	16'	3'-7"	8'-5"	18"	3'-3"	1	B	4	24				
16'	9'	3'-6"	9'-0"	18"	3'-0"	3	C	0	0	26'	16'	3'-10"	9'-2"	18"	3'-3"	1	B	4	24				
18'	9'	4'-0"	10'-0"	18"	3'-0"	3	C	0	0	28'	16'	4'-2"	9'-10"	18"	3'-3"	1	B	4	24				
20'	9'	4'-6"	11'-0"	18"	3'-0"	3	C	0	0	30'	16'	4'-6"	10'-6"	18"	3'-3"	1	B	4	24				
22'	9'	4'-10"	12'-4"	18"	3'-0"	3	D	0	0	VARIES	2'-6"	-	-	9"	12"	2	B	-	-				
24'	9'	5'-4"	13'-4"	18"	3'-0"	3	D	0	0														
26'	9'	5'-10"	14'-4"	18"	3'-0"	3	D	0	0														
28'	9'	6'-10"	14'-4"	18"	3'-0"	3	D	0	0														
30'	9'	7'-10"	14'-4"	18"	3'-0"	3	D	0	0														
12'	12'	2'-0"	8'-0"	18"	3'-0"	1	B	3	12														
14'	12'	3'-0"	8'-0"	18"	3'-0"	1	B	3	12														
16'	12'	3'-6"	9'-0"	18"	3'-0"	1	B	3	12														
18'	12'	4'-0"	10'-0"	18"	3'-0"	1	B	3	12														
20'	12'	4'-6"	11'-0"	21"	4'-3"	3	B	0	0														
22'	12'	4'-10"	12'-4"	21"	4'-3"	3	C	0	0														
24'	12'	5'-4"	13'-4"	21"	4'-3"	3	C	0	0														
26'	12'	3'-10"	9'-2"	21"	4'-3"	1	B	2	12														
28'	12'	4'-2"	9'-10"	21"	4'-3"	1	B	2	12														
30'	12'	4'-6"	10'-6"	21"	4'-3"	1	B	2	12														
14'	14'	3'-0"	8'-0"	18"	3'-8"	1	B	3	12														
16'	14'	3'-6"	9'-0"	18"	3'-8"	1	B	3	12														
18'	14'	4'-0"	10'-0"	18"	3'-8"	1	B	3	12														
20'	14'	4'-6"	11'-0"	18"	3'-8"	1	B	3	12														
22'	14'	3'-0"	8'-0"	18"	3'-8"	1	B	3	18														
24'	14'	3'-7"	8'-5"	18"	3'-8"	1	B	3	18														
26'	14'	3'-10"	9'-2"	18"	3'-8"	1	B	3	18														



ISOMETRIC VIEW

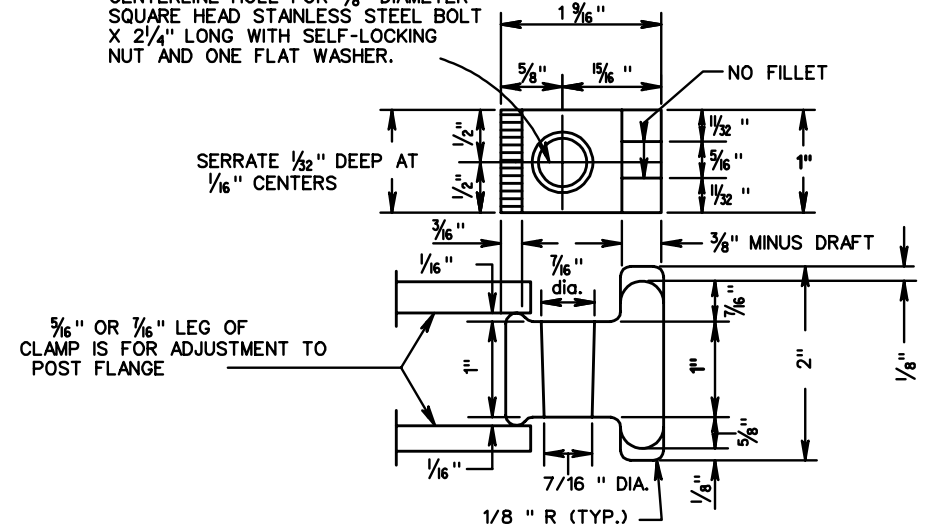


UNLESS OTHERWISE NOTED THE TOP OF THE SIGN PANEL SHALL NOT EXTEND ABOVE THE SIGN POST NO GREATER THAN THE DISTANCE OF 1/2 C.

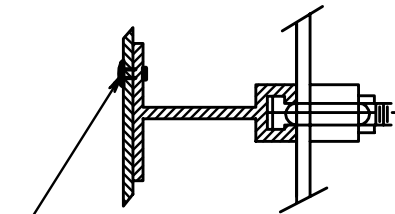
POST CLAMP DETAIL

GALVANIZED GRAY - IRON OR ALUMINUM CASTING

CENTERLINE HOLE FOR 3/8" DIAMETER SQUARE HEAD STAINLESS STEEL BOLT X 2 1/4" LONG WITH SELF-LOCKING NUT AND ONE FLAT WASHER.

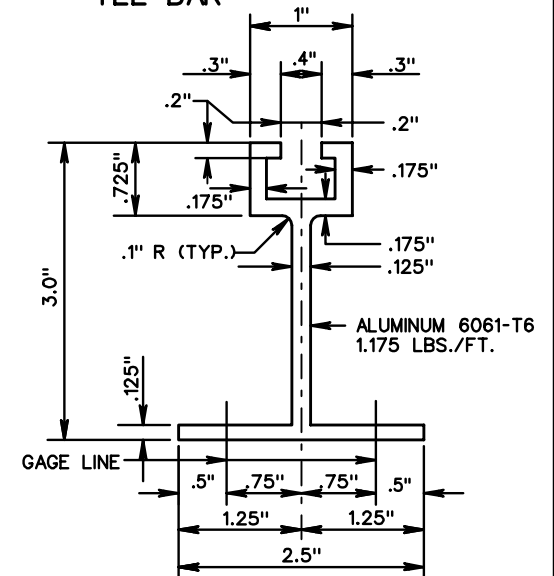


FASTENING



3/16" DIAMETER RIVET. -RIVETS SHALL BE DOME HEAD, BREAK MANDREL, BLIND RIVETS CONFORMING TO INDUSTRIAL FASTENERS INSTITUTE STANDARD IFI-114, STYLE 1, GRADES 10 OR 11 EXCEPT THAT THE MINIMUM ULTIMATE TENSILE STRENGTH SHALL BE 360 POUNDS. RIVETS SHALL HAVE A GRIP RANGE ACCOMMODATING THE COMBINED THICKNESS OF THE SIGN PANEL AND ZEE BAR AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

TEE BAR



ZEE BARS		
TYPE	SIZE	WEIGHT
A	2 3/8" x 1/4" x 3/16"	1.00LBS./FT.
B	3" x 2 1/16" x 1/4"	2.40LBS./FT.
C	4" x 3/16" x 1/4"	2.93LBS./FT.
D	5" x 3/4" x 5/16"	4.13LBS./FT.
E	6" x 3/2" x 3/8"	5.58LBS./FT.

SPECIFICATION REFERENCE

700
701

SIGN PANEL DESIGN

VIRGINIA DEPARTMENT OF TRANSPORTATION

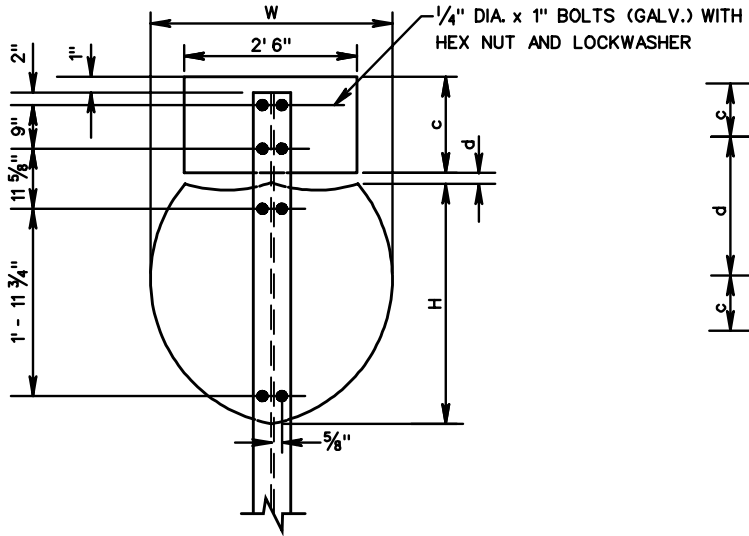


ROAD AND BRIDGE STANDARDS

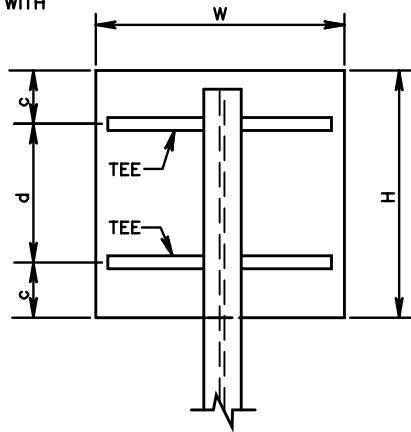
REVISION DATE SHEET 3 OF 3

1325.32

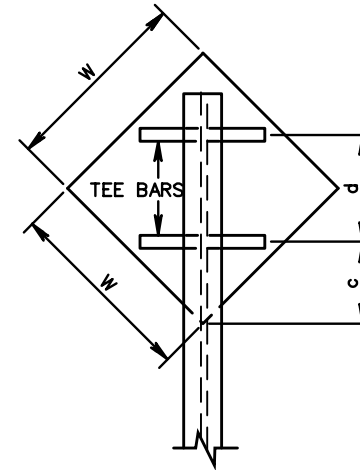
TYPE VA-A



TYPES VA-B, VA-C, VA-D, VA-E, VA-L AND VA-M

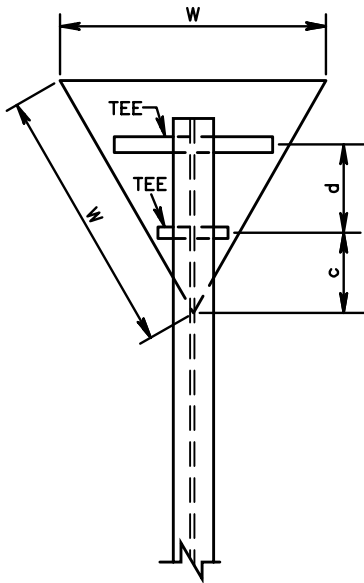


TYPE VA-F

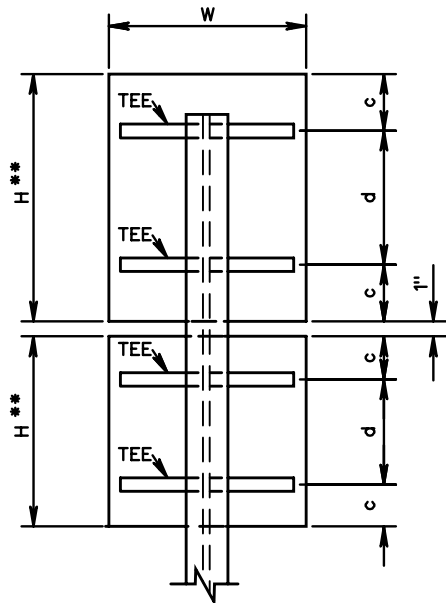


UNLESS OTHERWISE NOTED THE TOP OF THE SIGN PANEL SHALL NOT EXTEND ABOVE THE SIGN POST NO GREATER THAN THE DISTANCE OF $\frac{1}{2} C$

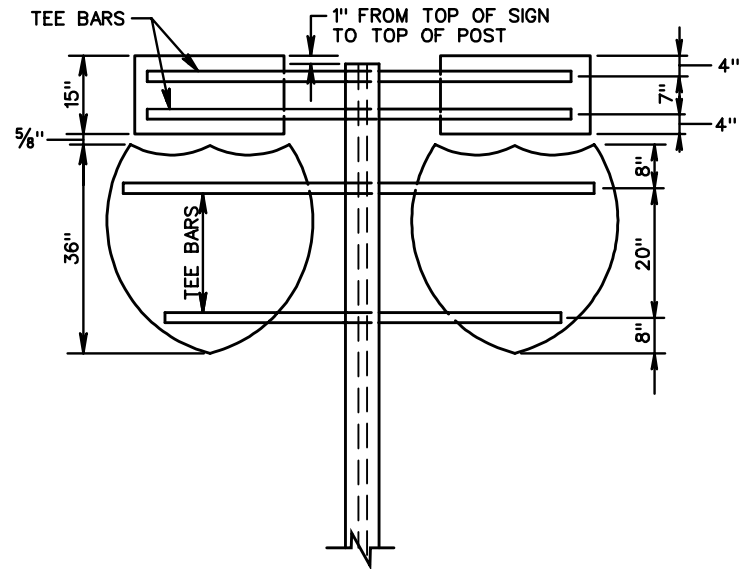
TYPE VA-G



TYPE VA-K



TYPE VA-A2



ROAD AND BRIDGE STANDARDS

SHEET 1 OF 2

REVISION DATE

1325.40

SIGN PANEL DESIGN

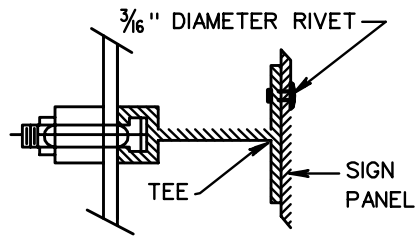
VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE

701

POST CLAMP DETAIL

FASTENING

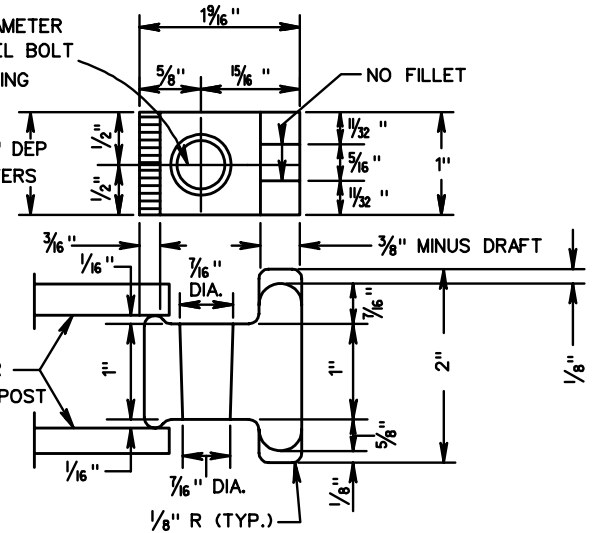


RIVETS SHALL BE DOME HEAD, BREAK MANDREL, BLIND RIVETS CONFORMING TO INDUSTRIAL FASTENERS INSTITUTE STANDARD IFI-114, STYLE 1, GRADES 10 OR 11 EXCEPT THAT THE MINIMUM ULTIMATE TENSILE STRENGTH SHALL BE 360 POUNDS. RIVETS SHALL HAVE A GRIP RANGE ACCOMMODATING THE COMBINE THICKNESS OF THE SIGN PANEL AND ZEE BAR AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

CENTERLINE HOLE FOR 3/8" DIAMETER SQUARE HEAD STAINLESS STEEL BOLT x 2 1/4" LONG WITH SELF-LOCKING NUT AND ONE FLAT WASHER.

SERRATE 1/32" DEP AT 1/16" CENTERS

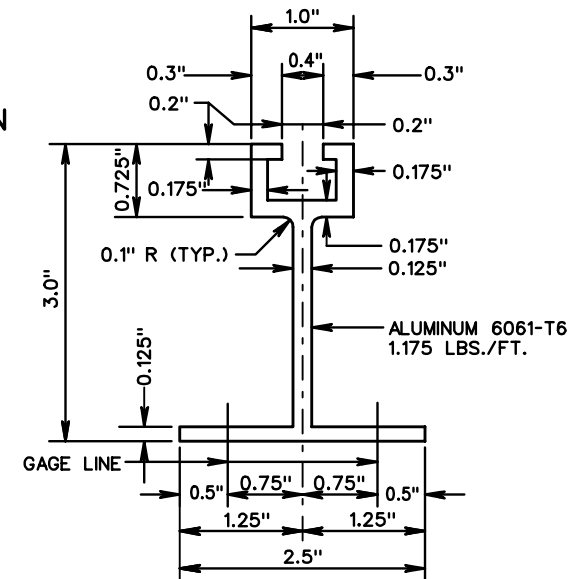
3/16" OR 7/16" LEG OF CLAMP IS FOR ADJUSTMENT TO POST FLANGE



TEE CROSS SECTION

TEE BAR SPACING CHART

STRUCTURE TYPE	SIGN PANEL DIMENSIONS				TEE 6061-T6 2.5 x 3.0 @ 1.175 LB./FT.		
	W	H	c	d	NUMBER	LENGTH	CLAMP
VA-A	3'	3'	1'-3"	5/8"	-	-	-
VA-B	4'	4'	1'-2"	1'-8"	2	3'-0"	4
VA-C	4'	5'	1'-3"	2'-6"	2	3'-0"	4
VA-D	5'	3'	0'-8"	1'-8"	2	4'-0"	4
VA-E	6'	5'	1'-3"	2'-6"	2	5'-0"	4
VA-F	4'	-	1'-8"	2'-4"	2	2'-10"	4
VA-G	5'	-	1'-8"	-	1 EACH	2'-10" & 1'-4"	4
VA-K	4'	5'	1'-3"	2'-6"	2	3'-0"	4
VA-K	4'	4'	1'-2"	1'-8"	2	3'-0"	4
VA-L	6'	6'	1'-6"	3'-0"	2	5'-0"	4
VA-M	5'	5'	1'-3"	2'-6"	2	4'-0"	4
VA-A2	6'	3'	1'-3"	5/8"	4	5'-0"	-



SPECIFICATION REFERENCE

701

SIGN PANEL DESIGN

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT

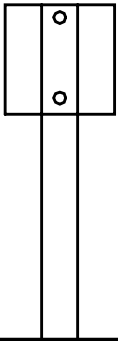
ROAD AND BRIDGE STANDARDS

REVISION DATE

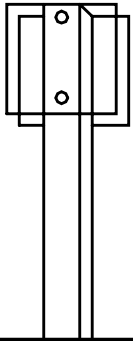
SHEET 2 OF 2

1325.41

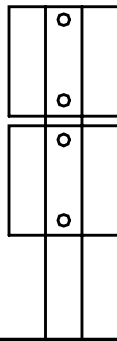
TYPE A



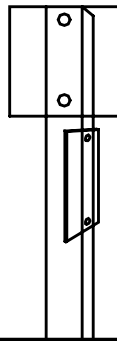
TYPE B



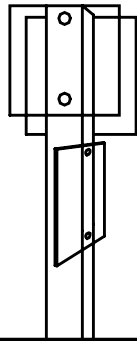
TYPE C



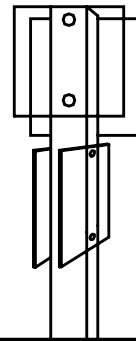
TYPE D



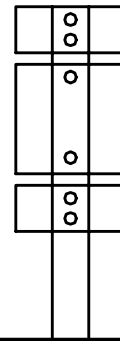
TYPE E



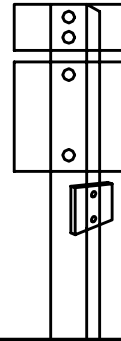
TYPE F



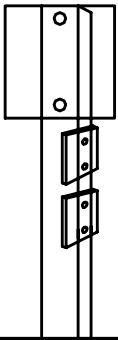
TYPE G



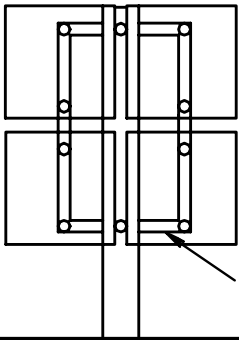
TYPE H



TYPE I

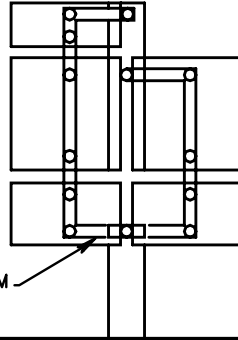


TYPE J

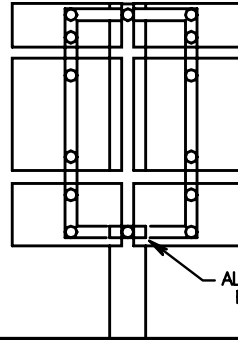


ALUMINUM
FRAME

TYPE K

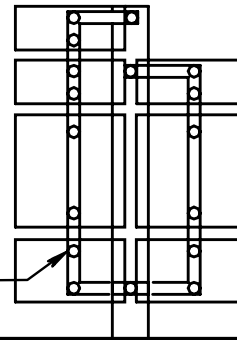


TYPE L

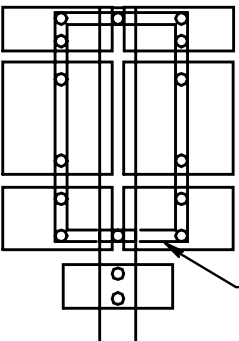


ALUMINUM
FRAME

TYPE M

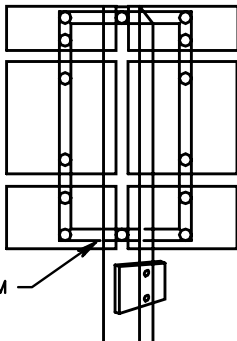


TYPE N

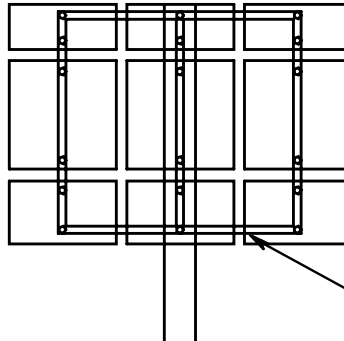


ALUMINUM
FRAME

TYPE O

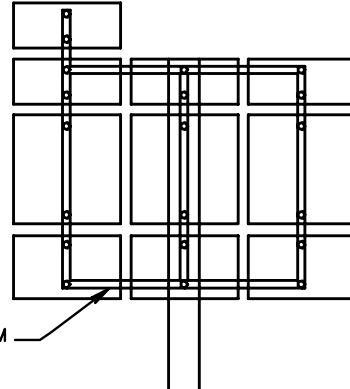


TYPE P



ALUMINUM
FRAME

TYPE Q



ROAD AND BRIDGE STANDARDS

SHEET 1 OF 2

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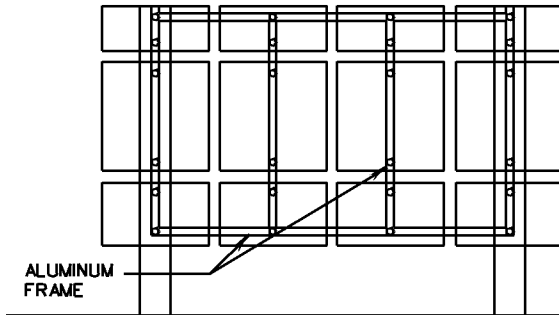
SIGN PANEL DESIGN

VIRGINIA DEPARTMENT OF TRANSPORTATION

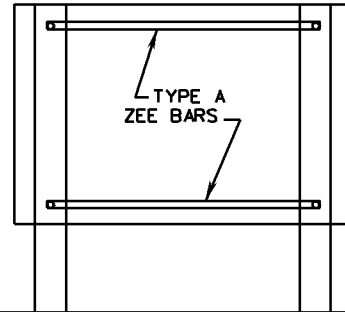
SPECIFICATION
REFERENCE

701

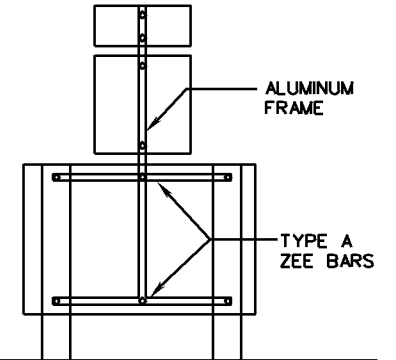
TYPE R



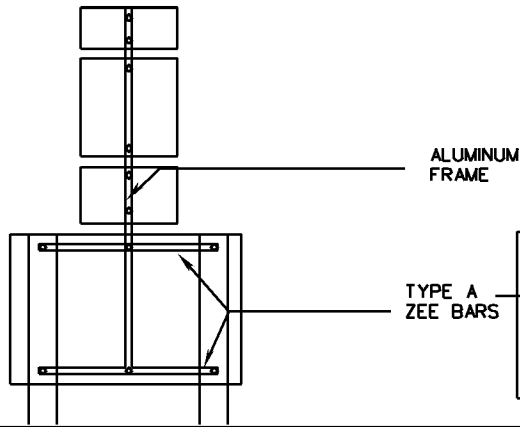
TYPE S



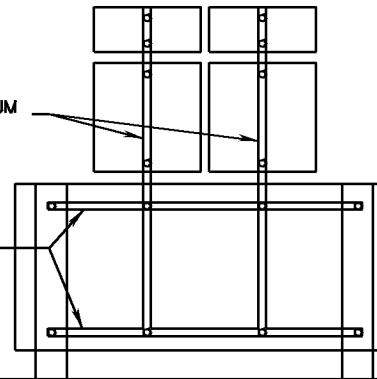
TYPE T



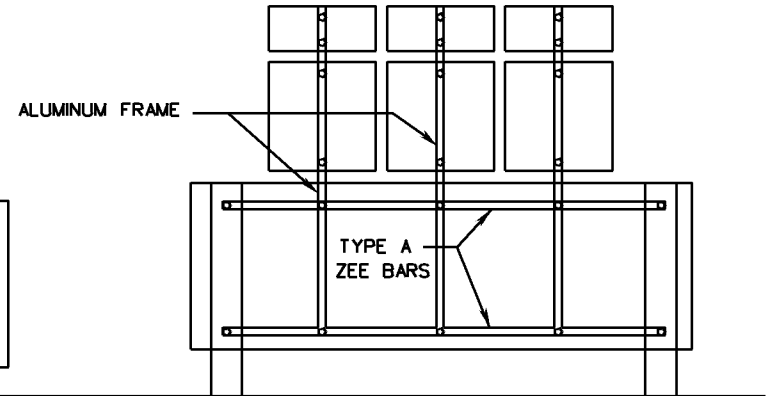
TYPE U



TYPE V

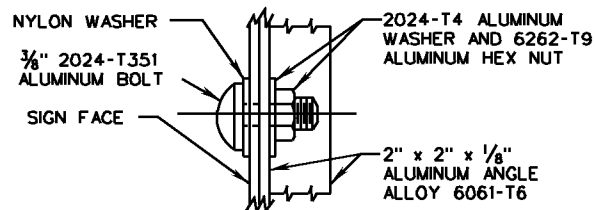


TYPE W



ALUMINUM FRAMING

SIGN PANEL ATTACHMENT DETAILS
(FOR SIGN PANEL ATTACHMENT TO Z BARS, SEE STANDARD SPD-1)



NOTES

NYLON WASHER SHALL BE 1/8" THICK MINIMUM WITH AN OUTSIDE DIAMETER OF 1" AND AN INSIDE DIAMETER OF 7/16".

TO OBTAIN A FLUSH MOUNTING SURFACE FOR SIGNS, ALL WOOD POST SHALL BE MORTISED WHERE NECESSARY TO RECESS THE FLANGE OF ALUMINUM ANGLE.

THE TYPE A ZEE BARS SHALL BE 2 3/8" x 1 1/4" x 3/16".

ALL VERTICAL AND HORIZONTAL SPACING BETWEEN SIGNS IN AN ASSEMBLY SHALL BE ONE INCH UNLESS SPECIFIED.

THESE ARE TYPICAL SIGN PANEL ASSEMBLIES; ALL ASSEMBLIES SHALL BE IN ACCORDANCE WITH PLAN DETAILS.

SPECIFICATION REFERENCE

701

SIGN PANEL DESIGN

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT

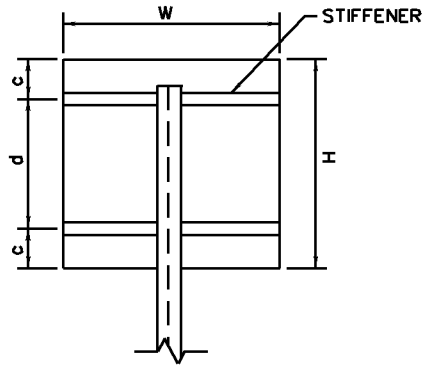
ROAD AND BRIDGE STANDARDS

REVISION DATE
6-15-09

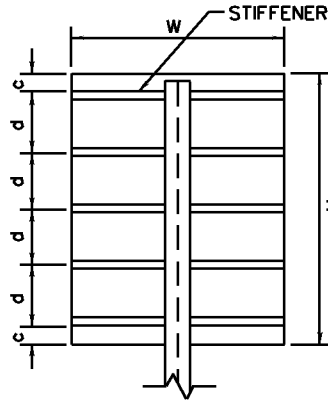
SHEET 2 OF 2

1325.51

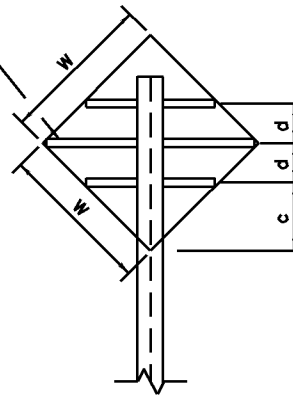
TYPES VA-B, VA-C, VA-D,
VA-L AND VA-M



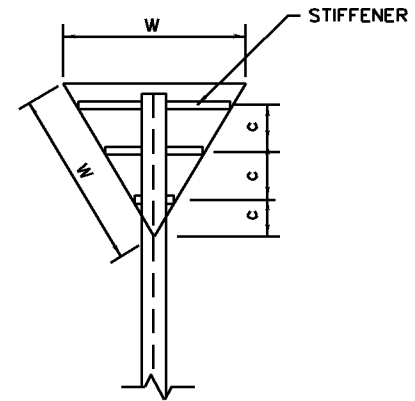
TYPES VA-E



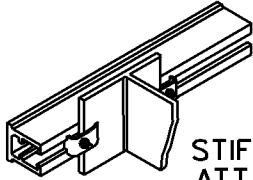
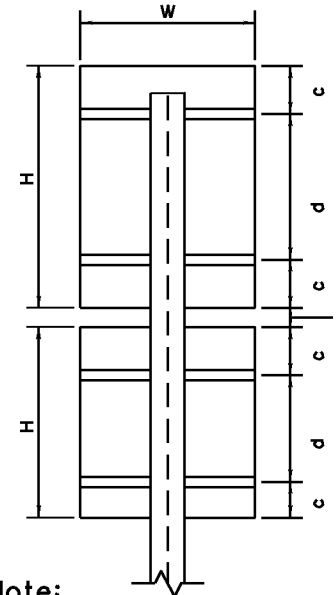
TYPES VA-F



TYPES VA-G

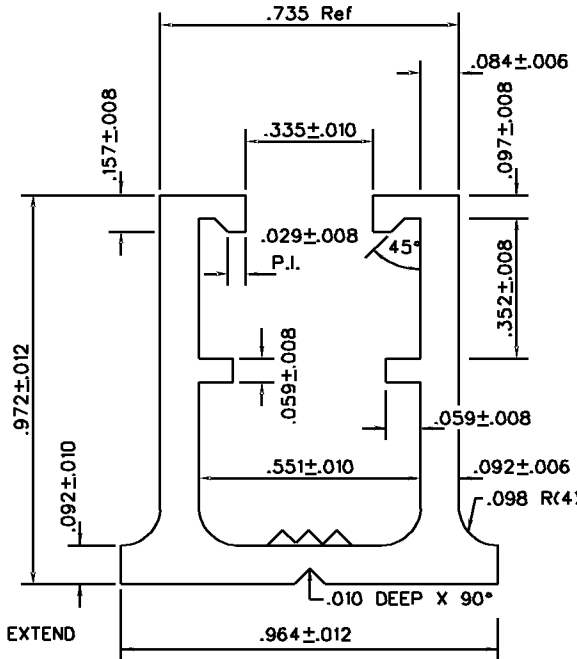


TYPES VA-K



STIFFENER TO POST
ATTACHMENT DETAIL

MEDIUM STIFFENER
DETAIL



Note:

RIVETS SHALL BE USED FOR SECURING THE STIFFENERS TO THE SIGN UNLESS OTHERWISE SPECIFIED OR APPROVED, AND SHALL BE 3/16" MINIMUM DIAMETER BY 1/2" LONG ALUMINUM AND CAPABLE OF WITHSTANDING A MINIMUM SHEAR FORCE OF 460LBS. RIVET SPACING FOR ATTACHING THE STIFFENERS TO THE SIGN PANEL SHALL BE 6" MAXIMUM BEGINNING 1 1/2" FROM THE ENDS OF THE SIGN PANEL.

STRUCTURE TYPE	W	H	c	d	STIFFENERS	
					NO.	SIZE
VA-B	4'	4'	6 1/2"	2'-11"	2	MEDIUM
VA-C	4'	5'	12 1/2"	2'-11"	2	MEDIUM
VA-D	5'	3'	7"	1'-10"	2	MEDIUM
VA-E	6'	5'	0"	1'-3"	5	MEDIUM
VA-F	4'	—	8"	2'-2"	3	MEDIUM
VA-G	5'	—	1'-4"	—	3	MEDIUM
VA-K	4'	5'	12 1/2"	2'-11"	2	MEDIUM
	4'	4'	6 1/2"	2'-11"	2	MEDIUM
VA-L	6'	6'	6"	1'-3"	5	MEDIUM
VA-M	5'	5'	8"	1'-10"	3	MEDIUM

SEE STANDARD SPD-4 FOR POST CLAMP AND BOLT DETAILS.

UNLESS OTHERWISE NOTED THE TOP OF THE SIGN PANEL SHALL NOT EXTEND ABOVE THE SIGN POST NO GREATER THAN THE DISTANCE OF 1/2 c.



ROAD AND BRIDGE STANDARDS

SHEET 1 OF 1

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1325.60

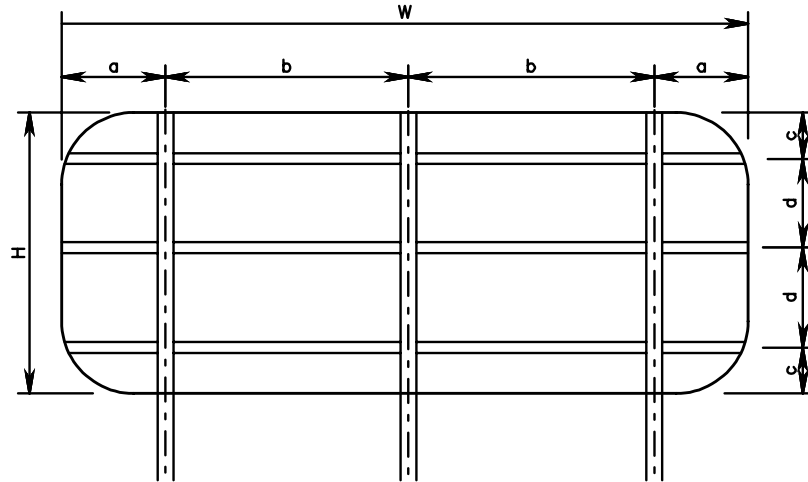
SIGN PANEL DESIGN

VIRGINIA DEPARTMENT OF TRANSPORTATION

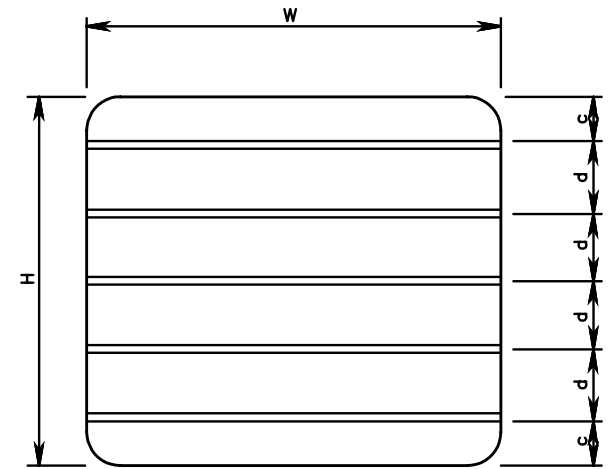
SPECIFICATION
REFERENCE

701

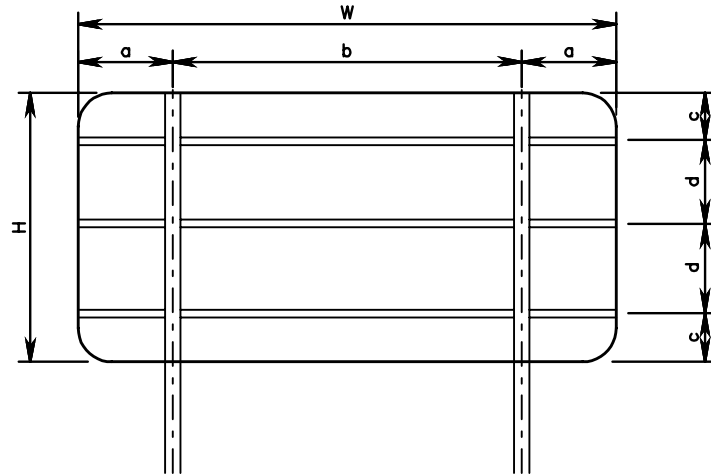
SIGN PANEL
DETAIL



SIGN PANEL
DETAIL



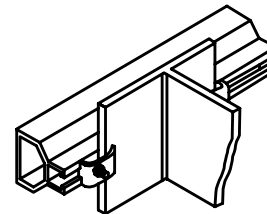
SIGN PANEL
DETAIL



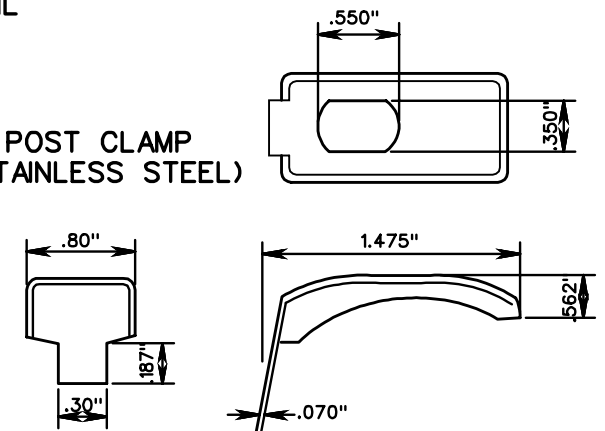
POST CLAMP BOLT
(STAINLESS STEEL)



STIFFENER TO POST
ATTACHMENT DETAIL



POST CLAMP
(STAINLESS STEEL)



SPECIFICATION
REFERENCE

701

SIGN PANEL DESIGN

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT

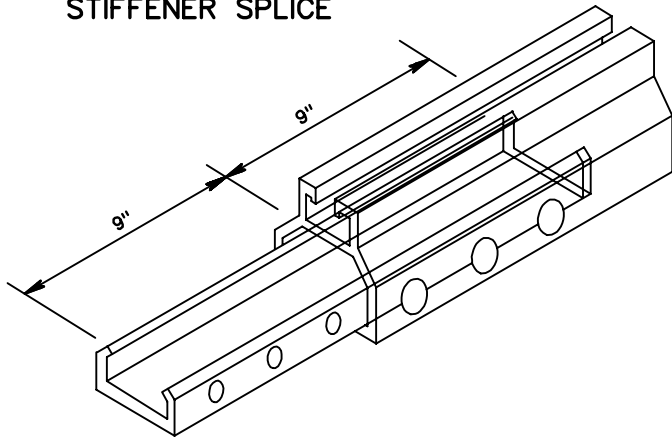
ROAD AND BRIDGE STANDARDS

REVISION DATE

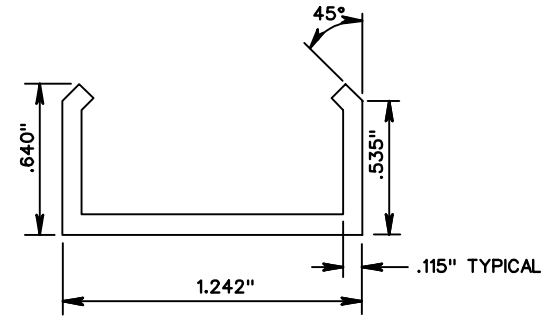
SHEET 1 OF 3

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LARGE STIFFENER SPLICE



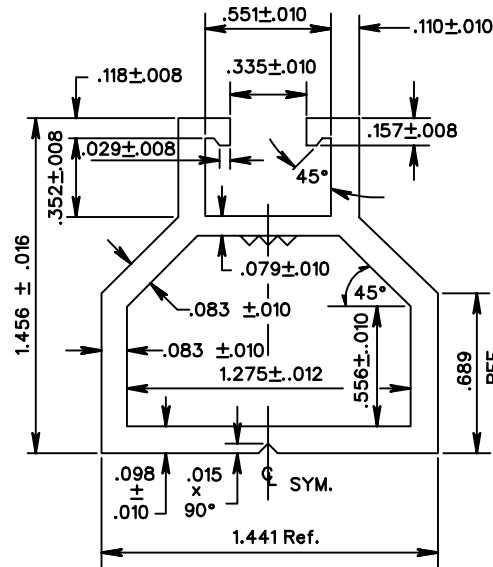
LARGE STIFFENER SPLICE BAR



THE MAXIMUM NUMBER OF SPLICES IN A STIFFENER SHALL BE ONE PER STIFFENER LOCATION.

SPLICES SHALL NOT BE IN A VERTICAL ALIGNMENT BUT SHALL BE OFFSET 12" FROM EACH OTHER.

LARGE STIFFENER DETAIL



ROAD AND BRIDGE STANDARDS

SHEET 2 OF 3

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1325.71

SIGN PANEL DESIGN

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE

701

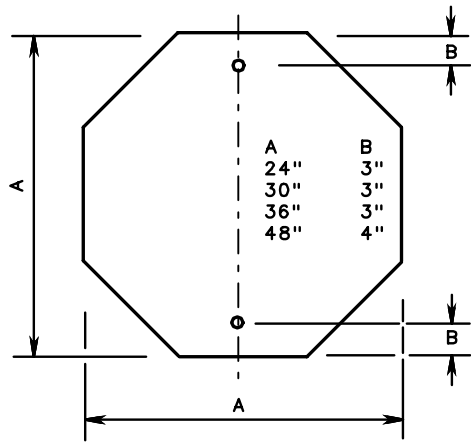
SIGN PANEL DIMENSIONS		SIGN PANEL ATTACHMENT DETAILS						STIFFENER		SIGN PANEL DIMENSIONS		SIGN PANEL ATTACHMENT DETAILS						STIFFENER		SPD-7
		a	b	c	d	NO.	SIZE					W	H	a	b	c	d			NO.
12'	4'	2'-0"	8'-0"	11 1/2"	2'-1"	2	LARGE	12'	10'	2'-0"	8'-0"	4"	2'-4"	5	LARGE					
11'	5'	1'-6"	8'-0"	1 1/2"	2'-0"	3	LARGE	14'	10'	2'-10"	8'-5"	6"	3'-0"	4	LARGE					
10'	6'	1'-0"	8'-0"	4"	1'-8"	4	LARGE	16'	10'	3'-2"	9'-7"	4"	2'-4"	5	LARGE					
12'	6'	2'-0"	8'-0"	11"	1'-8"	4	LARGE	18'	10'	3'-7"	10'-10"	0	1'-8"	7	LARGE					
14'	6'	2'-10"	8'-5"	0	3'-0"	3	LARGE	20'	10'	4'-0"	12'-0"	4"	1'-4"	8	LARGE					
16'	6'	3'-2"	9'-7"	0"	3'-0"	3	LARGE	22'	10'	4'-5"	13'-2"	4"	1'-2"	9	LARGE					
18'	6'	3'-7"	10'-10"	6"	1'-8"	4	LARGE	24'	10'	4'-10"	14'-5"	5"	10"	12	LARGE					
20'	6'	4'-0"	12'-0"	4"	1'-4"	5	LARGE	26'	10'	5'-2"	15'-7"	0	8"	16	LARGE					
22'	6'	4'-5"	13'-2"	1"	1'-2"	6	LARGE	10'	9'	1'-0"	8'-0"	4"	1'-8"	6	LARGE					
24'	6'	4'-10"	14'-5"	3"	11"	7	LARGE	12'	9'	2'-0"	8'-0"	4"	2'-1"	5	LARGE					
26'	6'	5'-2"	15'-7"	0"	8"	10	LARGE	14'	9'	2'-10"	8'-5"	0	3'-0"	4	LARGE					
10'	8'	1'-0"	8'-0"	8"	1'-8"	5	LARGE	16'	9'	3'-2"	9'-7"	1'-0"	2'-4"	4	LARGE					
12'	8'	2'-0"	8'-0"	6"	2'-4"	4	LARGE	18'	9'	3'-7"	10'-10"	4"	1'-8"	6	LARGE					
14'	8'	2'-10"	8'-5"	1'-0"	3'-0"	3	LARGE	20'	9'	4'-0"	12'-0"	0	1'-6"	7	LARGE					
16'	8'	3'-2"	9'-7"	6"	2'-4"	4	LARGE	22'	9'	4'-5"	13'-2"	5"	1'-2"	8	LARGE					
18'	8'	3'-7"	10'-10"	3"	1'-6"	6	LARGE	22'	9'	4'-5"	13'-2"	5"	1'-2"	8	LARGE					
20'	8'	4'-0"	12'-0"	3"	1'-6"	6	LARGE	24'	9'	4'-10"	14'-5"	4"	10"	11	LARGE					
22'	8'	4'-5"	13'-2"	6"	12"	8	LARGE	26'	9'	5'-2"	15'-7"	2"	8"	14	LARGE					
24'	8'	4'-10"	14'-5"	3"	9"	11	LARGE	12'	12'	2'-0"	8'-0"	2"	2'-1"	6	LARGE					
26'	8'	5'-2"	15'-7"	0"	8"	13	LARGE	14'	12'	2'-10"	8'-5"	0	3'-0"	5	LARGE					
10'	8'	1'-0"	8'-0"	8"	1'-8"	5	LARGE	16'	12'	3'-2"	9'-7"	2"	2'-4"	6	LARGE					
12'	8'	2'-0"	8'-0"	6"	2'-4"	4	LARGE	18'	12'	3'-7"	10'-10"	2"	1'-8"	8	LARGE					
14'	8'	2'-10"	8'-5"	1'-0"	3'-0"	3	LARGE	20'	12'	4'-0"	12'-0"	8"	1'-4"	9	LARGE					
16'	8'	3'-2"	9'-7"	6"	2'-4"	4	LARGE	22'	12'	4'-5"	13'-2"	2"	1'-2"	11	LARGE					
18'	8'	3'-7"	10'-10"	3"	1'-6"	6	LARGE	24'	12'	4'-10"	14'-5"	1 1/2"	11"	14	LARGE					
18'	8'	3'-7"	10'-10"	3"	1'-6"	6	LARGE	14'	14'	2'-10"	8'-5"	1'-0"	3'-0"	5	LARGE					
20'	8'	4'-0"	12'-0"	3"	1'-6"	6	LARGE	16'	14'	3'-2"	9'-7"	0	2'-4"	7	LARGE					
22'	8'	4'-5"	13'-2"	6"	12"	8	LARGE	18'	14'	3'-7"	10'-10"	4"	1'-8"	9	LARGE					
24'	8'	4'-10"	14'-5"	3"	9"	11	LARGE	20'	14'	4'-0"	12'-0"	4"	1'-4"	11	LARGE					
26'	8'	5'-2"	15'-7"	0	8"	13	LARGE	16'	16'	3'-2"	9'-7"	1'-0"	2'-4"	7	LARGE					
10'	10'	1'-0"	8'-0"	0	2'-0"	6	LARGE	18'	16'	3'-7"	10'-10"	6"	1'-8"	10	LARGE					
								VARIES	2'-6"	-	-	9"	12"	2	LARGE					

SPECIFICATION REFERENCE
701

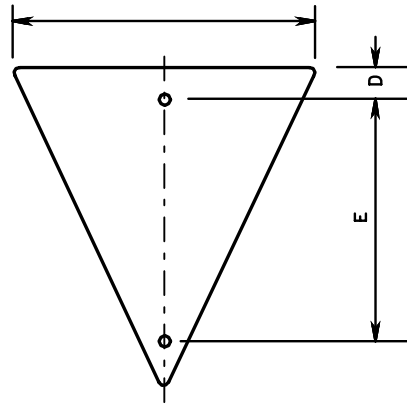
SIGN PANEL DESIGN

VIRGINIA DEPARTMENT OF TRANSPORTATION

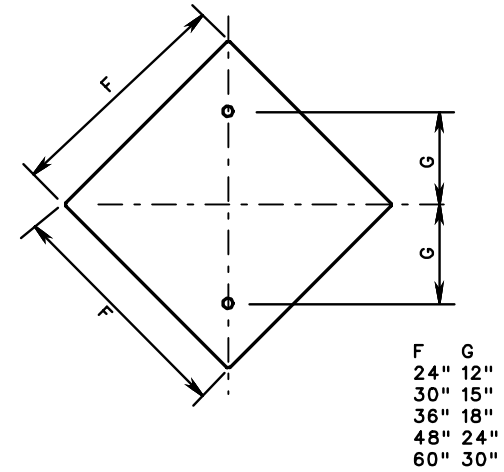
VDOT	
ROAD AND BRIDGE STANDARDS	
REVISION DATE	SHEET 3 OF 3
4/09	1325.72



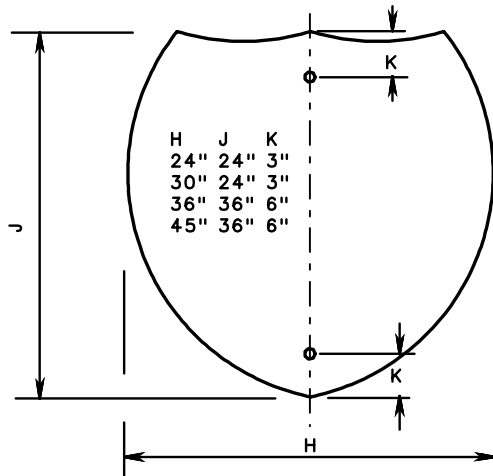
OCTAGON



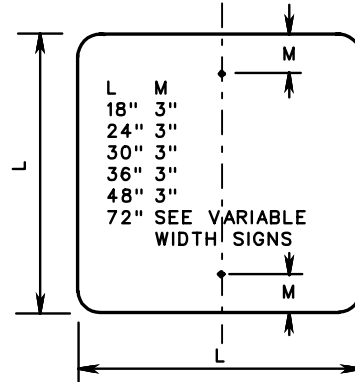
EQUILATERAL TRIANGLE



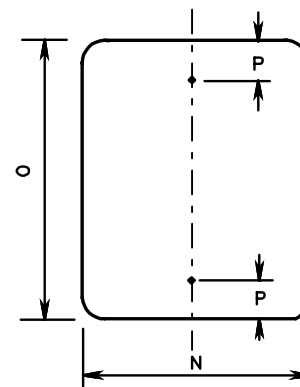
DIAMOND



INTERSTATE SHIELD



SQUARE



VERTICAL RECTANGLE

NOTE:

ALL HOLES SHALL BE 7/16" IN DIAMETER.



ROAD AND BRIDGE STANDARDS

PUNCHING REQUIREMENTS FOR SIGN PANELS

SINGLE POST INSTALLATIONS

VIRGINIA DEPARTMENT OF TRANSPORTATION

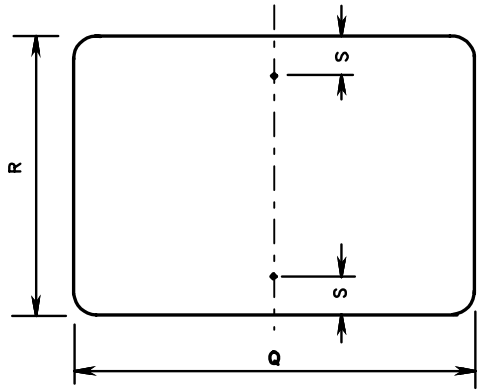
SPECIFICATION REFERENCE

SHEET 1 OF 2

REVISION DATE

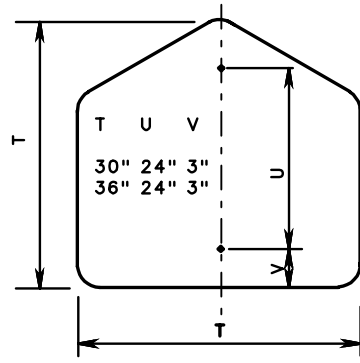
701

1326.10

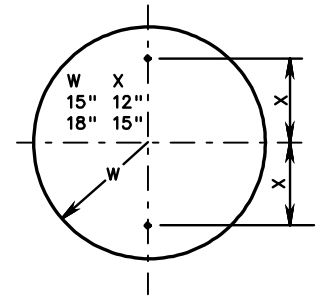


HORIZONTAL RECTANGLE

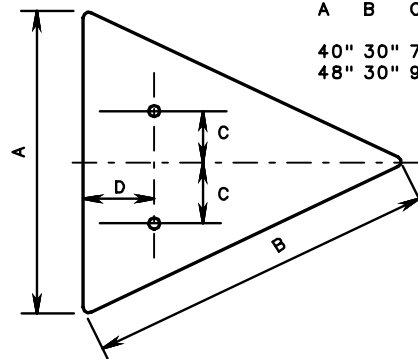
Q	R	S
18"	6"	1 1/2"
18"	12"	1 1/2"
20"	6"	1 1/2"
21"	15"	1 1/2"
24"	9"	1 1/2"
24"	12"	1 1/2"
24"	18"	3"
30"	15"	1 1/2"
30"	24"	3"
36"	12"	1 1/2"
36"	18"	2"
36"	24"	3"
42"	24"	3"
45"	36"	3"
48"	24"	3"
48"	36"	3"
48"	42"	4"
54"	24"	3"
54"	30"	3"



PENTAGON



CIRCLE



ISOSCELES TRIANGLE

A	B	C	D
40"	30"	7 1/2"	12"
48"	30"	9"	15"

SPECIFICATION REFERENCE

701

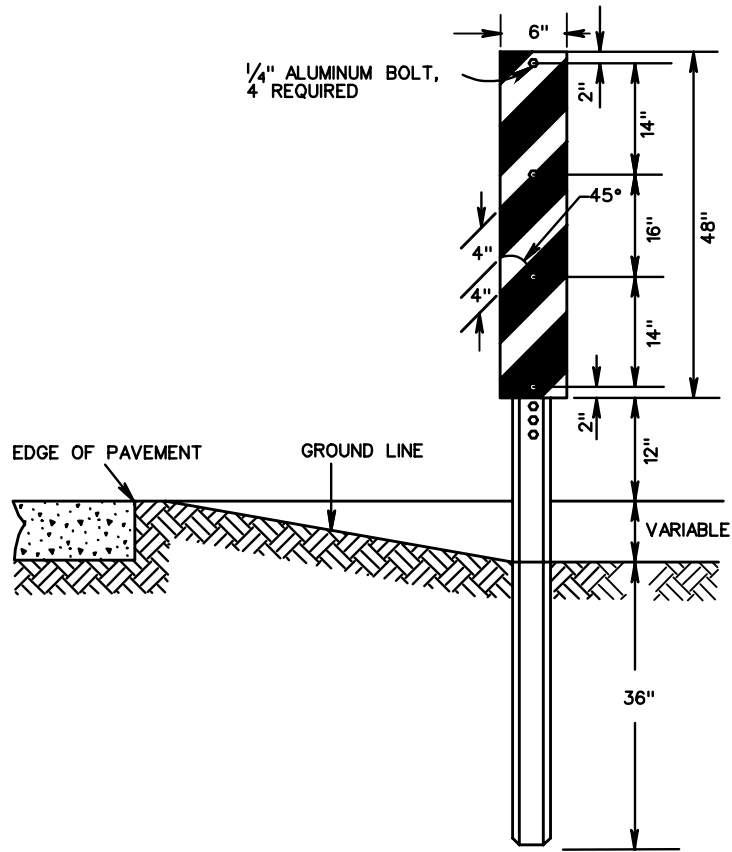
PUNCHING REQUIREMENTS FOR SIGN PANELS
 SINGLE POST INSTALLATIONS
 VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT

ROAD AND BRIDGE STANDARDS

REVISION DATE SHEET 2 OF 2

1326.11



NOTES:

SPECIAL DELINEATORS ARE MADE FROM ALUMINUM ALLOY, NOT LESS THAN 0.080 THICK CONFORMING TO ASTM B209, ALLOY 6061-T6 OR 5052-H38.

DELINEATORS EXTEND 1" ABOVE THE TOP OF THE POST.

DELINEATORS ARE REFLECTORIZED, AND IN ALL CASES, THE COLOR SHALL CONFORM TO THE COLOR OF THE EDGELINES, ALTERNATING WITH A BLACK STRIPE.

THE STRIPES SHALL SLOPE DOWN TOWARD THE CENTER OF ROADWAY.

DELINEATORS SHALL BE MOUNTED ON U-TYPE POSTS FABRICATED FROM ROLLED-RAIL STEEL 1.33 LB./FT. MINIMUM.

THE BOTTOM OF THE DELINEATOR PANEL SHALL BE 12" ABOVE THE PAVEMENT EDGE ELEVATION.



ROAD AND BRIDGE STANDARDS

SHEET 1 OF 1 REVISION DATE

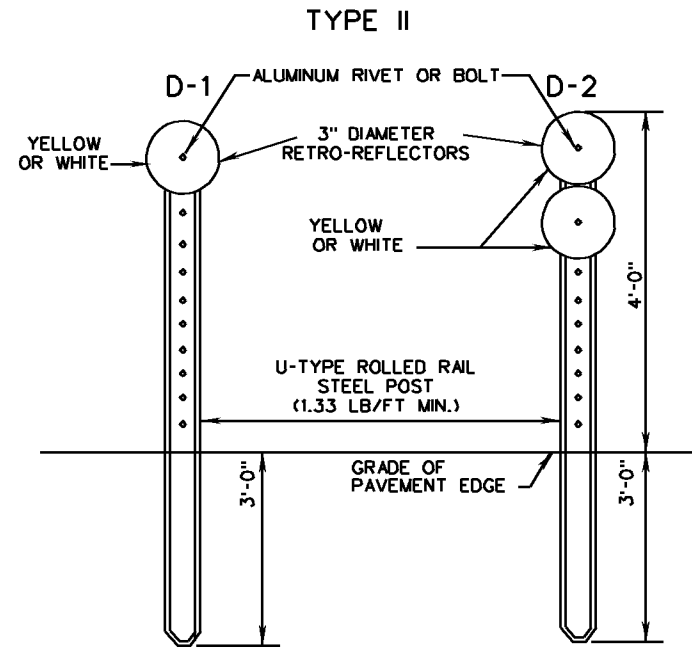
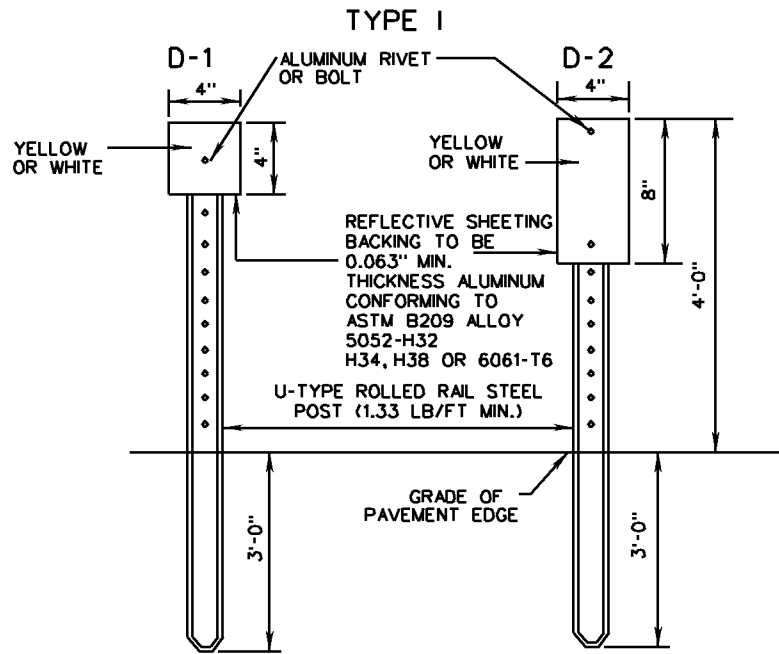
1327.10

**ROAD EDGE DELINEATOR
TYPICAL DETAILS**

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION
REFERENCE

702



NOTES:

ROAD EDGE DELINEATORS ARE TO BE ERECTED TWO FEET BEYOND THE OUTER EDGE OF THE SHOULDER OR THE FACE OF UNMOUNTABLE CURB.

D-1 DELINEATORS SHALL BE PLACED ON THE RIGHT OF THROUGH ROADWAYS AT 528 FOOT SPACING WITH THE FOLLOWING EXCEPTIONS:

TANGENT ROADWAYS WHERE PAVEMENT MARKERS ARE INSTALLED WILL NOT REQUIRE THE INSTALLATION OF DELINEATORS.

LOCATIONS WHERE DELINEATORS ARE INSTALLED ON GUARDRAILS, PARAPETS OR BARRIERS ON THE RIGHT OF THE ROADWAY WILL NOT REQUIRE THE INSTALLATION OF ROAD EDGE DELINEATORS.

D-1 DELINEATORS SHALL BE PLACED ON AT LEAST ONE SIDE AND ON THE OUTSIDE CURVE OF INTERCHANGE RAMPS EXCEPT WHERE DELINEATORS ARE INSTALLED ON GUARDRAILS, PARAPETS OR BARRIERS. THE SPACING ALONG THE RAMPS SHALL BE AT 100' INTERVALS EXCEPT IN HORIZONTAL CURVES WHERE THE SPACING SHALL CONFORM TO THE CHART ON SPACING FOR HIGHWAY DELINEATORS.

D-2 DELINEATORS SHALL BE PLACED ON ACCELERATION LANES AND DECELERATION LANES AT 100' SPACING.

THE COLOR OF DELINEATORS SHALL CONFORM TO THE COLOR OF THE ADJACENT EDGELINES.

SPACING FOR HIGHWAY DELINEATORS ON HORIZONTAL CURVES

DISTANCE IN FEET ROUNDED TO THE NEAREST 5'.

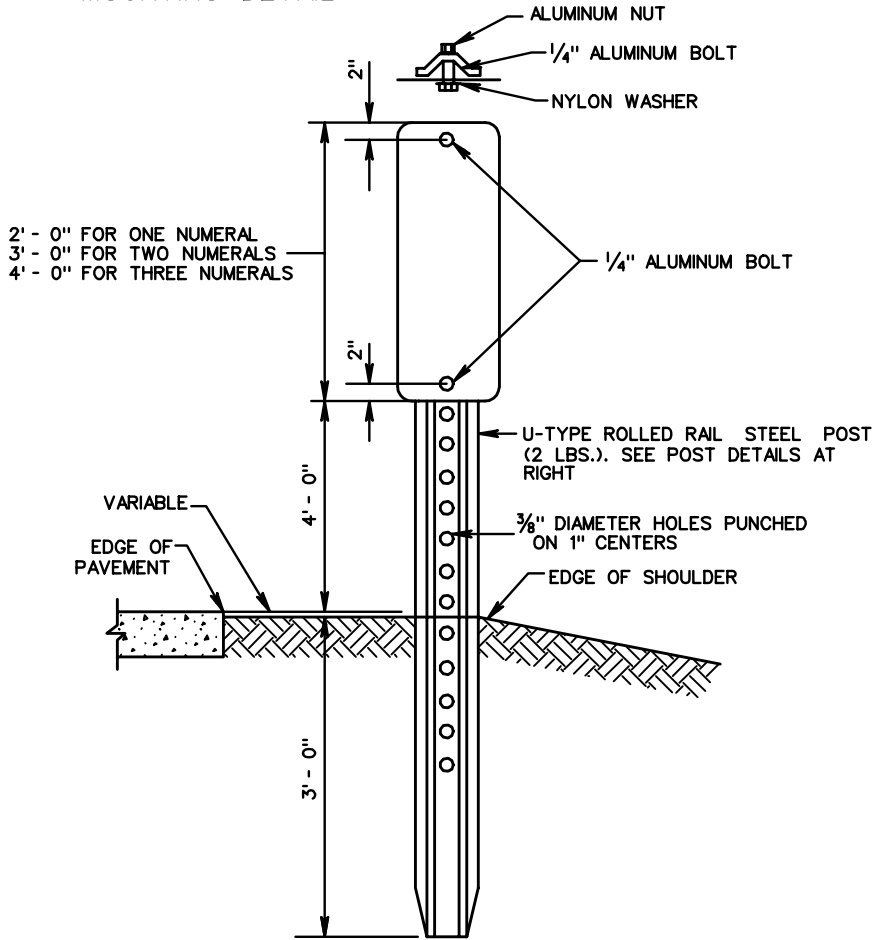
RADIUS OF CURVE IN FEET	SPACING ON CURVE IN FEET
50	20
150	30
200	35
250	40
300	50
400	55
500	65
600	70
700	75
800	80
900	85
1000	90

SPACING FOR SPECIFIC RADIUS NOT SHOWN MAY BE INTERPOLATED FROM TABLE. THE MINIMUM SPACING SHOULD BE 20'. THE SPACING ON CURVES SHOULD NOT EXCEED 300'. IN ADVANCE OF OR BEYOND A CURVE, AND PROCEEDING AWAY FROM THE END OF THE CURVE, THE SPACING OF THE FIRST DELINEATOR IS 25, THE SECOND IS 35 AND THE THIRD IS 65 BUT NOT TO EXCEED 300'. S REFERS TO THE DELINEATOR SPACING, IN FEET, FOR SPECIFIC RADIUS COMPUTED FROM THE FORMULA $S = 3 \sqrt{R-50}$

SPECIFICATION REFERENCE 702	<h2 style="margin: 0;">INTERSTATE ROAD EDGE DELINEATORS</h2> <h3 style="margin: 0;">TYPICAL DETAILS</h3> <p style="margin: 0;">VIRGINIA DEPARTMENT OF TRANSPORTATION</p>	ROAD AND BRIDGE STANDARDS REVISION DATE 6-15-09 SHEET 1 OF 1 1327.20
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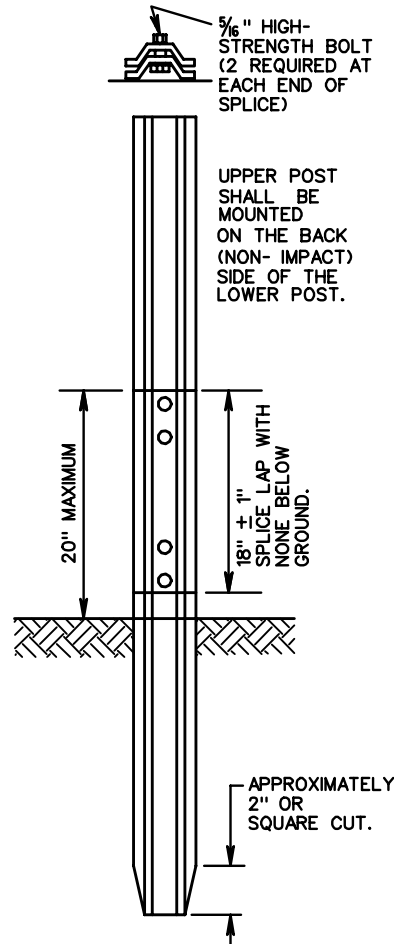
MM-1

MOUNTING DETAIL

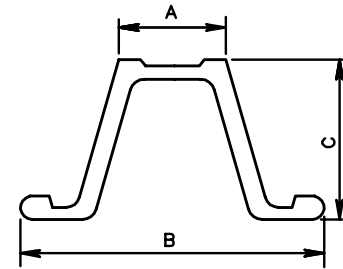


USP-1

SPLICING DETAIL



POST SECTION DIMENSIONS



1.33 LB./LF

MINIMUM	MAXIMUM
A. 1/2"	1"
B. 2"	2 1/4"
C. 3/4"	1 1/4"

2.00 LB./LF

MINIMUM	MAXIMUM
A. 1 3/4"	1 3/2"
B. 3 1/16"	3 1/8"
C. 1 7/16"	1 3/4"

NOTES:

DRIVING CAP TO BE USED WHEN DRIVING POST.

PANEL TO BE FABRICATED OF ASTM B209 ALLOY 6061-T6 OR 5052-H38, 0.080 THICK.

TOP OF PANEL TO BE FLUSH WITH TOP OF POST.

ERECTION

ERECTION

MILEPOST MARKERS TO BE LOCATED IN LINE WITH DELINEATOR POSTS, EDGE OF SHOULDER OR BACK OF GUARDRAIL, IF PRESENT.



ROAD AND BRIDGE STANDARDS

MILEPOST MARKERS & U-TYPE STEEL POST

SPECIFICATION REFERENCE

SHEET 1 OF 1

REVISION DATE

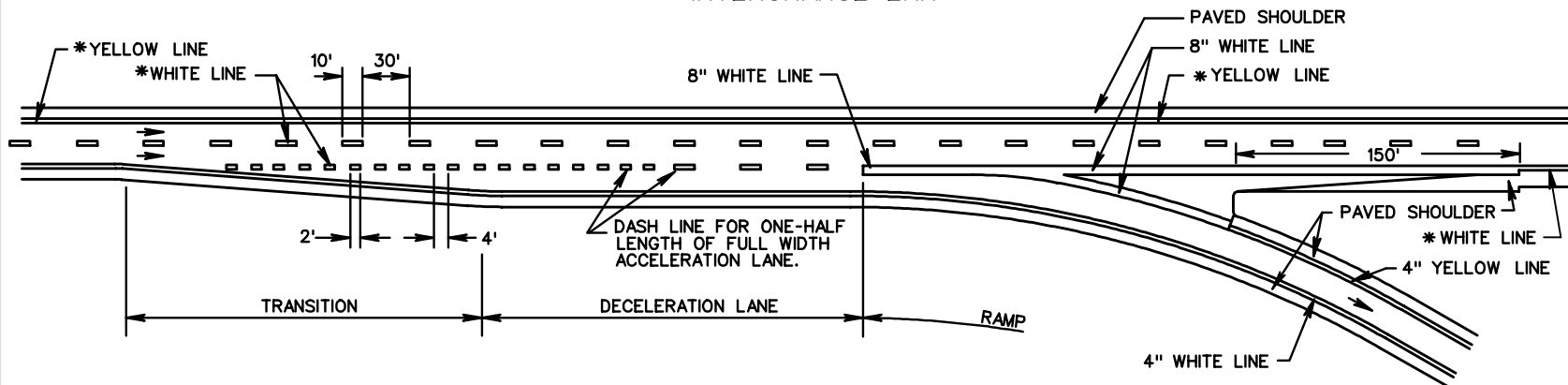
TYPICAL STRUCTURE DETAILS

701
702

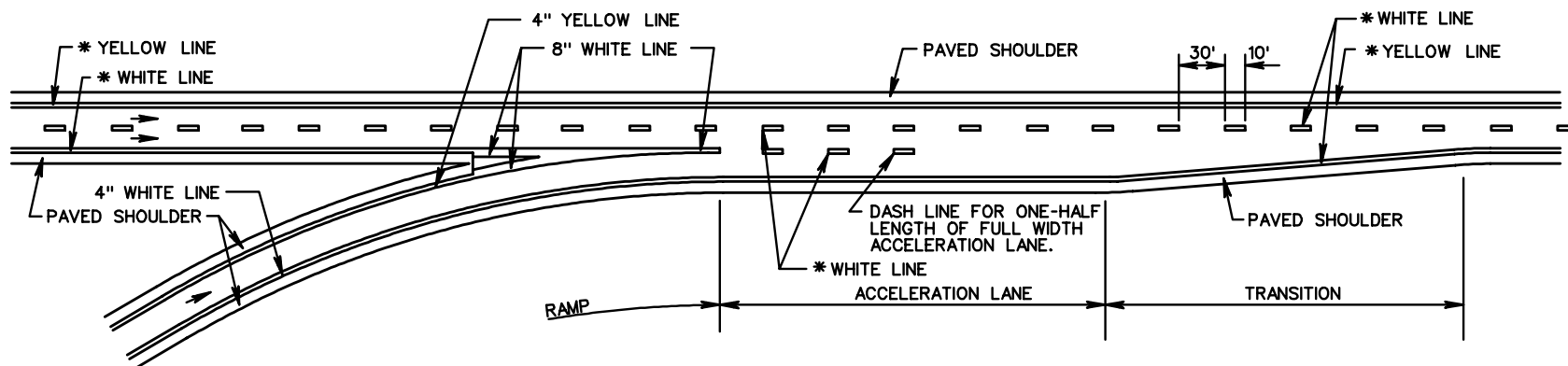
1328.10

VIRGINIA DEPARTMENT OF TRANSPORTATION

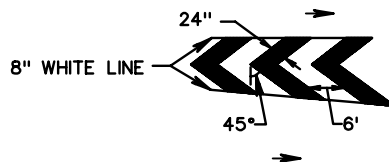
INTERCHANGE EXIT



INTERCHANGE ENTRANCE



GORE AREA HATCHING OPTIONAL



NOTES:

ALL PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE MUTCD.

* THE PAVEMENT MARKING FOR THE MAINLINE OF INTERSTATE HIGHWAYS SHALL BE 6" WIDE; ALL OTHER HIGHWAYS THE PAVEMENT MARKING SHALL BE 4" WIDE UNLESS OTHERWISE NOTED ON THE PLANS.

SPECIFICATION REFERENCE

704

TYPICAL PAVEMENT MARKING INTERCHANGE

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT

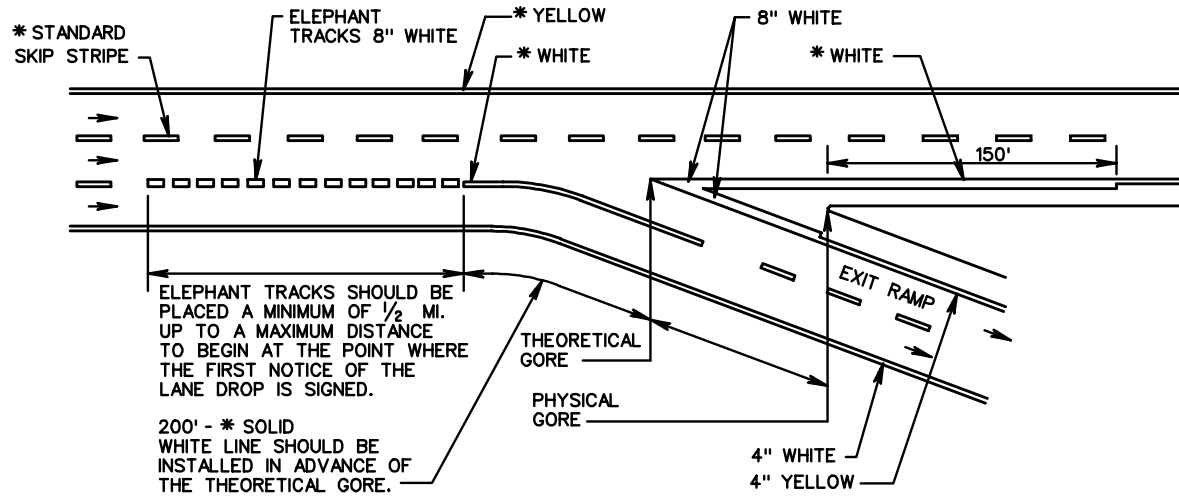
ROAD AND BRIDGE STANDARDS

REVISION DATE

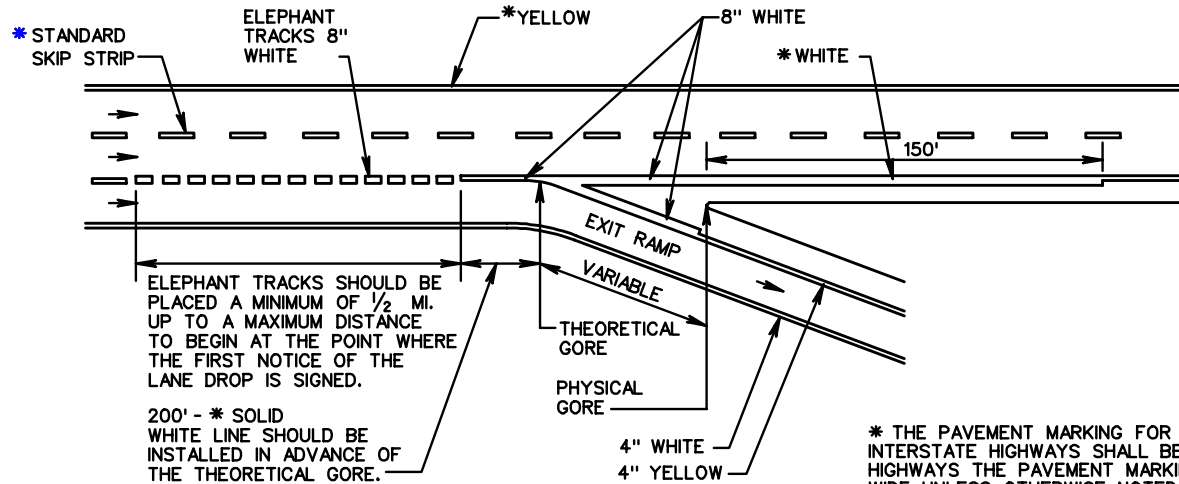
SHEET 1 OF 1

1330.10

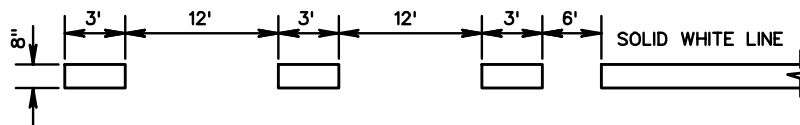
LIMITED ACCESS LANE DROP EXIT RAMPS BESIDE CHOICE LANE THRU / EXIT



LIMITED ACCESS LANE DROP EXIT RAMPS



STANDARD ELEPHANT TRACKS



ROAD AND BRIDGE STANDARDS

SHEET 1 OF 1

REVISION DATE

1330.20

TYPICAL PAVEMENT MARKING LIMITED ACCESS LANE DROP

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION
REFERENCE

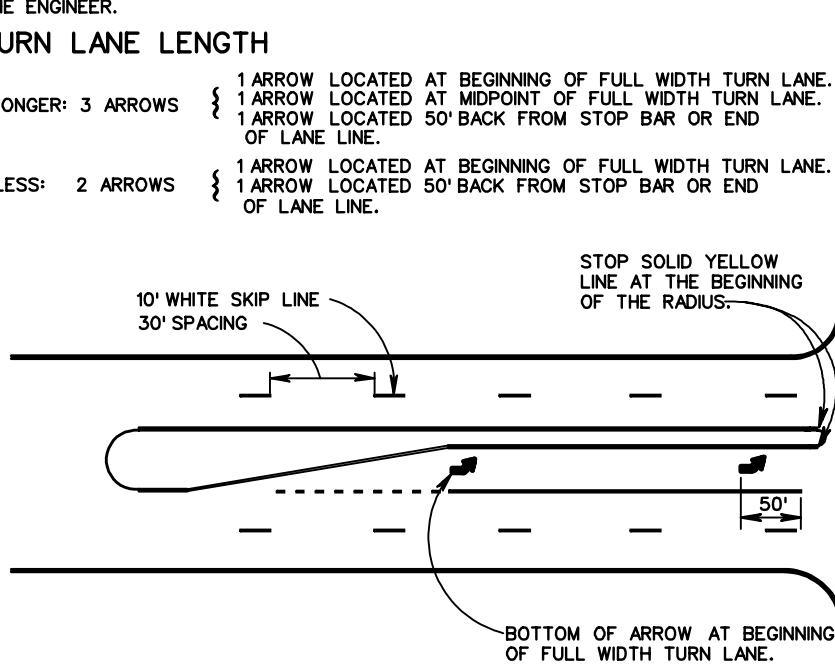
704

TURN LANE ARROWS

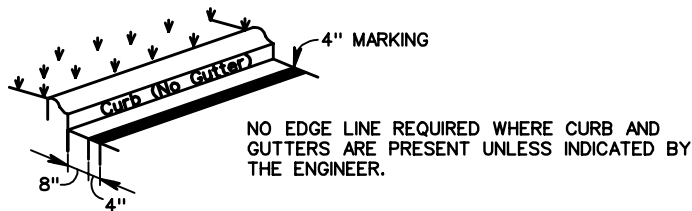
TURN ARROWS REQUIRED IN ACCORDANCE WITH THE FOLLOWING, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

TURN LANE LENGTH

- 301' OR LONGER: 3 ARROWS {
 - 1 ARROW LOCATED AT BEGINNING OF FULL WIDTH TURN LANE.
 - 1 ARROW LOCATED AT MIDPOINT OF FULL WIDTH TURN LANE.
 - 1 ARROW LOCATED 50' BACK FROM STOP BAR OR END OF LANE LINE.
- 300' OR LESS: 2 ARROWS {
 - 1 ARROW LOCATED AT BEGINNING OF FULL WIDTH TURN LANE.
 - 1 ARROW LOCATED 50' BACK FROM STOP BAR OR END OF LANE LINE.

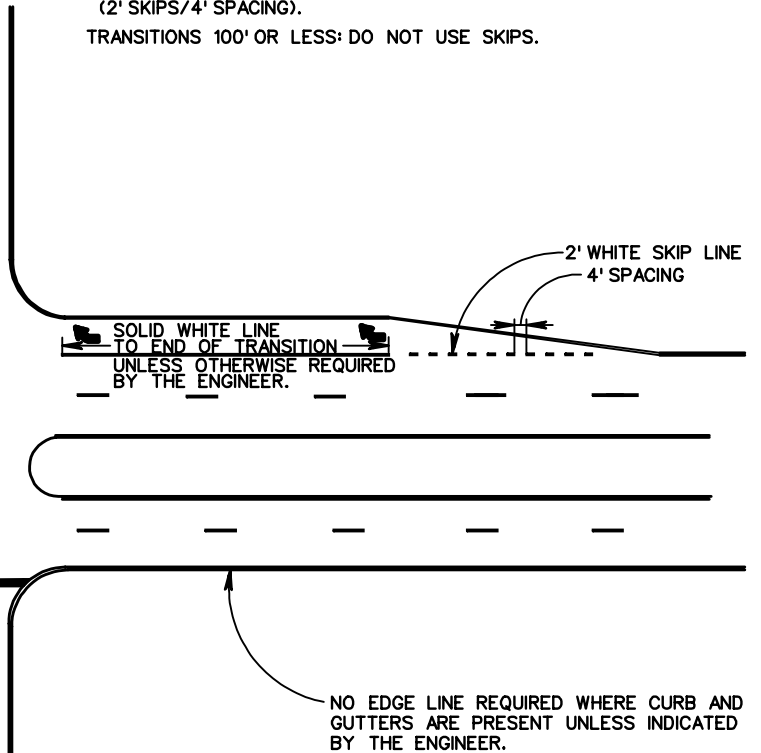


DETAIL FOR LOCATION OF EDGE LINES ON CURB SECTIONS OF ROADWAY (NO GUTTER)



SKIPS

- THRU LANES: USE 10' SKIPS/30' SPACING.
- TRANSITIONS MORE THAN 100': USE MINI SKIPS (2' SKIPS/4' SPACING).
- TRANSITIONS 100' OR LESS: DO NOT USE SKIPS.



Notes:

- STOP BARS, IF REQUIRED BY THE ENGINEER, SHALL BE A MINIMUM OF 4' IN ADVANCE OF THE CROSSWALK.
- STOP BARS SHALL BE 2' IN WIDTH.
- ARROWS SHALL BE IN ACCORDANCE WITH THE MUTCD.
- SPACING BETWEEN DOUBLE SOLID YELLOW LINES SHALL BE 4".

SPECIFICATION REFERENCE

704

TYPICAL PAVEMENT MARKING UNSIGNALIZED INTERSECTIONS

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT

ROAD AND BRIDGE STANDARDS

REVISION DATE

SHEET 1 OF 1

1330.30

TURN LANE ARROWS

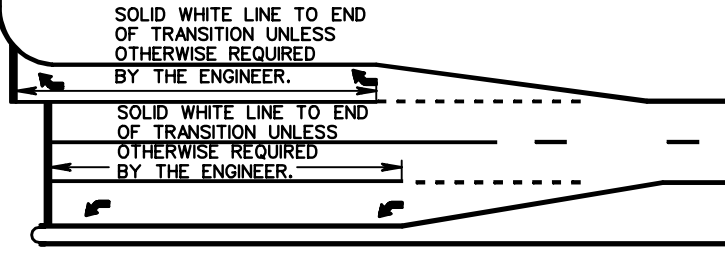
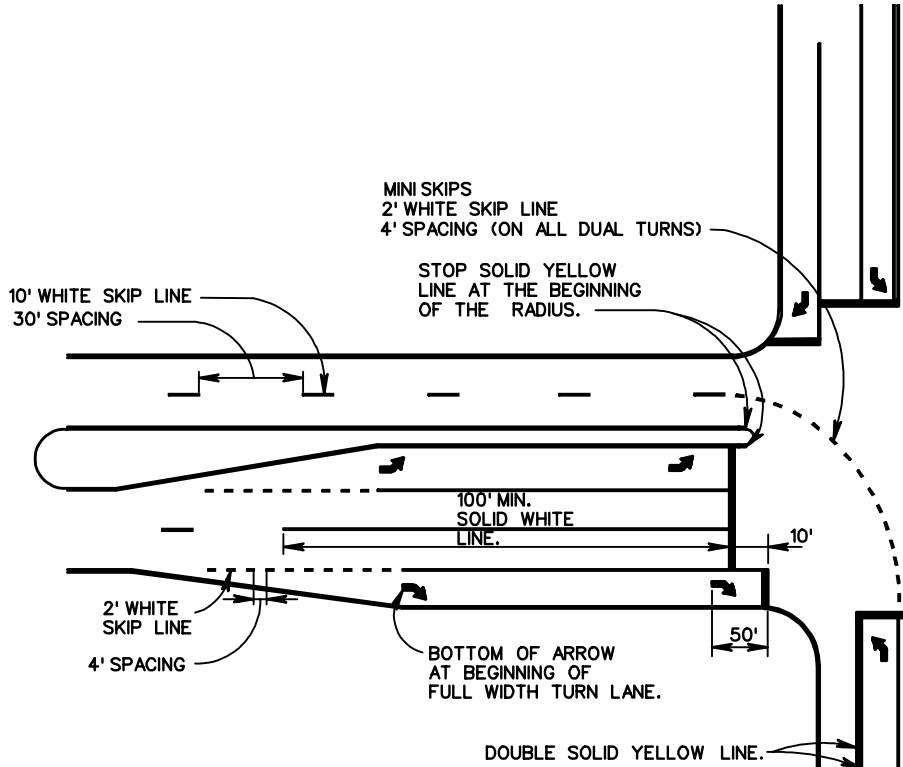
TURN ARROWS REQUIRED IN ACCORDANCE WITH THE FOLLOWING, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

TURN LANE LENGTH

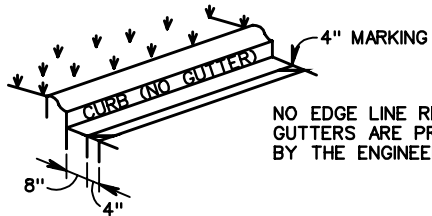
- 301' OR LONGER: 3 ARROWS { 1 ARROW LOCATED AT BEGINNING OF FULL WIDTH TURN LANE.
1 ARROW LOCATED AT MIDPOINT OF FULL WIDTH TURN LANE.
1 ARROW LOCATED 50' BACK FROM STOP BAR.
- 300' OR LESS: 2 ARROWS { 1 ARROW LOCATED AT BEGINNING OF FULL WIDTH TURN LANE.
1 ARROW LOCATED 50' BACK FROM STOP BAR.

SKIPS

THRU LANES: USE 10' SKIPS / 30' SPACING.
TRANSITIONS MORE THAN 100': USE MINISKIPS (2' SKIPS / 4' SPACING).
TRANSITIONS 100' OR LESS: DO NOT USE SKIPS



DETAIL FOR LOCATION OF EDGE LINES ON CURB SECTIONS OF ROADWAY (NO GUTTER)



NO EDGE LINE REQUIRED WHERE CURB AND GUTTERS ARE PRESENT UNLESS INDICATED BY THE ENGINEER.

NO EDGE LINE REQUIRED WHERE CURB AND GUTTERS ARE PRESENT UNLESS INDICATED BY THE ENGINEER.

NOTES:

- STOP BARS SHALL BE 2' IN WIDTH AND SHALL BE LOCATED AS SHOWN ON THE TRAFFIC SIGNAL PLANS.
- ARROWS SHALL BE IN ACCORDANCE WITH THE MUTCD.
- SPACING BETWEEN DOUBLE SOLID YELLOW LINES SHALL BE 4'.



ROAD AND BRIDGE STANDARDS

SHEET 1 OF 1

REVISION DATE

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**TYPICAL PAVEMENT MARKING
SIGNALIZED INTERSECTIONS**

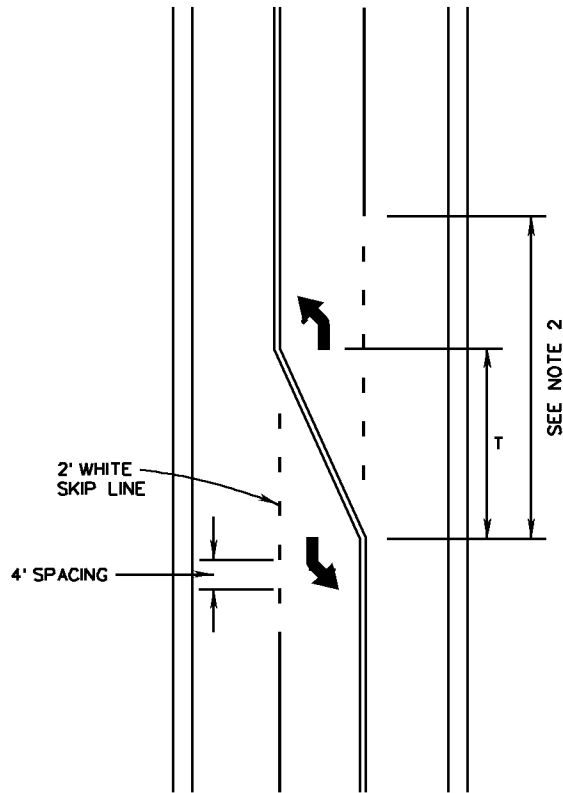
VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION
REFERENCE

704

NOTES:

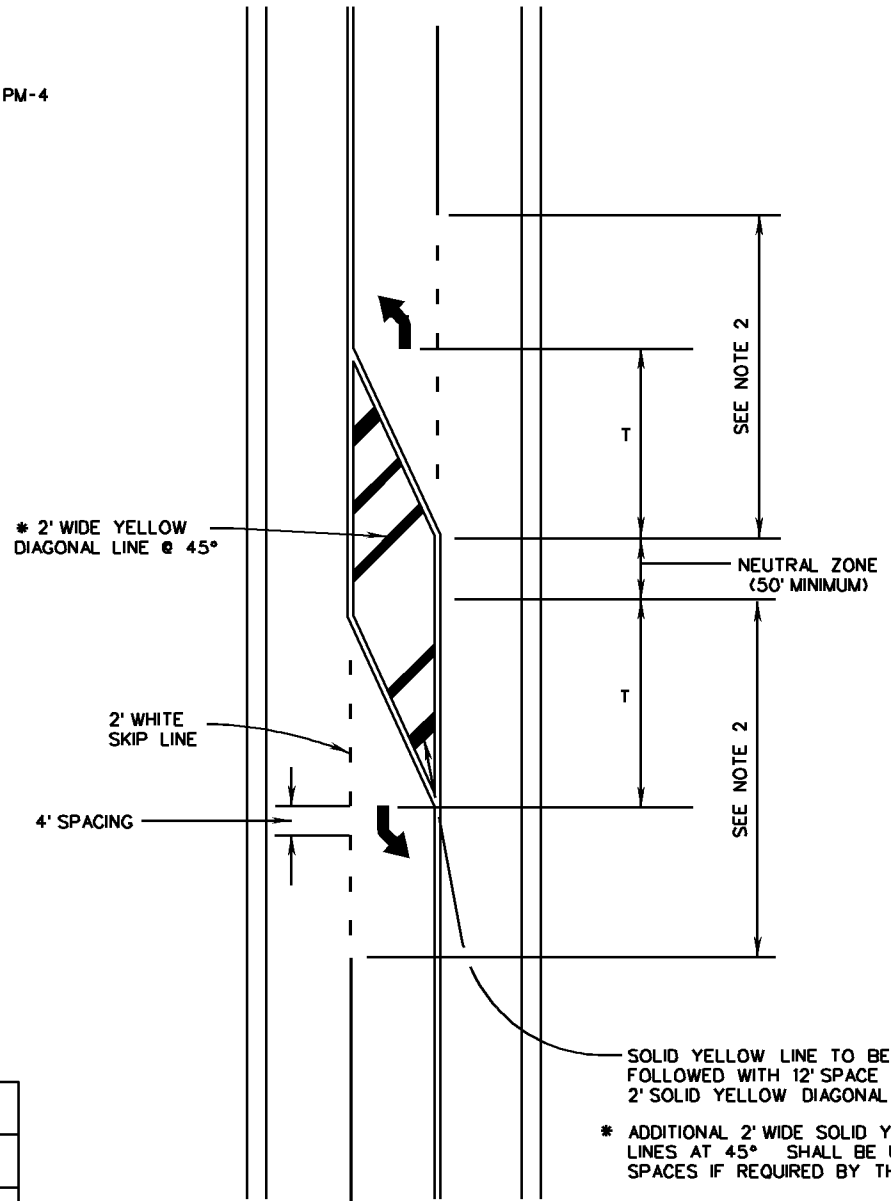
1. TAPER DESIGN USED SHALL BE AS DIRECTED BY THE ENGINEER.
2. TAPER OPENINGS SHALL BE AS FOLLOWS:
 150' IF $T \leq 150'$
 T IF $T > 150'$
 OR AS DIRECTED BY THE ENGINEER
3. TURN LANE ARROWS SHALL BE IN ACCORDANCE WITH PM-3 & PM-4



WITHOUT NEUTRAL ZONE

TAPER LENGTH (T) TABLE

SPEED	TAPER	TURN LANE WIDTH		
		10 FT	11 FT	12 FT
≤ 30 MPH	8:1	80'	90'	100'
> 30 MPH	15:1	150'	175'	200'



WITH NEUTRAL ZONE

SOLID YELLOW LINE TO BE 3' WIDE FOLLOWED WITH 12' SPACE AND ONE 2' SOLID YELLOW DIAGONAL LINE.

* ADDITIONAL 2' WIDE SOLID YELLOW DIAGONAL LINES AT 45° SHALL BE USED WITH 12' SPACES IF REQUIRED BY THE ENGINEER.

SPECIFICATION REFERENCE

704

**TYPICAL PAVEMENT MARKING
 LEFT TURN PAVEMENT MARKED MEDIAN**

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT

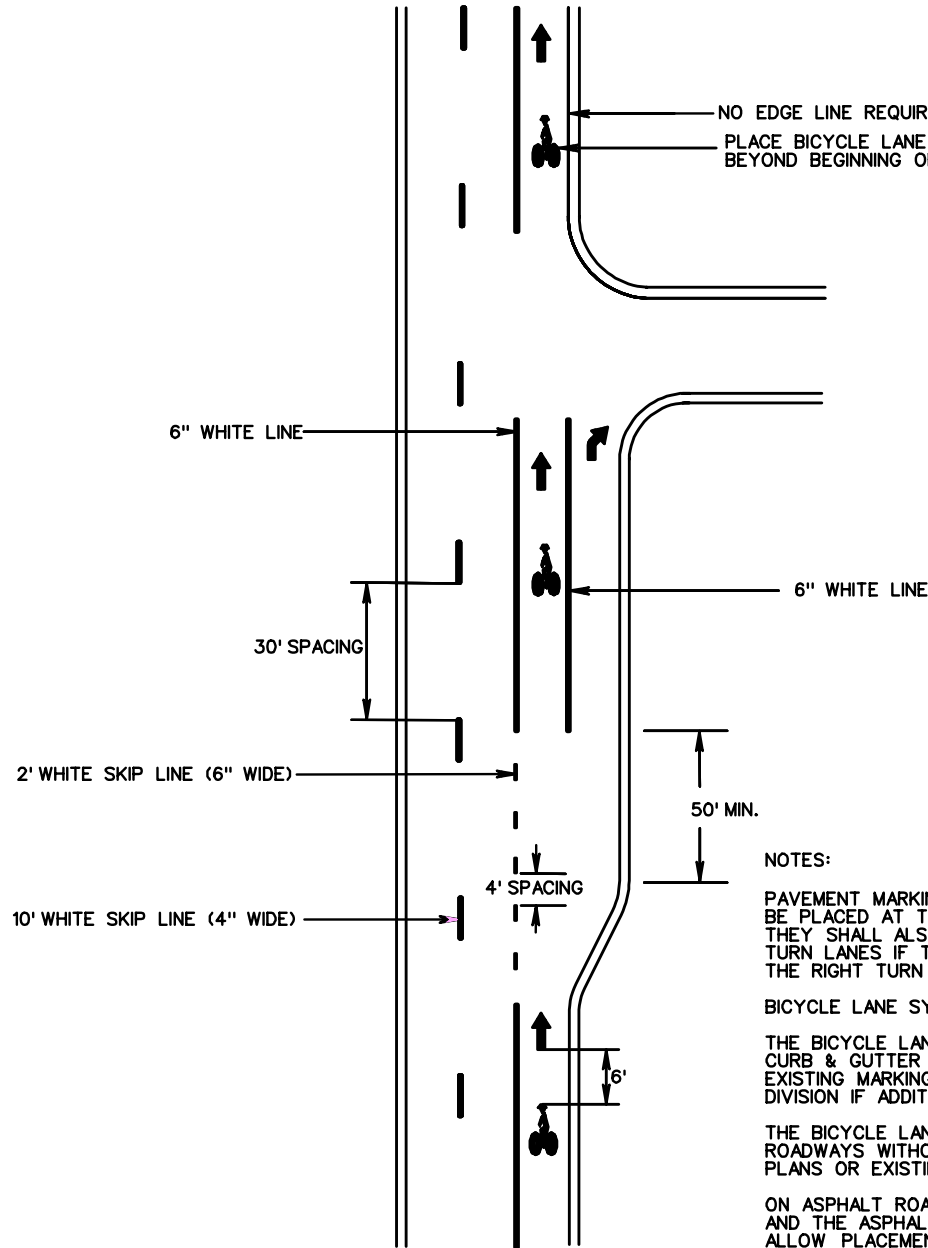
ROAD AND BRIDGE STANDARDS

REVISION DATE

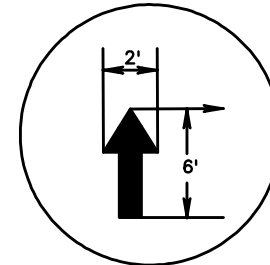
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SHEET 1 OF 1

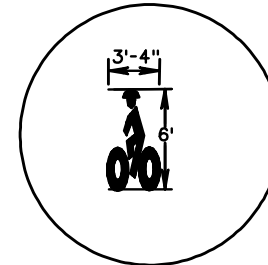
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ARROW DETAILS



BICYCLE LANE SYMBOL



NOTES:

PAVEMENT MARKINGS CONSISTING OF ARROW AND BICYCLE LANE SYMBOLS SHALL BE PLACED AT THE BEGINNING OF THE BICYCLE LANE AT RIGHT TURN LANES. THEY SHALL ALSO BE PLACED AT THE END OF THE BICYCLE LANE AT RIGHT TURN LANES IF THE SOLID WHITE LINE SEPARATING THE BICYCLE LANE FROM THE RIGHT TURN LANE IS GREATER THAN 100' IN LENGTH.

BICYCLE LANE SYMBOLS SHALL BE PLACED A MAXIMUM OF 500' APART.

THE BICYCLE LANE STRIPE SHALL BE 4' FROM THE EDGE OF PAVEMENT ON CURB & GUTTER ROADWAYS UNLESS OTHERWISE NOTED ON THE PLANS OR EXISTING MARKINGS INDICATE OTHERWISE. (CONTACT MOBILITY MANAGEMENT DIVISION IF ADDITIONAL GUIDANCE IS REQUIRED.)

THE BICYCLE LANE STRIPE SHALL BE 5' FROM THE FACE OF CURB ON ROADWAYS WITHOUT A GUTTER PAN UNLESS OTHERWISE NOTED ON THE PLANS OR EXISTING MARKINGS INDICATE OTHERWISE.

ON ASPHALT ROADWAYS WHERE THE BICYCLE LANE IS BESIDE CURB AND GUTTER AND THE ASPHALT PORTION OF THE BICYCLE LANE IS OF INSUFFICIENT WIDTH TO ALLOW PLACEMENT OF THE BICYCLE SYMBOL ENTIRELY ON THE ASPHALT, THE SYMBOL SHALL BE REDUCED IN SIZE TO FIT ENTIRELY ON THE ASPHALT. THE BICYCLE SYMBOL SHALL BE REDUCED TO NO LESS THAN 4' IN LENGTH AT THESE LOCATIONS.



ROAD AND BRIDGE STANDARDS

SHEET 1 OF 1

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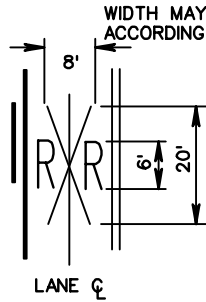
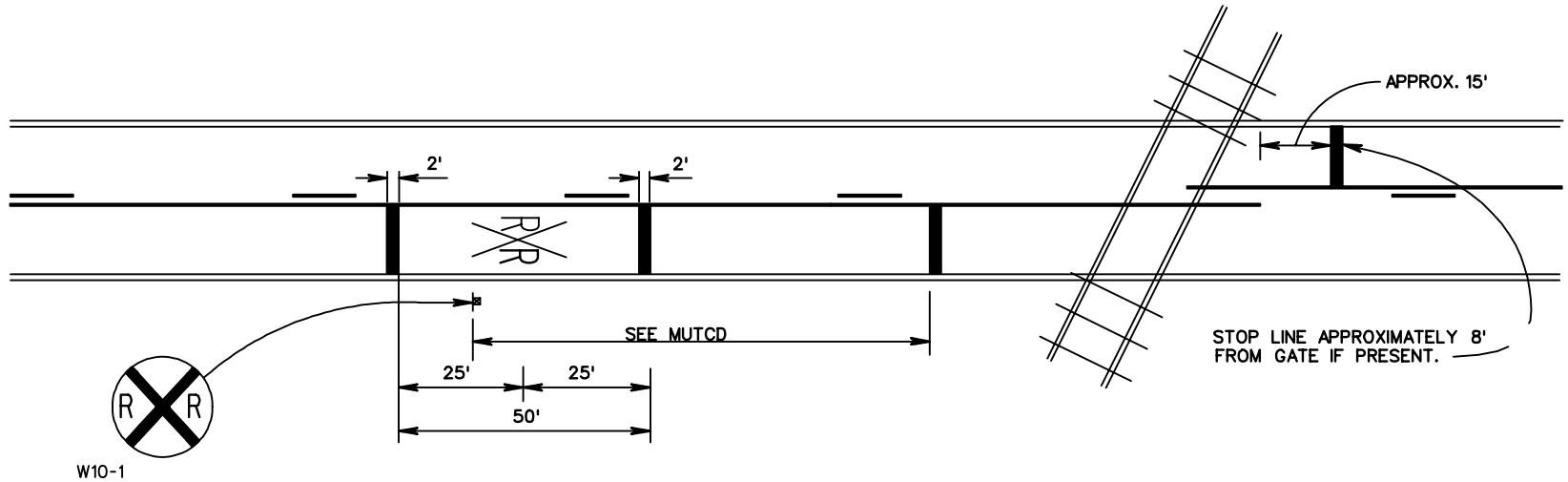
1330.60

TYPICAL PAVEMENT MARKINGS
BICYCLE LANE

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION
REFERENCE

704



A PORTION OF THE PAVEMENT MARKING SYMBOL SHOULD BE DIRECTLY OPPOSITE THE ADVANCE WARNING SIGN (W10-11). IF NEEDED, SUPPLEMENTAL PAVEMENT MARKING SYMBOLS MAY BE PLACED BETWEEN THE ADVANCE WARNING SIGN AND THE CROSSING, BUT SHOULD BE AT LEAST 50' FROM THE STOP LINE.

MARKINGS SHALL BE INSTALLED AT GRADE CROSSINGS WHICH CONFORM TO THE REQUIREMENTS OF THE MUTCD AND AS DIRECTED BY THE ENGINEER.

A THREE LANE ROADWAY SHOULD BE MARKED WITH A CENTERLINE FOR TWO-LANE APPROACH OPERATION ON THE APPROACH TO A CROSSING.

ON MULTI-LANE ROADS THE TRANSVERSE BANDS SHOULD EXTEND ACROSS ALL APPROACH LANES, AND INDIVIDUAL RXR SYBOLS SHOULD BE USED IN EACH APPROACH LANE.

REFER TO STANDARD ALPHABET FOR HIGHWAY SIGNS AND MARKINGS FOR RXR SYMBOLS DETAILS.

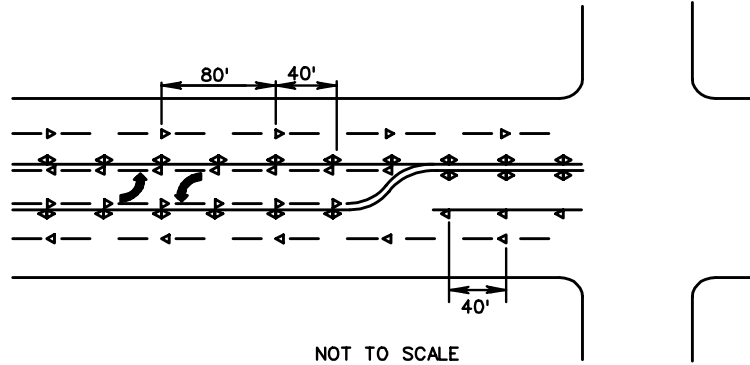
SPECIFICATION REFERENCE
704

TYPICAL PAVEMENT MARKING RAILROAD - HIGHWAY GRADE CROSSING

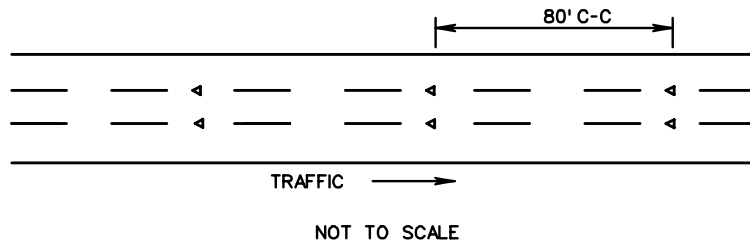
VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT	
ROAD AND BRIDGE STANDARDS	
REVISION DATE	SHEET 1 OF 1
	1330.70

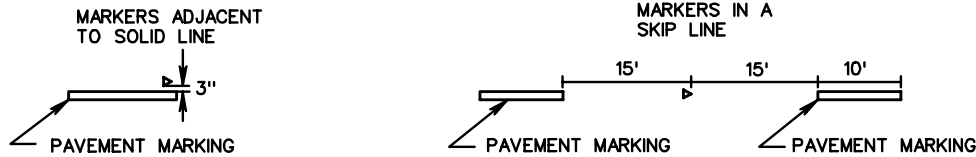
FIVE LANE - CENTER LANE LEFT TURN ONLY



DIVIDED ROADWAYS



GENERAL PLACEMENT:



Notes:

EXACT LOCATIONS OF THE MARKERS SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
 TYPICAL SPACING IS 40' C-C WHEN USED ADJACENT TO A SOLID LINE AND 80' WHEN USED IN CONJUNCTION WITH A SKIP LINE EXCEPT THAT ON HORIZONTAL CURVES OF 4° OR MORE, THE SPACING ALONG SKIP LINES AND CHANNELIZING LINES ADJACENT TO TURN LANES CAN BE REDUCED BY 1/2 AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

KEY:

- ◊ TWO WAY
- ◄ ONE WAY



ROAD AND BRIDGE STANDARDS

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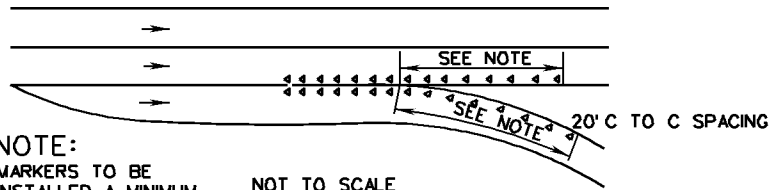
TYPICAL PAVEMENT MARKER LOCATION DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE

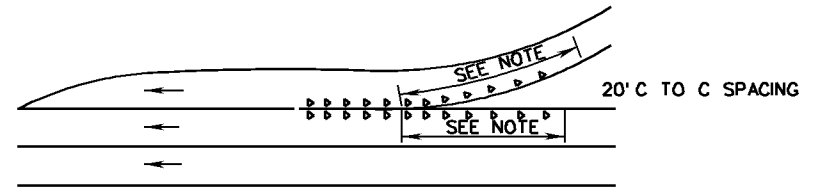
704

EXIT RAMP



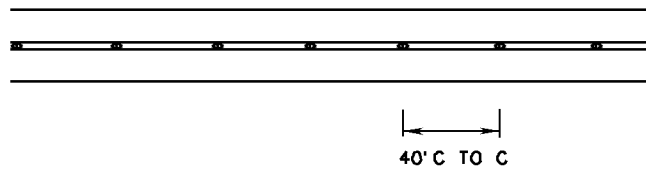
NOTE:
 MARKERS TO BE
 INSTALLED A MINIMUM
 OF 80' BEYOND
 PHYSICAL GORE.
 NOT TO SCALE

ENTRANCE RAMP

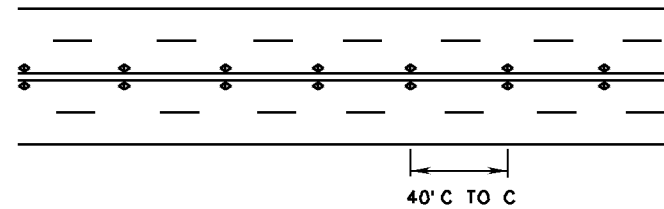


NOTE:
 MARKERS TO BE
 INSTALLED A MINIMUM
 OF 80' BEYOND
 PHYSICAL GORE.
 NOT TO SCALE

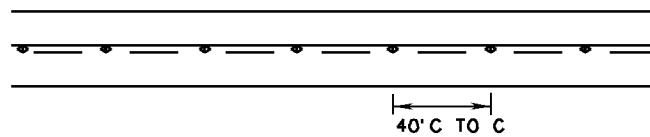
NO PASSING
 TWO-LANE



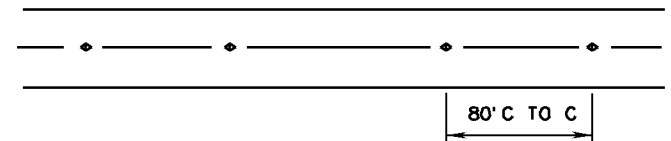
MULTI-LANE (3+ LANES)



PASSING ONE DIRECTION



PASSING TWO DIRECTIONS



SPECIFICATION
 REFERENCE

704

TYPICAL PAVEMENT MARKER
 LOCATION DETAILS
 VIRGINIA DEPARTMENT OF TRANSPORTATION

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ROAD AND BRIDGE STANDARDS

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ROAD AND BRIDGE STANDARDS

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1330.95

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION
REFERENCE