COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
1401 EAST BROAD STREET
RICHMOND, VIRGINIA 23219 2000

David S. Ekern, P.E.
COMMISSIONER

June 22, 2009

MEMORANDUM

To: All Holders of the Virginia Department of Transportation's 2008 Road and Bridge Standards

The following is a list of sheets contained in the 2008 Road and Bridge Standards that have been revised. Please add these pages to your copy of the standards. An insertable sheet will not be required in plan assemblies for the following sheet only. Changes to this sheet will not affect the basis of payment or estimates.

PAGE	REVISION
1301.01	Revised Table of Contents for section 1300

The following is a list of revised standards to the 2008 Road and Bridge Standards that require an insertable sheet to be in included in your plan assembly until the next edition of the imperial standards is published. Please add these pages to your copy of the standards. The respective insertable sheet number has been placed with the revised standard. An insertable sheet is available for each of these revised standards. The insertable sheets are available on VDOT's web site, on the FTP server, and in Falcon DMS for VDOT personnel. These insertable sheets will be required in plan assemblies for projects advertised January 12, 2010 and later.

PAGE	INSERT	STANDARD	REVISION
1307_10	IIS13_01	PA-1,2,3	REVISED NOTES/DETAILS
1310_11	IIS13_02	PF-8	REVISED DETAILS
1301_10	IIS13_12	CF-1	REVISED NOTES/DETAILS
1301_20	IIS13_13	CF-2	REVISED NOTES/DETAILS
1301_30	IIS13_14	CF-3	REVISED NOTES/DETAILS
1302_10	IIS13_15	MP-1	REVISED NOTES/DETAILS
1302_20	IIS13_16	WD-2	REVISED DETAILS
1302_30	IIS13_17	PF-2	REVISED DETAILS

PAGE	INSERT	STANDARD	REVISION
1303_10	IIS13_18	SW-1	REVISED DETAILS
1303_20	IIS13_19	SW-2	REVISED DETAILS
1303_40	IIS13_20	SMB-1,2,3	REVISED NOTES
1304_10	IIS13_21	TA-1	REVISED DETAILS
1305_10	IIS13_22	SMD-1,2	REVISED DETAILS
1306_10	IIS13_23	WD-1	REVISED DETAILS
1306_20	IIS13_24	WD-2	REVISED DETAILS
1309_10	IIS13_25	FB-2	REVISED DETAILS
1310_10	IIS13_26	PF-1	REVISED DETAILS
1310_20	IIS13_27	LF-1	REVISED DETAILS
1311_20	IIS13_28	LP-3	REVISED DETAILS
1312_11	IIS13_29	SE-1	REVISED DETAILS
1312_50	IIS13_30	SE-5	REVISED NOTES
1312_60	IIS13_31	SE-6	REVISED NOTES
1312_70	IIS13_32	SE-7	REVISED NOTES
1312_90	IIS13_33	SE-9	SPLIT INTO TWO PAGES (1312_90 AND 1312_91)
1312_91	IIS13_33	SE-9	NEW
1313_10	IIS13_34	SE-10	REVISED DETAILS
1315_11	IIS13_35	TD-1A,B,C	REVISED DETAILS
1317_10	IIS13_36	JB-R1,R2	REVISED NOTES/DETAILS
1317_11	IIS13_36	JB-R1,R2	REVISED NOTES
1317_20	IIS13_37	JB-S1,S2,S3	REVISED NOTES
1318_10	IIS13_38	ECI-1	REVISED NOTES
1321_12	IIS13_39	STP-1	REVISED NOTES
1322_12	IIS13_40	SSP-VA	REVISED NOTES
1324_13	IIS13_41	OSS-1	REVISED NOTES/DETAILS
1324_15	IIS13_41	OSS-1	REVISED NOTES
1324_16	IIS13_42	OSS-1	REVISED NOTES
1325_51	IIS13_43	SPD-5	REVISED NOTES
1325_60	IIS13_44	SPD-6	REVISED NOTES
1327_20	IIS13_45	ED-3	REVISED NOTES

If you have any questions or comments regarding this revision to the publication, please contact Chuck Patterson, at (804) 786-1805, of the Standards and Special Design Section.

Sincerely,

Mohammad Mirshahi, P.E.
State Location and Design Engineer

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SW-1	SIGNAL HEAD MOUNTING DETAILS	1303.10
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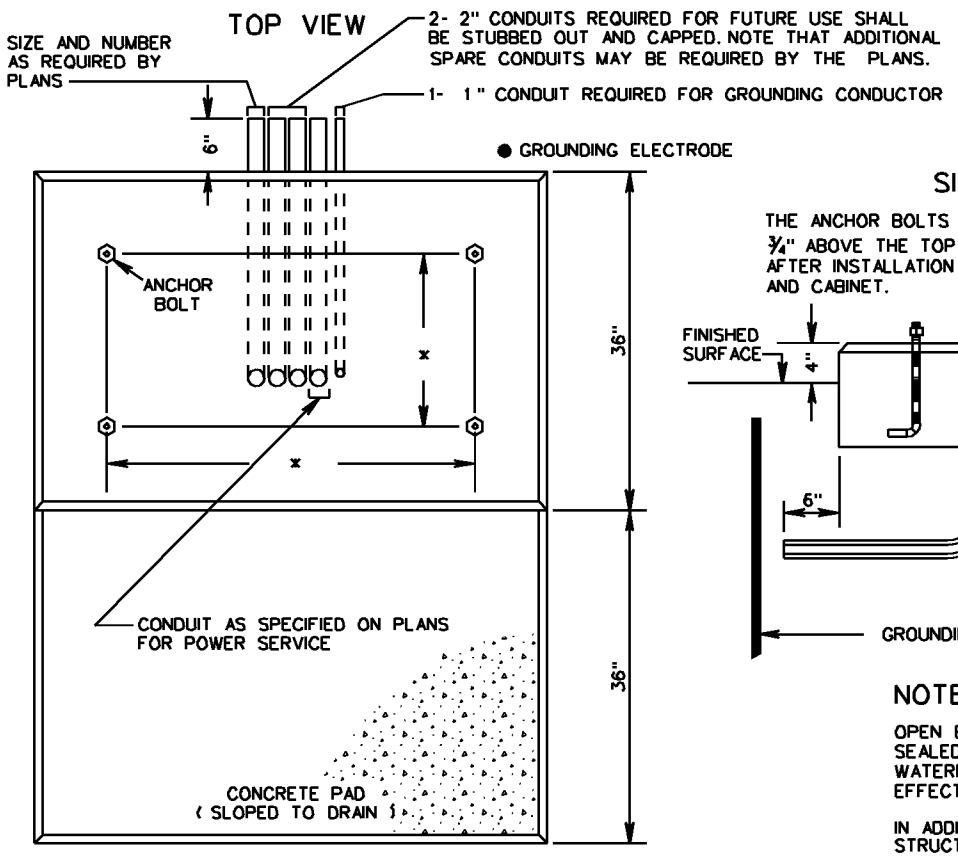
SECTION 1300-TRAFFIC CONTROL

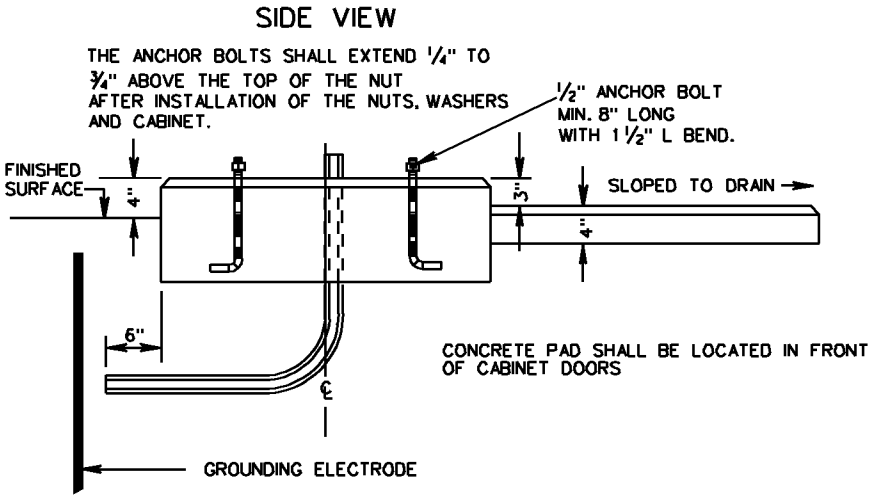
VIRGINIA DEPARTMENT OF TRANSPORTATION

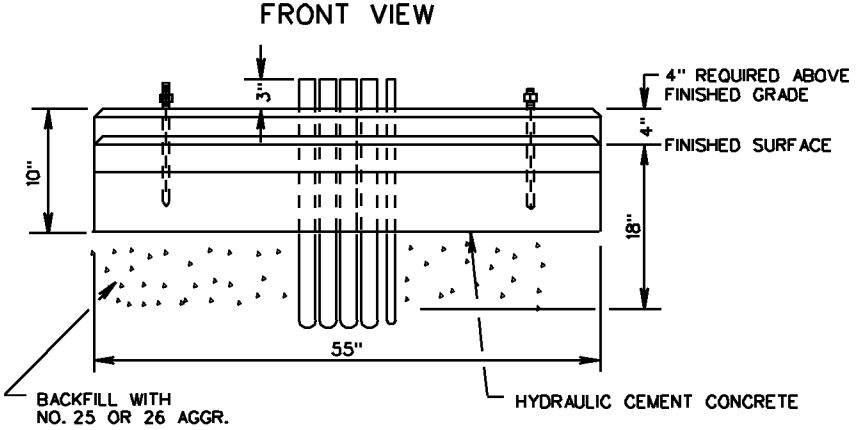
VDOT
ROAD AND BRIDGE STANDARDS

REVISION DATE | SHEET 1 OF 2

1300.01







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.

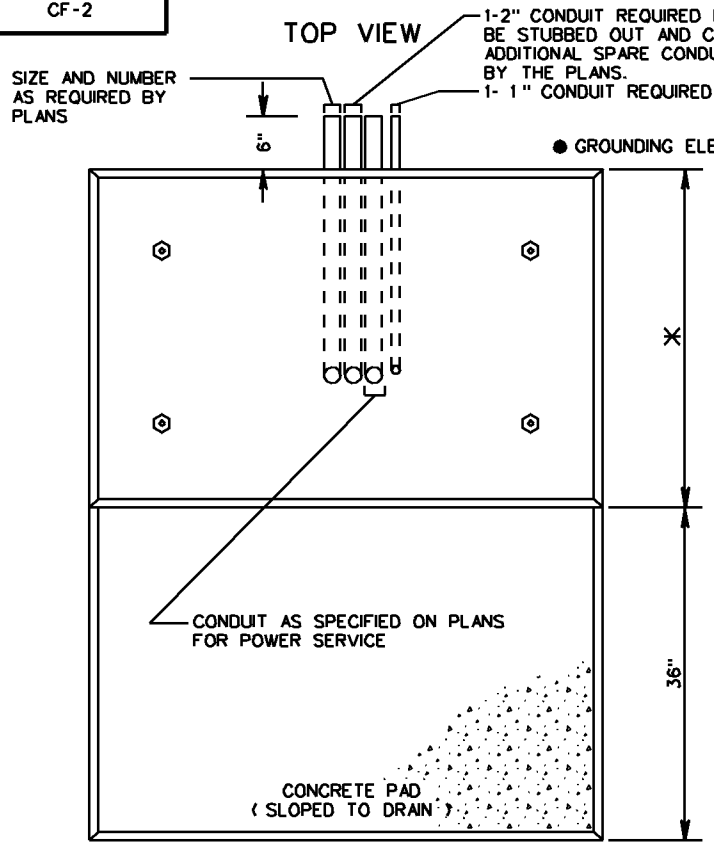
EMPTY CONDUITS SHALL BE PLUGGED TO PREVENT MOISTURE AND RODENT ENTRY.

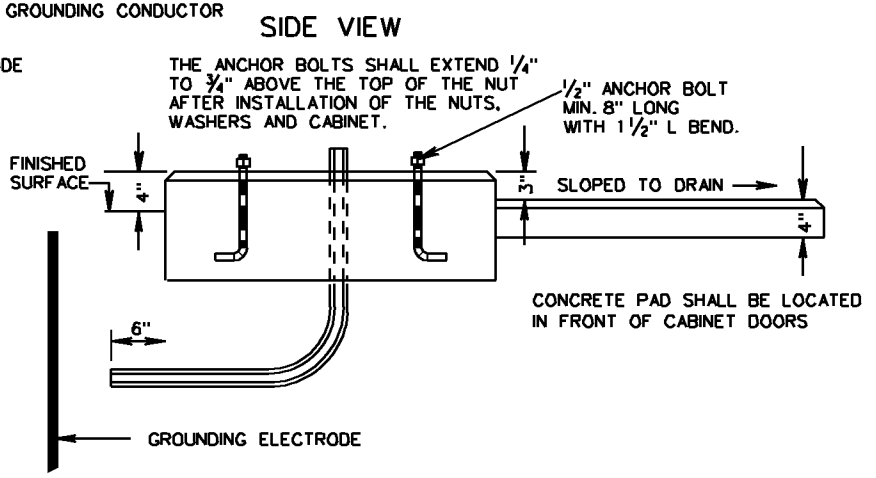
GROUNDING BUSHINGS SHALL BE INSTALLED ON EACH END OF METAL CONDUITS.

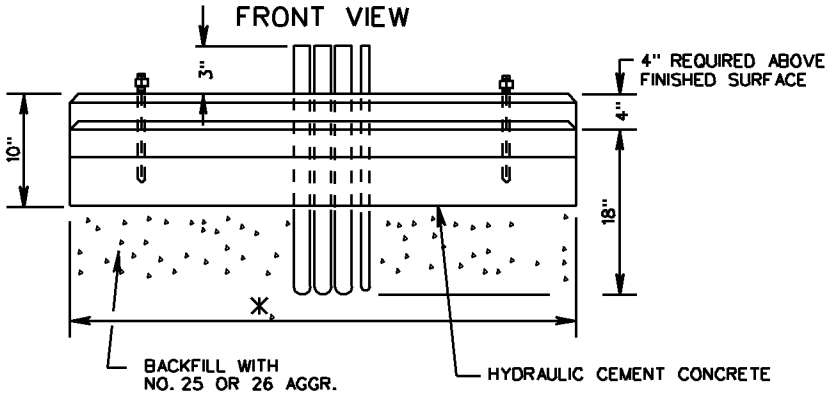
TWO - 1/2" DIAMETER WEEPHOLES SHALL BE PROVIDED IN THE FOUNDATION AND LOCATED 2" INSIDE OF THE BACK OR SIDE EDGES OF THE CONTROLLER CABINET. WEEPHOLES SHALL BE SLOPED TO ALLOW OUTLET TO BE 3" BELOW TOP OF FOUNDATION. TWO INCHES OF THE OUTLET END SHALL BE FIBER FILLED.

SPECIFICATION REFERENCE	# CONTROLLER CABINET FOUNDATION	VDOT ROAD AND BRIDGE STANDARDS
700	CABINET PLACEMENT DETAILS	REVISION DATE 06-15-2009 / SHEET 1 OF 1
	VIRGINIA DEPARTMENT OF TRANSPORTATION	1301.10

CF-2







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.

VDOT
ROAD AND BRIDGE STANDARDS

CONTROL CENTER CABINET FOUNDATION

CABINET PLACEMENT DETAILS

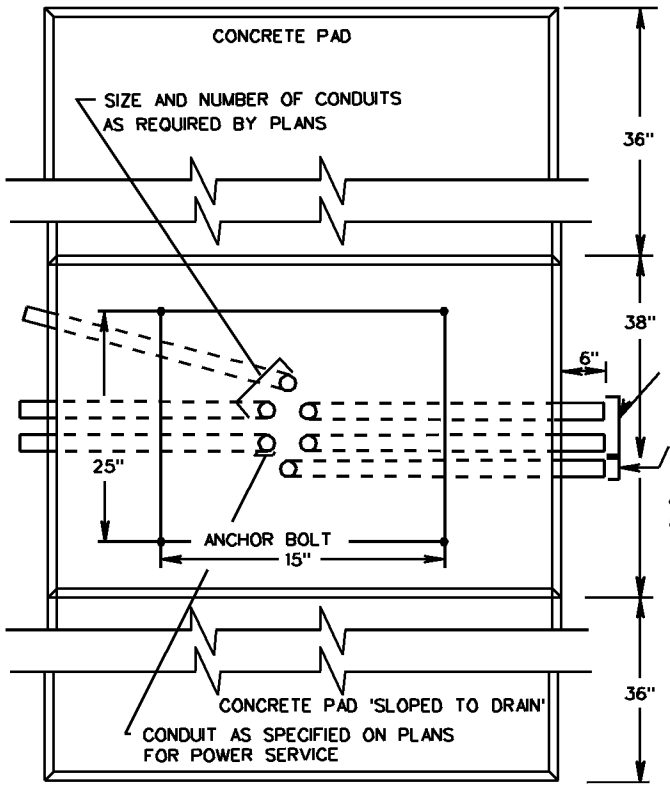
VIRGINIA DEPARTMENT OF TRANSPORTATION

SHEET 1 OF 1	REVISION DATE
1301.20	06-15-2009

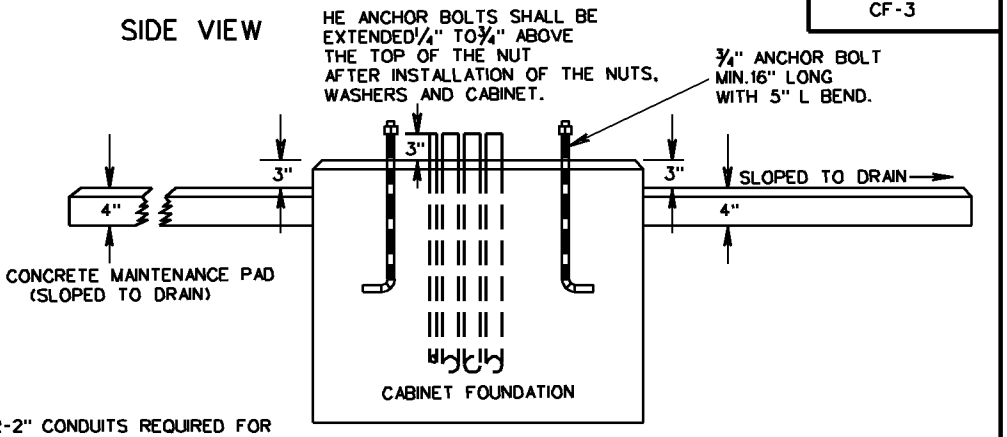
SPECIFICATION REFERENCE

700

TOP VIEW

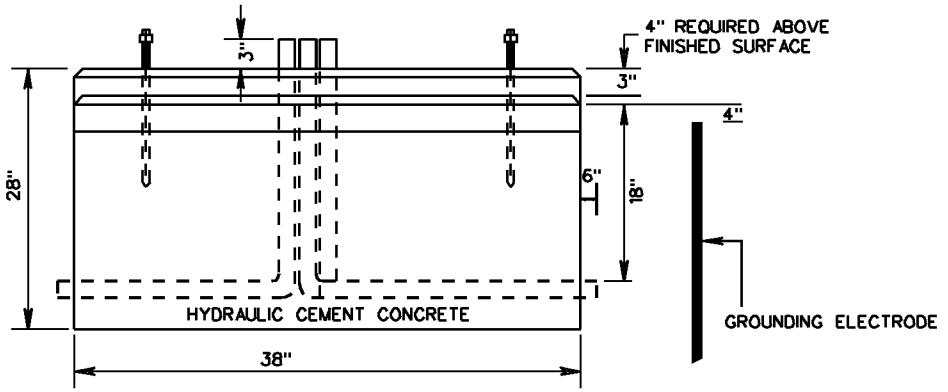


SIDE VIEW



CONCRETE PAD SHALL BE LOCATED IN FRONT OF CABINET DOORS

FRONT 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".

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.

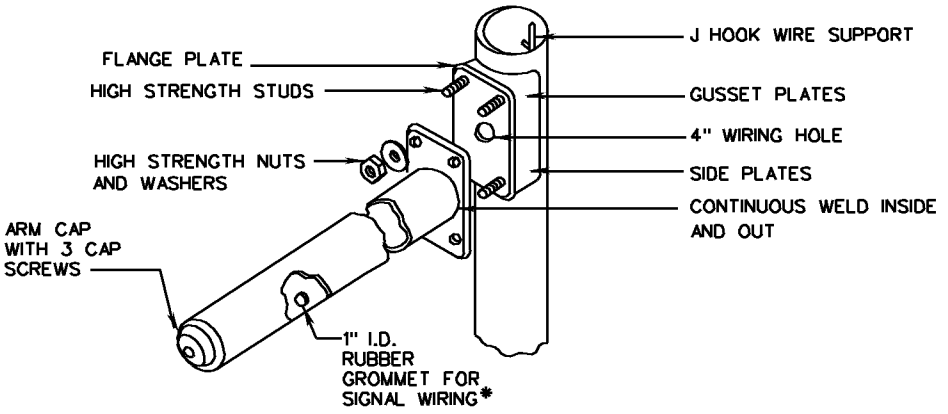
GROUNDING BUSHINGS SHALL BE ON EACH END OF METAL CONDUITS.

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.

SPECIFICATION REFERENCE	# CONTROLLER CABINET FOUNDATION	VDOT ROAD AND BRIDGE STANDARDS
700	CABINET PLACEMENT DETAILS	REVISION DATE: 06-15-2009
	VIRGINIA DEPARTMENT OF TRANSPORTATION	SHEET 1 OF 1
		1301.30

MP-1



ARM AND SIGNAL ATTACHMENT

NOTES:

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

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

Ⓒ 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.

VDOT
ROAD AND BRIDGE STANDARDS

SHEET 1 OF 1	REVISION DATE
1302.10	06-15-2009

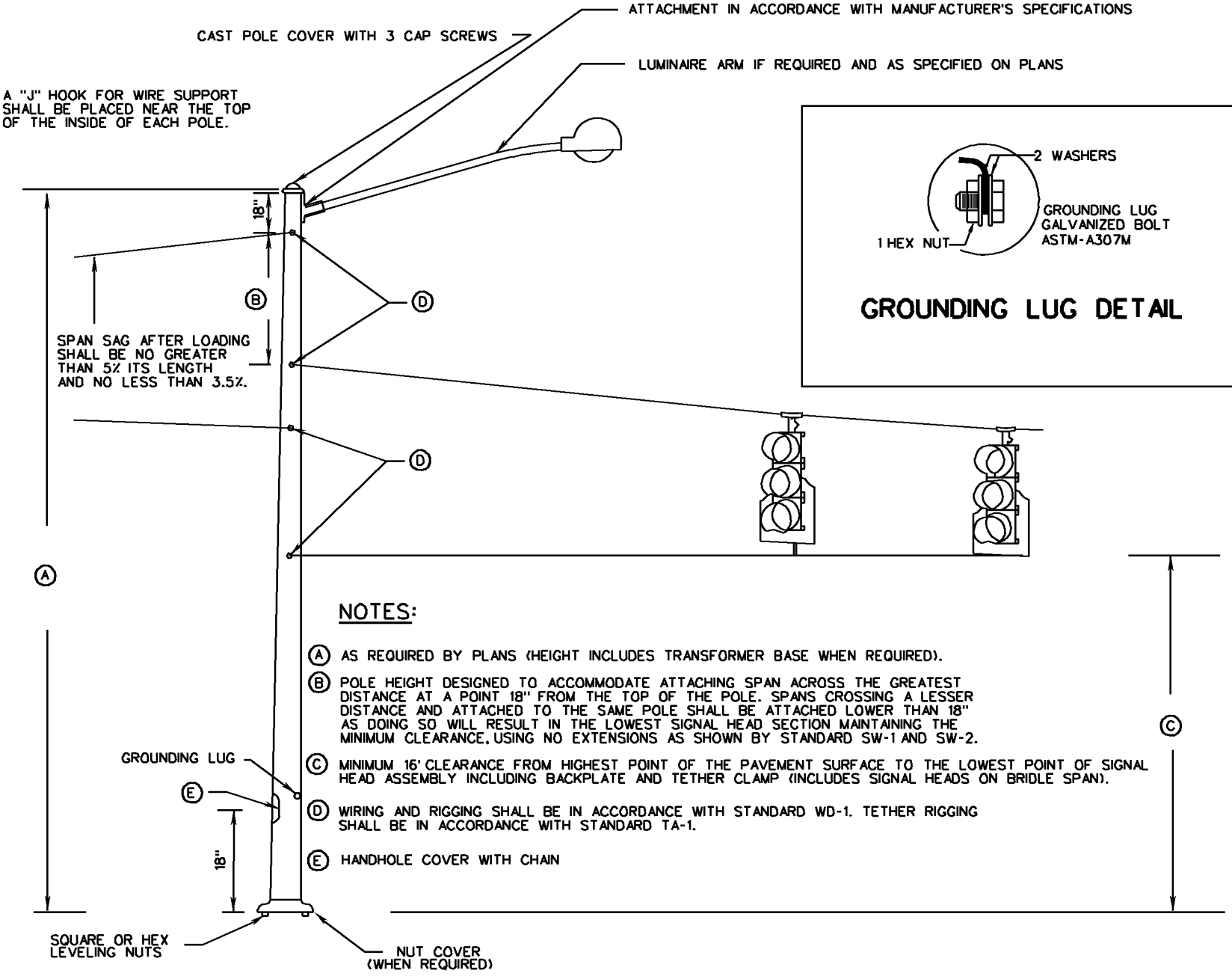
SIGNAL POLE DETAILS

MAST ARM AND COMBINATION LUMINAIRE MAST ARM POLE

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE

700



GROUNDING LUG DETAIL

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	SIGNAL POLE DETAILS	VDOT ROAD AND BRIDGE STANDARDS
700	STRAIN AND COMBINATION LUMINAIRE STRAIN POLE VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE 06-15-2009 · SHEET 1 OF 1 · 1302.20

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 1/4" DEEP AND 4" TO 6" LONG.

WHEN FOUNDATION EXTENDS 2" ABOVE FINISHED GRADE, ALL 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 EACH END OF PVC CONDUITS.

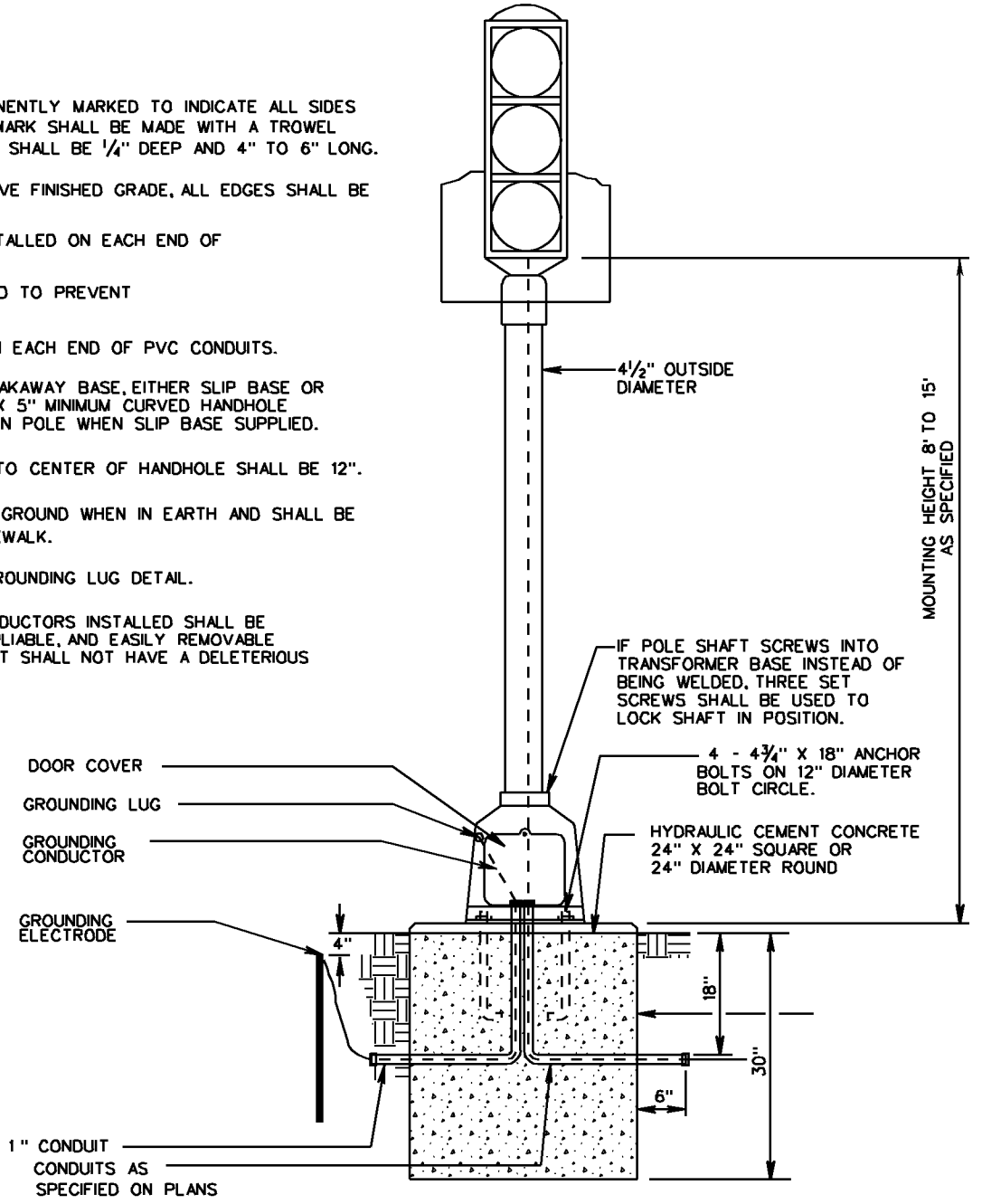
PEDESTAL POLE SHALL HAVE A BREAKAWAY BASE, EITHER SLIP BASE OR FRANGIBLE TRANSFORMER TYPE, 3" X 5" MINIMUM CURVED HANDHOLE WITH FRAME AND COVER REQUIRED IN POLE WHEN SLIP BASE SUPPLIED.

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.

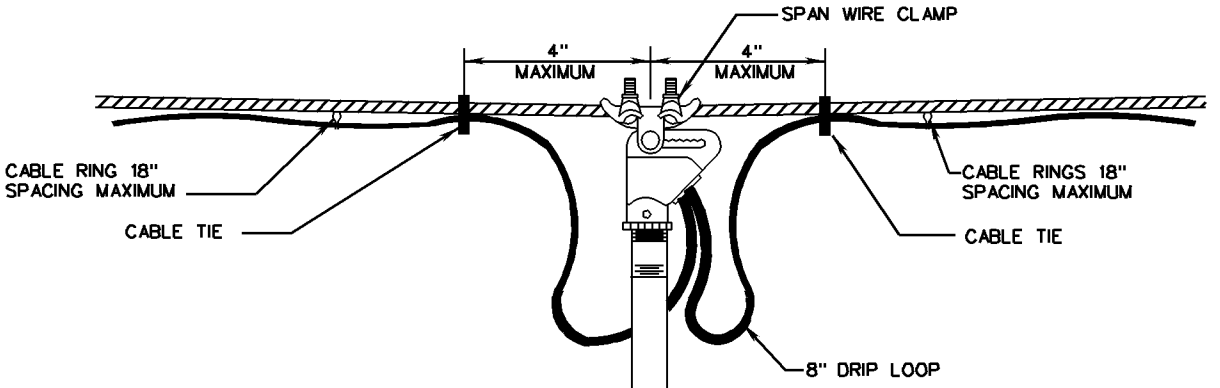
REFER TO STANDARD MP-2 FOR GROUNDING LUG DETAIL.

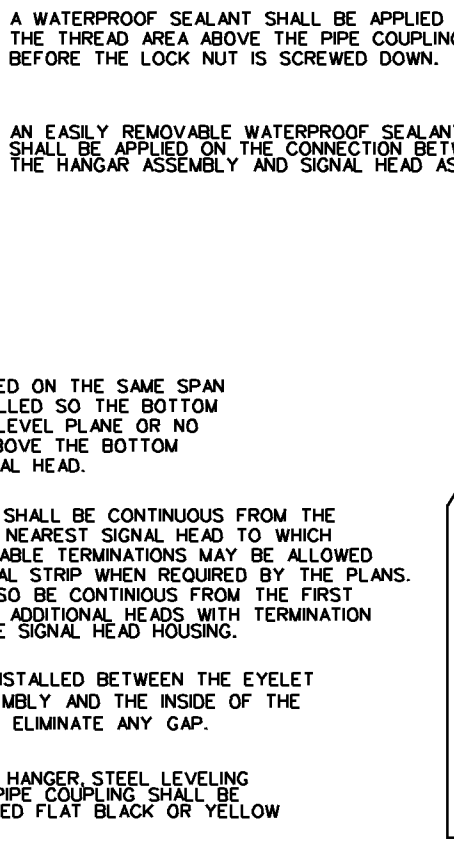
OPEN ENDS OF CONDUITS WITH CONDUCTORS INSTALLED SHALL BE SEALED WITH AN APPROVED SOFT, PLIABLE, AND EASILY REMOVABLE WATERPROOF SEALANT. THE SEALANT SHALL NOT HAVE A DELETERIOUS EFFECT ON CABLE COVERINGS.

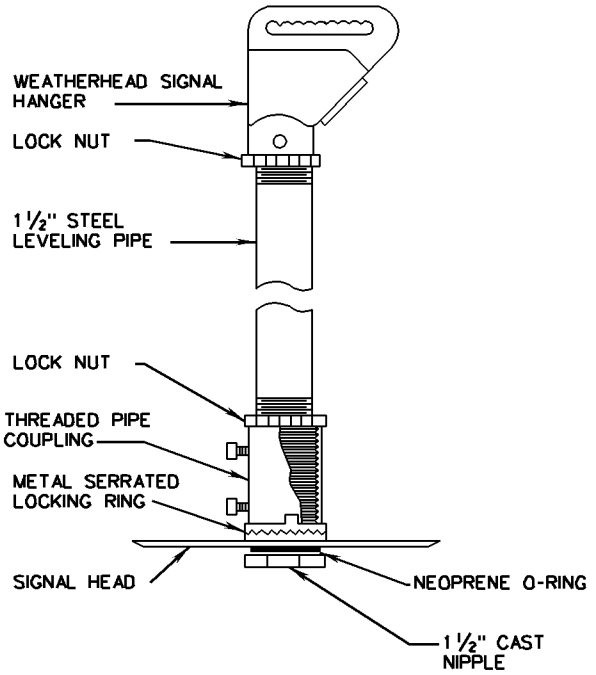


VDOT ROAD AND BRIDGE STANDARDS		PEDESTAL POLE AND FOUNDATION DETAILS VIRGINIA DEPARTMENT OF TRANSPORTATION	SPECIFICATION REFERENCE
SHEET 1 OF 1	REVISION DATE		700
1302.30	06-15-2009		

SW-1







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 CONTINIOUS 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

SPECIFICATION REFERENCE	SIGNAL HEAD MOUNTING DETAILS	VDOT ROAD AND BRIDGE STANDARDS
703	SPAN WIRE VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE 06-15-2009 SHEET 1 OF 1 1303.10

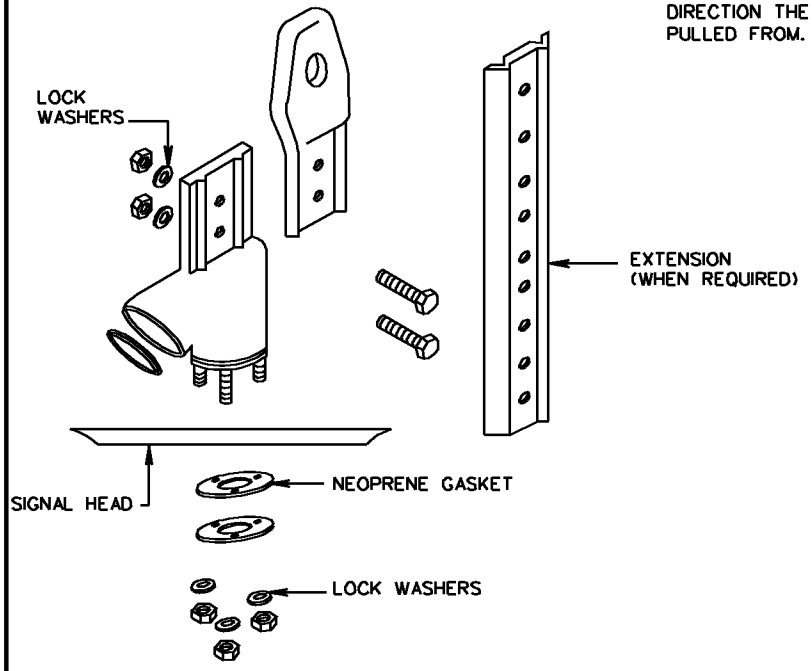
SW-2

NOTES:

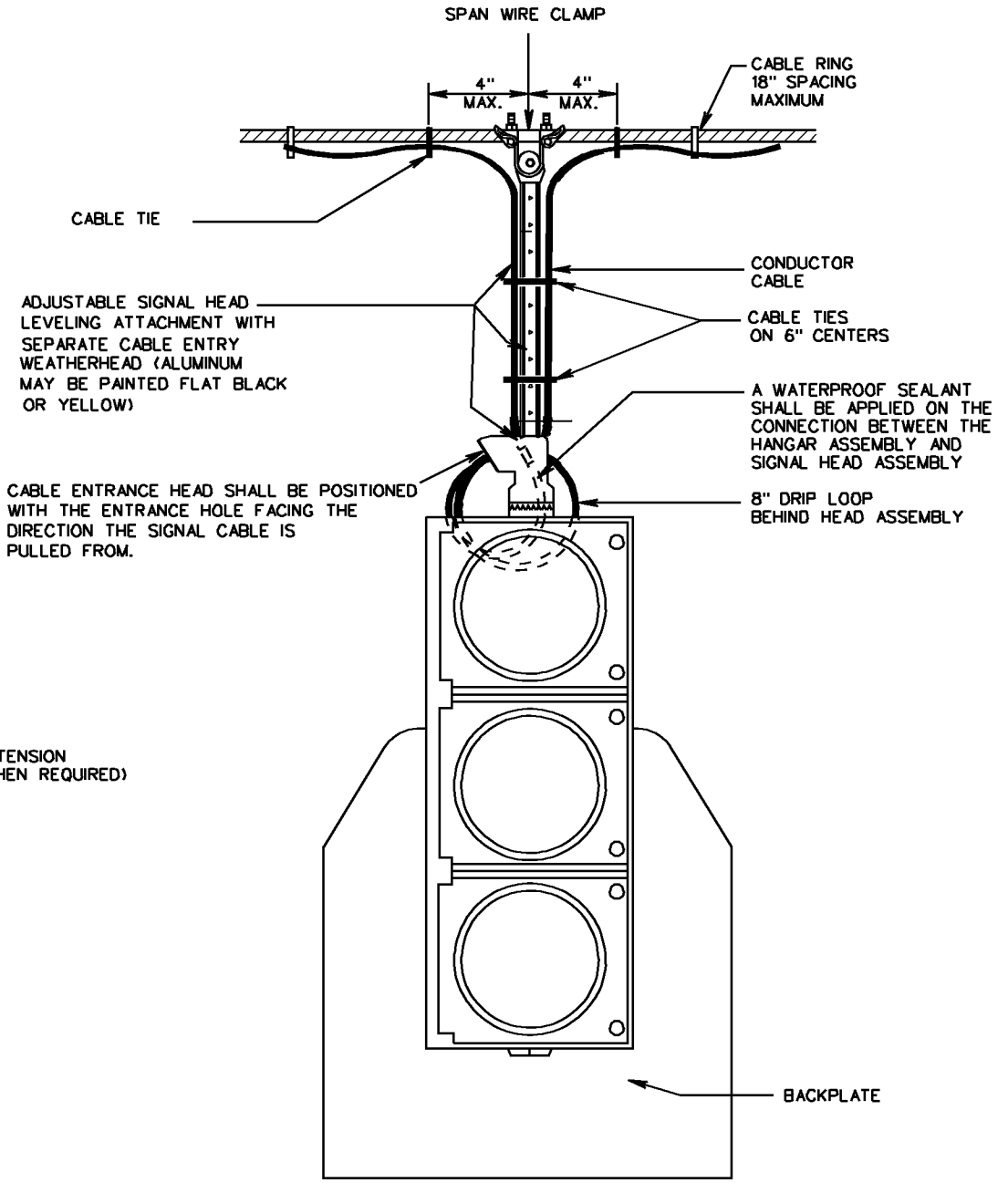
SIGNAL HEADS MOUNTED ON THE SAME SPAN WIRE SHALL BE INSTALLED SO THE BOTTOM SECTIONS ARE ON A LEVEL PLANE OR NO GREATER THAN 12" ABOVE THE BOTTOM OF THE LOWEST SIGNAL HEAD.

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 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.



HANGER ASSEMBLY DETAILS



VDOT
ROAD AND BRIDGE STANDARDS

SHEET 1 OF 1	REVISION DATE
1303.20	06-15-2009

SIGNAL HEAD MOUNTING DETAILS

SPAN WIRE

VIRGINIA DEPARTMENT OF TRANSPORTATION

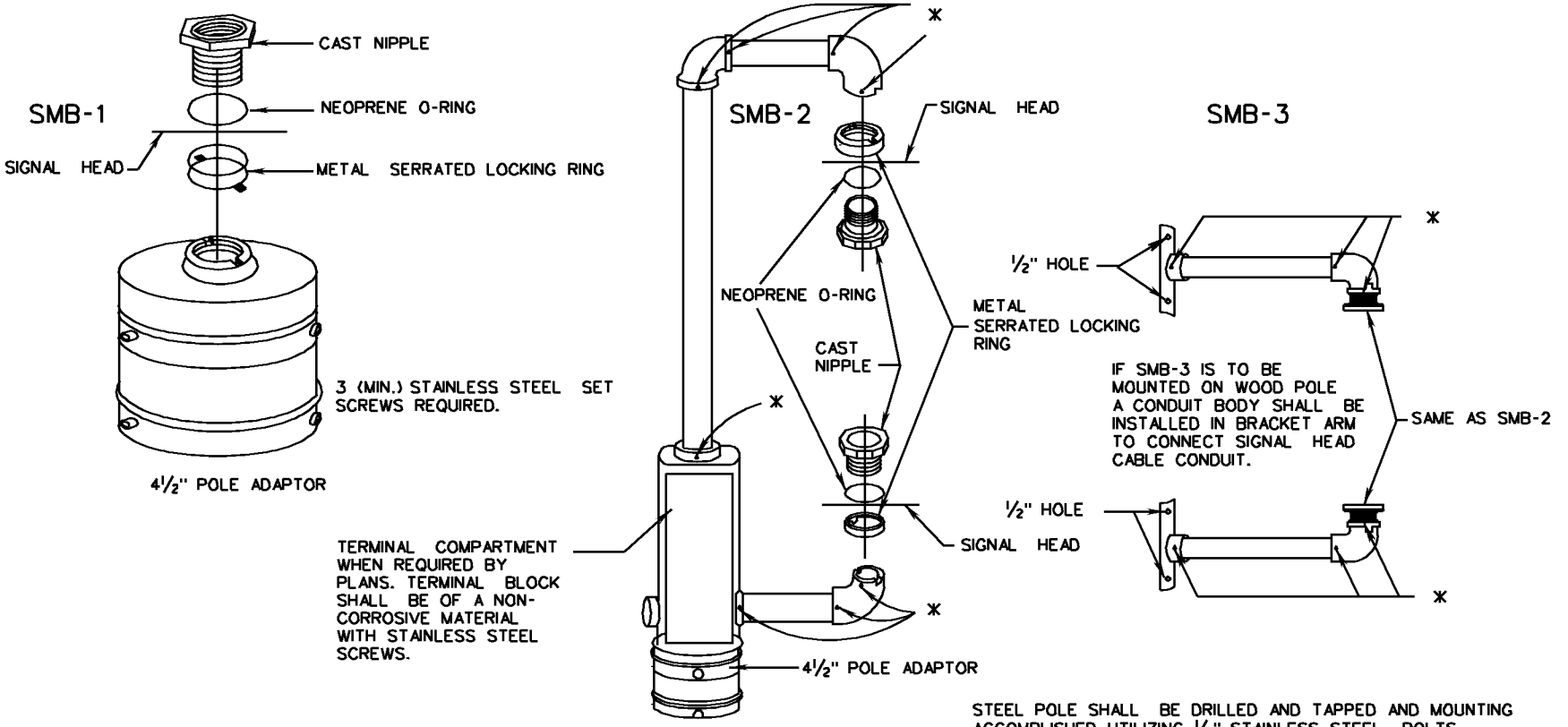
SPECIFICATION REFERENCE

703

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



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

VDOT
ROAD AND BRIDGE STANDARDS

SIGNAL HEAD MOUNTING DETAILS

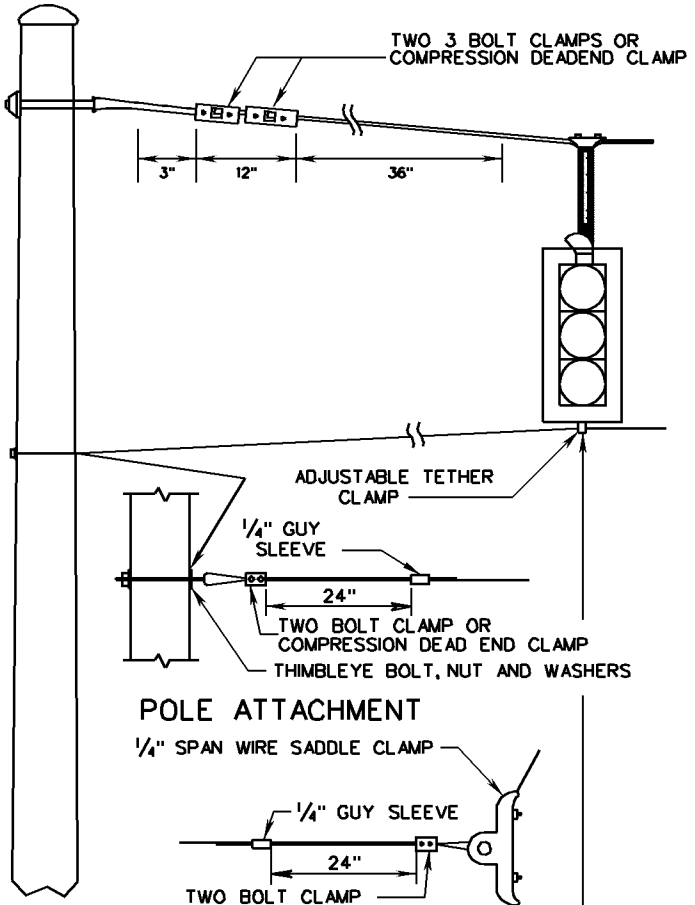
POLE TOP AND BRACKET

VIRGINIA DEPARTMENT OF TRANSPORTATION

SHEET 1 OF 1	REVISION DATE
1303.40	06-15-2009

SPECIFICATION REFERENCE

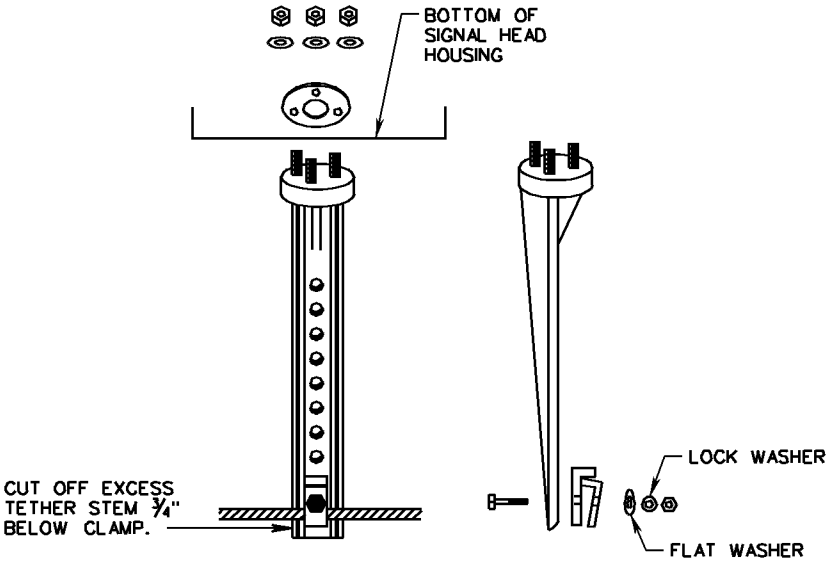
703



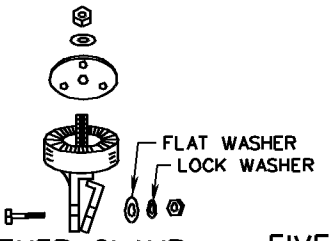
POLE ATTACHMENT

BRIDLE SPAN ATTACHMENT

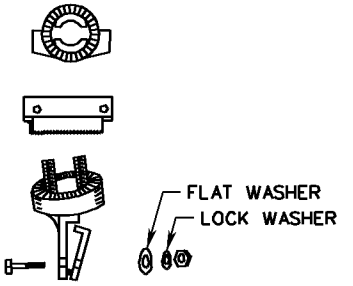
MINIMUM 16' CLEARANCE FROM HIGHEST POINT OF THE PAVEMENT SURFACE TO LOWEST POINT OF SIGNAL HEAD ASSEMBLY INCLUDING BACKPLATE AND TETHER CLAMP (INCLUDES SIGNAL HEADS ON BRIDLE SPAN).



ADJUSTABLE TETHER CLAMP



TETHER CLAMP

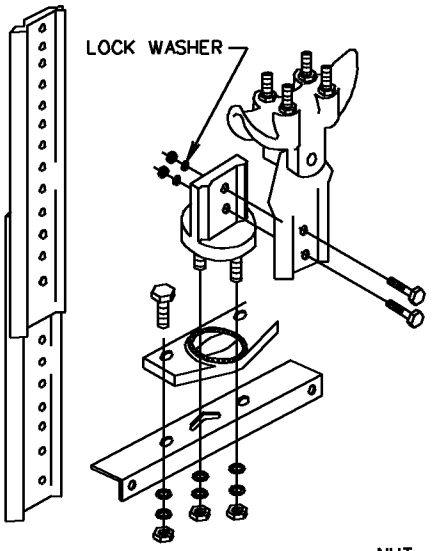


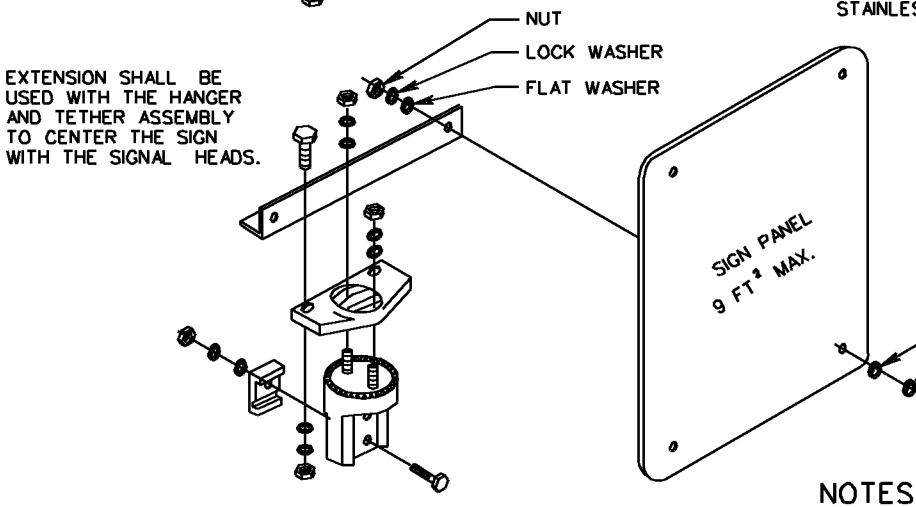
FIVE-HEAD CLUSTER
TETHER CLAMP

SPECIFICATION REFERENCE	TETHER WIRE DETAILS	VDOT ROAD AND BRIDGE STANDARDS
703	VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE 06-15-2009 / SHEET 1 OF 1 / 1304.10

SMD-1,2

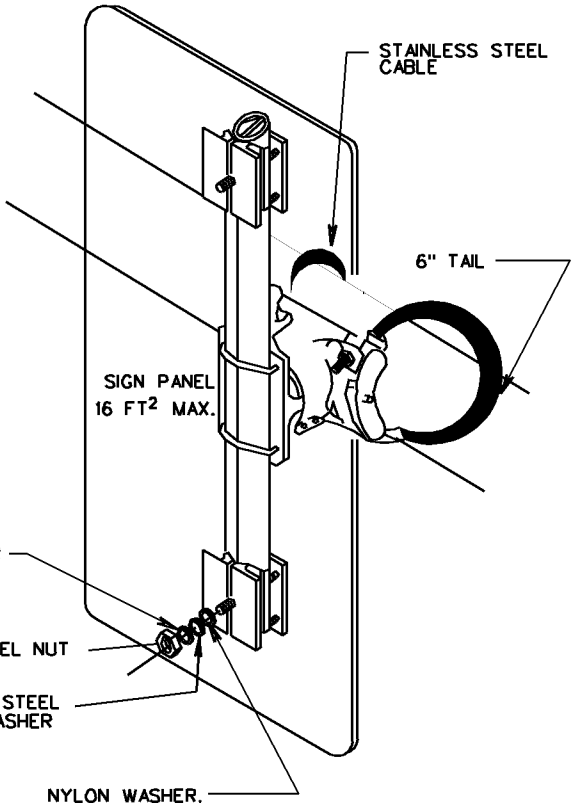
SPAN WIRE INSTALLATION





SMD-1

MAST ARM INSTALLATION



SMD-2

NOTES:

NUTS AND BOLTS USED FOR ATTACHMENT OF SIGN PANEL SHALL BE STAINLESS STEEL AND ¾" IN DIAMETER.

A 1¼" 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.

VDOT
ROAD AND BRIDGE STANDARDS

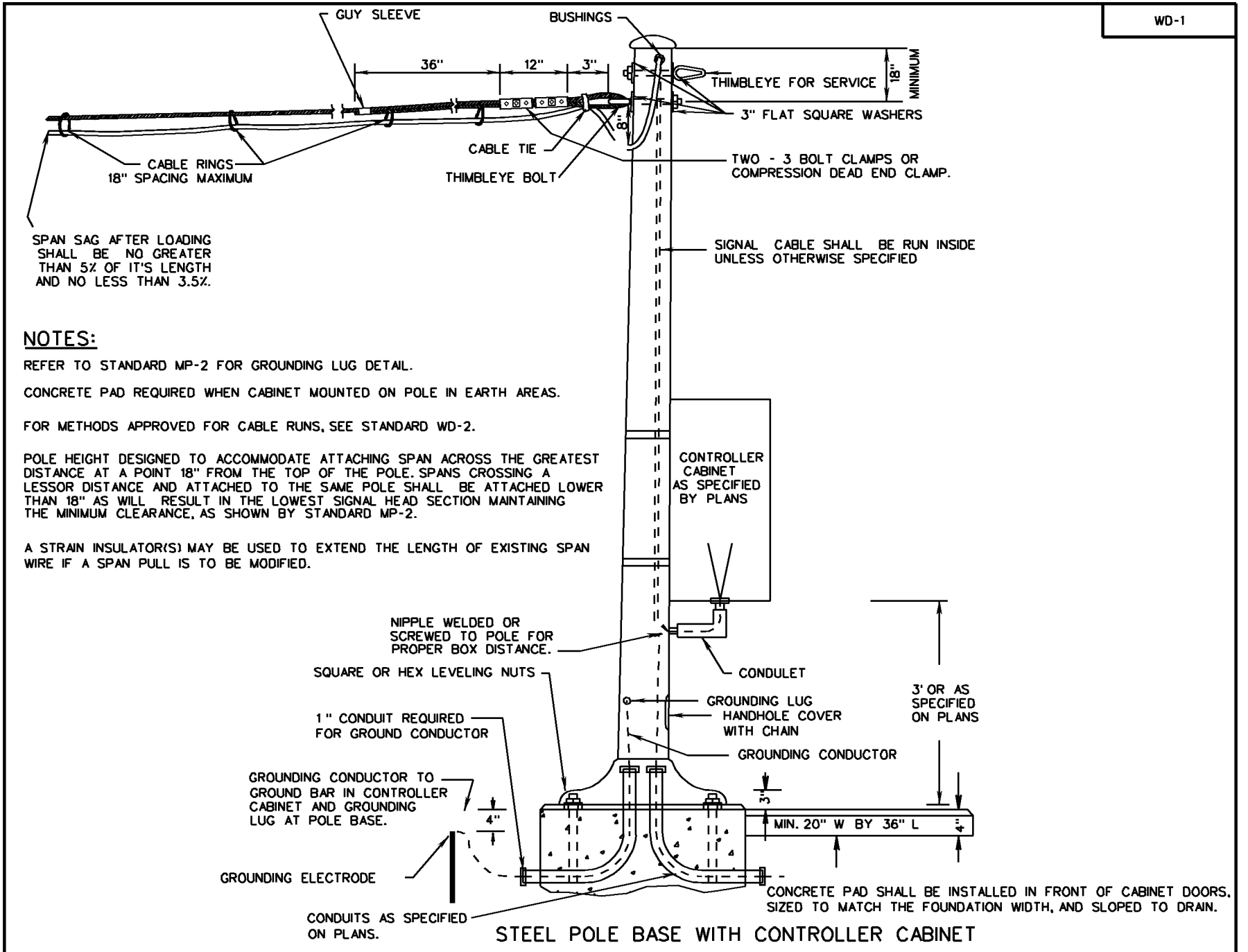
SIGN MOUNTING DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

SHEET 1 OF 1	REVISION DATE
1305.10	06-15-2009

SPECIFICATION REFERENCE

703



STEEL POLE BASE WITH CONTROLLER CABINET

NOTES:

REFER TO STANDARD MP-2 FOR GROUNDING LUG DETAIL.

CONCRETE PAD REQUIRED WHEN CABINET MOUNTED ON POLE IN EARTH AREAS.

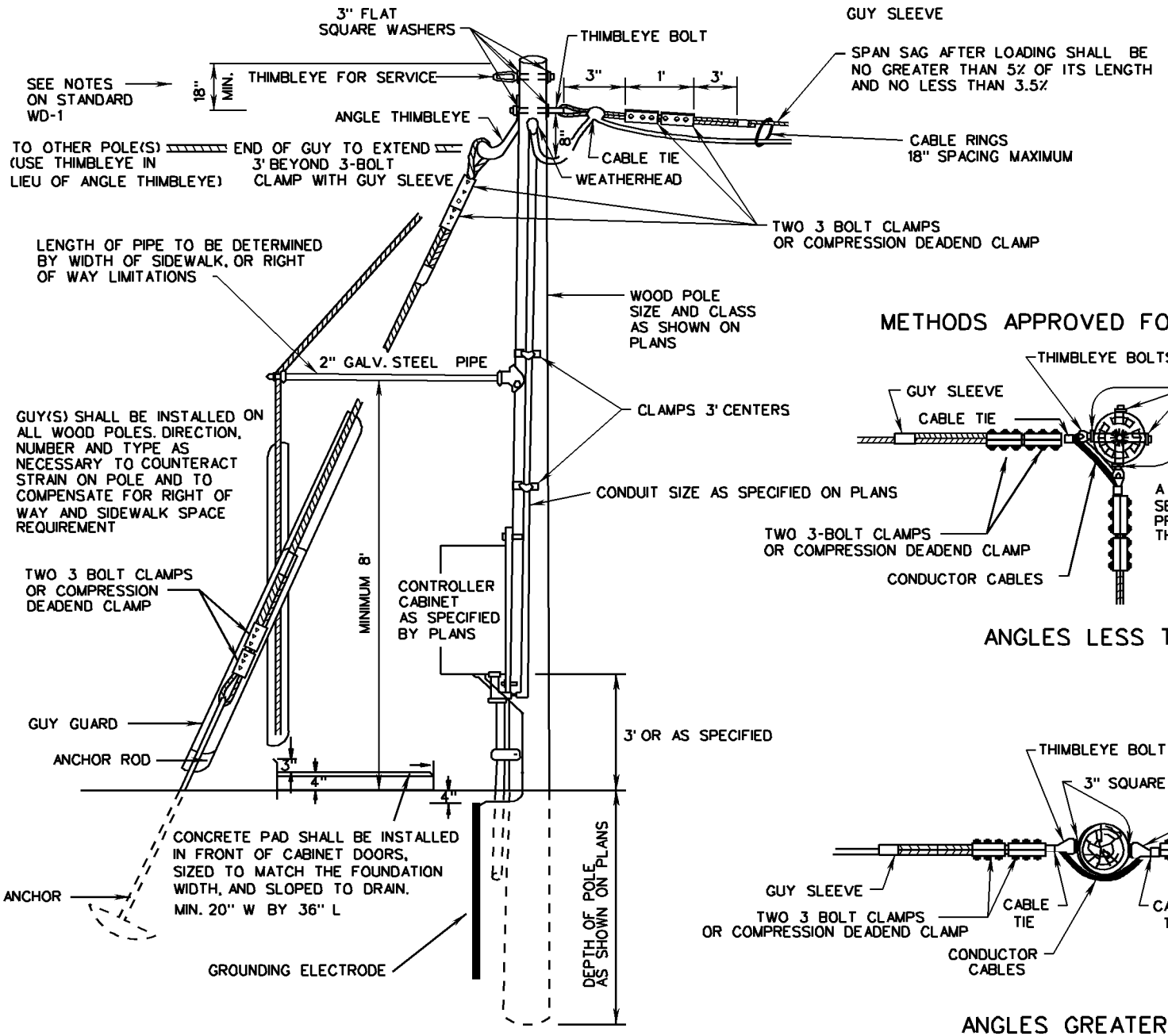
FOR METHODS APPROVED FOR CABLE RUNS, SEE STANDARD WD-2.

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.

SPECIFICATION REFERENCE	STEEL SIGNAL POLE WIRING AND RIGGING DETAILS	VDOT ROAD AND BRIDGE STANDARDS
700	VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE 06-15-2009 / SHEET 1 OF 1 / 1306.10

WD-2



METHODS APPROVED FOR CABLE RUNS

ANGLES LESS THAN 160°

ANGLES GREATER THAN 160°

VDOT
ROAD AND BRIDGE STANDARDS

WOOD POLE WIRING AND RIGGING

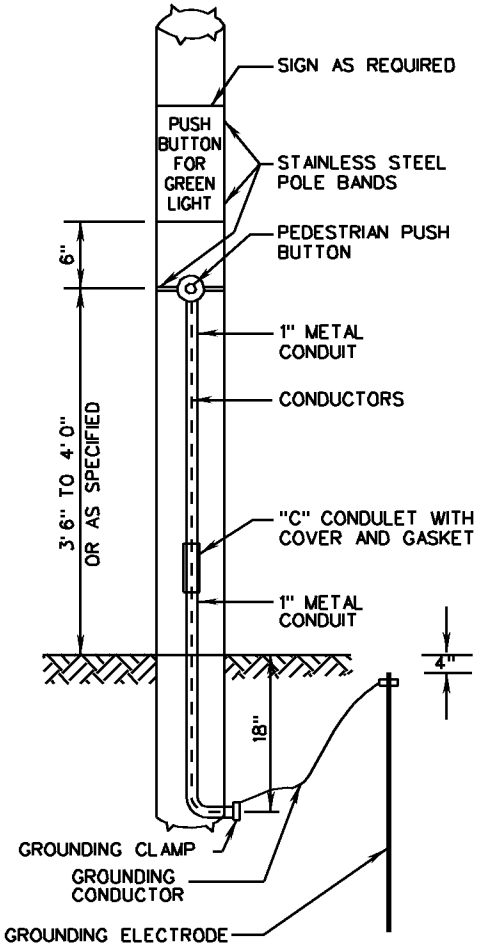
DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

SHEET 1 OF 1	REVISION DATE
1306.20	06-15-2009

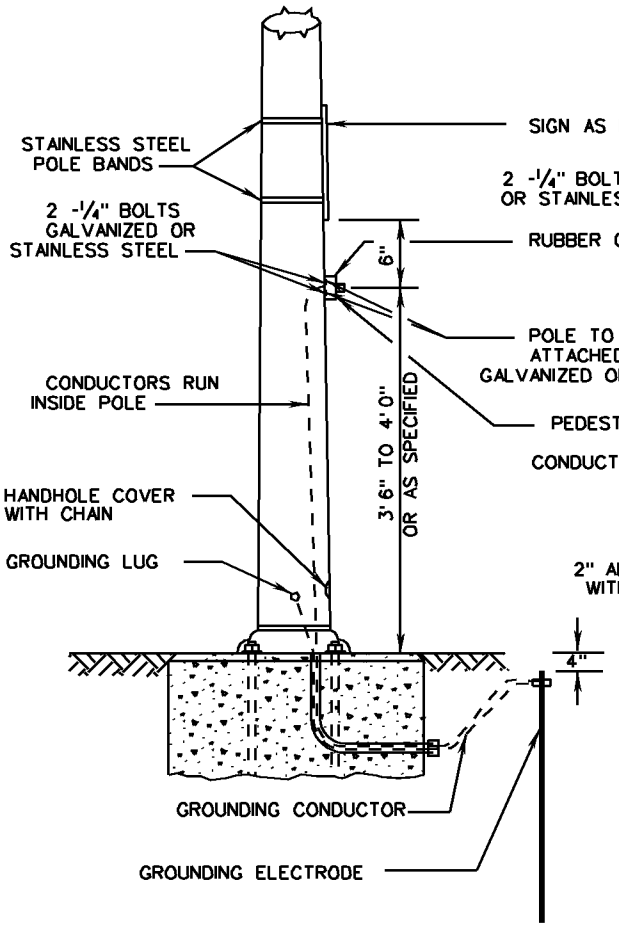
SPECIFICATION REFERENCE

700
703



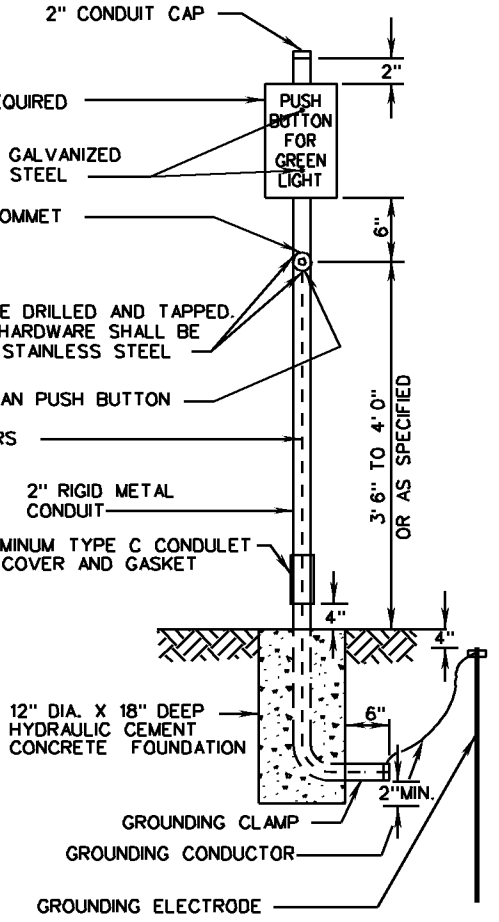
PA-1

WOOD/CONCRETE POLE



PA-2

SIGNAL/PEDESTAL POLE



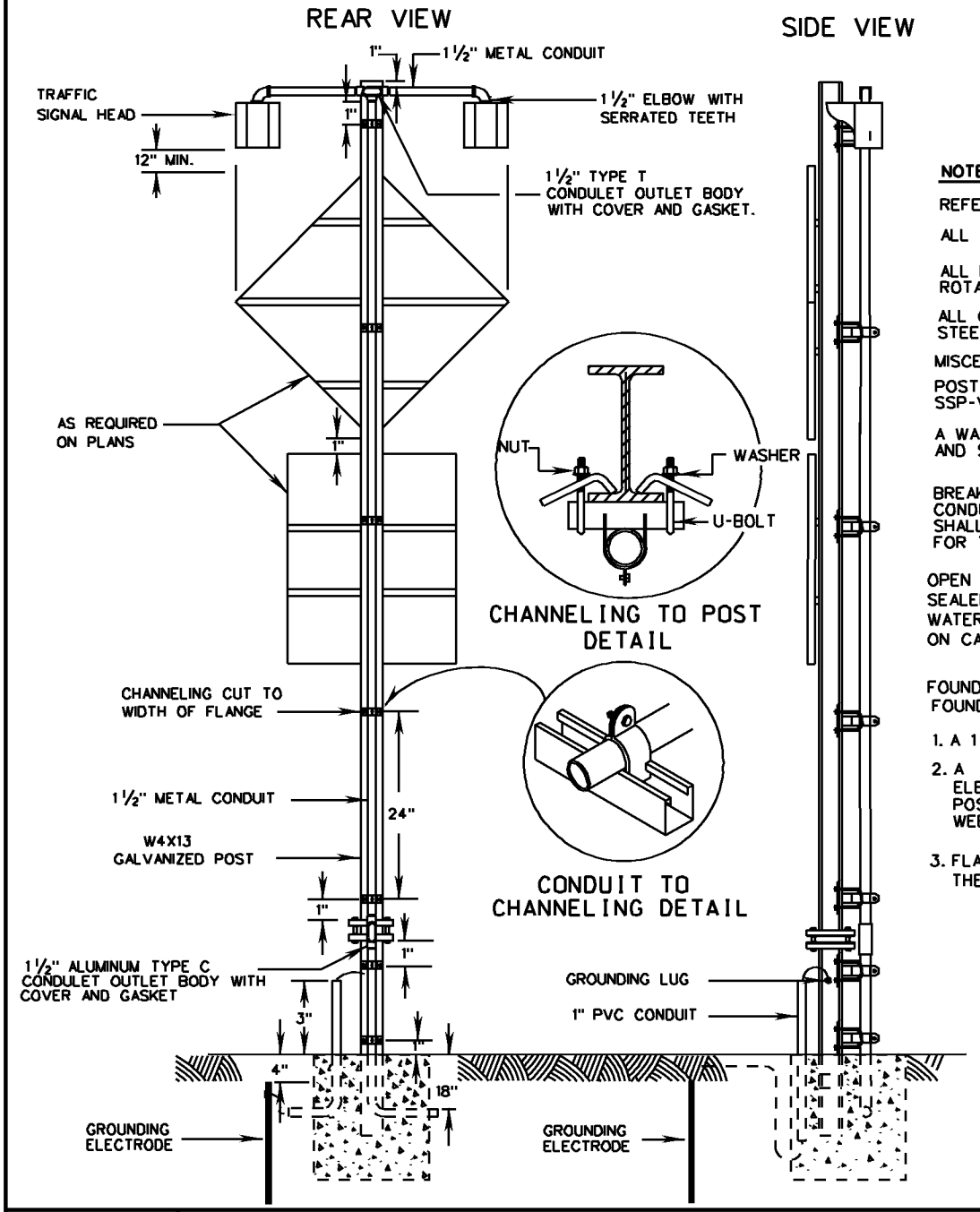
PA-3

METAL

NOTE:

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

SPECIFICATION REFERENCE	PEDESTRAIN ACTUATION DETAILS	VDOT ROAD AND BRIDGE STANDARDS
700 703	VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE 04/09 06-15-2009 · SHEET 1 OF 1 · 1307.10



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 GROUNDED CONDUCTOR.

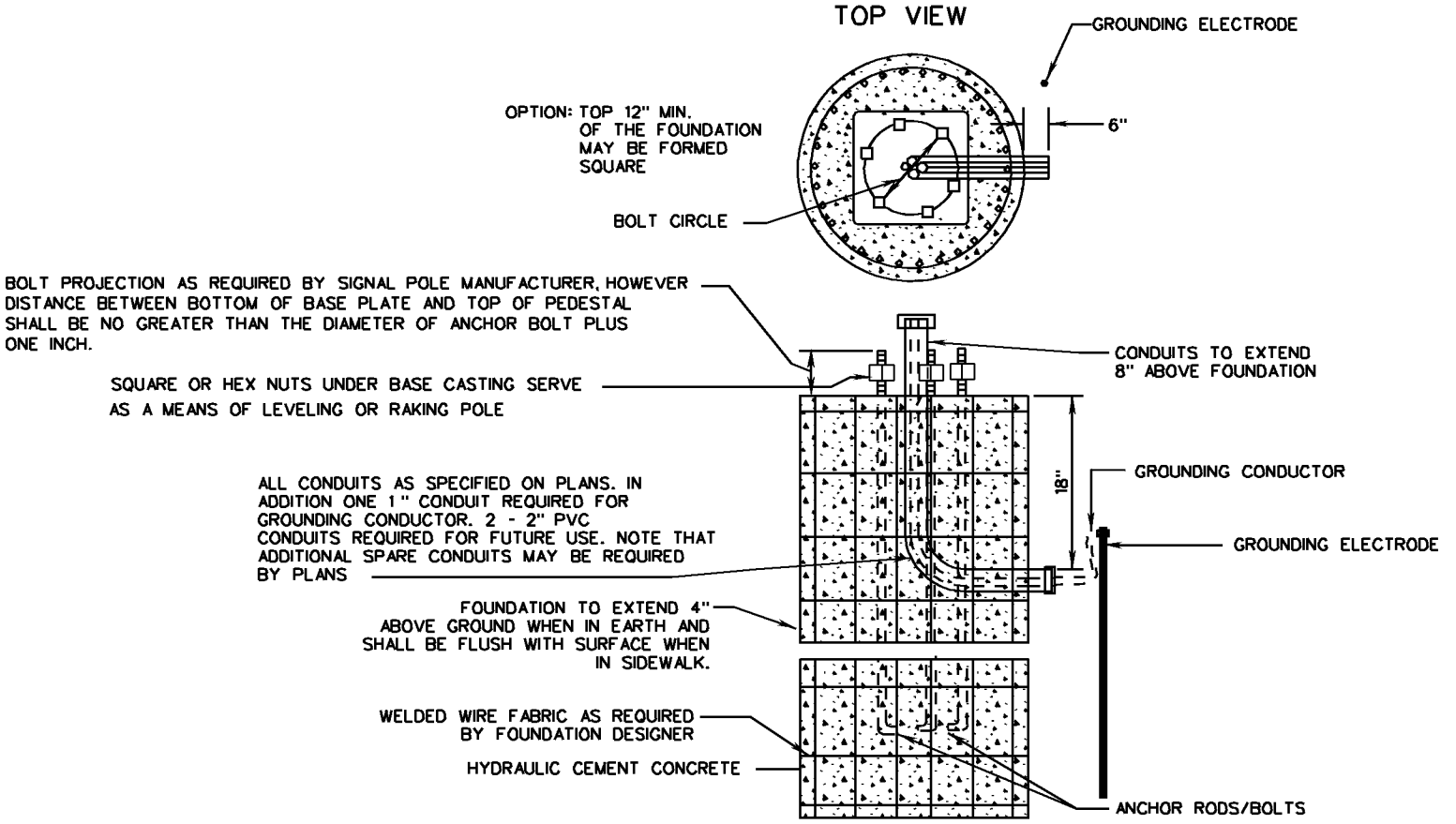
OPEN ENDS OF CONDUITS WITH CONDUCTORS INSTALLED SHALL BE SEALED WITH AN APPROVED SOFT, PLIABLE, AND EASILY REMOVABLE, WATERPROOF SEALANT. THE SEALANT SHALL NOT HAVE A DELETERIOUS ON CABLE COVERINGS

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	FLASHING BEACON INSTALLATION DETAILS VIRGINIA DEPARTMENT OF TRANSPORTATION	VDOT ROAD AND BRIDGE STANDARDS
700 703		REVISION DATE 06-15-2009 / SHEET 1 OF 1 / 1309.10

PF-1



SIDE VIEW

CIRCULAR FOUNDATION

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

VDOT
ROAD AND BRIDGE STANDARDS

SIGNAL POLE FOUNDATION

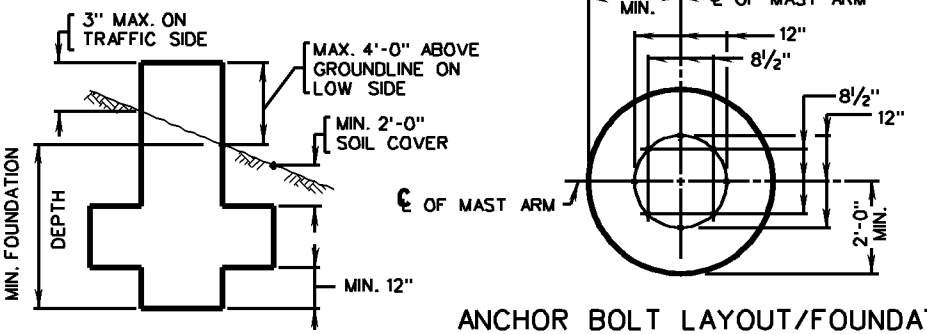
INSTALLATION DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

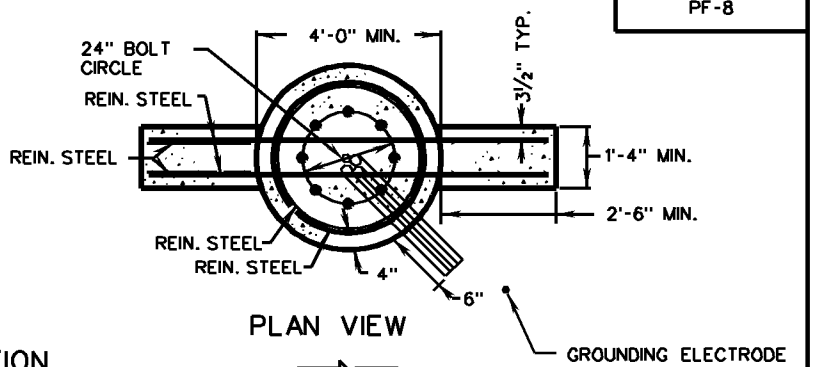
SHEET 1 OF 1	REVISION DATE
1310.10	06-15-2009

SPECIFICATION REFERENCE

700



ANCHOR BOLT LAYOUT/FOUNDATION



PLAN VIEW

NOTES:

ANCHOR BOLTS SHALL HAVE A THREADED PLATE OR A PLATE WITH NUT AND WASHER ON THE END OF BOLT EMBEDED 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 ¼" 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 ¾" AND FOR SIDEWALKS SHALL BE FLUSH.

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

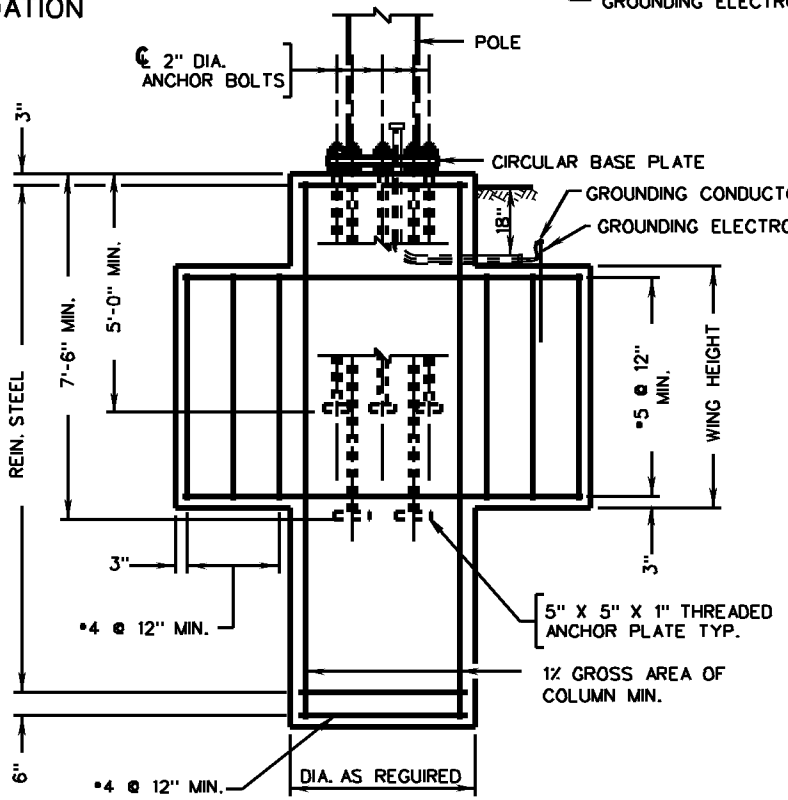
EMPTY CONDUITS SHALL BE PLUGGED TO PREVENT MOISTURE AND RODENT ENTRY.

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

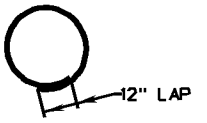
OPEN ENDS OF CONDUITS WITH CONDUCTORS INSTALLED SHALL BE SEALED WITH AN APPROVED SOFT, PLIABLE, AND EASILY REMOVABLE WATERPROOF SEALANT. THE SEALANT SHALL NOT HAVE A DELETERIOUS EFFECT ON CABLE COVERINGS.

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

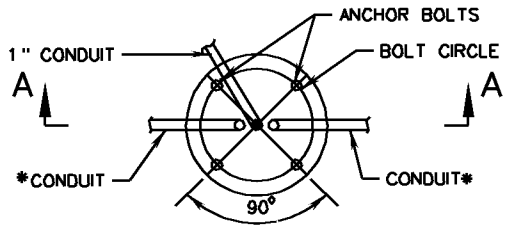


ELEVATION

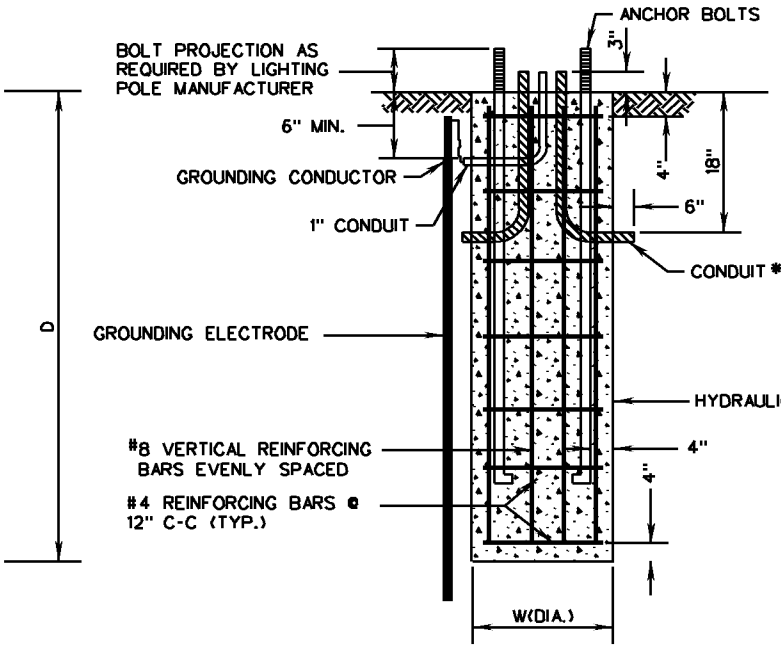


CAGE REINFORCING STEEL

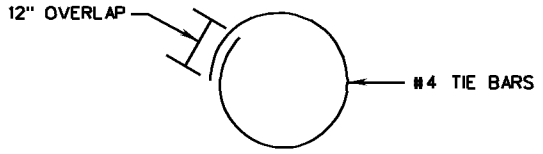
SPECIFICATION REFERENCE	SIGNAL POLE FOUNDATION INSTALLATION DETAILS VIRGINIA DEPARTMENT OF TRANSPORTATION	VDOT ROAD AND BRIDGE STANDARDS
700		REVISION DATE NEW 04/09 06/15/2009
		SHEET 1 OF 1 1310.11



PLAN VIEW



SECTION A-A



PLAN VIEW

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.

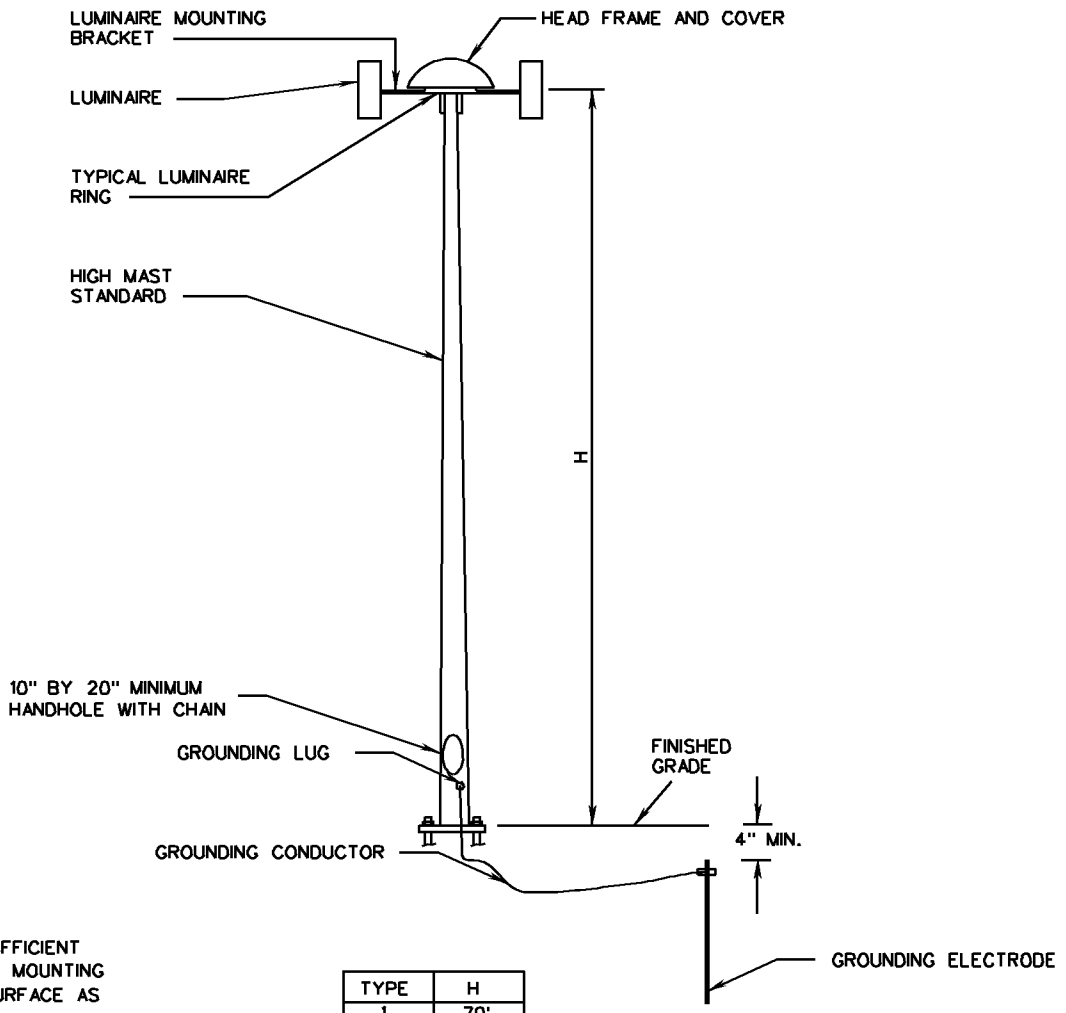
GROUNDING BUSHINGS SHALL BE INSTALLED ON EACH END OF METAL CONDUITS.

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	LIGHTING POLE FOUNDATION	VDOT ROAD AND BRIDGE STANDARDS
700	INSTALLATION DETAILS VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE 06-15-2009 SHEET 1 OF 1 1310.20



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

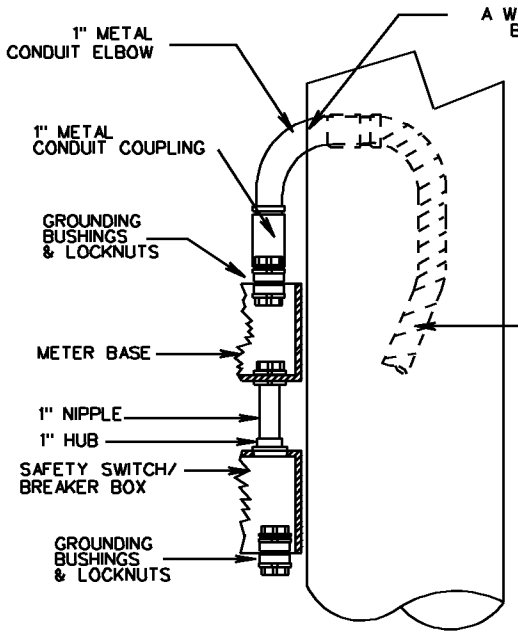
HIGH MAST LIGHT POLE

DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT
ROAD AND BRIDGE STANDARDS

REVISION DATE	SHEET 1 OF 1
06-15-2009	1311.20



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.

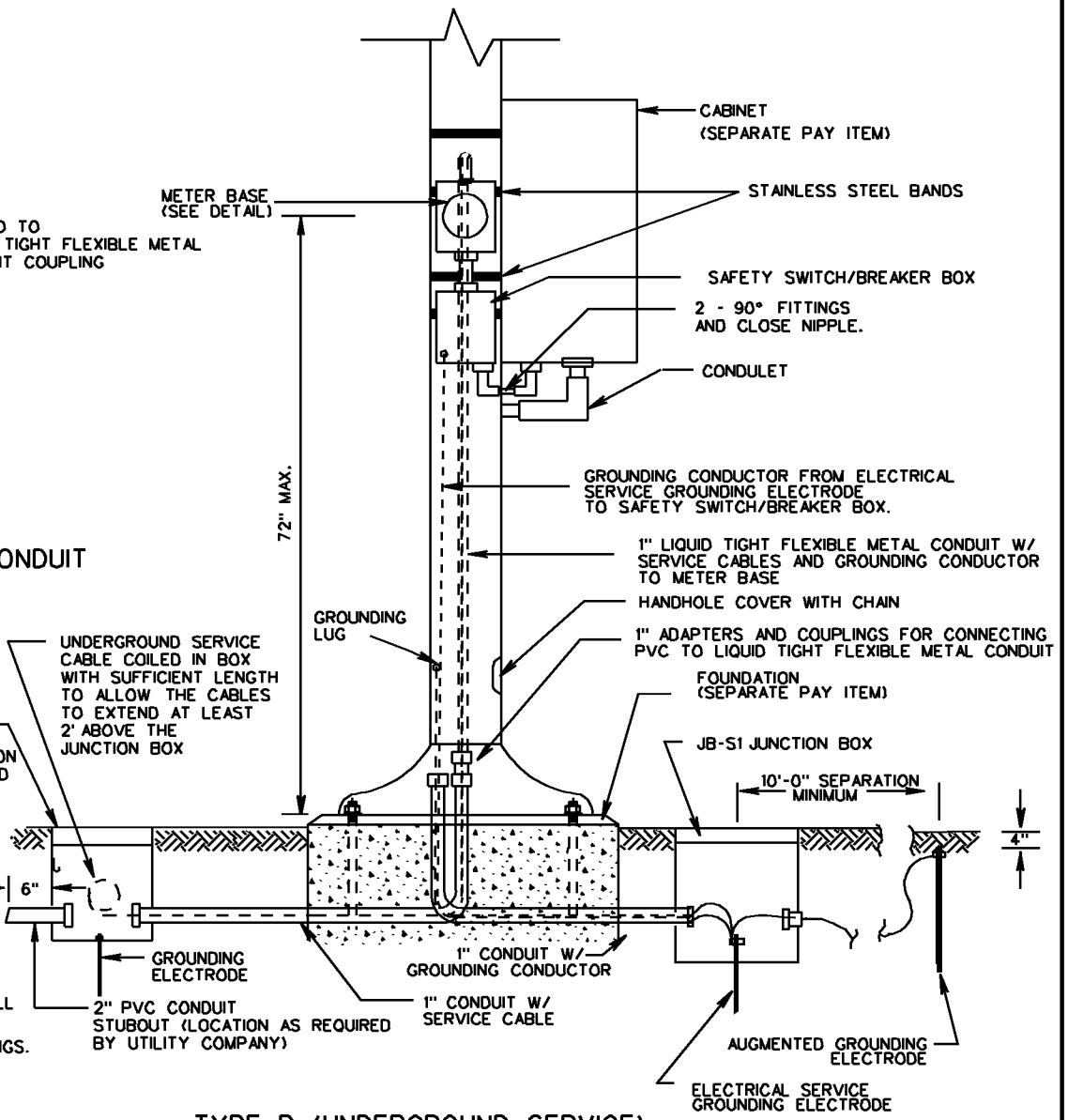
BELL ENDS SHALL BE INSTALLED ON EACH END OF PVC CONDUITS.

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.

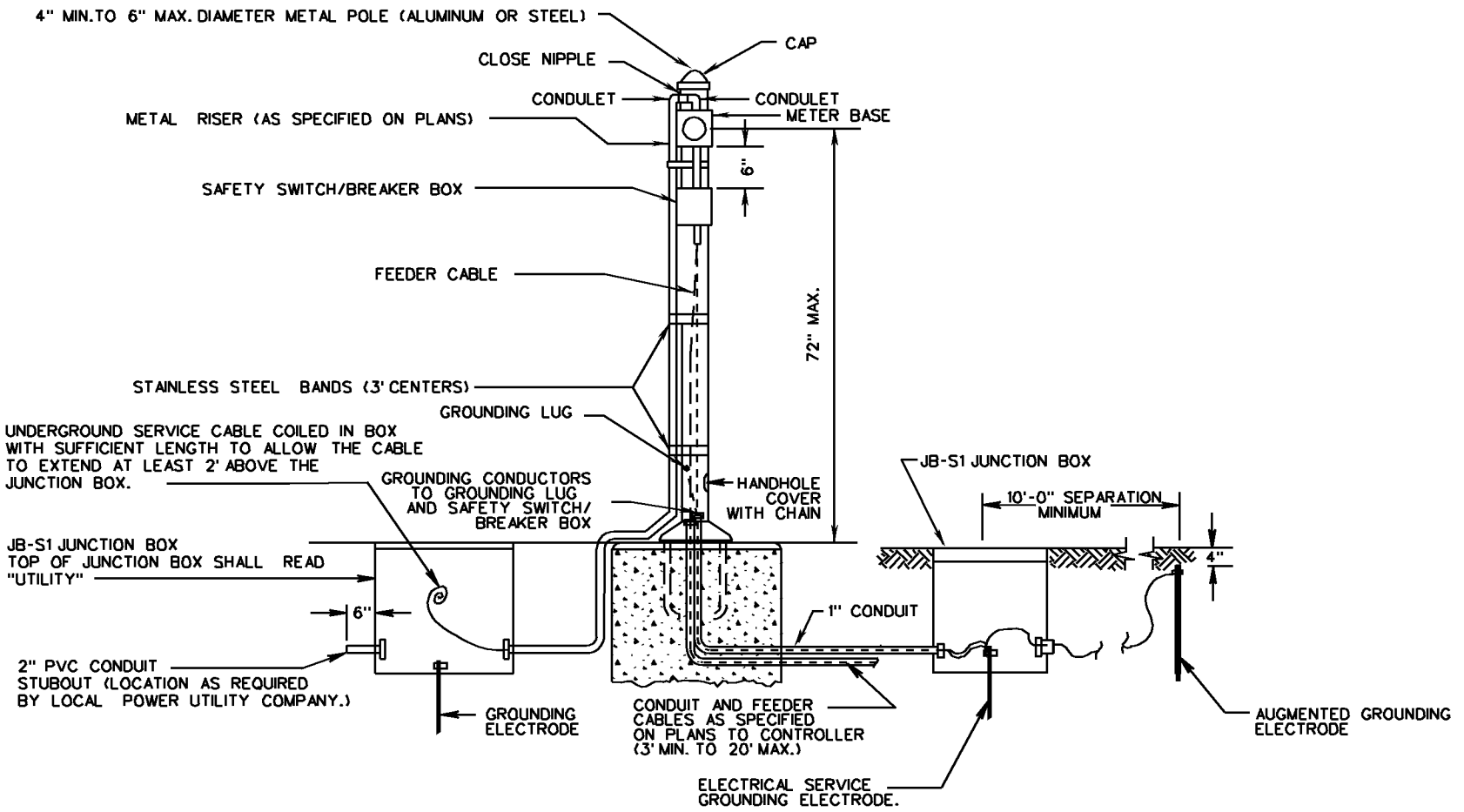
REFER TO STANDARD MP-2 FOR GROUNDING LUG DETAIL.



TYPE B (UNDERGROUND SERVICE) METAL POLE

SPECIFICATION REFERENCE	ELECTRICAL SERVICE INSTALLATION DETAILS	VDOT ROAD AND BRIDGE STANDARDS
700	VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE 06-15-2009 / SHEET 2 OF 2 / 1312.11

SE-5



PEDESTAL POLE WITH GROUND MOUNTED CABINET

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

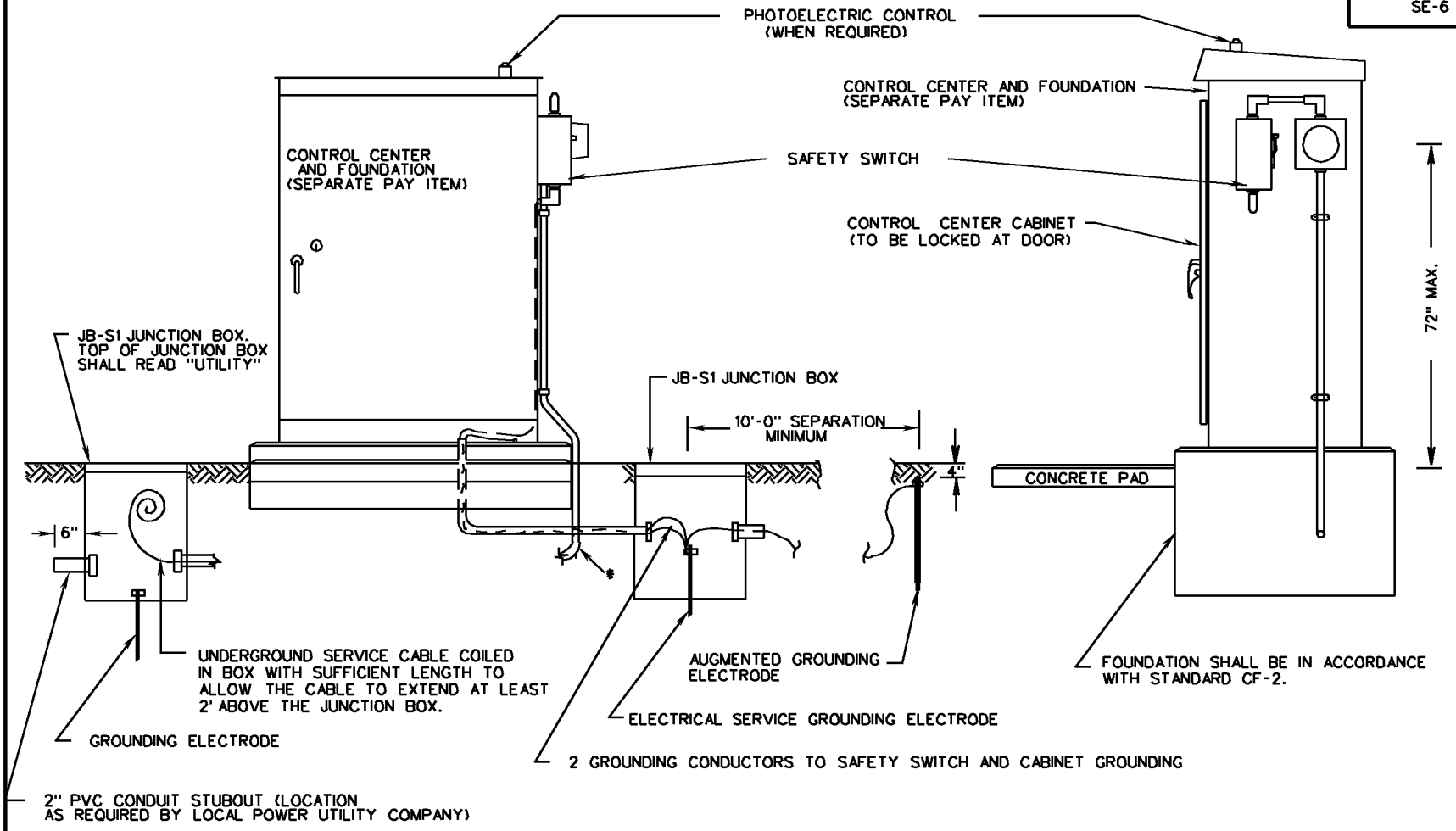
REFER TO STANDARD MP-2 FOR GROUNDING LUG DETAILS.

VDOT
ROAD AND BRIDGE STANDARDS

ELECTRICAL SERVICE
INSTALLATION DETAILS
VIRGINIA DEPARTMENT OF TRANSPORTATION

SHEET 1 OF 1	REVISION DATE
1312.50	06-15-2009

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	# ELECTRICAL SERVICE INSTALLATION DETAILS VIRGINIA DEPARTMENT OF TRANSPORTATION	VDOT ROAD AND BRIDGE STANDARDS
700		REVISION DATE: 06-15-2009
		SHEET 1 OF 1 1312.60

SE-7

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.

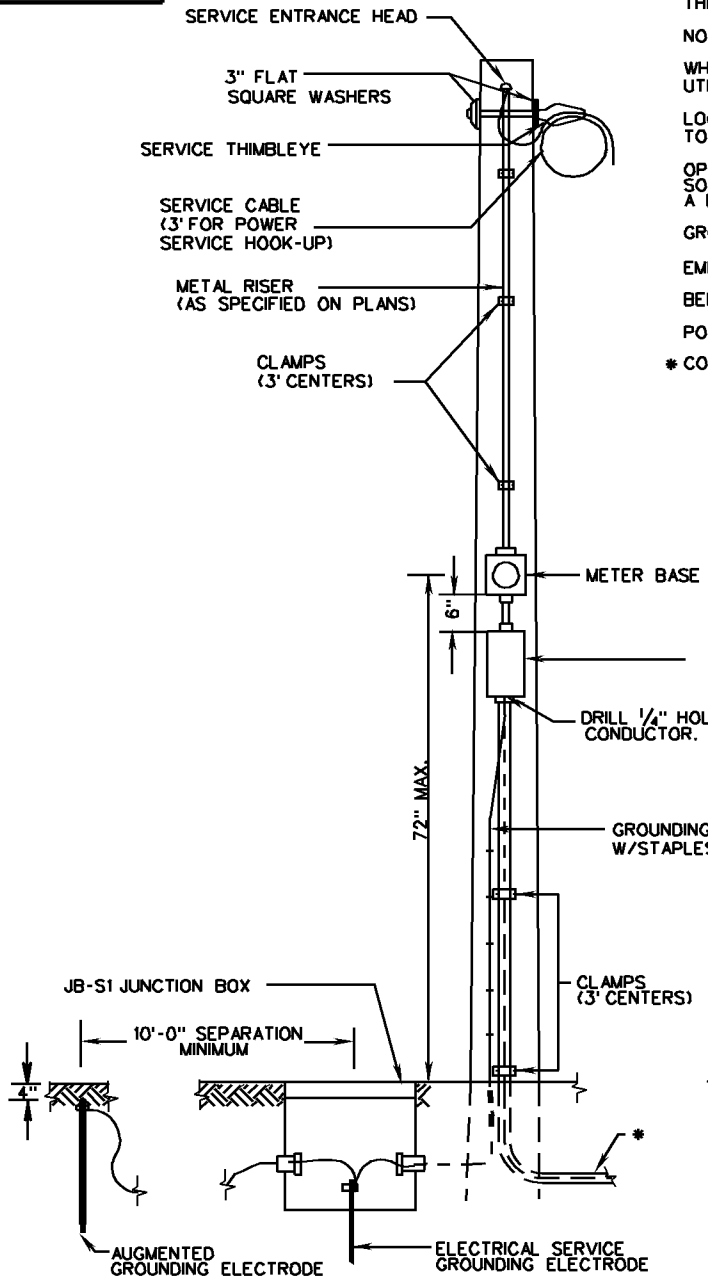
GROUNDING BUSHINGS SHALL BE INSTALLED ON EACH END OF METAL CONDUITS.

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

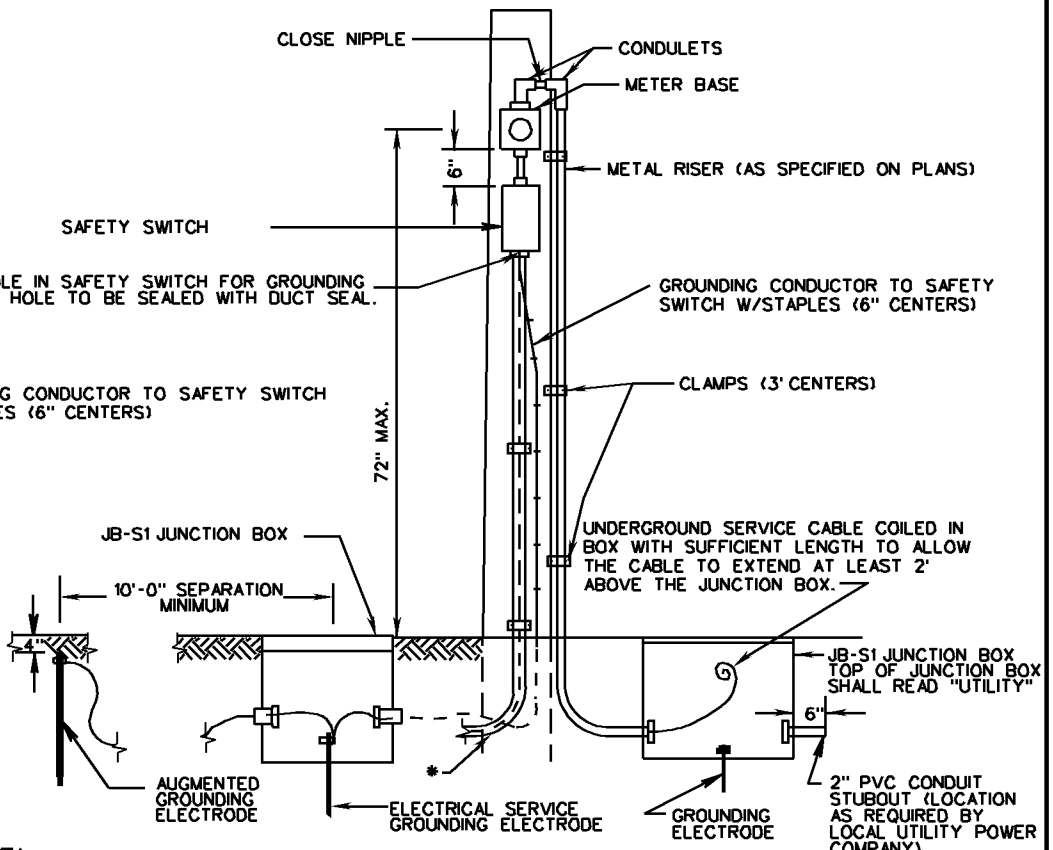
BELL ENDS SHALL BE INSTALLED ON EACH END OF PVC CONDUITS.

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

VDOT
ROAD AND BRIDGE STANDARDS

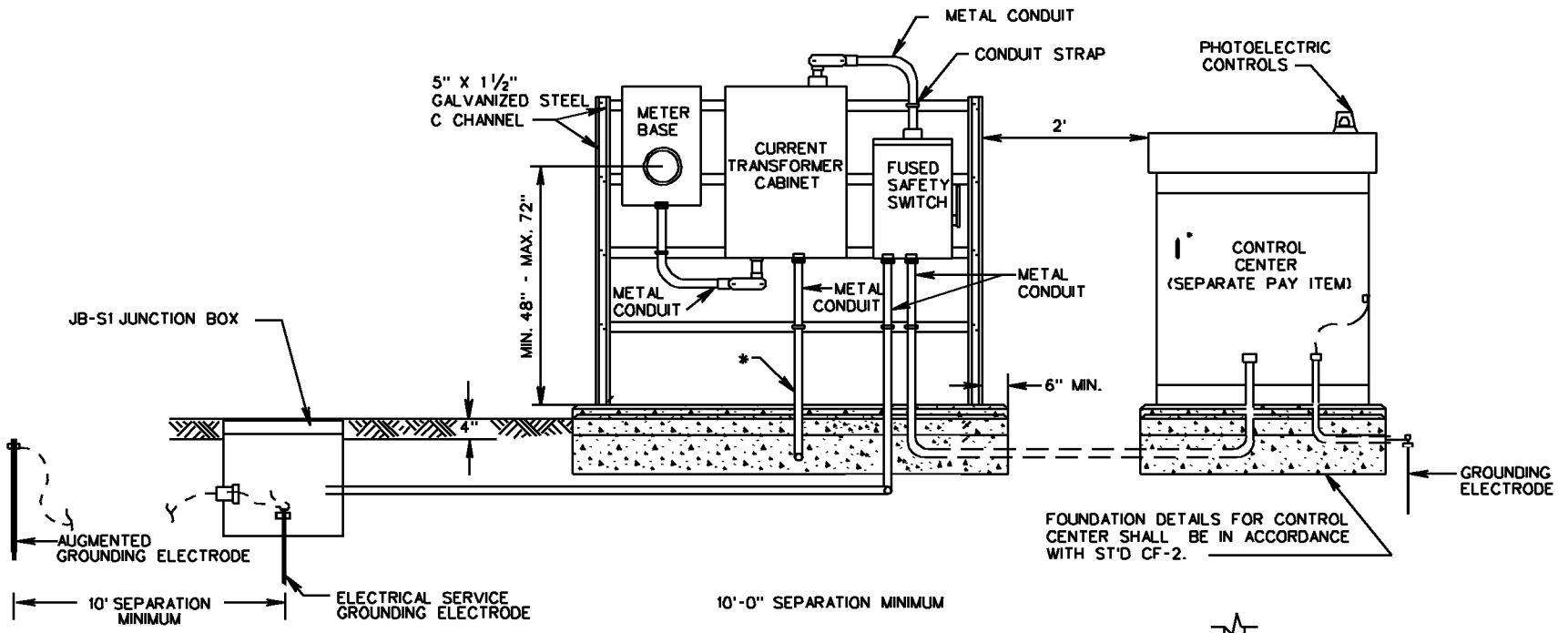
ELECTRICAL SERVICE
INSTALLATION DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

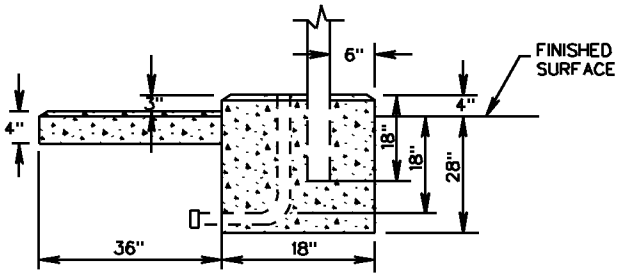
SHEET 1 OF 1	REVISION DATE
1312.70	06-15-2009

SPECIFICATION REFERENCE

700



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 ¾".

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 ⅜" 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 ¼" 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")

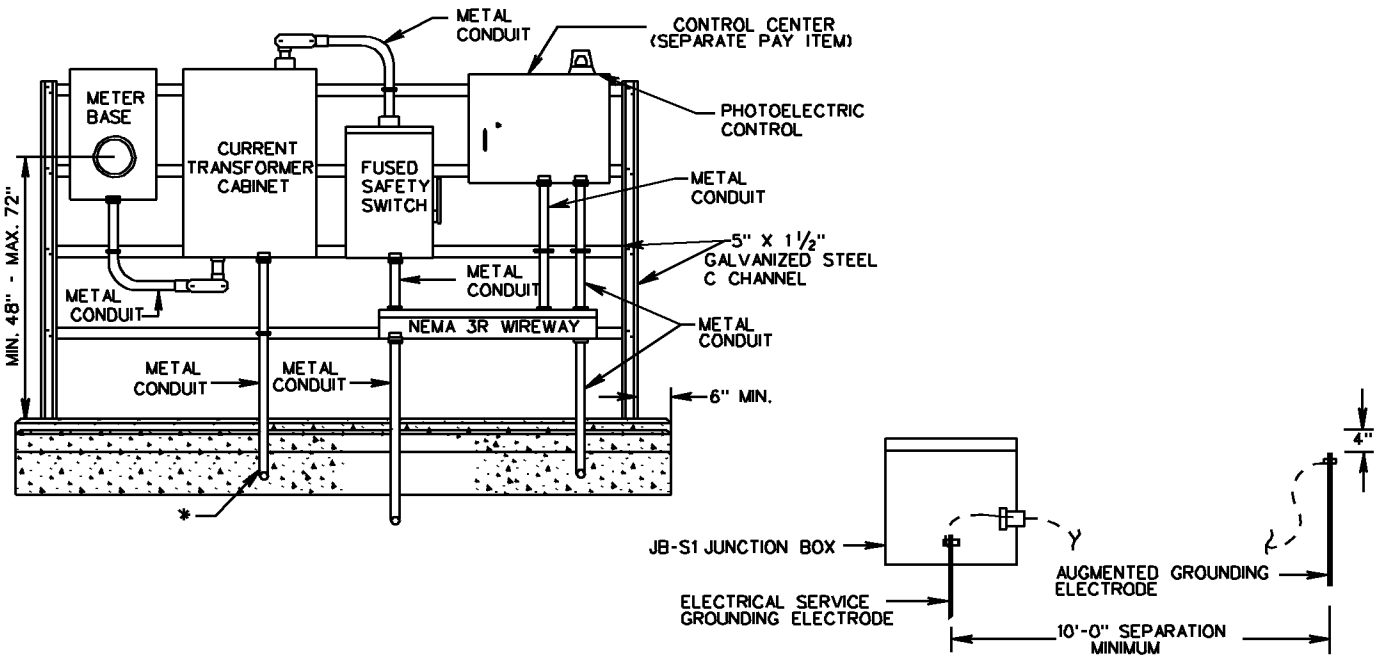
* CONDUIT SHALL BE STUBBED OUT 6" PAST CONCRETE FOUNDATION PAD. LOCATION OF THE STUBBED CONDUIT SHALL BE AS REQUIRED BY THE LOCAL POWER COMPANY.

VDOT
ROAD AND BRIDGE STANDARDS

ELECTRICAL SERVICE
INSTALLATION DETAILS
VIRGINIA DEPARTMENT OF TRANSPORTATION

SHEET 1 OF 2	REVISION DATE
1312.90	06-15-2009

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 ¾".

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 ⅜" 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 ¼" 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	ELECTRICAL SERVICE INSTALLATION DETAILS VIRGINIA DEPARTMENT OF TRANSPORTATION	VDOT ROAD AND BRIDGE STANDARDS
700		REVISION DATE NEW 06-15-09 / 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.

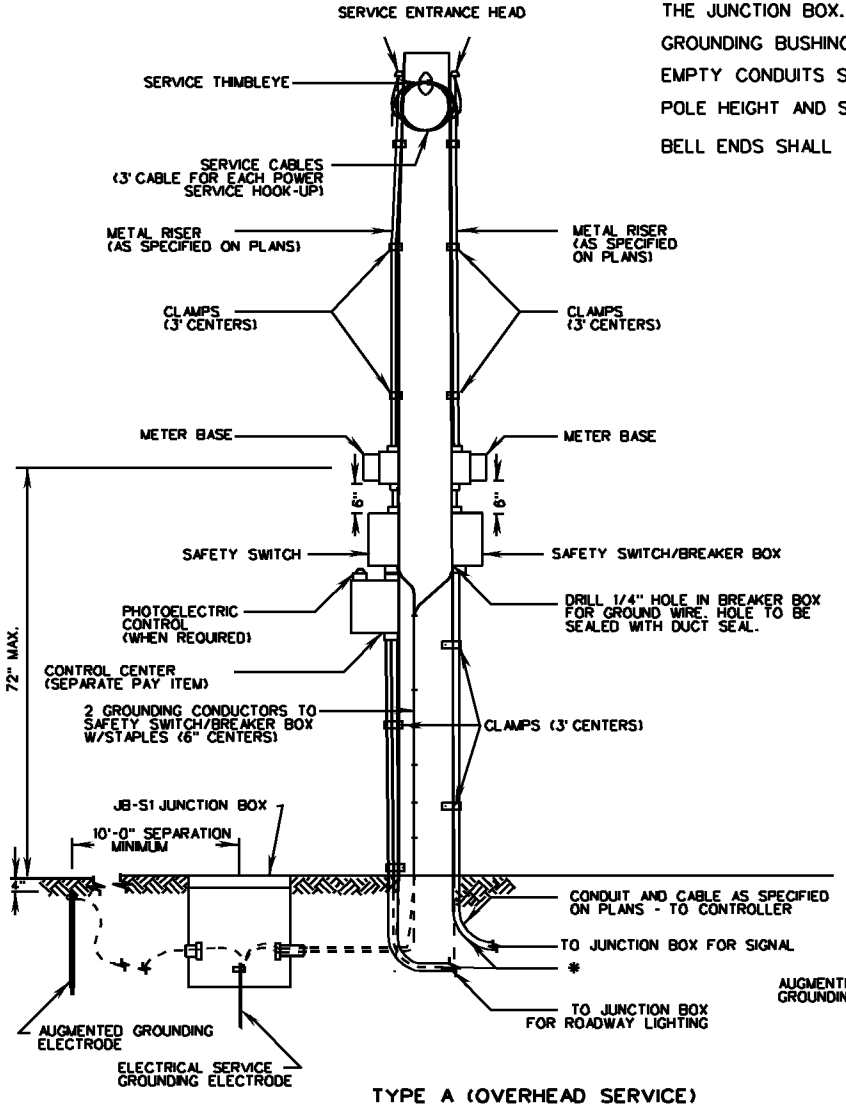
LOCAL POWER UTILITY COMPANY WILL INSTALL SERVICE POWER UTILITY CABLE FROM THEIR POWER SOURCE TO THE JUNCTION BOX AND MAKE REQUIRED SPLICES TO THE SERVICE CALBE COILED IN THE JUNCTION BOX.

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

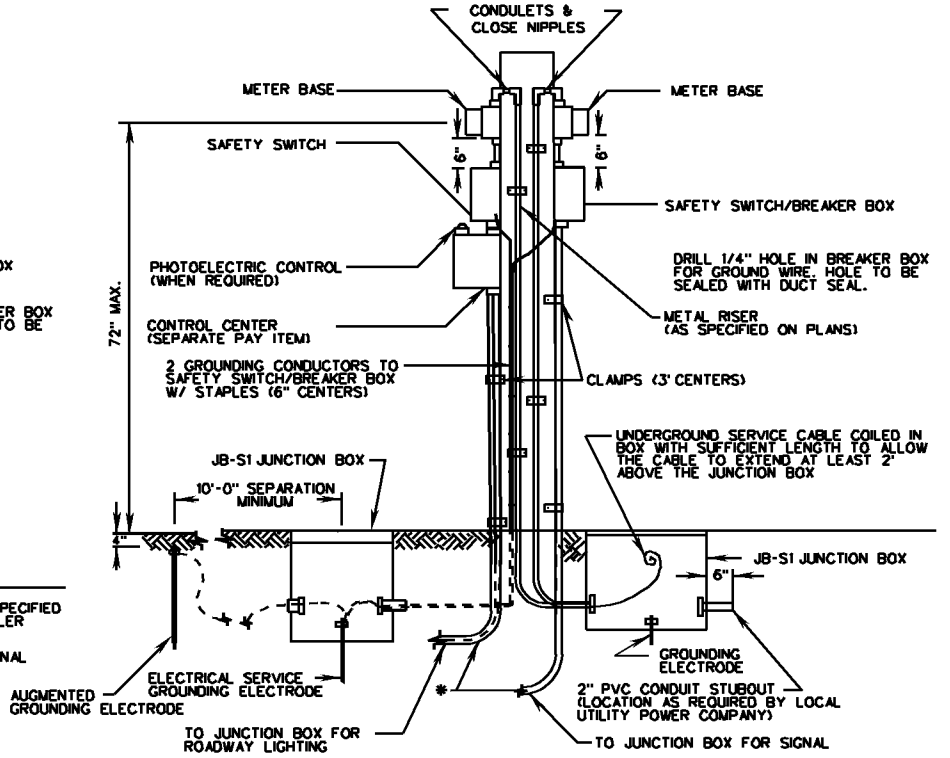
EMPTY CONDUITS SHALL BE PLUGGED TO PREVENT MOISTURE AND RODENT ENTRY.

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

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

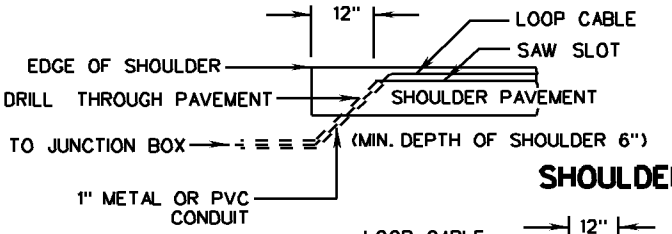


TYPE A (OVERHEAD SERVICE)
WOOD POLE

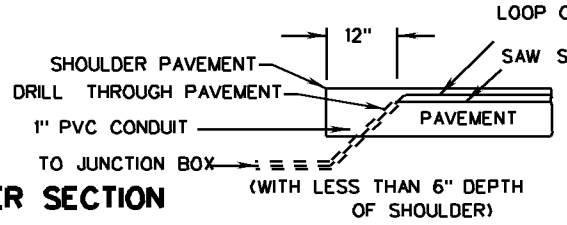


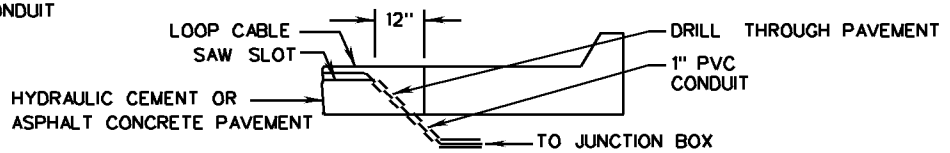
TYPE B (UNDERGROUND SERVICE)
WOOD POLE

SPECIFICATION REFERENCE	ELECTRICAL SERVICE INSTALLATION DETAILS	VDOT ROAD AND BRIDGE STANDARDS
700	VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE 06-15-2009 / SHEET 1 OF 1 / 1313.10

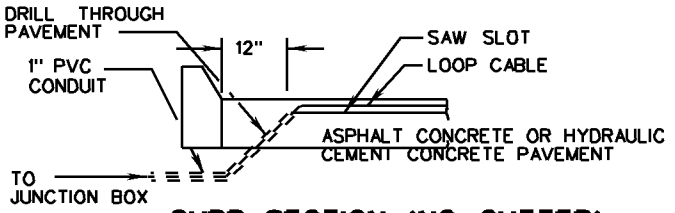


SHOULDER SECTION





CURB AND GUTTER SECTION



CURB SECTION (NO GUTTER)

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.

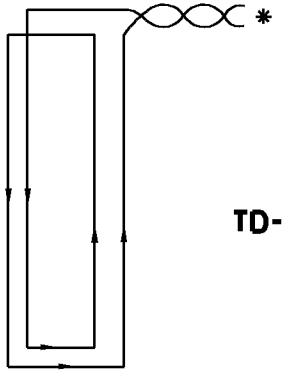
REMOVAL OF LARGE SECTIONS OF PAVEMENT TO PERFORM THIS WORK WILL NOT BE ALLOWED.

ONE PVC CONDUIT SHALL BE PROVIDED FOR EACH SAW SLOTS.

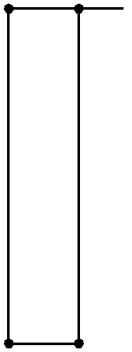
ANGLE OF DRILL FOR INSTALLATION OF CONDUIT AND LOOP CABLE SHALL BE APPROXIMATELY 45°.

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

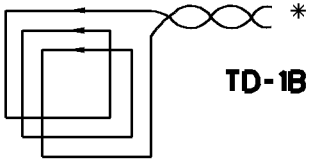
* TWISTED TOGETHER WITH A MINIMUM OF TWO TURNS PER RUNNING FOOT.



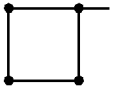
LOOP CABLE INSTALLATION



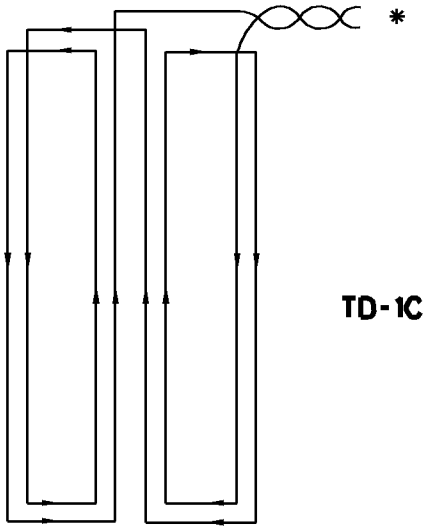
PLAN VIEW



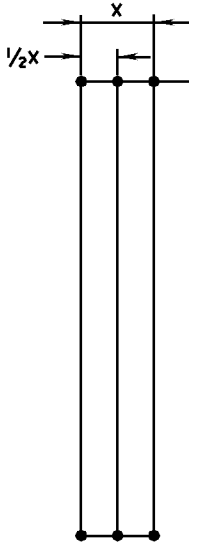
LOOP CABLE INSTALLATION



PLAN VIEW

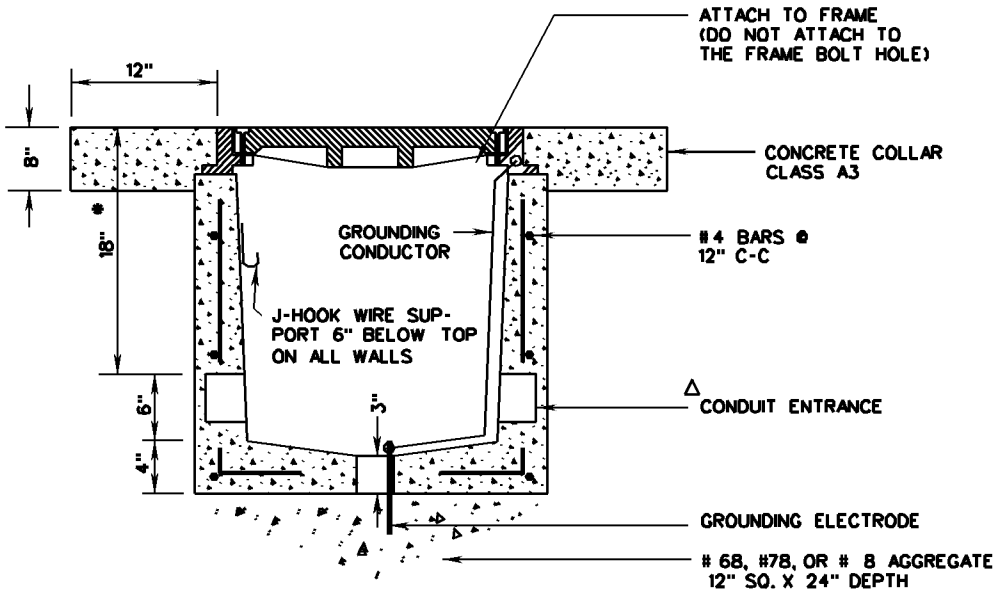


LOOP CABLE INSTALLATION

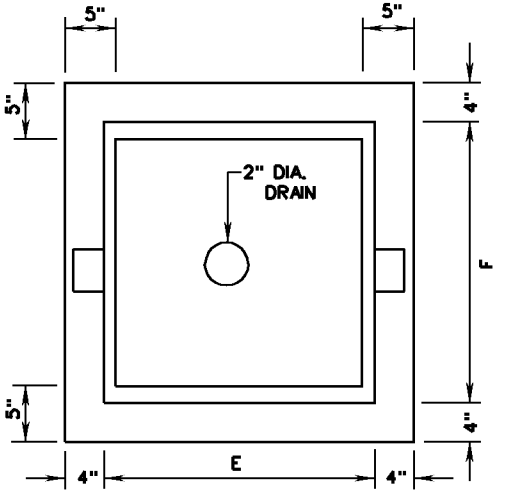


PLAN VIEW

SPECIFICATION REFERENCE	LOOP DETECTOR INSTALLATION DETAIL	VDOT ROAD AND BRIDGE STANDARDS
703	VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE 6-15-09
		SHEET 2 OF 2
		1315.11



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 1½" CONCRETE COVER. ANY REINFORCING STEEL IN CONFLICT WITH CONDUIT SHALL BE CUT A MINIMUM OF 1½" 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.

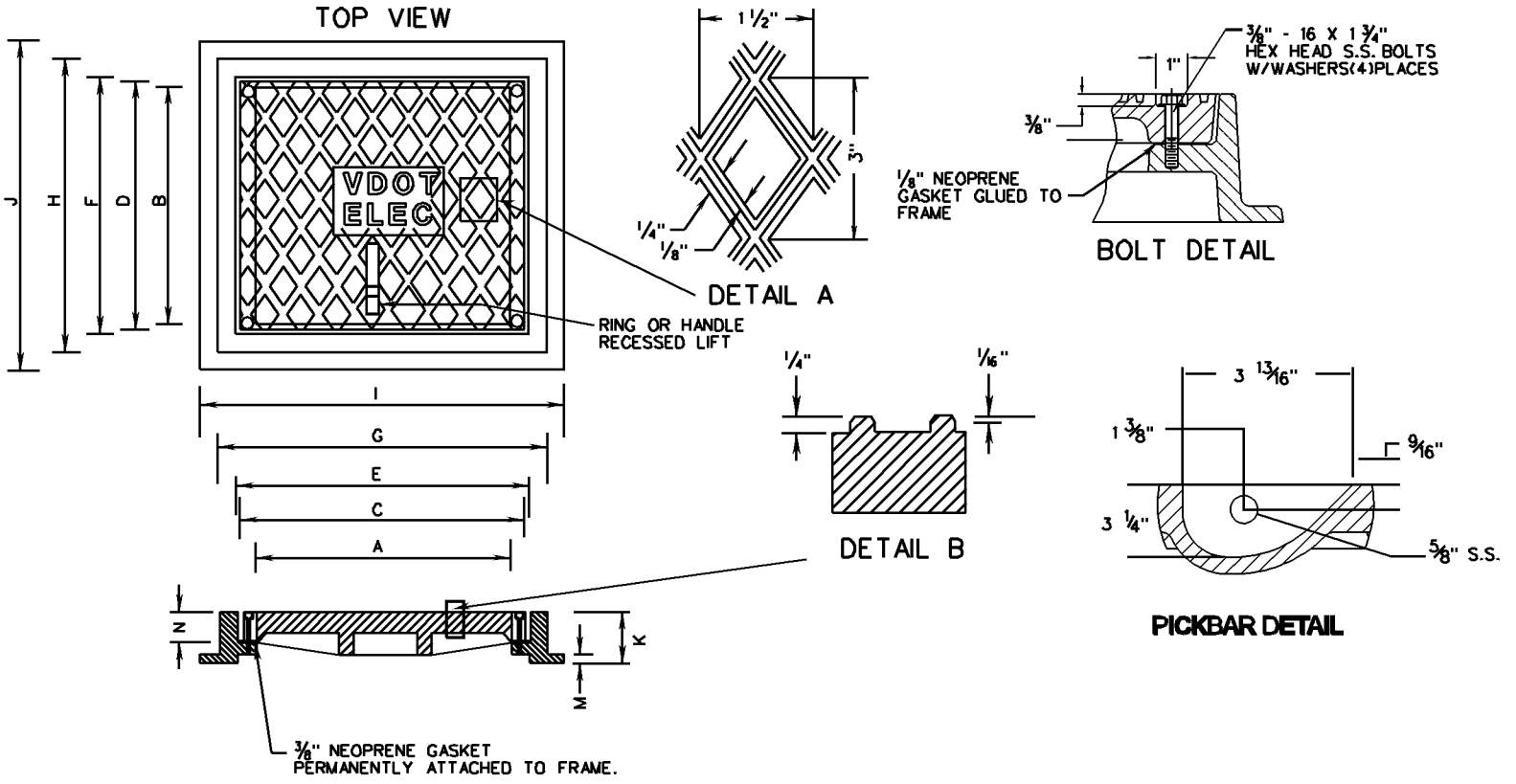
A CONCRETE COLLAR IS REQUIRED ONLY WHEN JUNCTION BOX IS INSTALLED IN EARTH AREAS.

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	JUNCTION BOX FOR TRAFFIC USE VIRGINIA DEPARTMENT OF TRANSPORTATION	VDOT ROAD AND BRIDGE STANDARDS
700		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.

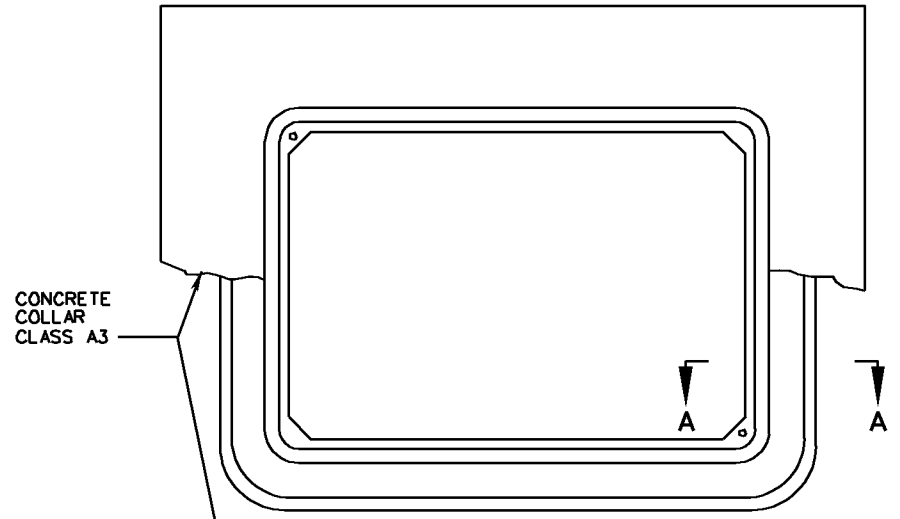
CASTINGS SHALL MEET ALL REQUIREMENTS OF AASHTO M306 AND AASHTO M105

VDOT
ROAD AND BRIDGE STANDARDS

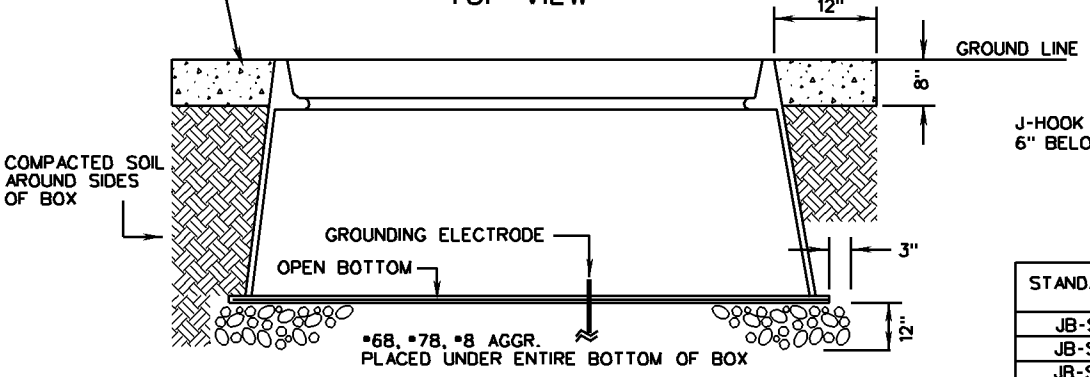
SHEET 2_ OF 2_ | REVISION DATE 06-15-2009
1317.11

JUNCTION BOX
FOR TRAFFIC USE
VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE
700

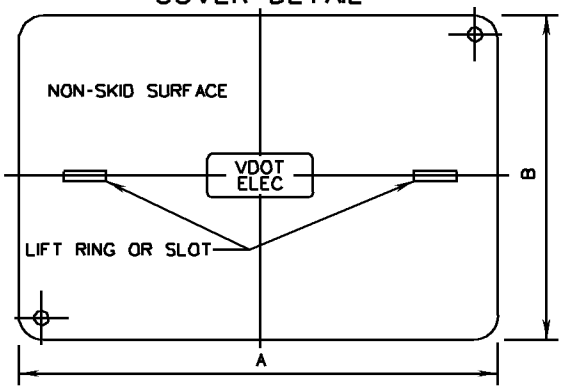


TOP VIEW

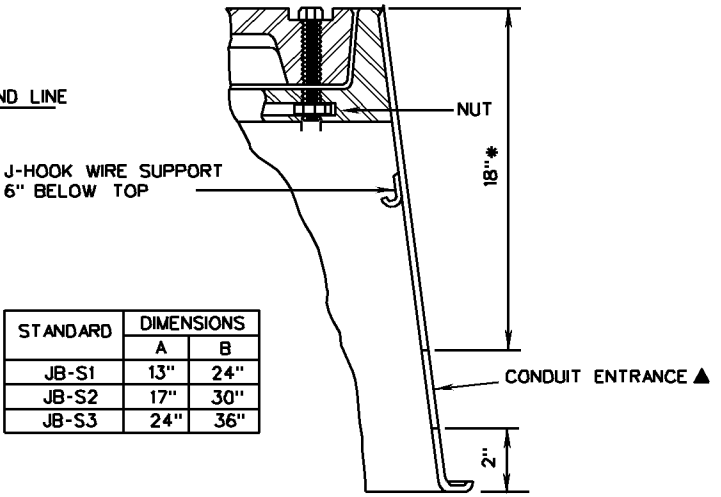


SECTION VIEW

COVER DETAIL



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 ⅜" 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

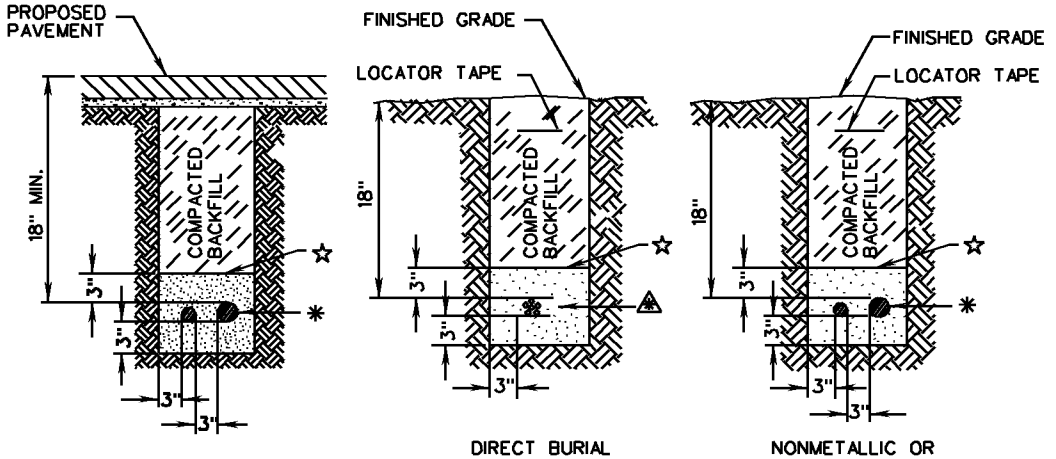
ROAD AND BRIDGE STANDARDS

REVISION DATE 6-15-09

SHEET 1 OF 1

1317.20

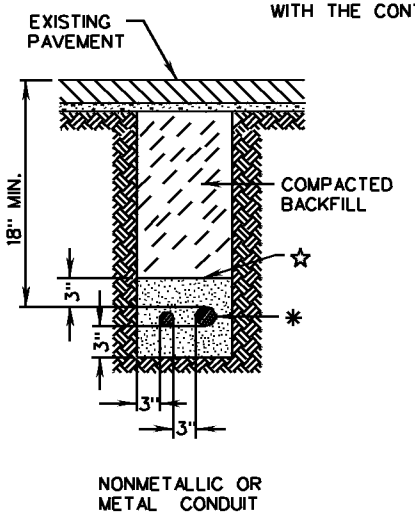
ECI-1



NON - PAVEMENT AND PROPOSED PAVEMENT AREA INSTALLATION

ECI-2

PAVEMENT SHALL BE RESTORED IN ACCORDANCE WITH THE CONTRACT PROVISIONS.



EXISTING 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" BEYONDTHE 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 SEPARATION BETWEEN CONDUIT SYSTEMS.

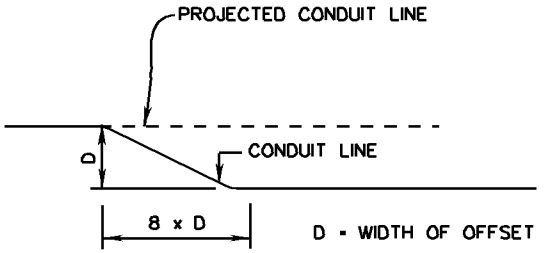
☆ BACKFILL MATERIAL BELOW THIS LEVEL SHALL BE SANDY FILL (FREE OF ANY STONES, CINDERS, WOOD, ROOTS, DEBRIS, ETC.)

* 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.



METHOD OF OFFSETTING CONDUIT

VDOT
ROAD AND BRIDGE STANDARDS

ELECTRICAL CONDUIT AND CONDUCTOR CABLE

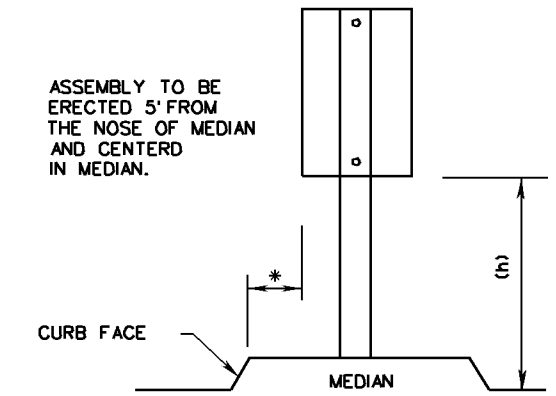
UNDERGROUND INSTALLATION

VIRGINIA DEPARTMENT OF TRANSPORTATION

SHEET 1 OF 1	REVISION DATE
1318.10	06-15-2009

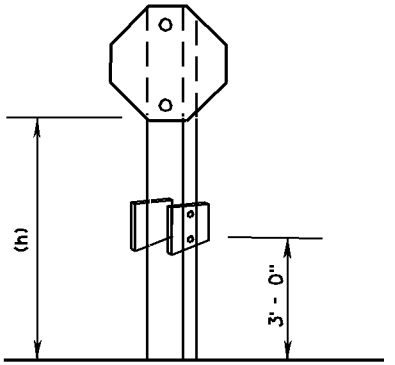
SPECIFICATION REFERENCE

700

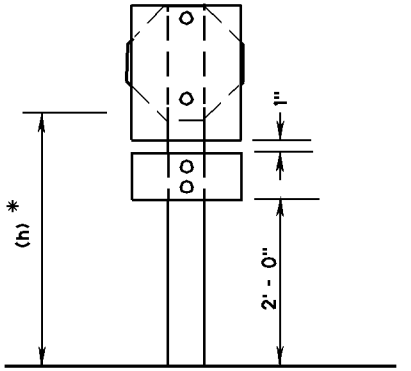


* 2' MINIMUM FOR MEDIANS OVER 10' IN WIDTH. 12" FOR MEDIANS 10' OR LESS IN WIDTH UNLESS SHOWN OTHERWISE ON THE PLANS.

SINGLE POST
MEDIAN INSTALLATIONS

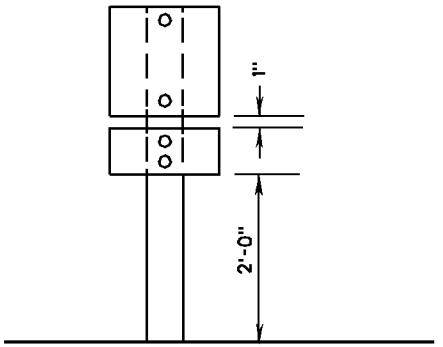


ONE WAY SIGNS
ON EXIT RAMPS
WITH STOP SIGN

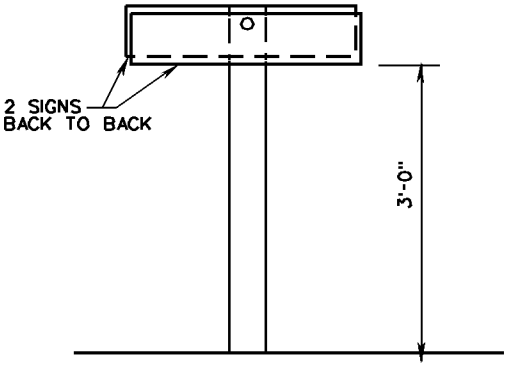


*TO BOTTOM OF STOP SIGN OR YIELD SIGN

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



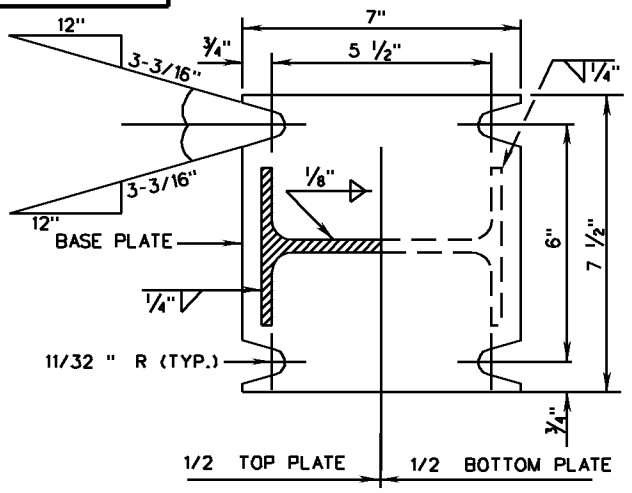
WRONG WAY SIGN
AND DO NOT ENTER SIGN
ON EXIT RAMPS



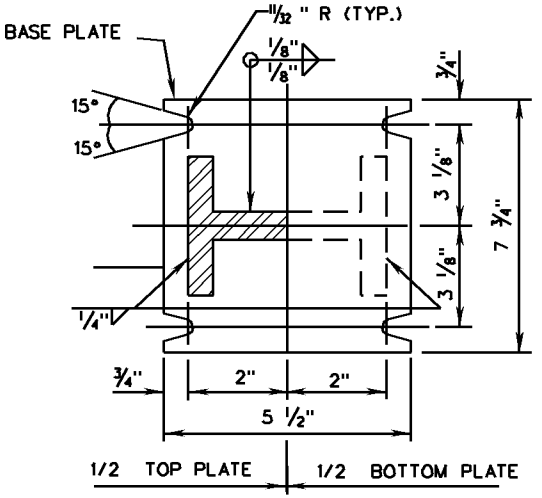
ONE WAY SIGNS
ON EXIT RAMPS

SPECIFICATION REFERENCE	SQUARE TUBE SIGN POST	VDOT ROAD AND BRIDGE STANDARDS
700	VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE 6-15-09 / SHEET 3 OF 3 / 1321.12

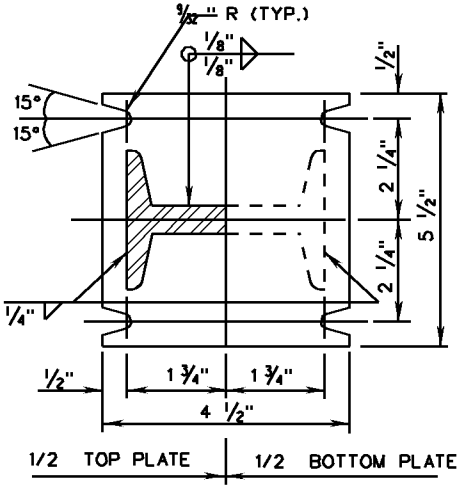
SSP-VA



SECTION A-A
FOR W6 x 12 POST

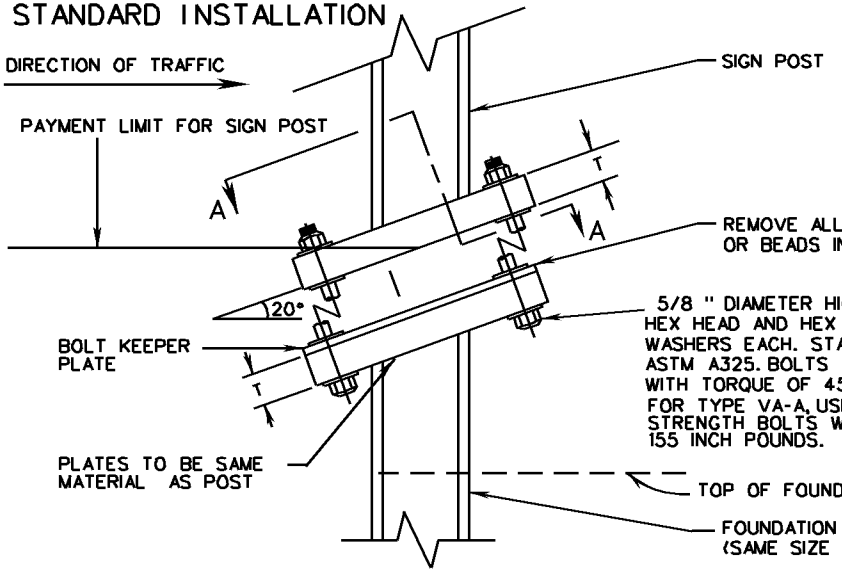


SECTION A-A
FOR W4 x 13 POST

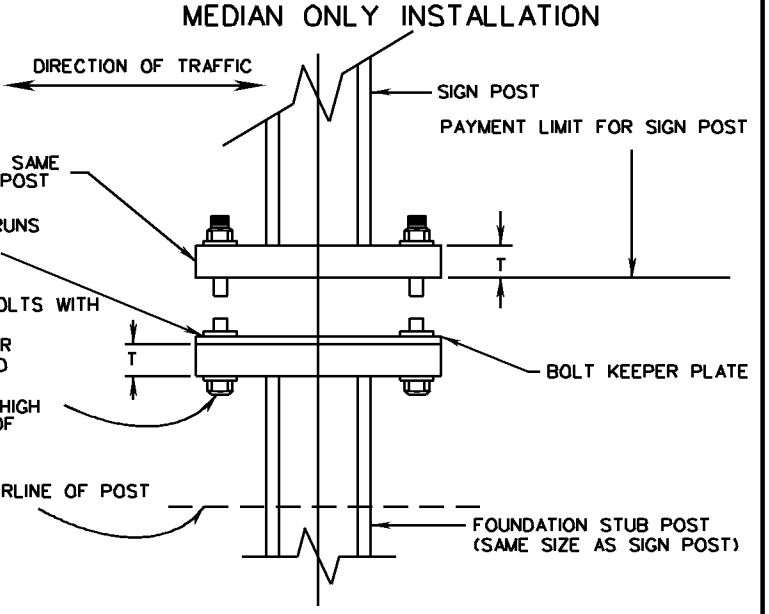


SECTION A-A
FOR S3 x 5.7 POST

STANDARD INSTALLATION



MEDIAN ONLY INSTALLATION



VDOT
ROAD AND BRIDGE STANDARDS

SHEET 3 OF 4

REVISION DATE
6-15-09

1322.12

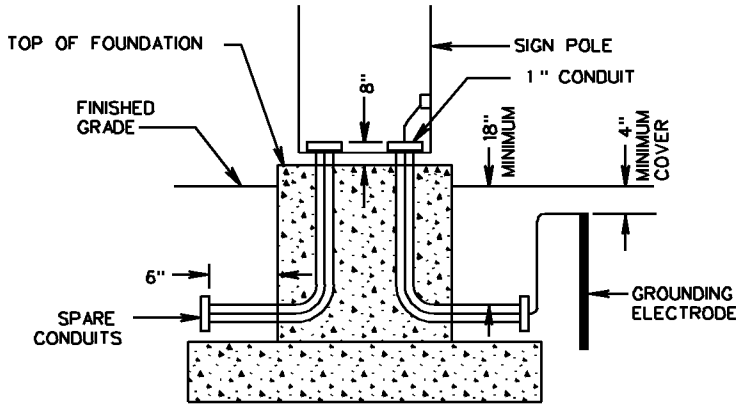
VA SIGN STRUCTURE
INSTALLATION DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

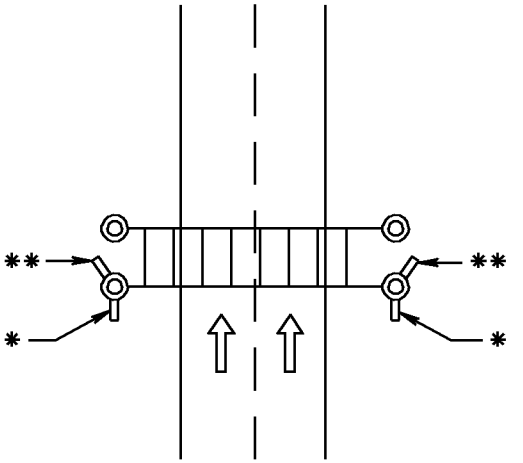
SPECIFICATION REFERENCE

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 ¾" 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.

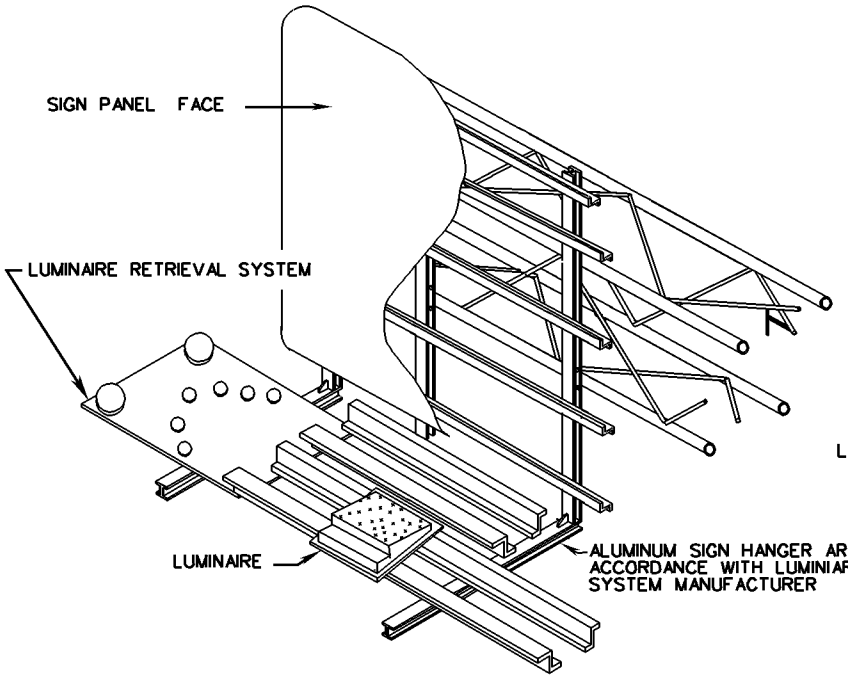
NO MORTAR, GROUT, OR CONCRETE SHALL BE PLACED BETWEEN BOTTOM OF BASE PLATE AND TOP OF FOUNDATION.

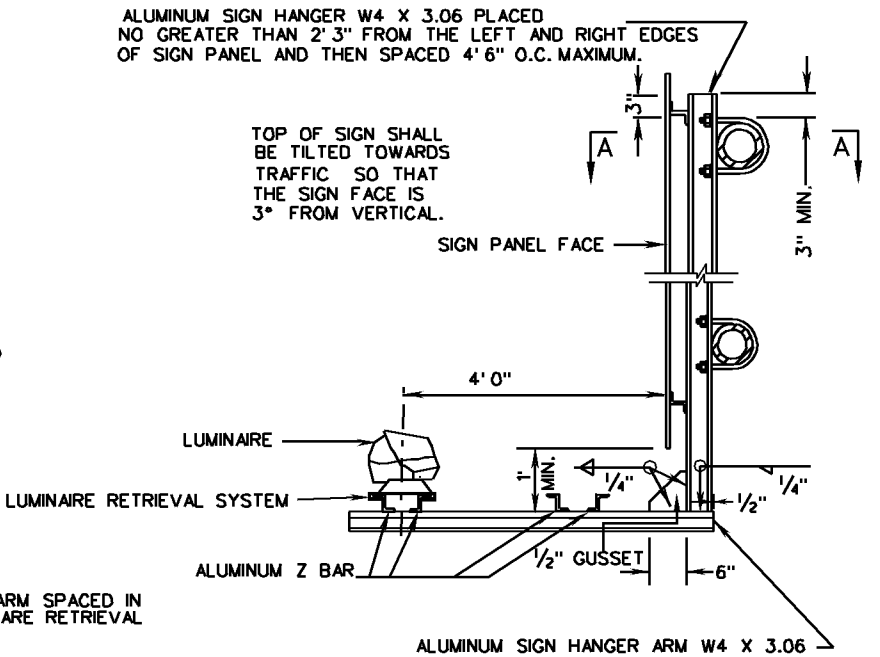
THE MAXIMUM SPACE BETWEEN THE BOTTOM OF THE BASE PLATE AND THE TOP OF THE FOUNDATION SHALL BE NO GREATER THAN THE DIAMETER OF THE ANCHOR BOLT PLUS ONE INCH.

OVERHEAD SIGN STRUCTURES INCLUDING "BUTTERFLY" STRUCTURES SHALL HAVE A MINIMUM OF SIX ANCHOR BOLTS, EACH HAVING A MINIMUM DIAMETER OF 1½".

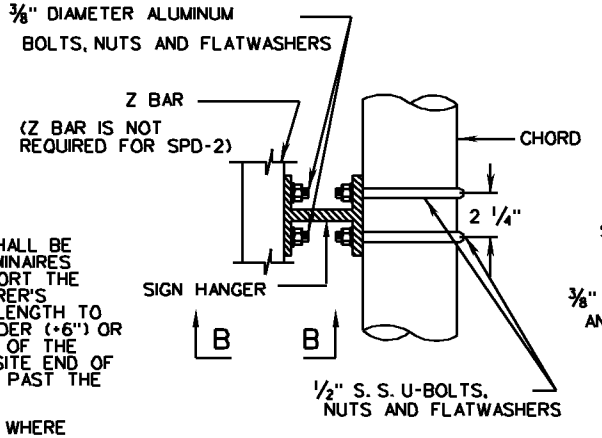
SPECIFICATION REFERENCE	OVERHEAD SIGN STRUCTURE FOUNDATION DETAILS VIRGINIA DEPARTMENT OF TRANSPORTATION	VDOT ROAD AND BRIDGE STANDARDS
700		REVISION DATE 06-15-2009 / SHEET 4 OF 7 / 1324.13

SIGN HANGER ERECTION DETAIL WITH LUMINAIRE RETRIEVAL SYSTEM

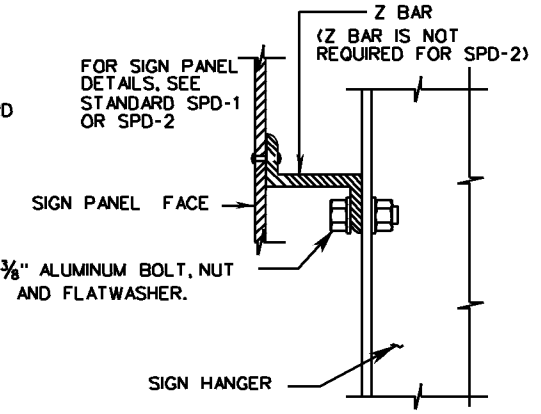




SECTION A-A



SECTION B-B



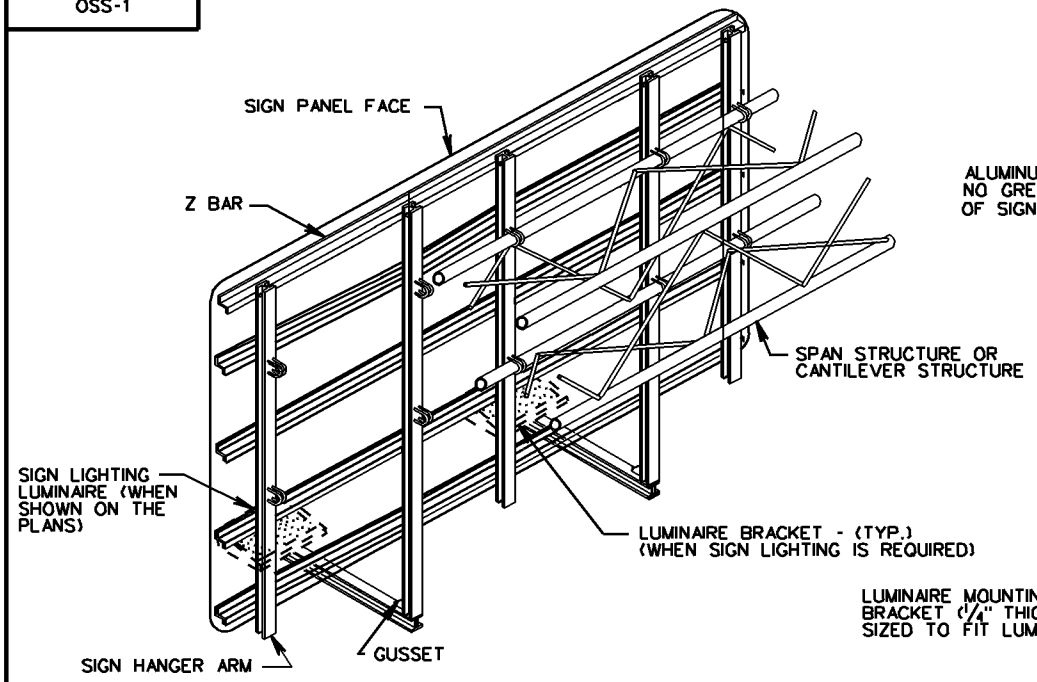
NOTE:

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. TURNTABLE 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.

SPECIFICATION REFERENCE	OVERHEAD SIGN STRUCTURE	VDOT ROAD AND BRIDGE STANDARDS
700	SIGN HANGER AND LUMINAIRE RETRIEVAL DETAIL	REVISION DATE 6-15-09
	VIRGINIA DEPARTMENT OF TRANSPORTATION	SHEET 6 OF 7
		1324.15

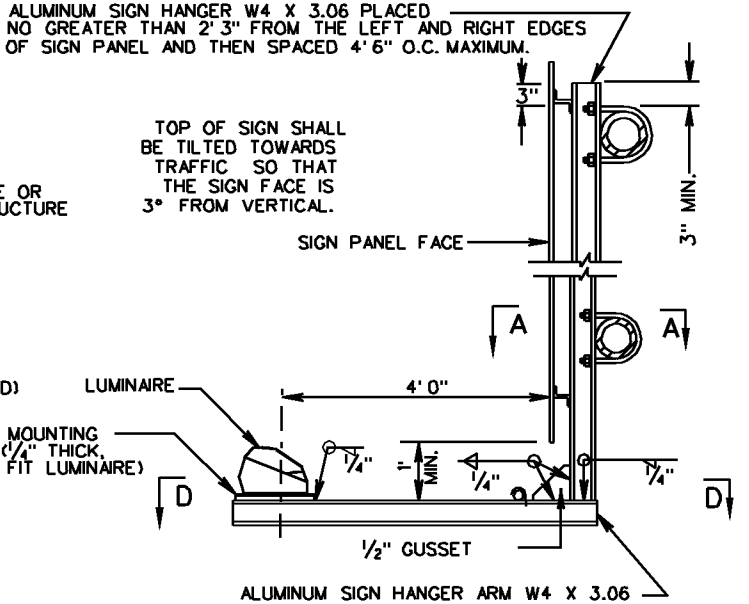
OSS-1



SIGN ATTACHMENT TO TRUSS-TYPE STRUCTURES

SIGN HANGER ERECTION DETAIL WITH LUMINAIRE

(WHEN NO LUMINAIRE RETRIEVAL SYSTEM IS REQUIRED)

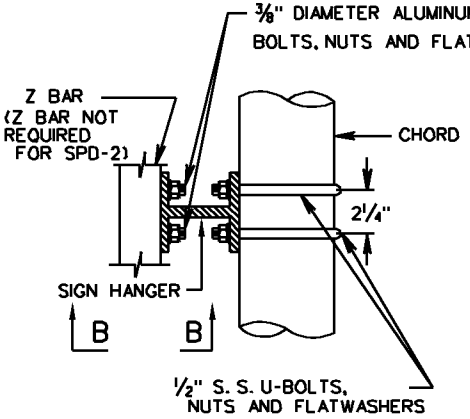


NOTE

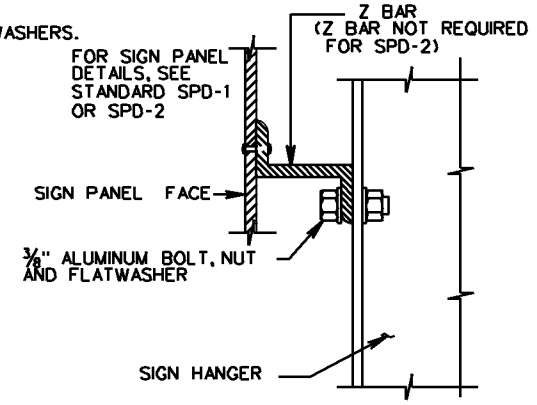
LUMINAIRES REQUIRED WHERE INDICATED ON THE PLANS.

LUMINAIRE TO BE ATTACHED TO MOUNTING BRACKET WITH FOUR, ⅜" DIA. GALVANIZED CAP SCREWS, LOCKWASHERS AND NUTS.

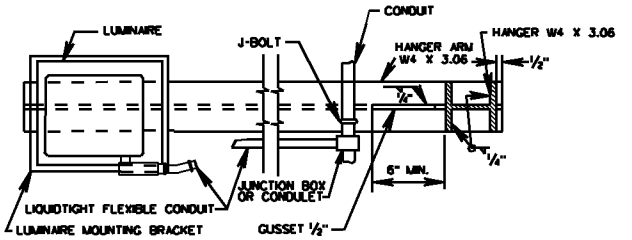
SECTION A-A



SECTION B-B



SECTION D-D



VDOT
ROAD AND BRIDGE STANDARDS

SHEET 7 OF 7

REVISION DATE 6-15-09

1324.16

OVERHEAD SIGN STRUCTURE

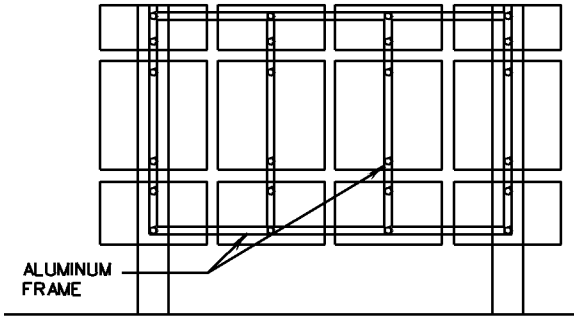
HANGER AND LUMINAIRE DETAIL

VIRGINIA DEPARTMENT OF TRANSPORTATION

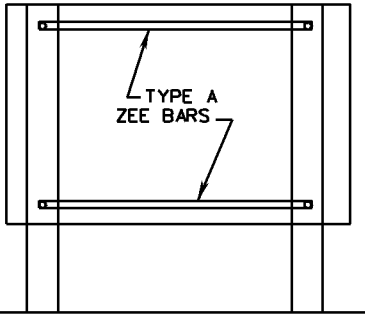
SPECIFICATION REFERENCE

700

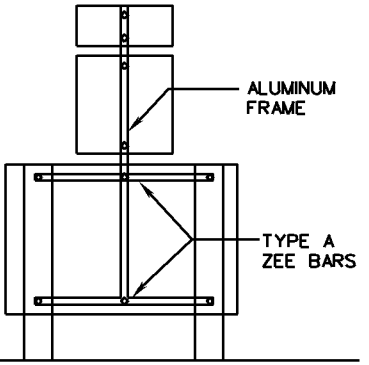
TYPE R



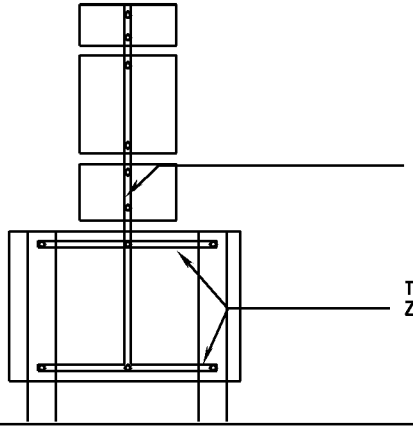
TYPE S



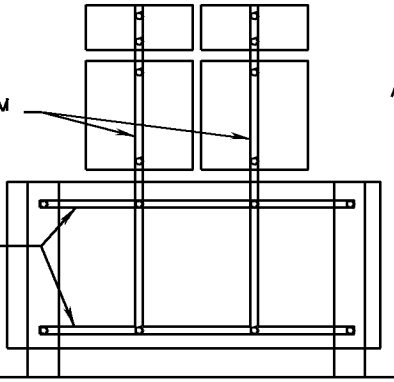
TYPE T



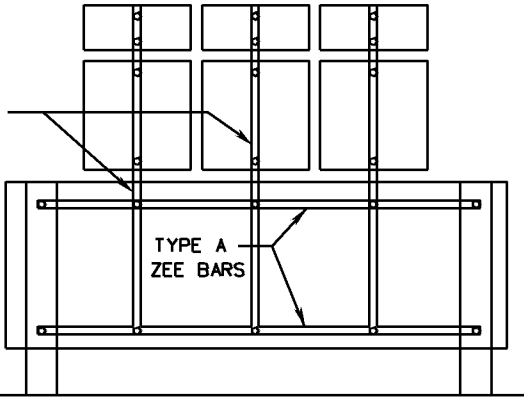
TYPE U



TYPE V



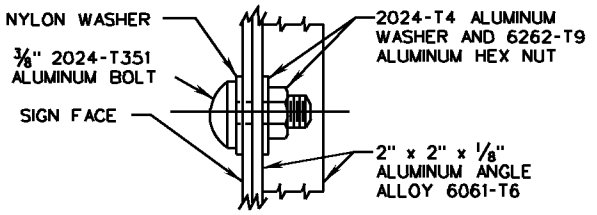
TYPE W



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".

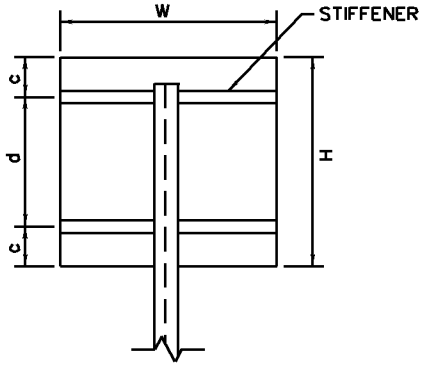
ALL VERTICAL AND HORIZONTAL SPACING BETWEEN SIGNS IN AN ASSEMBLY SHALL BE ONE INCH UNLESS SPECIFIED.

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

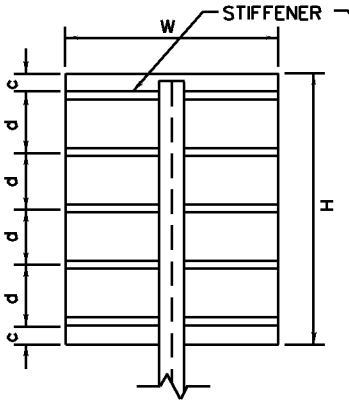
SPECIFICATION REFERENCE	SIGN PANEL DESIGN	VDOT ROAD AND BRIDGE STANDARDS
701	VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE 6-15-09 / SHEET 2 OF 2 / 1325.51

SPD-6

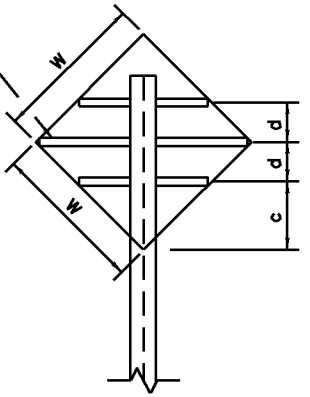
TYPES VA-B, VA-C, VA-D, VA-L AND VA-M



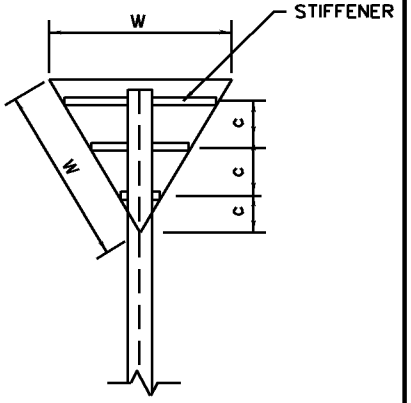
TYPES VA-E

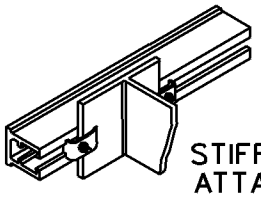


TYPES VA-F



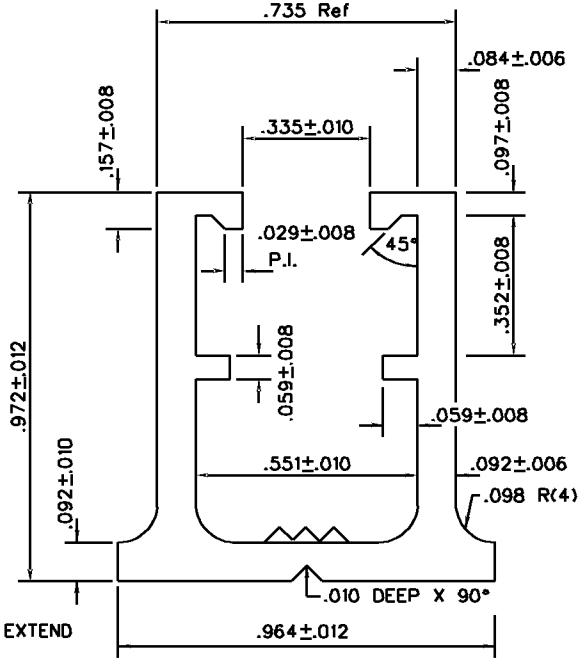
TYPES VA-G



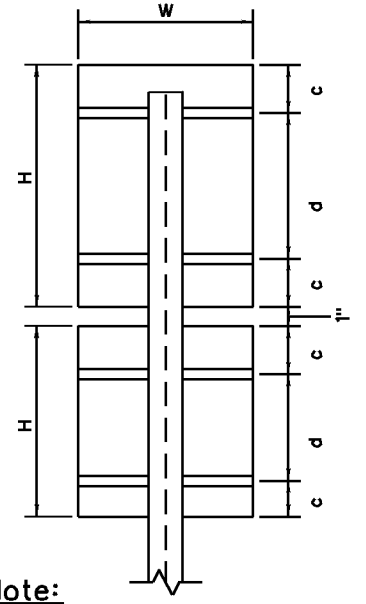


STIFFENER TO POST ATTACHMENT DETAIL

MEDIUM STIFFENER DETAIL



TYPES VA-K



STRUCTURE TYPE	W	H	c	d	STIFFENERS NO.	STIFFENERS SIZE
VA-B	4'	4'	6½"	2'-11"	2	MEDIUM
VA-C	4'	5'	12½"	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'	12½"	2'-11"	2	MEDIUM
	4'	4'	6½"	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 ½ c.

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 ½" 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 1½" FROM THE ENDS OF THE SIGN PANEL.

VDOT
ROAD AND BRIDGE STANDARDS

SIGN PANEL DESIGN

VIRGINIA DEPARTMENT OF TRANSPORTATION

SHEET 1 OF 1

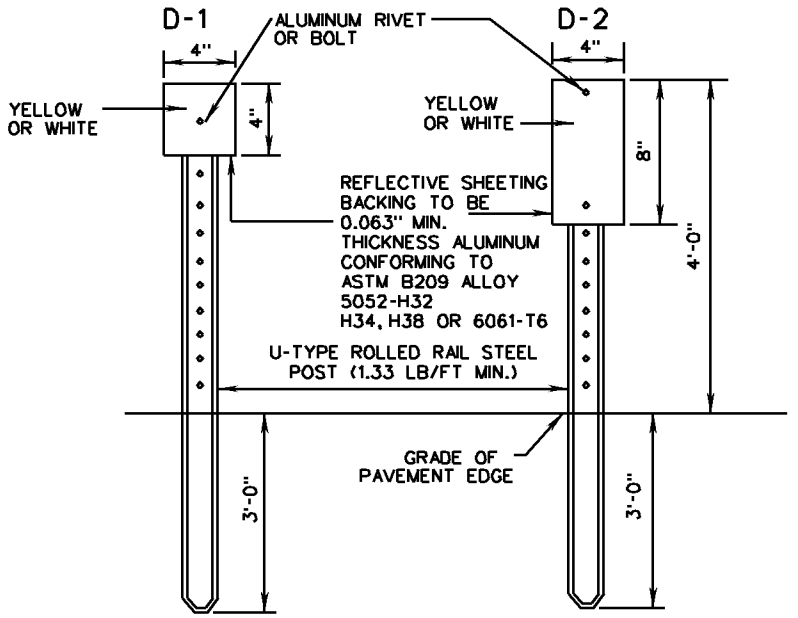
REVISION DATE 6-15-09

1325.60

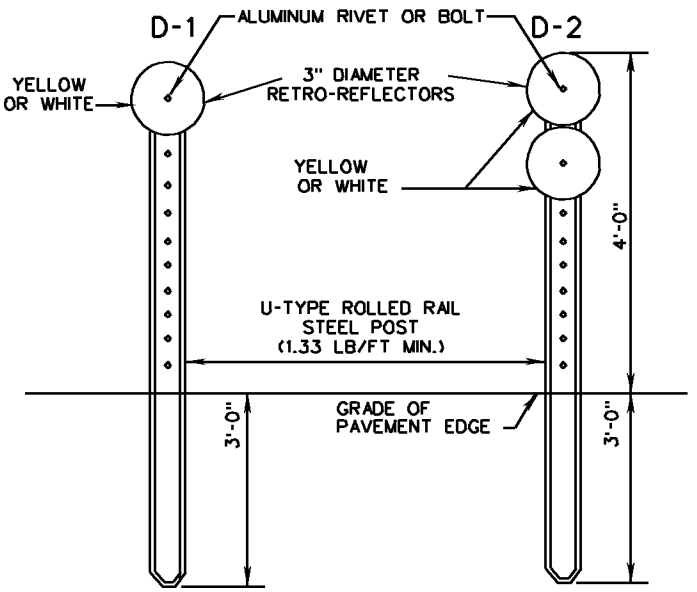
SPECIFICATION REFERENCE

701

TYPE I



TYPE II



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 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 RADII 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 2S, THE SECOND IS 3S AND THE THIRD IS 6S BUT NOT TO EXCEED 300'. S REFERS TO THE DELINEATOR SPACING, IN FEET, FOR SPECIFIC RADII COMPUTED FROM THE FORMULA $S = 3\sqrt{R-50}$

SPECIFICATION REFERENCE	INTERSTATE ROAD EDGE DELINEATORS	VDOT ROAD AND BRIDGE STANDARDS
702	TYPICAL DETAILS	REVISION DATE 6-15-09
	VIRGINIA DEPARTMENT OF TRANSPORTATION	SHEET 1 OF 1
		1327.20