



TRANSMITTAL
LETTER

Change # 5
Pub No. 111

DATE
August 3, 1977

OBJECT:

Traffic Standards - Signing - TC-7700 Series

INFORMATION AND SPECIAL INSTRUCTIONS:

Attached is a revised issue of PennDOT construction standards TC-7702A sheets 1 thru 9 dated August 1, 1977.

Direct any questions concerning revised standards to Mr. J. R. Doughty, P.E., Director, Bureau of Traffic Engineering, Pennsylvania Department of Transportation, Room 1014, Transportation and Safety Building, Harrisburg, Pennsylvania 17120, telephone (717)787-3620.

CANCEL AND DESTROY THE FOLLOWING:

TC-7702A, Type I sheets 1 thru 4 dated July 26, 1976

TC-7702A, Type II sheets 1 thru 5 dated July 26, 1976

REQUEST ADDITIONAL COPIES FROM:

Publications Management
Bureau of Office Services
Room 712
Transportation & Safety bldg.
Harrisburg, Pennsylvania 17120

APPROVED FOR ISSUANCE BY:

A handwritten signature in black ink, appearing to read 'J. R. Doughty', written over a horizontal line.

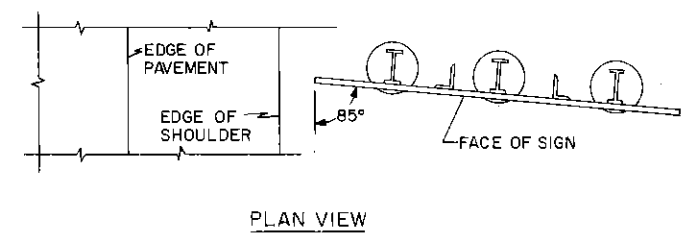
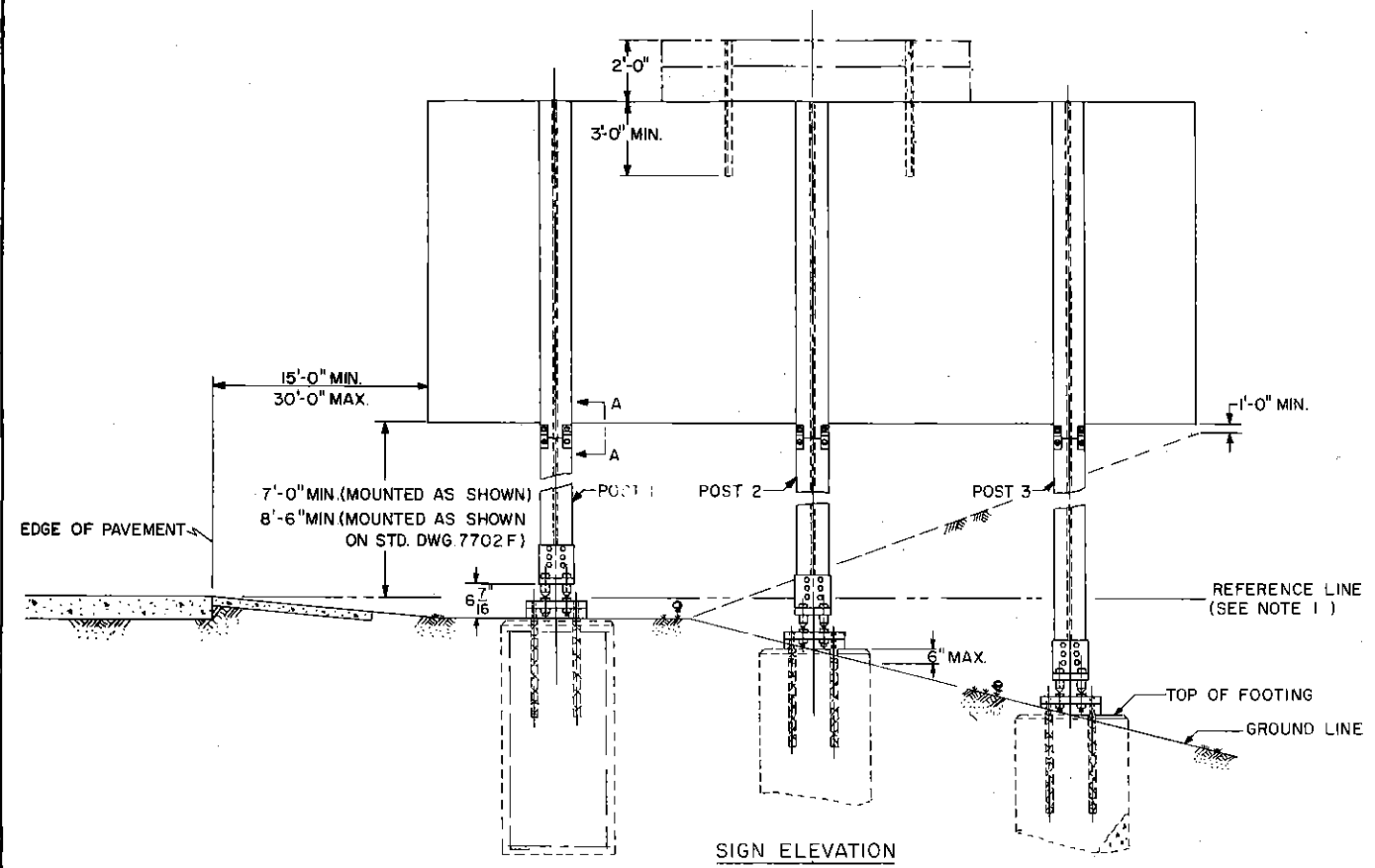
J. R. Doughty, P.E.
Director
Bureau of Traffic Engineering

DESIGN CRITERIA

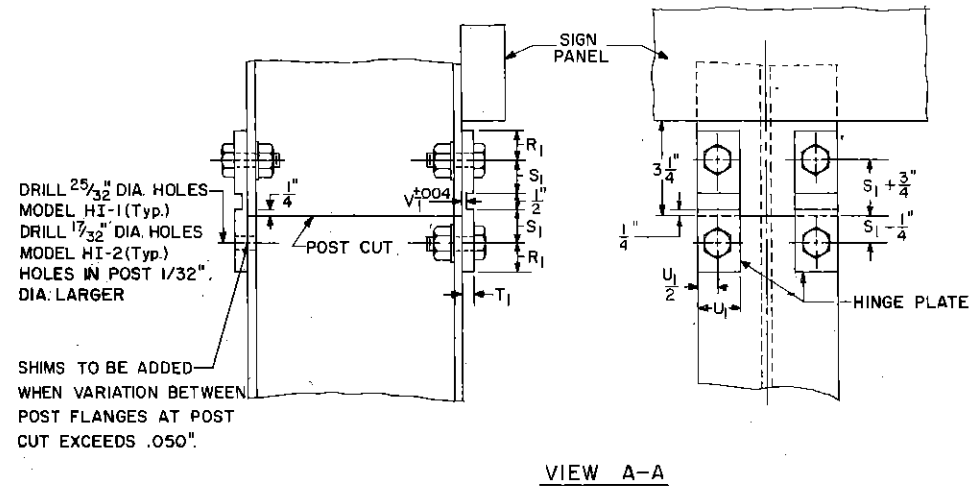
- THE DESIGN IS BASED ON 80 M.P.H. WIND USING 1975 A.A.S.H.T.O. STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS.
1. FOR SELECTION OF POST SIZE AND WEIGHT REFER TO "POST SELECTION TABLE FOR BREAKAWAY SIGNS" ON SHEET ENTITLED "POST SECTION SELECTION TABLES," SHEET 4 OF 9.
 2. FOR SELECTION OF FOOTING SIZE AND ITS REINFORCEMENT REFER TO "FOOTING SELECTION TABLE FOR BREAKAWAY SIGNS" ON SHEET ENTITLED "POST BASE DETAILS," SHEET 2 OF 9.
 3. FOR SELECTION OF UPPER HINGE SIZE REFER TO "HINGE SELECTION TABLE" SEE THIS SHEET.
 4. FOR SELECTION OF BRACKET NUMBER REFER TO "BRACKET NUMBER SELECTION TABLE" SEE SHEET 3 OF 9.
 5. FOR DETAILS OF SIGN PANELS, ATTACHMENT HARDWARE, POST EXTENSION, AND DESIGN OF TOP OF POST SEE TRAFFIC STANDARD TC 770.
 6. THE EMBEDMENT OF FOOTINGS IS BASED ON FIG. 1, 8, 2C(4) OF THE AASHTO SPECIFICATIONS. THE SOIL IS ASSUMED CAPABLE OF DEVELOPING A SOIL PRESSURE OF 2000 PSF IN AN UNDISTURBED OR ADEQUATELY COMPACTED CONDITION.
 7. USE CLASS "A" CONCRETE IN ALL FOOTINGS.

NOTES

1. IF TOP OF FOOTING IS ABOVE REFERENCE LINE IT IS INDICATED BY A (+) VALUE, IF BELOW BY A (-) VALUE.
2. LATERAL PLACEMENT SHALL BE DETERMINED IN THE FIELD, BY THE ENGINEER PRIOR TO INSTALLATION.
3. FOR LOCATIONS WHERE THERE IS AN UNMOUNTABLE CURB, THE HORIZONTAL CLEARANCE TO EDGE OF SIGN SHALL BE AT LEAST 2'-0" BEYOND THE FACE OF THE CURB.
4. LOCATION OF SIGN SHALL BE SUCH AS TO AVOID PLACING SUPPORTS IN DRAINAGE DITCHES.
5. POST #1 IS ALWAYS ADJACENT TO ROADWAY WHETHER SIGN IS LOCATED ON LEFT OR RIGHT.
6. ALL MATERIAL TO BE A-36 OR A-441 STRUCTURAL STEEL UNLESS NOTED.
7. ALL STEEL TO BE ZINC COATED BY THE HOT DIP PROCESS IN ACCORDANCE WITH CURRENT ASTM SPECIFICATION A123.
8. FORM FOOTING 3" MINIMUM BELOW GROUND LINE.



DIMENSIONS, ELEVATIONS, SLOPES & SITUATIONS SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY AND ACTUAL CASES WOULD DEPEND ON FIELD CONDITIONS.



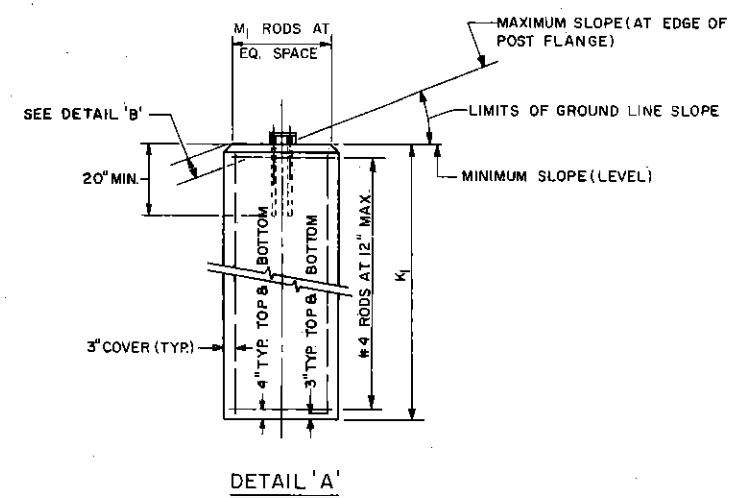
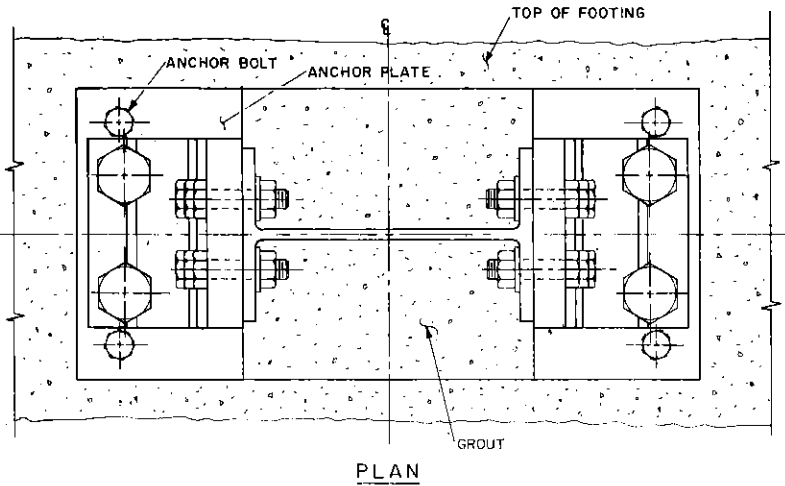
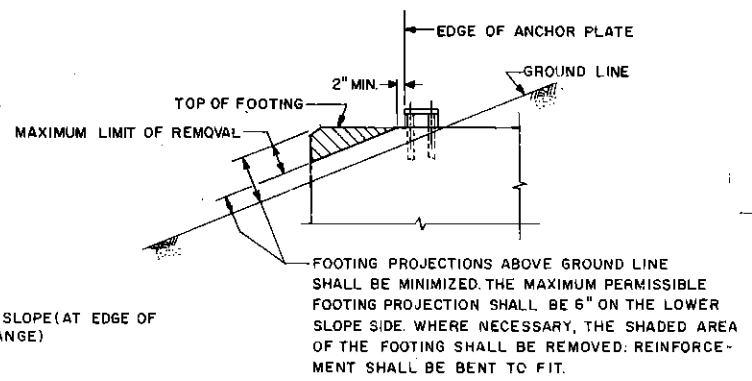
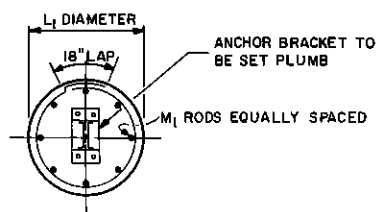
HINGE PLATE DATA						
POST SIZE	MODEL NO.	ALL DIMENSIONS IN INCHES				
		R ₁	S ₁	T ₁	U ₁	V ₁
S4X7.7	HI-2	4 3/4	7/8	1/4	1	.071
W6X8.5						
W6X12						
W6X15.5						
W8X17						
W8X20	HI-1	1	1 1/8	3/8	1 1/2	.113
W10X21						
W10X25						
W12X27						
W14X30						

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Commonwealth of Pennsylvania
DEPARTMENT OF TRANSPORTATION
BUREAU OF TRAFFIC ENGINEERING

**POST MOUNTED SIGNS - TYPE I
ERECTION DETAILS**

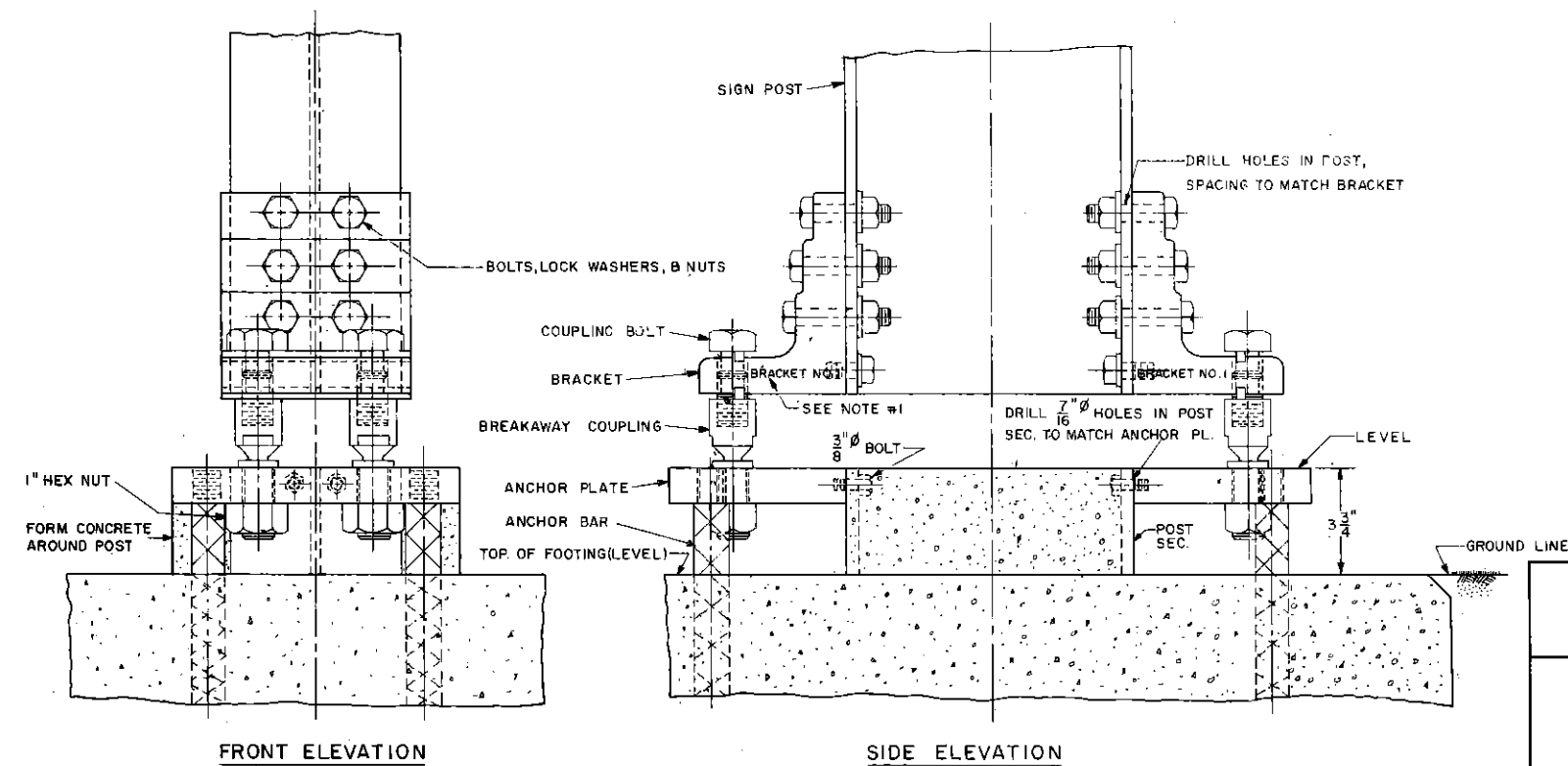
Recommended 8/1/77 <i>J.D. Smith</i> Director, Bureau of Traffic Engineering	Approved 8/1/77 <i>Robert R. Mauer</i> Deputy Chief Highway Engineer	Sht. 1 of 9 TC 7702 A TYPE I
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FOOTING SELECTION TABLE FOR BREAKAWAY SIGNS

POST SIZE	DIAMETER L ₁ FEET	DEPTH K ₁ FEET	REINF. STEEL M ₁
S4	1.5	5.00	8-#5
W6	2.0	5.50	8-#5
W8	2.5	6.00	8-#5
W10	3.0	6.75	8-#5
W12	3.0	7.50	8-#5
W14	3.0	8.00	8-#5

FOOTING DETAILS



FRONT ELEVATION

SIDE ELEVATION

BREAK-AWAY ASSEMBLY

NOTES

1. THE PROPER BRACKET NUMBER (STAMPED ON THE BRACKET) MUST BE USED FOR EACH POST AS INDICATED.
2. BREAKAWAY COUPLINGS SHALL BE BOLTED TO UPPER PORTION OF SIGN POST BEFORE PLACING AND CONNECTING POST TO FOOTING.
3. FOOTING SELECTION TABLE
 - a. THE EMBEDMENT OF FOOTINGS IS BASED ON FIGURE I.8.2.c(4) OF THE AASHTO SPECIFICATIONS. THE SOIL IS ASSUMED CAPABLE OF DEVELOPING A SOIL PRESSURE OF 2,000 PSF IN UNDISTURBED OR ADEQUATELY COMPACTED CONDITION.
 - b. ENTER TABLE WITH REQUIRED POST SIZE AND FIND REQUIRED FOOTING VALUES AS SHOWN IN DETAIL 'A'.

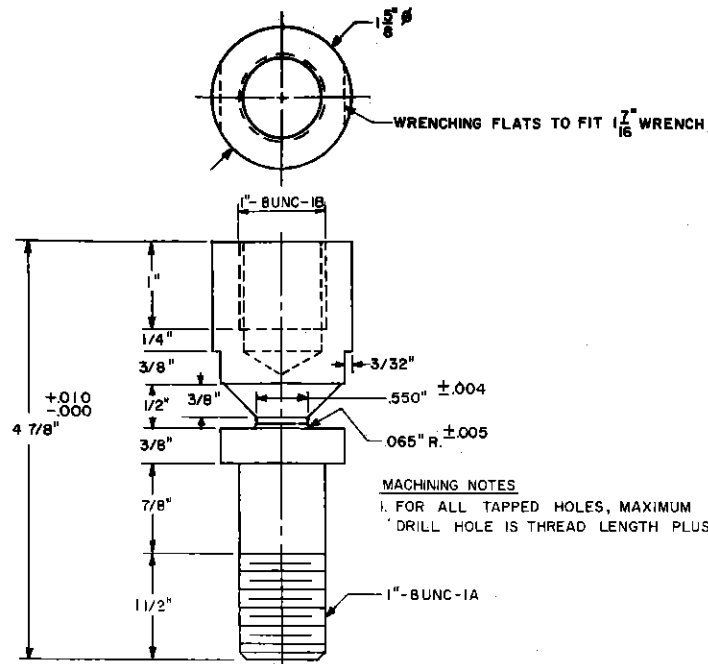
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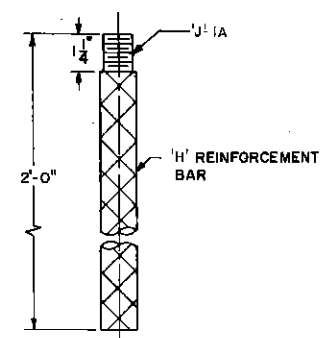
**POST MOUNTED SIGNS - TYPE I
POST BASE DETAILS**

Recommended 8/1/77 JRD Director, Bureau of Traffic Engineering	Approved 8/1/77 R. R. Mueser Deputy Chief Highway Engineer	Sht. 2 of 9 TC 7702 A TYPE I
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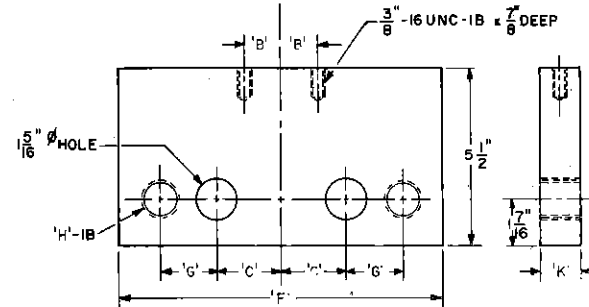
TRACED BY: R.C.G.
FORM 87



BREAK-AWAY COUPLING



ANCHOR BOLT

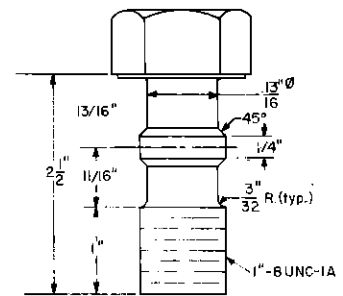


ANCHOR PLATE

NOTE:
ALL MATERIAL & WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE APPROPRIATE SPECIFICATION IN PennDOT FORM 408 AND/OR 409.

MACHINING NOTES
1. FOR ALL TAPPED HOLES, MAXIMUM ALLOWABLE DRILL HOLE IS THREAD LENGTH PLUS 3/8"

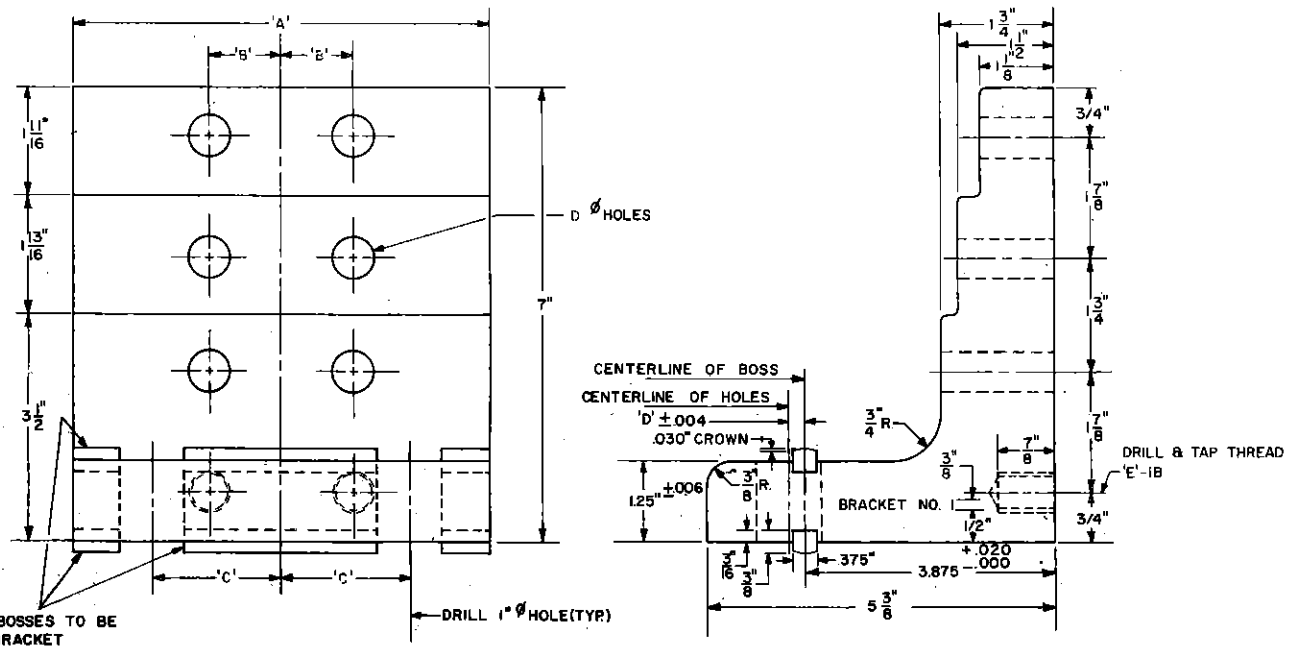
POST SIZE	BRACKET NUMBER SELECTION TABLE							
	BRACKET NUMBER							
	No. 1 'D'=.100"		No. 2 'D'=.150"		No. 3 'D'=.200"		No. 4 'D'=.250"	
	Min. "L"	Max. "L"	Min. "L"	Max. "L"	Min. "L"	Max. "L"	Min. "L"	Max. "L"
W6 x 6.5	12.19		8.65	12.18	6.69	8.64		6.68
W6 x 12	12.33		8.75	12.32	6.77	8.74		6.76
W6 x 15.5	12.33		8.75	12.32	6.77	8.74		6.76
W8 x 17	14.10		10.02	14.09	7.75	10.01		7.74
W8 x 20	14.22	25.00	10.10	14.21	7.82	10.09		7.81
W10 x 21	15.78		11.22	15.77	8.68	11.21		8.67
W10 x 25	15.93		11.33	15.92	8.77	11.32		8.76
W12 x 27	17.58		12.50	17.57	9.68	12.49		9.67
W14 x 30	19.27		13.71	19.26	10.62	13.70		10.61



COUPLING BOLT

NOTES FOR SELECTION OF BRACKET NUMBER
1. DETERMINE VALUE OF "L", WHICH IS THE DISTANCE FROM CENTROID OF WIND LOAD TO THE BOTTOM OF THE BRACKET, IN FEET, FOR EACH POST.
2. HAVING DETERMINED THE VALUE OF "L", ENTER BRACKET NUMBER SELECTION TABLE AND FIND PREVIOUSLY SELECTED POST SIZE ON THE LEFT SIDE. THEN MOVE HORIZONTALLY TO THE RIGHT UNTIL ENCOUNTERING THE "L" RANGE OF THE DETERMINED "L". NEXT MOVE VERTICALLY TO THE TOP OF THE COLUMN AND READ THE BRACKET NUMBER.

EXAMPLE:
ASSUME SIGN WITH A VALUE OF "L" = 12.4 FEET AND A POST SIZE OF W6x20, FROM THE TABLE FIND A BRACKET No. 2 IS REQUIRED.



BRACKET

POST SIZE	BASE TYPE	ALL DIMENSIONS IN INCHES									
		A	B	C	D	E	F	G	H	J	K
W6, W8	A	5	1 1/8	1 1/2	17/32	1/2-13UNC	8	1 5/8	7	7/8-9UNC	1
W10, W12, W14	B	6 1/2	2	2 1/32	5/8-11UNC	10	1 3/4	8	1-BUNC	1 1/4	

STAINLESS STEEL BOSSES TO BE PRESS FIT INTO BRACKET

DRILL 1" HOLE(TYP)

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BUREAU OF TRAFFIC ENGINEERING

**POST MOUNTED SIGNS-TYPE I
BREAKAWAY COUPLING DETAILS**

Recommended E/1/77 Director, Bureau of Traffic Engineering	Approved B/1/77 Deputy Chief Highway Engineer	Sht. 3 of 9 TC 7702A TYPE I
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POST SELECTION TABLE FOR BREAKAWAY SIGNS
(80) MPH WIND - TWO POST

W FEET	L Max FEET	HEIGHT "H" IN FEET														
		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
6	6	S4X7.7	S4X7.7	S4X7.7	S4X7.7	S4X7.7	S4X7.7	W6X8.5	W6X8.5	W6X8.5	W6X12	W6X12	W6X12			
8	8	S4X7.7	S4X7.7	S4X7.7	S4X7.7	S4X7.7	W6X8.5	W6X8.5	W6X8.5	W6X12	W6X12	W6X15.5	W6X15.5			
10	10	S4X7.7	S4X7.7	S4X7.7	S4X7.7	W6X8.5	W6X8.5	W6X12	W6X12	W6X15.5	W6X15.5	W6X15.5	W6X15.5			
12	12	S4X7.7	S4X7.7	W6X12	W6X12	W6X12	W6X12	W6X12	W6X15.5	W6X15.5	W6X15.5	W6X15.5	W6X15.5	W6X17		
14	14	S4X7.7	W6X12	W6X12	W6X12	W6X12	W6X15.5	W6X15.5	W6X15.5	W6X15.5	W6X15.5	W6X15.5	W6X15.5	W6X17		
16	16	W6X12	W6X12	W6X12	W6X12	W6X15.5	W6X15.5	W6X15.5	W6X15.5	W6X15.5	W6X15.5	W6X15.5	W6X15.5	W6X17	W6X20	
18	18	S4X7.7	S4X7.7	S4X7.7	S4X7.7	W6X8.5	W6X8.5	W6X12	W6X12	W6X12	W6X12	W6X15.5	W6X15.5			
20	20	S4X7.7	S4X7.7	S4X7.7	W6X8.5	W6X8.5	W6X12	W6X12	W6X12	W6X15.5	W6X15.5	W6X15.5	W6X15.5	W6X17		
22	22	S4X7.7	S4X7.7	W6X8.5	W6X8.5	W6X12	W6X12	W6X12	W6X15.5	W6X15.5	W6X15.5	W6X15.5	W6X15.5	W6X17	W6X20	
24	24	S4X7.7	S4X7.7	W6X8.5	W6X8.5	W6X12	W6X12	W6X12	W6X15.5	W6X15.5	W6X15.5	W6X15.5	W6X15.5	W6X17	W6X20	
26	26	S4X7.7	S4X7.7	W6X8.5	W6X8.5	W6X12	W6X12	W6X12	W6X15.5	W6X15.5	W6X15.5	W6X15.5	W6X15.5	W6X17	W6X20	
28	28	S4X7.7	S4X7.7	W6X8.5	W6X8.5	W6X12	W6X12	W6X12	W6X15.5	W6X15.5	W6X15.5	W6X15.5	W6X15.5	W6X17	W6X20	
30	30	S4X7.7	S4X7.7	W6X8.5	W6X8.5	W6X12	W6X12	W6X12	W6X15.5	W6X15.5	W6X15.5	W6X15.5	W6X15.5	W6X17	W6X20	

All erect sizes are A-36 steel All slanted sizes are A-441 steel

POST SELECTION TABLE FOR BREAKAWAY SIGNS
(80) MPH WIND - THREE POST

W FEET	L Max FEET	HEIGHT "H" IN FEET														
		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
6	6	S4X7.7	W6X8.5	W6X8.5	W6X12	W6X12	W6X15.5	W6X15.5	W6X15.5	W6X15.5	W6X17	W6X17	W6X20	W6X20		
8	8	W6X8.5	W6X8.5	W6X12	W6X12	W6X15.5	W6X15.5	W6X15.5	W6X15.5	W6X17	W6X17	W6X20	W6X20	W6X20		
10	10	W6X8.5	W6X12	W6X12	W6X15.5	W6X15.5	W6X15.5	W6X15.5	W6X17	W6X17	W6X20	W6X20	W6X20	W6X20		
12	12	W6X12	W6X12	W6X15.5	W6X15.5	W6X17	W6X17	W6X20	W6X20	W6X20	W6X20	W6X20	W6X20	W6X20		
14	14	W6X12	W6X15.5	W6X15.5	W6X17	W6X17	W6X20	W6X20	W6X20	W6X20	W6X20	W6X20	W6X20	W6X20		
16	16	W6X15.5	W6X15.5	W6X17	W6X17	W6X20	W6X20	W6X20	W6X20	W6X20	W6X20	W6X20	W6X20	W6X20		
18	18	S4X7.7	W6X8.5	W6X8.5	W6X12	W6X12	W6X15.5	W6X15.5	W6X15.5	W6X15.5	W6X17	W6X17	W6X20	W6X20		
20	20	S4X7.7	W6X8.5	W6X8.5	W6X12	W6X12	W6X15.5	W6X15.5	W6X15.5	W6X15.5	W6X17	W6X17	W6X20	W6X20		
22	22	S4X7.7	W6X8.5	W6X8.5	W6X12	W6X12	W6X15.5	W6X15.5	W6X15.5	W6X15.5	W6X17	W6X17	W6X20	W6X20		
24	24	S4X7.7	W6X8.5	W6X8.5	W6X12	W6X12	W6X15.5	W6X15.5	W6X15.5	W6X15.5	W6X17	W6X17	W6X20	W6X20		
26	26	S4X7.7	W6X8.5	W6X8.5	W6X12	W6X12	W6X15.5	W6X15.5	W6X15.5	W6X15.5	W6X17	W6X17	W6X20	W6X20		
28	28	S4X7.7	W6X8.5	W6X8.5	W6X12	W6X12	W6X15.5	W6X15.5	W6X15.5	W6X15.5	W6X17	W6X17	W6X20	W6X20		
30	30	S4X7.7	W6X8.5	W6X8.5	W6X12	W6X12	W6X15.5	W6X15.5	W6X15.5	W6X15.5	W6X17	W6X17	W6X20	W6X20		

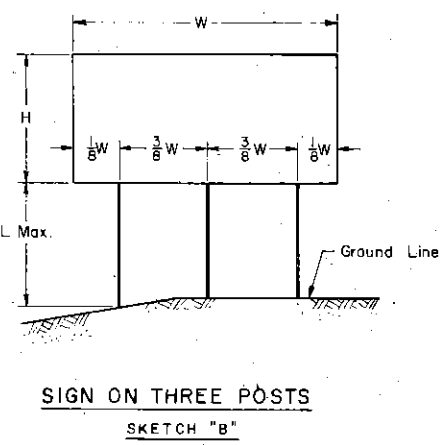
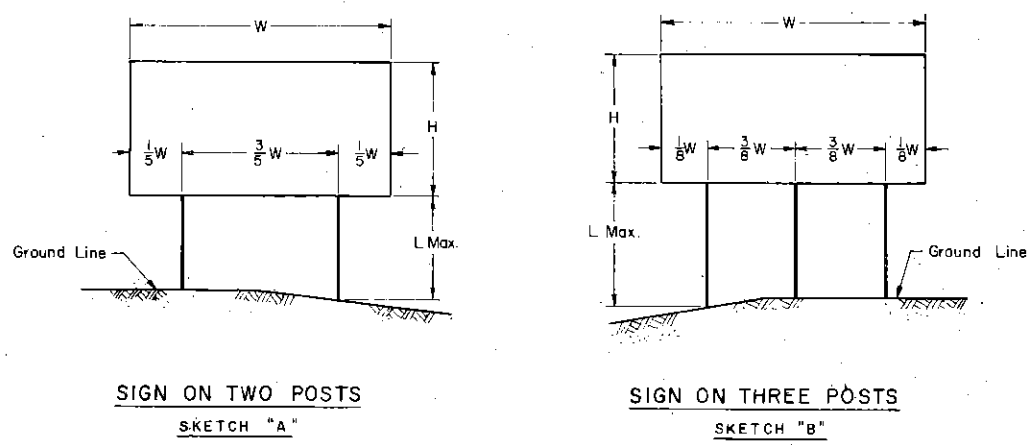
All erect sizes are A-36 steel All slanted sizes are A-441 steel

GENERAL NOTES FOR SELECTION OF SIGN SUPPORT POST BY TABLE

- DETERMINE REQUIRED VALUES OF "W", "H" AND "L" MAX. AS INDICATED IN SKETCH "A" OR "B".
W = MAXIMUM WIDTH OF REQUIRED SIGN.
H = MAXIMUM HEIGHT OF REQUIRED SIGN.
L MAX = MAXIMUM DISTANCE BETWEEN TOP OF FOOTING AND BOTTOM OF REQUIRED SIGN.
- ENTER TABLE WITH MAXIMUM VALUE OF L MAX. AND REQUIRED VALUES OF "W" AND "H" FOR SELECTION OF TUBE SIZE FOR ALL POSTS. IN THE TABLE THE FIRST NUMBER INDICATES THE DEPTH (INCHES) OF THE POST FOLLOWED BY THE SYMBOL AND WEIGHT IN LBS. PER FOOT.
- FOR SIGN SIZE BETWEEN THOSE VALUES OF "W", "H", AND "L" MAX. IN THE TABLE, USE NEXT HIGHEST FOOT VALUE.
- IN THE DETERMINATION OF POST HEIGHTS FOR A SIGN ON A TWO OR THREE POST SYSTEM, THE SHORTEST POST SHALL NOT BE LESS THAN 2'-6" AND THE LONGEST POST SHALL NOT BE LESS THAN 4'-6" WHEN MEASURED FROM THE TOP OF THE FOOTING TO THE BOTTOM OF THE SIGN PANEL.
- ALL POST SIZES UPRIGHT LETTERING AND LEFT OF DIVIDING LINE ARE A-36 STEEL. ALL POST SIZES SLANTED LETTERING AND RIGHT OF DIVIDING LINE ARE A-441 STEEL.

POST SELECTION EXAMPLE

FOR SIGN REQUIREMENT OF
W = 20'-0"
H = 10'-0"
L MAX = 8'-0"
FIND IN THE TABLE ENTITLED 80 MPH WIND - TWO POST
A 17 LB FLANGE AT 17 LBS PER FOOT IS REQUIRED FOR EACH POST.



Maximum Dimensions for Post Spacing	Panel - 1	Panel - 2
2 Post sign	1/5 W 3'-0"	4'-0"
	3/5 W 9'-0"	12'-0"
	1 W 15'-0"	20'-0"
3 Post sign	1/6 W 3'-0"	3'-9"
	1/3 W 9'-0"	11'-3"
	1 W 24'-0"	30'-0"

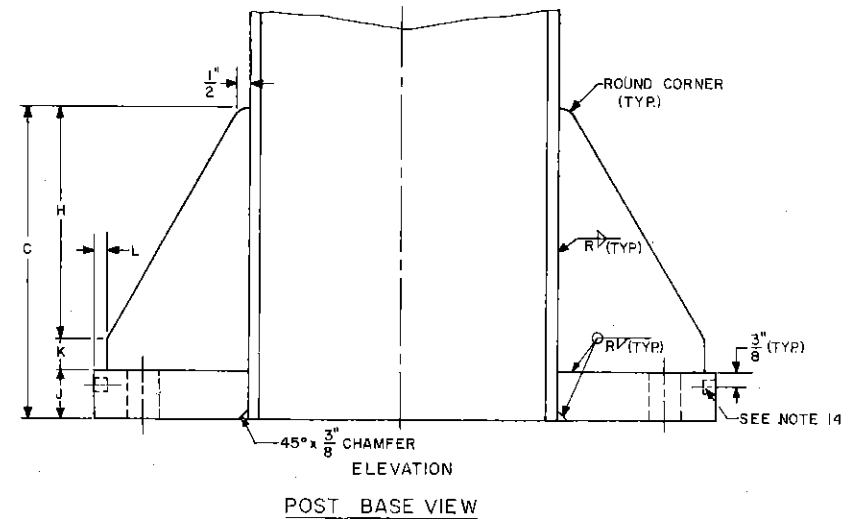
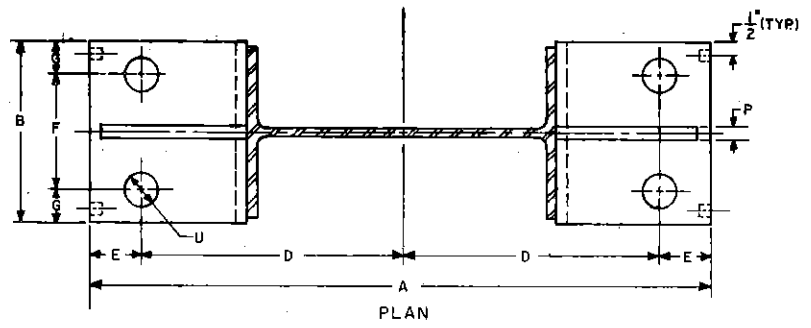
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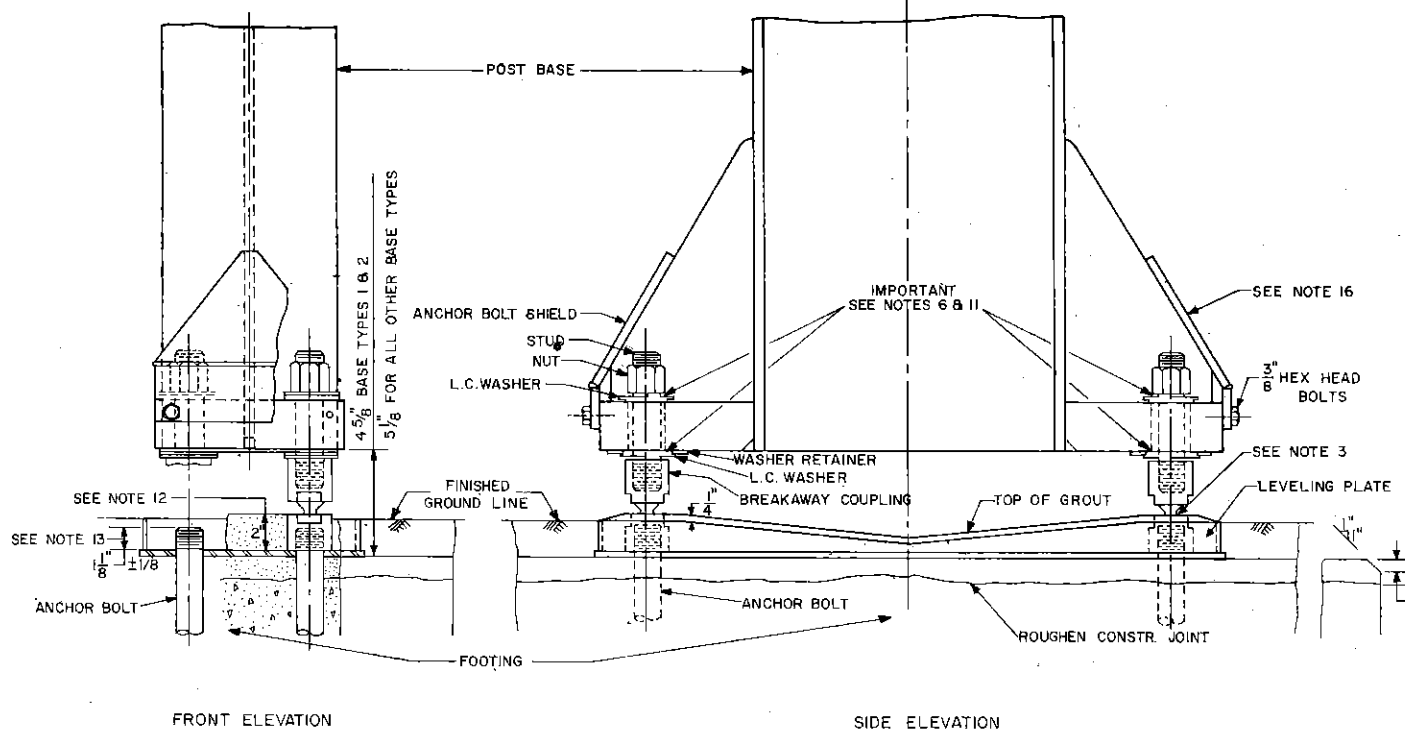
POST MOUNTED SIGNS - TYPE I
POST SECTION - SELECTION TABLES

Recommended 8/1/77
Approved 8/1/77
Director, Bureau of Traffic Engineering
Deputy Chief
Highway Engineer

REV. NO. APPD BY DATE



POST BASE VIEW

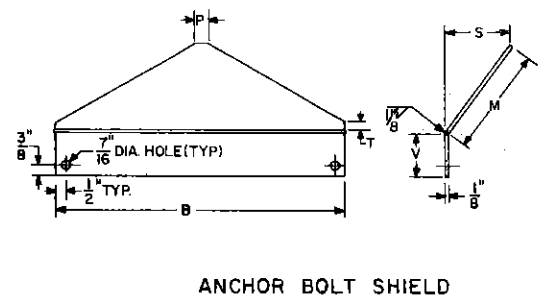


BREAKAWAY COUPLING INSTALLATION VIEW X-X

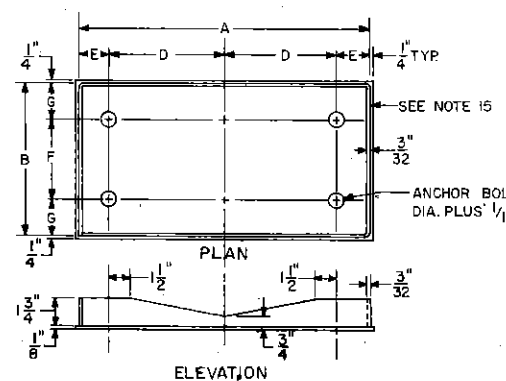
- NOTES**
1. ALL WELDS TO CONFORM TO LATEST A.W.S. SPECIFICATIONS.
 2. THE HEX STUD END WITH THE SMALLER THREAD DEPTH ($1\frac{1}{8}$) SHOULD BE SCREWED INTO TOP OF BREAKAWAY COUPLING.
 3. SMALL END OF TAPER ON BREAKAWAY COUPLING SHOULD ALWAYS POINT DOWNWARD.
 4. USE STANDARD FLAT WASHERS UNDER NUTS ON BASE TYPES 1 & 2.
 5. ALL MATERIAL TO BE ASTM A-36 STEEL OR EQUAL, UNLESS NOTED.
 6. THE PROPER WASHER NUMBER (STAMPED ON WASHER) MUST BE USED FOR EACH POST AS INDICATED IN THE TABLE ON SHEET ENTITLED "BREAKAWAY GROUND MOUNTED SIGNS".
 7. THE AXIS OF THE ANCHOR FRAME SHOULD BE PLACED PARALLEL TO THE SIGN PANEL FACE.
 8. POST BASE MATERIAL SHALL BE STEEL ASTM A-36 FOR POSTS UP TO AND INCLUDING 6W15.5, ASTM A-441 FOR LARGER POST SIZES.
 9. NO L.C. WASHERS OR RETAINERS ARE REQ'D. FOR BASE TYPE 1 & 2.
 10. GROUT MAY BE OMITTED IF ANCHOR BOLTS AND LEVELING PLATE CAN BE PROPERLY POSITIONED.
 11. RAISED PORTION OF L.C. WASHERS MUST BE POSITIONED AS INDICATED. CENTER OF RAISED PORTION MUST BE TOWARD $\frac{1}{2}$ OF POST.
 12. AFTER GROUT UNDER LEVELING PLATE HAS SET, SCREW BREAKAWAY COUPLINGS TO ANCHOR BOLTS AND FILL ENTIRE PLATE WITH GROUT AS SHOWN.
 13. HOLD THIS HEIGHT ON ALL ANCHOR BOLTS, KEEP PLATE LEVEL WHEN GROUTING.
 14. DRILL AND TAP 4 HOLES $\frac{3}{8}$ " 16UNC-2 x $\frac{1}{2}$ " DEEP.
 15. BEND STRIP OF $\frac{3}{32}$ " THK. SHEET METAL AROUND BOTTOM PLATE AS SHOWN AND TACK WELD. LEVELING PLATE TO BE GALVANIZED IN ACCORDANCE WITH SPECIFICATIONS.
 16. ATTACH ANCHOR BOLT SHIELDS AFTER ANCHOR BOLTS HAVE BEEN TIGHTENED.

RATED BENDING MOMENT X X AXIS INCH LBS.	POST BASE DATA		DIMENSIONS IN INCHES																	
	POST SIZE	BASE TYPE	A	B	C	D	E	F	G	H	J*	K	L	M	P	R	S	T	U	V
83,000	4S	1	9 $\frac{1}{2}$	4 $\frac{3}{4}$	5 $\frac{3}{16}$	3 $\frac{1}{2}$	1 $\frac{1}{4}$	2 $\frac{3}{4}$	1	3 $\frac{1}{16}$	1	1 $\frac{1}{2}$	1 $\frac{1}{4}$	2 $\frac{1}{2}$	1 $\frac{3}{8}$	1 $\frac{1}{4}$	1 $\frac{5}{16}$	7 $\frac{7}{8}$	1 $\frac{1}{8}$	7 $\frac{7}{8}$
232,000	6W	2	12 $\frac{1}{2}$	4 $\frac{3}{4}$	6	5	1 $\frac{1}{4}$	2 $\frac{3}{4}$	1	4 $\frac{1}{2}$	1	1 $\frac{1}{2}$	1 $\frac{1}{4}$	2 $\frac{1}{2}$	1 $\frac{3}{8}$	1 $\frac{1}{4}$	1 $\frac{5}{16}$	7 $\frac{7}{8}$	1 $\frac{1}{8}$	7 $\frac{7}{8}$
489,000	8W	3	16	7	8 $\frac{1}{8}$	6	2	4 $\frac{1}{4}$	1 $\frac{3}{8}$	5 $\frac{3}{8}$	1 $\frac{1}{2}$	1 $\frac{1}{4}$	1 $\frac{1}{2}$	4	1 $\frac{1}{2}$	1 $\frac{3}{8}$	2 $\frac{1}{16}$	1 $\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{1}{8}$
761,000	10W	4	20	7	9 $\frac{3}{4}$	8	2	4 $\frac{1}{4}$	1 $\frac{3}{8}$	7	1 $\frac{1}{2}$	1 $\frac{1}{4}$	1 $\frac{1}{2}$	4	1 $\frac{1}{2}$	1 $\frac{3}{8}$	2 $\frac{1}{16}$	1 $\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{1}{8}$
1,000,000	12W	5	24	7	11 $\frac{1}{2}$	10	2	4 $\frac{1}{4}$	1 $\frac{3}{8}$	8 $\frac{3}{4}$	1 $\frac{1}{2}$	1 $\frac{1}{4}$	1 $\frac{1}{2}$	4	1 $\frac{1}{2}$	1 $\frac{3}{8}$	2 $\frac{1}{16}$	1 $\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{1}{8}$
1,210,000	14W	6	28	7	11 $\frac{1}{2}$	12	2	4 $\frac{1}{4}$	1 $\frac{3}{8}$	8 $\frac{3}{4}$	1 $\frac{1}{2}$	1 $\frac{1}{4}$	1 $\frac{1}{2}$	4	1 $\frac{1}{2}$	1 $\frac{3}{8}$	2 $\frac{1}{16}$	1 $\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{1}{8}$

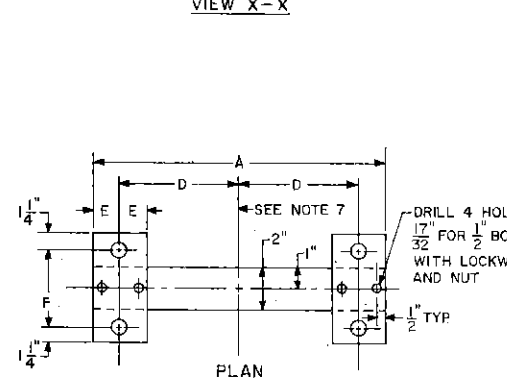
* BASE PLATE THICKNESS MUST BE AS SPECIFIED



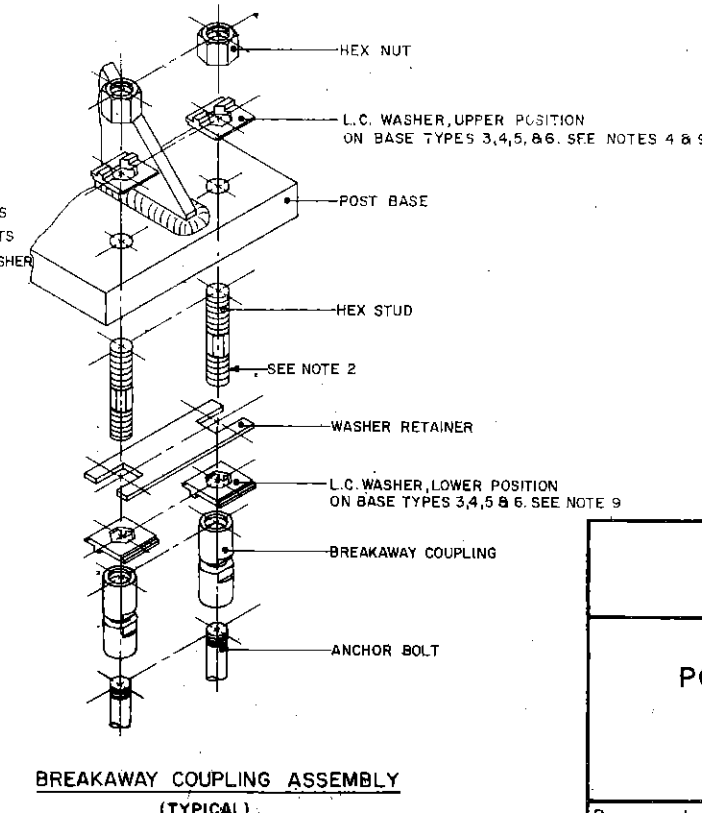
ANCHOR BOLT SHIELD



LEVELING PLATE DETAIL



ANCHOR BOLT DETAIL



BREAKAWAY COUPLING ASSEMBLY (TYPICAL)

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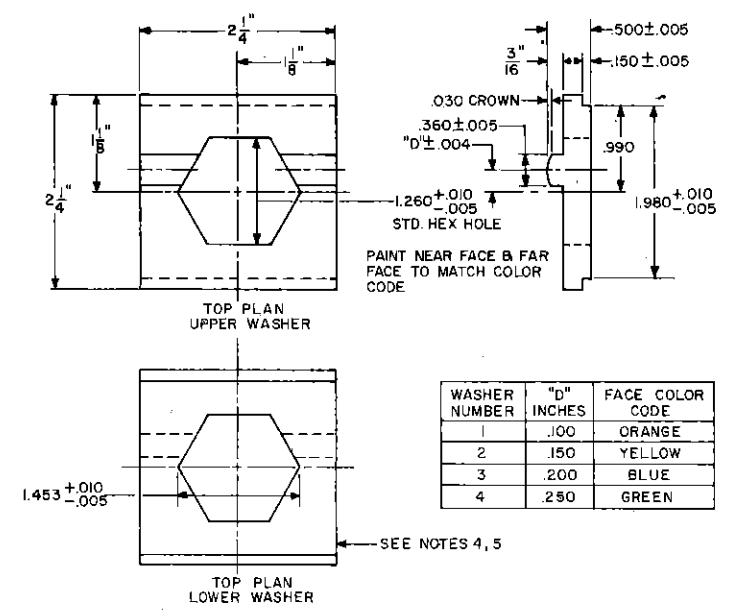
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POST MOUNTED SIGNS-TYPE II

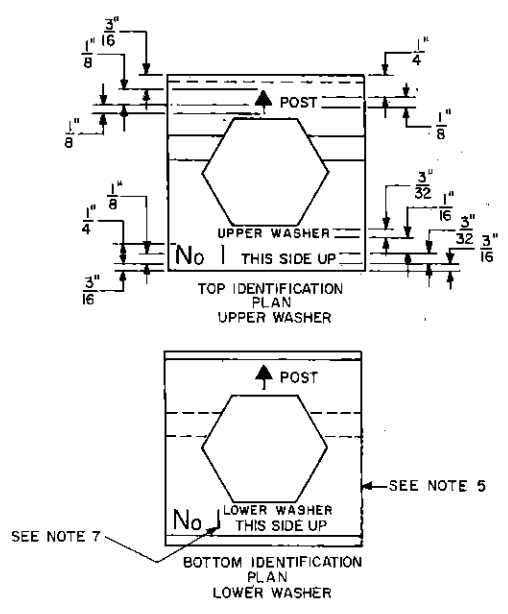
POST BASE DETAILS

Recommended 8/1/77 Approved 8/1/77 Sht. 6 of 9
 Director, Bureau of Traffic Engineering Deputy Chief Highway Engineer TC 7702 A TYPE II

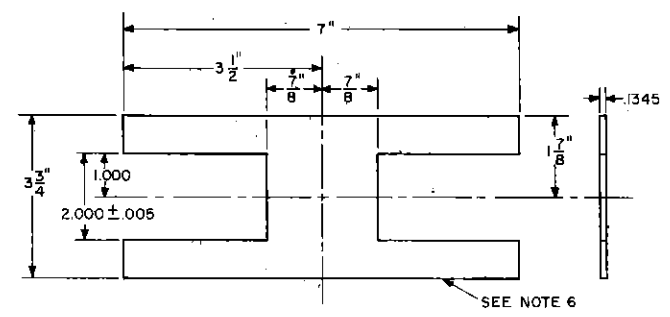
- NOTES:
1. MATERIAL: STEEL, ASTM A-304 OR EQUAL.
 2. MATERIAL: STEEL, ASTM A-320 OR EQUAL.
 3. SUPPLY ONE HEAVY HEX NUT WITH EACH STUD.
 4. MATERIAL: AISI 630 STAINLESS STEEL OR EQUAL.
 5. PROPER WASHER NUMBER & MESSAGE MUST BE PERMANENTLY PLACED ON EACH WASHER, TOP AND BOTTOM, AS SHOWN.
 6. MATERIAL: STEEL, ASTM A-570 OR EQUAL.
 7. LABEL WITH APPROPRIATE WASHER NUMBER.



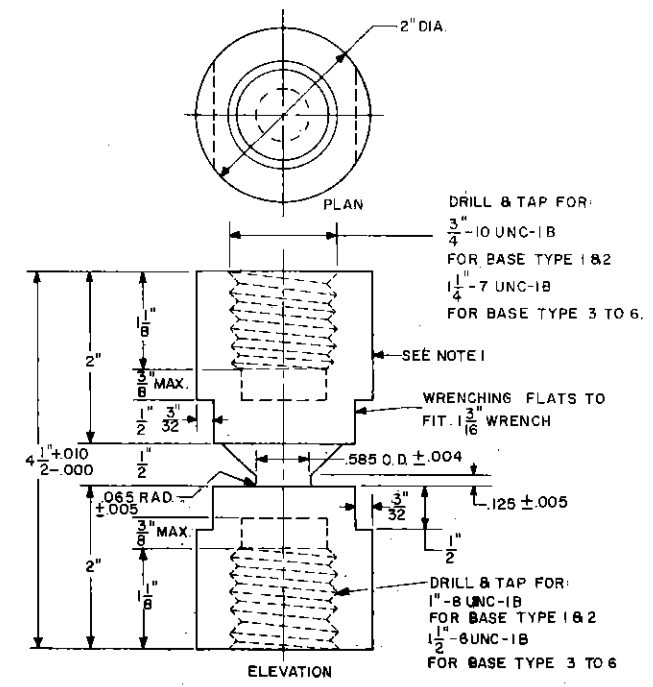
LOAD CONCENTRATING WASHER DETAILS



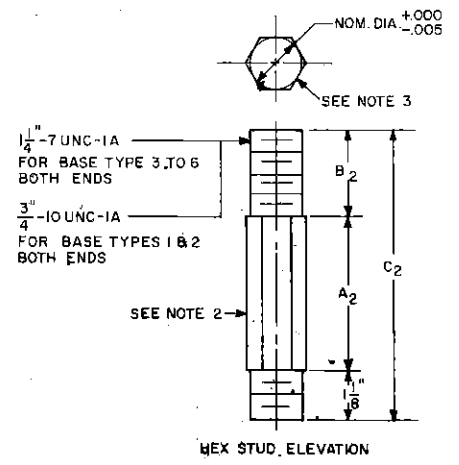
LOAD CONCENTRATING WASHER IDENTIFICATION DETAIL



WASHER RETAINER FOR BASE TYPES 3 TO 6
(NONE REQUIRED FOR BASE TYPES 1 & 2)



BREAK-AWAY COUPLING



HEX STUDS LENGTHS & SIZES

BASE TYPE	A ₂ INCHES	B ₂ INCHES	C ₂ INCHES	HEX SIZE
1	15/16	15/16	3 3/8	3/4
2	"	"	"	"
3	2 1/4	2 1/8	5 1/2	1 1/4
4	"	"	"	"
5	"	"	"	"
6	"	"	"	"

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REV. NO.	APP'D BY DATE

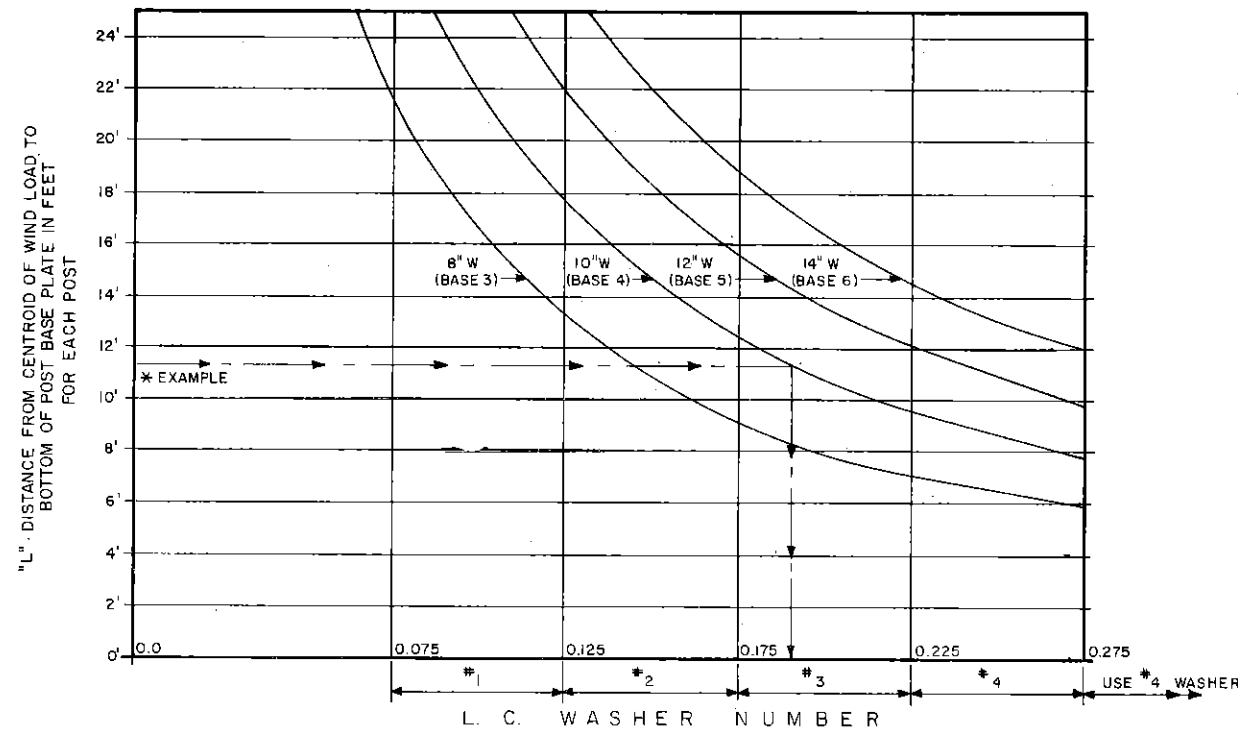
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BUREAU OF TRAFFIC ENGINEERING

POST MOUNTED SIGNS -TYPE II
BREAK AWAY COUPLING DETAILS

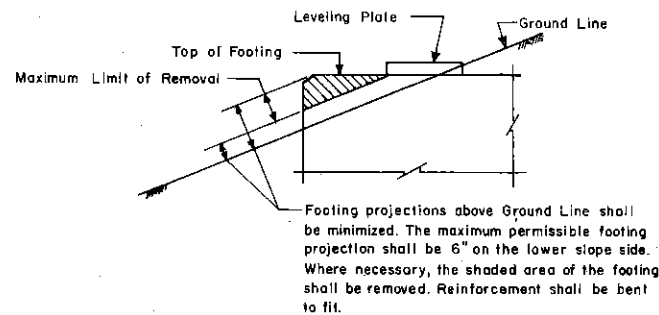
Recommended: 8/1/77 <i>J.R. Donahoe</i> Director, Bureau of Traffic Engineering	Approved: 8/1/77 <i>Robert R. Moore</i> Deputy Chief Highway Engineer	Sht. 7 of 9 TC 7702A TYPE II
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**GENERAL NOTES FOR SELECTION OF
SIGN SUPPORT COMPONENTS BY
TABLE AND CHART**

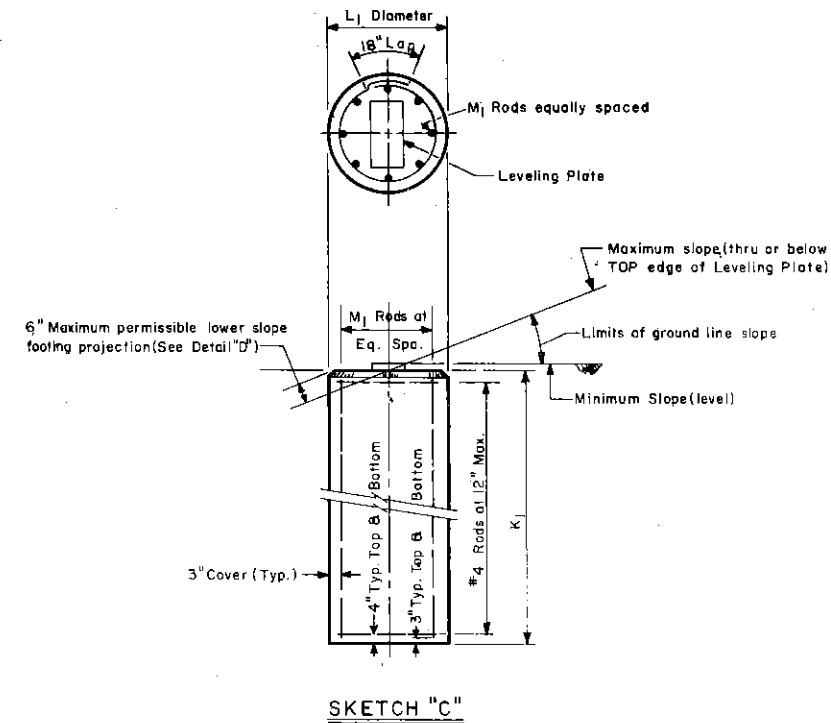
LOAD CONCENTRATING WASHER AND BASE TYPE SELECTION CHART



NOTE:
NO LOAD CONCENTRATING WASHERS ARE REQUIRED FOR
BASE TYPE 1 AND BASE TYPE 2.



DETAIL "D"



BASE TYPE	DIAMETER L ₁ FEET	DEPTH K ₁ FEET	REINF STEEL M ₁
1	2.0	4.25	8-#5
2	2.0	4.50	8-#5
3	2.5	6.00	8-#5
4	3.0	6.75	8-#5
5	3.0	7.50	8-#5
6	3.0	8.00	8-#5

FOOTING DETAILS

I LOAD CONCENTRATING WASHER AND BASE TYPE SELECTION CHART

1. DETERMINE VALUE OF "L₁" (SEE CHART).
2. HAVING DETERMINED VALUE OF "L₁", ENTER LOAD CONCENTRATING WASHER AND BASE TYPE SELECTION CHART FROM LEFT SIDE AND CONTINUE ACROSS TO INTERSECTION WITH PREVIOUSLY SELECTED POST DEPTH AND FIND CORRESPONDING BASE TYPE NUMBER. DROP VERTICALLY DOWN FROM CURVE FOR REQUIRED L.C. WASHER NUMBER.

* EXAMPLE:
ASSUME SIGN WITH A VALUE OF L₁ = 11.5 FEET AND POST DEPTH OF 10 IN. FROM CHART FIND BASE 4 AND L.C. WASHER #3 REQUIRED

II FOOTING SELECTION TABLE

1. THE EMBEDMENT OF FOOTINGS IS BASED ON FIGURE 6 OF THE AASHTO SPECIFICATIONS. THE SOIL IS ASSUMED CAPABLE OF DEVELOPING A SOIL PRESSURE OF 2,000 PSF IN AN UNDISTURBED OR ADEQUATELY COMPACTED CONDITION.
2. ENTER TABLE FOR PREVIOUSLY SELECTED BASE TYPE AND FIND REQUIRED FOOTING VALUES AS SHOWN IN SKETCH "C".

Commonwealth of Pennsylvania
DEPARTMENT OF TRANSPORTATION
BUREAU OF TRAFFIC ENGINEERING

**POST MOUNTED SIGNS-TYPE II
WASHER, BASE, &
FOOTING SELECTION TABLES**

Recommended 8/1/77 <i>[Signature]</i> Director, Bureau of Traffic Engineering	Approved 8/1/77 <i>[Signature]</i> Deputy Chief Highway Engineer	Sht. 8 of 9 TC7702A TYPE II
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