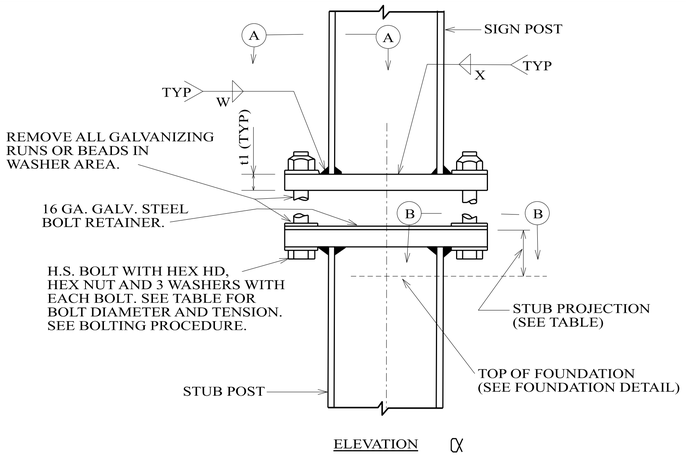
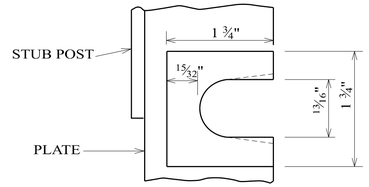
REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO



ELEVATION (X)

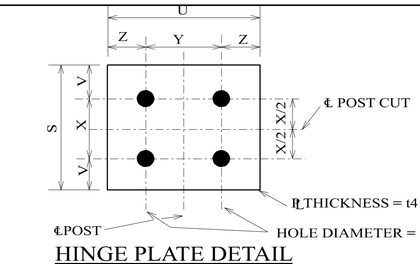


FURNISH 2 ~ .012" ± THICK AND 2 ~ .032" ± THICK SHIMS PER POST. SHIMS SHALL BE FABRICATED FROM BRASS SHIM STOCK OR STRIP CONFORMING TO ASTM B36 WITH ROCKWELL "B" SCALE HARDNESS OF 82 OR HIGHER. ALL SHIMS SHALL BE INSTALLED WITH THE CLOSED END TOWARD THE POST.

SHIM DETAIL

PROCEDURE FOR ASSEMBLY OF BASE CONNECTION

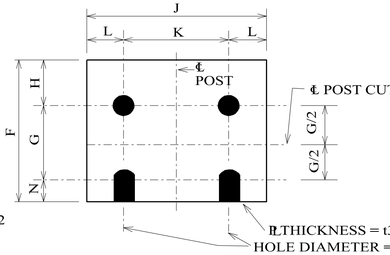
1. ASSEMBLE POST TO STUB WITH BOLTS AND BOLT RETAINER WITH ONE FLAT WASHER ON EACH BOLT BETWEEN PLATES.
2. SHIM AS REQUIRED TO PLUMB POST.
3. TIGHTEN ALL BOLTS THE MAXIMUM POSSIBLE WITH 12" TO 15" WRENCH TO BED WASHERS AND SHIMS AND TO CLEAN BOLT THREADS. THEN LOOSEN EACH BOLT IN TURN AND RETIGHTEN IN A SYSTEMATIC ORDER TO THE PRESCRIBED TENSION (SEE TABLE)
4. BURR THREADS AT JUNCTION WITH NUT USING A CENTER PUNCH TO PREVENT NUT LOOSENING.



HINGE PLATE DETAIL

(SEE TABLE FOR DIMENSIONS AND WEIGHT)

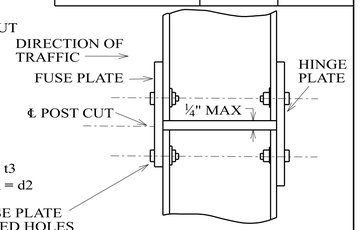
USE H.S. BOLTS WITH HEX HD AND HEX NUT. ONE FLAT WASHER UNDER EACH BOLT HEAD AND BEVEL OR FLAT WASHER (WHERE REQUIRED) UNDER NUT.



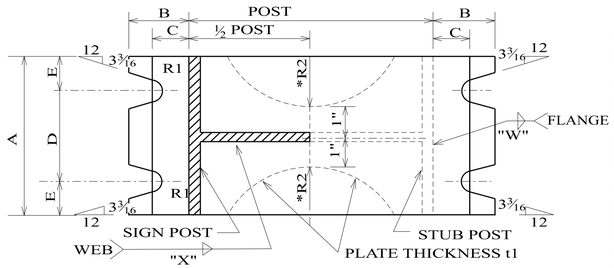
FUSE PLATE DETAIL

THE BOLTS IN THE FUSE AND HINGE PLATES SHALL BE TIGHTENED TO SUCH A DEGREE AS TO OBTAIN THE FOLLOWING MINIMUM RESIDUAL TENSION IN EACH BOLT.

BOLT SIZE	MINIMUM RESIDUAL BOLT TENSION
½" Ø	12050 LBS
⅝" Ø	19200 LBS
¾" Ø	28400 LBS
⅞" Ø	39250 LBS

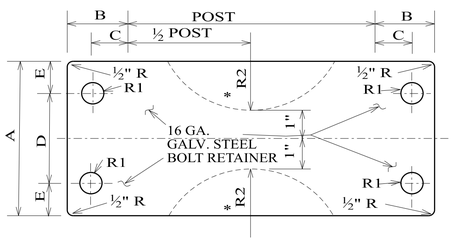


INSTALL FUSE PLATE WITH SLOTTED HOLES IN DOWN POSITION



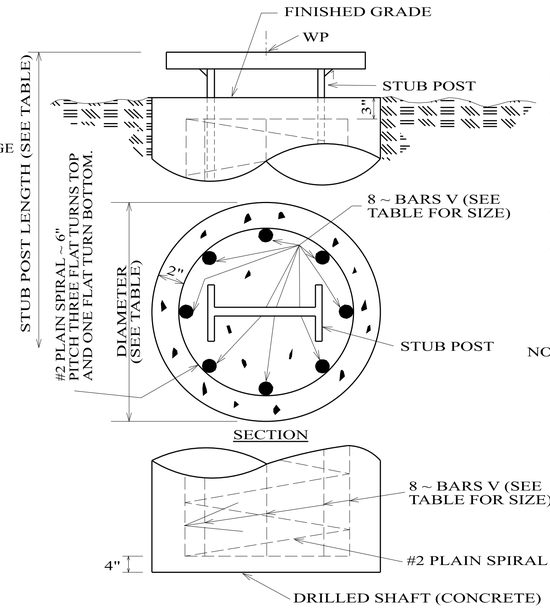
SECTION A-A SECTION B-B

SIGN POST AND STUB POST



BOLT RETAINER FOR BASE CONNECTION

* R2 WHEN REQ'D. (SEE TABLE BELOW FOR DIMENSIONS)



FOUNDATION DETAIL

GENERAL NOTES

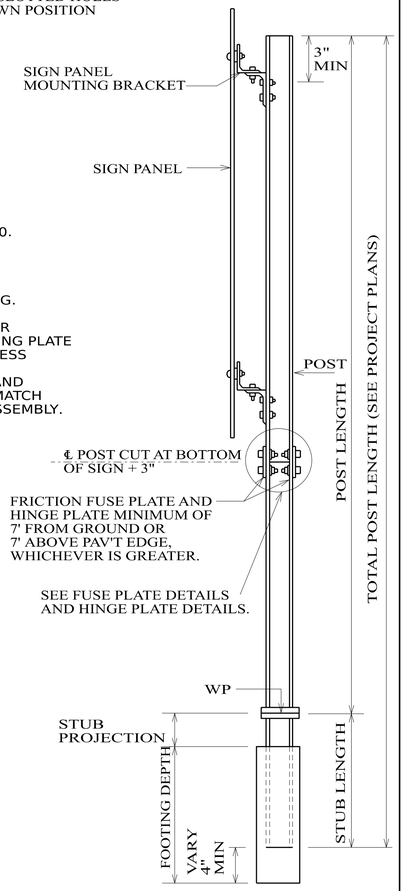
1. ALL BOLTS, NUTS AND WASHERS OTHER THAN HIGH STRENGTH SHALL CONFORM TO ASTM A307, GRADE A.
2. ALL STRUCTURAL STEEL SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123. BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM B695, CLASS 50.
3. STRUCTURAL STEEL SHALL CONFORM WITH THE REQUIREMENTS OF ASTM SPECS A441, A588 OR A572 GRADE 50.
4. ALL HIGH STRENGTH BOLTS, NUTS & WASHERS SHALL CONFORM TO ASTM A325.
5. ALL HOLES IN THE FUSE PLATES, HINGE PLATES & BASE PLATES SHALL BE DRILLED AND/OR SAWED, OR BY OTHER APPROVED ALTERNATIVE METHOD.
6. EACH SIGN POST SHALL BE FABRICATED FROM A CONTINUOUS PIECE OF MATERIAL. THE HOLES FOR THE FUSE AND HINGE PLATES SHALL BE DRILLED AND POST SECTIONS MATCH MARKED BEFORE CUTTING AND GALVANIZING. THE MATCH MARKS SHALL BE VISIBLE AFTER GALVANIZATION.
7. FOR PROPER FUNCTIONING OF THE BREAKAWAY FEATURE OF THE SUPPORTS, IT IS NECESSARY FOR THE INTERIOR WASHERS OF THE BASE PLATE BOLTS TO TRANSFER THE BEARING PRESSURES EQUALLY. THEREFORE, THE BEARING PLATE SURFACES SHALL AFTER ASSEMBLY HAVE A CLEARANCE BETWEEN THEM OF AT LEAST 0.1 INCH, BUT NOT IN EXCESS OF 0.25 INCHES.
8. SUPPORTS (POSTS AND STUBS) SHALL BE FABRICATED AND SHOP ASSEMBLED TO INSURE PROPER ALIGNMENT AND MATCHING OF BASE PLATES, ANY DISMANTLING REQUIRED FOR SHIPMENT TO THE JOB SITE WILL REQUIRE THE MATCH MARKINGS OF THE PLATES, ETC. TO INSURE THAT REASSEMBLY WILL BE IN THE. SAME MANNER AS WAS SHOP ASSEMBLY.
9. IT SHALL BE REQUIRED THAT EACH POST BE PREASSEMBLED AND INSTALLED AS A UNIT TO INSURE PROPER ALIGNMENT OF THE POST AND STUB ASSEMBLIES.
10. THE NUTS AND WASHERS REQUIRED FOR THE FUSE PLATES AND HINGE PLATES ON THE S3 x 5.7 AND S4 x 7.7 POSTS MAY BE PLACED ON THE OUTSIDE OF THE POST FLANGE.

NOTE: THE FOLLOWING ALTERNATES MAY BE USED FOR THE POST SIZES SHOWN

POST SIZE SHOWN	* ALTERNATE POST SIZE
W6 x 8.5	W6 x 9
W6 x 15.5	W6 x 15
W8 x 17	W8 x 18
W8 x 20	W8 x 21
W10 x 21	W10 x 22
W10 x 25	W10 x 26
W12 x 27	W12 x 26

POSTS WITHIN A 7 FEET SPAN CANNOT WEIGH MORE THAN 18 POUNDS PER LINEAR FEET. THE TOTAL WEIGHT OF THE POSTS FROM THE HINGE TO THE BASE SHALL NOT EXCEED 600 POUNDS. IF EITHER CONDITION CANNOT BE MET, THE SIGN SUPPORT SHALL BE PLACED BEHIND GUARDRAIL.

(X) ALTERNATE BREAKAWAY DEVICES OR PRODUCTS AS SHOWN ON THE ALABAMA DEPARTMENT OF TRANSPORTATION'S APPROVED MATERIALS, SOURCES, AND DEVICES WITH SPECIAL ACCEPTANCE REQUIREMENTS MANUAL LIST IV-5 ARE ALLOWED AND SHALL BE INSTALLED AS PER THE MANUFACTURER'S RECOMMENDATIONS. THE CONTRACTOR SHALL FURNISH A DRAWING DETAILING THE INSTALLATION REQUIRMENTS.



BASE CONNECTION DATA TABLE

* POST SIZE / DIMENSION	BOLT SIZE & CLAMPING FORCE	A	B	C	D	E	t1]	R2	W	X	R1
W6 x 8.5	⅝" Ø x 2 ¾" 1740 ~ 2660 LBS. (226 - 345 IN-LBS SLIP BASE TORQUE)	5"	2"	1 ¼"	2 ¼"	1⅜"	¾"	-	¼"	3/16"	11/32"
W6 x 12		5"	2"	1 ¼'	2 ¼"	1⅜"	¾"	-	5/16"	¼"	11/32"
W6 x 15.5		6"	2"	1 ¼"	2 ¼"	1 ⅞"	¾"	-	5/16"	¼"	11/32"
W8 x 17		5 ¼"	2"	1 ¼'	2 ¼"	1 ½"	¾"	3"	⅜"	¼"	11/32"
W8 x 20	¾"Ø x 3 ½" 2400 ~ 3600 LBS (369 ~ 554 IN-LBS SLIP BASE TORQUE)	5 ¼"	2"	1 ¼"	2 ¼'	1 ½"	¾"	3"	7/16"	¼"	11/32"
W10 x 21		5 ¾"	2 ¼"	1 ⅜"	2 ¾'	1 ½"	1"	4 ½"	⅜"	5/16"	13/32"
W10 x 25		5 ¾"	2 ¼"	1 ⅜"	2 ¾"	1 ½"	1"	4 ½"	½"	5/16"	13/32"
W12 x 27		6 ½"	2 ¼"	1 ⅜"	2 ¾"	1 ⅞"	1"	6"	½"	5/16"	13/32"
S3 x 5.7	½" Ø x 2 ½" 920 ~ 1380 LBS (95 ~ 142 IN-LBS SLIP BASE TORQUE)	3 ½"	2"	1 ¼"	2"	¾"	⅝"	-	5/16"	3/16"	9/32"
S4 x 7.7		3 ½"	2"	1 ¼"	2"	¾"	⅝"	-	⅜"	¼"	9/32"

FUSE PLATE DATA TABLE

F	G	H	J	K	L	N	d1	t3	BOLT DIA	MIN BOLT LGTH	WT OF EACH FUSE PLATE Kg ℄
3 ⅝"	2"	1 ⅛"	4"	2 ¼"	⅞"	½"	9/16"	¼"	½" Ø	1 ½"	0.94#
3 ⅝"	2"	1 ⅛"	4"	2 ¼"	⅞"	½"	9/16"	¼"	½" Ø	1 ½"	0.94#
4 ⅜"	2 ½"	1 ¼"	6"	3 ½"	1 ¼"	⅝"	11/16"	⅜"	⅝" Ø	1 ½"	2.58#
4 ⅜"	2 ½"	1 ¼"	5 ¼"	2 ¾"	1 ¼"	⅝"	11/16"	⅜"	⅝" Ø	1 ½"	2.24#
4 ⅜"	2 ½"	1 ¼"	5 ¼"	2 ¾"	1 ¼"	⅝"	11/16"	⅜"	⅝" Ø	1 ½"	2.95#
5 ¼"	3"	1 ½"	5 ¾"	2 ¾"	1 ½'	¾"	13/16"	½"	¾" Ø	1 ¾"	3.88#
5 ¼"	3"	1 ½"	5 ¾"	2 ¾"	1 ½"	¾"	13/16"	½"	¾" Ø	1 ⅞"	3.88#
5 ¼"	3"	1 ½"	6 ½"	3 ½"	1 ½"	¾"	13/16"	½"	¾" Ø	1 ⅞"	4.44#
3 ⅛"	1 ½"	1 ⅛"	2 ⅝"	1 ⅜"	⅝"	½"	9/16"	¼"	½" Ø	1 ½"	0.49#
3 ⅛"	1 ½"	1 ⅛"	2 ⅝"	1 ⅜"	⅝"	½"	9/16"	¼"	½" Ø	1 ½"	0.49#

HINGE PLATE DATA TABLE

S	U	V	X	Y	Z	T4	D2	BOLT DIA	MIN BOLT LGTH	WT OF EACH HINGE
4 ¼"	4"	1 ⅛"	2"	2 ¼"	⅞"	¼"	9/16"	½" Ø	1 ½"	1.13#
4 ¼"	4"	1 ⅛"	2"	2 ½"	⅞"	5/16"	9/16"	½" Ø	1 ½"	1.42#
5"	6"	1 ¼"	2 ½"	3 ½"	1 ¼"	5/16"	11/16"	⅝" Ø	1 ½"	3.86#
5"	5 ¼"	1 ¼"	2 ½"	2 ¾"	1 ¼"	5/16"	11/16"	⅝" Ø	1 ½"	2.94#
5"	5 ¼"	1 ¼"	2 ½"	2 ¾"	1 ¼"	5/16"	11/16"	⅝" Ø	1 ½"	3.82#
6"	5 ¾"	1 ½"	3"	2 ¾"	1 ½"	⅜"	13/16"	¾" Ø	1 ¾"	5.04#
6"	5 ¾"	1 ½"	3"	2 ¾"	1 ½"	7/16"	13/16"	¾" Ø	1 ⅞"	5.78#
6"	6 ½"	1 ½"	3"	3 ½"	1 ½"	7/16"	13/16"	¾" Ø	1 ⅞"	7.44#
3 ¾"	2 ⅝"	1 ⅛"	1 ½"	1 ⅜"	⅝"	5/16"	9/16"	½" Ø	1 ½"	0.73#
3 ¾"	2 ⅝"	1 ⅛"	1 ½"	1 ⅜"	⅝"	5/16"	9/16"	½" Ø	1 ½"	0.73#

FOUNDATION DATA

STUB LENGTH	STUB PROJECT	DR SHAFT DIA	BARS V SIZE
2'-0"	3"	2'-0"	#5
2'-0"	3"	2'-0"	#5
2'-6"	3"	2'-0"	#6
2'-6"	3"	2'-0"	#7
2'-6"	3"	2'-0"	#8
3'-0"	2 ½"	2'-0"	#9
3'-0"	2 ½"	2'-0"	#10
3'-0"	2 ½"	2'-0"	#11
1'-6"	3 ½"	1'-6"	#5
1'-6"	3 ½"	1'-6"	#5

NOT TO SCALE

--SPECIFICATIONS--
CURRENT ALABAMA DEPARTMENT OF TRANSPORTATION

ALABAMA DEPARTMENT OF TRANSPORTATION
1409 COLISEUM BOULEVARD
MONTGOMERY, AL 36110
P.O. BOX 303050, MONTGOMERY,AL 36130-3050

REVISIONS:
1. Added to CADD on 10-20-2000 by J.F.T.
2. Added "or by other approved alternative method" to note #5 on 8-1-2016 by L.V.S.
3. Revised note allowing alternative breakaway devices/products on MSDSAR List IV-5 on 6-20-2017 by L.V.S.
4. Removed and replaced Note 2 on 05-22-2026 by J.F.T.

Bureau Std Engr: G.L.D.
DRAWN BY:
DATE DRAWN: 7-8-1992
REVISED DATE: 5-22-2026

DESIGN BUREAU SPECIAL DRAWING

BEAM POST DETAILS OF BASE CONNECTION TYPE-1 FUSE PLATE AND HINGE FOR POSTS 66" OR GREATER APART

SPECIAL DRAWING NO: SPECIAL PROJECT DETAIL

INDEX NO: 71005