OS-299 (8-72)

TRANSMITTAL LETTER

Publication 111M, Change 4

DATE

September 13, 2000

SUBJECT:

Change 4 to Publication 111M, Traffic Control Signing Standards – TC-8700 Series

INFORMATION AND SPECIAL INSTRUCTIONS:

The attached revised index, and new TC-8716, Type III Barricade Standard should be incorporated into Publication 111M. The previous index should be removed.

CANCEL AND DESTROY THE FOLLOWING:

Removed index sheet.

REQUEST ADDITIONAL COPIES FROM:

Distribution Services Unit
P.O. Box 2028
Harrisburg, PA 17105
Telephone: (717) 787-6746

APPROVED FOR ISSUANCE BY:

Bradley L. Mallory
Secretary of Transportation
By:

M. M. Ryan

Deputy Secretary for
Highway Administration

OS-299 (8-72)

TRANSMITTAL LETTER

Publication 111M, Change 3

DATE

February 28, 2000

SUBJECT:

Traffic Control Signing Standards – TC-8700 Series

INFORMATION AND SPECIAL INSTRUCTIONS:

The attached updated index for Publication 111M should be inserted into your standards. The previous index along with TC-8709 (5 Sheets) should be removed. This new index sheet reflects the removal of TC-8709 "Delineators" approved August 1, 1997 from this publication.

TC-8709 has been removed from this publication and replaced by TC-7604 (see SOL #470-00-01). TC-7604 will be incorporated into a future publication.

Copies of TC-7604 can be obtained by calling John Geisel (717-772-5462) or Kim Smith (717-783-6268) of the Bureau of Highway Safety and Traffic Engineering, Traffic Engineering and Operations Division.

CANCEL AND DESTROY THE FOLLOWING:

All removed sheets.

REQUEST ADDITIONAL COPIES FROM:

Distribution Services Unit
P.O. Box 2028
Harrisburg, PA 17105
Telephone: (717) 787-6746

APPROVED FOR ISSUANCE BY:

Bradley L. Mallory
Secretary of Transportation
By: M. M. Ryan 2/11/00

Deputy Secretary for
Highway Administration

OS-2449 (8-72)

TRANSMITTAL LETTER

Publication 111M, Change 2

DATE

September 11, 1998

SUBJECT:

Traffic Control Signing Standards - TC-8700 Series

INFORMATION AND SPECIAL INSTRUCTIONS:

The attached updated index for Publication 111M should be inserted into your standards. The previous index should be removed. This index sheet reflects the changes made to TC-8702E under Change 1 to this Publication.

CANCEL AND DESTROY THE FOLLOWING:

Removed index sheet.

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P.O. Box 2028
Harrisburg, PA 17105

Telephone: (717) 787-6746

APPROVED FOR ISSUANCE BY:

Bradley L. Mallory
Secretary of Transportation
By:

M.M. Ryan

Deputy Secretary for
Highway Administration

OS-299 (8-72)

TRANSMITTAL LETTER

Publication 111M, Change 1

DATE

August 1, 1998

SUBJECT:

Traffic Control Signing Standards - TC-8700 Series

INFORMATION AND SPECIAL INSTRUCTIONS:

The attached TC-8702E standards dated August 1, 1998 should be inserted into your standards. The previous TC-8702E standards sheets 1 of 2 and 2 of 2 dated August 1, 1997 should be removed and destroyed. The major change to this standard is the addition of composite posts as an alternative to wood posts. No changes have been made to the previous wood post standards. These revised standards simply add sheets 3 and 4 concerning composite posts.

CANCEL AND DESTROY THE FOLLOWING:

All removed sheets.

REQUEST ADDITIONAL COPIES FROM:

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Harrisburg, PA 17105

Telephone: (717) 787-6746

APPROVED FOR ISSUANCE BY:

Bradley L. Mallory
Secretary of Transportation
By:

M. M. Ryan

Deputy Secretary for
Highway Administration

OS-299 (8-72)

TRANSMITTAL LETTER

Publication 111M

DATE

August 1, 1997

SUBJECT:

Traffic Control Signing Standards - TC-8700 Series

INFORMATION AND SPECIAL INSTRUCTIONS:

The attached Standard Drawings shall be used by Department personnel and consultants whenever applicable for design, detailing, and installation of traffic control signs. The previous Publication 111, issued June 1990, and any changes thereto shall be replaced by this new edition.

The following is a summary of the major, non-metric related changes that have been incorporated into the metric edition:

TC-8701A:

1 of 7, ◆ Added use of highway route numbers on post-interchange distance signs.
◆ Added Next Exit ( ) Miles Sign.

2 of 7, ◆ Added Next Exit ( ) Miles Sign.
◆ Added Speed Limit sign after interchange.

4 of 7, ◆ Added Next Exit ( ) Miles Sign.
◆ Added Speed Limit sign after interchange.

TC-8701D:

1 of 8, ◆ Note 1, added to address extruded aluminum signs when it results in a sign height greater than what is required.
4 of 8, ◆ Fabrication detail for Next Exit ( ) Miles Sign added.
7 of 8, ◆ Changed three line ramp destination sign height from 1500 mm to 1200 mm.

TC-8701E:

1 of 2, ◆ Double post-clip pattern for overhead sign detail added.
2 of 2, ◆ End view for light section extruded aluminum panels added.

TC-8701R:

1 of 1, ◆ Note 8, "Next Rest Area ( ) Miles" no longer an optional sign.

TC-8701S:

1 of 3, ◆ Stiffener spacing chart updated.
◆ Rear view detail added and Note 1 revised to require a double post-clip pattern for all flat sheet aluminum sign installations.
3 of 3, ◆ Detail 3A changed to show cutaway view.

TC-8701W:

1 of 1, ◆ Note 11, " Next Rest Area ( ) Miles" sign detail and note added.

TC-8702A:

2 of 6, ◆ Two post installation selection table expanded to include larger sign sizes.
3 of 6, ◆ Three post installation selection table expanded to include larger sign sizes.
◆ Spacing between post changed to 1/6,1/3,1/3, 1/6 of sign width
4 of 6, ◆ Note 6 concerning maximum number of shims added.
6 of 6, ◆ Footing Selection Table revised (footing size, L1).

TC-8702B:

7 of 11, ◆ Universal spacer detail added.
10 of 11, ◆ Eliminated 2.1 m requirement between posts for three post installations.
11 of 11, ◆ 2.7 m minimum sign height from ground to top of sign requirement added.

TC-8702E:

1 of 2, ◆ 1800 mm x 1500 mm one post installation detail added.

All new projects initiated after January 1, 1997 shall conform to these new drawings. Projects that have been started in English units prior to January 1, 1997, and all other projects that were granted an exception from the Bureau of Design may continue in English units as long as the PS&E's of these projects are submitted to the Bureau of Design before July 31, 2000.

The Standard Drawings voided by this new edition should be maintained for reference on those projects now under construction.

CANCEL AND DESTROY THE FOLLOWING:

REQUEST ADDITIONAL COPIES FROM:

Distribution Services Unit
P. O. Box 2028
Harrisburg, PA 17105

Telephone: (717) 787-6746

APPROVED FOR ISSUANCE BY:

Bradley L. Mallory
Secretary of Transportation

M. M. Ryan

By: Michael M. Ryan, P.E.
Deputy Secretary for
Highway Administration

COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF TRANSPORTATION

PENNDOT

TRAFFIC-CONTROL SIGNING STANDARDS
PUBLICATION 111M

TC-8700 SERIES

BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

November 2001 Printing
(Includes Changes 1-4)

August 1997

INDEX OF TRAFFIC - CONTROL SIGNING STANDARDS

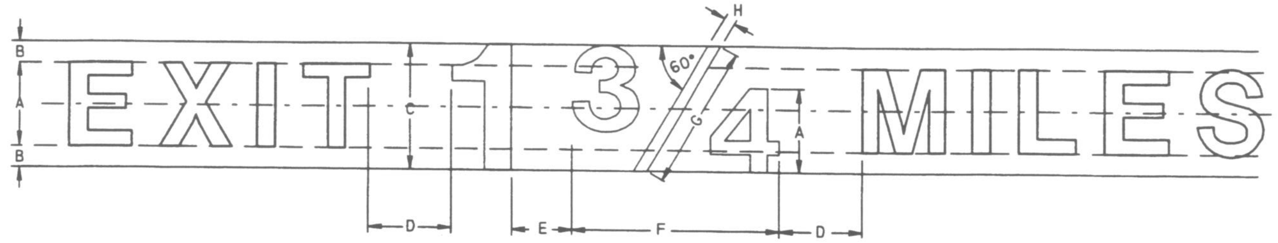
STANDARD DRAWING NO.	DATE	DESCRIPTION
TC-8700C (8 SHEETS)	AUGUST 1,1997	SPACING CHARTS / DIRECT APPLIED LETTERS, NUMERALS & ARROWS
TC-8701A (7 SHEETS)	AUGUST 1,1997	ADVANCE SIGNING FOR INTERCHANGES
TC-8701D (8 SHEETS)	AUGUST 1,1997	SIGN DETAILS / FREEWAY & EXPRESSWAY GUIDE SIGNS
TC-8701E (2 SHEETS)	AUGUST 1,1997	EXTRUDED ALUMINUM CHANNEL SIGNS
TC-8701P	AUGUST 1,1997	FREEWAY & EXPRESSWAY ADVANCE SIGNING FOR PARKING AREAS
TC-8701R	AUGUST 1,1997	FREEWAY & EXPRESSWAY ADVANCE SIGNING FOR REST AREAS
TC-8701S (3 SHEETS)	AUGUST 1,1997	FLAT SHEET ALUMINUM SIGNS WITH EXTRUDED ALUMINUM STIFFENERS
TC-8701W	AUGUST 1,1997	FREEWAY & EXPRESSWAY ADVANCE SIGNING FOR WELCOME CENTERS
TC-8702A (6 SHEETS)	AUGUST 1,1997	POST-MOUNTED SIGNS, TYPE A
TC-8702B (11 SHEETS)	AUGUST 1,1997	POST-MOUNTED SIGNS, TYPE B
TC-8702C (2 SHEETS)	AUGUST 1,1997	POST-MOUNTED SIGNS, TYPE C
TC-8702D (2 SHEETS)	AUGUST 1,1997	POST-MOUNTED SIGNS, TYPE D
TC-8702E (4 SHEETS)	AUGUST 1,1998	POST-MOUNTED SIGNS, TYPE E
TC-8710	AUGUST 1,1997	DISTANCE MARKERS
TC-8715 (4 SHEETS)	AUGUST 1,1997	SIGN LIGHTING
TC-8716	AUGUST 24,2000	TYPE III BARRICADE

08-SEP-2000

TC87IDX.DGN

NOTES:

1. SEE TC-8701D FOR SIGN LAYOUT DETAILS FOR FREEWAY AND EXPRESSWAY SIGNS.
2. TO DETERMINE THE PROPER SIZE, SERIES AND TYPE OF LEGEND TO BE USED, SEE THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND TC-8701D.



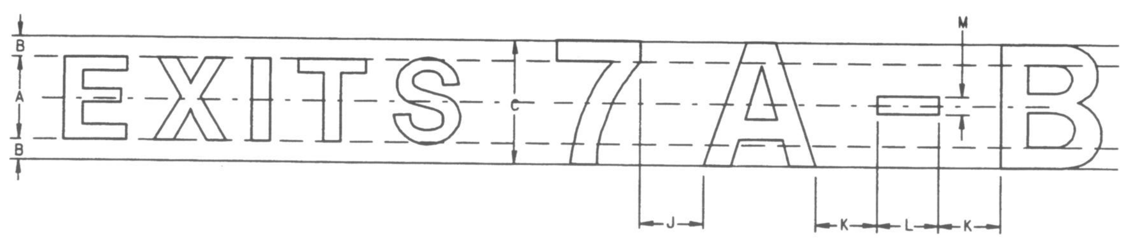
NOTES:

1. DIAGONAL OF FRACTION TO BE CENTERED OPTICALLY.
2. WHEN THE NUMERATOR OF A FRACTION IS 1 (ONE), USE 2.2 x A. FOR ALL OTHER NUMERATORS, USE 2.5 x A.

SIZE OF THE FRACTION RECTANGLE IS DETERMINED AS FOLLOWS:

SYMBOL	TITLE	RATIO TO HEIGHT OF UPPER CASE
A	LETTER HEIGHT	1.0 x UPPER CASE
B	SPACE TO TOP OR BOTTOM OF RECTANGLE	0.25 x A
C	HEIGHT OF RECTANGLE	1.5 x A
D	SPACE TO NEXT CHARACTER	1.5 x A
E	SPACE FROM WHOLE NUMBER TO A FRACTION OR DECIMAL POINT	0.75 x A
F	WIDTH OF RECTANGLE	SEE NOTE 2
G	LENGTH OF DIAGONAL	1.7 x A
H	THICKNESS OF DIAGONAL	LETTER STROKE WIDTH

SIZE AND SPACING OF FRACTIONS
(EXCEPT SEE SHEET 5 OF 8 OF TC-8701D FOR FRACTIONS ON LINES WITH UPPER/LOWER CASE LEGEND)



NOTE:

1. THE DASH IS TO BE CENTERED OPTICALLY.

SIZE AND SPACING OF DASHES ARE DETERMINED AS FOLLOWS:

SYMBOL	TITLE	RATIO TO HEIGHT OF UPPER CASE
A	LETTER HEIGHT	1.0 x UPPER CASE
B	SPACE TO TOP OR BOTTOM OF RECTANGLE	0.25 x A
C	HEIGHT OF RECTANGLE	1.5 x A
J	SPACE FROM NUMBER TO A CHARACTER	0.75 x A
K	SPACE FROM DASH TO A CHARACTER	0.75 x A
L	LENGTH OF DASH	0.75 x A
M	THICKNESS OF DASH	STROKE WIDTH

SIZE AND SPACING OF DASHES

HOW TO USE THE SPACING CHARTS ON THE FOLLOWING SHEETS:

a. SELECT THE PROPER CHART FROM SHEETS 2 THROUGH 7. (FOR LETTER AND NUMERAL SIZES WHERE A SPACING CHART HAS NOT BEEN PROVIDED, USE ONE OR MORE OF THE EXISTING CHARTS TO DETERMINE PROPER SPACING. FOR EXAMPLE, FOR 375 mm SERIES E NUMERALS, USE 1.5 TIMES THE VALUES SHOWN FOR 250 mm SERIES E NUMERALS.)

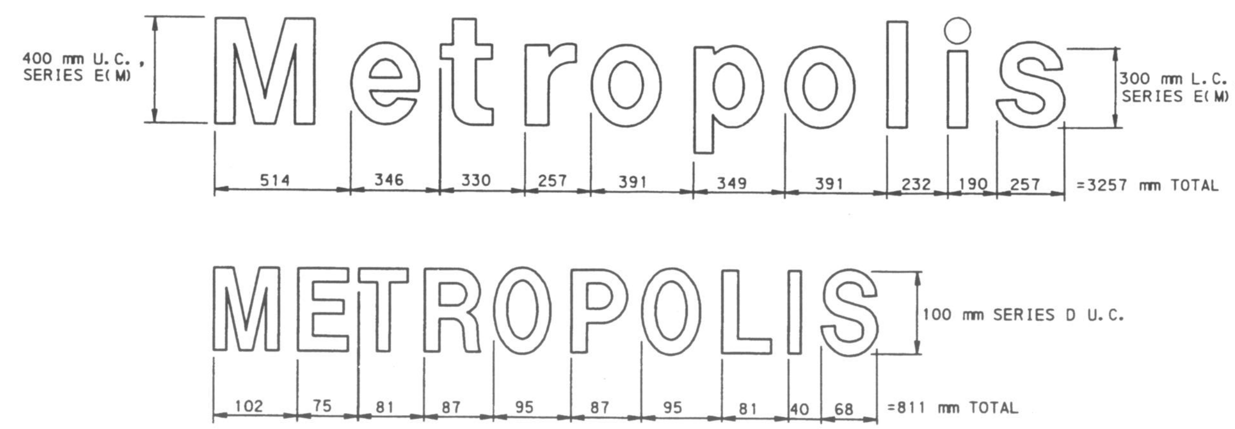
b. IN THE LEFT-HAND VERTICAL COLUMN, LOCATE THE FIRST LETTER OF THE WORD BEING SPACED.

c. LOCATE THE NEXT LETTER OF THE WORD BEING SPACED IN THE TOP HORIZONTAL COLUMN.

d. THE FIGURE AT THE INTERSECTION OF THE TWO COLUMNS IS THE TOTAL WIDTH IN MILLIMETERS OF THE FIRST LETTER PLUS THE SPACE TO THE LEFT EDGE OF THE NEXT LETTER.

e. TO COMPUTE THE LENGTH OF A WORD, ADD THE FIGURES OBTAINED BY REPEATING STEPS a, b, c AND d FOR EACH SUCCESSIVE LETTER PLUS THE LETTER WIDTH ONLY OF THE LAST LETTER. SEE EXAMPLES. (THE LETTER WIDTHS ARE GIVEN IN THE EXTREME LEFT-HAND COLUMN OF EACH CHART.)

f. THE MINIMUM SPACING BETWEEN WORDS IN THE SAME LINE SHOULD BE THE HEIGHT OF THE UPPER CASE LETTER USED IN THAT LINE.



EXAMPLES

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

SPACING CHARTS
DIRECT APPLIED LETTERS & NUMERALS

GENERAL INFORMATION

RECOMMENDED AUG. 1, 1997	RECOMMENDED AUG. 1, 1997	SHT. 1 OF 8
A H Brenner — CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	Gary L. Hoffman — CHIEF HIGHWAY ENGINEER	TC-8700C

04-AUG-1997

600 mm UPPER CASE to 450 mm lower case

600 \ 450		a c d e g o q	b h i k l m n p r u	f	w	j	s t v y	x	z
		a 385, c 385, d 389, e 389, g 389, o 400, q 389	b 389, h 389, i 114, k 385, l 114, m 643, n 389, p 389, r 298, u 389	247	602	214	s 385, t 305, v 454, y 492	473	400
610	A	755	770	743	701	724	706	724	759
486	B	658	703	646	600	642	619	619	661
486	C	646	684	635	593	631		638	654
486	D	642	691	638	584	631		638	646
446	E	606	644	595	553	591		598	614
446	F	523	598	542	523	530		537	560
486	G	646	684	635	593	631		638	654
486	H	696	733	684	646	680		691	700
120	I	330	367	318	280	314		325	334
456	J	661	673	650	612	638		647	666
494	K	616	676	608	566	604		612	627
446	L	568	628	560	518	556		564	579
562	M	772	809	760	722	756		767	776
486	N	696	733	684	646	680		691	700
504	O	660	709	656	602	649		656	664
486	P	635	658	623	563	608		619	631
504	Q	660	709	656	602	649		656	664
486	R	642	691	638	584	631		638	646
486	S	631	680	619	582	616		623	635
446	T	560	628	553	530	560		568	579
486	U	691	703	680	642	668		677	696
552	V	659	724	666	643	682		689	701
638	W	783	798	771	729	752	734	752	787
526	X	671	686	659	617	640	622	640	675
610	Y	687	762	706	678	682		694	732
486	Z	677	714	673	619	668		677	684

600 mm DIGIT TO 600 mm DIGIT

600		0, 2, 3, 6, 8, 9	1, 5	4, 7
		0: 504; 2, 3, 6, 8, 9: 486	1: 192; 5: 486	4: 562; 7: 486
504	0	630	660	630
192	1	348	348	318
486	2	612	642	612
486	3	612	642	612
562	4	688	688	604
486	5	612	642	612
486	6	612	642	612
486	7	612	612	528
486	8	612	642	612
486	9	612	642	612

500 mm UPPER CASE to 375 mm lower case

500 \ 375		a c d e g o q	b h i k l m n p r u	f	w	j	s t v y	x	z
		a 321, c 321, d 324, e 324, g 324, o 333, q 324	b 324, h 324, i 95, k 321, l 95, m 536, n 324, p 324, r 248, u 324	206	502	178	s 321, t 254, v 378, y 410	394	333
508	A	629	641	619	584	603	588	603	632
405	B	548	586	538	500	535	516	516	551
405	C	538	570	529	494	526		532	545
405	D	535	576	532	487	526		532	538
372	E	505	537	496	461	493		499	512
372	F	436	499	452	436	442		448	467
405	G	538	570	529	494	526		532	545
405	H	580	611	570	538	567		576	583
100	I	275	306	265	233	262		271	278
380	J	551	561	542	510	532		539	555
412	K	514	564	507	472	504		510	523
372	L	474	524	467	432	464		470	483
468	M	643	674	633	601	630		639	646
405	N	580	611	570	538	567		576	583
420	O	550	591	547	502	541		547	553
405	P	529	548	519	469	507		516	526
420	Q	550	591	547	502	541		547	553
405	R	535	576	532	487	526		532	538
405	S	526	567	516	485	513		519	529
372	T	467	524	461	442	467		474	483
405	U	576	586	567	535	557		564	580
460	V	549	603	555	536	568		574	584
532	W	653	665	643	608	627	612	627	656
438	X	559	571	549	514	533	518	533	562
508	Y	572	635	588	565	568		578	610
405	Z	564	595	561	516	557		564	570

500 mm DIGIT TO 500 mm DIGIT

500		0, 2, 3, 6, 8, 9	1, 5	4, 7
		0: 420; 2, 3, 6, 8, 9: 405	1: 160; 5: 405	4: 468; 7: 405
420	0	525	550	525
160	1	290	290	265
405	2	510	535	510
405	3	510	535	510
468	4	573	573	503
405	5	510	535	510
405	6	510	535	510
405	7	510	510	440
405	8	510	535	510
405	9	510	535	510

400 mm UPPER CASE to 300 mm lower case

400 \ 300		a c d e g o q	b h i k l m n p r u	f	w	j	s t v y	x	z
		a 257, c 257, d 260, e 260, g 260, o 267, q 260	b 260, h 260, i 76, k 257, l 76, m 429, n 260, p 260, r 197, u 260	165	400	143	s 257, t 203, v 302, y 327	314	267
406	A	501	514	495	466	482	470	482	504
324	B	438	470	432	400	429	413	413	442
324	C	432	457	422	394	419		426	435
324	D	429	461	426	391	419		426	432
298	E	406	431	396	368	393		400	409
298	F	349	400	362	349	355		358	374
324	G	432	457	422	394	419		426	435
324	H	464	489	457	432	454		461	467
80	I	220	245	213	188	210		217	223
304	J	441	450	434	409	425		431	444
330	K	412	451	406	378	403		410	419
298	L	380	419	374	346	371		378	387
374	M	514	539	507	482	504		511	517
324	N	464	489	457	432	454		461	467
336	O	441	473	438	403	431		438	444
324	P	422	438	416	375	406		413	419
336	Q	441	473	438	403	431		438	444
324	R	429	461	426	391	419		426	432
324	S	419	454	413	388	410		416	422
298	T	374	419	368	355	374		380	387
324	U	461	470	454	429	445		451	464
368	V	438	482	444	428	454		460	466
426	W	521	534	515	486	502	490	502	524
350	X	445	458	439	410	426	414	426	448
406	Y	457	508	470	450	454		463	488
324	Z	451	476	448	413	445		451	457

400 mm DIGIT TO 400 mm DIGIT

400		0, 2, 3, 6, 8, 9	1, 5	4, 7
		0: 336; 2, 3, 6, 8, 9: 324	1: 120; 5: 324	4: 374; 7: 324
336	0	420	440	420
120	1	224	224	204
324	2	408	428	408
324	3	408	428	408
374	4	458	458	402
324	5	408	428	408
324	6	408	428	408
324	7	408	408	352
324	8	408	428	408
324	9	408	428	408

450 mm lower case to 450 mm lower case

450		a c d e g o q	b h i k l m n p r u	f	w	j s t v y	x	z
		a 385, c 385, d 389, e 389, g 389, o 400, q 389	b 389, h 389, i 114, k 385, l 114, m 643, n 389, p 389, r 298, u 389	247	602	j 214, s 385, t 305, v 454, y 492	473	400
385	a	572	618	560	518	557	567	576
389	b	522	576	511	469	507	519	526
385	c	530	576	518	476	515	522	534
389	d	576	622	564	522	561	571	580
389	e	534	580	522	480	519	526	538
247	f	380	434	369	327	365	377	384
389	g	576	622	564	522	561	571	580
389	h	576	622	564	522	561	571	580
114	i	301	347	289	247	286	296	305
214	j	401	447	389	347	386	396	405
385	k	518	572	507	465	503	515	522
114	l	301	347	289	247	286	296	305
643	m	830	876	818	776	815	825	834
389	n	576	622	564	522	561	571	580
400	o	533	587	522	480	518	530	537
389	p	522	576	511	469	507	519	526
389	q	576	622	564	522	561	571	580
298	r	389	443	382	336	375	382	394
385	s	518	572	507	465	503	515	522
305	t	442	496	435	389	427	438	450
389	u	576	622	564	522	561	571	580
454	v	572	626	564	522	561	568	576
602	w	724	774	716	674	712	720	732
473	x	603	648	591	550	587	595	606
492	y	610	664	602	560	599	606	614
400	z	537	591	530	484	522	533	545

375 mm lower case to 375 mm lower case

375		a c d e g o q	b h i k l m n p r u	f	w	j s t v y	x	z
		a 321, c 321, d 324, e 324, g 324, o 333, q 324	b 324, h 324, i 95, k 321, l 95, m 536, n 324, p 324, r 248, u 324	206	502	j 178, s 321, t 254, v 378, y 410	394	333
321	a	477	515	467	432	464	473	480
324	b	435	480	426	391	422	432	438
321	c	442	480	432	397	429	435	445
324	d	480	518	470	435	467	476	483
324	e	445	483	435	400	432	438	448
206	f	317	362	308	273	304	314	320
324	g	480	518	470	435	467	476	483
324	h	480	518	470	435	467	476	483
95	i	251	289	241	206	238	247	254
178	j	334	372	324	289	321	330	337
321	k	432	477	423	388	419	429	435
95	l	251	289	241	206	238	247	254
536	m	692	730	682	647	679	688	695
324	n	480	518	470	435	467	476	483
333	o	444	489	435	400	431	441	447
324	p	435	480	426	391	422	432	438
324	q	480	518	470	435	467	476	483
248	r	324	369	318	280	312	318	328
321	s	432	477	423	388	419	429	435
254	t	368	413	362	324	356	365	375
324	u	480	518	470	435	467	476	483
378	v	476	521	470	435	467	473	480
502	w	604	645	597	562	594	600	610
394	x	502	540	492	458	489	496	505
410	y	508	553	502	467	499	505	512
333	z	447	492	441	403	435	444	454

300 mm lower case to 300 mm lower case

300		a c d e g o q	b h i k l m n p r u	f	w	j s t v y	x	z
		a 257, c 257, d 260, e 260, g 260, o 267, q 260	b 260, h 260, i 76, k 257, l 76, m 429, n 260, p 260, r 197, u 260	165	400	j 143, s 257, t 203, v 302, y 327	314	267
257	a	381	413	375	346	371	378	384
260	b	349	384	342	314	340	346	352
257	c	352	384	346	317	343	349	355
260	d	384	416	378	349	374	381	387
260	e	355	387	349	320	346	352	358
165	f	254	289	247	219	245	251	257
260	g	384	416	378	349	374	381	387
260	h	384	416	378	349	374	381	387
76	i	200	232	194	165	190	197	203
143	j	267	299	261	232	257	264	270
257	k	346	381	339	311	337	343	349
76	l	200	232	194	165	190	197	203
429	m	553	585	547	518	543	550	556
260	n	384	416	378	349	374	381	387
267	o	356	391	349	321	347	353	359
260	p	349	384	342	314	340	346	352
260	q	384	416	378	349	374	381	387
197	r	257	292	254	222	248	254	261
257	s	346	381	339	311	337	343	349
203	t	295	330	289	260	285	292	298
260	u	384	416	378	349	374	381	387
302	v	382	416	375	346	372	378	384
400	w	483	514	476	448	473	480	486
314	x	400	432	394	365	390	396	403
327	y	407	441	400	371	397	403	409
267	z	359	394	353	324	349	356	362

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

SPACING CHARTS
DIRECT APPLIED LETTERS & NUMERALS

UPPER CASE & LOWER CASE
SERIES E MODIFIED

RECOMMENDED AUG. 1, 1997 CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED AUG. 1, 1997 Gary L. Hoffman CHIEF HIGHWAY ENGINEER	SHT. 2 OF 8 TC-8700C

330 mm UPPER CASE to 250 mm lower case

250 / 330		213		216			219	216			64	213	64	359	216		165	216	140	333	117	213	168	254	273	264	219
		a	c	d	e	g	o	q	b	h	i	k	l	m	n	p	r	u	f	w	j	s	t	v	y	x	z
338	A	418							427										411		389	402		392		402	420
270	B	365							391										359		334	359		343		343	368
270	C	359							381										352		327	350				356	362
270	D	359							384										356		327	350				356	359
248	E	337							359										330		305	328				334	340
248	F	289							334										302		289	296				299	312
270	G	359							381										352		327	350				356	362
270	H	388							407										381		359	378				384	391
66	I	184							203										177		155	174				180	187
253	J	367							374										361		342	355				358	371
275	K	345							377										339		316	335				342	348
248	L	318							350										312		289	308				315	321
312	M	430							449										423		401	420				426	433
270	N	388							407										381		359	378				384	391
280	O	369							394										366		337	360				366	369
270	P	352							365										346		311	340				343	350
280	Q	369							394										366		337	360				366	369
270	R	359							384										356		327	350				356	359
270	S	350							378										343		324	343				346	352
248	T	312							350										305		296	312				318	321
270	U	384							391										378		359	372				375	388
307	V	364							402										371		358	380				383	389
355	W	435							444										428		406	419		409		419	437
292	X	372							381										365		343	356		346		356	374
338	Y	379							424										392		376	379				386	408
270	Z	375							397										372		343	372				375	381

330 mm DIGIT TO 330 mm DIGIT

330		280	270					100	270	312	270
		0	2	3	6	8	9	1	5	4	7
280	0	350						367		350	
100	1	187						187		170	
270	2	340						357		340	
270	3	340						357		340	
312	4	382						382		335	
270	5	340						357		340	
270	6	340						357		340	
270	7	340						340		293	
270	8	340						357		340	
270	9	340						357		340	

265 mm UPPER CASE to 200 mm lower case

200 / 265		171					178	171			51	171	51	286	171		133	171	111	270	95	171	136	203	219	210	178
		a	c	d	e	g	o	q	b	h	i	k	l	m	n	p	r	u	f	w	j	s	t	v	y	x	z
271	A	334							343										330		311	322		314		322	336
216	B	292							313										288		267	286		275		275	295
216	C	288							305										281		263	279				284	290
216	D	286							307										284		261	279				284	288
199	E	271							288										264		246	262				267	273
199	F	233							267										242		233	237				239	250
216	G	288							305										281		263	279				284	290
216	H	309							326										305		288	303				307	311
53	I	146							163										142		125	140				144	148
203	J	294							300										290		273	284				288	296
220	K	275							301										271		252	269				273	279
199	L	254							280										250		231	248				252	258
249	M	342							359										338		321	336				340	344
216	N	309							326										305		288	303				307	311
224	O	294							315										292		269	287				292	296
216	P	281							292										277		250	271				275	279
224	Q	294							315										292		269	287				292	296
216	R	286							307										284		261	279				284	288
216	S	279							303										275		259	273				277	281
199	T	250							280										246		237	250				254	258
216	U	307							313										303		286	297				301	309
245	V	292							321										296		285	302				306	310
284	W	347							356										343		324	335		327		335	349
233	X	296							305										292		273	284		276		284	298
271	Y	305							339										314		300	303				309	326
216	Z	301							317										299		275	297				301	305

265 mm DIGIT TO 265 mm DIGIT

265		224	216					80	216	249	216
		0	2	3	6	8	9	1	5	4	7
224	0	280						293		280	
80	1	149						149		136	
216	2	272						285		272	
216	3	272						285		272	
249	4	305						305		268	
216	5	272						285		272	
216	6	272						285		272	
216	7	272						272		235	
215	8	272						285		272	
216	9	272						285		272	

200 mm UPPER CASE to 150 mm lower case

150 / 200		129		130			134	130			38	129	38	215	130		99	130	83	200	72	129	102	151	164	157	134
		a	c	d	e	g	o	q	b	h	i	k	l	m	n	p	r	u	f	w	j	s	t	v	y	x	z
203	A	250							257										247		233	241		235		241	252
162	B	219							235										216		200	215		206		206	221
162	C	216							229										211		197	209				213	218
162	D	215							230										213		196	209				213	216
149	E	203							216										198		184	196				200	205
149	F	175							200										181		175	178				179	187
162	G	216							229										211		197	209				213	218
162	H	232							245										229		216	227				230	233
40	I	110							123										107		94	105				108	111
152	J	220							225										217		205	213				216	222
165	K	206							226										203		189	202				205	209
149	L	190							210										187		173	186				189	193
187	M	257							270										254		241	252				255	258
162	N	232							245										229		216	227				230	233
168	O	221							236										219		202	215				219	222
162	P	211							219										208		188	203				206	209
168	Q	221							236										219		202	215				219	222
162	R	215							230										213		196	209				213	216
162	S	209							227										206		194	205				208	211
149	T	187							210										184		178	187				190	193
162	U	230							235										227		215	223				226	232
184	V	219							241										222		214	227				230	233
213	W	260							267										257		243	251		245		251	262
175	X	222							229										219		205	213		207		213	224
203	Y	229							254										235		225	227				232	244
162	Z	226							238										224		206	223				226	229

200 mm DIGIT TO 200 mm DIGIT

200		168	162					60	162	187	162
		0	2	3	6	8	9	1	5	4	7
168	0	210						220		210	
60	1	112						112		102	
162	2	204						214		204	
162	3	204						214		204	
187	4	229						229		201	
162	5	204						214		204	
162	6	204						214		204	
162	7	204						204		176	
162	8	204						214		204	
162	9	204						214		204	

250 mm lower case to 250 mm lower case

250		213		216			219	216			64	213	64	359	216		165	216	140	333	117	213	168	254	273	264	219
		a	c	d	e	g	o	q	b	h	i	k	l	m	n	p	r	u	f	w	j	s	t	v	y	x	z
213	a	315							343										311		286	308				315	318
216	b	289							318										286		260	283				289	292
213	c	293							318										286		264	286				289	295
216	d	318							346										314		289	311				318	321
216	e	296							321										289		267	289				292	298
140	f	213							242										210		184	207				213	216
216	g	318							346										314		289	311				318	321
216	h	318							346										314		289	311				318	321
64	i	166							194										162		137	159				166	169
117	j	219							247										215		190	212				219	222
213	k	286							315										283		257	280				286	289
64	l	166							194										162		137	159				166	169
359	m	461							489										457		432	454				461	464
216	n	318							346										314		289	311				318	321
219	o	292							321										289		263	286				292	295
216	p	289							318										286		260	283				289	292
216	q	318							346										314		289	311				318	321
165	r	216							245										213		187	206				213	219
213	s	286							315										283		257	280				286	289
168	t	244							273										241		216	238				241	248
216	u	318							346										314		289	311				318	321
254	v	321							349										314		292	311				318	324
333	w	403							428										397		374	393				400	406
264	x	337							362										331		305	328				334	337
273	y	340							368										333		311	330				337	343
219	z	295							324										292		267	289				292	299

200 mm lower case to 200 mm lower case

200		171					178	171			51	171	51	286	171		133	171	111	270	95	171	136	203	219	210	178
		a	c	d	e	g	o	q	b	h	i	k	l	m	n	p	r	u	f	w	j	s	t	v	y	x	z
171	a	254							275										250		230	247				252	256
171	b	230							254										226		207	224				228	232
171	c	234							256										230		211	228				232	236
171	d	254							275										250		230	247				252	256
171	e	234							256										230		211	228				232	236
111	f	170							194										166		147	164				168	172
171	g	254							275										250		230	247				252	256
171	h	254							275										250		230	247				252	256
51	i	134							155										130		110	127				132	136
95	j	178							199										174		154	171				176	180
171	k	230							254										226		207	224				228	232
51	l	134							155										130		110	127				132	136
286	m	369							390										365		345	362				367	371
171	n	254							275										250		230	247				252	256
178	o	237							261										233		214	231				235	239
171	p	230							254										226		207	224				228	232
171	q	254							275										250		230	247				252	256
133	r	173							196										171		150	167				171	176
171	s	230							254										226		207	224				228	232
136	t	197							221										193		174	191				195	199
171	u	254							275										250		230	247				252	256
203	v	256							279										252		232	250				254	258
270	w	325							346										321		302	319				323	327
210	x	267							289										263		244	261				265	269
219	y	272							295										268		248	266				270	274
178	z	239							263										235		216	233				237	241

150 mm lower case to 150 mm lower case

150		129		130			134	130			38	129	38	215	130		99	130	83	200	72	129	102	151	164	157	134
		a	c	d	e	g	o	q	b	h	i	k	l	m	n	p	r	u	f	w	j	s	t	v	y	x	z
129	a	191							207										188		173	186				190	193
130	b	174							192										171		157	170				173	176
129	c	176							193										173		159	172				175	178
130	d	192							208										189		174	187				191	194
130	e	177							194										174		160	173				176	179
83	f	127							145										124		110	123				126	129
130	g	192							208										189		174	187				191	194
130	h	192							208										189		174	187				191	194
38	i	100							116										97		82	95				99	102
72	j	134							150										131		116	129				133	136
129	k	173							191										170		156	169				172	175
38	l	100							116										97		82	95				99	102
215	m	277							293										274		259	272				276	279
130	n	192							208										189		174	187				191	194
134	o	178							196										175		161	174				177	180
130	p	174							192										171		157	170				173	176
130	q	192							208										189		174	187				191	194
99	r	129							146										128		112	125				128	131
129	s	173							191										170		156	169				172	175
102	t	148							166										145		131	143				146	149
130	u	192							208										189		174	187				191	194
151	v	191							208										188		173	186				189	192
200	w	241							257										238		224	237				240	243
157	x	200							216										197		183	195				198	201
164	y	204							221										201		186	199				202	205
134	z	180							198										177		163	175				178	181

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

SPACING CHARTS
DIRECT APPLIED LETTERS & NUMERALS

UPPER CASE & LOWER CASE
SERIES E MODIFIED

RECOMMENDED AUG. 1, 1997
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION

RECOMMENDED AUG. 1, 1997
Gary L. Hoffman
CHIEF HIGHWAY ENGINEER

SHT. 3 OF 8

TC-8700C

450 mm UPPER CASE TO 450 mm UPPER CASE

450		457 342 335 414 479 457	365 335 365 79 371 335 421 365	378 365 394 365
		A J T V W Y	B D E F H I K L M N P R U	C G O Q S X Z
457	A	489	552	552
365	B	460	482	460
365	C	428	460	460
365	D	460	482	460
335	E	398	430	430
335	F	398	430	430
365	G	460	482	460
365	H	460	482	482
79	I	174	196	196
342	J	437	459	459
371	K	434	466	466
335	L	367	430	430
421	M	516	538	538
365	N	460	482	482
378	O	473	495	473
365	P	460	482	460
378	Q	473	495	473
365	R	460	482	460
365	S	460	482	460
335	T	367	430	430
365	U	460	482	482
414	V	446	509	509
479	W	511	574	574
394	X	457	489	489
457	Y	489	552	552
365	Z	428	460	460

300 mm UPPER CASE TO 300 mm UPPER CASE

300		305 229 224 276 319 305	243 224 243 52 248 224 281 243	252 243 262 243
		A J T V W Y	B D E F H I K L M N P R U	C G O Q S X Z
305	A	326	368	368
243	B	306	321	306
243	C	285	306	306
243	D	306	321	306
224	E	266	287	287
224	F	266	287	287
243	G	306	321	306
243	H	306	321	321
52	I	115	130	130
229	J	292	307	307
248	K	290	311	311
224	L	245	287	287
281	M	344	359	359
243	N	306	321	321
252	O	315	330	315
243	P	306	321	306
252	Q	315	330	315
243	R	306	321	306
243	S	306	321	306
224	T	245	287	287
243	U	306	321	321
276	V	297	339	339
319	W	340	382	382
262	X	304	325	325
305	Y	326	368	368
243	Z	285	306	306

250 mm UPPER CASE TO 250 mm UPPER CASE

250		254 190 186 230 266 254	202 186 202 44 206 186 234 202	210 202 218 202
		A J T V W Y	B D E F H I K L M N P R U	C G O Q S X Z
254	A	271	306	306
202	B	254	268	254
202	C	237	254	254
202	D	254	268	254
186	E	221	238	238
186	F	221	238	238
202	G	254	268	254
202	H	254	268	268
44	I	96	110	110
190	J	242	256	256
206	K	241	258	258
186	L	203	238	238
234	M	286	300	300
202	N	254	268	268
210	O	262	276	262
202	P	254	268	254
210	Q	262	276	262
202	R	254	268	254
202	S	254	268	254
186	T	203	238	238
202	U	254	268	268
230	V	247	282	282
266	W	283	318	318
218	X	253	270	270
254	Y	271	306	306
202	Z	237	254	254

200 mm UPPER CASE TO 200 mm UPPER CASE

200		203 152 149 184 213 203	162 149 162 35 165 149 187 162	168 162 175 162
		A J T V W Y	B D E F H I K L M N P R U	C G O Q S X Z
203	A	217	245	245
162	B	204	214	204
162	C	190	204	204
162	D	204	214	204
149	E	177	191	191
149	F	177	191	191
162	G	204	214	204
162	H	204	214	214
35	I	77	87	87
152	J	194	204	204
165	K	193	207	207
149	L	163	191	191
187	M	229	239	239
162	N	204	214	214
168	O	210	220	210
162	P	204	214	204
168	Q	210	220	210
162	R	204	214	204
162	S	204	214	204
149	T	163	191	191
162	U	204	214	214
184	V	198	226	226
213	W	227	255	255
175	X	203	217	217
203	Y	217	245	245
162	Z	190	204	204

450 mm DIGIT TO 450 mm DIGIT

450		378 365	135 365	421 365
		0 2 3 6 8 9	1 5	4 7
378	0	473	495	473
135	1	252	252	230
365	2	460	482	460
365	3	460	482	460
421	4	516	516	453
365	5	460	482	460
365	6	460	482	460
365	7	460	460	397
365	8	460	482	460
365	9	460	482	460

300 mm DIGIT TO 300 mm DIGIT

300		252 243	90 243	281 243
		0 2 3 6 8 9	1 5	4 7
252	0	315	330	315
90	1	168	168	153
243	2	306	321	306
243	3	306	321	306
281	4	344	344	302
243	5	306	321	306
243	6	306	321	306
243	7	306	306	264
243	8	306	321	306
243	9	306	321	306

250 mm DIGIT TO 250 mm DIGIT

250		210 202	75 202	234 202
		0 2 3 6 8 9	1 5	4 7
210	0	262	276	262
75	1	141	141	127
202	2	254	268	254
202	3	254	268	254
234	4	286	286	251
202	5	254	268	254
202	6	254	268	254
202	7	254	254	219
202	8	254	268	254
202	9	254	268	254

200 mm DIGIT TO 200 mm DIGIT

200		168 162	60 162	187 162
		0 2 3 6 8 9	1 5	4 7
168	0	210	220	210
60	1	112	112	102
162	2	204	214	204
162	3	204	214	204
187	4	229	229	201
162	5	204	214	204
162	6	204	214	204
162	7	204	204	176
162	8	204	214	204
162	9	204	214	204

150 mm UPPER CASE TO 150 mm UPPER CASE

150		152 114 112 138 160 152	121 112 121 26 124 112 140 121	126 121 131 121
		A J T V W Y	B D E F H I K L M N P R U	C G O Q S X Z
152	A	162	184	194
121	B	153	160	185
121	C	142	153	153
121	D	153	160	153
112	E	133	144	144
112	F	133	144	144
121	G	153	160	153
121	H	153	160	160
26	I	58	65	65
114	J	146	153	153
124	K	145	156	156
112	L	122	144	144
140	M	172	179	179
121	N	153	160	160
126	O	158	165	158
121	P	153	160	153
126	Q	158	165	158
121	R	153	160	153
121	S	153	160	153
112	T	122	144	144
121	U	153	160	160
138	V	148	170	170
160	W	170	192	192
131	X	152	163	163
152	Y	162	184	184
121	Z	142	153	153

150 mm DIGIT TO 150 mm DIGIT

150		126 121	45 121	140 121
		0 2 3 6 8 9	1 5	4 7
126	0	158	165	158
45	1	84	84	77
121	2	153	160	153
121	3	153	160	153
140	4	172	172	150
121	5	153	160	153
121	6	153	160	153
121	7	153	153	131
121	8	153	160	153
121	9	153	160	153

100 mm UPPER CASE TO 100 mm UPPER CASE

100		102 76 75 92 106 102	81 75 81 18 83 75 94 81	84 81 87 81
		A J T V W Y	B D E F H I K L M N P R U	C G O Q S X Z
102	A	109	123	123
81	B	102	107	102
81	C	95	102	102
81	D	102	107	102
75	E	89	96	96
75	F	89	96	96
81	G	102	107	102
81	H	102	107	107
18	I	39	44	44
76	J	97	102	102
83	K	97	104	104
75	L	82	96	96
94	M	115	120	120
81	N	102	107	107
84	O	105	110	105
81	P	102	107	102
84	Q	105	110	105
81	R	102	107	102
81	S	102	107	102
75	T	82	96	96
81	U	102	107	107
92	V	99	113	113
106	W	113	127	127
87	X	101	108	108
102	Y	109	123	123
81	Z	95	102	102

100 mm DIGIT TO 100 mm DIGIT

100		84 81	30 81	94 81
		0 2 3 6 8 9	1 5	4 7
84	0	105	110	105
30	1	56	56	51
81	2	102	107	102
81	3	102	107	102
94	4	115	115	101
81	5	102	107	102
81	6	102	107	102
81	7	102	102	88
81	8	102	107	102
81	9	102	107	102

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

SPACING CHARTS
DIRECT APPLIED LETTERS & NUMERALS

UPPER CASE
SERIES E

RECOMMENDED AUG. 1, 1997
[signature]
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION

RECOMMENDED AUG. 1, 1997
Gary L. Hoffman
CHIEF HIGHWAY ENGINEER

SHT. 4 OF 8

TC-8700C

450 mm UPPER CASE TO 450 mm UPPER CASE

450		A J T V W Y	B D E F H I K L M N P R U	C G O Q S X Z
		383 286 279 342 401 385	308 279 308 72 315 279 353 308	322 308
383	A	412	469	469
308	B	394	416	394
308	C	364	394	394
308	D	394	416	394
279	E	335	365	365
279	F	335	365	365
308	G	394	416	394
308	H	394	416	416
72	I	158	180	180
286	J	372	394	394
315	K	371	401	401
279	L	308	365	365
353	M	439	461	461
308	N	394	416	416
322	O	408	430	408
308	P	394	416	394
322	Q	408	430	408
308	R	394	416	394
308	S	394	416	394
279	T	308	365	365
308	U	394	416	416
342	V	371	428	428
401	W	430	487	487
308	X	364	394	394
385	Y	414	471	471
308	Z	364	394	394

300 mm UPPER CASE TO 300 mm UPPER CASE

300		A J T V W Y	B D E F H I K L M N P R U	C G O Q S X Z
		255 190 186 229 267 257	205 186 205 48 210 186 236 205	214 205
255	A	274	312	312
205	B	262	276	262
205	C	243	262	262
205	D	262	276	262
186	E	224	243	243
186	F	224	243	243
205	G	262	276	262
205	H	262	276	276
48	I	105	119	119
190	J	247	261	261
210	K	248	267	267
186	L	205	243	243
236	M	293	307	307
205	N	262	276	276
214	O	271	285	271
205	P	262	276	262
214	Q	271	285	271
205	R	262	276	262
205	S	262	276	262
186	T	205	243	243
205	U	262	276	276
229	V	248	286	286
267	W	286	324	324
205	X	243	262	262
257	Y	276	314	314
205	Z	243	262	262

250 mm UPPER CASE TO 250 mm UPPER CASE

250		A J T V W Y	B D E F H I K L M N P R U	C G O Q S X Z
		212 159 155 190 222 214	171 155 171 40 175 155 196 171	179 171
212	A	228	260	260
171	B	219	230	219
171	C	203	219	219
171	D	219	230	219
155	E	187	203	203
155	F	187	203	203
171	G	219	230	219
171	H	219	230	230
40	I	88	99	99
159	J	207	218	218
175	K	207	223	223
155	L	171	203	203
196	M	244	255	255
171	N	219	230	230
179	O	227	238	227
171	P	219	230	219
179	Q	227	238	227
171	R	219	230	219
171	S	219	230	219
155	T	171	203	203
171	U	219	230	230
190	V	206	238	238
222	W	238	270	270
171	X	203	219	219
214	Y	230	262	262
171	Z	203	219	219

200 mm UPPER CASE TO 200 mm UPPER CASE

200		A J T V W Y	B D E F H I K L M N P R U	C G O Q S X Z
		170 127 124 152 178 171	137 124 137 32 140 124 157 137	143 137
170	A	183	208	208
137	B	175	185	175
137	C	162	175	175
137	D	175	185	175
124	E	149	162	162
124	F	149	162	162
137	G	175	185	175
137	H	175	185	185
32	I	70	80	80
127	J	165	175	175
140	K	165	178	178
124	L	137	162	162
157	M	195	205	205
137	N	175	185	185
143	O	181	191	181
137	P	175	185	175
143	Q	181	191	181
137	R	175	185	175
137	S	175	185	175
124	T	137	162	162
137	U	175	185	185
152	V	165	190	190
178	W	191	216	216
137	X	162	175	175
171	Y	184	209	209
137	Z	162	175	175

450 mm DIGIT TO 450 mm DIGIT

450		0 2 3 6 8 9	1 5	4 7
		322 308	110 308	335 308
322	0	408	430	408
110	1	218	218	196
308	2	394	416	394
308	3	394	416	394
335	4	421	421	364
308	5	394	416	394
308	6	394	416	394
308	7	394	394	337
308	8	394	416	394
308	9	394	416	394

300 mm DIGIT TO 300 mm DIGIT

300		0 2 3 6 8 9	1 5	4 7
		214 205	74 205	224 205
214	0	271	285	271
74	1	145	145	131
205	2	262	276	262
205	3	262	276	262
224	4	281	281	243
205	5	262	276	262
205	6	262	276	262
205	7	262	262	224
205	8	262	276	262
205	9	262	276	262

250 mm DIGIT TO 250 mm DIGIT

250		0 2 3 6 8 9	1 5	4 7
		179 171	61 171	186 171
179	0	227	238	227
61	1	120	120	109
171	2	219	230	219
171	3	219	230	219
186	4	234	234	202
171	5	219	230	219
171	6	219	230	219
171	7	219	219	187
171	8	219	230	219
171	9	219	230	219

200 mm DIGIT TO 200 mm DIGIT

200		0 2 3 6 8 9	1 5	4 7
		143 137	50 137	149 137
143	0	181	191	181
50	1	98	98	88
137	2	175	185	175
137	3	175	185	175
149	4	187	187	162
137	5	175	185	175
137	6	175	185	175
137	7	175	175	150
137	8	175	185	175
137	9	175	185	175

150 mm UPPER CASE TO 150 mm UPPER CASE

150		A J T V W Y	B D E F H I K L M N P R U	C G O Q S X Z
		128 95 93 114 133 128	102 93 102 24 105 93 118 102	107 102
128	A	138	156	156
102	B	130	138	130
102	C	121	130	130
102	D	130	138	130
93	E	112	121	121
93	F	112	121	121
102	G	130	138	130
102	H	130	138	138
24	I	52	60	60
95	J	123	131	131
105	K	124	133	133
93	L	103	121	121
118	M	146	154	154
102	N	130	138	138
107	O	135	143	135
102	P	130	138	130
107	Q	135	143	135
102	R	130	138	130
102	S	130	138	130
93	T	103	121	121
102	U	130	138	138
114	V	124	142	142
133	W	143	161	161
102	X	121	130	130
128	Y	138	156	156
102	Z	121	130	130

150 mm DIGIT TO 150 mm DIGIT

150		0 2 3 6 8 9	1 5	4 7
		107 102	37 102	112 102
107	0	135	143	135
37	1	73	73	65
102	2	130	138	130
102	3	130	138	130
112	4	140	140	122
102	5	130	138	130
102	6	130	138	130
102	7	130	130	112
102	8	130	138	130
102	9	130	138	130

100 mm UPPER CASE TO 100 mm UPPER CASE

100		A J T V W Y	B D E F H I K L M N P R U	C G O Q S X Z
		85 64 62 76 89 86	68 62 68 16 70 62 78 68	71 68
85	A	91	104	104
68	B	87	92	87
68	C	81	87	87
68	D	87	92	87
62	E	75	81	81
62	F	75	81	81
68	G	87	92	87
68	H	87	92	92
16	I	35	40	40
64	J	83	88	88
70	K	83	89	89
62	L	68	81	81
78	M	97	102	102
68	N	87	92	92
71	O	90	95	90
68	P	87	92	87
71	Q	90	95	90
68	R	87	92	87
68	S	87	92	87
62	T	68	81	81
68	U	87	92	92
76	V	82	95	95
89	W	95	108	108
68	X	81	87	87
86	Y	92	105	105
68	Z	81	87	87

100 mm DIGIT TO 100 mm DIGIT

100		0 2 3 6 8 9	1 5	4 7
		71 68	25 68	75 68
71	0	90	95	90
25	1	49	49	44
68	2	87	92	87
68	3	87	92	87
75	4	94	94	81
68	5	87	92	87
68	6	87	92	87
68	7	87	87	74
68	8	87	92	87
68	9	87	92	87

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

SPACING CHARTS
DIRECT APPLIED LETTERS & NUMERALS

UPPER CASE
SERIES D

RECOMMENDED AUG. 1, 1997
A.H. Brown
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION

RECOMMENDED AUG. 1, 1997
Gary L. Hoffman
CHIEF HIGHWAY ENGINEER

TC-8700C

450 mm UPPER CASE TO 450 mm UPPER CASE

450		A 286 · J T 230 · V 279 · W 342 · Y 286	B D 250 · E F 230 · H 250 · I 63 · K 250 · L 230 · M 297 · N P R U 250	C G 250 · O Q 263 · S 250 · X 268 · Z 250
		A J T V W Y	B D E F H I K L M N P R U	C G O Q S X Z
286	A	312	364	364
250	B	328	346	328
250	C	301	328	328
250	D	328	346	328
230	E	281	308	308
230	F	281	308	308
250	G	328	346	328
250	H	328	346	346
63	I	141	159	159
230	J	308	326	326
250	K	301	328	328
230	L	256	308	308
297	M	375	393	393
250	N	328	346	346
263	O	341	359	341
250	P	328	346	328
263	Q	341	359	341
250	R	328	346	328
250	S	328	346	328
230	T	256	308	308
250	U	328	346	346
279	V	305	357	357
342	W	368	420	420
268	X	319	346	346
286	Y	312	364	364
250	Z	301	328	328

300 mm UPPER CASE TO 300 mm UPPER CASE

300		A 190 · J T 152 · V 186 · W 229 · Y 190	B D 167 · E F 152 · H 167 · I 43 · K 167 · L 152 · M 198 · N P R U 167	C G 167 · O Q 176 · S 167 · X 179 · Z 167
		A J T V W Y	B D E F H I K L M N P R U	C G O Q S X Z
190	A	207	242	242
167	B	219	231	219
167	C	201	219	219
167	D	219	231	219
152	E	186	204	204
152	F	186	204	204
167	G	219	231	219
167	H	219	231	231
43	I	95	107	107
152	J	204	216	216
167	K	201	219	219
152	L	169	204	204
198	M	250	262	262
167	N	219	231	231
176	O	228	240	228
167	P	219	231	219
176	Q	228	240	228
167	R	219	231	219
167	S	219	231	219
152	T	169	204	204
167	U	219	231	231
186	V	203	238	238
229	W	246	281	281
179	X	213	231	231
190	Y	207	242	242
167	Z	201	219	219

250 mm UPPER CASE TO 250 mm UPPER CASE

250		A 159 · J T 127 · V 155 · W 190 · Y 159	B D 139 · E F 127 · H 139 · I 36 · K 139 · L 127 · M 165 · N P R U 139	C G 139 · O Q 147 · S 139 · X 149 · Z 139
		A J T V W Y	B D E F H I K L M N P R U	C G O Q S X Z
159	A	173	202	202
139	B	182	193	182
139	C	167	182	182
139	D	182	193	182
127	E	155	170	170
127	F	155	170	170
139	G	182	193	182
139	H	182	193	193
36	I	79	90	90
127	J	170	181	181
139	K	167	182	182
127	L	141	170	170
165	M	208	219	219
139	N	182	193	193
147	O	190	201	190
139	P	182	193	182
147	Q	190	201	190
139	R	182	193	182
139	S	182	193	182
127	T	141	170	170
139	U	182	193	193
155	V	169	198	198
190	W	204	233	233
149	X	177	192	192
159	Y	173	202	202
139	Z	167	182	182

200 mm UPPER CASE TO 200 mm UPPER CASE

200		A 127 · J T 102 · V 124 · W 152 · Y 127	B D 111 · E F 102 · H 111 · I 28 · K 111 · L 102 · M 132 · N P R U 111	C G 111 · O Q 117 · S 111 · X 119 · Z 111
		A J T V W Y	B D E F H I K L M N P R U	C G O Q S X Z
127	A	138	161	161
111	B	145	154	145
111	C	134	145	145
111	D	145	154	145
102	E	125	136	136
102	F	125	136	136
111	G	145	154	145
111	H	145	154	154
28	I	62	71	71
102	J	136	145	145
111	K	134	145	145
102	L	113	136	136
132	M	166	175	175
111	N	145	154	154
117	O	151	160	151
111	P	145	154	145
117	Q	151	160	151
111	R	145	154	145
111	S	145	154	145
102	T	113	136	136
111	U	145	154	154
124	V	135	158	158
152	W	163	186	186
119	X	142	153	153
127	Y	138	161	161
111	Z	134	145	145

450 mm DIGIT TO 450 mm DIGIT

450		0 263 · 2 3 6 8 9 250	1 92 · 5 250	4 279 · 7 250
		0 2 3 6 8 9	1 5	4 7
263	0	341	359	341
92	1	188	188	170
250	2	328	346	328
250	3	328	346	328
279	4	357	357	305
250	5	328	346	328
250	6	328	346	328
250	7	328	328	276
250	8	328	346	328
250	9	328	346	328

300 mm DIGIT TO 300 mm DIGIT

300		0 176 · 2 3 6 8 9 167	1 62 · 5 167	4 186 · 7 167
		0 2 3 6 8 9	1 5	4 7
176	0	228	240	228
62	1	126	126	114
167	2	219	231	219
167	3	219	231	219
186	4	238	238	203
167	5	219	231	219
167	6	219	231	219
167	7	219	219	184
167	8	219	231	219
167	9	219	231	219

250 mm DIGIT TO 250 mm DIGIT

250		0 147 · 2 3 6 8 9 139	1 52 · 5 139	4 155 · 7 139
		0 2 3 6 8 9	1 5	4 7
147	0	190	201	190
52	1	106	106	95
139	2	182	193	182
139	3	182	193	182
155	4	198	198	169
139	5	182	193	182
139	6	182	193	182
139	7	182	182	153
139	8	182	193	182
139	9	182	193	182

200 mm DIGIT TO 200 mm DIGIT

200		0 117 · 2 3 6 8 9 111	1 41 · 5 111	4 124 · 7 111
		0 2 3 6 8 9	1 5	4 7
117	0	151	160	151
41	1	84	84	75
111	2	145	154	145
111	3	145	154	145
124	4	158	158	135
111	5	145	154	145
111	6	145	154	145
111	7	145	145	122
111	8	145	154	145
111	9	145	154	145

150 mm UPPER CASE TO 150 mm UPPER CASE

150		A 95 · J T 76 · V 93 · W 114 · Y 95	B D 83 · E F 76 · H 83 · I 21 · K 83 · L 76 · M 99 · N P R U 83	C G 83 · O Q 88 · S 83 · X 89 · Z 83
		A J T V W Y	B D E F H I K L M N P R U	C G O Q S X Z
95	A	104	121	121
83	B	109	115	109
83	C	100	109	109
83	D	109	115	109
76	E	93	102	102
76	F	93	102	102
83	G	109	115	109
83	H	109	115	115
21	I	47	53	53
76	J	102	108	108
83	K	100	109	109
76	L	85	102	102
99	M	125	131	131
83	N	109	115	115
88	O	114	120	114
83	P	109	115	109
88	Q	114	120	114
83	R	109	115	109
83	S	109	115	109
76	T	85	102	102
83	U	109	115	115
93	V	102	119	119
114	W	123	140	140
89	X	106	115	115
95	Y	104	121	121
83	Z	100	109	109

150 mm DIGIT TO 150 mm DIGIT

150		0 88 · 2 3 6 8 9 83	1 31 · 5 83	4 93 · 7 83
		0 2 3 6 8 9	1 5	4 7
88	0	114	120	114
31	1	63	63	57
83	2	109	115	109
83	3	109	115	109
93	4	119	119	102
83	5	109	115	109
83	6	109	115	109
83	7	109	109	92
83	8	109	115	109
83	9	109	115	109

100 mm UPPER CASE TO 100 mm UPPER CASE

100		A 64 · J T 51 · V 62 · W 76 · Y 64	B D 56 · E F 51 · H 56 · I 14 · K 56 · L 51 · M 66 · N P R U 56	C G 56 · O Q 59 · S 56 · X 59 · Z 56
		A J T V W Y	B D E F H I K L M N P R U	C G O Q S X Z
64	A	70	81	81
56	B	73	77	73
56	C	67	73	73
56	D	73	77	73
51	E	62	68	68
51	F	62	68	68
56	G	73	77	73
56	H	73	77	77
14	I	31	35	35
51	J	68	72	72
56	K	67	73	73
51	L	57	68	68
66	M	83	87	87
56	N	73	77	77
59	O	76	80	76
56	P	73	77	73
59	Q	76	80	76
56	R	73	77	73
56	S	73	77	73
51	T	57	68	68
56	U	73	77	77
62	V	68	79	79
76	W	82	93	93
59	X	70	76	76
64	Y	70	81	81
56	Z	67	73	73

100 mm DIGIT TO 100 mm DIGIT

100		0 59 · 2 3 6 8 9 56	1 21 · 5 56	4 62 · 7 56
		0 2 3 6 8 9	1 5	4 7
59	0	76	80	76
21	1	42	42	38
56	2	73	77	73
56	3	73	77	73
62	4	79	79	68
56	5	73	77	73
56	6	73	77	73
56	7	73	73	62
56	8	73	77	73
56	9	73	77	73

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

SPACING CHARTS
DIRECT APPLIED LETTERS & NUMERALS

UPPER CASE
SERIES C

RECOMMENDED AUG. 1, 1997
A H Bri[illegible]
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION

RECOMMENDED AUG. 1, 1997
Gary L. Hoffman
CHIEF HIGHWAY ENGINEER

SHT. 6 OF 8

TC-8700C

250 mm UPPER CASE TO 250 mm UPPER CASE

250	A	J	T	V	W	Y	B	D	E	F	H	I	K	L	M	N	P	R	U	C	G	O	Q	S	X	Z
	135	111	95	117	159	135	107		95		107	32	111	95	123	107						115		107	117	107

250		A J T V W Y	B D E F H I K L M N P R U	C G O Q S X Z
135	A	148	173	173
107	B	145	155	145
107	C	132	145	145
107	D	145	155	145
95	E	120	133	133
95	F	120	133	133
107	G	145	155	145
107	H	145	155	155
32	I	70	80	80
111	J	149	159	159
111	K	136	149	149
95	L	108	133	133
123	M	161	171	171
107	N	145	155	155
115	O	153	163	153
107	P	145	155	145
115	Q	153	163	153
107	R	145	155	145
107	S	145	155	145
95	T	108	133	133
107	U	145	155	155
117	V	130	155	155
159	W	172	197	197
117	X	142	155	155
135	Y	148	173	173
107	Z	132	145	145

250 mm DIGIT TO 250 mm DIGIT

250	0	2	3	6	8	9	1	5	4	7
	115	107					52	107	123	107

250		0 2 3 6 8 9	1 5	4 7
115	0	153	163	153
52	1	100	100	90
107	2	145	155	145
107	3	145	155	145
123	4	161	161	136
107	5	145	155	145
107	6	145	155	145
107	7	145	145	120
107	8	145	155	145
107	9	145	155	145

200 mm UPPER CASE TO 200 mm UPPER CASE

200	A	J	T	V	W	Y	B	D	E	F	H	I	K	L	M	N	P	R	U	C	G	O	Q	S	X	Z
	108	89	76	94	127	108	86		76		86	25	89	76	99	86						92		86	94	86

200		A J T V W Y	B D E F H I K L M N P R U	C G O Q S X Z
108	A	118	138	138
86	B	116	124	116
86	C	106	116	116
86	D	116	124	116
76	E	96	106	106
76	F	96	106	106
86	G	116	124	116
86	H	116	124	124
25	I	55	63	63
89	J	119	127	127
89	K	109	119	119
76	L	86	106	106
99	M	129	137	137
86	N	116	124	124
92	O	122	130	122
86	P	116	124	116
92	Q	122	130	122
86	R	116	124	116
86	S	116	124	116
76	T	86	106	106
86	U	116	124	124
94	V	104	124	124
127	W	137	157	157
94	X	114	124	124
108	Y	118	138	138
86	Z	106	116	116

200 mm DIGIT TO 200 mm DIGIT

200	0	2	3	6	8	9	1	5	4	7
	92	86					41	86	99	86

200		0 2 3 6 8 9	1 5	4 7
92	0	122	130	122
41	1	79	79	71
86	2	116	124	116
86	3	116	124	116
99	4	129	129	109
86	5	116	124	116
86	6	116	124	116
86	7	116	116	96
86	8	116	124	116
86	9	116	124	116

150 mm UPPER CASE TO 150 mm UPPER CASE

150	A	J	T	V	W	Y	B	D	E	F	H	I	K	L	M	N	P	R	U	C	G	O	Q	S	X	Z
	81	66	57	70	95	81	64		57		64	19	66	57	74	64						69		64	70	64

150		A J T V W Y	B D E F H I K L M N P R U	C G O Q S X Z
81	A	89	104	104
64	B	87	93	87
64	C	79	87	87
64	D	87	93	87
57	E	72	80	80
57	F	72	80	80
64	G	87	93	87
64	H	87	93	93
19	I	42	48	48
66	J	89	95	95
66	K	81	89	89
57	L	65	80	80
74	M	97	103	103
64	N	87	93	93
69	O	92	98	92
64	P	87	93	87
69	Q	92	98	92
64	R	87	93	87
64	S	87	93	87
57	T	65	80	80
64	U	87	93	93
70	V	78	93	93
95	W	103	118	118
70	X	85	93	93
81	Y	89	104	104
64	Z	79	87	87

150. mm DIGIT TO 150 mm DIGIT

150	0	2	3	6	8	9	1	5	4	7
	69	64					31	64	74	64

150		0 2 3 6 8 9	1 5	4 7
69	0	92	98	92
31	1	60	60	54
64	2	87	93	87
64	3	87	93	87
74	4	97	97	82
64	5	87	93	87
64	6	87	93	87
64	7	87	87	72
64	8	87	93	87
64	9	87	93	87

NOTE:

USE OF SERIES B ALPHABET IS RESTRICTED TO STREET NAME SIGNS, PARKING SIGNS AND OTHER SIMILAR SIGNS WHERE LIMITED BREADTH AND STROKE WIDTHS ARE REQUIRED FOR DESIGN PURPOSES.

100 mm UPPER CASE TO 100 mm UPPER CASE

100	A	J	T	V	W	Y	B	D	E	F	H	I	K	L	M	N	P	R	U	C	G	O	Q	S	X	Z
	54	44	38	47	64	54	43		38		43	13	44	38	49	43						46		43	47	43

100		A J T V W Y	B D E F H I K L M N P R U	C G O Q S X Z
54	A	59	69	69
43	B	58	62	58
43	C	53	58	58
43	D	58	62	58
38	E	48	53	53
38	F	48	53	53
43	G	58	62	58
43	H	58	62	62
13	I	28	32	32
44	J	59	63	63
44	K	54	59	59
38	L	43	53	53
49	M	64	68	68
43	N	58	62	62
46	O	61	65	61
43	P	58	62	58
46	Q	61	65	61
43	R	58	62	58
43	S	58	62	58
38	T	43	53	53
43	U	58	62	62
47	V	52	62	62
64	W	69	79	79
47	X	57	62	62
54	Y	59	69	69
43	Z	53	58	58

100 mm DIGIT TO 100 mm DIGIT

100	0	2	3	6	8	9	1	5	4	7
	46	43					21	43	49	43

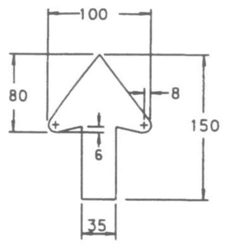
100		0 2 3 6 8 9	1 5	4 7
46	0	61	65	61
21	1	40	40	36
43	2	58	62	58
43	3	58	62	58
49	4	64	64	54
43	5	58	62	58
43	6	58	62	58
43	7	58	58	48
43	8	58	62	58
43	9	58	62	58

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

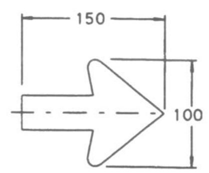
SPACING CHARTS
DIRECT APPLIED LETTERS & NUMERALS

UPPER CASE
SERIES B

RECOMMENDED AUG. 1, 1997	RECOMMENDED AUG. 1, 1997	SHT. 7 OF 8
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	CHIEF HIGHWAY ENGINEER	TC-8700C



TYPE P



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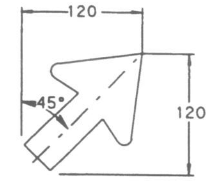
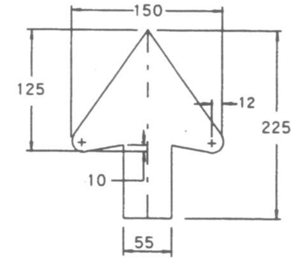


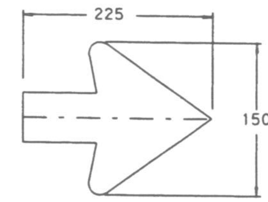
FOR DETAIL OF ARROW, SEE TYPE P

TYPE R

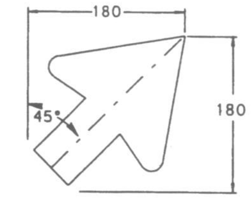
DESTINATION SIGN ARROWS (100 mm LEGEND)



TYPE S



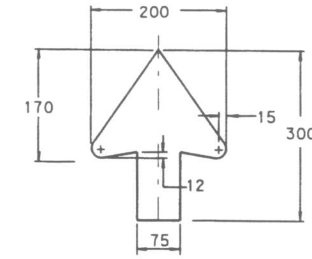
TYPE T



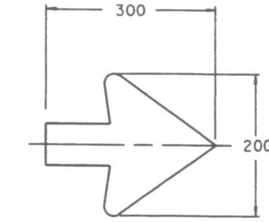
FOR DETAIL OF ARROW, SEE TYPE S

TYPE U

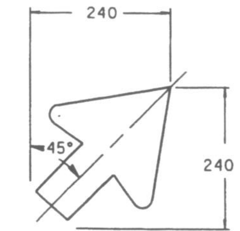
DESTINATION SIGN ARROWS (150 mm LEGEND)



TYPE K



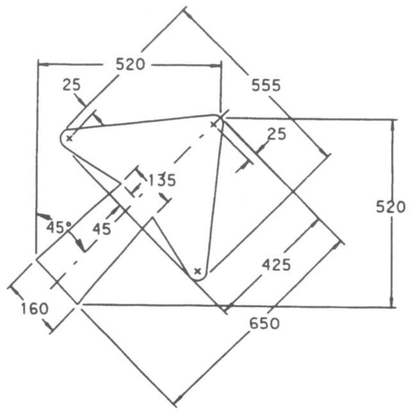
TYPE L



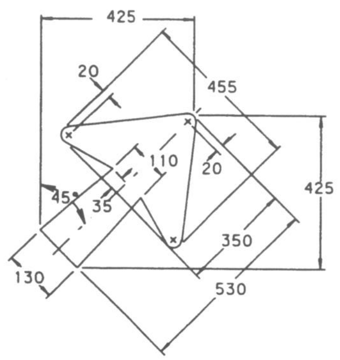
FOR DETAIL OF ARROW, SEE TYPE K

TYPE M

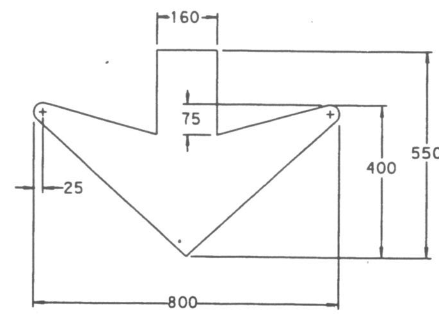
FREEWAY / EXPRESSWAY RAMP SIGNING



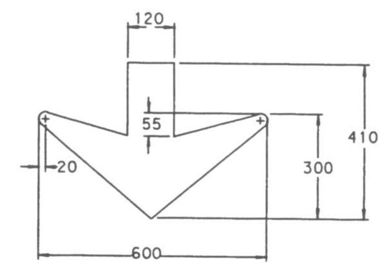
TYPE A



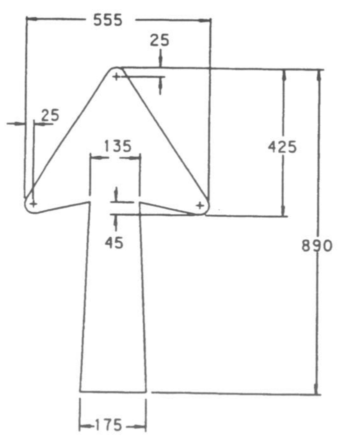
TYPE B



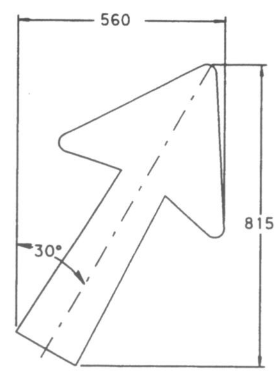
TYPE C



TYPE D

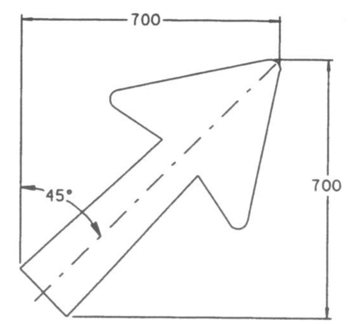


TYPE E



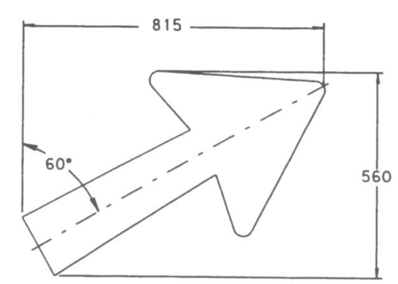
FOR DETAIL OF ARROW, SEE TYPE E.

TYPE F



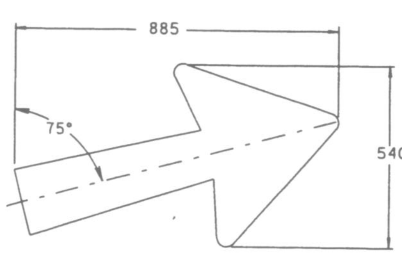
FOR DETAIL OF ARROW, SEE TYPE E.

TYPE G



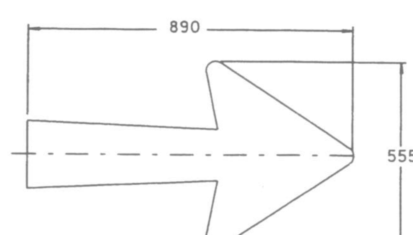
FOR DETAIL OF ARROW, SEE TYPE E.

TYPE H



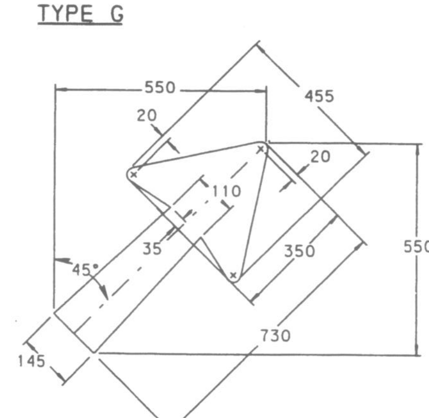
FOR DETAIL OF ARROW, SEE TYPE E.

TYPE I

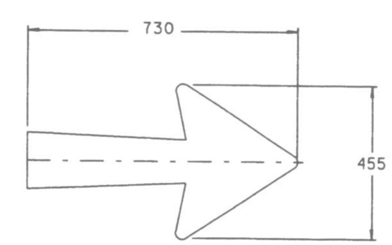


FOR DETAIL OF ARROW, SEE TYPE E.

TYPE J



TYPE N



FOR DETAIL OF ARROW, SEE TYPE N.

TYPE O

FREEWAY / EXPRESSWAY SIGNING

NOTES:

1. ARROW TYPES A THROUGH J, N AND O ARE FOR USE ON FREEWAY AND EXPRESSWAY SIGNS.
2. ARROW TYPES K, L AND M ARE FOR USE ON FREEWAY AND EXPRESSWAY RAMP SIGNS.
3. ARROW TYPES P, Q AND R ARE FOR USE ON DESTINATION SIGNS WITH 100 mm LEGEND.
4. ARROW TYPES S, T AND U ARE FOR USE ON DESTINATION SIGNS WITH 150 mm LEGEND.
5. ALL DIMENSIONS ARE IN MILLIMETERS.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

SPACING CHARTS
DIRECT APPLIED

ARROWS

RECOMMENDED AUG. 1, 1997 A H Brown CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED AUG. 1, 1997 Gary L. Hoffman CHIEF HIGHWAY ENGINEER	SHT. 8 OF 8 TC-8700C

SIGNING PLANS

1. THE SIGNING PLANS SHOULD BE DRAWN TO A SCALE OF 1 : 1000. A PLAN VIEW OF THE SIGNS AND SIGN SUPPORTS SHOULD BE DEPICTED AT THE APPROXIMATE LOCATIONS AND SMALL PICTORIAL DRAWINGS OF THE SIGN FACES SHOULD BE INCLUDED NEAR THE PLAN VIEW, ALONG WITH THE TYPE OF POST AND/OR SUPPORT. A NUMBER SHALL BE ASSIGNED TO EACH SIGN NOT INCLUDED IN THE DEPARTMENT'S PUBLICATION 236M AND CROSS-REFERENCED TO THE SIGN FABRICATION DETAILS.

2. ALL SIGNS SHALL BE DESIGNED IN ACCORDANCE TO THE LAYOUT DETAILS INCLUDED IN TRAFFIC STANDARD TC-8701D.

3. SIGN LIGHTING SHOULD BE INCLUDED FOR ALL OVERHEAD GUIDE SIGNS EXCEPT SIGNS ON TANGENT ROADWAYS WHERE MOTORISTS HAVE A CLEAR VIEW OF THE SIGN FOR A MINIMUM OF 360 m AND WHERE THE VERTICAL ALIGNMENT IS SUCH THAT LOW BEAM HEADLIGHTS WILL ILLUMINATE THE SIGNS.

DESCRIPTION OF SIGNS

1. MAJOR GUIDE SIGNS PROVIDE MOTORISTS ADVANCE INFORMATION ON THE PRINCIPAL DESTINATIONS SERVED BY THE INTERCHANGE. TWO OR THREE MAJOR GUIDE SIGNS SHOULD BE USED, WITH TYPICAL PLACEMENT BEING 3.2 km, 1.6 km AND 0.8 km IN ADVANCE OF THE EXIT. THE FOLLOWING INFORMATION SHOULD BE DISPLAYED ON MAJOR GUIDE SIGNS, BEGINNING FROM THE TOP OF THE SIGN:

   A. AN EXIT PANEL WHEN THE EXIT IS NUMBERED. THE PANEL SHOULD BE ON THE RIGHT SIDE FOR RIGHT-HAND EXITS, AND ON THE LEFT SIDE FOR LEFT-HAND EXITS.

   B. A SHIELD FOR EACH NUMBERED TRAFFIC ROUTE ASSIGNED TO THE CROSSING ROUTE OR WHICH IS VERY CLOSE TO THE INTERCHANGE. A CARDINAL DIRECTION SHOULD BE ASSOCIATED WITH EACH ROUTE WHERE TRAFFIC CAN ONLY GO IN ONE DIRECTION, AND THE WORD "TO" SHOULD BE USED ABOVE THE SHIELD OF ROUTES WHICH ARE CLOSE TO THE INTERCHANGE.

   C. THE NAME OF THE TWO NEAREST COMMUNITIES AS IDENTIFIED ON THE OFFICIAL TRANSPORTATION MAP, ONE TO THE LEFT AND ONE TO THE RIGHT, UNLESS ALTERNATE DESTINATIONS ARE APPROVED IN ACCORDANCE WITH DEPARTMENT POLICY. AT SINGLE EXIT INTERCHANGES, THE COMMUNITY NAME TO THE LEFT SHOULD BE ABOVE THE COMMUNITY NAME TO THE RIGHT; AT DOUBLE EXIT INTERCHANGES, THE TOP NAME SHOULD BE THE COMMUNITY SERVED BY THE FIRST EXIT. IN URBAN AREAS, THE STREET NAME SHOULD BE USED IN LIEU OF COMMUNITY NAMES.

   D. THE DISTANCE TO THE EXIT IN MILES AND/OR FRACTIONS OF MILES SHOULD BE SHOWN BELOW THE COMMUNITY NAMES OR THE STREET NAME. FRACTIONS SHOULD TYPICALLY BE SHOWN TO THE NEAREST 1/4 MILE, ALTHOUGH THE FRACTIONS "1/8" AND "3/8" ARE ACCEPTABLE. THE WORD "EXIT" OR "EXITS" SHOULD PRECEDE THE DISTANCE IF THE EXIT IS NOT NUMBERED.

2. A SUPPLEMENTAL GUIDE SIGN MAY INCLUDE ONE OR TWO DESTINATIONS, WHICH MAY BE A LARGE COMMUNITY NOT IDENTIFIED ON THE MAJOR GUIDE SIGNS OR ANY OTHER LARGE TRAFFIC GENERATOR IN ACCORDANCE WITH DEPARTMENT POLICY.

3. SERVICE SIGNS ARE USED TO IDENTIFY GAS, FOOD, LODGING, CAMPING, VISITOR INFORMATION, HOSPITAL, DIESEL, AND STATE POLICE. WITH THE EXCEPTION OF STATE POLICE, GENERAL MOTORIST SERVICE SIGNS INSTALLED ON NEW PANELS SHALL BE THE SYMBOL TYPE AS ILLUSTRATED IN TRAFFIC STANDARD TC-8701D.

   AS AN ALTERNATE TO GENERAL MOTORISTS SERVICE SIGNS, LOGO SIGNS MAY BE INSTALLED ON SELECTED INTERSTATE HIGHWAYS AND OTHER FREEWAYS IN ACCORDANCE WITH DEPARTMENT POLICY. WHEN LOGO SIGNS ARE INSTALLED, ALL GENERAL MOTORIST SERVICE SIGNS WILL BE REMOVED, UNLESS A SPECIFIC SERVICE IS NOT REPRESENTED BY A LOGO SIGN.

4. EXIT DIRECTION SIGNS SHOULD INCLUDE THE SAME TRAFFIC ROUTES AND DESTINATIONS AS INCLUDED ON THE MAJOR GUIDE SIGNS, AS APPROPRIATE, PLUS AN UPWARD-POINTING OR SLANTING ARROW. THE ALIGNMENT OF THE ARROW SHOULD APPROXIMATE THE ANGLE RELATED TO THE SHARPNESS OF THE TURN.

5. GORE SIGNS SHALL BE LOCATED IN THE AREA BETWEEN THE MAIN ROADWAY AND THE RAMP AT ALL EXITS. THE SIGNS SHALL HAVE THE WORD "EXIT" AND AN ARROW; IF THE EXIT IS NUMBERED, THE NUMBER OR NUMBER AND LETTER SHOULD ALSO BE INCLUDED.

6. CONFIRMATION ROUTE MARKERS SHOULD NOT BE USED BETWEEN CLOSELY SPACED INTERCHANGES OR WHEN A "PULL-THRU SIGN" FOLLOWS THE INTERCHANGE.

7. OFF-RAMP DIRECTIONAL SIGNS ARE USED ON ALL DIAMOND INTERCHANGE OFF-RAMPS, AND SHOULD INCLUDE ALL DESTINATIONS INCLUDED ON THE MAJOR AND SUPPLEMENTAL GUIDE SIGNS. THE DISTANCE IN THE NEAREST NUMBER OF WHOLE MILES TO THE DESTINATION SHOULD BE INCLUDED IF THE DESTINATION IS OVER 3.2km AWAY, WHERE THE DISTANCE IS THE DISTANCE TO THE CENTER OF THE COMMUNITY OR ENTRANCE TO THE TRAFFIC GENERATOR.

8. POST-INTERCHANGE DISTANCE SIGNS SHOULD BE USED IN RURAL AREAS AND WHERE UNDUE REPETITION OF MESSAGES WILL NOT OCCUR. WHEN USED, IT SHOULD INCLUDE TWO OR THREE DESTINATION POINTS AND THE DISTANCES IN THE NEAREST NUMBER OF WHOLE MILES TO THOSE POINTS. THE FIRST DESTINATION SHOULD BE THE CLOSEST MEANINGFUL COMMUNITY WHICH IS NEAR AN INTERCHANGE; THE LAST DESTINATION IS THE NEAREST NATIONAL CONTROL CITY; AND AN INTERMEDIATE DESTINATION MAY BE INCLUDED BETWEEN THE TWO OTHER DESTINATIONS. CONSIDERATION MAY ALSO BE GIVEN TO INCLUDING MAJOR INTERSECTING HIGHWAY ROUTES AS DESTINATIONS USING THE ROUTE NUMBER (i.e., PA 30, US 30, etc.) EXCEPT PA TURNPIKE MAY BE USED. SHIELDS ARE NOT REQUIRED.

9. NEXT (   ) EXITS AREA SIGNS MAY BE USED IN ADVANCE OF MORE THAN THREE INTERCHANGES SERVING AN URBAN AREA OR HISTORICAL OR RECREATIONAL REGION. INTERCHANGE SEQUENCE SERIES SIGNS MAY BE USED PRIOR TO ALL BUT THE LAST INTERCHANGE.

10. INTERCHANGE SEQUENCE SIGNS ARE USED IN LARGE URBAN AREAS WHEN THE INTERCHANGES ARE CLOSELY SPACED IN ORDER TO IDENTIFY THE NEXT TWO OR THREE INTERCHANGES. WHEN USED, THE INTERCHANGE SEQUENCE SIGNS SHOULD NORMALLY BE INSTALLED IN THE MEDIAN OR ON AN OVERHEAD STRUCTURE. THEY FREQUENTLY CAN BE INSTALLED BACK-TO-BACK, ONE IN EACH DIRECTION.

11. COMMUNITY INTERCHANGES IDENTIFICATION SIGNS MAY BE USED FOR SUBURBAN OR RURAL COMMUNITIES SERVED BY TWO OR THREE INTERCHANGES. THE SIGN IS IDENTICAL TO THE INTERCHANGE SEQUENCE SIGN EXCEPT THE NAME OF THE COMMUNITY AND THE WORD "EXITS" IS SHOWN ON THE TOP OF THE SIGN. THE SIGN SHOULD BE LOCATED IN ADVANCE OF THE FIRST INTERCHANGE FOR THE COMMUNITY.

12. LANE ASSIGNMENT SIGNS MAY BE USED TO ASSIGN A PARTICULAR LANE FOR A GIVEN DESTINATION. A DOWN ARROW IS NORMALLY USED, BUT ALTERNATE MESSAGES SUCH AS "LEFT LANE", "RIGHT LANES", ETC. MAY BE USED.

13. PULL-THRU SIGNS MAY BE USED WHEN THE GEOMETRICS OF THE INTERCHANGE ARE COMPLEX, SUCH AS AT THE JUNCTION OF FREEWAYS AND WHEN IT IS NOT CLEAR TO THE DRIVER WHICH ROADWAY IS THE THROUGH ROADWAY. A NATIONAL OR REGIONAL CONTROL CITY SHOULD BE USED AS THE DESTINATION. DOWN ARROWS MAY BE USED WHEN THE ALIGNMENT AND NUMBER OF THROUGH LANES IS NOT READILY EVIDENT. (PULL-THRU SIGNS ARE SIMILAR TO LANE ASSIGNMENT SIGNS BUT NEVER HAVE DISTANCES OR EXIT PANELS.)

14. EXIT ONLY PANELS SHOULD BE USED FOR ALL INTERCHANGE LANE DROPS AT WHICH THE THROUGH ROUTE IS CARRIED ON THE MAINLINE. EXIT ONLY PANELS SHOULD ALWAYS BE INSTALLED OVERHEAD, IN CONJUNCTION WITH LANE ASSIGNMENT SIGNS, EXIT DIRECTION SIGNS AND DIAGRAMMATIC SIGNS.

15. DIAGRAMMATIC SIGNS PROVIDE A GRAPHIC VIEW OF THE EXIT IN RELATIONSHIP TO THE MAIN HIGHWAY. THEY SHOULD BE USED FOR SPLITS HAVING OFF-RAMP MOVEMENTS TO THE LEFT, OPTIONAL LANE SPLITS, EXITS WITH ROUTE DISCONTINUITY, AND LEFT EXIT LANE DROPS; AND THEY ALSO MAY BE USED AT TWO-LANE EXITS WITH AN OPTIONAL LANE. DIAGRAMMATIC SIGNS SHOULD BE DESIGNED IN ACCORDANCE WITH THE STANDARD HIGHWAY SIGNS BOOK, AS PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.

16. EXIT PANELS SHALL BE USED ON ALL MAJOR GUIDE, EXIT DIRECTION, LANE ASSIGNMENT, AND DIAGRAMMATIC SIGNS WHEN EXIT NUMBERS HAVE BEEN ASSIGNED. THE PLURAL "EXITS" SHOULD BE USED IN ADVANCE OF INTERCHANGES WITH MORE THAN ONE EXIT, ALONG WITH THE RAMP DESIGNATIONS "A-B" OR "B-A", DEPENDING UPON WHICH RAMP DESIGNATION IS SERVED FIRST. (WHEN THERE ARE TWO EXITS, THE FIRST ONE IN THE DIRECTION OF INCREASING DISTANCE MARKERS IS DESIGNATED AS "A", THE SECOND ONE AS "B".)

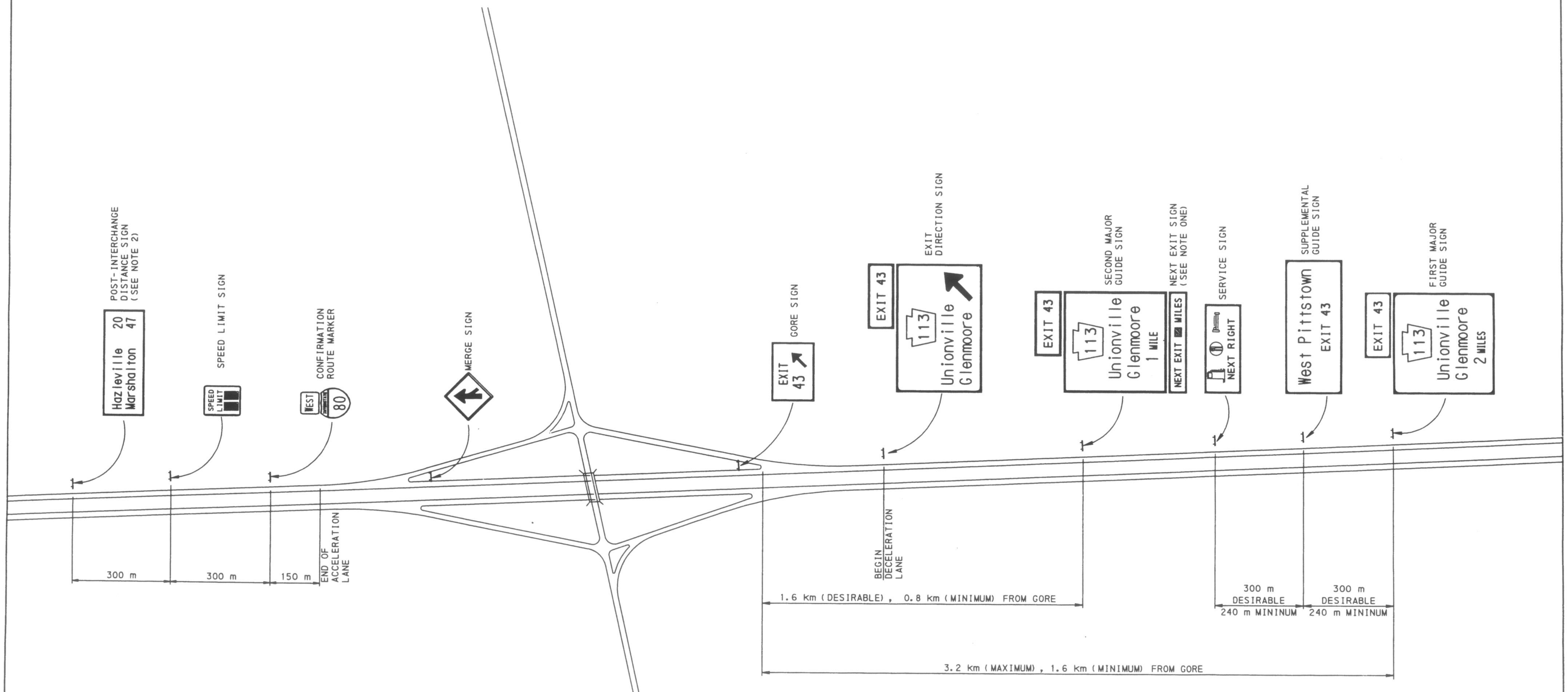
17. ADVISORY EXIT SPEED SIGNS (W13-2) AS DETAILED IN THE DEPARTMENT'S PUBLICATION 236M SHALL BE INSTALLED ALONGSIDE THE DECELERATION LANE, POSITIONED APPROXIMATELY AT THE MID-POINT.

18. NEXT EXIT ( ) MILES SIGN SHOULD BE USED BELOW THE ADVANCE GUIDE SIGN NEAREST THE INTERCHANGE (NORMALLY THE 1 MILE ADVANCE GUIDE SIGN) WHEN THE DISTANCE BETWEEN SUCCESSIVE RURAL INTERCHANGES IS MORE THAN 8 KILOMETERS. THIS SIGN MAY BE FABRICATED AS AN INTEGRAL PART OF THE ADVANCE GUIDE SIGN OR MAY BE A SEPARATE SUPPLEMENTARY PANEL. WHEN A SEPARATE PANEL IS USED, ENSURE THAT IT IS INSTALLED ON THE POST ABOVE THE HINGE PLATE.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

INTERCHANGE ADVANCE SIGNING GENERAL NOTES

RECOMMENDED AUG. 1, 1997 A H Brown CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED AUG. 1, 1997 Gary L. Hoffman CHIEF HIGHWAY ENGINEER	SHT. 1 OF 7 TC-8701A



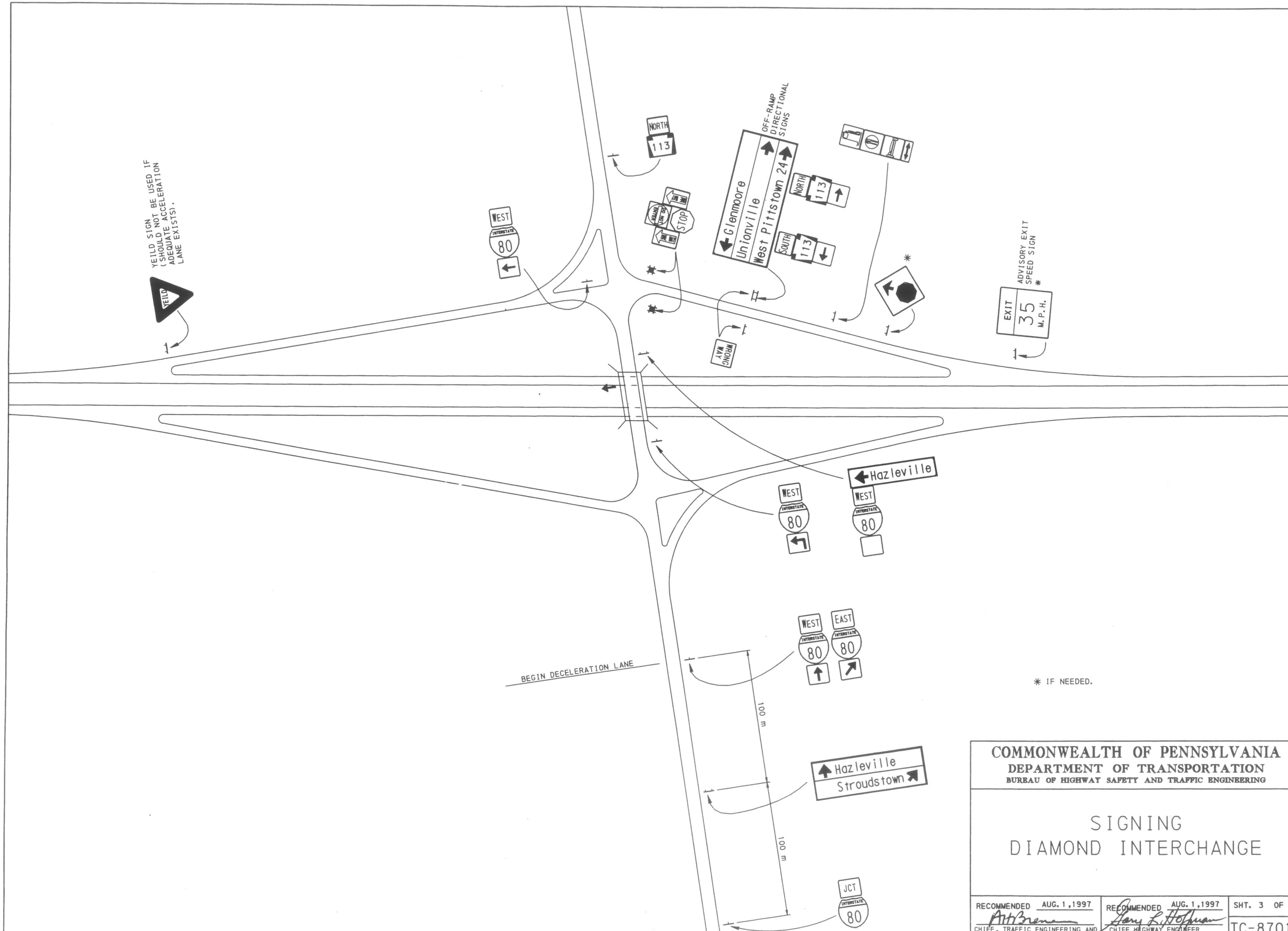
NOTES:

1. USE NEXT EXIT () MILES SIGN ONLY WHEN INTERCHANGES ARE 8km OR MORE APART.
2. WHEN INSUFFICIENT SPACE EXISTS FOR ALL POST-INTERCHANGE SIGNS. THE DISTANCE SIGN SHOULD BE ELIMINATED FIRST.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

ADVANCE SIGNING DIAMOND INTERCHANGE (ONE EXIT)

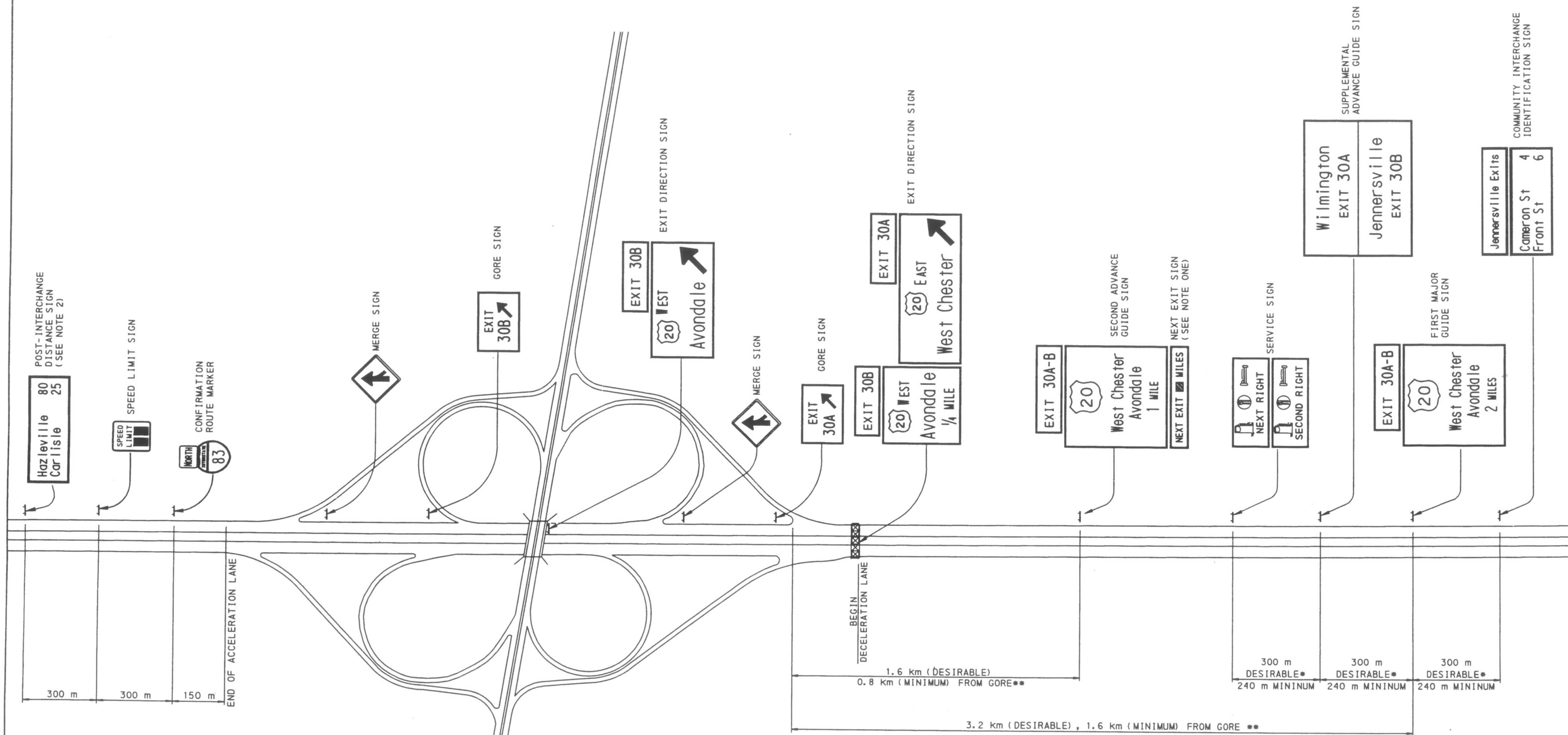
RECOMMENDED AUG. 1, 1997 [signature] CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED AUG. 1, 1997 Gary L. Hoffman CHIEF HIGHWAY ENGINEER	SHT. 2 OF 7 TC-8701A



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

SIGNING
DIAMOND INTERCHANGE

RECOMMENDED AUG. 1,1997 CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED AUG. 1,1997 CHIEF HIGHWAY ENGINEER	SHT. 3 OF 7 TC-8701A



* WHEN SERVICE SIGN IS NOT USED, LOCATE SUPPLEMENTAL SIGN MIDWAY BETWEEN FIRST AND SECOND ADVANCE GUIDE SIGNS.

** DISTANCE INDICATED ON SIGN SHALL AGREE WITH DISTANCE FROM GORE.

ALL MAJOR SIGNS AND SIGN STRUCTURES ARE TO BE FIELD LOCATED.

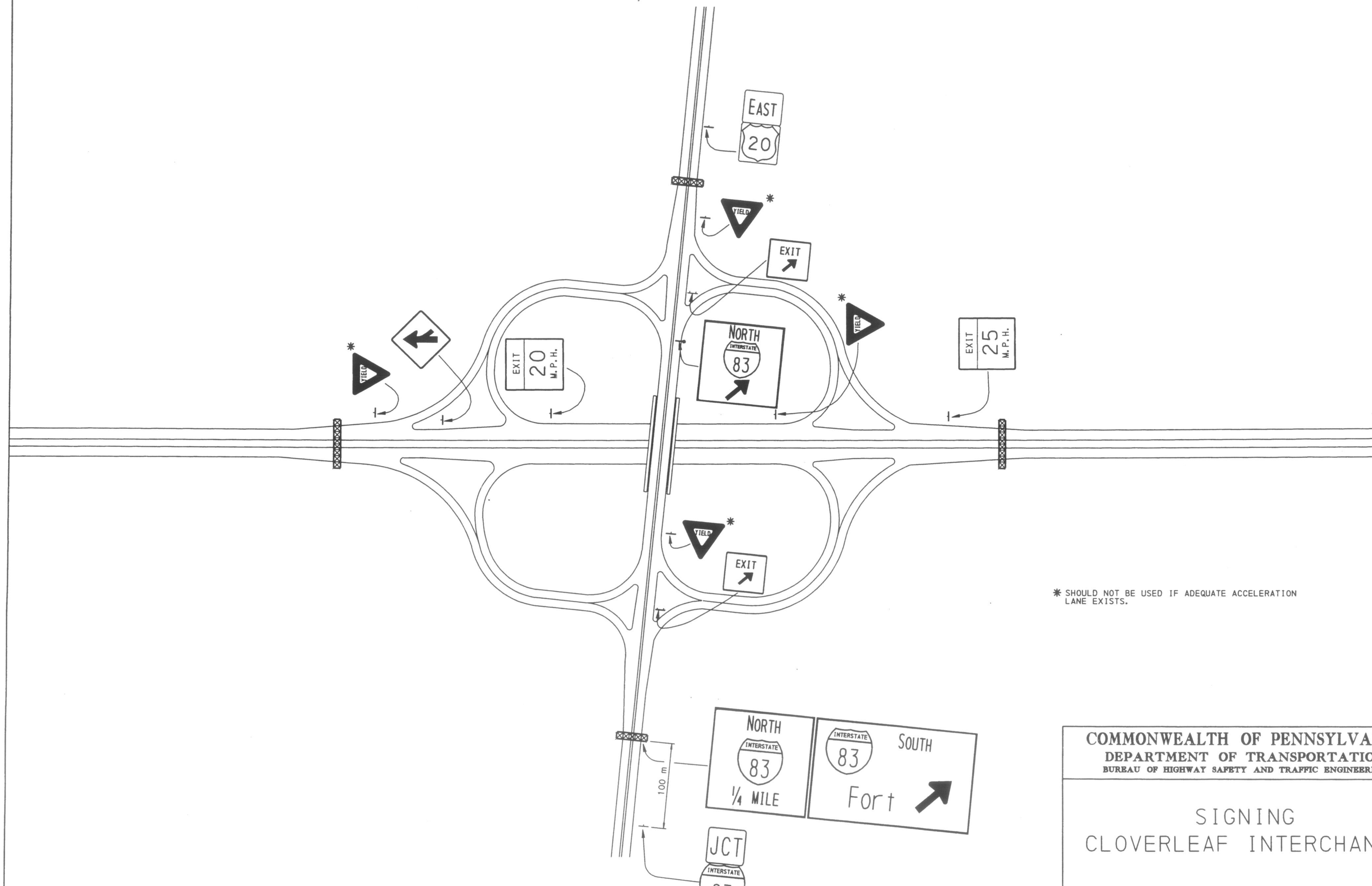
NOTES:

1. USE NEXT EXIT () MILES SIGN ONLY WHEN INTERCHANGES ARE 8km OR MORE APART.
2. WHEN INSUFFICIENT SPACE EXISTS FOR ALL POST-INTERCHANGE SIGNS. THE DISTANCE SIGN SHOULD BE ELIMINATED FIRST.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

ADVANCE SIGNING CLOVERLEAF INTERCHANGE

RECOMMENDED AUG. 1, 1997 CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED AUG. 1, 1997 Gary L. Hoffman CHIEF HIGHWAY ENGINEER	SHT. 4 OF 7 TC-8701A

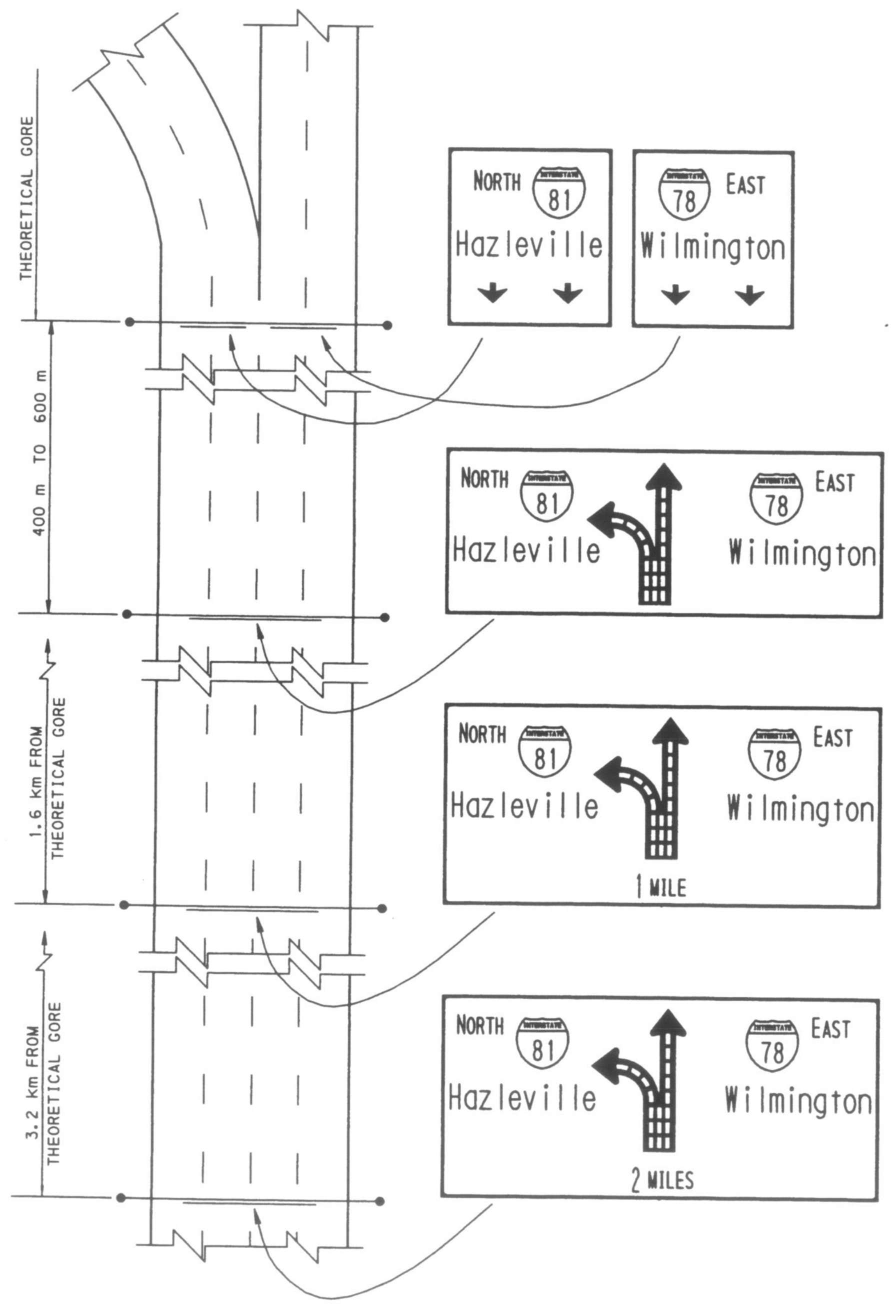


* SHOULD NOT BE USED IF ADEQUATE ACCELERATION LANE EXISTS.

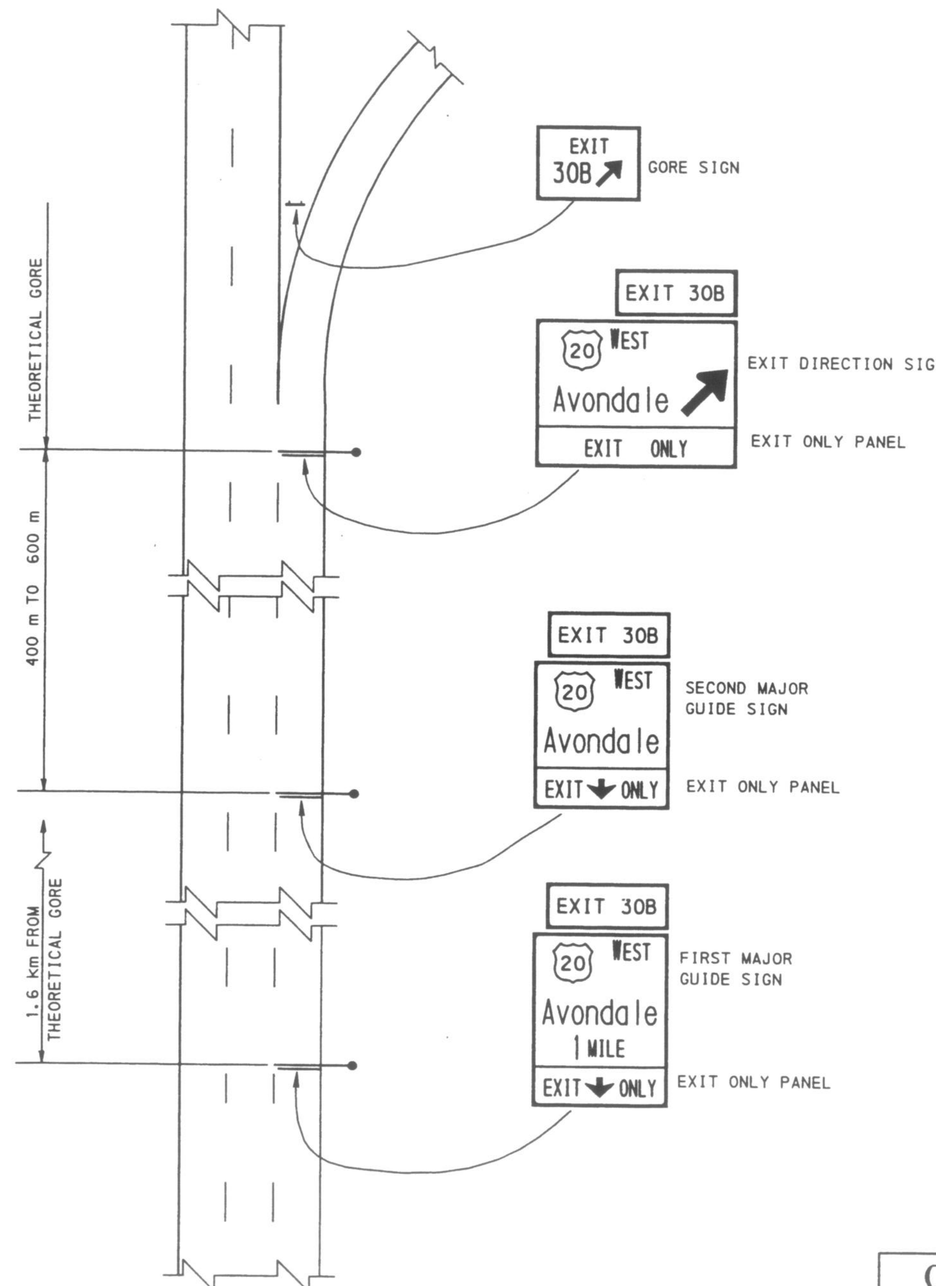
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

SIGNING
CLOVERLEAF INTERCHANGE

RECOMMENDED AUG. 1, 1997	RECOMMENDED AUG. 1, 1997	SHT. 5 OF 7
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	CHIEF HIGHWAY ENGINEER	TC-8701A



DIAGRAMMATIC SIGNING

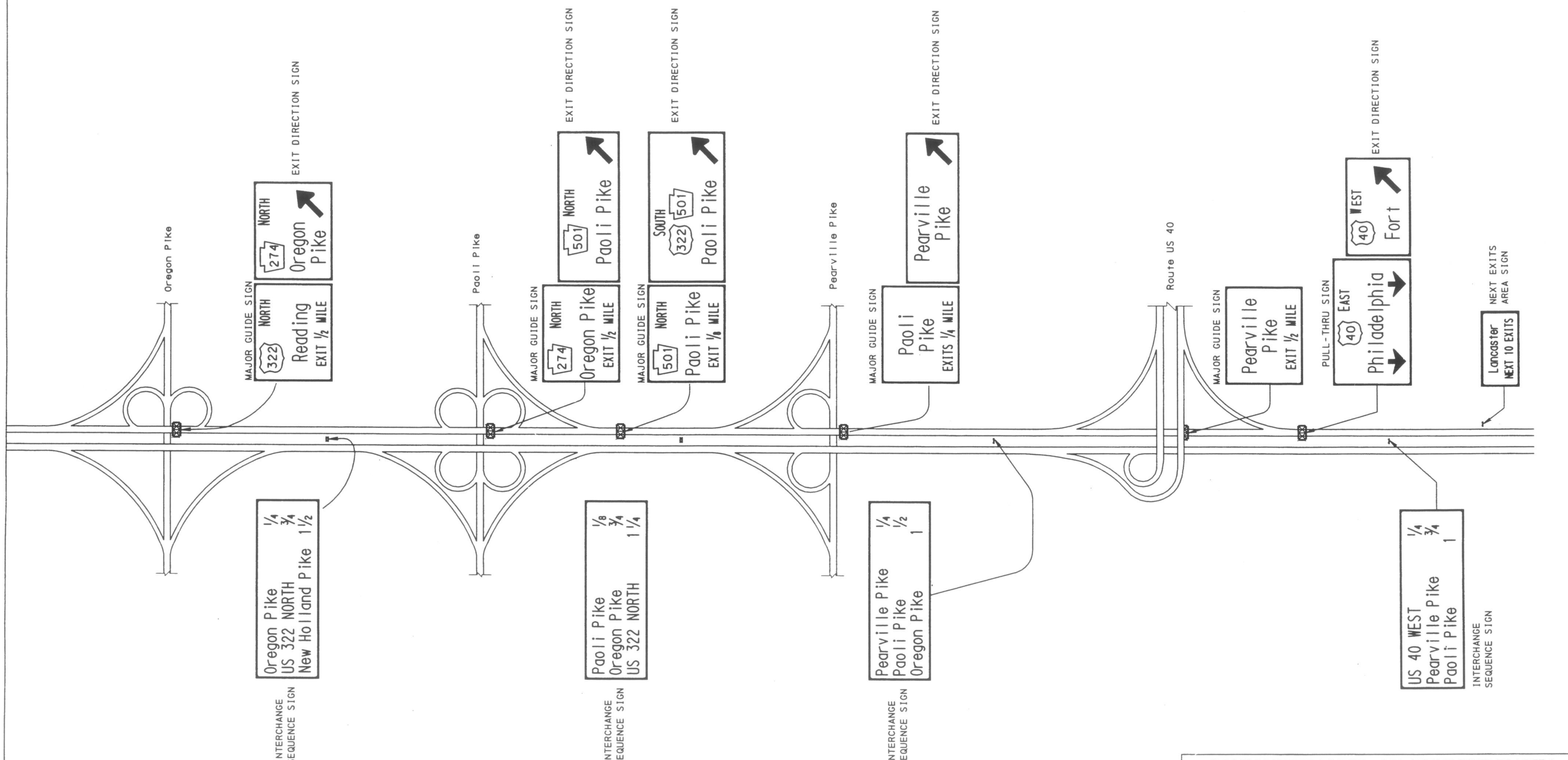


LANE DROP SIGNING

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

SIGNING
DIAGRAMMATIC & LANE DROP

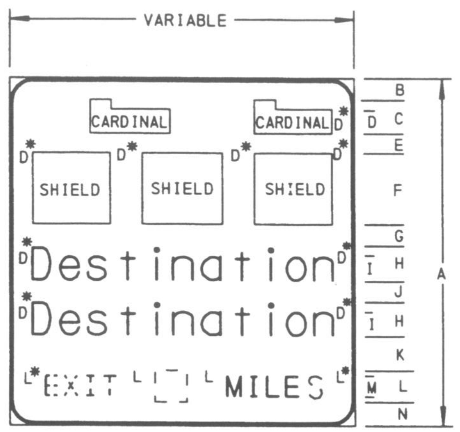
RECOMMENDED AUG. 1, 1997	RECOMMENDED AUG. 1, 1997	SHT. 6 OF 7
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	CHIEF HIGHWAY ENGINEER	TC-8701A



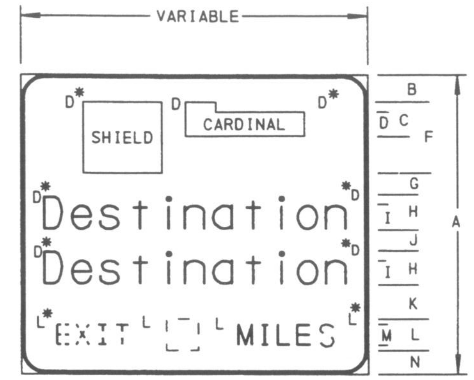
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

TYPICAL SIGNING
CLOSELY SPACED
INTERCHANGES

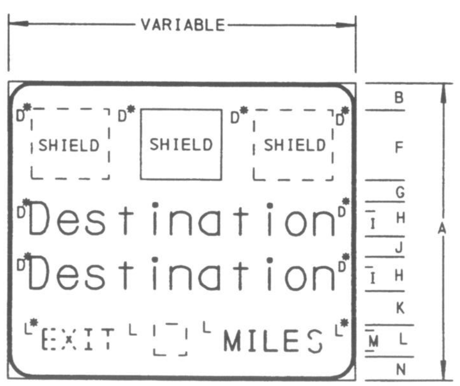
RECOMMENDED AUG. 1, 1997 Al Brenner CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED AUG. 1, 1997 Gary L. Hoffman CHIEF HIGHWAY ENGINEER	SHT. 7 OF 7 TC-8701A



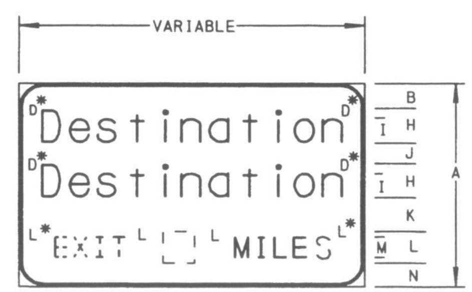
DEST. SIZE	DEST. LINES	DIMENSIONS (MILLIMETERS)													
		A	B	C	D	E	F	G	H	I	J	K	L	M	N
500/375	1	4200	450	450	375	300	900	350	500	375		350	450	300	450
500/375	2	4950	400	450	375	300	900	350	500	375	375	350	450	300	375
400/300	1	3600	335	375	300	250	900	300	400	300		325	375	250	340
400/300	2	4200	335	375	300	250	900	275	400	300	300	300	375	250	290
330/250	1	3150	275	300	250	200	900	250	330	250		250	375	250	270
330/250	2	3750	290	300	250	200	900	250	330	250	250	250	375	250	275



DEST. SIZE	DEST. LINES	DIMENSIONS (MILLIMETERS)												
		A	B	C	D	F	G	H	I	J	K	L	M	N
500/375	1	3300	375	450	375	900	350	500	375		350	450	300	375
500/375	2	4200	385	450	375	900	350	500	375	375	350	450	300	390
400/300	1	3000	335	375	300	900	325	400	300		325	375	250	340
400/300	2	3600	310	375	300	900	300	400	300	300	300	375	250	315
330/250	1	2700	295	300	250	900	250	330	250		250	375	250	300
330/250	2	3300	305	300	250	900	250	330	250	250	250	375	250	310



DEST. SIZE	DEST. LINES	DIMENSIONS (MILLIMETERS)											
		A	B	D	F	G	H	I	J	K	L	M	N
500/375	1	3300	375	375	900	350	500	375		350	450	300	375
500/375	2	4200	385	375	900	350	500	375	375	350	450	300	390
400/300	1	3000	335	300	900	325	400	300		325	375	250	340
400/300	2	3600	310	300	900	300	400	300	300	300	375	250	315
330/250	1	2700	295	250	900	250	330	250		250	375	250	300
330/250	2	3300	305	250	900	250	330	250	250	250	375	250	310



DEST. SIZE	DEST. LINES	DIMENSIONS (MILLIMETERS)									
		A	B	D	H	I	J	K	L	M	N
500/375	1	2100	400	375	500	375		350	450	300	400
500/375	2	3000	410	375	500	375	375	350	450	300	415
400/300	1	1800	350	300	400	300		325	375	250	350
400/300	2	2400	310	300	400	300	300	300	375	250	315
330/250	1	1500	270	250	330	250		250	375	250	275
330/250	2	2100	280	250	330	250	250	250	375	250	285

* INDICATES MINIMUM SPACING.

GENERAL NOTES

1. SIGN DIMENSIONS: WIDTHS AND HEIGHTS OF SIGNS SHALL BE IN INCREMENTS OF 150 mm. THE SIGN HEIGHTS OF EXTRUDED ALUMINUM PANEL SIGNS ARE ACCEPTABLE IN INCREMENTS OF 152 mm. THE INCREASED HEIGHTS OF SIGNS SHALL BE DISTRIBUTED EQUALLY BETWEEN THE LEGEND CLEARANCE DIMENSIONS AT THE TOP AND BOTTOM OF THE SIGN, WHEN THE USE OF EXTRUDED ALUMINUM PANELS RESULTS IN A VERTICAL SIGN DIMENSION GREATER THAN REQUIRED.

2. SINGLE SHIELDS: WHEN MOUNTED ALONE, SHIELDS SHALL BE CENTERED WITHIN THE WIDTH DIMENSION.

3. MULTIPLE SHIELDS: WHEN MULTIPLE SHIELDS ARE USED, THEY SHALL BE EVENLY SPACED WITHIN THE WIDTH DIMENSION AND SHALL BE ON THE SAME VERTICAL ALIGNMENT.

4. SINGLE SHIELD WITH CARDINAL DIRECTION: THE CARDINAL DIRECTION SHALL BE MOUNTED ON THE SAME SIDE OF THE SHIELD AS THE EXIT, WITH THE TOP LINE OF THE SHIELD AND THE CARDINAL AT THE SAME ELEVATION. CARDINALS MAY BE CENTERED OVER THE SHIELD WHEN THE SHIELD/CARDINAL BECOMES THE CONTROLLING LINE FOR THE WIDTH DIMENSION.

5. MULTIPLE SHIELDS AND CARDINALS: WHEN MULTIPLE SHIELDS ARE USED WITH CARDINALS, THE CARDINALS SHALL BE CENTERED OVER THE APPROPRIATE SHIELDS. A CARDINAL MAY BE CENTERED OVER TWO SHIELDS WHEN APPLICABLE.

6. DESTINATION: THE DESTINATION MESSAGE SHOULD ORDINARILY CONSIST OF NOT MORE THAN TWO DESTINATIONS. A DESTINATION MAY BE A CITY, TOWN OR VILLAGE NAME; A STREET NAME; OR THE NAME OF A LARGE TRAFFIC GENERATOR. FOR SUPPLEMENTAL GUIDE SIGNS, THE DESTINATION MAY BE ANY APPROVED SUPPLEMENTAL DESTINATION.

7. ACTION MESSAGE: THE ACTION MESSAGE SHALL CONSIST OF EITHER A DISTANCE INDICATION, A DIRECTION INDICATION, OR A LANE ASSIGNMENT ARROW.

8. EXIT PANELS: EXIT PANELS SHALL BE USED ON MAJOR GUIDE SIGNS WHENEVER EXIT NUMBERS HAVE BEEN ASSIGNED. WHEN USED, THEY SHALL BE INSTALLED ON THE SIDE OF THE SIGN AS THE EXIT. WHEN EXIT PANELS ARE USED, THE WORD "EXIT" SHALL NOT BE USED IN THE MAIN SIGN'S ACTION MESSAGE.

9. EXIT ONLY PANELS: EXIT ONLY PANELS SHALL BE USED ONLY FOR A LANE DROP. THE PANELS SHALL BE YELLOW REFLECTORIZED BACKGROUND WITH BLACK LEGEND, AND SHALL BE DESIGNED TO FIT WITHIN THE WHITE BORDER OF THE COMPLETE SIGN PANEL. THE TOP OF THE EXIT ONLY PANEL SHOULD BE A MINIMUM OF 260 mm BELOW THE BOTTOM OF THE LOWEST DESTINATION. SEE SHEET 4 OF THIS STANDARD FOR DETAILS OF EXIT PANELS.

10. INTERCHANGE CLASSIFICATION: FOR FREEWAY AND EXPRESSWAY SIGNING PURPOSES, INTERCHANGES ARE CLASSIFIED AS MAJOR OR INTERMEDIATE AS DEFINED BELOW:
    A. MAJOR/CATEGORY A--INTERCHANGES WITH OTHER FREEWAYS OR EXPRESSWAYS.
    B. MAJOR/CATEGORY B--INTERCHANGES WITH HIGH-VOLUME MULTILANE HIGHWAYS, PRINCIPAL URBAN ARTERIALS AND MAJOR RURAL ROUTES WHERE THE INTERCHANGING TRAFFIC IS HEAVY OR INCLUDES MANY DRIVERS UNFAMILIAR WITH THE AREA.
    C. INTERMEDIATE--MOST INTERCHANGES WITH URBAN OR RURAL ROUTES.

11. LEGEND SIZES: WITH RESPECT TO NOTE 10, LETTER AND NUMERAL SIZES FOR ADVANCE GUIDE, EXIT DIRECTION, AND OVERHEAD SIGNS ARE:

LEGEND TYPE		FREEWAYS			EXPRESSWAYS			OVER-HEAD SIGNS
		MAJOR		INTER-MEDIATE	MAJOR		INTER-MEDIATE	
		CAT. A	CAT. B		CAT. A	CAT. B		
CARDINAL DIRECTION	FIRST LETTER	450	450	375	450	375	300	375
CARDINAL DIRECTION	OTHER LETTERS	375	375	300	375	300	250	300
DESTINATION		500/375	500/375	400/300	500/375	400/300	330/250	400/300
DISTANCE	NUMERAL	450	450	375	450	375	300	375
DISTANCE	WORD	300	300	250	300	250	250	250
ACTION MESSAGE		300	300	250	300	250	250	250

12. LEGEND SPACING: LEGEND SPACING SHALL FOLLOW THE PROCEDURES AND CHARTS SHOWN IN TC-8700C. SEE SHEET 8 OF THIS STANDARD FOR DESIGN DETAILS OF SHIELDS AND FOR THE SPACING OF CARDINAL DIRECTIONS.

13. SERIES: ALL UPPER CASE/LOWER CASE LEGEND SHALL BE SERIES E MODIFIED, AND ALL CAPITAL LEGEND AND NUMERALS SHALL BE SERIES E, UNLESS OTHERWISE NOTED.

14. COLOR: UNLESS NOTED OTHERWISE, ALL SIGNS SHALL HAVE A GREEN REFLECTORIZED BACKGROUND WITH WHITE REFLECTORIZED LEGEND AND BORDER OF THE TYPE SPECIFIED IN SECTION 1103 OF PUBLICATION 408M.

15. BORDERS: ALL SIGNS SHALL HAVE A 50 mm BORDER WITH 300 mm CORNER RADII, UNLESS OTHERWISE NOTED.

16. MUTCD: SIGN DETAILS SHALL COMPLY WITH THIS STANDARD DRAWING AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

SIGN DETAILS FREEWAY AND EXPRESSWAY GUIDE SIGNS

ADVANCE GUIDE SIGNS

RECOMMENDED AUG. 1, 1997
AHBrener
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION

RECOMMENDED AUG. 1, 1997
Gary L. Hoffman
CHIEF HIGHWAY ENGINEER

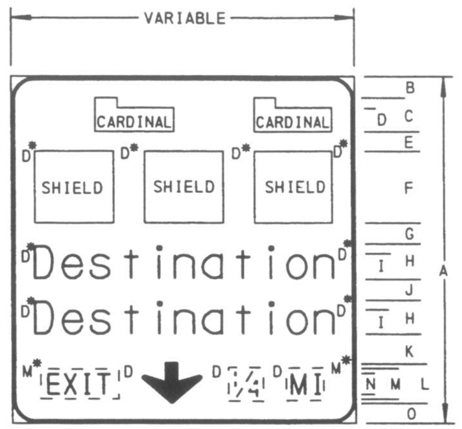
SHT. 1 OF 8

TC-8701D

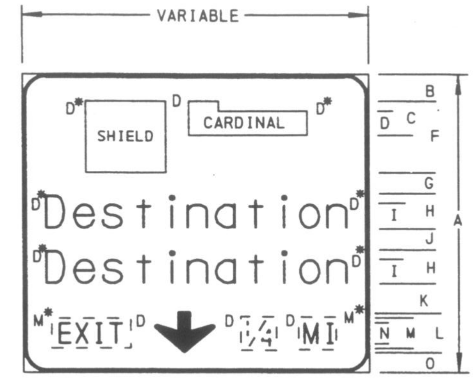
04-AUG-1997

NOTES

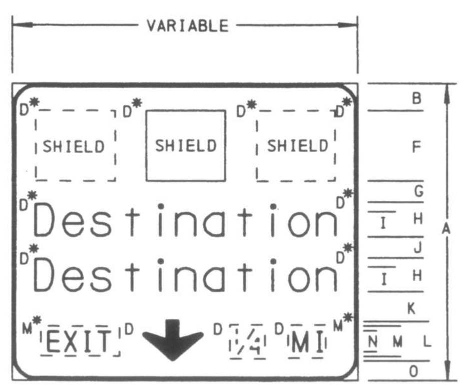
1. SIGNS ON THIS SHEET ARE TO BE USED OVERHEAD FOR LANE ASSIGNMENTS.
2. REFER TO TC-8700C FOR ARROW DETAILS. THE TYPE C ARROW SHALL BE USED FOR THE 500 mm / 375 mm AND 400 mm / 300 mm LEGEND SIZES, AND THE TYPE D ARROW SHALL BE USED FOR THE 330 mm / 250 mm LEGEND SIZE.
3. LANE ASSIGNMENT ARROW USAGE SHALL COMPLY WITH THE MOST CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.



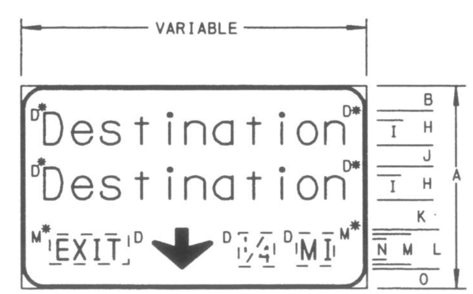
DEST. SIZE	DEST. LINES	DIMENSIONS (MILLIMETERS)														
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
500/375	1	4200	450	450	375	300	900	350	500	375		300	550	450	300	400
500/375	2	4950	400	450	375	300	900	350	500	375	375	300	550	450	300	325
400/300	1	3600	335	375	300	250	900	300	400	300		240	550	375	250	250
400/300	2	4200	310	375	300	250	900	275	400	300	300	215	550	375	250	225
330/250	1	3150	295	300	250	200	900	250	330	250		215	410	375	250	250
330/250	2	3750	305	300	250	200	900	250	330	250	250	225	410	375	250	250



DEST. SIZE	DEST. LINES	DIMENSIONS (MILLIMETERS)													
		A	B	C	D	F	G	H	I	J	K	L	M	N	O
500/375	1	3300	375	450	375	900	350	500	375		300	550	450	300	325
500/375	2	4200	385	450	375	900	350	500	375	375	300	550	450	300	340
400/300	1	3000	335	375	300	900	325	400	300		240	550	375	250	250
400/300	2	3600	300	375	300	900	300	400	300	300	215	550	375	250	235
330/250	1	2700	300	300	250	900	250	330	250		235	410	375	250	275
330/250	2	3300	310	300	250	900	250	330	250	250	235	410	375	250	285



DEST. SIZE	DEST. LINES	DIMENSIONS (MILLIMETERS)												
		A	B	D	F	G	H	I	J	K	L	M	N	O
500/375	1	3300	375	375	900	350	500	375		300	550	450	300	325
500/375	2	4200	385	375	900	350	500	375	375	300	550	450	300	340
400/300	1	3000	335	300	900	325	400	300		240	550	375	250	250
400/300	2	3600	300	300	900	300	400	300	300	215	550	375	250	235
330/250	1	2700	300	250	900	250	330	250		235	410	375	250	275
330/250	2	3300	310	250	900	250	330	250	250	235	410	375	250	285



DEST. SIZE	DEST. LINES	DIMENSIONS (MILLIMETERS)										
		A	B	D	H	I	J	K	L	M	N	O
500/375	1	2100	400	375	500	375		300	550	450	300	350
500/375	2	3000	410	375	500	375	375	300	550	450	300	365
400/300	1	1800	350	300	400	300		240	550	375	250	260
400/300	2	2400	310	300	400	300	300	215	550	375	250	225
330/250	1	1500	280	250	330	250		235	410	375	250	245
330/250	2	2100	285	250	330	250	250	235	410	375	250	260

* INDICATES MINIMUM SPACING.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

SIGN DETAILS
FREEWAY AND EXPRESSWAY
GUIDE SIGNS

OVERHEAD LANE
ASSIGNMENT SIGNS

RECOMMENDED AUG. 1, 1997
A.H. Brenan
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION

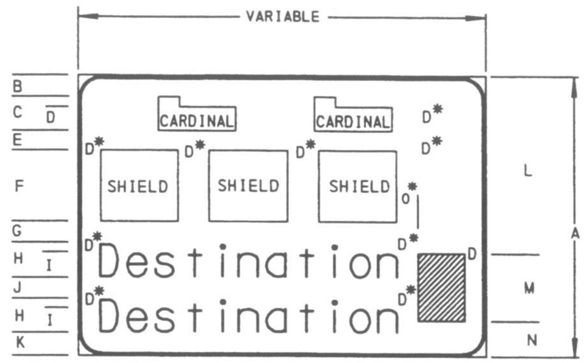
RECOMMENDED AUG. 1, 1997
Gary L. Hoffman
CHIEF HIGHWAY ENGINEER

SHT. 2 OF 8

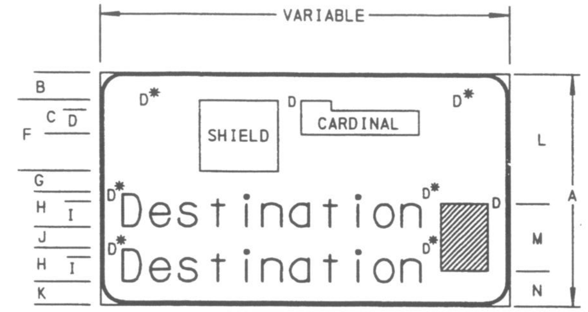
TC-8701D

NOTES

1. REFER TO TC-8700C FOR ARROW DETAILS. TYPE F ARROW DIMENSIONS ARE SHOWN FOR ILLUSTRATIVE PURPOSES, BUT TYPE E THROUGH TYPE J ARROWS MAY ALSO BE USED FOR THE SIGNS SHOWN ON THIS SHEET.



DEST. SIZE	DEST. LINES	DIMENSIONS (MILLIMETERS)														
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
500/375	1	3300	400	450	375	300	900	350	500	375		400	2085	815	400	
500/375	2	4200	415	450	375	300	900	350	500	375	375	410	2760	815	625	
400/300	1	2850	325	375	300	250	900	275	400	300		325	1710	815	325	200
400/300	2	3600	325	375	300	250	900	300	400	300	300	350	2310	815	475	
330/250	1	2550	285	300	250	200	900	250	330	250		285	1450	815	285	200
330/250	2	3150	295	300	250	200	900	250	330	250	250	295	1935	815	400	



DEST. SIZE	DEST. LINES	DIMENSIONS (MILLIMETERS)												
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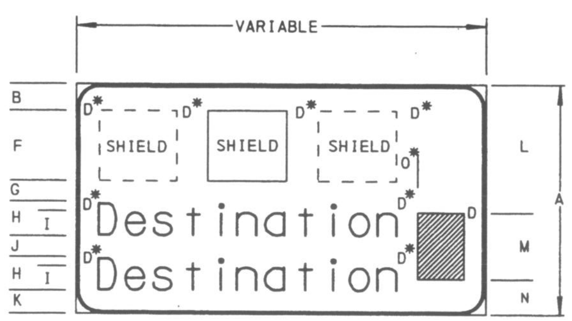
500/375	2	3450	415	450	375	900	350	500	375	375	410	2010	815	625
400/300	1	2250	325	375	300	900	300	400	300		325	1110	815	325
400/300	2	3000	350	375	300	900	300	400	300	300	350	1710	815	475
330/250	1	2100	300	300	250	900	275	330	250		295	990	815	295
330/250	2	2700	310	300	250	900	275	330	250	250	305	1485	815	400



DEST. SIZE	DEST. LINES	DIMENSIONS (MILLIMETERS)												
		A	B	D	F	G	H	I	J	K	L	M	N	O
500/375	1	2550	400	375	900	350	500	375		400	1335	815	400	
500/375	2	3450	415	375	900	350	500	375	375	410	2010	815	625	
400/300	1	2250	325	300	900	300	400	300		325	1110	815	325	200
400/300	2	3000	350	300	900	300	400	300	300	350	1710	815	475	
330/250	1	2100	300	250	900	275	330	250		295	990	815	295	200
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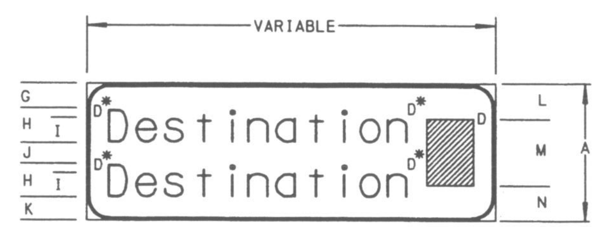


DEST. SIZE	DEST. LINES	DIMENSIONS (MILLIMETERS)									
		A	D	G	H	I	J	K	L	M	N
500/375	1	1350	375	425	500	375		425	270	815	265
500/375	2	2250	375	440	500	375	375	435	720	815	715
400/300	1	1350	300	475	400	300		475	270	815	265
400/300	2	1800	300	350	400	300	300	350	495	815	490
330/250	1	1350	250	510	330	250		510	270	815	265
330/250	2	1500	250	295	330	250	250	295	345	815	340

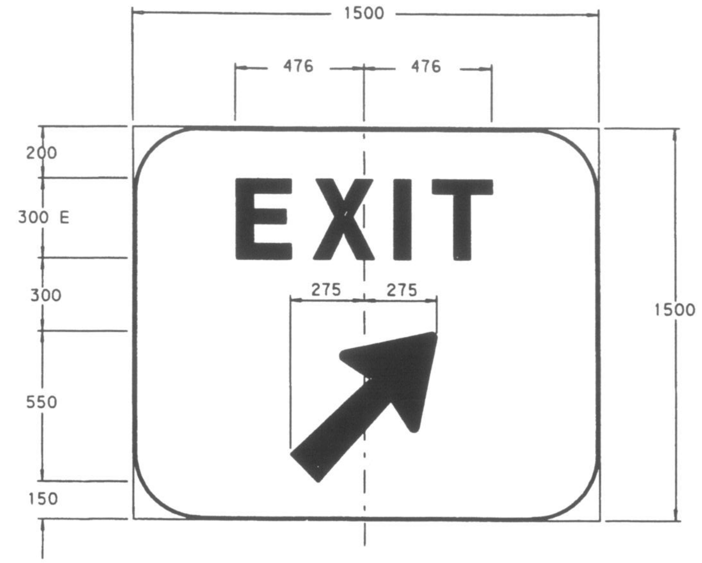
* INDICATES MINIMUM SPACING.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

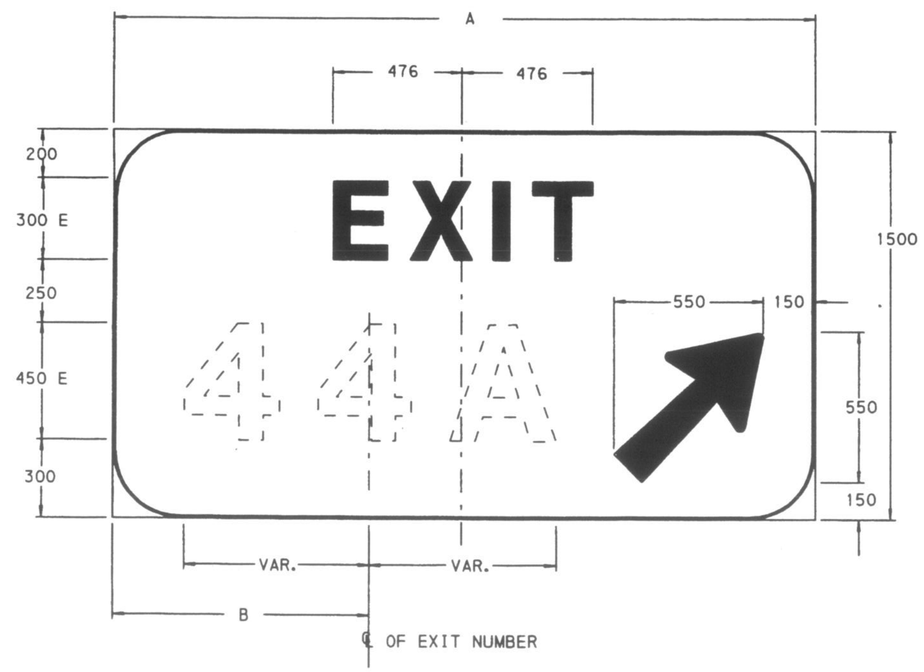
SIGN DETAILS
FREEWAY AND EXPRESSWAY GUIDE SIGNS
EXIT DIRECTION SIGNS

RECOMMENDED AUG. 1, 1997 — CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION

RECOMMENDED AUG. 1, 1997 — CHIEF HIGHWAY ENGINEER

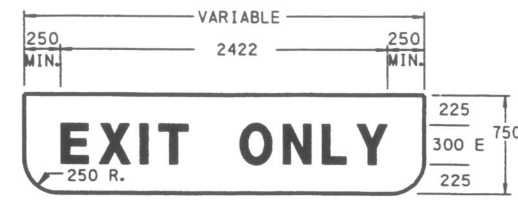


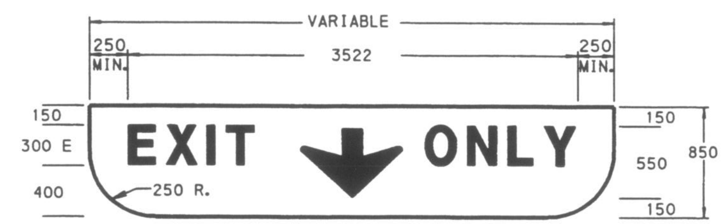
USE FOR UNNUMBERED EXITS ONLY.



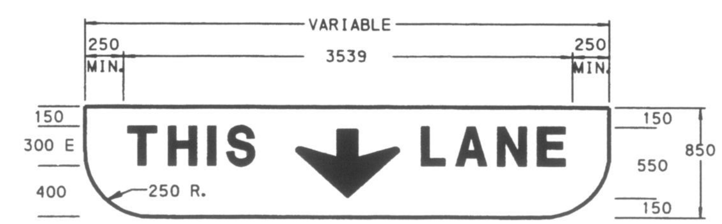
NUMBER OF		DIMENSIONS (MILLIMETERS)	
DIGITS	LETTERS	A	B
1	0	1800	540
1	1	2100	655
2	1	2400	850

GORE SIGNS

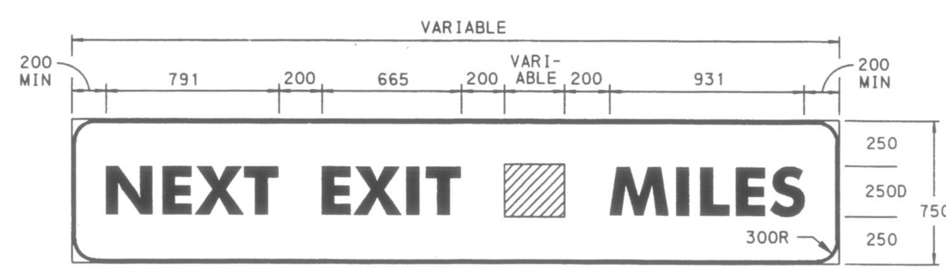




EXIT ONLY PANELS



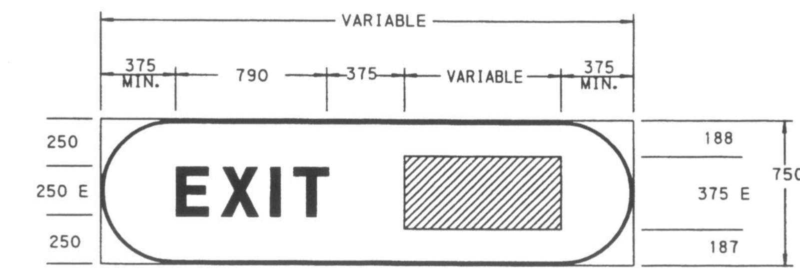
THIS LANE PANEL



NEXT EXIT PANEL

NOTES

1. EXIT ONLY AND THIS LANE PANELS SHALL HAVE A YELLOW REFLECTORIZED BACKGROUND AND BLACK NONREFLECTORIZED LEGEND.
2. REFER TO TC-8700C FOR ARROW DETAILS. TYPE N ARROW SHALL BE USED ON THE GORE SIGNS, AND TYPE C ARROW SHALL BE USED ON THE EXIT ONLY AND THIS LANE PANELS.
3. ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.



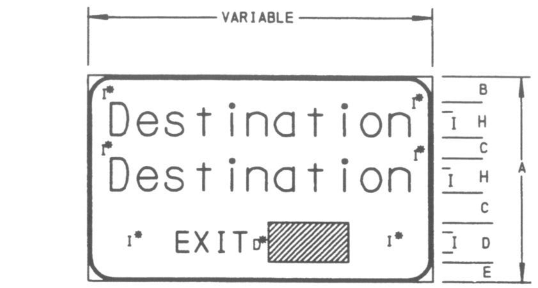
EXIT PANEL

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

SIGN DETAILS
FREEWAY AND EXPRESSWAY
GUIDE SIGNS

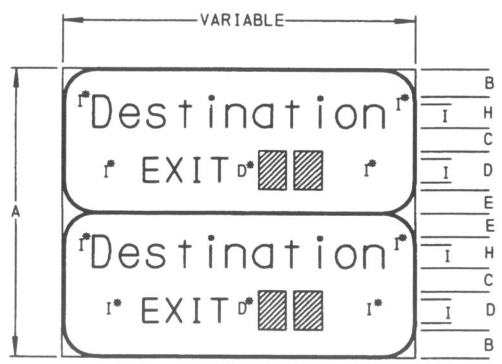
GORE SIGNS, EXIT PANELS & NEXT EXIT SIGNS

RECOMMENDED AUG. 1, 1997	RECOMMENDED AUG. 1, 1997	SHT. 4 OF 8
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	CHIEF HIGHWAY ENGINEER	TC-8701D



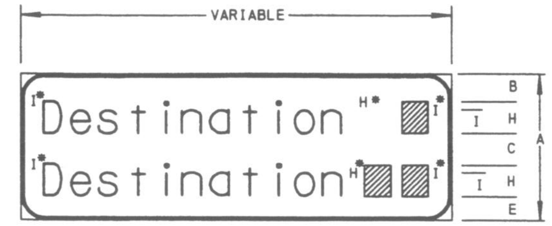
TYPE FACILITY	DESTINATION LINES	DIMENSIONS (MILLIMETERS)						
		A	B	C	D	E	H	I
EXPRESSWAY	1	1200	205	225	300	205	265	200
	2	1800	235	250	300	235	265	200
FREEWAY	1	1500	260	275	375	260	330	250
	2	2100	260	275	375	255	330	250

SINGLE EXIT SUPPLEMENTAL GUIDE SIGN



TYPE FACILITY	DIMENSIONS (MILLIMETERS)						
	A	B	C	D	E	H	I
EXPRESSWAY	2400	220	200	300	215	265	200
FREEWAY	3000	275	250	375	270	330	250

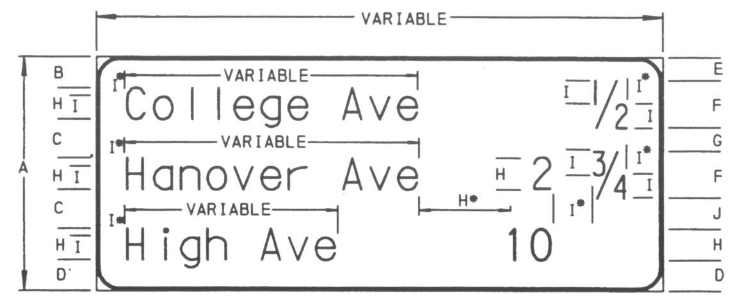
DOUBLE EXIT SUPPLEMENTAL GUIDE SIGN



LEGEND AND NUMERALS - SERIES E MODIFIED

TYPE FACILITY	DESTINATION LINES	DIMENSIONS (MILLIMETERS)					
		A	B	C	E	H	I
EXPRESSWAY	2	1200	275	250	275	200	150
	3	1500	250	200	250	200	150
FREEWAY	2	1350	275	270	275	265	200
	3	1800	245	255	250	265	200

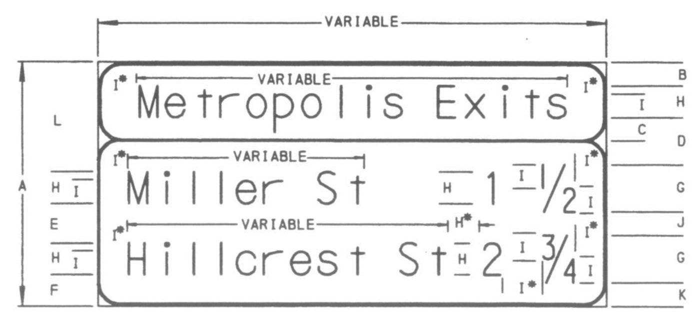
POST INTERCHANGE DISTANCE SIGN



LEGEND AND NUMERALS - SERIES E MODIFIED

TYPE FACILITY	DESTINATION LINES	DIMENSIONS (MILLIMETERS)									
		A	B	C	D	E	F	G	H	I	J
EXPRESSWAY	2	1350	285	250	285	270	300		265	200	230
	3	1800	250	250	255	235	300	215	265	200	230
FREEWAY	2	1500	285	275	280	265	375		330	250	250
	3	2100	280	275	280	260	375	230	330	250	250

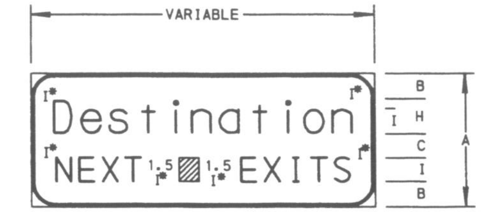
INTERCHANGE SEQUENCE SIGN



LEGEND AND NUMERALS - SERIES E MODIFIED

TYPE FACILITY	DESTINATION LINES	DIMENSIONS (MILLIMETERS)											
		A	B	C	D	E	F	G	H	I	J	K	L
EXPRESSWAY	2	1950	255	205	400	235	250	300	265	200	200	230	935
	3	2400	255	205	400	210	250	300	265	200	175	230	935
FREEWAY	2	2400	310	260	500	295	285	375	330	250	250	260	1160
	3	3000	285	260	500	295	285	375	330	250	250	260	1135

COMMUNITY INTERCHANGES IDENTIFICATION SIGN



TYPE FACILITY	DIMENSIONS (MILLIMETERS)				
	A	B	C	H	I
EXPRESSWAY	1200	245	245	265	200
FREEWAY	1350	260	250	330	250

NEXT (NUMBER) EXITS AREA SIGN

* INDICATES MINIMUM SPACING.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

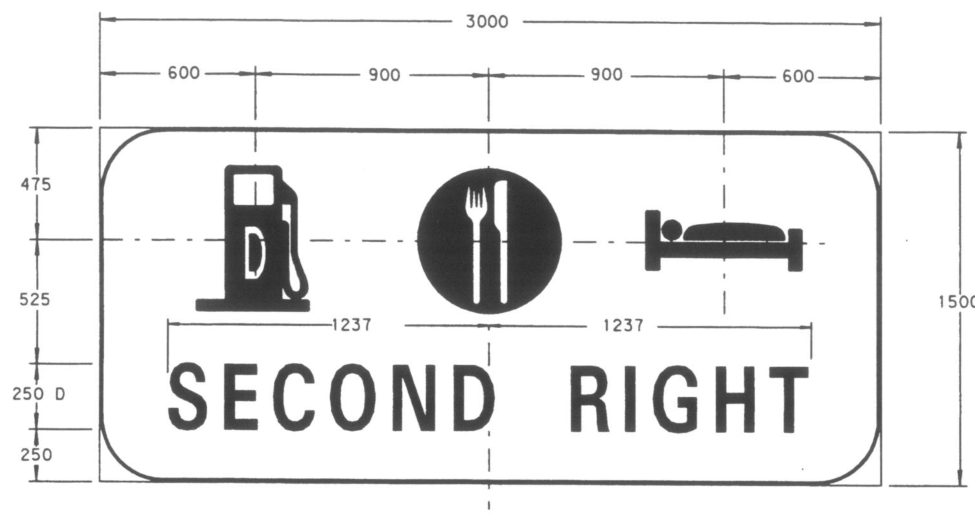
SIGN DETAILS
FREEWAY AND EXPRESSWAY GUIDE SIGNS
SUPPLEMENTAL GUIDE SIGNS & MISCELLANEOUS INTERCHANGE SIGNS

RECOMMENDED AUG. 1, 1997
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION

RECOMMENDED AUG. 1, 1997
Gary L Hoffman
CHIEF HIGHWAY ENGINEER

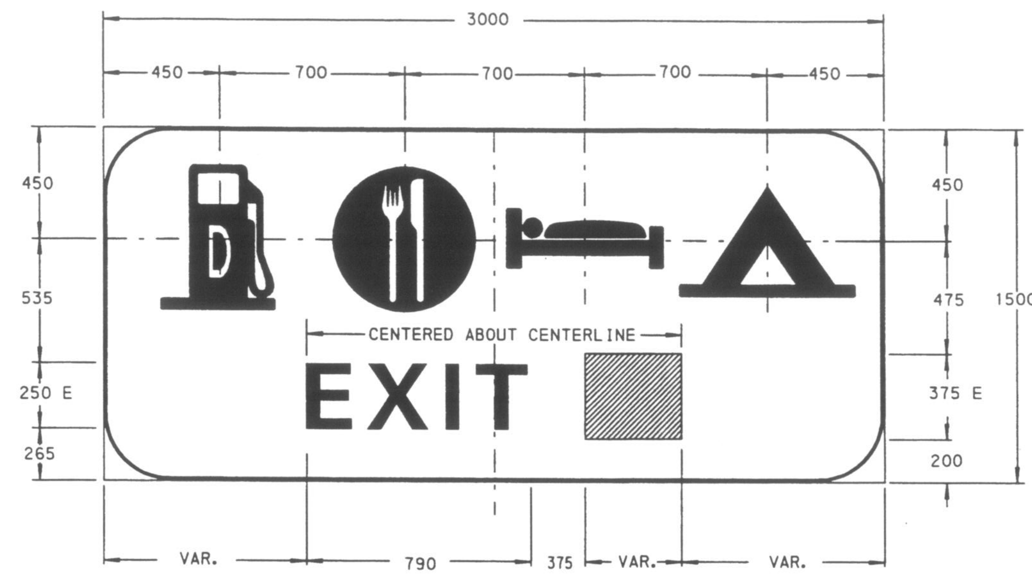
SHT. 5 OF 8

TC-8701D



SEE 6-SERVICE SIGN FOR SERVICE SYMBOL DIMENSIONS

3-SERVICE SIGN

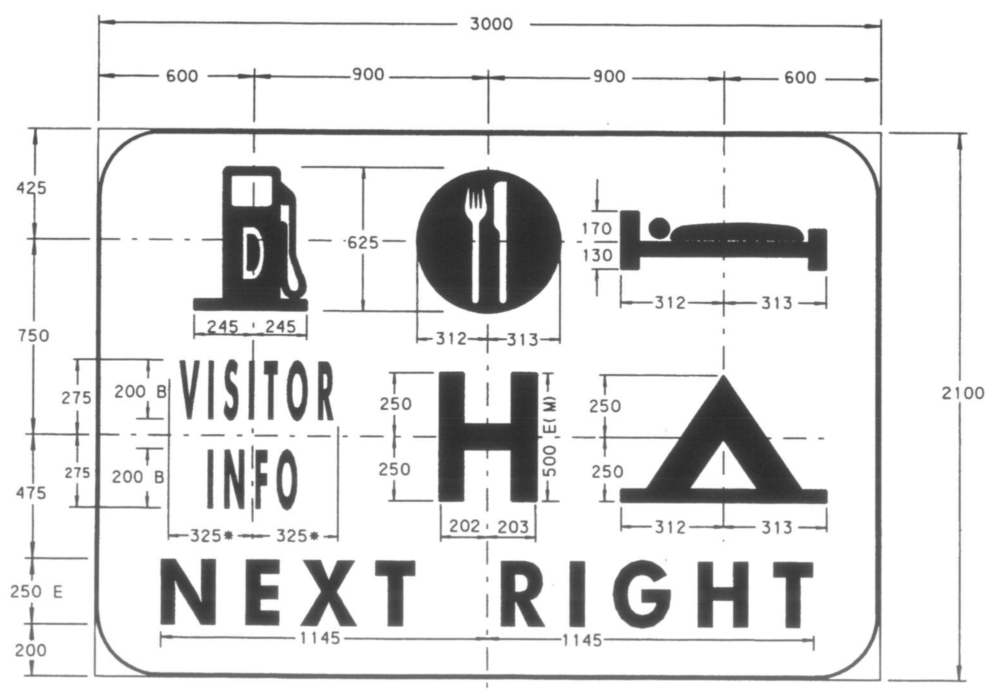


SEE 6-SERVICE SIGN FOR SERVICE SYMBOL DIMENSIONS

4-SERVICE SIGN

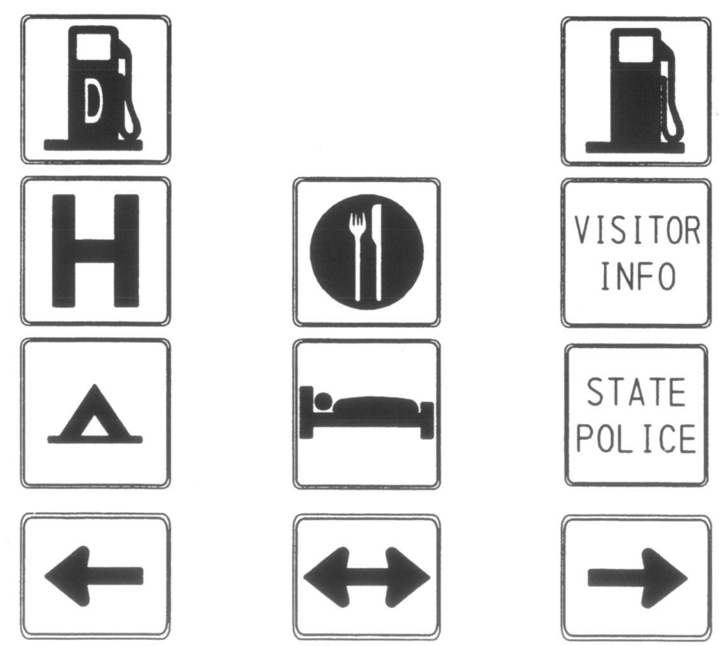
NOTES:

1. ALL SERVICE SIGNS SHALL HAVE A BLUE REFLECTORIZED BACKGROUND AND WHITE REFLECTORIZED SYMBOLS, LEGENDS, AND BORDERS. UNLESS NOTED OTHERWISE, THE TYPE OF REFLECTIVE SHEETING SHALL COMPLY WITH DEPARTMENT PUBLICATION 408M.
2. ALL MAINLINE SERVICE SIGNS SHALL HAVE A 50 mm BORDER WITH 225 mm CORNER RADII.
3. THE STANDARD MAINLINE SERVICE SIGN SHALL USE A 3000 mm x 1500 mm PANEL AND SHALL USE THE THREE-SYMBOL LAYOUT. IF FOUR SYMBOLS ARE REQUIRED, THE SYMBOLS SHALL BE AS INDICATED. IF MORE THAN FOUR SYMBOLS ARE REQUIRED, A 3000 mm x 2100 mm PANEL SHALL BE USED.
4. WHEN THE EXIT IS NUMBERED, THE EXIT NUMBER SHOULD BE USED INSTEAD OF "NEXT RIGHT" OR "SECOND RIGHT".
5. FOR THE LAYOUT OF RAMP SIGNING (600 mm x 600 mm), SEE D9 SERIES IN DEPARTMENT PUBLICATION 236M. USE (600 mm x 300 mm) SERVICES ARROW (D9-2-2) WITH RAMP SIGNING.
6. NORMAL SEQUENCE SHOULD BE GAS (DIESEL), FOOD, LODGING, AND THEN OTHERS.
7. ALL DIMENSIONS ARE IN MILLIMETERS.



* - REDUCE WIDTH 15%

6-SERVICE SIGN

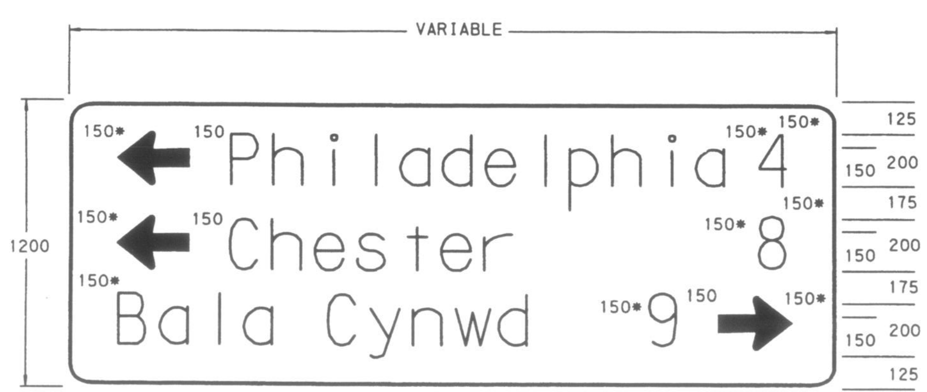


RAMP SIGNING

COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING		
SIGN DETAILS FREEWAY AND EXPRESSWAY GUIDE SIGNS GENERAL MOTORIST SERVICE SIGNS		
RECOMMENDED AUG. 1, 1997 [signature] CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED AUG. 1, 1997 Gary L. Hoffman CHIEF HIGHWAY ENGINEER	SHT. 6 OF 8 TC-8701D

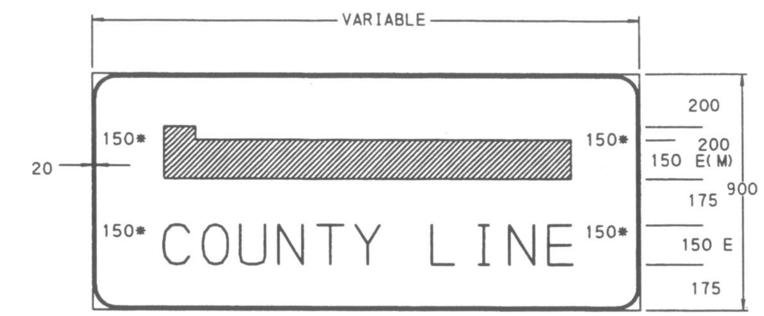
LEGEND AND NUMERAL - SERIES E MODIFIED

LEGEND AND NUMERALS - SERIES E MODIFIED

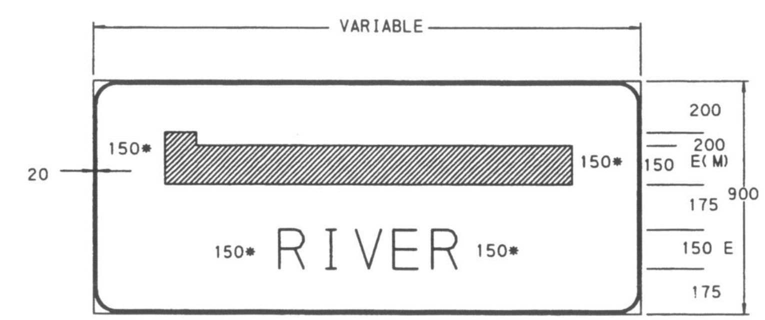


LEGEND AND NUMERALS - SERIES E MODIFIED

RAMP DESTINATION SIGNS



COUNTY BOUNDARY SIGNS



WATERWAY SIGNS

NOTES:

1. ALL SIGNS ON THIS SHEET SHALL HAVE A 30 mm BORDER WITH 150 mm CORNER RADII, UNLESS OTHERWISE NOTED.
2. REFER TO TC-8700C FOR ARROW DETAILS. TYPE K, TYPE L OR TYPE M ARROWS SHALL BE USED FOR THE RAMP DESTINATION SIGNS.
3. BOUNDARY AND WATERWAY SIGNS SHALL HAVE WHITE REFLECTORIZED BACKGROUND AND BLUE REFLECTORIZED LEGEND AND BORDER. UNLESS NOTED OTHERWISE, THE TYPE OF REFLECTIVE SHEETING SHALL COMPLY WITH DEPARTMENT PUBLICATION 408M.
4. ALL DIMENSIONS ARE IN MILLIMETERS.

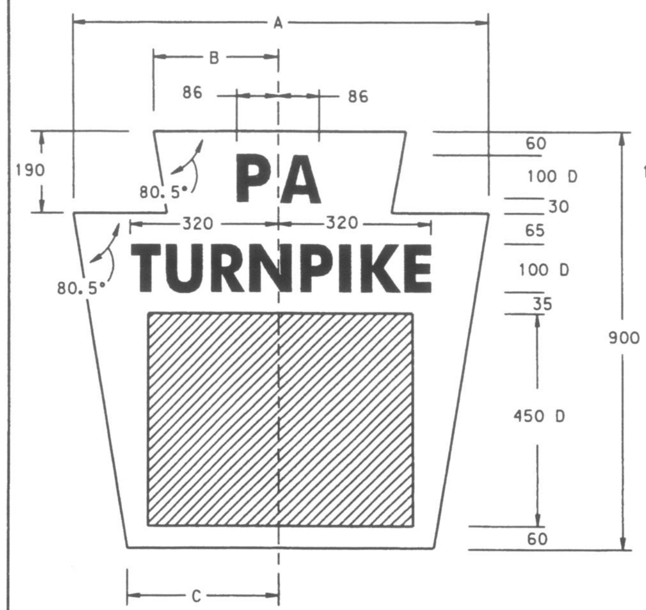
* INDICATES MINIMUM SPACING

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

SIGN DETAILS
FREEWAY AND EXPRESSWAY
GUIDE SIGNS

RAMP DESTINATION
AND BOUNDARY SIGNS

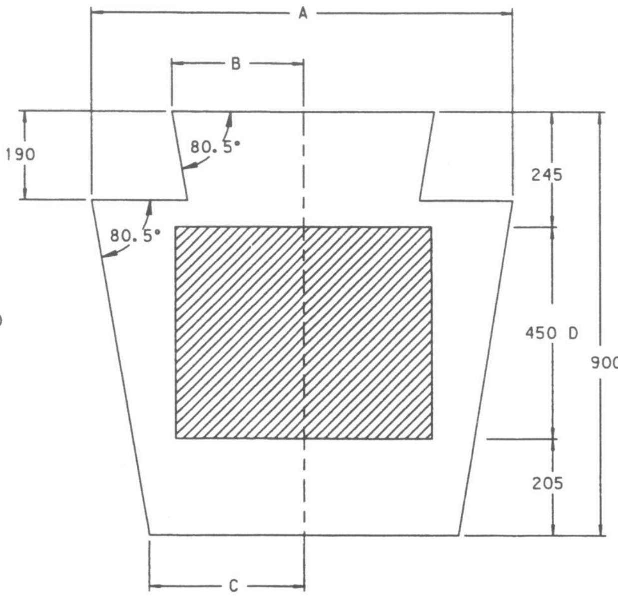
RECOMMENDED AUG. 1, 1997 A H Brenner CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED AUG. 1, 1997 Gary L. Hoffman CHIEF HIGHWAY ENGINEER	SHT. 7 OF 8 TC-8701D



COLOR: WHITE REFLECTORIZED BACKGROUND
BLACK NONREFLECTORIZED LEGEND

NUMBER OF DIGITS	DIMENSIONS (mm) A	B	C
1 OR 2	900	260	330
3	1125	375	445

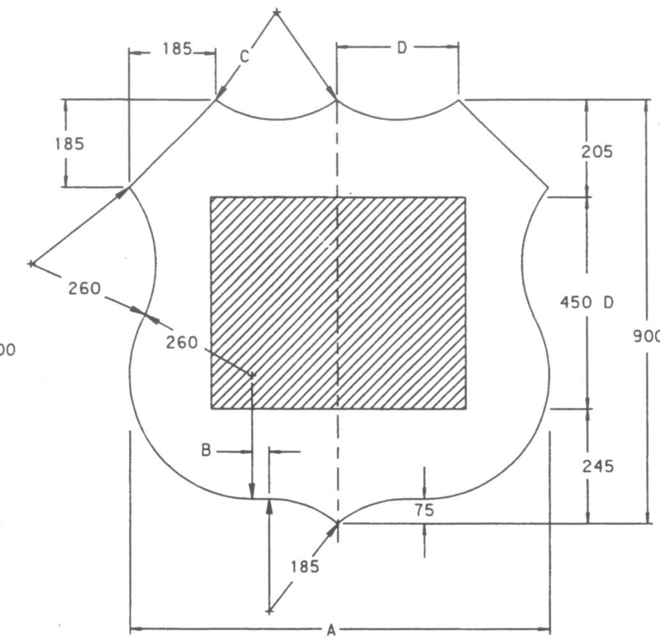
PA. TURNPIKE ROUTE SHIELD



COLOR: WHITE REFLECTORIZED BACKGROUND
BLACK NONREFLECTORIZED LEGEND

NUMBER OF DIGITS	DIMENSIONS (mm) A	B	C
1 OR 2	900	260	330
3	1125	375	445

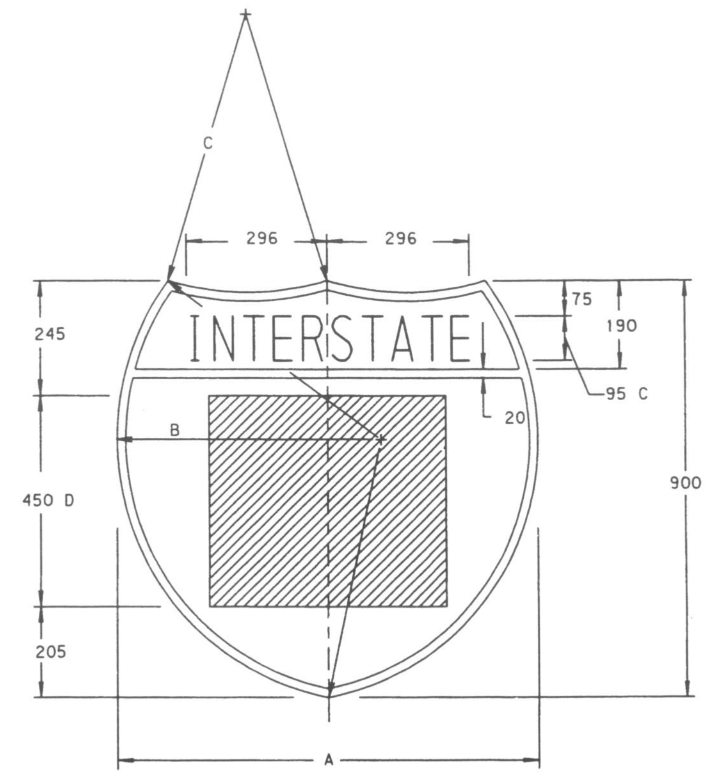
PA. SHIELD



COLOR: WHITE REFLECTORIZED BACKGROUND
BLACK NONREFLECTORIZED LEGEND

NUMBER OF DIGITS	DIMENSIONS (mm) A	B	C	D
1 OR 2	900	35	185	260
3	1125	135	335	375

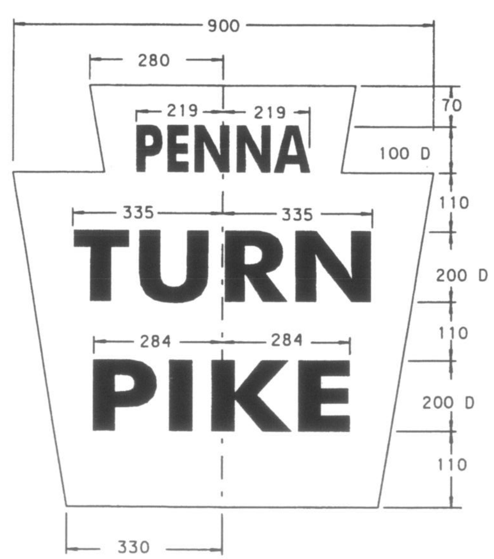
U.S. SHIELD



COLOR: WHITE REFLECTORIZED LEGEND AND BORDER
RED REFLECTORIZED TOP BACKGROUND
BLUE REFLECTORIZED BOTTOM BACKGROUND

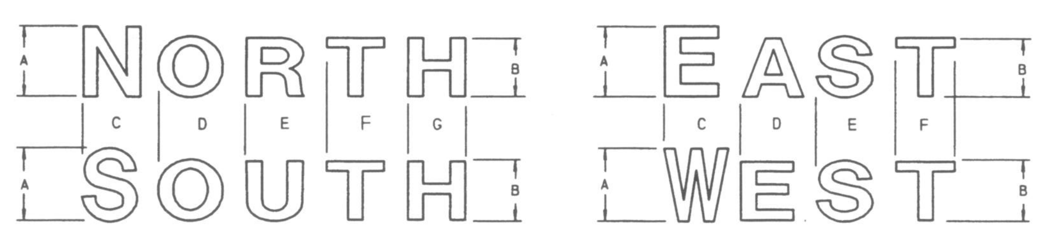
NUMBER OF DIGITS	DIMENSIONS (mm) A	B	C
1 OR 2	900	571	571
3	1125	647	914

INTERSTATE SHIELD



COLOR: WHITE REFLECTORIZED BACKGROUND
BLACK NONREFLECTORIZED LEGEND

PENNA. TURNPIKE SHIELD



SERIES E CAPITAL

	A	B	C	D	E	F	G	TOTAL
NORTH	450	375	472	413	383	359	304	1931
	375	300	392	330	306	287	243	1558
	300	250	315	276	254	238	202	1285
SOUTH	450	375	452	413	383	359	304	1911
	375	300	375	330	306	287	243	1541
	300	250	300	276	254	238	202	1270
EAST	450	375	392	460	383	280		1515
	375	300	327	368	306	224		1225
	300	250	262	306	254	186		1008
WEST	450	375	566	359	383	280		1588
	375	300	470	287	306	224		1287
	300	250	376	238	254	186		1054

CARDINAL DETAILS

NOTES:

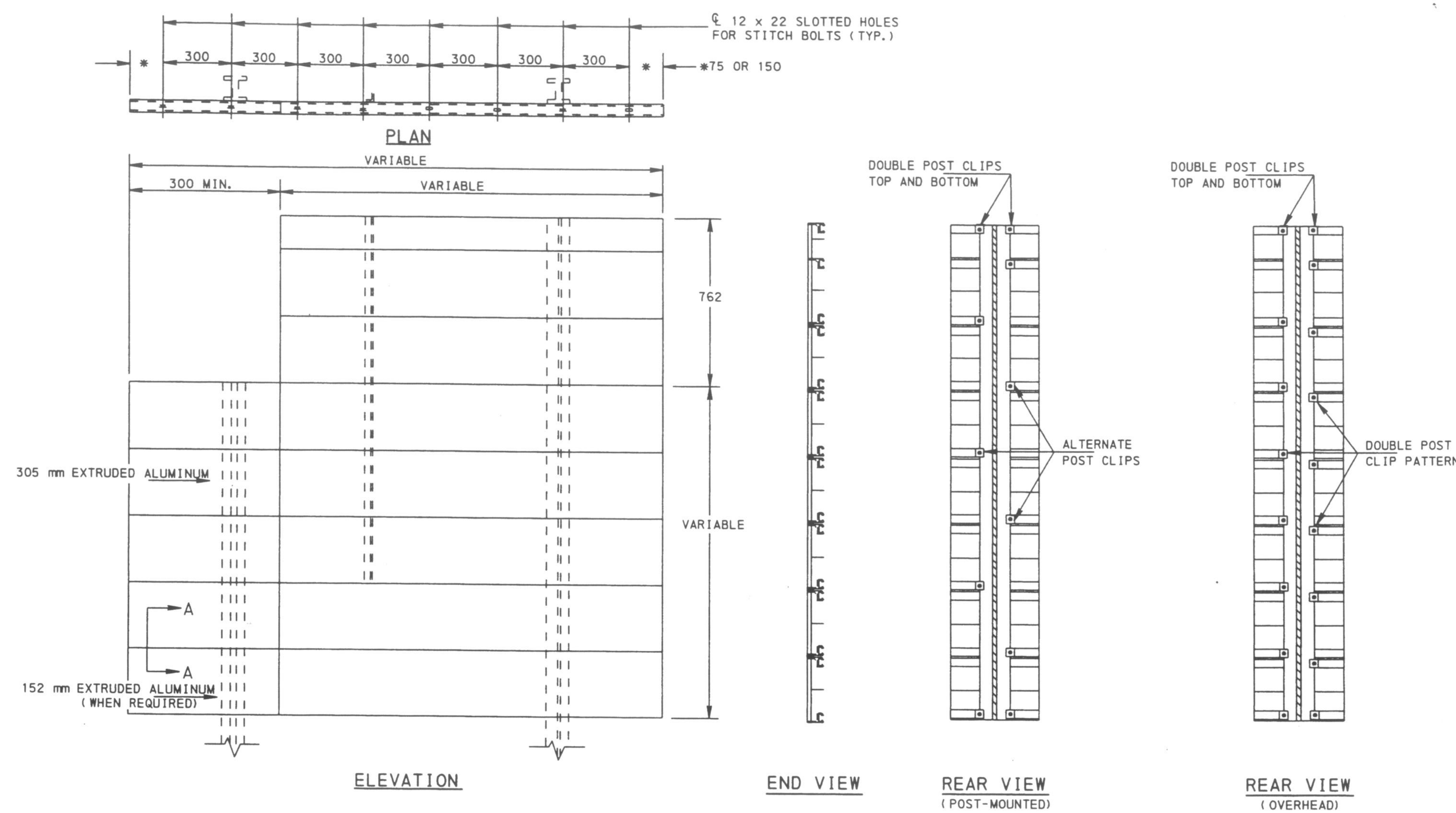
1. THESE IRREGULAR-SHAPED SHIELDS SHALL BE FABRICATED FROM TYPE III OR IV REFLECTIVE SHEETING AND SHALL BE USED ON ALL GUIDE SIGNS IN LIEU OF THOSE SHIELDS DEPICTED IN PUBLICATION 236M.
2. THE PA TURNPIKE ROUTE SHIELD SHALL ONLY BE USED WITH PA NUMBERED TRAFFIC ROUTES, i.e., NOT WITH INTERSTATE ROUTES SUCH AS I-76, I-276, I-476, ETC.
3. ALL DIMENSIONS ARE IN MILLIMETERS.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

SIGN DETAILS
FREEWAY AND EXPRESSWAY
GUIDE SIGNS

CARDINALS AND SHIELDS

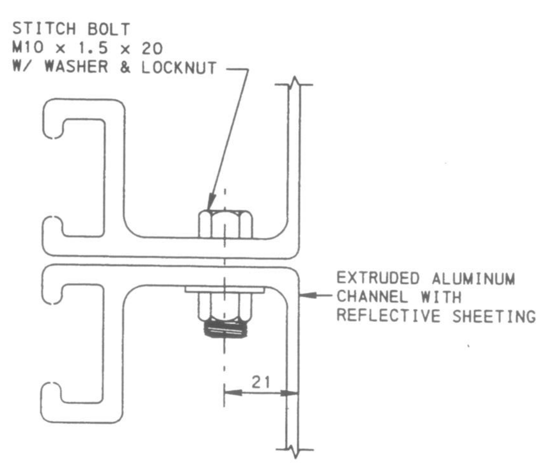
RECOMMENDED AUG. 1, 1997	RECOMMENDED AUG. 1, 1997	SHT. 8 OF 8
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	CHIEF HIGHWAY ENGINEER	TC-8701D



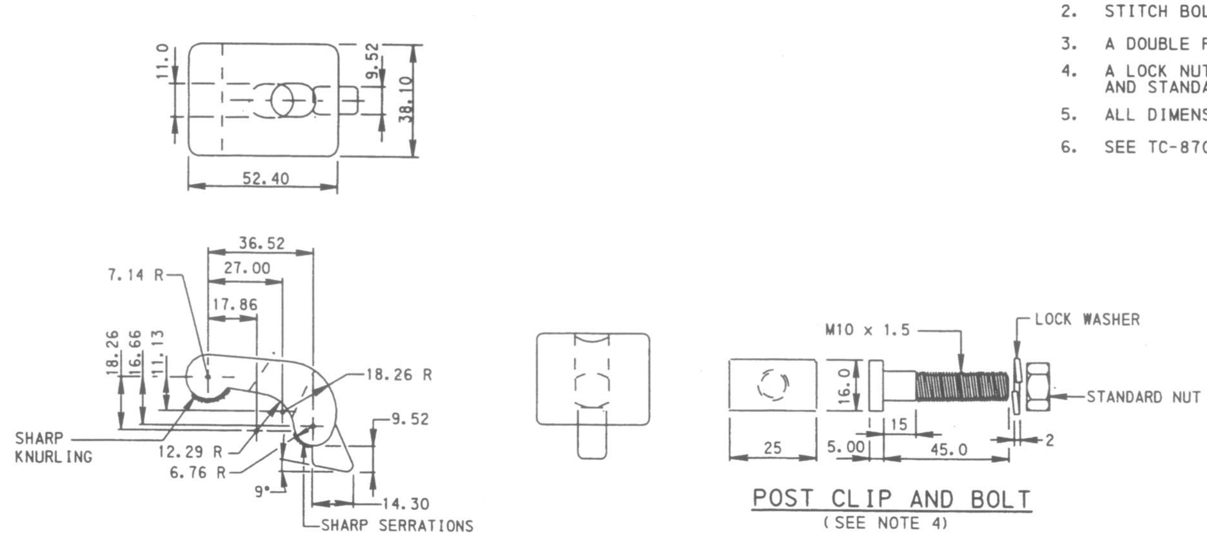
EXTRUDED ALUMINUM CHANNEL SIGN

NOTES:

1. IF A 152 mm SECTION IS REQUIRED, IT SHOULD BE PLACED AT THE TOP AND/OR THE BOTTOM OF THE SIGN.
2. STITCH BOLTS TO BE USED AT 300 mm CENTERS THROUGHOUT THE SIGN PANEL.
3. A DOUBLE POST CLIP PATTERN IS REQUIRED FOR ALL OVERHEAD SIGNS.
4. A LOCK NUT AND M10 WASHER MAY BE USED IN LIEU OF A LOCK WASHER AND STANDARD NUT FOR POST CLIPS.
5. ALL DIMENSIONS ARE IN MILLIMETERS.
6. SEE TC-8702E FOR INSTALLATION ON WOOD POSTS.



SECTION A-A

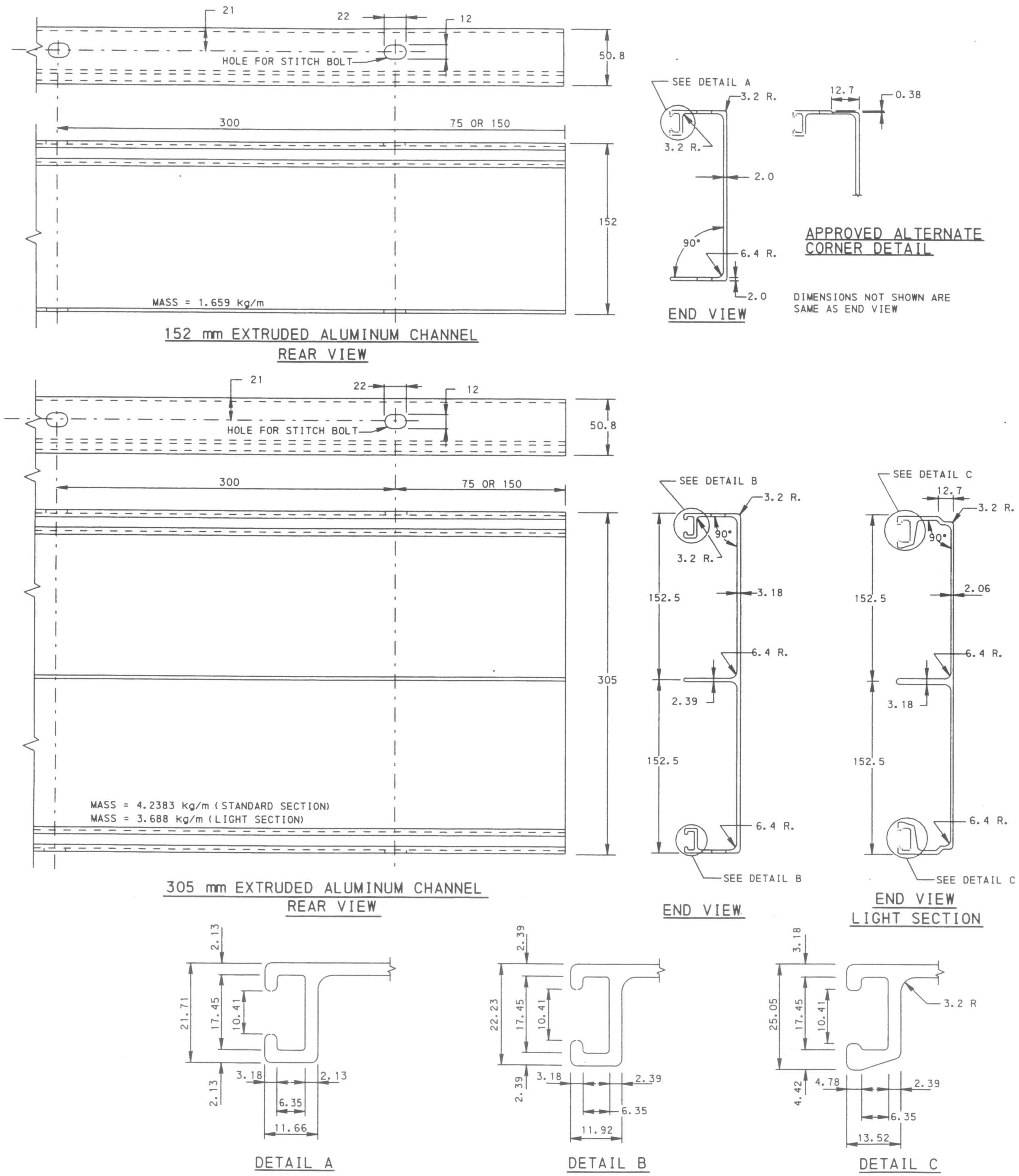


POST CLIP AND BOLT
(SEE NOTE 4)

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

EXTRUDED ALUMINUM CHANNEL SIGN

RECOMMENDED AUG. 1, 1997 CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED AUG. 1, 1997 Gary L. Hoffman CHIEF HIGHWAY ENGINEER	SHT. 1 OF 2 TC-8701E



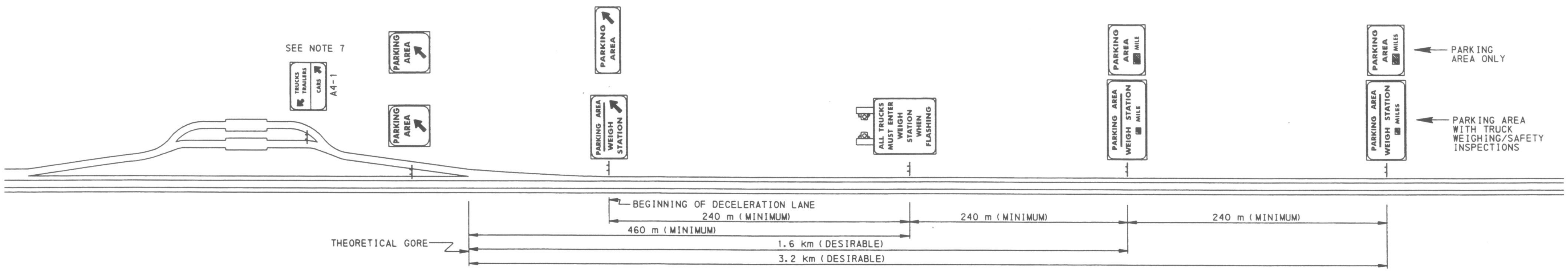
NOTES

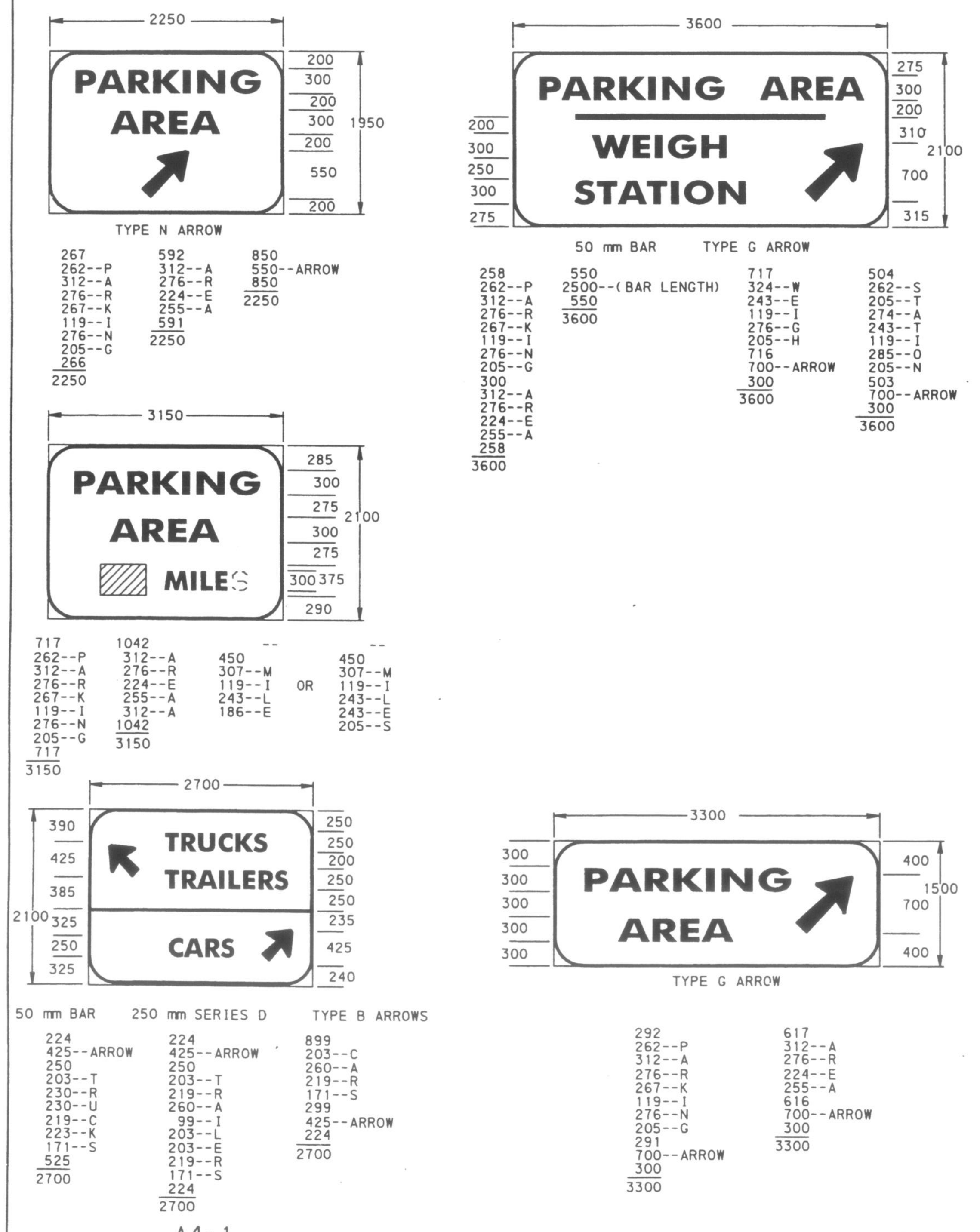
1. USE EITHER THE STANDARD SECTION (28008) OR THE LIGHT SECTION (401771).
2. FOR DETAILS A, B, AND C USE 1.6 mm R. ON ALL OUTSIDE CORNERS AND 0.8 mm R. ON ALL INSIDE CORNERS UNLESS OTHERWISE SPECIFIED.
3. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.

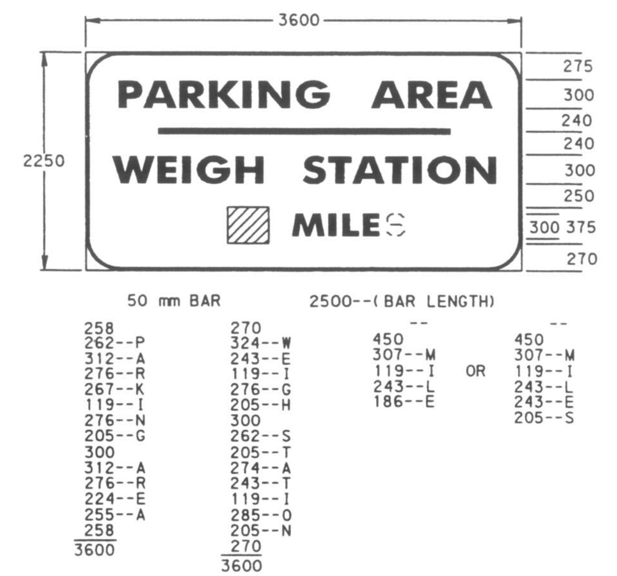
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

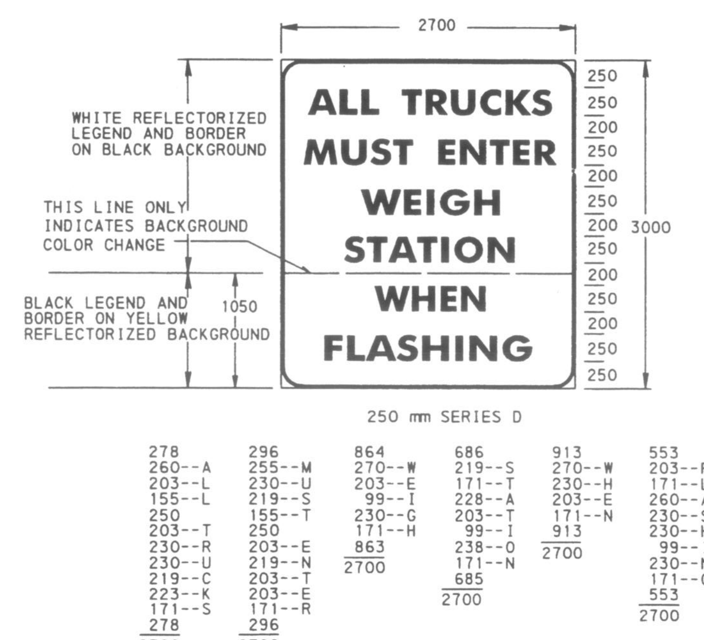
EXTRUDED ALUMINUM CHANNEL SIGN

RECOMMENDED AUG. 1, 1997	RECOMMENDED AUG. 1, 1997	SHT. 2 OF 2
B. H. Brenan CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	Gary L. Hoffman CHIEF HIGHWAY ENGINEER	TC-8701E









NOTES

1. DEFINITION: PARKING AREAS DO NOT HAVE PERMANENT REST ROOM FACILITIES.
2. DISTANCE: USE DISTANCE FROM THEORETICAL GORE FOR DISTANCE INDICATED ON SIGNS.
3. COLOR: USE BLUE REFLECTORIZED BACKGROUND WITH WHITE REFLECTORIZED DIRECT APPLIED LEGEND AND BORDER, UNLESS OTHERWISE NOTED.
4. BORDERS: USE 50 mm WIDE BORDER WITH 300 mm CORNER RADII, UNLESS OTHERWISE NOTED.
5. LEGEND AND SIGN WIDTH: UNLESS OTHERWISE NOTED, USE 300 mm SERIES D UPPER CASE FOR LEGEND, AND 375 mm SERIES D FOR DIGITS. SEE TC-8700C FOR LAYOUTS OF ARROWS AND FRACTIONS, AND FOR DETERMINING SIGN WIDTHS.
6. POSTS: USE POSTS OF AN APPROVED BREAKAWAY DESIGN, EITHER STEEL (TC-8702A OR TC-8702B) OR WOOD (TC-8702E).
7. A4-1 SIGN: USE ONLY WHEN SEPARATE PARKING AREAS ARE PROVIDED.
8. MINIMUM SIGN SPACING: MAINTAIN 240 m MINIMUM SPACING FOR ALL SIGNS PRIOR TO DECELERATION LANE.
9. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

FREEWAY AND EXPRESSWAY
ADVANCE SIGNING

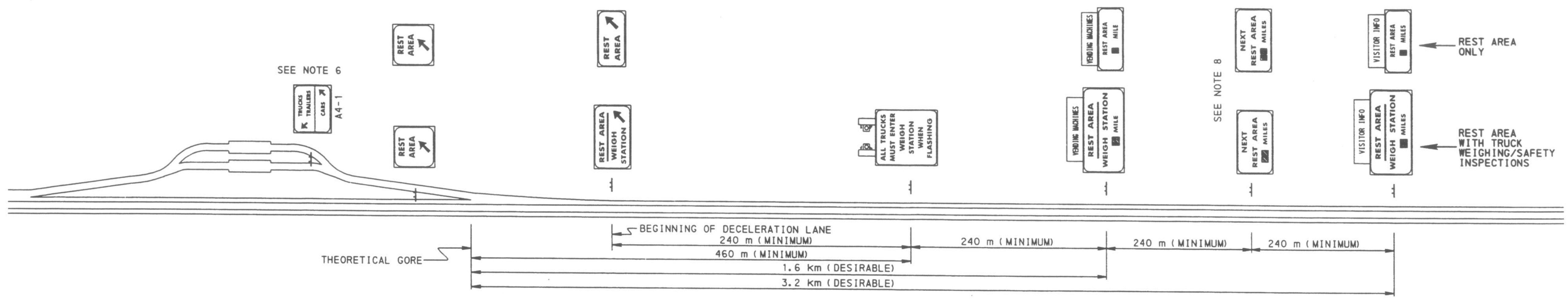
PARKING AREAS

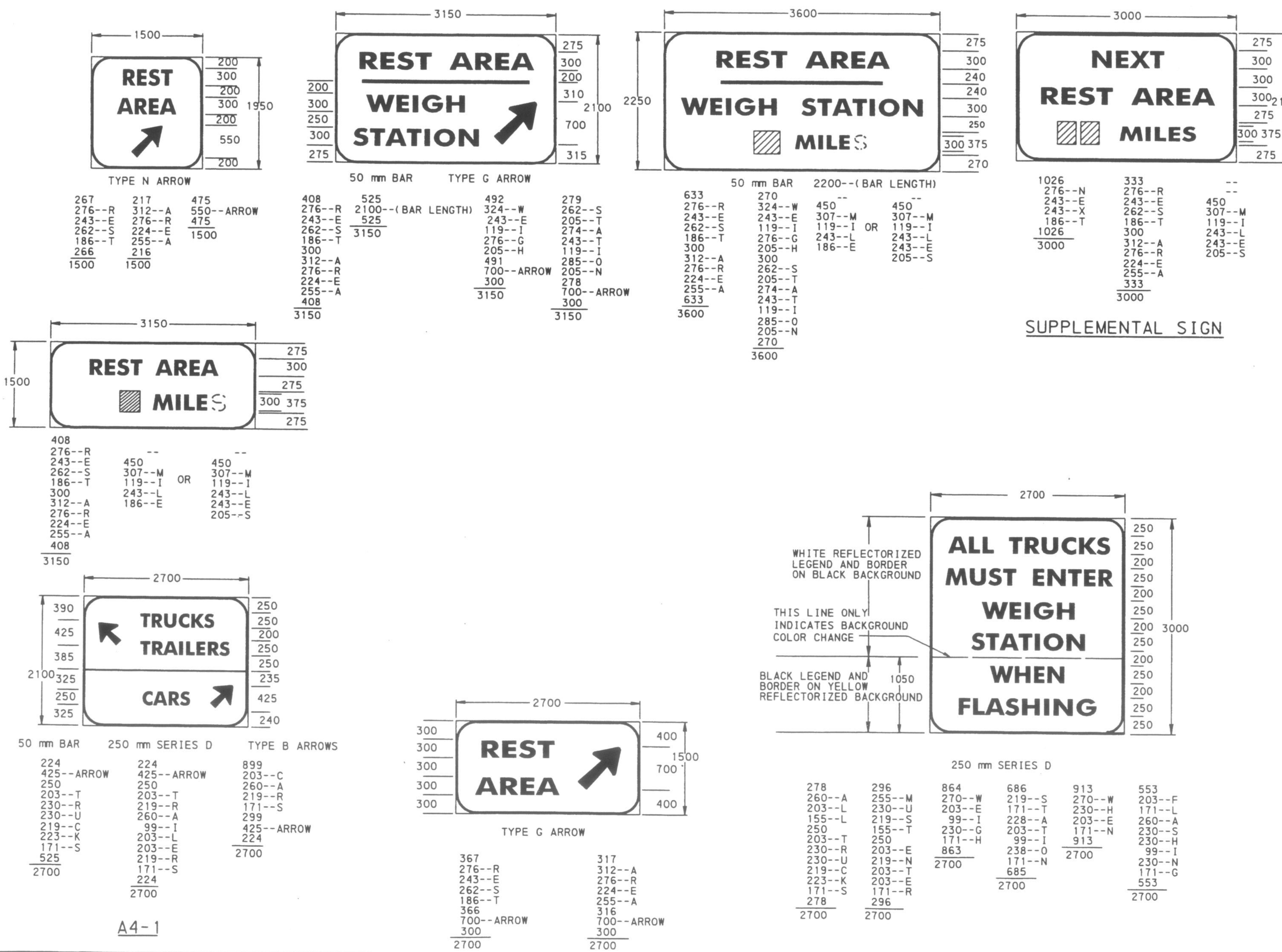
RECOMMENDED AUG. 1, 1997 — CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION

RECOMMENDED AUG. 1, 1997 Gary L. Hoffman — CHIEF HIGHWAY ENGINEER

SHT. 1 OF 1

TC-8701P





NOTES

1. DISTANCE: USE DISTANCE FROM THEORETICAL GORE FOR DISTANCE INDICATED ON SIGNS.
2. COLOR: USE BLUE REFLECTORIZED BACKGROUND WITH WHITE REFLECTORIZED DIRECT APPLIED LEGEND AND BORDER, UNLESS OTHERWISE NOTED.
3. BORDERS: USE 50 mm WIDE BORDER WITH 300 mm CORNER RADII, UNLESS OTHERWISE NOTED.
4. LEGEND AND SIGN WIDTH: UNLESS OTHERWISE NOTED, USE 300 mm SERIES D UPPER CASE FOR LEGEND, AND 375 mm SERIES D FOR DIGITS. SEE TC-8700C FOR LAYOUTS OF ARROWS AND FRACTIONS, AND FOR DETERMINING SIGN WIDTHS.
5. POSTS: USE POSTS OF AN APPROVED BREAKAWAY DESIGN, EITHER STEEL (TC-8702A OR TC-8702B) OR WOOD (TC-8702E).
6. A4-1 SIGN: USE ONLY WHEN SEPARATE PARKING AREAS ARE PROVIDED.
7. MINIMUM SIGN SPACING: MAINTAIN 240 m MINIMUM SPACING FOR ALL SIGNS PRIOR TO DECELERATION LANE.
8. NEXT REST AREA SUPPLEMENTAL SIGN: THIS SIGN MAY BE ELIMINATED IF SUFFICIENT SIGN SPACING DOES NOT EXIST.
9. VISITOR INFO SIGN (D5-6-1): USE AS SHOWN IF THE REST AREA IS STAFFED TO PROVIDE VISITOR (TOURIST) INFORMATION IN ACCORDANCE WITH DEPARTMENT POLICY. SEE PUBLICATION 236M FOR LAYOUT. IF THE SIGN NEEDS TO BE COVERED PERIODICALLY OR IF A FOLDING SIGN IS USED, IT MAY BE MOUNTED BELOW THE MAIN SIGN, PROVIDED PROPER SIGN HEIGHT IS MAINTAINED AND THE BREAKAWAY FEATURE OF THE POSTS IS UNAFFECTED.
10. VENDING MACHINES SIGN (D5-6-2): USE IF VENDING MACHINES ARE AVAILABLE. SEE PUBLICATION 236M FOR LAYOUT. SEE NOTE 9 CONCERNING ALTERNATE LOCATION FOR FOLDING SIGNS.
11. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

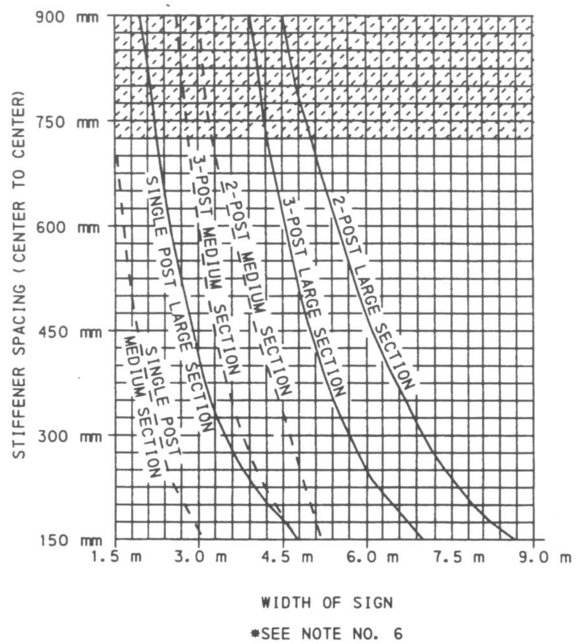
FREEWAY AND EXPRESSWAY ADVANCE SIGNING

REST AREAS

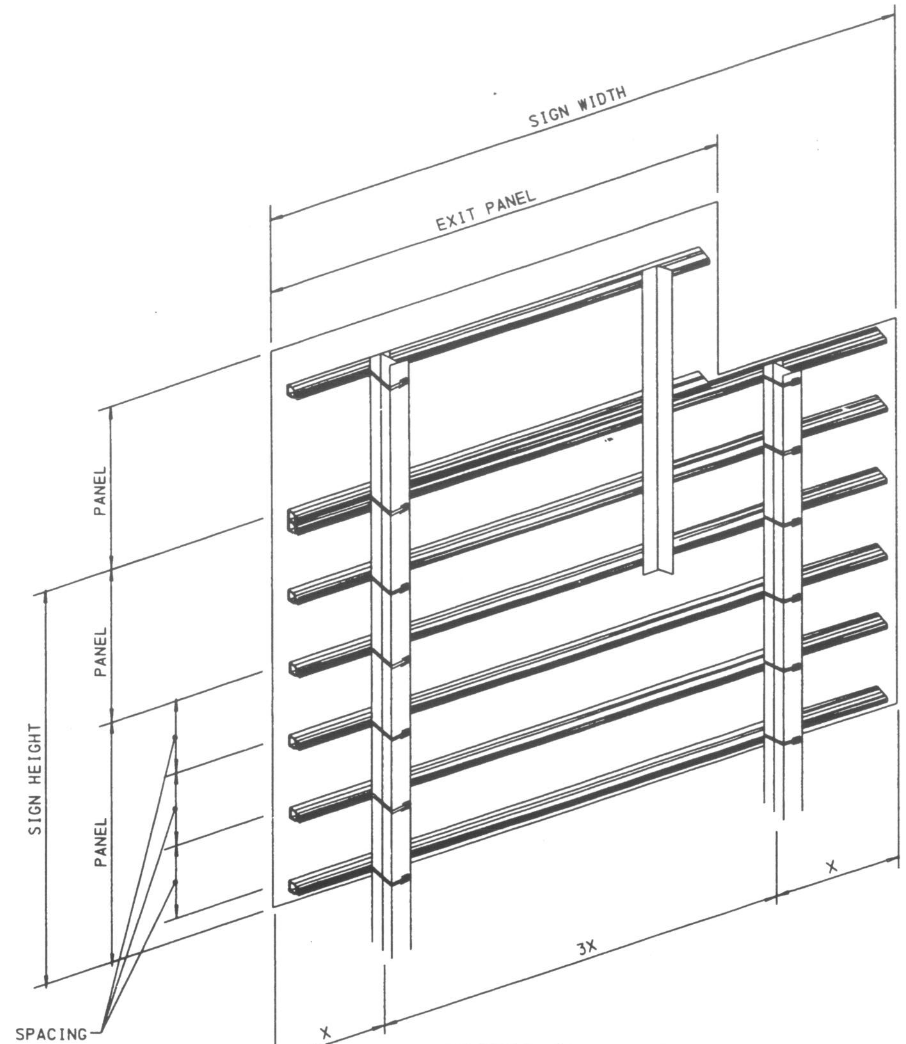
RECOMMENDED AUG. 1, 1997	RECOMMENDED AUG. 1, 1997	SHT. 1 OF 1
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	CHIEF HIGHWAY ENGINEER	TC-8701R

NOTES

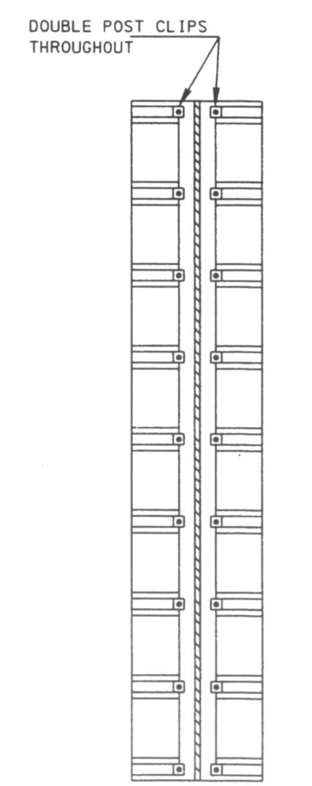
1. THIS STANDARD SHALL APPLY TO LARGE REFLECTORIZED SIGNS MANUFACTURED FROM FLAT SHEET ALUMINUM, BRACED WITH EXTRUDED ALUMINUM STIFFENERS, AND CONNECTED TO A SPECIFIED TYPE OF POST (OR VERTICAL SUPPORT OF A STRUCTURE) BY USE OF TWIST-IN TOGGLE AND BUCKLE STRAPS, OR STAINLESS STEEL POST CLIPS. WHEN POST CLIPS ARE USED A DOUBLE POST CLIP PATTERN IS REQUIRED FOR BOTH POST MOUNTED AND OVERHEAD SIGN INSTALLATIONS.
2. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THIS STANDARD AND PUB. 408M.
3. THE STIFFENER SPACING CHART ON THIS SHEET IS DESIGNED TO ACCOMODATE "SINGLE-POST" INSTALLATIONS AND "MULTIPLE-POST" INSTALLATIONS WHERE THE SPACING BETWEEN THE POSTS (OR VERTICAL SUPPORTS) IS THREE TIMES THE SIGN OVERHANG BEYOND THE END POSTS. (THE SPACING BETWEEN THE POSTS ON A "TWO-POST" INSTALLATION IS 3/5TH OF THE SIGN WIDTH, AND SPACING BETWEEN THE POSTS ON A "THREE-POST" INSTALLATION IS 1/3 OF THE SIGN WIDTH.)
4. WHEN SIGNS ARE TO BE INSTALLED AND THE SPACING OF THE POSTS IS OTHER THAN THOSE INDICATED IN NOTE NO. 3, THE FABRICATOR SHOULD CONSULT THE DISTRICT TRAFFIC ENGINEER FOR THE PROPER SPACING OF THE STIFFENERS. HOWEVER, THE SPACING BETWEEN THE STIFFENERS SHALL NOT BE GREATER THAN THE SPACING INDICATED IN THE CHART FOR THE SAME WIDTH OF SIGN.
5. TO USE THE STIFFENER SPACING CHART, START WITH THE SIGN WIDTH AND GO VERTICALLY UPWARD UNTIL INTERSECTING THE CURVED LINE INDICATING THE PROPER NUMBER OF POSTS (OR VERTICAL SUPPORTS) AND THE TYPE OF STIFFENER SECTION TO BE USED. THE MAXIMUM STIFFENER SPACING IS INDICATED HORIZONTALLY TO THE LEFT.
6. THE MAXIMUM STIFFENER SPACING IS NORMALLY 725 mm. HOWEVER, FOR SIGNS MADE OF A CONTINUOUS SHEET OF ALUMINUM THROUGHOUT THE HEIGHT OF THE SIGN AND ON WHICH THE FLAT SHEET ALUMINUM OVERHANGS BOTH THE TOP AND BOTTOM STIFFENERS BY A DISTANCE EQUAL TO ONE-THIRD OF THE SPACING BETWEEN STIFFENERS, STIFFENERS SPACINGS INDICATED IN THE SHADED PORTION OF THE CHART MAY BE USED. (EXAMPLE: A 3600 mm x 1500 mm SIGN COULD BE INSTALLED ON TWO POSTS USING ONLY TWO LARGE SECTION STIFFENERS SPACED AT THE ULTIMATE 900 mm SPACING, WITH 300 mm OF THE SIGN ABOVE THE TOP STIFFENER AND 300 mm OF THE SIGN BELOW THE BOTTOM STIFFENER.)
7. PANELS MAY BE SPLICED USING ANY OF THREE ARRANGEMENTS SHOWN ON SHEET 2 OF 3 OF THIS STANDARD.
8. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
9. SEE TC8702E FOR INSTALLATION ON WOOD POSTS.



STIFFENER SPACING CHART

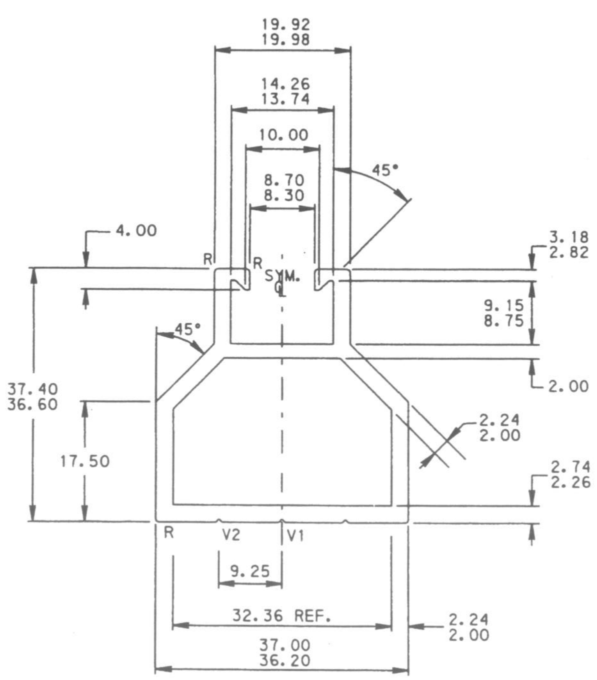


STIFFENER LOCATION



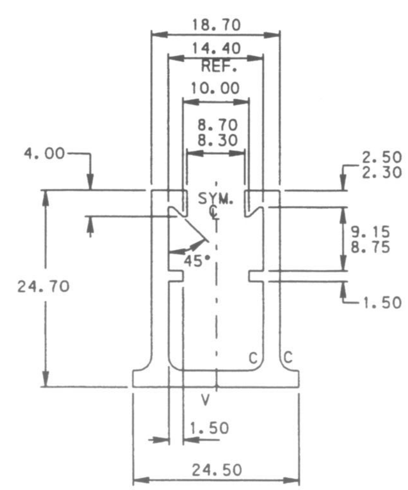
REAR VIEW

(POST & OVERHEAD MOUNTED)



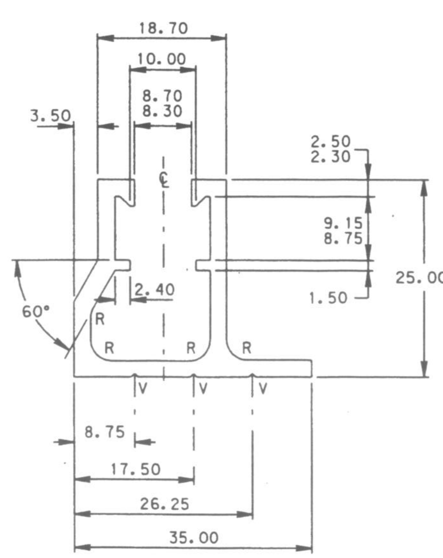
V1 = VEE GROOVE 1.00 DEEP x 90°
V2 = VEE GROOVE 0.50 DEEP x 90°
R = 0.50 RADIUS

LARGE SECTION



UNSPECIFIED THICKNESS = 2.30/2.00
V = VEE GROOVE 0.4 DEEP x 90°
C = 2.50 RADIUS

MEDIUM SECTION



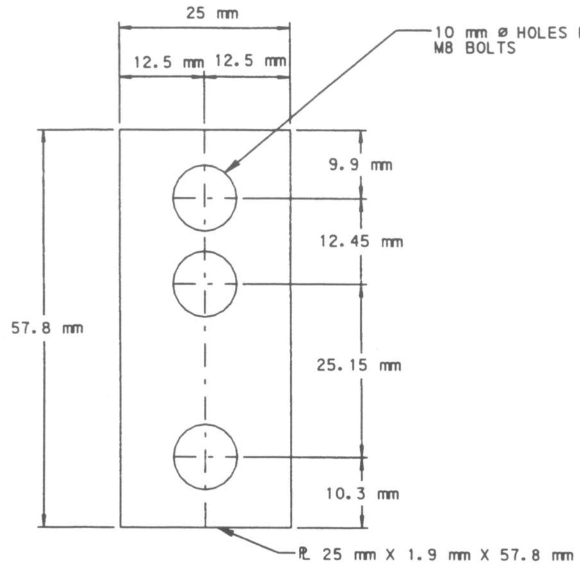
UNSPECIFIED THICKNESS = 2.30/2.00
V = VEE GROOVE 0.4 DEEP x 90°
R = 2.50 RADIUS

MEDIUM FLANGED SECTION

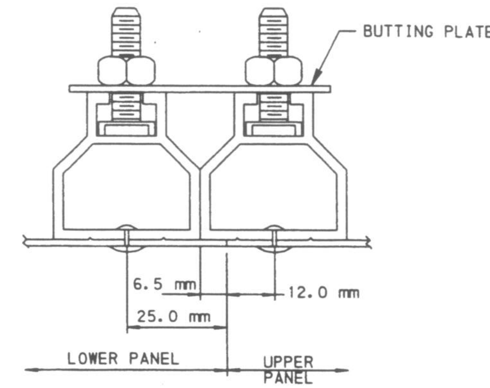
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

FLAT SHEET ALUMINUM SIGNS WITH EXTRUDED ALUMINUM STIFFENERS GENERAL INFORMATION

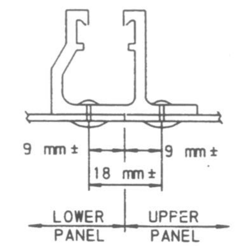
RECOMMENDED AUG. 1, 1997	RECOMMENDED AUG. 1, 1997	SHT. 1 OF 3
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	CHIEF HIGHWAY ENGINEER	TC-8701S



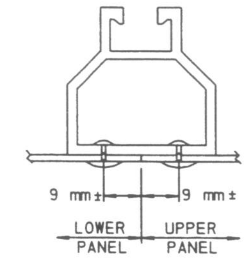
BUTTING PLATE



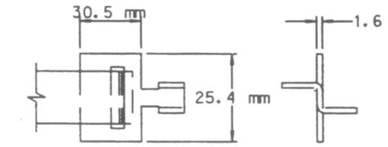
DOUBLE LARGE SECTION PANEL SPLICE



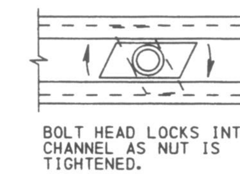
FLANGED SECTION PANEL SPLICE



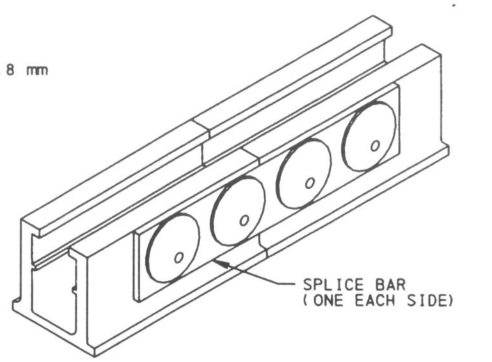
SINGLE LARGE SECTION PANEL SPLICE



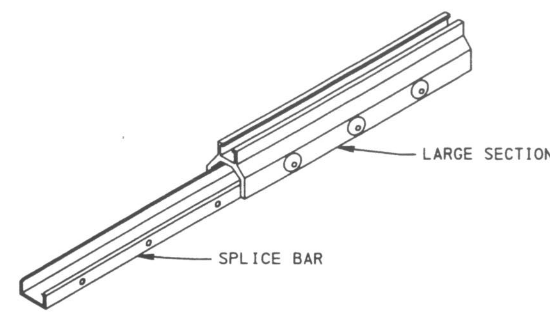
TWIST-IN TOGGLE



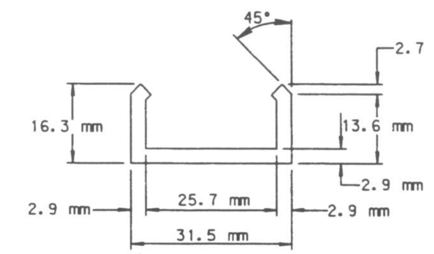
TWIST-IN BOLT



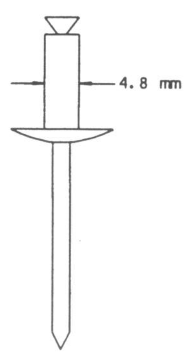
MEDIUM SECTION SPLICE



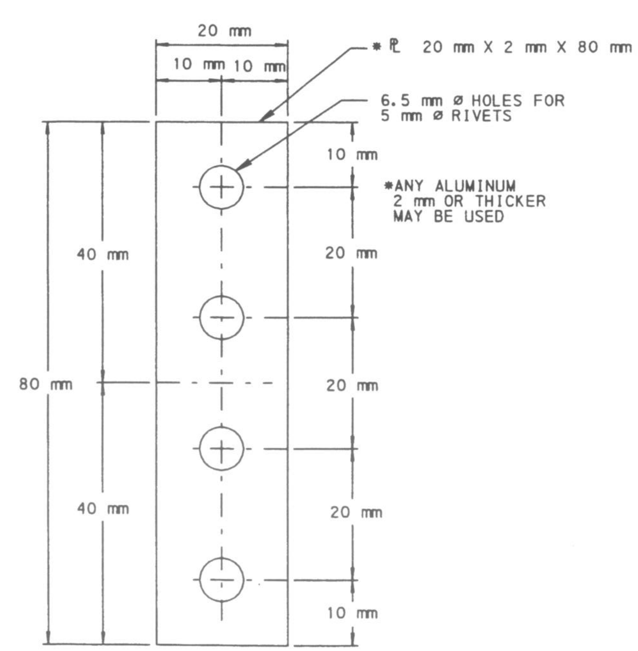
LARGE SECTION SPLICE



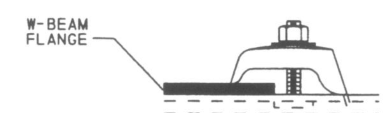
LARGE SECTION SPLICE BAR



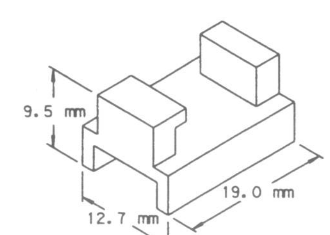
POP RIVET



MEDIUM SECTION SPLICE BAR



POST CLIP
SF-VHB

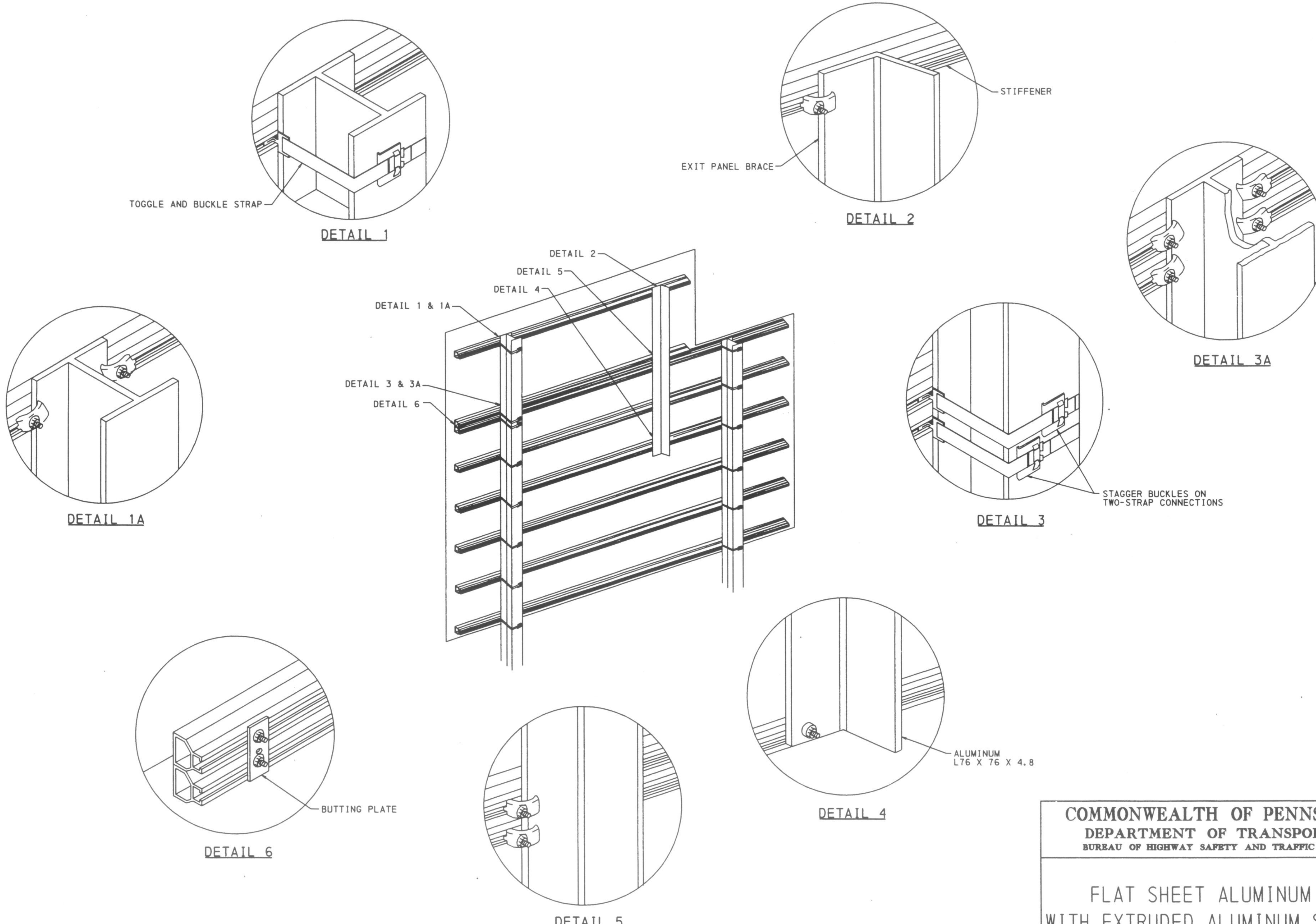


PLASTIC INSERT

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

FLAT SHEET ALUMINUM SIGNS
WITH EXTRUDED ALUMINUM STIFFENERS
SPLICE AND CONNECTION DETAILS

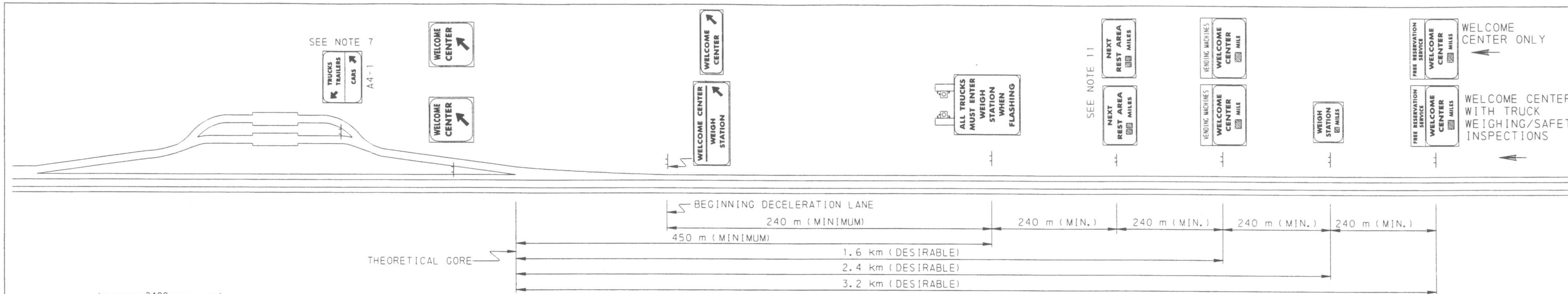
RECOMMENDED AUG. 1, 1997	RECOMMENDED AUG. 1, 1997	SHT. 2 OF 3
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	CHIEF HIGHWAY ENGINEER	TC-8701S

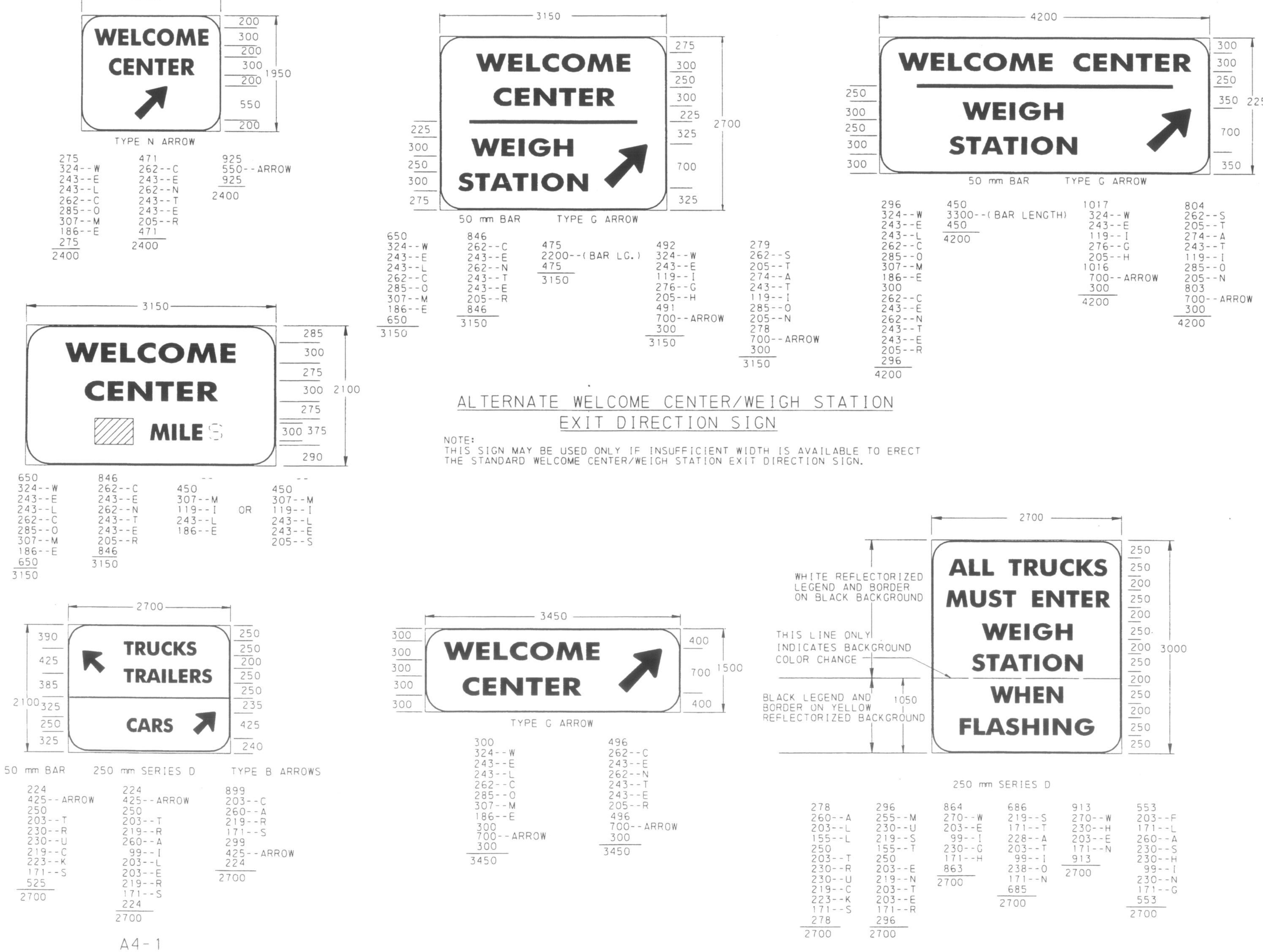


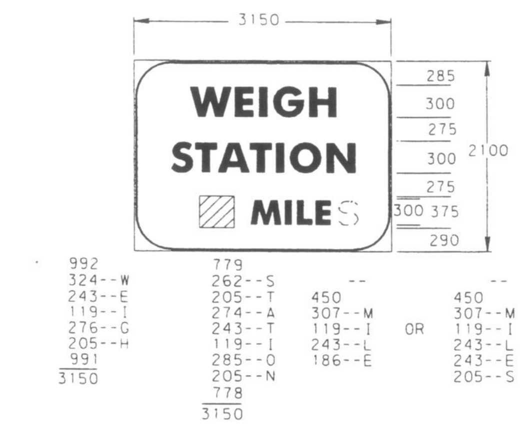
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

FLAT SHEET ALUMINUM SIGNS
WITH EXTRUDED ALUMINUM STIFFENERS
POST & STIFFENER CONNECTIONS

RECOMMENDED AUG. 1, 1997 CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED AUG. 1, 1997 CHIEF HIGHWAY ENGINEER	SHT. 3 OF 3 TC-8701S







NOTES

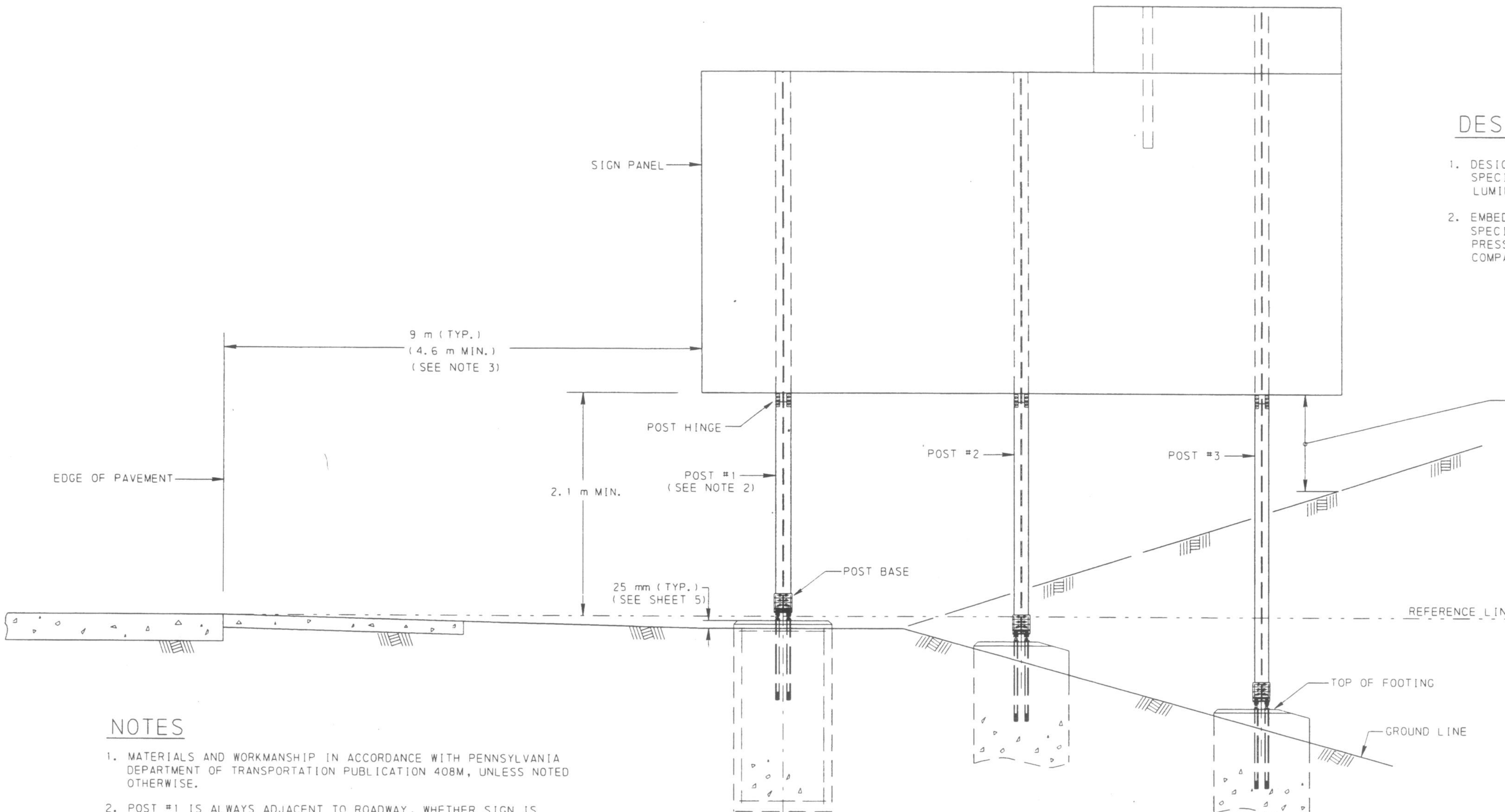
1. DEFINITION: USE INDICATED SIGNING FOR WELCOME CENTERS THAT ARE OFFICIALLY RECOGNIZED BY THE PA DEPARTMENT OF TRANSPORTATION.
2. DISTANCE: USE DISTANCE FROM THEORETICAL GORE FOR DISTANCE INDICATED ON SIGNS.
3. COLOR: USE BLUE REFLECTORIZED BACKGROUND WITH WHITE REFLECTORIZED DIRECT APPLIED LEGEND AND BORDER, UNLESS OTHERWISE NOTED.
4. BORDERS: USE 50 mm WIDE BORDER WITH 300 mm CORNER RADII, UNLESS OTHERWISE NOTED.
5. LEGEND AND SIGN WIDTH: UNLESS OTHERWISE NOTED, USE 300 mm SERIES D UPPER CASE FOR LEGEND, AND 375 mm SERIES D FOR DIGITS. SEE TC-8700C FOR LAYOUTS OF ARROWS AND FRACTIONS, AND FOR DETERMINING SIGN WIDTHS.
6. POSTS: USE POSTS OF AN APPROVED BREAKAWAY DESIGN, EITHER STEEL (TC-8702A OR TC-8702B) OR WOOD (TC-8702E).
7. A4-1 SIGN: USE ONLY WHEN SEPARATE PARKING AREAS ARE PROVIDED.
8. MINIMUM SIGN SPACING: MAINTAIN 240 m MINIMUM SPACING FOR ALL SIGNS PRIOR TO DECELERATION LANE.
9. VENDING MACHINES SIGN (D5-6-2): USE IF VENDING MACHINES ARE AVAILABLE. SEE PUBLICATION 236M FOR LAYOUT. IF A FOLDING SIGN IS USED, IT MAY ALSO BE MOUNTED BELOW THE MAIN SIGN, PROVIDED PROPER SIGN HEIGHT IS MAINTAINED AND THE BREAKAWAY FEATURE OF THE POSTS IS UNAFFECTED.
10. FREE RESERVATION SERVICE: USE IF RESERVATION SERVICE IS AVAILABLE. SEE PUBLICATION 236M FOR LAYOUT. SEE NOTE 9 CONCERNING ALTERNATE LOCATION FOR FOLDING SIGNS.
11. NEXT REST AREA SUPPLEMENTAL SIGN: THIS SIGN MAY BE ELIMINATED IF SUFFICIENT SIGN SPACING DOES NOT EXIST. SEE TC-8701R FOR SIGN FABRICATION DETAILS.
12. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

FREEWAY AND EXPRESSWAY ADVANCE SIGNING

WELCOME CENTERS

RECOMMENDED AUG. 1, 1997 A.H. Brown CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED AUG. 1, 1997 Gary L. Hoffman CHIEF HIGHWAY ENGINEER	SHT. 1 OF 1 TC-8701W



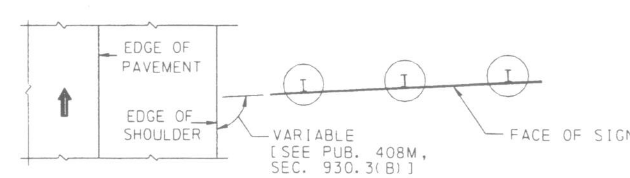
SIGN ELEVATION

DESIGN CRITERIA

1. DESIGN BASED ON 129 km/h WIND USING 1994 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS.
2. EMBEDMENT OF FOOTINGS BASED ON FIG. 1.8.2C(4) OF THE AASHTO SPECIFICATIONS. SOIL ASSUMED CAPABLE OF DEVELOPING A SOIL PRESSURE OF 96 kPa IN AN UNDISTURBED OR ADEQUATELY COMPACTED CONDITION.

NOTES

1. MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF TRANSPORTATION PUBLICATION 408M, UNLESS NOTED OTHERWISE.
2. POST #1 IS ALWAYS ADJACENT TO ROADWAY, WHETHER SIGN IS LOCATED ON LEFT OR RIGHT.
3. AT LOCATIONS WITH UNMOUNTABLE CURB, GUIDERAIL OR BARRIER, PLACE THE NEAR EDGE OF THE SIGN AT LEAST 0.6 m BEHIND THE CURB FACE, GUIDERAIL OR BARRIER. AT LOCATIONS WITH GUIDERAIL OR BARRIER, IT IS DESIRABLE TO PLACE POST #1 BEYOND THE DEFLECTION DISTANCE OF THE GUIDERAIL OR BARRIER. PRIOR TO FABRICATION, DETERMINE ACTUAL LATERAL PLACEMENT IN THE FIELD WITH THE APPROVAL OF THE ENGINEER.
4. LOCATE SIGNS TO AVOID PLACING SUPPORTS IN DRAINAGE DITCHES.
5. MOUNT ALL SIGN PANELS ABOVE POST HINGES.
6. FOR SELECTION OF POSTS, REFER TO POST SELECTION TABLES ON SHEET 2.
7. FOR POST BASE AND HINGE DETAILS, REFER TO SHEET 3.
8. FOR SELECTION OF FOOTING SIZE AND REINFORCEMENT, REFER TO FOOTING SELECTION TABLE ON SHEET 5.
9. FOR DETAIL OF SIGN PANELS AND ATTACHMENT HARDWARE, SEE TRAFFIC STANDARD TC-8701E OR TC-8701S.



PLAN VIEW

TRANSPO INDUSTRIES OR EQUAL

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

POST-MOUNTED SIGNS, TYPE A

ERECTION DETAILS

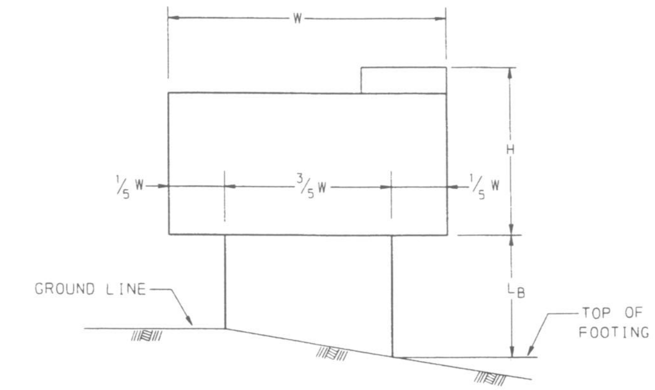
RECOMMENDED AUG. 1, 1997 A.H. Bren[illegible] CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED AUG. 1, 1997 Gary L. Hoffman CHIEF HIGHWAY ENGINEER	SHT. 1 OF 6 TC-8702A

POST SELECTION TABLE - TWO POSTS

W (m)	LB (m)	1.220	1.525	1.830	2.135	2.440	2.745	3.050	3.355	3.660	3.965	4.270	4.575	4.880	5.185	5.490	5.795
		HEIGHT "H" IN METERS															
1.8	2.0	W150x14	W150x14	W150x14	W150x14	W150x14	W150x14	W150x14	W150x14	W150x14	W150x18	W150x18	W200x27	W250x33	W250x33	W250x33	W250x33
	2.5	W150x14	W150x14	W150x14	W150x14	W150x14	W150x14	W150x14	W150x14	W150x18	W150x22	W200x27	W200x27	W250x33	W250x33	W250x33	W250x33
	3.0	W150x14	W150x14	W150x14	W150x14	W150x14	W150x14	W150x18	W150x18	W150x22	W150x22	W200x27	W200x27	W250x33	W250x33	W250x33	W250x33
	3.5	W150x14	W150x14	W150x14	W150x14	W150x18	W150x18	W150x18	W150x22	W150x22	W150x22	W200x27	W200x27	W250x33	W250x33	W250x33	W250x33
	4.0	W150x14	W150x14	W150x14	W150x18	W150x18	W150x18	W150x22	W150x22	W150x22	W150x22	W200x27	W200x27	W250x33	W250x33	W250x33	W250x33
	4.5	W150x14	W150x14	W150x18	W150x18	W150x18	W150x22	W150x22	W150x22	W150x22	W200x27	W200x27	W200x27	**	**	**	**
	5.0	W150x14	W150x18	W150x18	W150x22	W150x22	W150x22	W150x22	W150x22	W200x27	W200x27	*	*	-	-	-	-
2.4	2.0	W150x14	W150x14	W150x14	W150x14	W150x14	W150x14	W150x14	W150x18	W150x18	W150x22	W200x27	W250x33	W250x33	W250x33	W250x33	-
	2.5	W150x14	W150x14	W150x14	W150x14	W150x14	W150x14	W150x18	W150x18	W200x27	W200x27	W250x33	W250x33	W250x33	W250x33	W250x33	-
	3.0	W150x14	W150x14	W150x14	W150x14	W150x14	W150x18	W150x22	W150x22	W200x27	W200x27	W250x33	W250x33	W250x33	W250x33	W250x33	-
	3.5	W150x14	W150x14	W150x14	W150x18	W150x18	W150x22	W150x22	W150x22	W200x27	W200x27	W250x33	W250x33	W250x33	W250x33	W250x33	-
	4.0	W150x14	W150x18	W150x18	W150x18	W150x22	W150x22	W150x22	W150x22	W200x27	W200x27	W250x33	W250x33	W250x33	W250x33	W250x33	-
	4.5	W150x14	W150x18	W150x18	W150x22	W150x22	W150x22	W150x22	W200x27	W200x27	*	**	**	**	-	-	-
	5.0	W150x18	W150x18	W150x22	W150x22	W150x22	W150x22	W200x27	W200x27	*	*	-	-	-	-	-	-
3.0	2.0	W150x14	W150x14	W150x14	W150x14	W150x14	W150x14	W150x18	W150x18	W200x27	W200x27	W250x33	W250x33	W250x33	-	-	-
	2.5	W150x14	W150x14	W150x14	W150x14	W150x14	W150x18	W150x18	W150x22	W200x27	W250x33	W250x33	W250x33	W250x33	-	-	-
	3.0	W150x14	W150x14	W150x14	W150x14	W150x18	W150x22	W150x22	W200x27	W200x27	W250x33	W250x33	W250x33	W250x33	-	-	-
	3.5	W150x14	W150x14	W150x18	W150x22	W150x22	W150x22	W150x22	W200x27	W200x27	W250x33	W250x33	W250x33	W250x33	-	-	-
	4.0	W150x14	W150x18	W150x18	W150x22	W150x22	W150x22	W150x22	W200x27	W200x27	W250x33	W250x33	W250x33	W250x33	-	-	-
	4.5	W150x18	W150x18	W150x22	W150x22	W150x22	W200x27	W200x27	*	*	**	**	-	-	-	-	-
	5.0	W150x18	W150x22	W150x22	W150x22	W200x27	W200x27	*	**	**	-	-	-	-	-	-	-
3.6	2.0	W150x14	W150x14	W150x14	W150x14	W150x18	W150x18	W150x22	W200x27	W200x27	W250x33	W250x33	W250x33	W310x39	W360x45	-	-
	2.5	W150x14	W150x14	W150x14	W150x14	W150x18	W150x22	W150x22	W200x27	W250x33	W250x33	W250x33	W250x33	W310x39	W360x45	-	-
	3.0	W150x14	W150x14	W150x14	W150x18	W150x22	W150x22	W200x27	W200x27	W250x33	W250x33	W250x33	W250x33	W310x39	W360x45	-	-
	3.5	W150x14	W150x14	W150x18	W150x22	W150x22	W150x22	W200x27	W200x27	W250x33	W250x33	W250x33	W250x33	W310x39	W360x45	-	-
	4.0	W150x18	W150x18	W150x22	W150x22	W150x22	W150x22	W200x27	W200x31	W250x33	W250x33	W250x33	W250x39	W310x39	W360x45	-	-
	4.5	W150x18	W150x22	W150x22	W150x22	W200x27	W200x27	W200x31	W250x33	W250x33	W250x39	W250x39	W310x39	W360x45	-	-	-
	5.0	W150x22	W150x22	W150x22	W200x27	W200x27	W200x31	W250x33	W250x33	W250x39	W310x39	W310x39	W360x45	-	-	-	-
4.2	2.0	W150x14	W150x14	W150x14	W150x14	W150x18	W150x22	W200x27	W200x27	W250x33	W250x33	W250x33	W310x39	W360x45	-	-	-
	2.5	W150x14	W150x14	W150x14	W150x18	W150x22	W150x22	W200x27	W200x27	W250x33	W250x33	W250x33	W310x39	W360x45	-	-	-
	3.0	W150x14	W150x14	W150x18	W150x18	W150x22	W200x27	W200x27	W250x33	W250x33	W250x33	W250x33	W310x39	W360x45	-	-	-
	3.5	W150x14	W150x18	W150x22	W150x22	W150x22	W200x27	W200x27	W250x33	W250x33	W250x33	W250x33	W310x39	W360x45	-	-	-
	4.0	W150x18	W150x22	W150x22	W150x22	W200x27	W200x27	W200x31	W250x33	W250x33	W250x39	W310x39	W360x45	-	-	-	-
	4.5	W150x18	W150x22	W150x22	W200x27	W200x27	W200x31	W250x33	W250x33	W250x39	W250x39	W310x39	-	-	-	-	-
	5.0	W150x22	W150x22	W200x27	W200x27	W200x31	W250x33	W250x33	W250x39	W310x39	W310x39	W360x45	-	-	-	-	-
4.8	2.0	W150x14	W150x14	W150x14	W150x18	W150x22	W150x22	W200x27	W250x33	W250x33	W250x33	W250x33	W360x45	-	-	-	-
	2.5	W150x14	W150x14	W150x18	W150x18	W150x22	W150x22	W200x27	W250x33	W250x33	W250x33	W310x39	W360x45	-	-	-	-
	3.0	W150x14	W150x18	W150x18	W150x22	W150x22	W200x27	W250x33	W250x33	W250x33	W250x33	W310x39	W360x45	-	-	-	-
	3.5	W150x14	W150x18	W150x22	W150x22	W200x27	W200x27	W250x33	W250x33	W250x33	W250x33	W310x39	W360x45	-	-	-	-
	4.0	W150x18	W150x22	W150x22	W150x22	W200x27	W200x31	W250x33	W250x33	W250x39	W310x39	W360x45	-	-	-	-	-
	4.5	W150x22	W150x22	W150x22	W200x27	W200x31	W200x31	W250x33	W250x39	W310x39	W360x45	-	-	-	-	-	-
	5.0	W150x22	W150x22	W200x27	W200x31	W250x33	W250x33	W250x39	W310x39	W360x45	-	-	-	-	-	-	-
5.4	2.0	W150x14	W150x14	W150x18	W150x18	W150x22	W200x27	W200x27	W250x33	W250x33	W250x33	W250x39	-	-	-	-	-
	2.5	W150x14	W150x14	W150x18	W150x22	W150x18	W200x27	W200x27	W250x33	W250x33	W310x39	W360x45	-	-	-	-	-
	3.0	W150x14	W150x18	W150x22	W150x22	W150x22	W200x27	W250x33	W250x33	W250x33	W310x39	W360x45	-	-	-	-	-
	3.5	W150x18	W150x18	W150x22	W150x22	W200x27	W200x27	W250x33	W250x33	W250x33	W310x39	W360x45	-	-	-	-	-
	4.0	W150x22	W150x22	W150x22	W200x27	W200x27	W200x31	W250x33	W250x39	W310x39	W360x45	-	-	-	-	-	-
	4.5	W150x22	W150x22	W200x27	W200x31	W250x33	W200x31	W250x39	W310x39	W360x45	-	-	-	-	-	-	-
	5.0	W150x22	W200x27	W200x31	W250x33	W250x33	W250x33	W310x39	W360x45	-	-	-	-	-	-	-	-
6.0	2.0	W150x14	W150x14	W150x18	W150x22	W150x22	W200x27	W250x33	W250x33	W250x33	W250x33	W310x39	-	-	-	-	-
	2.5	W150x14	W150x18	W150x22	W150x22	W150x22	W200x27	W250x33	W250x33	W310x39	W360x45	-	-	-	-	-	-
	3.0	W150x14	W150x18	W150x22	W150x22	W150x22	W250x33	W250x33	W250x33	W310x39	W360x45	-	-	-	-	-	-
	3.5	W150x18	W150x22	W150x22	W200x27	W200x27	W250x33	W250x33	W250x33	W310x39	W360x45	-	-	-	-	-	-
	4.0	W150x22	W150x22	W200x27	W200x27	W200x31	W250x33	W250x39	W310x39	W360x45	-	-	-	-	-	-	-
	4.5	W150x22	W150x22	W200x27	W200x31	W250x33	W250x39	W310x39	W360x45	-	-	-	-	-	-	-	-
	5.0	W150x22	W200x27	W200x31	W250x33	W250x33	W310x39	W360x45	-	-	-	-	-	-	-	-	-
6.6	2.0	W150x14	W150x18	W150x18	W150x22	W200x27	W200x27	W250x33	W250x33	W250x33	W310x39	W360x45	-	-	-	-	-
	2.5	W150x14	W150x18	W150x22	W150x18	W200x27	W200x27	W250x33	W250x33	W310x39	W360x45	-	-	-	-	-	-
	3.0	W150x18	W150x22	W150x18	W150x22	W200x27	W250x33	W250x33	W250x33	W310x39	W360x45	-	-	-	-	-	-
	3.5	W150x18	W150x22	W200x27	W200x27	W200x27	W250x33	W250x33	W310x39	W360x45	-	-	-	-	-	-	-
	4.0	W150x22	W150x22	W200x27	W200x31	W250x33	W250x33	W310x39	W360x45	-	-	-	-	-	-	-	-
	4.5	W150x22	W200x27	W200x31	W250x33	W250x33	W250x39	W360x45	-	-	-	-	-	-	-	-	-
	5.0	W200x27	W200x31	W250x33	W250x33	W310x39	W310x39	-	-	-	-	-	-	-	-	-	-

* POST SIZE W200x31 MAY BE USED IF ACTUAL TOTAL WEIGHT OF BOTH POSTS IS LESS THAN 272kg.

** POST SIZE W250x33 MAY BE USED IF ACTUAL TOTAL WEIGHT OF BOTH POSTS IS LESS THAN 272kg.



SIGN ON TWO POSTS

SKETCH A

POST SELECTION EXAMPLE

FOR A SIGN WHERE

W = 1.8 METERS
H = 1.220 METERS
L_B = 5.0 METERS

TWO W150X14, A36M STEEL POSTS ARE REQUIRED.

GENERAL NOTES FOR SELECTION OF SIGN SUPPORT POSTS

1. DETERMINE VALUES OF "W", "H", AND "L_B" AS INDICATED IN SKETCHES "A" OR "B".
   W = MAXIMUM WIDTH OF SIGN.
   H = MAXIMUM HEIGHT OF SIGN.
   L_B = MAXIMUM DISTANCE BETWEEN TOP OF A FOOTING AND BOTTOM OF SIGN.
2. FOR SELECTION OF POSTS, ENTER TABLES WITH VALUES OF "W", "H" AND "L_B".
3. FOR A SIGN SIZE BETWEEN THOSE VALUES OF "W", "H" AND "L_B" IN THE TABLE, USE NEXT HIGHEST METER VALUE.
4. ALL POST SIZES WITHIN A CROSSHATCHED BACKGROUND ARE A572M STEEL ALL OTHER POST SIZES ARE A36M STEEL.
5. USE THE LONGEST POST TO SELECT ALL THE POST SIZES.
6. NO MORE THAN 2 POSTS MAY BE ERECTED WITHIN ANY 2.1 m PATH. THE TOTAL COMBINED WEIGHT OF ALL POSTS WITHIN A 2.1 m PATH SHOULD NOT EXCEED 67 kg/m. THE TOTAL COMBINED WEIGHT OF ALL POSTS WITHIN A 2.1 m PATH SHOULD NOT EXCEED 272 kg BELOW THE POST HINGE. THERE IS NO NEED TO CHECK THE ABOVE WEIGHT CRITERIA UNLESS THE POST SELECTION CONTAINS A "*" OR "**".
7. SEE SHEET 3 OF 6 FOR SIGN ON THREE POSTS.

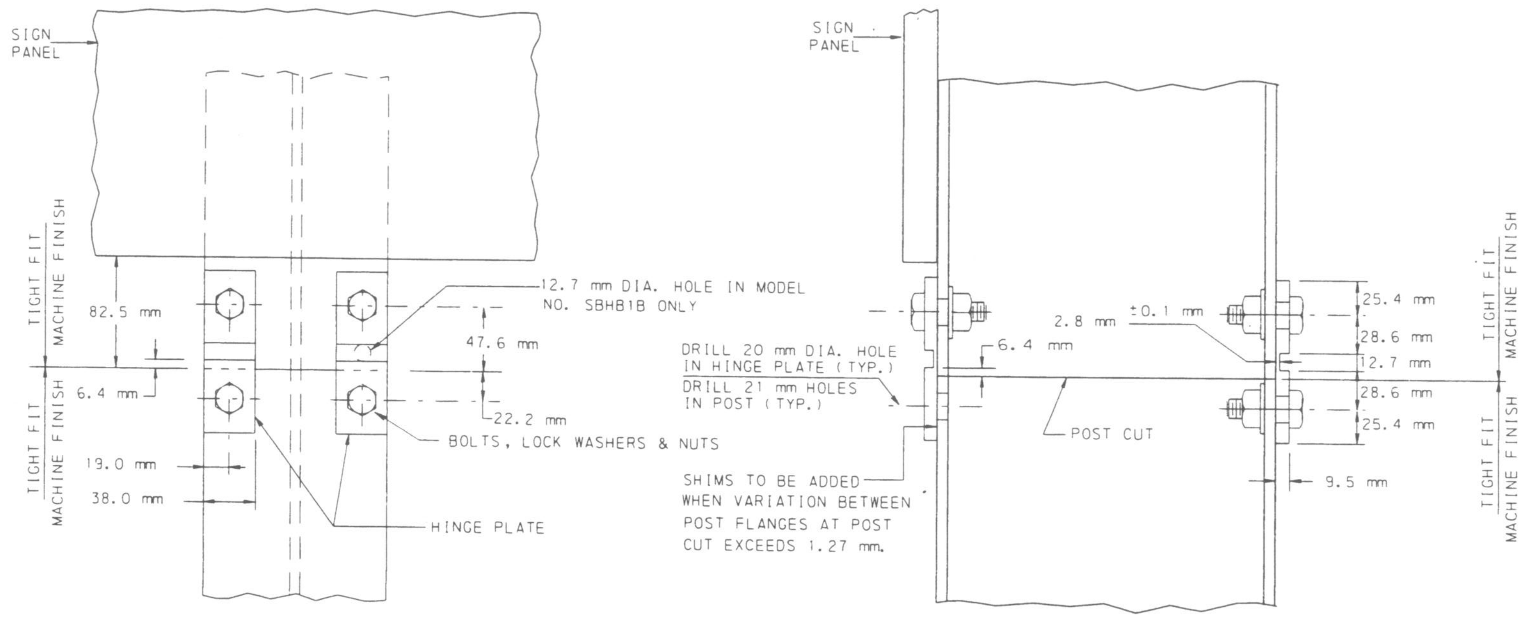
TRANSPO INDUSTRIES OR EQUAL

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

POST-MOUNTED SIGNS, TYPE A

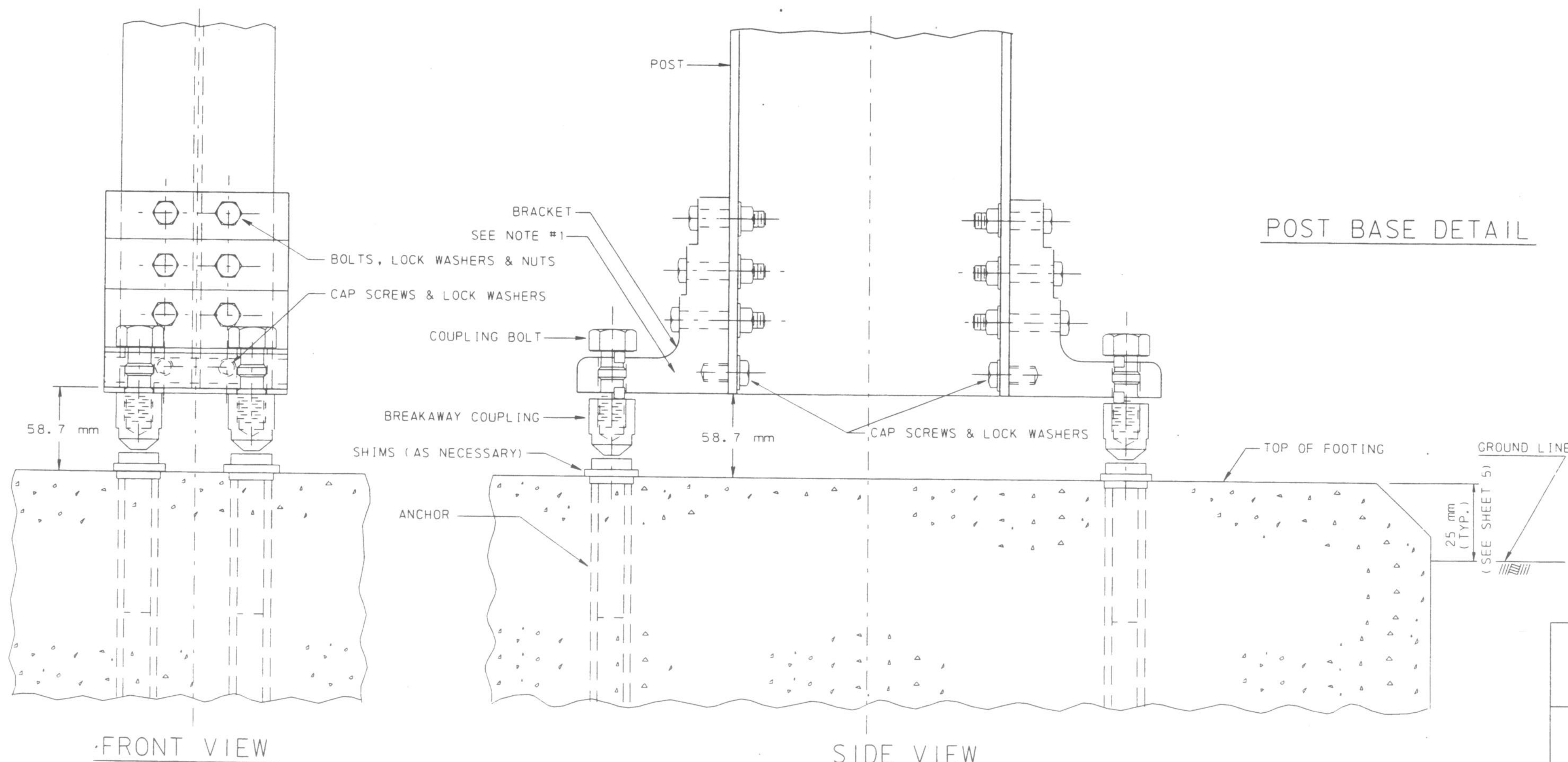
POST SELECTION TABLE

RECOMMENDED AUG. 1, 1997	RECOMMENDED AUG. 1, 1997	SHT. 2 OF 6
A H Brenner — CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	Gary L Hoffman — CHIEF HIGHWAY ENGINEER	TC-8702A



POST HINGE DETAIL

POST BASE DETAIL



BREAKAWAY ASSEMBLIES

NOTES

1. THE BRACKET NUMBER IS STAMPED ON THE BRACKET.
2. BOLT THE BRACKETS TO POST, THEN PLACE POST AND CONNECTED BRACKET TO BREAKAWAY COUPLING.
3. FOR BRACKET, BREAKAWAY COUPLING, COUPLING BOLT, AND SHIM DETAILS, REFER TO SHEET 4.
4. FOR FOOTING AND ANCHOR DETAILS, REFER TO SHEET 5.
5. ALL BOLTS TO BE TIGHTENED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
6. SHIMS BETWEEN THE COUPLINGS AND ANCHORS SHOULD BE LIMITED TO TWO SHIMS UNDERNEATH ANY ONE COUPLING AND THREE SHIMS UNDERNEATH ANY TWO COUPLINGS.

TRANSPO INDUSTRIES OR EQUAL

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

POST-MOUNTED SIGNS, TYPE A

POST BASE AND HINGE DETAILS

RECOMMENDED AUG. 1, 1997 CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED AUG. 1, 1997 Gary L. Hoffman CHIEF HIGHWAY ENGINEER	SHT. 4 of 6 TC-8702A

POST SELECTION TABLE - THREE POSTS

W (m)	LB (m)	1.220	1.525	1.830	2.135	2.440	2.745	3.050	3.355	3.660	3.965	4.270	4.575	4.880
		HEIGHT " H " IN METERS												
6.6	2.0	W150x14	W150x14	W150x14	W150x18	W150x18	W150x22	W200x27	W200x27	W250x33	W250x33	W250x33	W310x39	W360x45
	2.5	W150x14	W150x14	W150x14	W150x18	W150x22	W150x22	W200x27	W200x27	W250x33	W250x33	W310x39	W310x39	W360x45
	3.0	W150x14	W150x14	W150x18	W150x22	W150x22	W200x27	W200x31	W250x33	W250x33	W250x33	W310x39	W310x39	W360x45
	3.5	W150x14	W150x18	W150x22	W150x22	W150x22	W200x27	W200x31	W250x33	W250x33	W250x33	W310x39	W310x39	W360x45
	4.0	W150x18	W150x22	W150x22	W200x22	W200x27	W200x27	W200x31	W250x33	W250x33	W250x39	W310x39	W360x45	-
	4.5	W150x22	W150x22	W150x22	W200x27	W200x27	W200x31	W200x31	W250x39	W250x39	W310x39	W360x45	-	-
	5.0	W150x22	W150x22	W200x27	W200x31	W200x31	W250x33	W250x33	W310x39	W310x39	W360x45	-	-	-
7.2	2.0	W150x14	W150x14	W150x14	W150x18	W150x22	W150x22	W200x27	W250x33	W250x33	W250x33	W250x33	W360x45	-
	2.5	W150x14	W150x14	W150x18	W150x18	W150x22	W150x18	W200x27	W250x33	W250x33	W250x33	W310x39	W360x45	-
	3.0	W150x14	W150x14	W150x18	W150x22	W150x22	W200x27	W250x33	W250x33	W250x33	W250x33	W310x39	W360x45	-
	3.5	W150x14	W150x18	W150x22	W150x22	W200x27	W200x27	W250x33	W250x33	W250x33	W250x33	W310x39	W360x45	-
	4.0	W150x18	W150x22	W150x22	W200x22	W200x27	W200x31	W250x33	W250x33	W250x39	W310x39	W360x45	-	-
	4.5	W150x22	W150x22	W150x22	W200x27	W200x31	W250x33	W250x33	W250x39	W310x39	W360x45	-	-	-
	5.0	W150x22	W150x22	W200x27	W200x31	W250x33	W250x33	W250x39	W310x39	W360x45	-	-	-	-
7.8	2.0	W150x14	W150x14	W150x14	W150x18	W150x22	W200x27	W200x27	W250x33	W250x33	W250x33	W250x33	-	-
	2.5	W150x14	W150x14	W150x18	W150x22	W150x22	W200x27	W200x27	W250x33	W250x33	W310x39	W360x45	-	-
	3.0	W150x14	W150x18	W150x22	W150x22	W150x22	W200x27	W250x33	W250x33	W250x33	W310x39	W360x45	-	-
	3.5	W150x18	W150x18	W150x22	W150x22	W200x27	W200x27	W250x33	W250x33	W250x33	W310x39	W360x45	-	-
	4.0	W150x22	W150x22	W150x22	W200x27	W200x27	W200x31	W250x33	W250x33	W310x39	W360x45	-	-	-
	4.5	W150x22	W150x22	W200x27	W200x27	W200x31	W250x33	W250x39	W310x39	W360x45	-	-	-	-
	5.0	W150x22	W200x27	W200x27	W200x31	W250x33	W250x33	W310x39	W310x39	-	-	-	-	-
8.4	2.0	W150x14	W150x14	W150x18	W150x18	W150x22	W200x27	W250x33	W250x33	W250x33	W250x33	W310x39	-	-
	2.5	W150x14	W150x18	W150x18	W150x22	W150x18	W200x27	W250x33	W250x33	W250x33	W310x39	W360x45	-	-
	3.0	W150x14	W150x18	W150x22	W150x18	W150x22	W250x33	W250x33	W250x33	W250x33	W310x39	W360x45	-	-
	3.5	W150x18	W150x22	W150x22	W200x27	W200x27	W250x33	W250x33	W250x33	W310x39	W360x45	-	-	-
	4.0	W150x22	W150x22	W150x22	W200x27	W200x31	W250x33	W250x33	W250x39	W360x45	-	-	-	-
	4.5	W150x22	W150x22	W200x27	W200x31	W250x33	W250x33	W250x39	W310x39	-	-	-	-	-
	5.0	W150x22	W200x27	W200x31	W250x33	W250x33	W250x39	W310x39	W360x45	-	-	-	-	-
9.0	2.0	W150x14	W150x14	W150x18	W150x22	W150x22	W200x27	W250x33	W250x33	W250x33	W250x33	W310x39	-	-
	2.5	W150x14	W150x18	W150x22	W150x22	W150x22	W200x27	W250x33	W250x33	W310x39	W360x45	-	-	-
	3.0	W150x14	W150x18	W150x22	W150x22	W150x22	W250x33	W250x33	W250x33	W310x39	W360x45	-	-	-
	3.5	W150x18	W150x22	W150x22	W200x27	W200x27	W250x33	W250x33	W250x33	W310x39	-	-	-	-
	4.0	W150x22	W150x22	W200x27	W200x27	W200x31	W250x33	W250x39	W310x39	W360x45	-	-	-	-
	4.5	W150x22	W150x22	W200x27	W200x31	W250x33	W250x39	W310x39	W360x45	-	-	-	-	-
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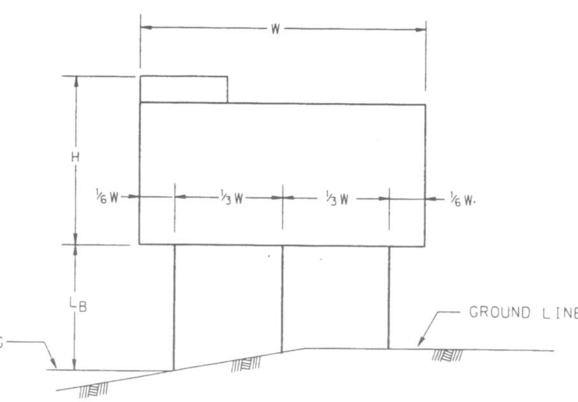


SIGN ON THREE POSTS

SKETCH B

NOTE:

SEE SHEET 2 OF 6 FOR GENERAL NOTES AND SIGN ON TWO POSTS.

TRANSPO INDUSTRIES OR EQUAL

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

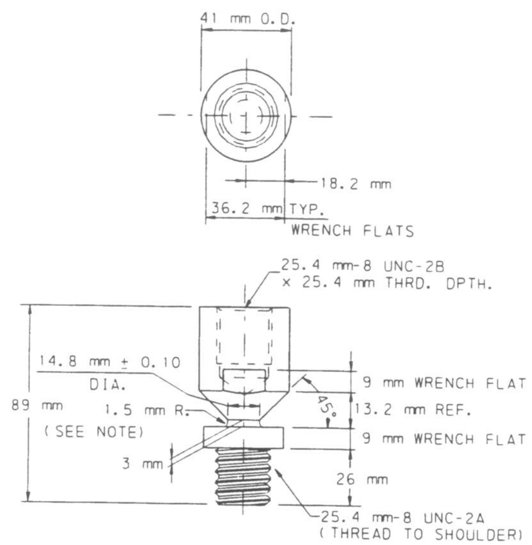
POST-MOUNTED SIGNS, TYPE A

POST SELECTION TABLE

RECOMMENDED AUG. 1, 1997	RECOMMENDED AUG. 1, 1997	SHT. 3 OF 6
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	CHIEF HIGHWAY ENGINEER	TC-8702A

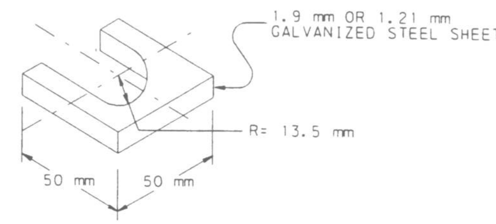
GENERAL NOTES FOR BRACKET NUMBER SELECTION TABLES

1. FOR EACH POST, DETERMINE VALUES OF "L_T" AND "H" AS INDICATED IN SKETCH.
   H = MAXIMUM HEIGHT OF SIGN IN METERS.
   L_T = DISTANCE BETWEEN THE TOP OF FOOTING AND THE TOP OF SIGN IN METERS FOR EACH POST.
2. ENTER TABLE WITH "H" AND "L_T" TO SELECT THE REQUIRED BRACKET FOR THAT POST.
3. FOR SIZES OF "H" AND "L_T" BETWEEN THOSE VALUES ON THE TABLE, USE THE NEXT HIGHEST VALUE.

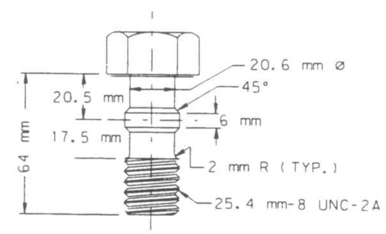


BREAKAWAY COUPLING DETAIL

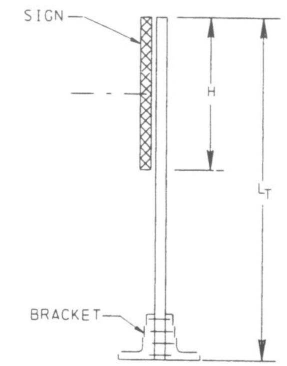
NOTE: DO NOT PLACE TORQUE ACROSS NECK PORTION OF COUPLING.

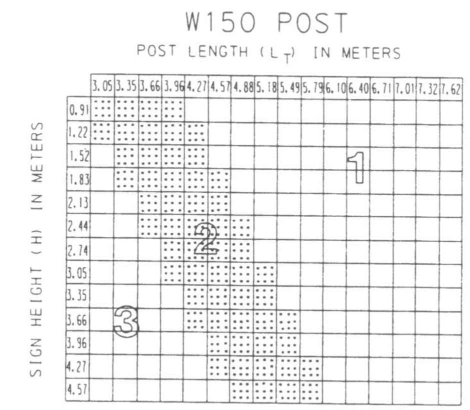


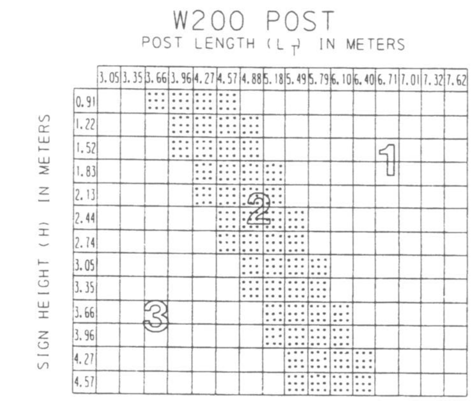
SHIM DETAIL



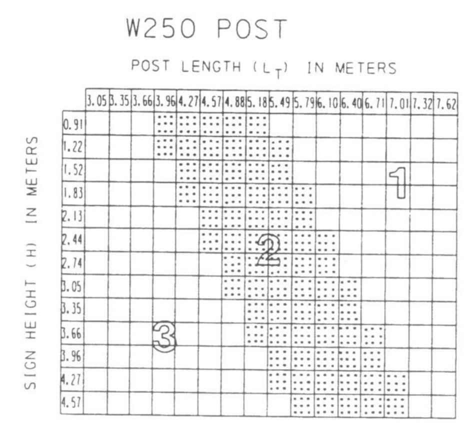
COUPLING BOLT DETAIL

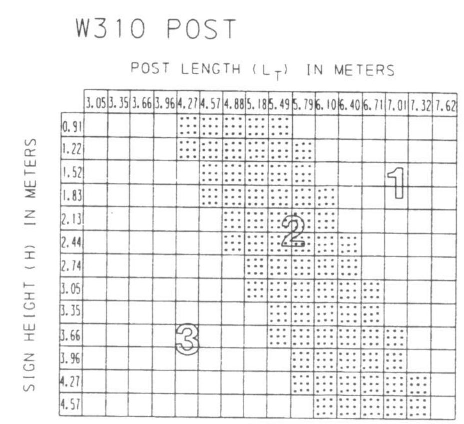


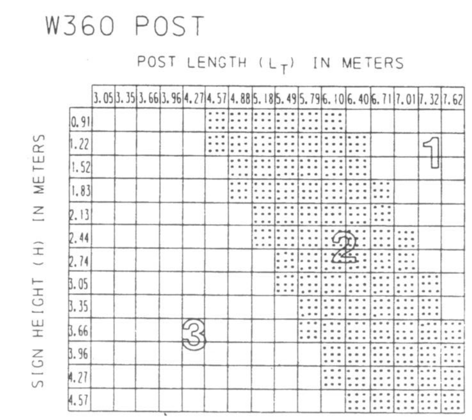




B-525 BRACKET TABLES

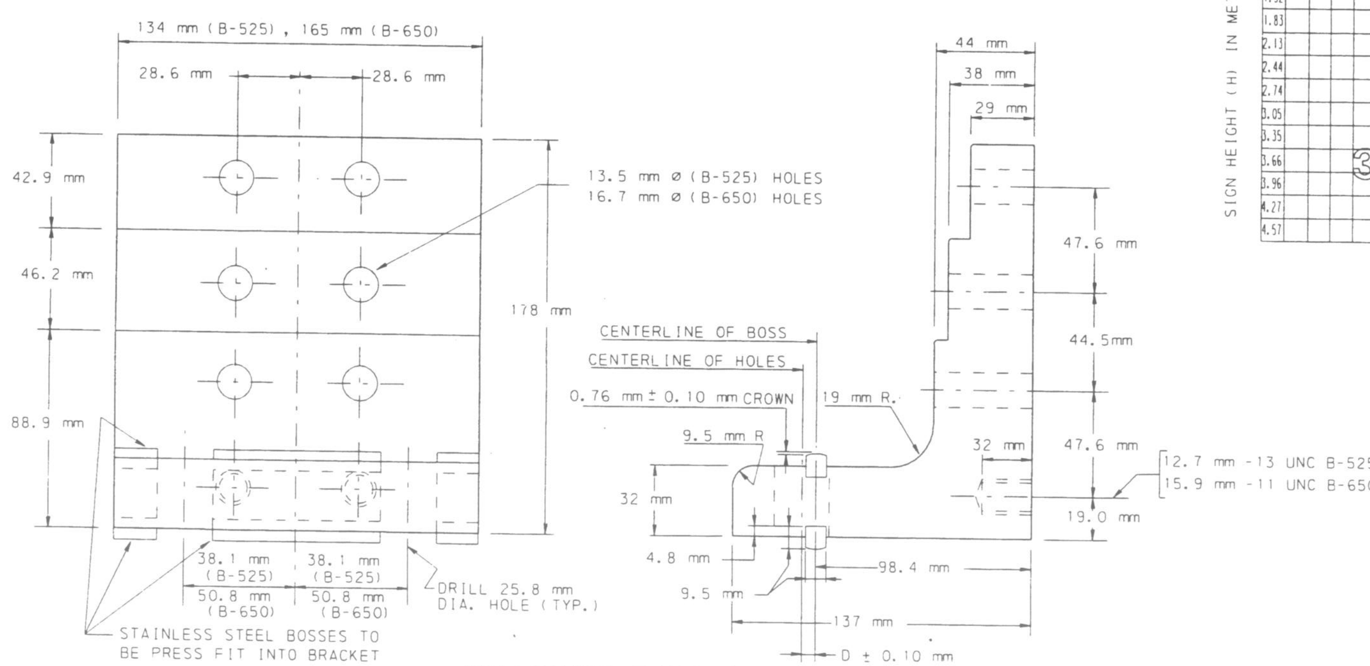






B-650 BRACKET TABLES

BRACKET SELECTION TABLES



BRACKET DETAIL

SELECT BRACKET FROM THE BRACKET SELECTION TABLES THEN SELECT THE VALUE FOR DIMENSION "D" FROM TABLE A.

TABLE A

BRACKET NO.	D (mm)
1	2.5
2	3.8
3	5.1

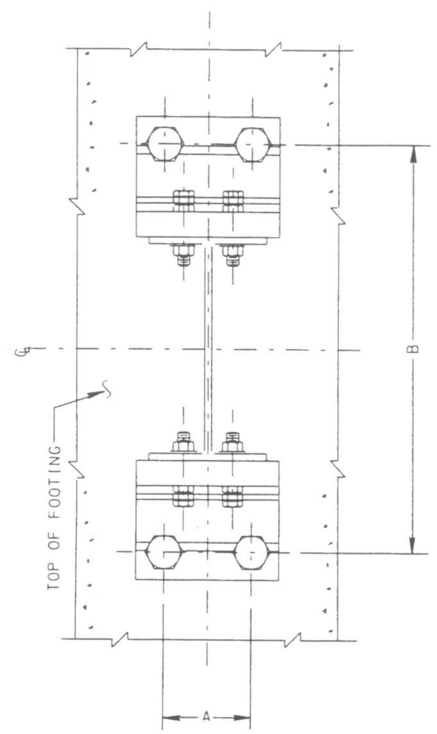
TRANSPO INDUSTRIES OR EQUAL

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

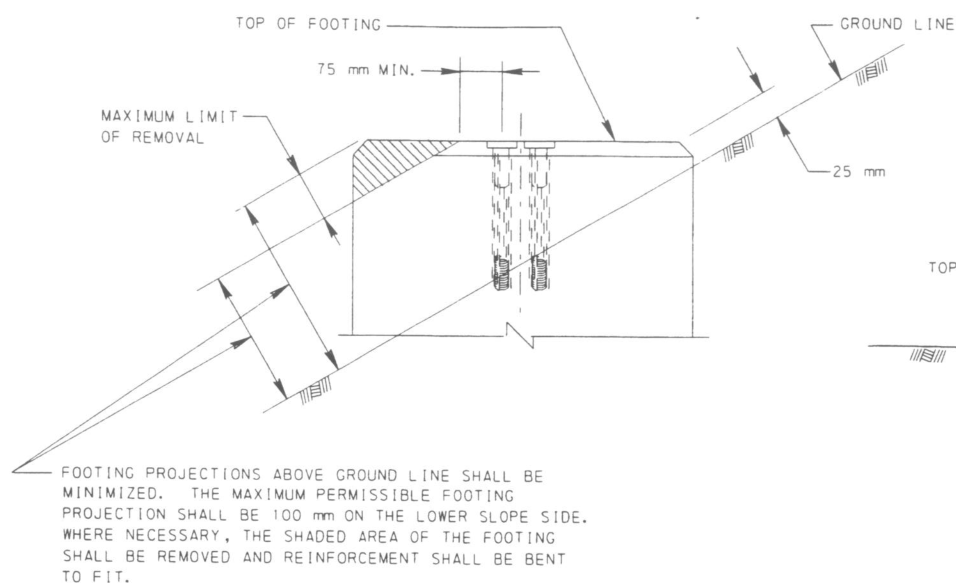
POST-MOUNTED SIGNS, TYPE A

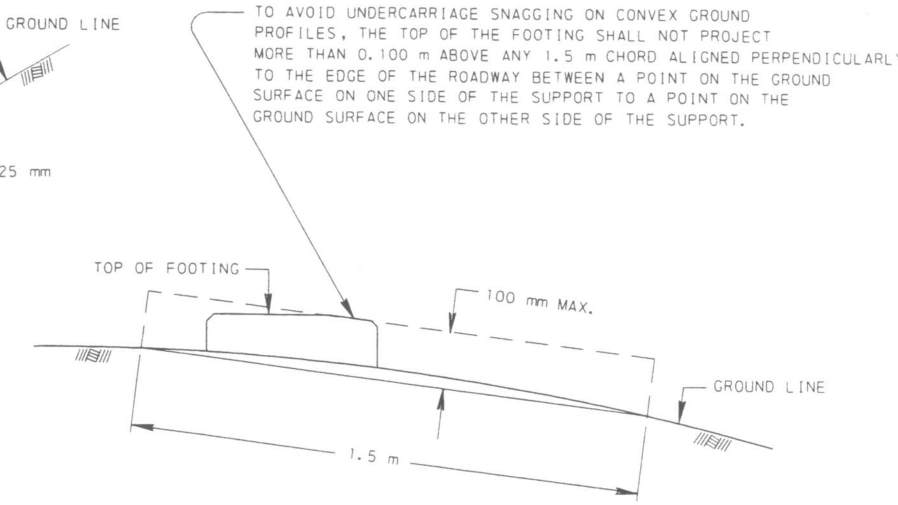
BREAKAWAY COUPLING AND BRACKET DETAILS

RECOMMENDED AUG. 1, 1997	RECOMMENDED AUG. 1, 1997	SHT. 5 of 6
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	CHIEF HIGHWAY ENGINEER	TC-8702A



PLAN



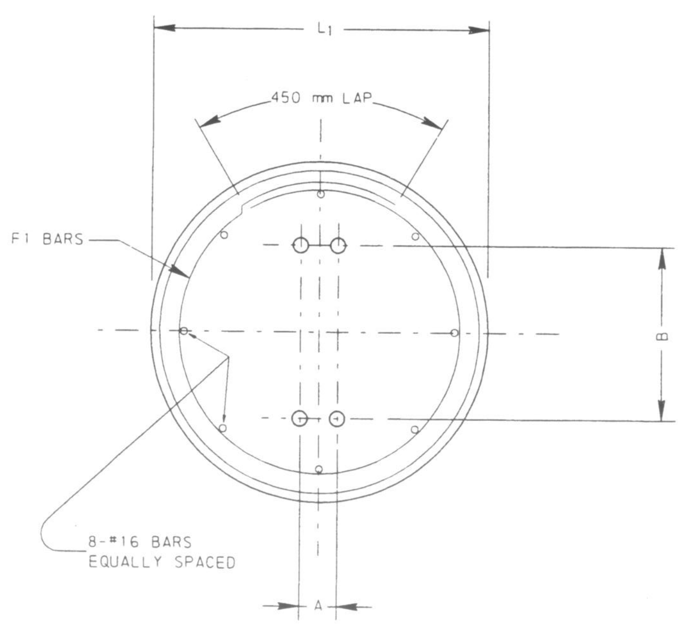


FOOTING SELECTION TABLE			
POST SIZE	L_1* METERS	DEPTH K_1 METERS	REINF. STEEL F_1
W150	0.75	1.7	7-#13
W200		1.9	7-#13
W250		2.1	8-#13
W310	0.90	2.3	9-#13
W360		2.5	9-#13

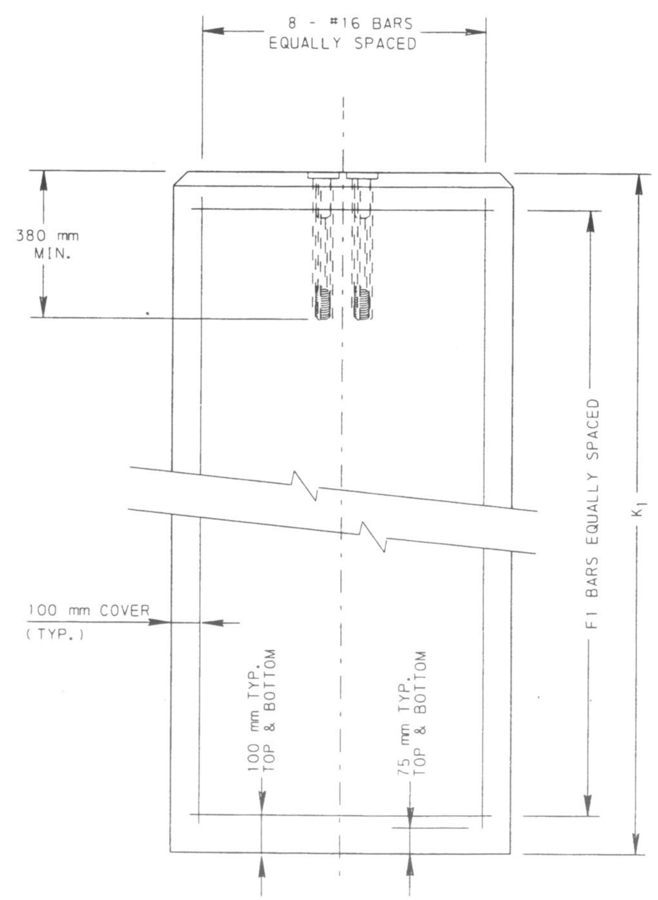
* DIAMETER IF CIRCULAR OR MIN. SIDE IF SQUARE OR RECTANGULAR

NOTES

1. ENTER FOOTING SELECTION TABLE WITH REQUIRED POST SIZE AND FIND REQUIRED FOOTING VALUES AS SHOWN IN DETAILS.
2. THE ANCHOR SHALL BE 304 STAINLESS STEEL WITH 1053 STEEL ROD AND COIL.
3. FORM THE TOP 0.3 METER OF THE FOOTING.
4. USE CLASS "A" CEMENT CONCRETE IN ALL FOOTINGS.
5. ACTUAL DIMENSIONS "A" & "B" SHOULD BE OBTAINED FROM THE MANUFACTURER OR MEASURED FROM THE ASSEMBLED BRACKETS PRIOR TO PLACEMENT OF ANCHORS. APPROXIMATE DIMENSIONS ARE AS FOLLOWS:
   - A (LATERAL SPACING OF ANCHORS)
     76.2 mm FOR B-525 USED ON W150 & W200 POSTS.
     101.6 mm FOR B-650 USED ON W250, W310 & W360 POSTS.
   - B (LONGITUDINAL SPACING OF ANCHORS)
     BRACKET #1 - DEPTH OF POST SECTION PLUS 201.6 mm.
     BRACKET #2 - DEPTH OF POST SECTION PLUS 204.8 mm.
     BRACKET #3 - DEPTH OF POST SECTION PLUS 206.4 mm.
6. TO INSURE PROPER SPACING AND ALIGNMENT OF ANCHORS, IT IS RECOMMENDED THAT ALL ANCHORS BE HELD IN PLACE BY A RIGID MACHINED TEMPLATE WHILE THE CONCRETE IS PLACED AND CURED.

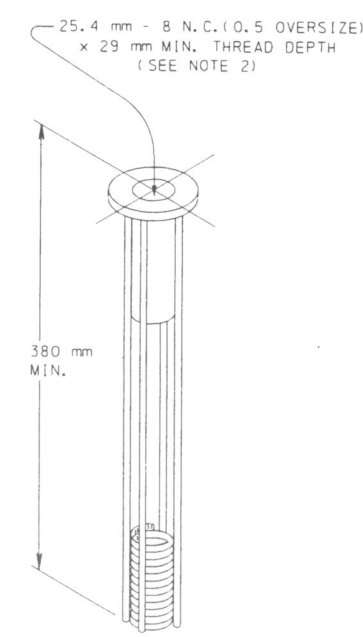


TOP VIEW



FOOTING DETAILS

SIDE VIEW



ANCHOR

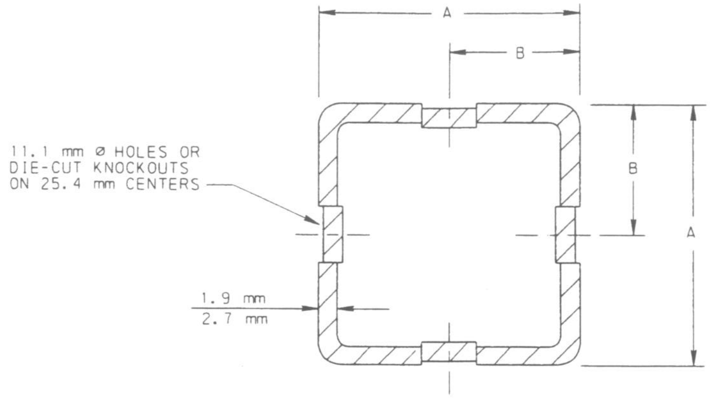
TRANSPO INDUSTRIES OR EQUAL

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

POST-MOUNTED SIGNS, TYPE A

FOOTING DETAILS

RECOMMENDED AUG. 1, 1997 CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED AUG. 1, 1997 CHIEF HIGHWAY ENGINEER	SHT. 6 of 6 TC-8702A



SIGN POST				ANCHOR POST				ANCHOR SLEEVE *				SPLICE SLEEVE			
SIZE	DIMENSION A	DIMENSION B	THICK.	SIZE	DIMENSION A	DIMENSION B	THICK.	SIZE	DIMENSION A	DIMENSION B	THICK.	SIZE	DIMENSION A	DIMENSION B	THICK.
44.5	44.5	22.2	1.9	50.8	50.8	25.4	2.7	57.2	57.2	28.6	2.7	38.1	38.1	19.0	1.9
50.8	50.8	25.4	1.9	57.2	57.2	28.6	2.7	63.5	63.5	31.8	2.7	44.5	44.5	22.2	1.9
57.2	57.2	28.6	1.9	63.5	63.5	31.8	2.7	76.2	76.2	38.1	4.8	50.8	50.8	25.4	1.9

ALL VALUES SHOWN ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.

* ONLY REQUIRED FOR INSTALLATIONS IN CONCRETE.

SQUARE STEEL POSTS

SYSTEM A

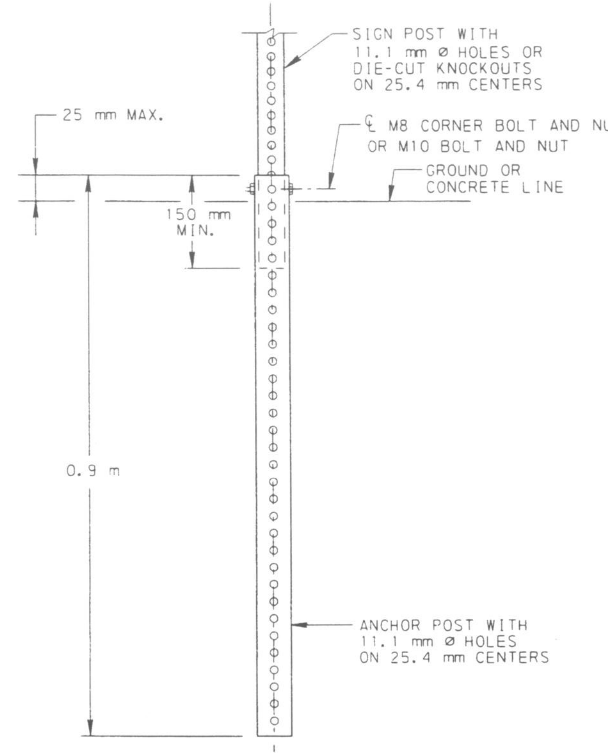
2.7 mm AND 1.9 mm - 415 MPa

INSTALLATION INSTRUCTIONS

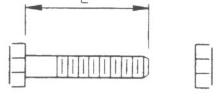
1. DETERMINE THE PROPER SIZE AND NUMBER OF SIGN POSTS FROM THE APPROPRIATE GRAPH ON SHEET 2 OF 13.
2. PUNCH OUT APPROPRIATE KNOCKOUTS AND ATTACH THE SIGN.
3. DETERMINE THE PROPER SIZE ANCHOR POST FROM THE SQUARE STEEL POSTS TABLE ON THIS SHEET.
4. DRIVE THE ANCHOR POST INTO THE GROUND, USING THE APPROPRIATE SIZE DRIVE CAP, UNTIL ONLY ONE HOLE REMAINS ABOVE THE GROUND OR FINISHED ELEVATION OF THE CONCRETE.
5. PUNCH OUT THE SIXTH KNOCKOUTS FROM THE BOTTOM OF THE SIGN POST.
6. SLIDE A MINIMUM OF 150 mm OF THE SIGN POST INTO THE ANCHOR POST.
7. ATTACH THE SIGN POST TO THE ANCHOR POST WITH ONE M8 CORNER BOLT AND NUT (OR ALTERNATELY ONE M10 BOLT AND NUT) THROUGH THE TOP HOLE OF THE ANCHOR POST.
8. TIGHTEN THE BOLT AND NUT BY THE TURN-OF-NUT METHOD. BRING NUT TO A SNUG CONDITION TO ENSURE THAT ALL PARTS ARE BROUGHT TOGETHER INTO FULL CONTACT WITH EACH OTHER, THEN TIGHTEN AN ADDITIONAL ½ TURN.

INSTALLATION IN CONCRETE

1. INSTALL AS NOTED ABOVE, BUT PLACE A 450 mm LONG ANCHOR SLEEVE OUTSIDE THE ANCHOR POST SO THAT THE TOPS OF THE ANCHOR POST AND ANCHOR SLEEVE ARE EVEN. SELECT THE PROPER SIZE ANCHOR SLEEVE FROM THE SQUARE STEEL POSTS TABLE ON THIS SHEET.



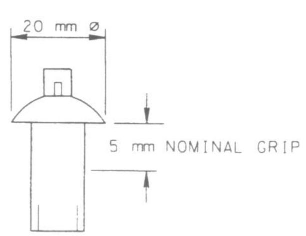
INSTALLATION DETAIL



SIGN POST SIZE mm	DIMENSION L mm
44.5	75
50.8	
57.2	90

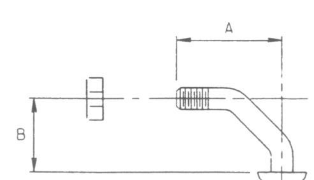
M10 x 1.5 ANCHOR BOLTS & NUTS

CADMIUM PLATED STEEL



10 mm DRIVE RIVET

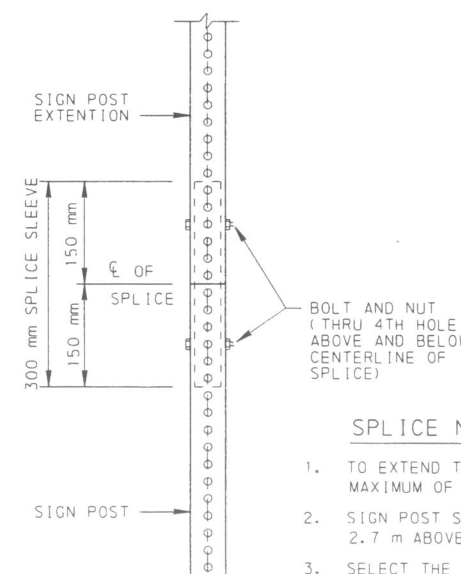
CADMIUM PLATED STEEL



SIGN POST SIZE mm	DIMENSION mm A	DIMENSION mm B
44.5	34.13	24.61
50.8		
57.2	39.69	30.16

M8 x 1.25 CORNER BOLTS & NUTS

CADMIUM PLATED STEEL



SPLICE NOTES

1. TO EXTEND THE HEIGHT OF A SIGN POST, A MAXIMUM OF ONE SPLICE MAY BE MADE.
2. SIGN POST SPLICES MUST BE A MINIMUM OF 2.7 m ABOVE GROUND.
3. SELECT THE PROPER SIZE SPLICE SLEEVE FROM THE SQUARE STEEL POSTS TABLE ON THIS SHEET.

SPLICE DETAIL

NOTES

1. MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH PUB. 408M.
2. SIGN POSTS AND SPLICE SLEEVES SHALL HAVE 11.1 mm DIAMETER HOLES OR DIE-CUT KNOCKOUTS ON 25.4 mm CENTERS ON ALL FOUR SIDES. ANCHOR POSTS AND ANCHOR SLEEVES SHALL HAVE 11.1 mm DIAMETER HOLES ON 25.4 mm CENTERS ON ALL FOUR SIDES.
3. BOLTS AND NUTS SHALL BE ASTM A 307, GRADE B.
4. DRIVE RIVETS MAY BE USED TO FASTEN SIGN BLANKS TO THE SIGN POST.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

POST-MOUNTED SIGNS, TYPE B

STEEL SQUARE POSTS (SYSTEM A) ERECTION DETAILS

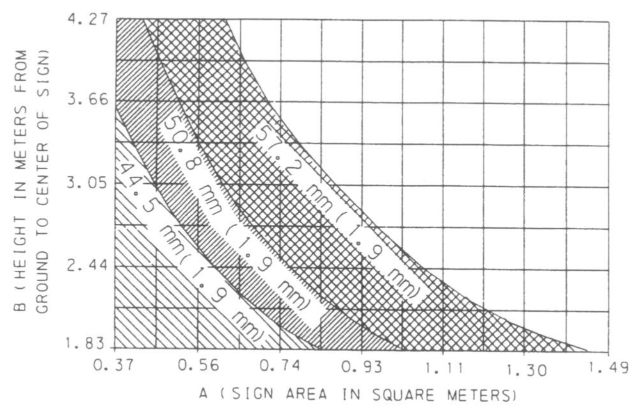
RECOMMENDED AUG. 1, 1997 — CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION

RECOMMENDED AUG. 1, 1997 — Gary L. Hoffman — CHIEF HIGHWAY ENGINEER

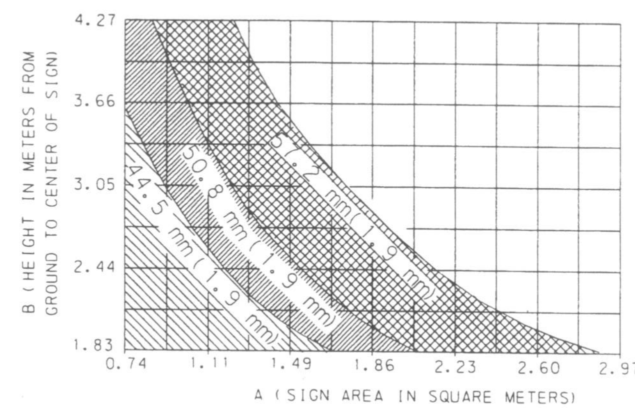
SHT. 1 OF 11

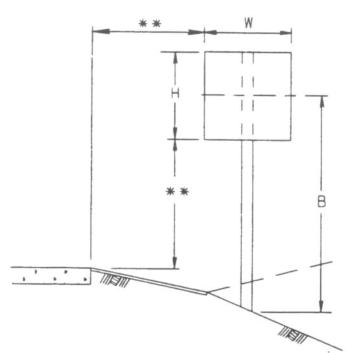
TC-8702B

SYSTEM A
ONE-POST INSTALLATION



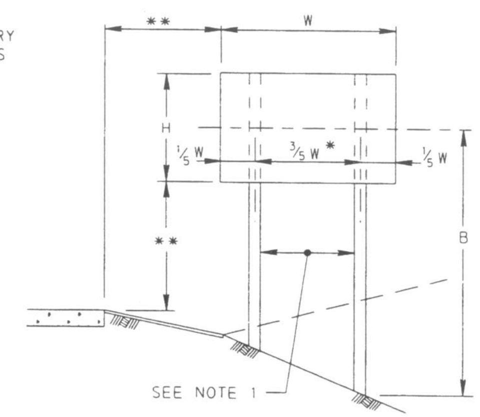
SYSTEM A
TWO-POST INSTALLATION
(SEE NOTE 1)





* WHEN ERECTING STANDARD WARNING OR REGULATORY SIGNS THAT ARE PREPUNCHED, THIS DISTANCE IS THE DISTANCE BETWEEN THE HORIZONTAL HOLES.

** SEE SHEET 13 OF 13 FOR SIGN LOCATION/INSTALLATION DETAILS.



A = SIGN AREA IN SQUARE METERS (SEE TABLE)
A = W x H FOR SQUARE OR RECTANGULAR SIGNS
WHERE:
W = WIDTH OF SIGN IN METERS
H = HEIGHT OF SIGN IN METERS

SIGN AREA TABLE

SQUARE OR RECTANGULAR SIGNS						IRREGULAR SHAPED SIGNS	
SIZE (mm x mm)	AREA (SQ. m.)	SIZE (mm x mm)	AREA (SQ. m.)	SIZE (mm x mm)	AREA (SQ. m.)	SIGN (mm x mm)	AREA (SQ. m.)
200x1200	0.24	750x375	0.28	1800x300	0.54	YIELD (R1-2) 900 x 900	0.35
300x450	0.14	750x600	0.45	1800x600	1.08	YIELD (R1-2) 1200 x 1200	0.62
300x600	0.18	750x750	0.56	1800x900	1.62	YIELD (R1-2) 1500 x 1500	0.97
300x750	0.22	750x900	0.68	1800x1200	2.16	NO PASSING PENNANT (W14-3) 1200 x 900	0.50
300x900	0.27	750x1200	0.90	1800x1500	2.70	RAILROAD WARNING (W10-1) 900 DIA.	0.64
300x1200	0.36	750x1500	1.12	2400x600	1.44	SCHOOL (S1-1) 750 x 750	0.42
450x375	0.17	900x900	0.81	2400x1200	2.88	SCHOOL (S1-1) 900 x 900	0.61
450x450	0.20	900x1200	1.08	3000x300	0.90	STOP (R1-1) 600 x 600	0.30
450x600	0.27	900x1350	1.22	3000x375	1.12	STOP (R1-1) 750 x 750	0.47
450x900	0.40	1200x1200	1.44	3000x600	1.80	STOP (R1-1) 900 x 900	0.67
450x1200	0.54	1200x1500	1.80	3000x750	2.25	STOP (R1-1) 1200 x 1200	1.19
525x375	0.20	1500x300	0.45	3600x300	1.08	INTERSTATE ROUTE MARKER (M1-1) 600 x 600	0.29
600x600	0.36	1500x600	0.90	3600x450	1.62	INTERSTATE ROUTE MARKER (M1-1) 750 x 600	0.36
600x900	0.54	1500x1050	1.58	3600x600	2.16	INTERSTATE ROUTE MARKER (M1-1) 900 x 900	0.69
600x1200	0.72	1500x1500	2.25	3600x750	2.70	INTERSTATE ROUTE MARKER (M1-1) 1125 x 900	0.80

NOTES

1. 57.2 mm POSTS SHALL HAVE 2.1 m CLEARANCE BETWEEN EACH OTHER, MEASURED FROM INSIDE POST EDGE TO INSIDE POST EDGE, WHEN USED IN TWO-POST INSTALLATIONS 50.8 mm AND 44.5 mm POSTS MAY HAVE LESS THAN 2.1 m CLEARANCE BETWEEN EACH OTHER WHEN USED IN TWO-POST INSTALLATIONS.

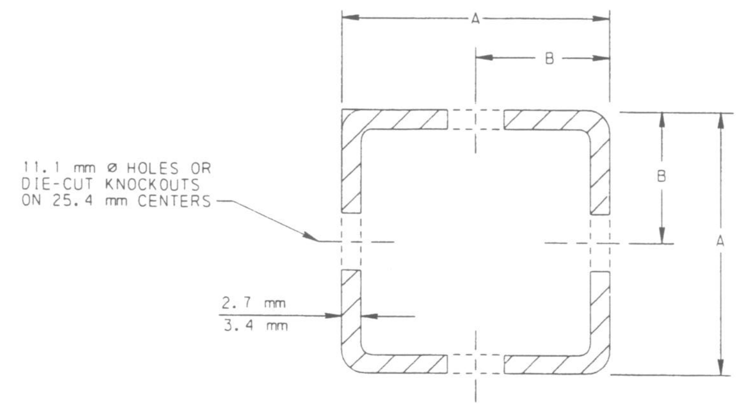
2. TO DETERMINE THE POST SIZE, ENTER THE GRAPH WITH THE VALUES OF A AND B. THE SHADED AREA INDICATES THE APPROPRIATE POST SIZE REQUIRED.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

POST-MOUNTED SIGNS, TYPE B

STEEL SQUARE POSTS (SYSTEM A) SELECTION TABLES

RECOMMENDED AUG. 1, 1997	RECOMMENDED AUG. 1, 1997	SHT. 2 OF 11
AHBr—	Gary L. Hoffman	
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	CHIEF HIGHWAY ENGINEER	TC-8702B

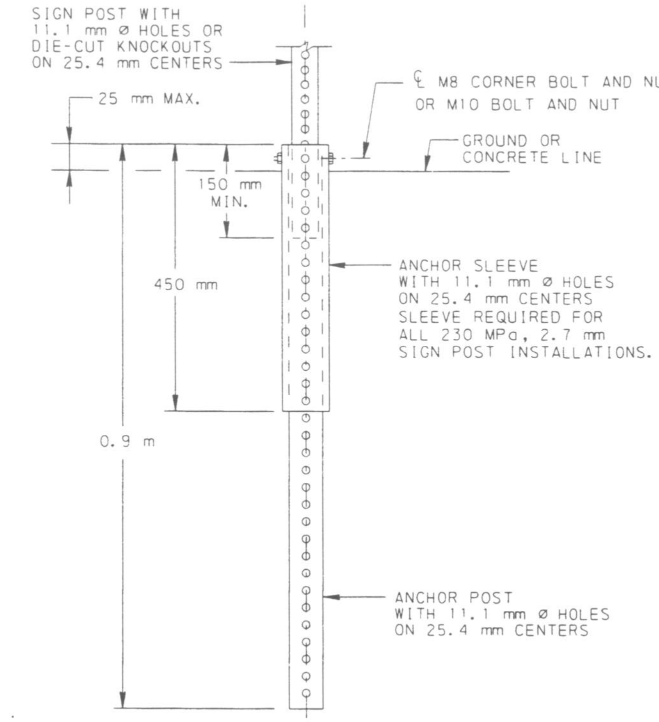


INSTALLATION INSTRUCTIONS

1. DETERMINE THE PROPER SIZE AND NUMBER OF SIGN POSTS FROM THE APPROPRIATE GRAPH ON SHEET 4 OF 13.
2. DETERMINE THE PROPER SIZE ANCHOR POST AND ANCHOR SLEEVE FROM THE SQUARE STEEL POSTS TABLE ON THIS SHEET.
3. DRIVE THE ANCHOR POST AND ANCHOR SLEEVE INTO THE GROUND SIMULTANEOUSLY, USING THE APPROPRIATE SIZE DRIVE CAP, UNTIL ONLY ONE HOLE REMAINS ABOVE THE GROUND OR FINISHED ELEVATION OF THE CONCRETE.
4. SLIDE A MINIMUM OF 150 mm OF THE SIGN POST INTO THE ANCHOR POST.
5. ATTACH THE SIGN POST TO THE ANCHOR POST AND SLEEVE WITH ONE M8 CORNER BOLT AND NUT (OR ALTERNATELY ONE M10 BOLT AND NUT) THROUGH THE TOP HOLE OF THE ANCHOR POST AND SLEEVE.
6. TIGHTEN THE BOLT AND NUT BY THE TURN-OF-NUT METHOD. BRING NUT TO A SNUG CONDITION TO ENSURE THAT ALL PARTS ARE BROUGHT TOGETHER INTO FULL CONTACT WITH EACH OTHER, THEN TIGHTEN AN ADDITIONAL ½ TURN.

INSTALLATION IN CONCRETE

1. INSTALL AS NOTED ABOVE.



INSTALLATION DETAIL

* REQUIRED FOR ALL POST INSTALLATIONS

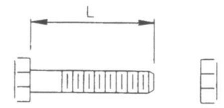
SIGN POST				ANCHOR POST				ANCHOR SLEEVE*				SPLICE SLEEVE			
SIZE	DIMENSION A	DIMENSION B	THICK.	SIZE	DIMENSION A	DIMENSION B	THICK.	SIZE	DIMENSION A	DIMENSION B	THICK.	SIZE	DIMENSION A	DIMENSION B	THICK.
44.5	44.5	22.2	2.7	50.8	50.8	25.4	2.7	57.2	57.2	28.6	2.7	38.1	38.1	19.0	2.7
50.8	50.8	25.4	2.7	57.2	57.2	28.6	2.7	63.5	63.5	31.8	2.7	44.5	44.5	22.2	2.7
57.2	57.2	28.6	2.7	63.5	63.5	31.8	2.7	76.2	76.2	38.1	4.8	50.8	50.8	25.4	2.7
63.5	63.5	31.8	3.4	76.2	76.2	38.1	4.8	-	-	-	-	55.6	55.6	27.8	3.4

ALL VALUES SHOWN ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.

SQUARE STEEL POSTS

SYSTEM B

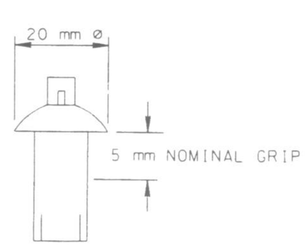
2.7 mm - 230 MPa



SIGN POST SIZE mm	DIMENSION L mm
44.5	75
50.8	
57.2	90
63.5	

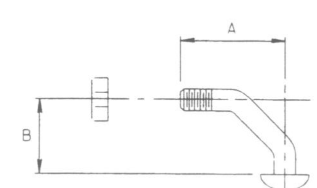
M10 × 1.5 ANCHOR BOLTS & NUTS

CADMIUM PLATED STEEL



10 mm DRIVE RIVET

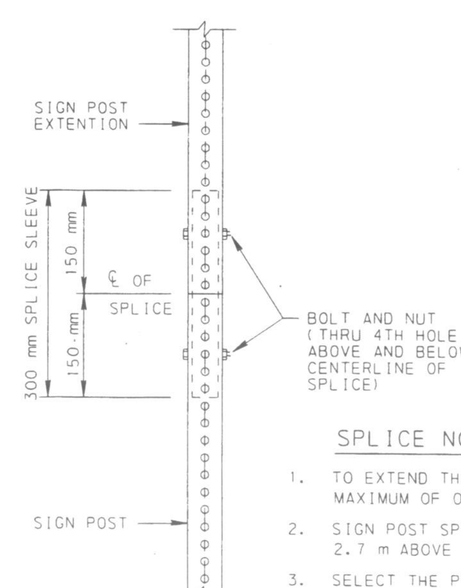
CADMIUM PLATED STEEL



SIGN POST SIZE mm	DIMENSION mm A	B
44.5	34.13	24.61
50.8		
57.2	39.69	30.16
63.5		

M8 × 1.25 CORNER BOLTS & NUTS

CADMIUM PLATED STEEL



SPLICE NOTES

1. TO EXTEND THE HEIGHT OF A SIGN POST, A MAXIMUM OF ONE SPLICE MAY BE MADE.
2. SIGN POST SPLICES MUST BE A MINIMUM OF 2.7 m ABOVE GROUND.
3. SELECT THE PROPER SIZE SPLICE SLEEVE FROM THE SQUARE STEEL POSTS TABLE ON THIS SHEET.

SPLICE DETAIL

INSTALLATION NOTES

1. MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH PUB. 408M.
2. SIGN POSTS AND SPLICE SLEEVES SHALL HAVE 11.1 mm DIAMETER HOLES OR DIE-CUT KNOCKOUTS ON 25.4 mm CENTERS ON ALL FOUR SIDES. ANCHOR POSTS AND ANCHOR SLEEVES SHALL HAVE 11.1 mm DIAMETER HOLES ON 25.4 mm CENTERS ON ALL FOUR SIDES.
3. BOLTS AND NUTS SHALL BE ASTM A 307, GRADE B.
4. DRIVE RIVETS MAY BE USED TO FASTEN SIGN BLANKS TO THE SIGN POST.

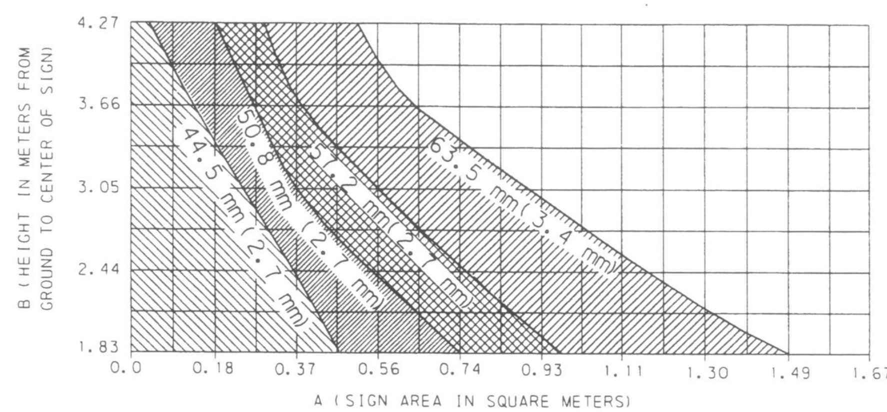
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

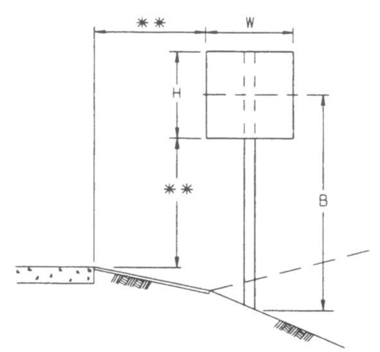
POST-MOUNTED SIGNS, TYPE B

STEEL SQUARE POSTS (SYSTEM B) ERECTION DETAILS

RECOMMENDED AUG. 1, 1997	RECOMMENDED AUG. 1, 1997	SHT. 3 OF 11
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	CHIEF HIGHWAY ENGINEER	TC-8702B

SYSTEM B
ONE-POST INSTALLATION

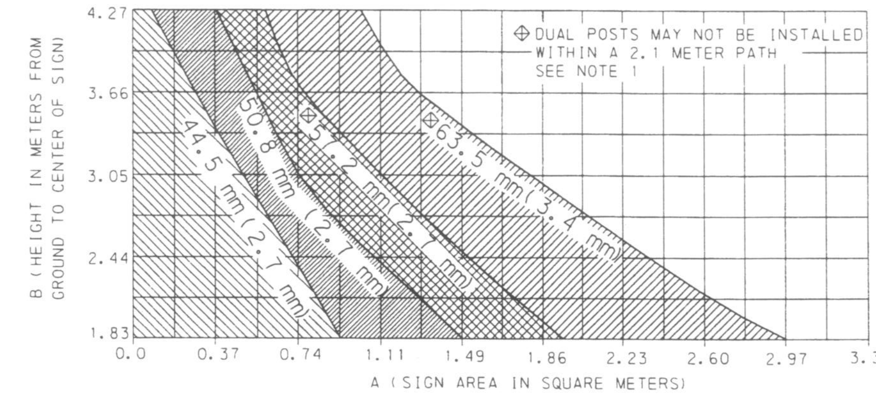


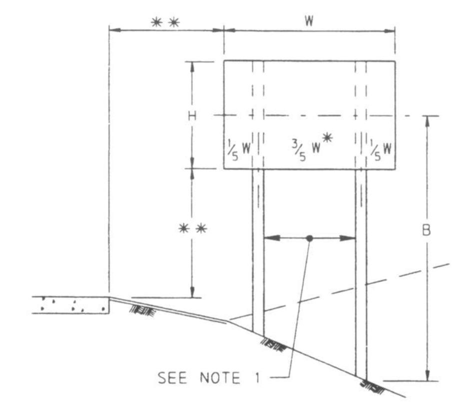


* WHEN ERECTING STANDARD WARNING OR REGULATORY SIGNS THAT ARE PREPUNCHED, THIS DISTANCE IS THE DISTANCE BETWEEN THE HORIZONTAL HOLES.

** SEE SHEET 13 OF 13 FOR SIGN LOCATION/INSTALLATION DETAILS.

SYSTEM B
TWO-POST INSTALLATION





NOTES

1. 63.5 mm POSTS AND 57.2 mm POSTS SHALL HAVE 2.1 METER CLEARANCE BETWEEN EACH OTHER, MEASURED FROM INSIDE POST EDGE TO INSIDE POST EDGE, WHEN USED IN TWO-POST INSTALLATIONS. 50.8 mm AND 44.5 mm POSTS MAY HAVE LESS THAN 2.1 m CLEARANCE BETWEEN EACH OTHER WHEN USED IN TWO-POST INSTALLATIONS.

2. TO DETERMINE THE POST SIZE, ENTER THE GRAPH WITH THE VALUES OF A AND B. THE SHADED AREA INDICATES THE APPROPRIATE POST SIZE REQUIRED.

A = SIGN AREA IN SQUARE METERS (SEE TABLE)
A = W x H FOR SQUARE OR RECTANGULAR SIGNS
WHERE:
W = WIDTH OF SIGN IN METERS
H = HEIGHT OF SIGN IN METERS

SIGN AREA TABLE

SQUARE OR RECTANGULAR SIGNS						IRREGULAR SHAPED SIGNS	
SIZE (mm x mm)	AREA (SQ. m.)	SIZE (mm x mm)	AREA (SQ. m.)	SIZE (mm x mm)	AREA (SQ. m.)	SIGN (mm x mm)	AREA (SQ. m.)
200x1200	0.24	750x375	0.28	1800x300	0.54	YIELD (R1-2) 900 x 900	0.35
300x450	0.14	750x600	0.45	1800x600	1.08	YIELD (R1-2) 1200 x 1200	0.62
300x600	0.18	750x750	0.56	1800x900	1.62	YIELD (R1-2) 1500 x 1500	0.97
300x750	0.22	750x900	0.68	1800x1200	2.16	NO PASSING PENNANT (W14-3) 1200 x 900	0.50
300x900	0.27	750x1200	0.90	1800x1500	2.70	RAILROAD WARNING (W10-1) 900 DIA.	0.64
300x1200	0.36	750x1500	1.12	2400x600	1.44	SCHOOL (S1-1) 750 x 750	0.42
450x375	0.17	900x900	0.81	2400x1200	2.88	SCHOOL (S1-1) 900 x 900	0.61
450x450	0.20	900x1200	1.08	3000x300	0.90	STOP (R1-1) 600 x 600	0.30
450x600	0.27	900x1350	1.22	3000x375	1.12	STOP (R1-1) 750 x 750	0.47
450x900	0.40	1200x1200	1.44	3000x600	1.80	STOP (R1-1) 900 x 900	0.67
450x1200	0.54	1200x1500	1.80	3000x750	2.25	STOP (R1-1) 1200 x 1200	1.19
525x375	0.20	1500x300	0.45	3600x300	1.08	INTERSTATE ROUTE MARKER (M1-1) 600 x 600	0.29
600x600	0.36	1500x600	0.90	3600x450	1.62	INTERSTATE ROUTE MARKER (M1-1) 750 x 600	0.36
600x900	0.54	1500x1050	1.58	3600x600	2.16	INTERSTATE ROUTE MARKER (M1-1) 900 x 900	0.69
600x1200	0.72	1500x1500	2.25	3600x750	2.70	INTERSTATE ROUTE MARKER (M1-1) 1125 x 900	0.80

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

POST-MOUNTED SIGNS, TYPE B

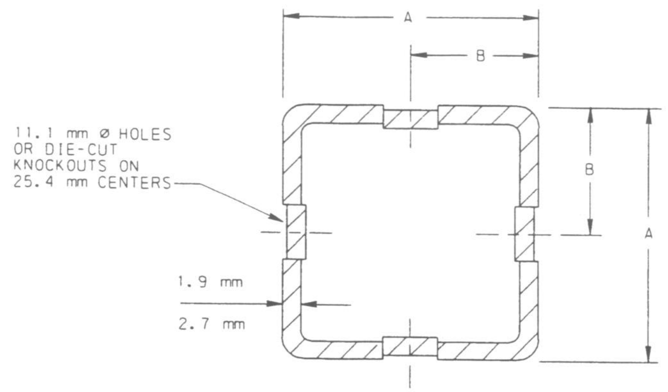
STEEL SQUARE POSTS (SYSTEM B) SELECTION TABLES

RECOMMENDED AUG. 1, 1997
A. Brennan
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION

RECOMMENDED AUG. 1, 1997
Gary L. Hoffman
CHIEF HIGHWAY ENGINEER

SHT. 4 OF 11

TC-8702B



SIGN POST				ANCHOR POST				ANCHOR SLEEVE ✳				SPLICE SLEEVE			
SIZE	DIMENSION A	DIMENSION B	THICK.	SIZE	DIMENSION A	DIMENSION B	THICK.	SIZE	DIMENSION A	DIMENSION B	THICK.	SIZE	DIMENSION A	DIMENSION B	THICK.
44.5	44.5	22.2	1.9	50.8	50.8	25.4	2.7	57.2	57.2	28.6	2.7	38.1	38.1	19.0	1.9
50.8	50.6	25.4	1.9	57.2	57.2	28.6	2.7	63.5	63.5	31.8	2.7	44.5	44.5	22.2	1.9

ALL VALUES SHOWN ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.

✳ REQUIRED FOR ALL INSTALLATIONS

SQUARE STEEL POSTS

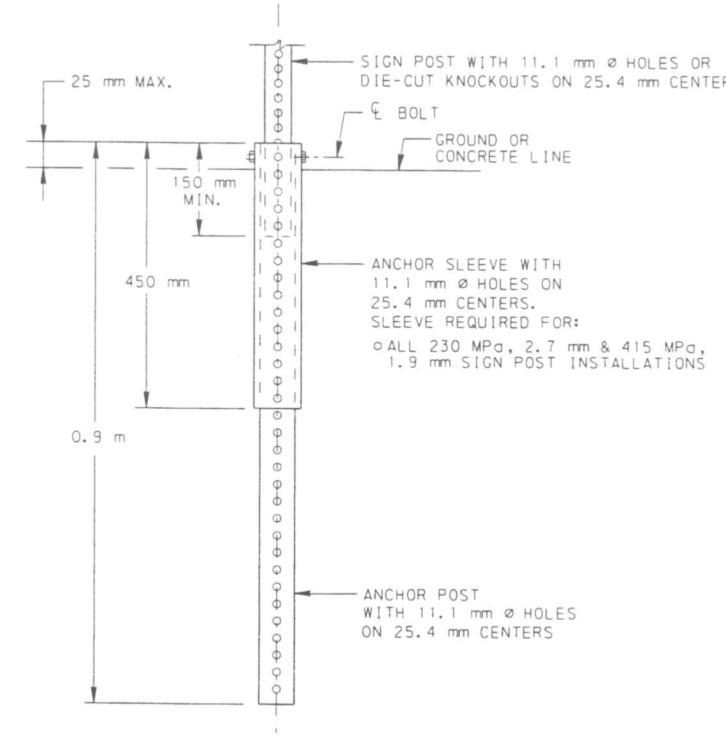
SYSTEM C
1.9 mm - 415 MPa
2.7 mm - 230 MPa

INSTALLATION INSTRUCTIONS

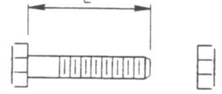
1. DETERMINE THE PROPER SIZE AND NUMBER OF SIGN POSTS FROM THE APPROPRIATE GRAPH ON SHEET 6 OF 13.
2. DETERMINE THE PROPER SIZE ANCHOR POST AND ANCHOR SLEEVE FROM THE SQUARE STEEL POSTS TABLE ON THIS SHEET.
3. DRIVE THE ANCHOR POST AND ANCHOR SLEEVE INTO THE GROUND SIMULTANEOUSLY, USING THE APPROPRIATE SIZE DRIVE CAP, UNTIL ONLY ONE HOLE REMAINS ABOVE THE GROUND OR FINISHED ELEVATION OF THE CONCRETE.
4. SLIDE A MINIMUM OF 150 mm OF THE SIGN POST INTO THE ANCHOR POST.
5. ATTACH THE SIGN POST TO THE ANCHOR POST AND SLEEVE WITH ONE M8 CORNER BOLT AND NUT (OR ALTERNATELY ONE M10 BOLT AND NUT) THROUGH THE TOP HOLE OF THE ANCHOR POST AND SLEEVE.
6. TIGHTEN THE BOLT AND NUT BY THE TURN-OF-NUT METHOD. BRING NUT TO A SNUG CONDITION TO ENSURE THAT ALL PARTS ARE BROUGHT TOGETHER INTO FULL CONTACT WITH EACH OTHER, THEN TIGHTEN AN ADDITIONAL ½ TURN.

INSTALLATION IN CONCRETE

1. INSTALL AS NOTED ABOVE.



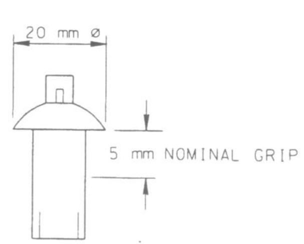
INSTALLATION DETAIL



SIGN POST SIZE mm	DIMENSION L mm
44.5	75
50.8	
57.2	90
63.5	

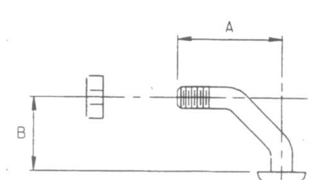
M10 × 1.5 ANCHOR BOLTS & NUTS

CADMIUM PLATED STEEL



10 mm DRIVE RIVET

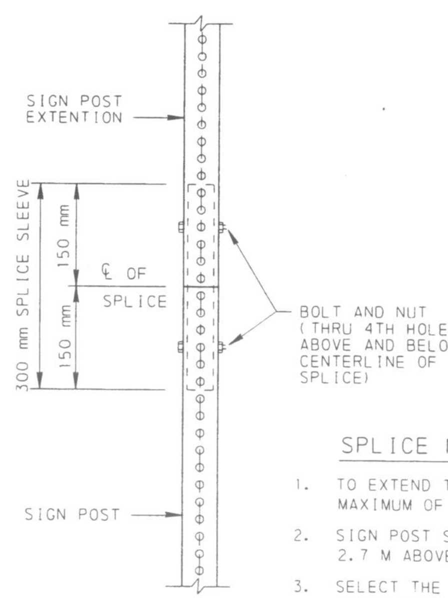
CADMIUM PLATED STEEL



SIGN POST SIZE mm	DIMENSION mm A	B
44.5	34.13	24.61
50.8		
57.2	39.69	30.16
63.5		

M8 × 1.25 CORNER BOLTS & NUTS

CADMIUM PLATED STEEL



SPLICE NOTES

1. TO EXTEND THE HEIGHT OF A SIGN POST, A MAXIMUM OF ONE SPLICE MAY BE MADE.
2. SIGN POST SPLICES MUST BE A MINIMUM OF 2.7 M ABOVE GROUND.
3. SELECT THE PROPER SIZE SPLICE SLEEVE FROM THE SQUARE STEEL POSTS TABLE ON THIS SHEET.

SPLICE DETAIL

INSTALLATION NOTES

1. MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH PUB. 408M.
2. SIGN POSTS AND SPLICE SLEEVES SHALL HAVE 11.1 mm DIAMETER HOLES OR DIE-CUT KNOCKOUTS ON 25.4 mm CENTERS ON ALL FOUR SIDES. ANCHOR POSTS AND ANCHOR SLEEVES SHALL HAVE 11.1 mm DIAMETER HOLES ON 25.4 mm CENTERS ON ALL FOUR SIDES.
3. BOLTS AND NUTS SHALL BE ASTM A 307, GRADE B.
4. DRIVE RIVETS MAY BE USED TO FASTEN SIGN BLANKS TO THE SIGN POST.

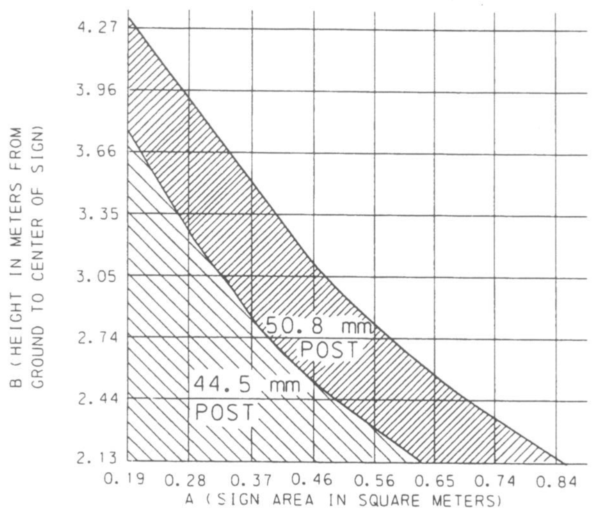
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

POST-MOUNTED SIGNS, TYPE B

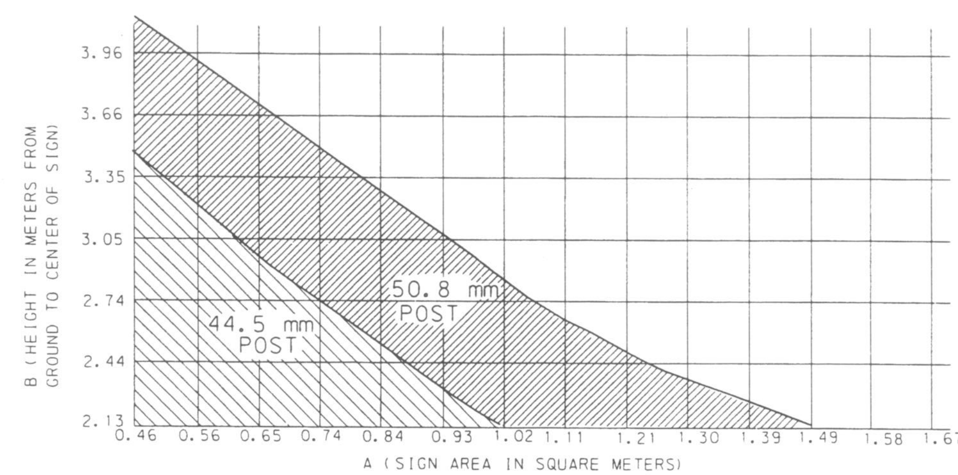
STEEL SQUARE POSTS (SYSTEM C) ERECTION DETAILS

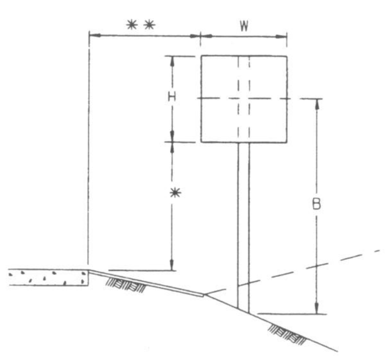
RECOMMENDED AUG. 1, 1997	RECOMMENDED AUG. 1, 1997	SHT. 5 OF 11
A H Brenneman CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	Gary L Hoffman CHIEF HIGHWAY ENGINEER	TC-8702B

SYSTEM C
ONE-POST INSTALLATION



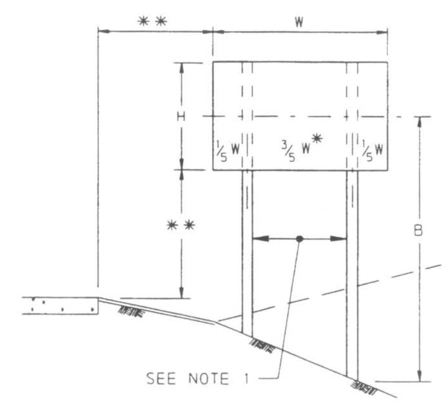
SYSTEM C
TWO-POST INSTALLATION





* WHEN ERECTING STANDARD WARNING OR REGULATORY SIGNS THAT ARE PREPUNCHED, THIS DISTANCE IS THE DISTANCE BETWEEN THE HORIZONTAL HOLES.

** SEE SHEET 13 OF 13 FOR SIGN LOCATION/INSTALLATION DETAILS.



A = SIGN AREA IN SQUARE METERS (SEE TABLE)
A = W x H FOR SQUARE OR RECTANGULAR SIGNS
WHERE:
W = WIDTH OF SIGN IN METERS
H = HEIGHT OF SIGN IN METERS

SIGN AREA TABLE

SQUARE OR RECTANGULAR SIGNS						IRREGULAR SHAPED SIGNS	
SIZE (mm x mm)	AREA (SQ. m.)	SIZE (mm x mm)	AREA (SQ. m.)	SIZE (mm x mm)	AREA (SQ. m.)	SIGN (mm x mm)	AREA (SQ. m.)
200x1200	0.24	750x375	0.28	1800x300	0.54	YIELD (R1-2) 900 x 900	0.35
300x450	0.14	750x600	0.45	1800x600	1.08	YIELD (R1-2) 1200 x 1200	0.62
300x600	0.18	750x750	0.56	1800x900	1.62	YIELD (R1-2) 1500 x 1500	0.97
300x750	0.22	750x900	0.68	1800x1200	2.16	NO PASSING PENNANT (W14-3) 1200 x 900	0.50
300x900	0.27	750x1200	0.90	1800x1500	2.70	RAILROAD WARNING (W10-1) 900 DIA.	0.64
300x1200	0.36	750x1500	1.12	2400x600	1.44	SCHOOL (S1-1) 750 x 750	0.42
450x375	0.17	900x900	0.81	2400x1200	2.88	SCHOOL (S1-1) 900 x 900	0.61
450x450	0.20	900x1200	1.08	3000x300	0.90	STOP (R1-1) 600 x 600	0.30
450x600	0.27	900x1350	1.22	3000x375	1.12	STOP (R1-1) 750 x 750	0.47
450x900	0.40	1200x1200	1.44	3000x600	1.80	STOP (R1-1) 900 x 900	0.67
450x1200	0.54	1200x1500	1.80	3000x750	2.25	STOP (R1-1) 1200 x 1200	1.19
525x375	0.20	1500x300	0.45	3600x300	1.08	INTERSTATE ROUTE MARKER (M1-1) 600 x 600	0.29
600x600	0.36	1500x600	0.90	3600x450	1.62	INTERSTATE ROUTE MARKER (M1-1) 750 x 600	0.36
600x900	0.54	1500x1050	1.58	3600x600	2.16	INTERSTATE ROUTE MARKER (M1-1) 900 x 900	0.69
600x1200	0.72	1500x1500	2.25	3600x750	2.70	INTERSTATE ROUTE MARKER (M1-1) 1125 x 900	0.80

NOTES

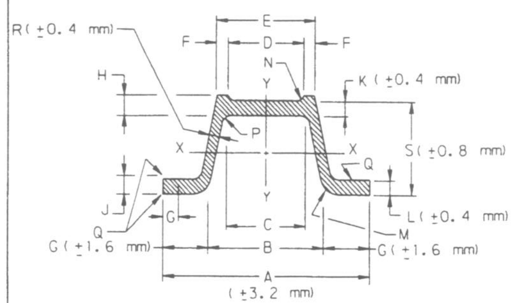
1. 50.8 mm AND 44.5 mm POSTS MAY HAVE LESS THAN 2.1 m CLEARANCE BETWEEN EACH OTHER WHEN USED IN TWO-POST INSTALLATIONS.
2. TO DETERMINE THE POST SIZE, ENTER THE GRAPH WITH THE VALUES OF A AND B. THE SHADED AREA INDICATES THE APPROPRIATE POST SIZE REQUIRED.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

POST-MOUNTED SIGNS, TYPE B

STEEL SQUARE POSTS (SYSTEM C) SELECTION TABLES

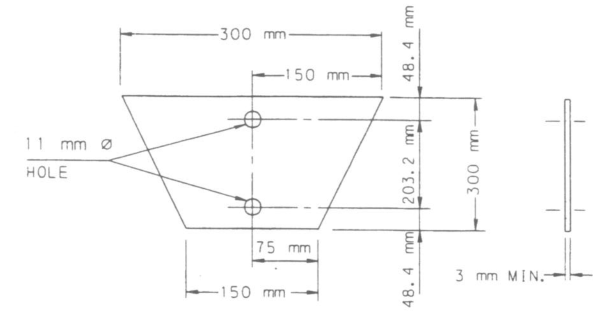
RECOMMENDED AUG. 1, 1997	RECOMMENDED AUG. 1, 1997	SHT. 6 OF 11
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	CHIEF HIGHWAY ENGINEER	TC-8702B



SIGN POST DIMENSIONS								
WEIGHT * kg/m	DIMENSIONS (MILLIMETERS)							
	A	B	C	D	E	F	G	H
3.71	77.8	43.8	28.8	22.6	32.4	4.9	17.0	5.5
5.94	88.9	46.7	28.9	22.8	33.7	5.5	21.1	5.9

SIGN POST DIMENSIONS								
WEIGHT * kg/m	DIMENSIONS (MILLIMETERS)							
	J	K	L	M	N	P	Q	R
3.71	38.5	3.9	4.0	3.2 R	2.4 R	4.8 R	0.8 R	3.0
5.94	50.1	5.1	5.5	3.2 R	0.5 R	4.8 R	2.4 R	3.5

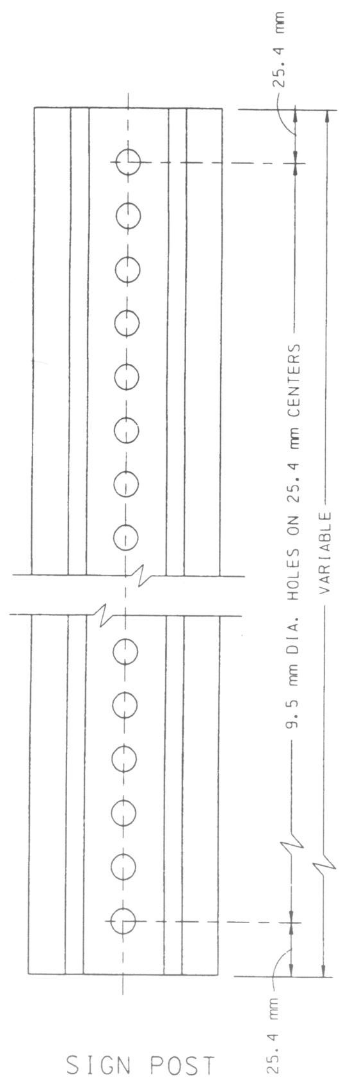
* ±3.5%



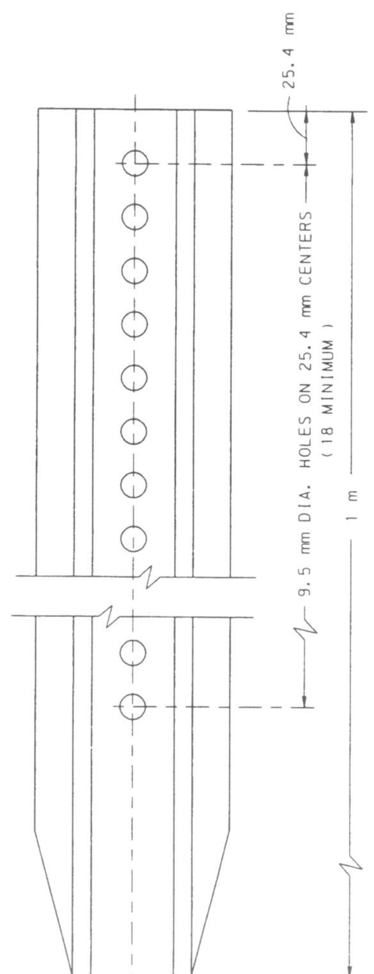
ANCHOR PLATE

NOTES

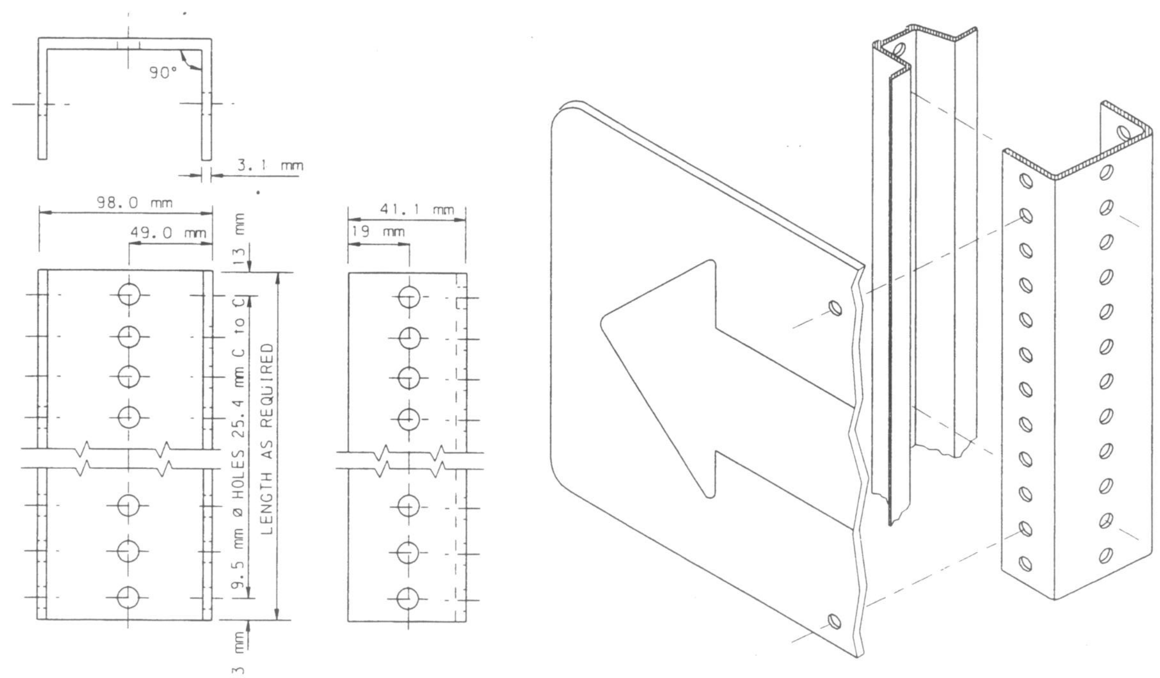
1. MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH PUB. 408M.
2. FORMED-CHANNEL SIGN MOUNTS SHALL BE MILD STEEL.
3. ANCHOR BOLTS SHALL BE 7.94 mm - 18 UNC x 58 mm FULLY THREADED, GRADE 9 HEX HEAD. A FLANGED ANCHOR BOLT MAY BE SUBSTITUTED FOR THE STANDARD ANCHOR BOLT AND FLATWASHER.
4. WASHERS SHALL BE M8 GRADE 9 PLATED.
5. LOCKNUTS SHALL BE 7.94 mm x 18 UNC THREADS, HEX HEADED.
6. ANY OTHER DEPARTMENT APPROVED BREAKAWAY CONNECTION APPROVED FOR THIS KIND OF POST MAY BE SUBSTITUTED FOR THE UNIVERSAL SPACER.



SIGN POST

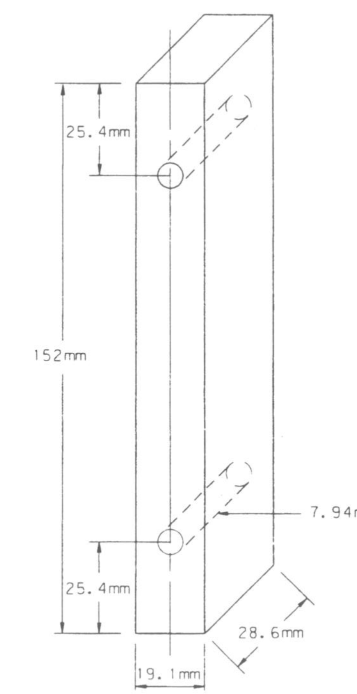


ANCHOR POST

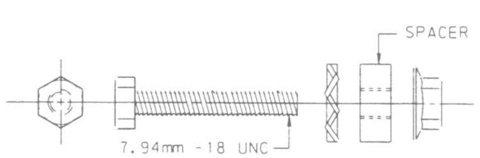


FORMED-CHANNEL SIGN MOUNT

USE WHEN IT IS NECESSARY TO MOUNT SIGNS ON THE SIDE OF A CHANNEL BAR POST IN ADDITION TO THE NORMAL SIGN MOUNTING LOCATION ON THE FLANGED FACE.



UNIVERSAL SPACER



ANCHOR BOLT

SPACER, LOCK NUT AND WASHER

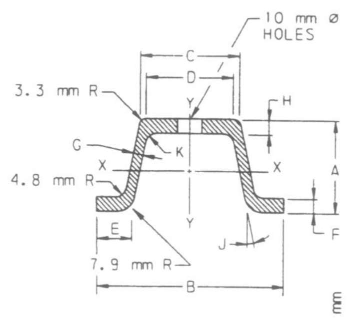
ANCHOR BOLTS TO BE 58mm, GRADE 9, HEX HEAD.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

POST-MOUNTED SIGNS, TYPE B

CHANNEL BAR POSTS (NEW BILLET STEEL) MATERIAL DETAILS

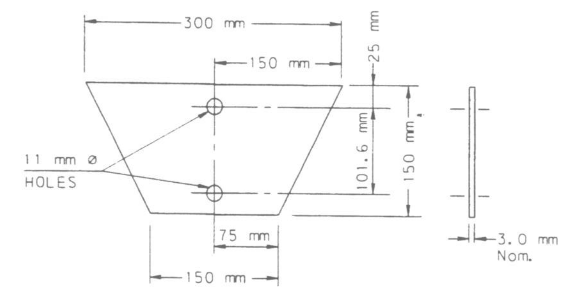
RECOMMENDED AUG. 1, 1997 CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED AUG. 1, 1997 CHIEF HIGHWAY ENGINEER	SHT. 7 OF 11 TC-8702B



WEIGHT * kg/m	DIMENSIONS (MILLIMETERS)									
	A	B	C	D	E	F	G	H	J	K
3.71	39.6	79.5	31.8	26.9	16.0	4.1	3.3	3.8	12.5°	3.3 R
5.94	44.4	88.9	42.4	35.8	18.3	6.4	4.6	5.8	11.5°	4.8 R

STEEL POST DIMENSIONS

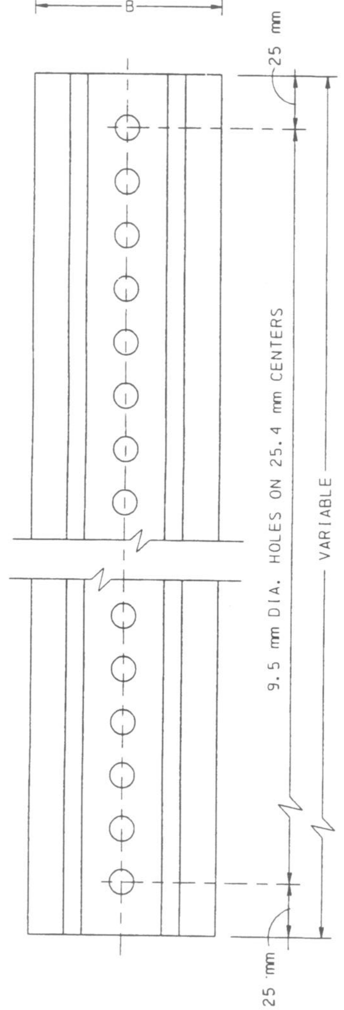
* ±3.5%



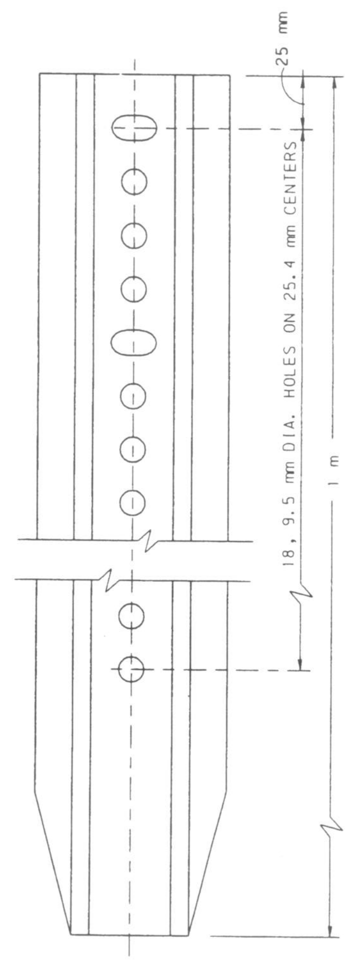
ANCHOR PLATE

NOTES

1. MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH PUB. 408M.
2. FORMED-CHANNEL SIGN MOUNTS SHALL BE MILD STEEL.
3. ANCHOR BOLTS SHALL BE 7.94 mm - 18 UNC x 58 mm FULLY THREADED, GRADE 9 HEX HEAD. A FLANGED ANCHOR BOLT MAY BE SUBSTITUTED FOR THE STANDARD ANCHOR BOLT AND FLATWASHER.
4. WASHERS SHALL BE M8 GRADE 9 PLATED.
5. LOCKNUTS SHALL BE 7.94 mm x 18 UNC THREADS, HEX HEADED.
6. ANY OTHER DEPARTMENT APPROVED BREAKAWAY CONNECTION APPROVED FOR THIS KIND OF POST MAY BE SUBSTITUTED FOR THE UNIVERSAL SPACER.
7. SEE SHEET 7 OF 11 FOR SPACER AND ANCHOR BOLT DETAILS.

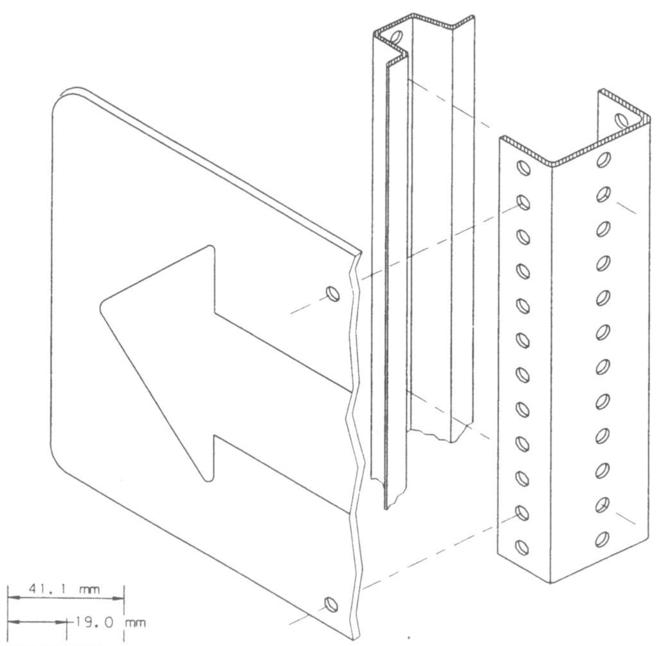


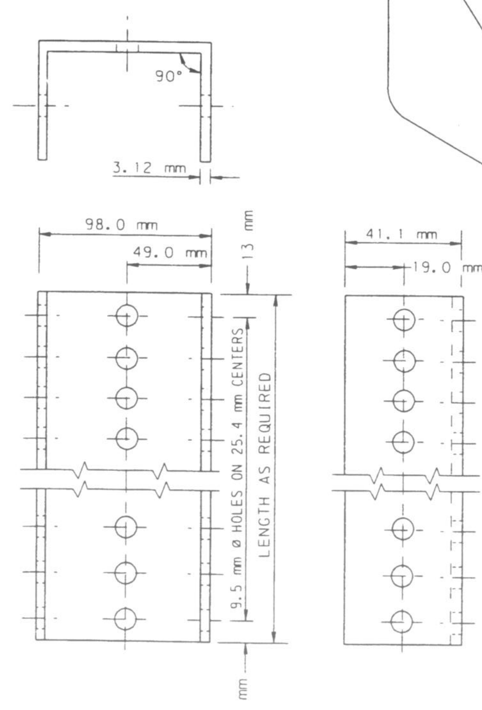
SIGN POST



FIRST AND FIFTH HOLES TO BE ELONGATED SLOTS 9.5 mm x 13 mm.

ANCHOR POST





FORMED-CHANNEL SIGN MOUNT

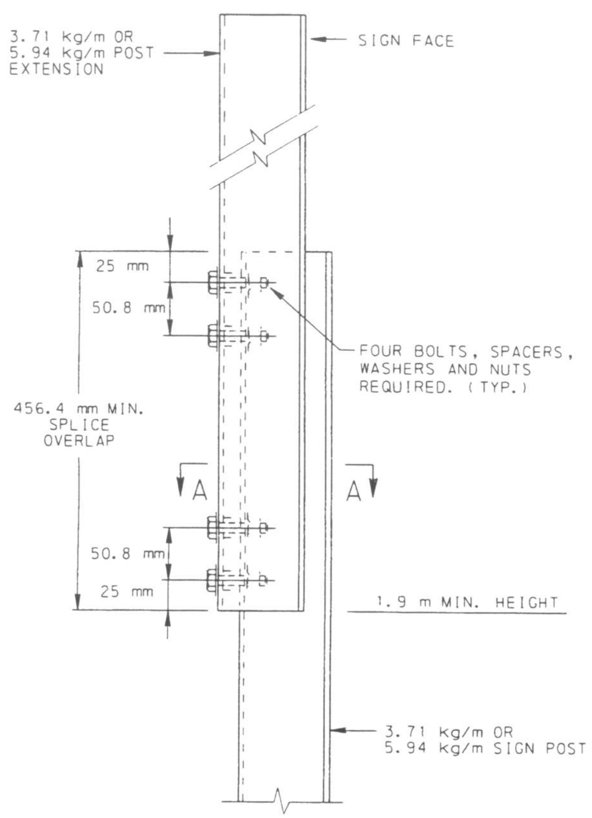
USE WHEN IT IS NECESSARY TO MOUNT SIGNS ON THE SIDE OF A CHANNEL BAR POST IN ADDITION TO THE NORMAL SIGN MOUNTING LOCATION ON THE FLANGED FACE.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

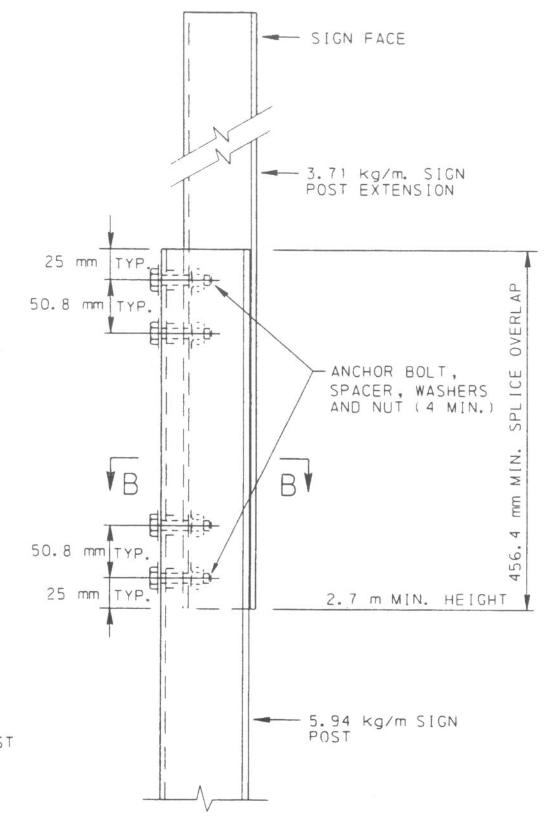
POST-MOUNTED SIGNS, TYPE B

CHANNEL BAR POSTS
(ROLLED STEEL RAILS)
MATERIAL DETAILS

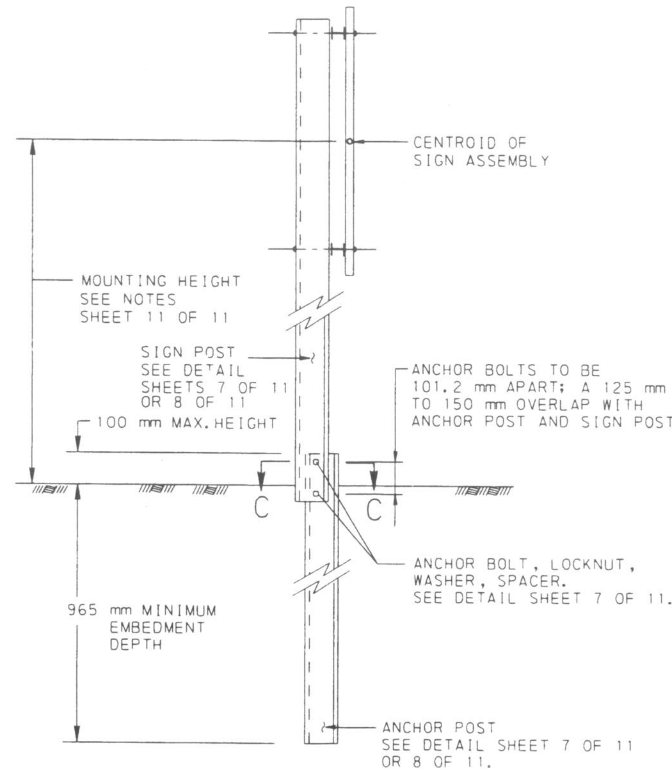
RECOMMENDED APR. 15, 1997	RECOMMENDED APR. 15, 1997	SHT. 8 OF 11
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	CHIEF HIGHWAY ENGINEER	TC-8702B



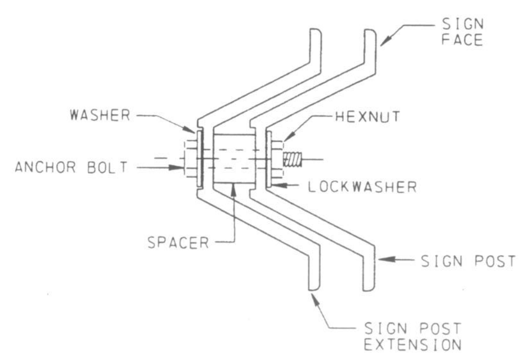
POST EXTENSION
SPLICE DETAIL A
FOR USE IN EXTENDING SIGN POSTS



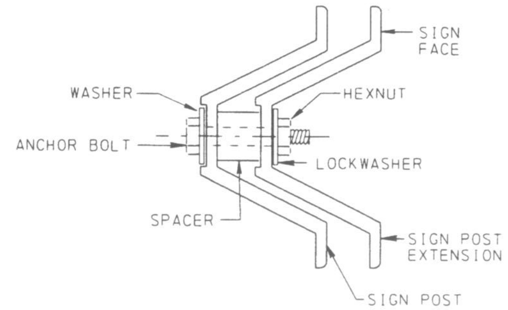
ALTERNATE POST EXTENSION
SPLICE DETAIL B
FOR USE IN EXTENDING SIGN POSTS



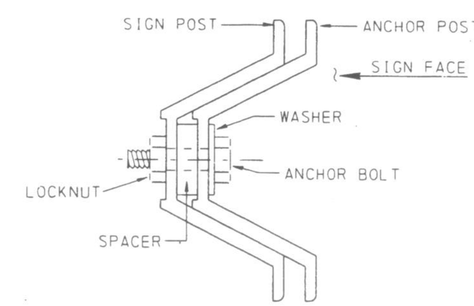
INSTALLATION DETAIL



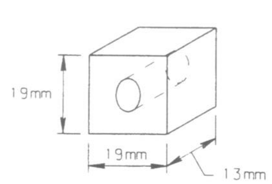
SECTION A-A



SECTION B-B



SECTION C-C



SPACER DETAIL

LAP SPLICE INSTALLATION INSTRUCTIONS

1. DETERMINE THE PROPER SIZE SIGN POST AND ANCHOR POST FROM THE APPROPRIATE GRAPH ON SHEET 10 OF 11. USE 3.71 kg/m ANCHOR POSTS WITH 3.71 kg/m SIGN POSTS AND 5.94 kg/m ANCHOR POSTS WITH 5.94 kg/m SIGN POSTS.
2. REMOVE A SHOVEL OF SOIL AT THE POST LOCATION TO ALLOW FOR FINAL ATTACHMENT OF THE SIGN POST TO THE ANCHOR POST.
3. DRIVE ANCHOR POST WITH A DRIVE CAP TO WITHIN APPROXIMATELY 300 mm ABOVE GROUND LEVEL. PLACE ONE BOLT AND WASHER IN FIFTH HOLE FROM THE END OF THE EXPOSED ANCHOR POST. SECURELY TIGHTEN SPACER ONTO BOLT.
4. DRIVE ANCHOR POST TO 100 mm ABOVE GROUND LEVEL. PLACE REMAINING BOLT AND WASHER IN FIRST HOLE FROM THE END OF POST AND SECURELY TIGHTEN SPACER ONTO BOLT. (BOLTS 101.6 mm APART)
5. NEST TOP SIGN POST OVER PROTRUDING ANCHOR POST BOLTS THROUGH FIRST AND FIFTH HOLES OF TOP SIGN POST. THIS WILL RESULT IN A 125 mm TO 150 mm OVERLAP.
6. PLACE A LOCKNUT ON EACH BOLT. TIGHTEN BOLTS AND NUTS BY TURN-OF-NUT METHOD. BRING NUT TO A SNUG TIGHT CONDITION TO ENSURE THAT ALL PARTS ARE BROUGHT TOGETHER INTO FULL CONTACT WITH EACH OTHER, THEN TIGHTEN AN ADDITIONAL ½ TURN.
7. RESTORE SOIL AROUND THE ANCHOR POST.

INSTALLATION IN SOFT SOIL

1. USE THE ANCHOR PLATE IN AREAS WITH SOFT SOIL. BOLT THE TOP ANCHOR BOLT 25.4 mm BELOW THE BOTTOM ANCHOR POST BOLT, (6 TO 7 HOLES FROM THE END OF THE ANCHOR POST).

POST EXTENSION SPLICE NOTES

1. TO EXTEND THE HEIGHT OF A SIGN POST, A MAXIMUM OF ONE SPLICE MAY BE MADE.
2. FOUR ANCHOR BOLTS WITH SPACERS, WASHERS AND NUTS ARE REQUIRED. SEE SHEET 7 OF 11 FOR ANCHOR BOLT SYSTEM.
3. POST EXTENSION SPLICE DETAIL A IS PREFERRED OVER POST EXTENSION SPLICE DETAIL B.

   WHEN DETAIL A IS USED, 3.71 kg/m POSTS SHALL USE A 3.71 kg/m POST EXTENSION POST FOR SPLICE EXTENSIONS; 5.94 kg/m POSTS SHALL USE A 5.94 kg/m POST EXTENSION POST FOR SPLICE EXTENSIONS.

   WHEN DETAIL A IS USED, POST EXTENSION SPLICES SHALL BE MOUNTED ON THE BACK (NON-IMPACT) SIDE OF THE SIGN POST. SPLICES SHALL BE MADE AT A MINIMUM HEIGHT OF 1.9 m, MEASURED TO THE BOTTOM OF THE SPLICE.
4. POST EXTENSION SPLICE DETAIL B IS PERMITTED FOR USE TO PROVIDE A FLUSH SIGN MOUNT SURFACE FOR 5.94 kg/m POSTS.

   WHEN DETAIL B IS USED, 3.71 kg/m POST EXTENSION SPLICES MAY BE NESTED ON THE FRONT OF A 5.94 kg/m POST. SPLICES SHALL BE MADE AT A MINIMUM HEIGHT OF 2.7 m, MEASURED TO THE BOTTOM OF THE SPLICE.

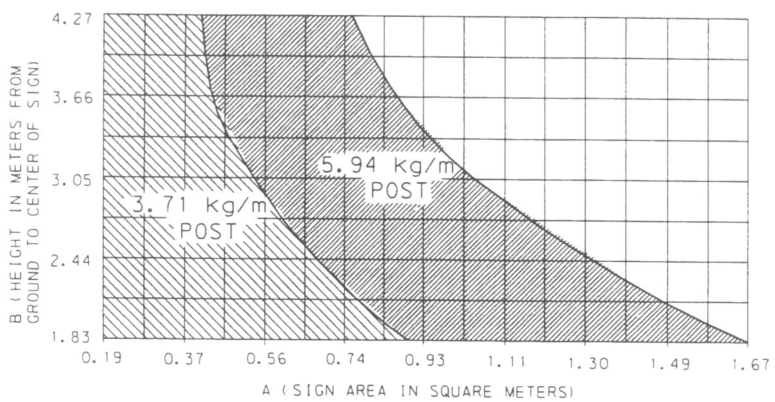
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

POST-MOUNTED SIGNS, TYPE B

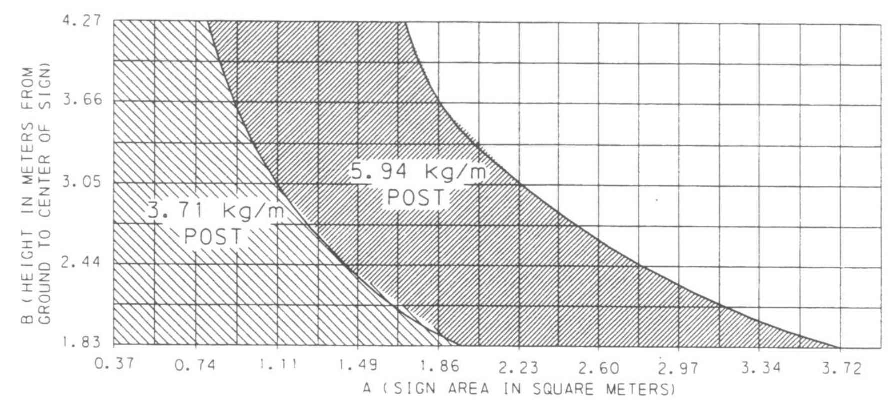
CHANNEL BAR POSTS ERECTION DETAILS

RECOMMENDED AUG. 1, 1997	RECOMMENDED AUG. 1, 1997	SHT. 9 OF 11
ArBrenna CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	Gary L. Hoffman CHIEF HIGHWAY ENGINEER	TC-8702B

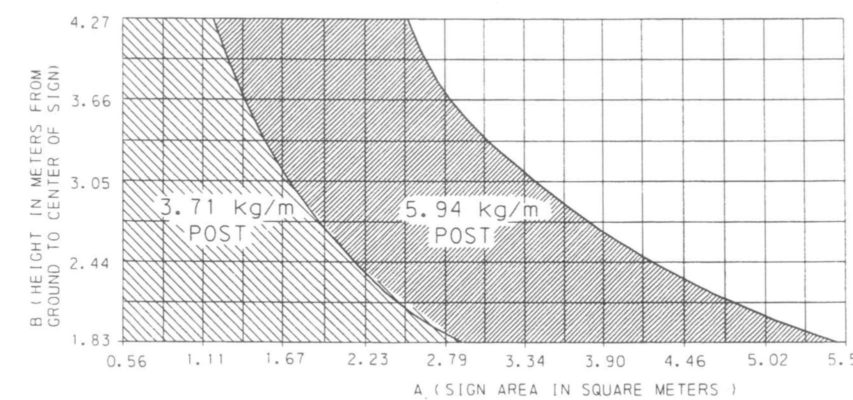
ONE-POST INSTALLATION

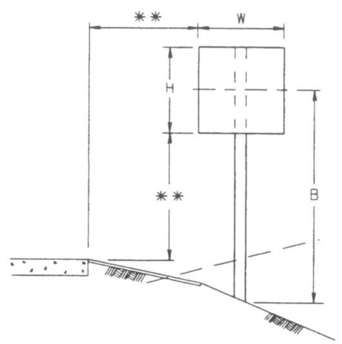


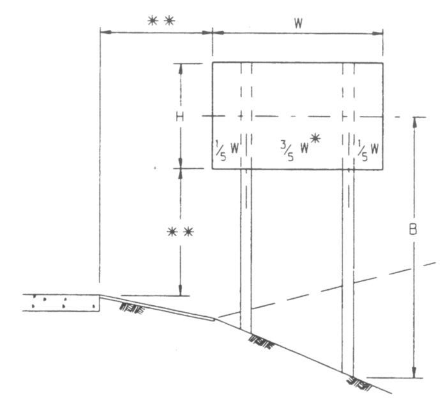
TWO-POST INSTALLATION

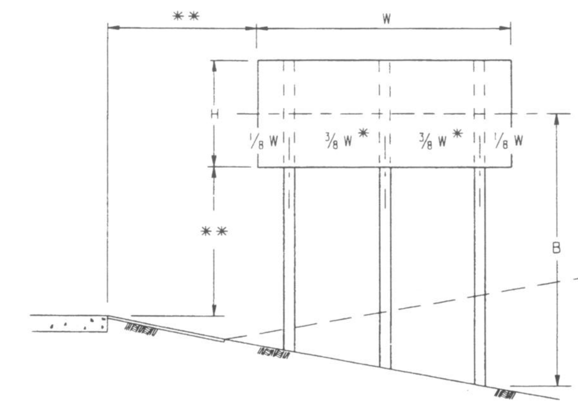


THREE-POST INSTALLATION









* WHEN ERECTING STANDARD WARNING OR REGULATORY SIGNS THAT ARE PREPUNCHED, THIS DISTANCE IS THE DISTANCE BETWEEN THE HORIZONTAL HOLES.

** SEE SHEET 13 OF 13 FOR SIGN LOCATION/INSTALLATION DETAILS.

A = SIGN AREA IN SQUARE METERS (SEE TABLE)
A = W x H FOR SQUARE OR RECTANGULAR SIGNS
WHERE:
W = WIDTH OF SIGN IN METERS
H = HEIGHT OF SIGN IN METERS

SIGN AREA TABLE

SQUARE OR RECTANGULAR SIGNS						IRREGULAR SHAPED SIGNS	
SIZE (mm x mm)	AREA (SQ. m.)	SIZE (mm x mm)	AREA (SQ. m.)	SIZE (mm x mm)	AREA (SQ. m.)	SIGN (mm x mm)	AREA (SQ. m.)
200x1200	0.24	750x375	0.28	1800x300	0.54	YIELD (R1-2) 900 x 900	0.35
300x450	0.14	750x600	0.45	1800x600	1.08	YIELD (R1-2) 1200 x 1200	0.62
300x600	0.18	750x750	0.56	1800x900	1.62	YIELD (R1-2) 1500 x 1500	0.97
300x750	0.22	750x900	0.68	1800x1200	2.16	NO PASSING PENNANT (W14-3) 1200 x 900	0.50
300x900	0.27	750x1200	0.90	1800x1500	2.70	RAILROAD WARNING (W10-1) 900 DIA.	0.64
300x1200	0.36	750x1500	1.12	2400x600	1.44	SCHOOL (S1-1) 750 x 750	0.42
450x375	0.17	900x900	0.81	2400x1200	2.88	SCHOOL (S1-1) 900 x 900	0.61
450x450	0.20	900x1200	1.08	3000x300	0.90	STOP (R1-1) 600 x 600	0.30
450x600	0.27	900x1350	1.22	3000x375	1.12	STOP (R1-1) 750 x 750	0.47
450x900	0.40	1200x1200	1.44	3000x600	1.80	STOP (R1-1) 900 x 900	0.67
450x1200	0.54	1200x1500	1.80	3000x750	2.25	STOP (R1-1) 1200 x 1200	1.19
525x375	0.20	1500x300	0.45	3600x300	1.08	INTERSTATE ROUTE MARKER (M1-1) 600 x 600	0.29
600x600	0.36	1500x600	0.90	3600x450	1.62	INTERSTATE ROUTE MARKER (M1-1) 750 x 600	0.36
600x900	0.54	1500x1050	1.58	3600x600	2.16	INTERSTATE ROUTE MARKER (M1-1) 900 x 900	0.69
600x1200	0.72	1500x1500	2.25	3600x750	2.70	INTERSTATE ROUTE MARKER (M1-1) 1125 x 900	0.80

NOTES

1. 3.71 kg/m AND 5.94 kg/m POSTS MAY HAVE LESS THAN 2.1 m CLEARANCE BETWEEN EACH OTHER WHEN USED IN TWO-POST AND THREE-POST INSTALLATIONS.

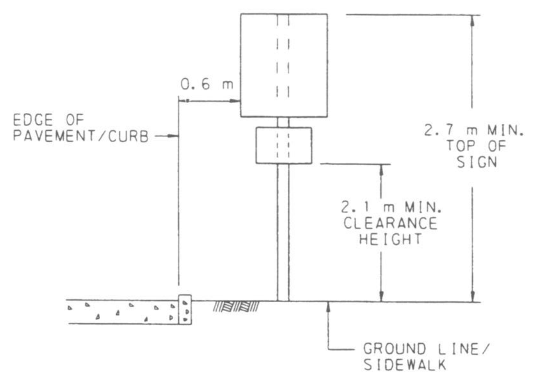
2. TO DETERMINE THE POST SIZE, ENTER THE GRAPH WITH THE VALUES OF A AND B. THE SHADED AREA INDICATES THE APPROPRIATE POST SIZE REQUIRED.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

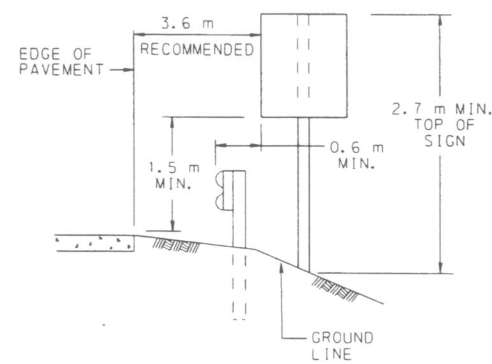
POST-MOUNTED SIGNS, TYPE B

CHANNEL BAR POSTS SELECTION TABLES

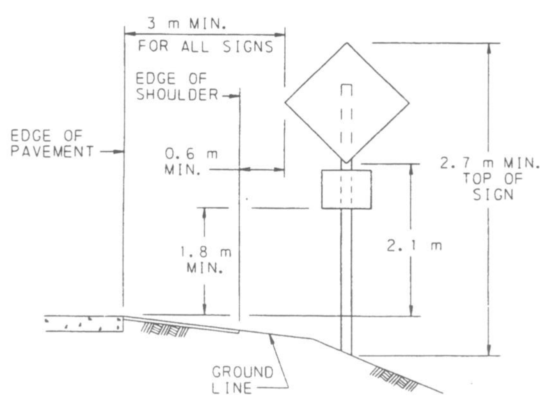
RECOMMENDED AUG. 1, 1997	RECOMMENDED AUG. 1, 1997	SHT. 10 OF 11
Art Brenner CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	Gary L. Hoffman CHIEF HIGHWAY ENGINEER	TC-8702B



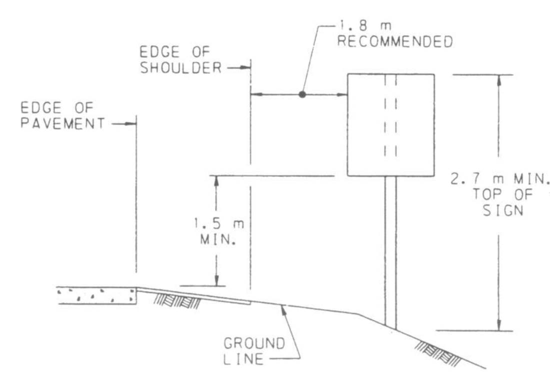
BUSINESS OR RESIDENTIAL AREA



RURAL AREA CONVENTIONAL HIGHWAY
(NO SHOULDER)



FREEWAY / EXPRESSWAYS



RURAL AREA CONVENTIONAL HIGHWAY
(WITH SHOULDER)

NOTES

1. SIGN CLEARANCE HEIGHT. CLEARANCE HEIGHT SHALL BE MEASURED FROM THE BOTTOM OF THE SIGN TO A LEVEL LINE PROJECTED FROM THE NEAR EDGE OF ROADWAY. THIS MAY RESULT IN A SIGN HEIGHT GREATER THAN THE MINIMUM HEIGHT REQUIRED WHEN MEASURED FROM THE GROUND LEVEL TO THE BOTTOM OF THE SIGN. IN BUSINESS AND URBAN AREAS THE CLEARANCE HEIGHT SHALL ALSO BE MEASURED FROM THE BOTTOM OF THE SIGN TO THE GROUND LEVEL OR SIDEWALK AREA TO REDUCE THE POSSIBILITY OF PEDESTRIANS COLLIDING WITH THE SIGN.

2. LATERAL SIGN CLEARANCE. SIGNS SHOULD BE PLACED AS FAR AS PRACTICAL FROM THE EDGE OF THE ROADWAY TO REDUCE THE POSSIBILITY OF VEHICLES HITTING THE SIGNS. WHEN GUIDE RAIL IS PRESENT, SIGNS SHOULD BE PLACED BEHIND THE GUIDERAIL.

3. ROUTE MARKER SIGNS WITH AUXILIARY SIGNS (NORTH, SOUTH, ETC.) SHALL BE CONSIDERED A SINGLE SIGN ASSEMBLY. THE CLEARANCE HEIGHT IS MEASURED FROM THE BOTTOM OF THE LOWEST AUXILIARY SIGN TO A LEVEL LINE PROJECTED FROM THE NEAR EDGE OF ROADWAY.

4. BUSINESS OR URBAN AREAS

   A. IN BUSINESS, COMMERCIAL OR RESIDENTIAL DISTRICTS, OR WHERE PARKING AND/OR PEDESTRIAN MOVEMENTS ARE LIKELY, OR WHERE THE SIGN MAY BLOCK VISIBILITY, THE BOTTOM OF ALL SIGNS (INCLUDING AUXILIARY SIGNS) SHALL BE A MINIMUM OF 2.1 m ABOVE GROUND AND THE NEAR PAVEMENT EDGE.

   B. LATERAL CLEARANCE RECOMMENDED IS 0.6 m BEHIND CURB. IF SIDEWALK WIDTH IS LIMITED, OR WHEN EXISTING UTILITY POLES ARE CLOSE TO THE CURB A 0.3 m CLEARANCE IS PERMISSIBLE.

5. RURAL AREAS

   A. CONVENTIONAL HIGHWAYS. ALTHOUGH 2.1 m MINIMUM SIGN HEIGHT CLEARANCE IS RECOMMENDED, IN RURAL DISTRICTS WHERE THE CONDITIONS LISTED IN NOTE 4A ARE NOT LIKELY, SIGNS MAY BE MOUNTED AT A MINIMUM CLEARANCE HEIGHT OF 1.5 m. IF A SUPPLEMENTAL SIGN IS INSTALLED BELOW THE MAIN SIGN, THE CLEARANCE HEIGHT OF THE SUPPLEMENTAL SIGN MAY BE 1.2 m.

   WHEN GUIDERAIL OR CONCRETE BARRIERS ARE PRESENT A 0.6 m LATERAL CLEARANCE IS RECOMMENDED.

   WHEN SHOULDERS ARE NOT PRESENT IT IS RECOMMENDED THAT SIGNS BE PLACED 3.6 m FROM THE EDGE OF ROADWAY. WHERE SHOULDERS ARE PRESENT A 1.8 m LATERAL CLEARANCE IS RECOMMENDED.

   B. FREEWAY AND EXPRESSWAYS. DIRECTIONAL SIGNS SHALL BE HAVE A MINIMUM CLEARANCE HEIGHT OF 2.1 m. HOWEVER, IF A SUPPLEMENTAL SIGN IS INSTALLED BELOW THE MAIN SIGN, THE SUPPLEMENTAL SIGN MAY HAVE A CLEARANCE HEIGHT OF 1.8 m, PROVIDED THAT A 2.4 m CLEARANCE HEIGHT IS MAINTAINED FOR THE MAIN SIGN.

   ALL ROUTE MARKER, REGULATORY, AND WARNING SIGN ASSEMBLIES SHALL MAINTAIN A 1.8 m CLEARANCE HEIGHT TO THE BOTTOM OF THE SIGN ASSEMBLY (INCLUDING AUXILIARY SIGNS).

   A 0.6 m MINIMUM LATERAL CLEARANCE IS REQUIRED BEHIND UNMOUNTABLE CURB OR ROADWAY SHOULDER.

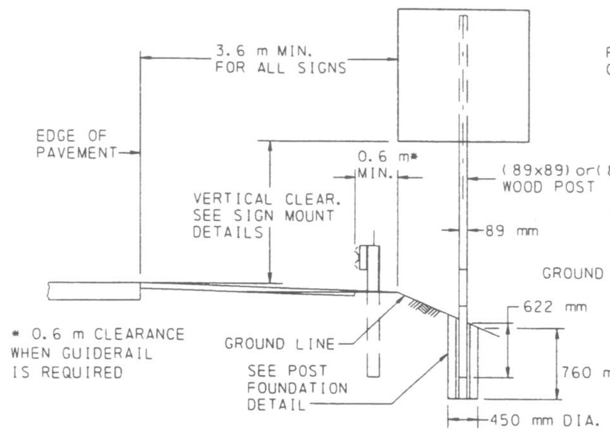
   A 3.0 m MINIMUM LATERAL CLEARANCE FROM THE EDGE OF THE NEAREST TRAVEL LANE IS RECOMMENDED.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

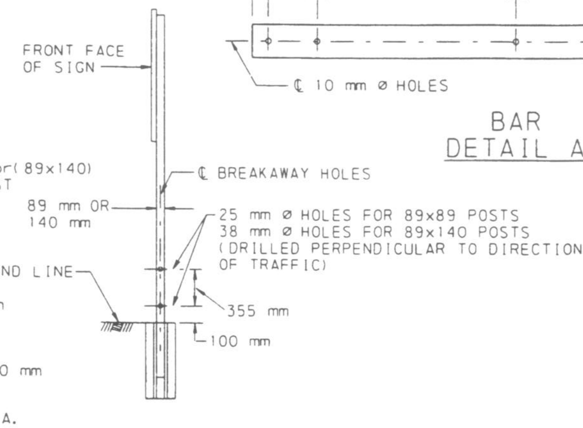
POST-MOUNTED SIGNS, TYPE B

SIGN LOCATION / INSTALLATION DETAILS

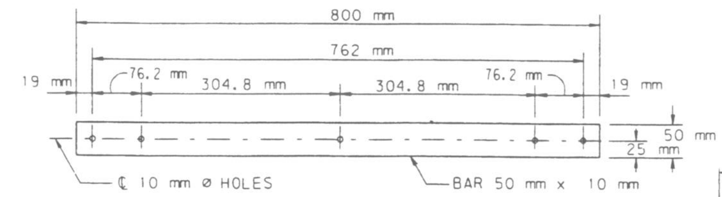
RECOMMENDED AUG. 1, 1997 P.H. Brennan CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED AUG. 1, 1997 Gary L. Hoffman CHIEF HIGHWAY ENGINEER	SHT. 11 OF 11 TC-8702B



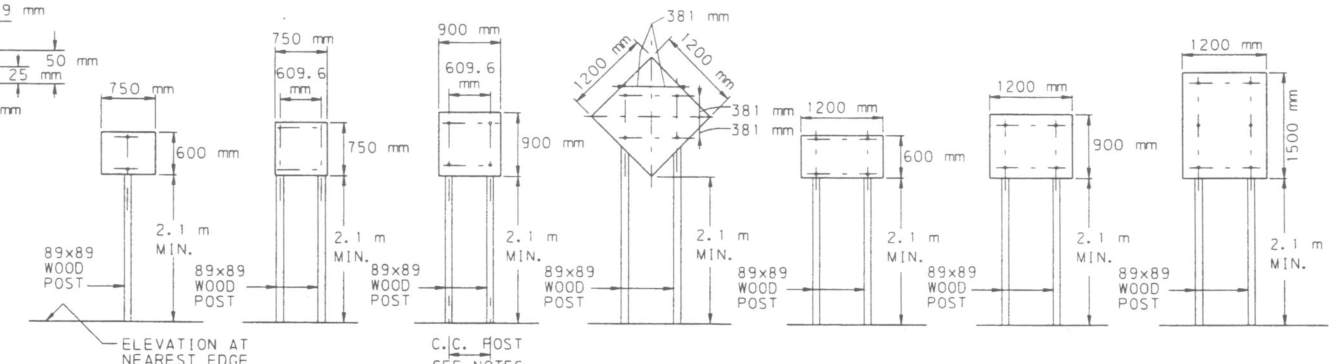
ELEVATION VIEW



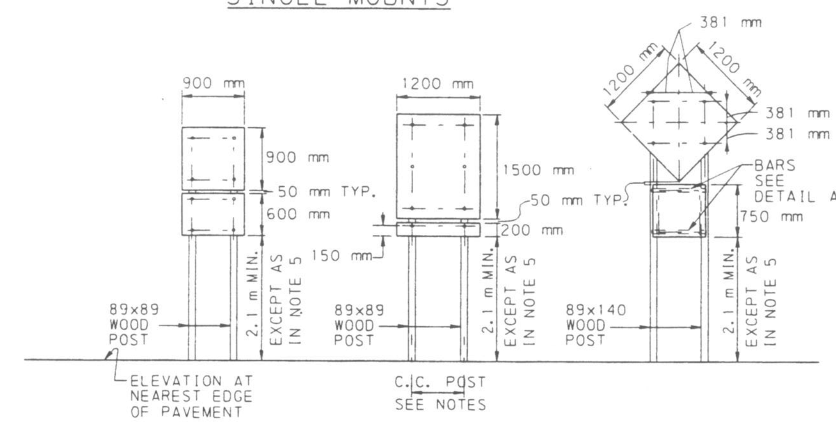
END VIEW



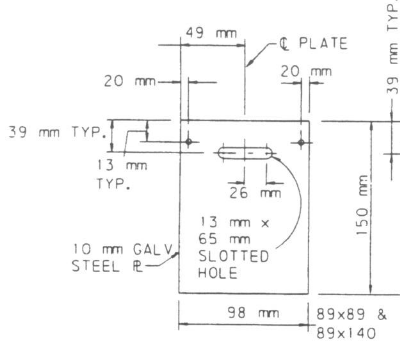
BAR DETAIL A



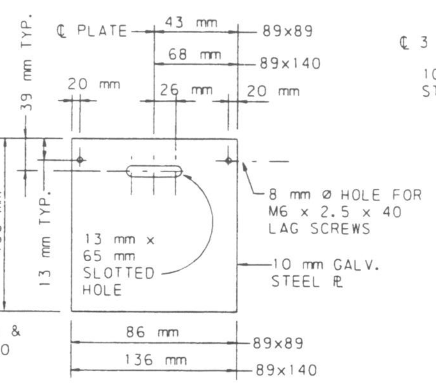
SINGLE MOUNTS



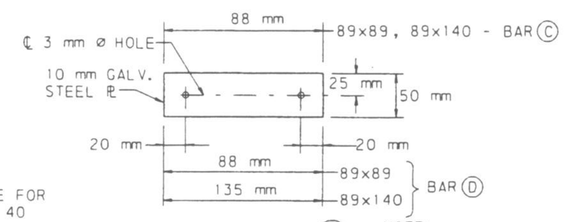
MULTIPLE MOUNTS



SHIM PLATE (A)

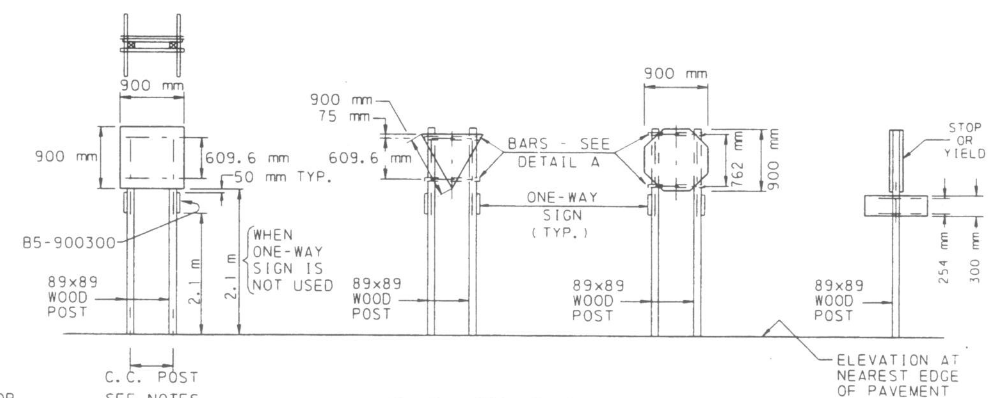


SHIM PLATE (B)

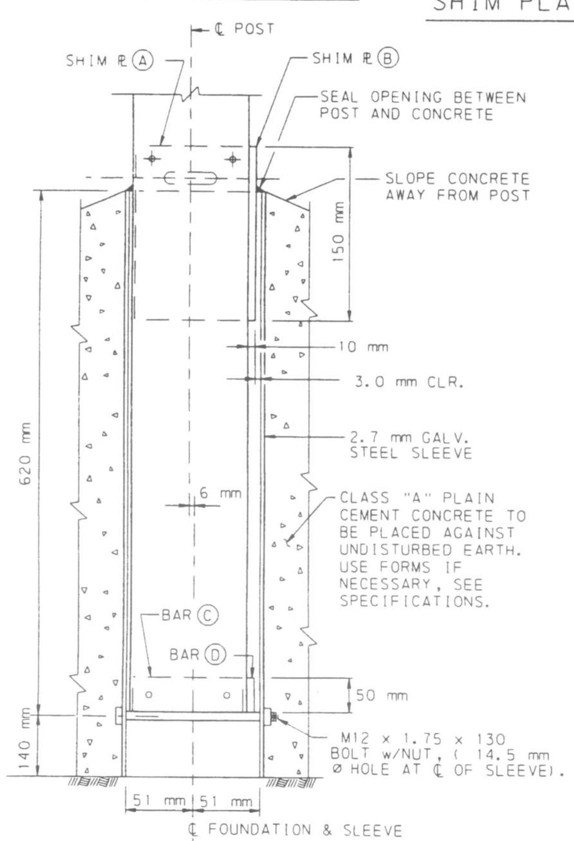


SHIM BAR (C)
SHIM BAR (D)

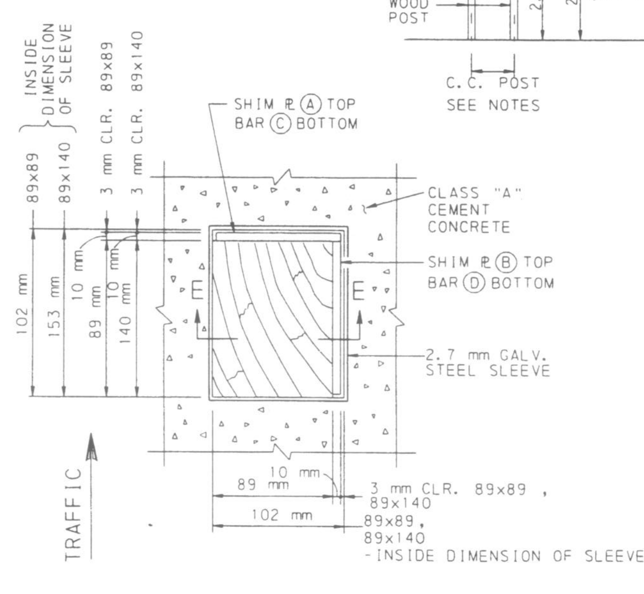
NOTE:
NAIL SHIM BARS TO POST TO HOLD BARS IN PLACE WHILE POST IS BEING PLACED.



BACK-TO-BACK MOUNTS



SECTION E-E (SHOWN)



FOUNDATION DETAIL

NOTES:

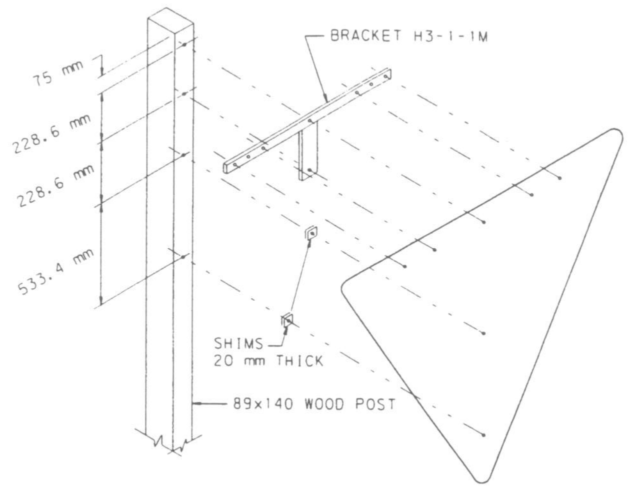
1. MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF TRANSPORTATION PUBLICATION 408M, UNLESS NOTED OTHERWISE.
2. DETERMINE THE CENTER TO CENTER POST DIMENSIONS ON TWO-POST INSTALLATIONS BY THE BOLT HOLE SPACING ON THE SIGN BLANKS.
3. FOR DETAILS OF BOLTS AND SIZE REQUIRED, SEE SHEET 2 OF 2.
4. GALVANIZE ALL STEEL SLEEVES IN ACCORDANCE WITH ASTM A123.
5. IF A SUPPLEMENTAL SIGN IS INSTALLED BELOW THE MAIN SIGN, THE BOTTOM OF THE SIGN ASSEMBLY MAY BE 1.8 m ABOVE THE NEAR EDGE OF THE PAVEMENT. HOWEVER, IN BUSINESS, COMMERCIAL & RESIDENTIAL DISTRICTS WHERE PARKING AND/OR PEDESTRIAN MOVEMENTS ARE LIKELY OR WHERE THE SIGN MAY BLOCK VISIBILITY, THE BOTTOM OF ALL SIGNS SHALL BE A MINIMUM OF 2.1 m ABOVE GROUND.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

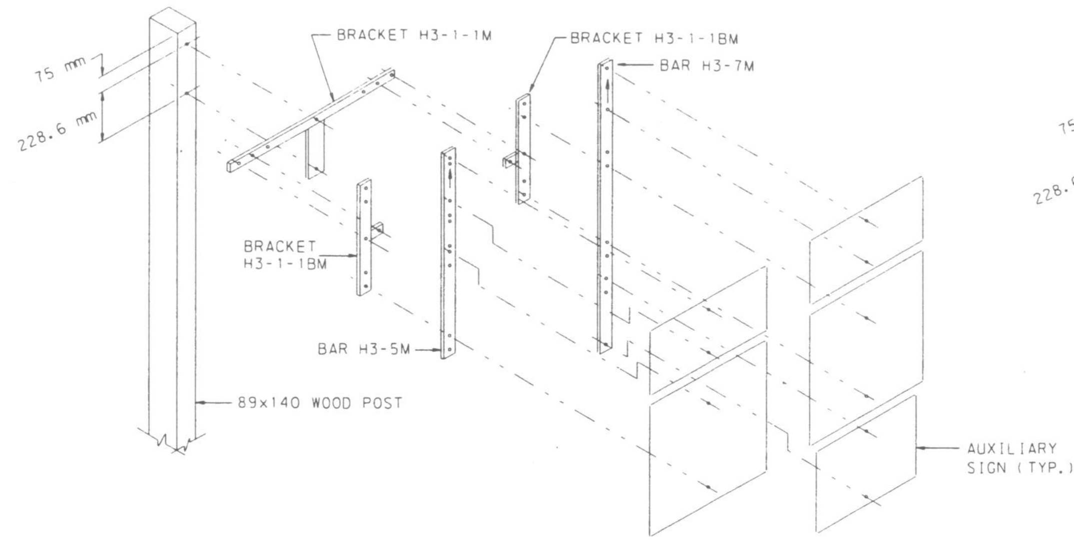
POST-MOUNTED SIGNS, TYPE C

ERECTION DETAILS

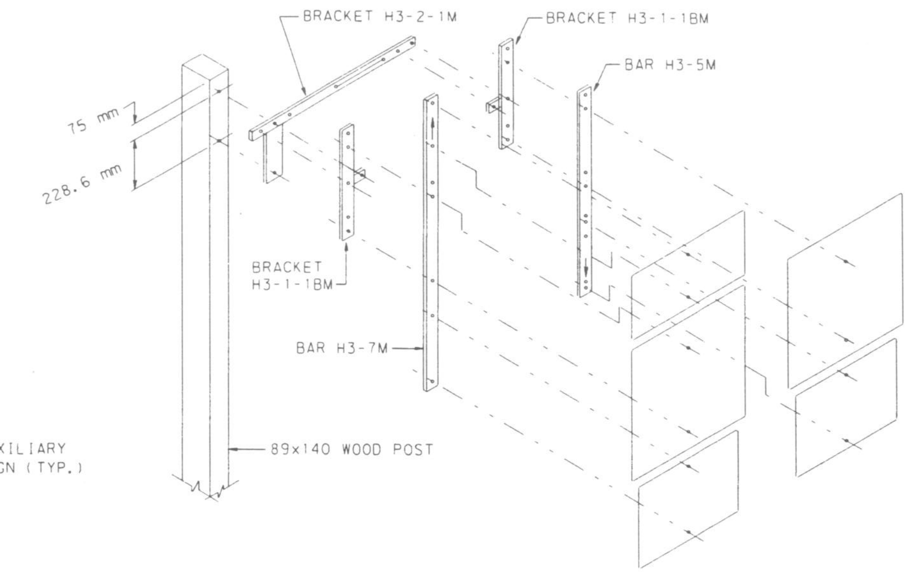
RECOMMENDED AUG. 1, 1997 [signature] CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED AUG. 1, 1997 Gary L. Hoffman CHIEF HIGHWAY ENGINEER	SHT. 1 OF 2 TC-8702C



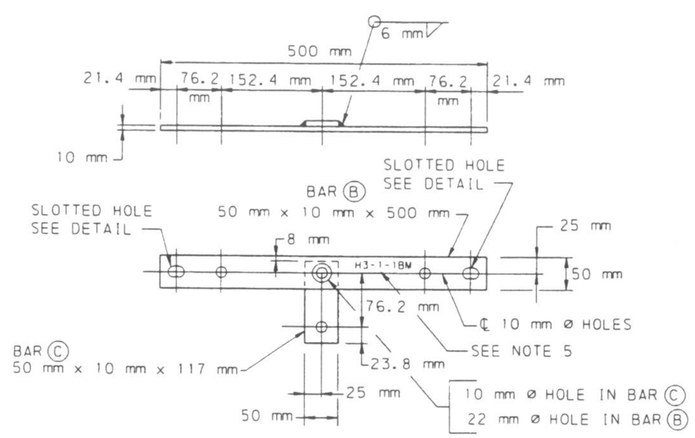
TYPICAL YIELD SIGN ASSEMBLY



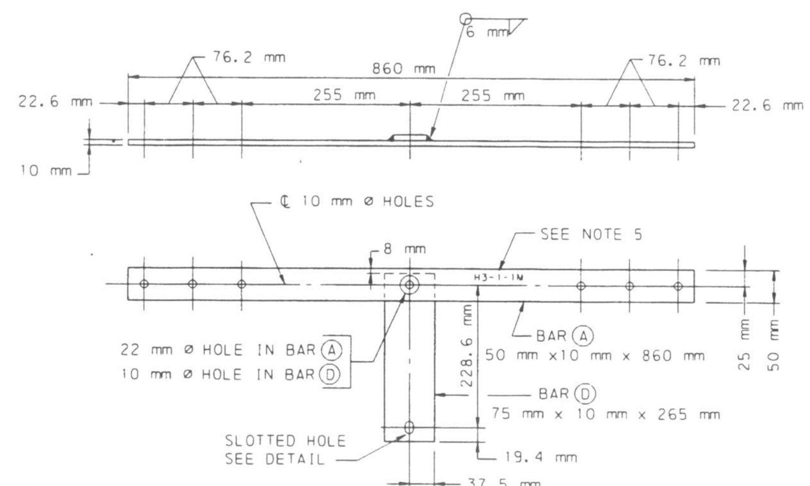
ROUTE MARKER BRACKET ASSEMBLY
TYPE I



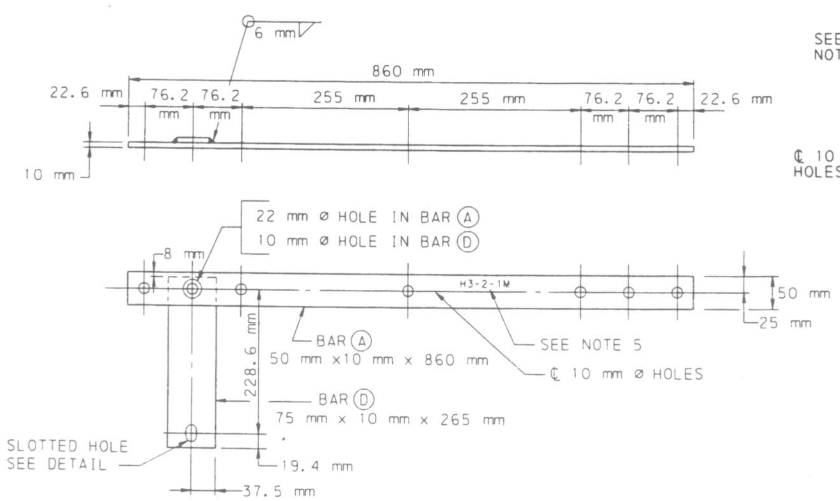
ROUTE MARKER BRACKET ASSEMBLY
TYPE II



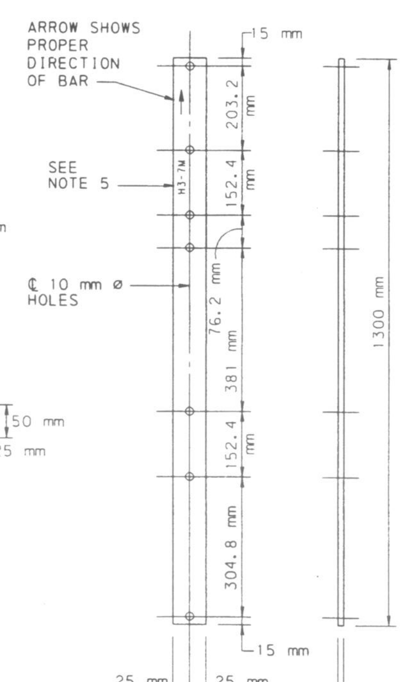
BRACKET H3-1-1BM



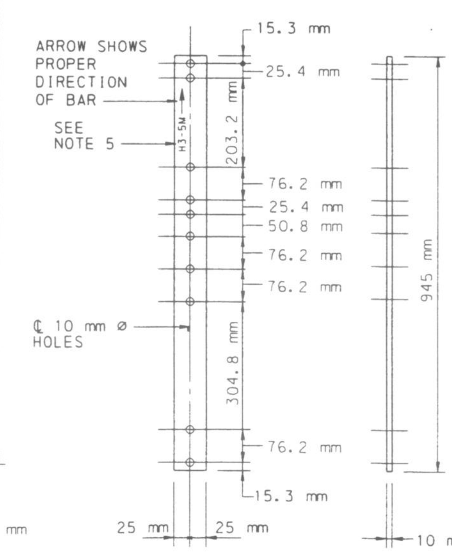
BRACKET H3-1-1M



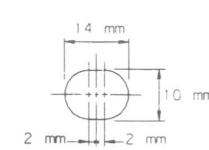
BRACKET H3-2-1M



BAR H3-7M



BAR H3-5M



SLOTTED HOLE

BOLT TABLE	
LENGTH	DESCRIPTION
25 mm	SIGN + BRACKET
40 mm	SIGN + BRACKET + BRACKET
40 mm	BRACKET + BRACKET
200 mm	SIGN + BRACKET(S) + 89x140 POST
200 mm	BRACKET(S) + 89x140 POST
170 mm	SIGN + 89x140 POST
120 mm	SIGN + 89x89 POST

BOLTS ARE ALUMINUM, M8 x 1.0 WITH FLAT WASHERS, LOCK WASHERS AND NUT. LENGTH AS SHOWN IN THE BOLT TABLE.

NOTES:

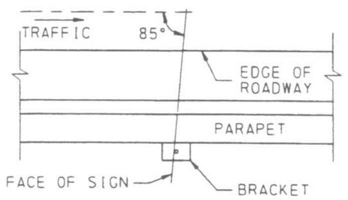
1. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF TRANSPORTATION PUBLICATION 408M, UNLESS NOTED OTHERWISE.
2. A M8 x 75 mm ALUMINUM LAG SCREW MAY BE USED IN LIEU OF AN ALUMINUM BOLT THROUGH THE POST AS ILLUSTRATED.
3. USE A FLAT ALUMINUM OR NYLON WASHER ON THE FACE OF ALL SIGNS.
4. DRILL BREAKAWAY HOLES IN POSTS AND ERECT AS SHOWN ON SHEET 1 OF 2.
5. STAMP BRACKET/BAR NUMBER IN 10 mm HIGH LETTERS AND NUMBERS IN POSITIONS AS SHOWN.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

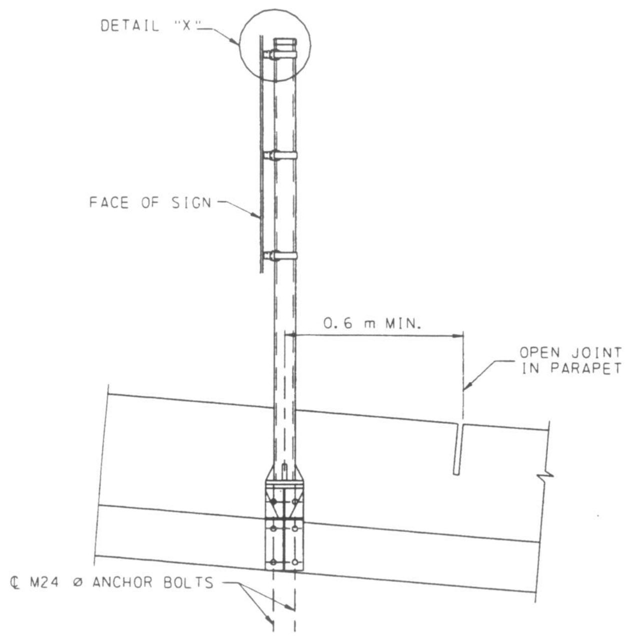
POST-MOUNTED SIGNS, TYPE C

ERECTION DETAILS

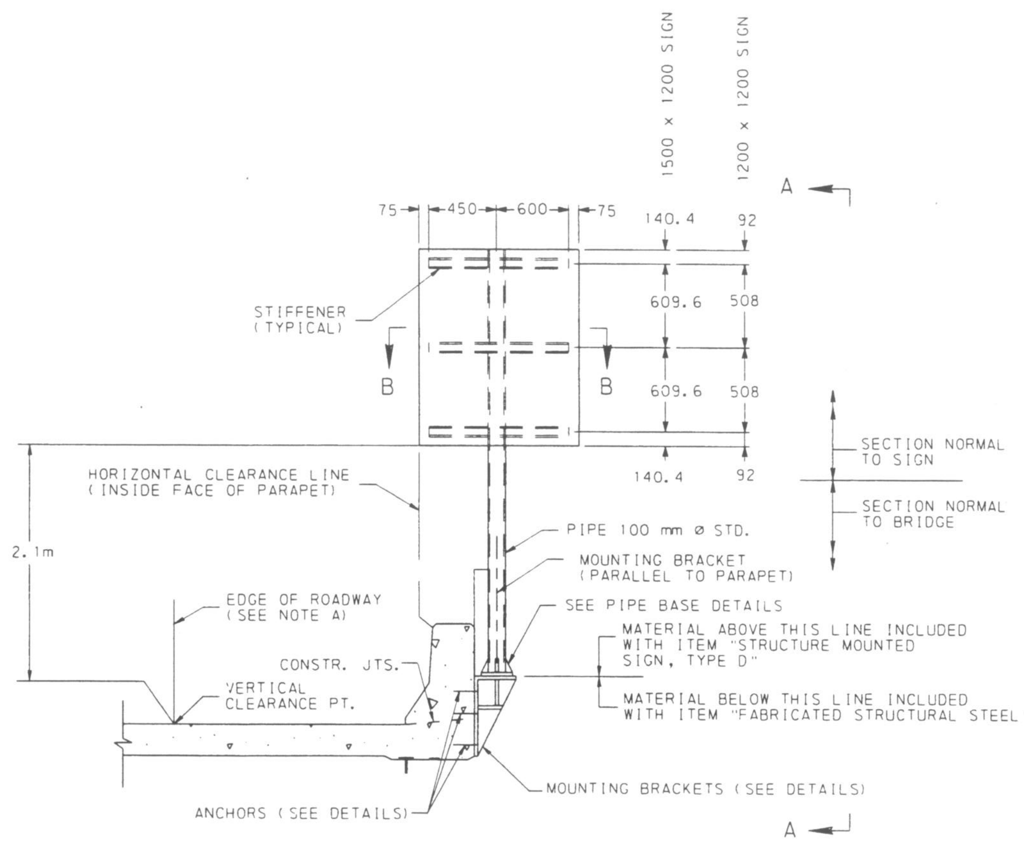
RECOMMENDED AUG. 1, 1997	RECOMMENDED AUG. 1, 1997	SHT. 2 OF 2
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	Gary L. Hoffman CHIEF HIGHWAY ENGINEER	TC-8702C



PLAN VIEW



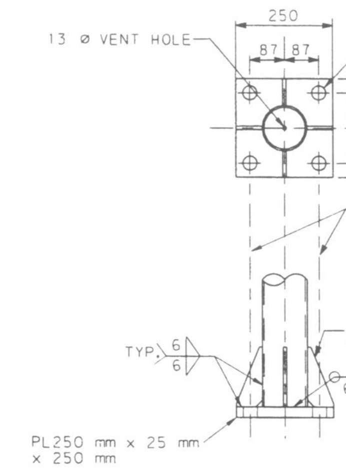
VIEW A-A



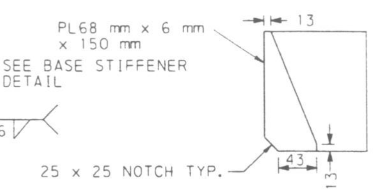
SECTION THRU BRIDGE
SINGLE RECTANGULAR SIGN

NOTE A

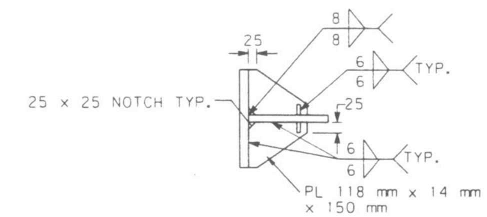
EDGE OF ROADWAY ON BRIDGE IS THE PROJECTION OF THE EDGE OF ROADWAY ON ADJACENT FILL SECTION OR AS INDICATED BY THE EDGE MARKINGS.



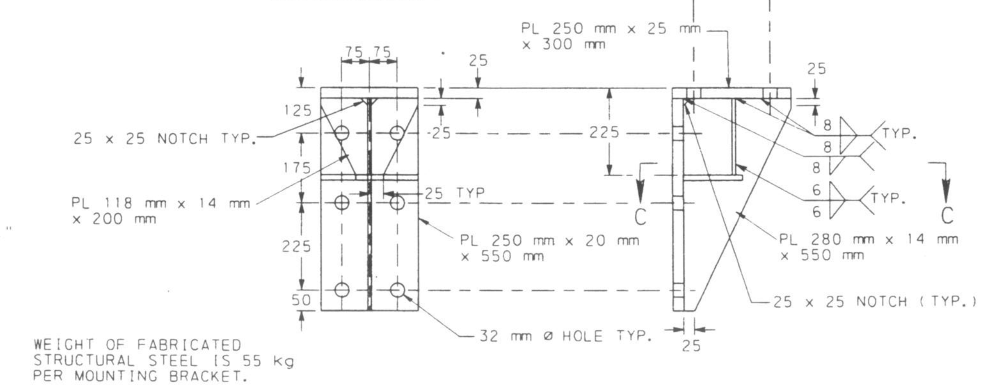
BASE DETAIL



BASE STIFFENER DETAIL

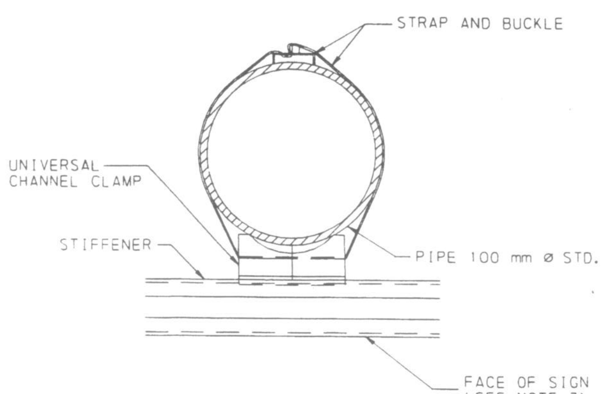


SECTION C-C

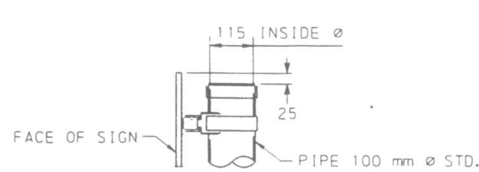


MOUNTING BRACKET DETAILS

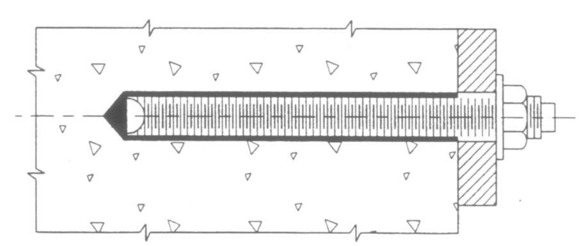
1. WORKSMANSHIP SHALL BE IN ACCORDANCE WITH PUBLICATION 408M.
2. ALL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH PUBLICATION 408M.
3. THE STIFFENERS AND STIFFENER HARDWARE SHALL CONFORM TO SECTION 1103.03(d) AND TO STANDARD DRAWING 8701S. THE RIVETS USED TO FASTEN THE FLAT SHEET ALUMINUM TO THE STIFFENER SHALL CONFORM TO SECTION 1103.11(g), AND SHALL BE SPACED AS INDICATED IN SECTION 1103.03(e).
4. ALL STRUCTURAL STEEL TO BE A36M, ALL BOLTS TO BE A325 TYPE I UNLESS NOTED.
5. FOR DESIGN OF SIGN PANELS, ATTACHMENT HRADWARE, SEE TRAFFIC STANDARD.
6. ALL WELDS TO CONFORM TO LATEST A.W.S. SPECIFICATIONS.
7. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.



SECTION B-B



DETAIL "X"



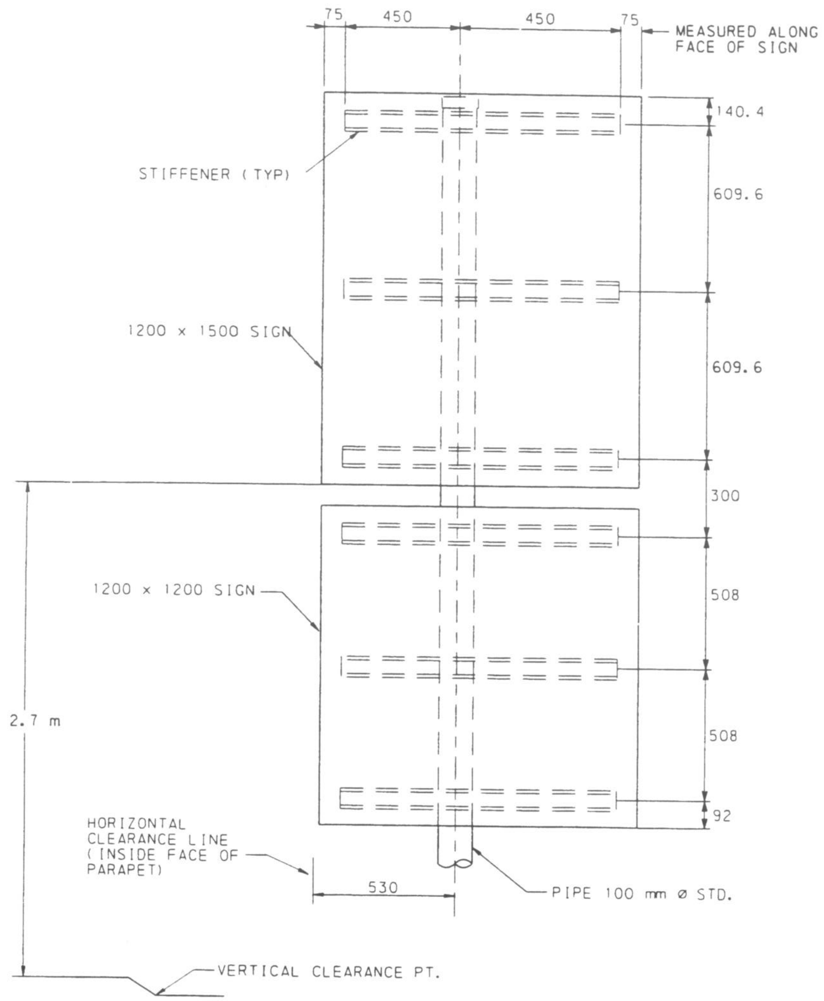
ANCHOR ROD ASSEMBLY WITH NUT AND WASHER

ADHESIVE ANCHOR DETAIL
(HILTI OR EQUAL)

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

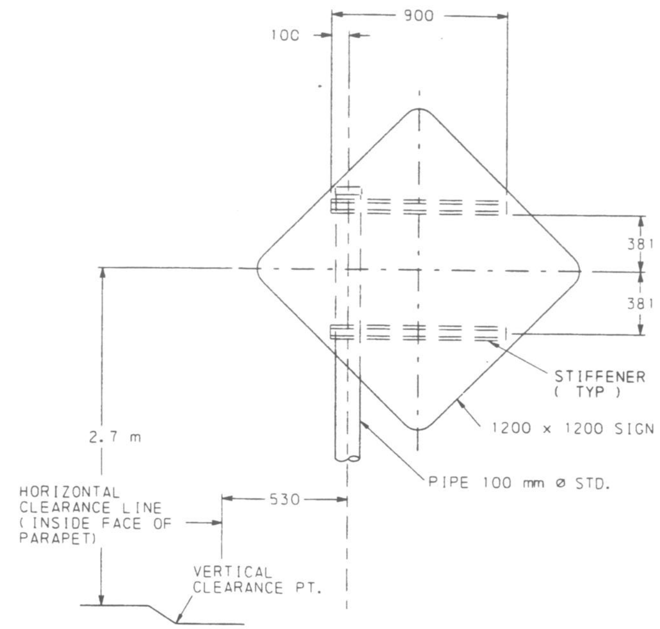
ERECTION DETAILS
POST MOUNTED SIGNS, TYPE D
(STRUCTURE CONNECTIONS)

RECOMMENDED AUG. 1, 1997	RECOMMENDED AUG. 1, 1997	SHT. 1 OF 2
A. H. Brenner CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	Gary L. Hoffman CHIEF HIGHWAY ENGINEER	TC8702D



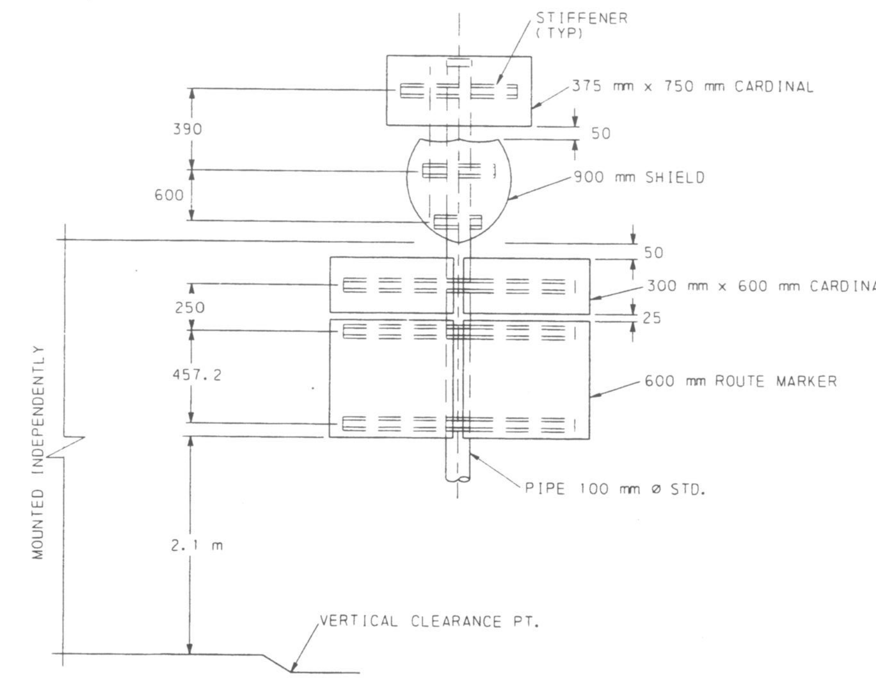
DOUBLE RECTANGULAR SIGN

(PARTS NOT SHOWN ARE SIMILAR TO SINGLE RECTANGULAR SIGN)



DIAMOND SIGN

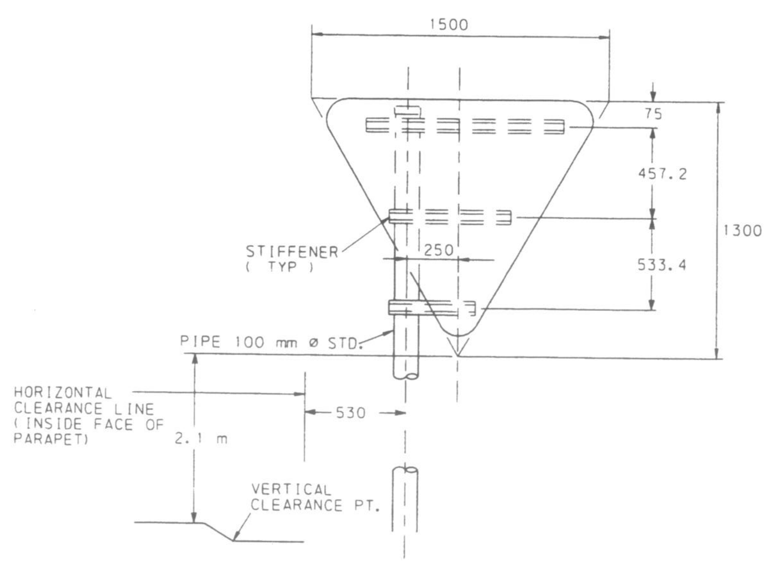
(PARTS NOT SHOWN ARE SAME AS SINGLE RECTANGULAR SIGN)



DOUBLE ROUTE MARKER WITH 900 mm SHIELD

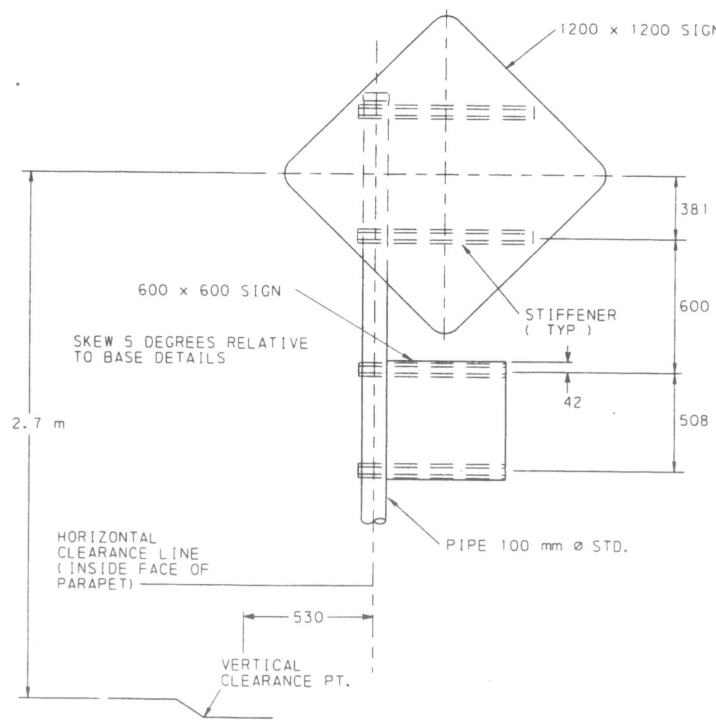
(PARTS NOT SHOWN ARE SIMILAR TO SINGLE RECTANGULAR SIGN)

* ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.



TRIANGULAR SIGN

(PARTS NOT SHOWN ARE SIMILAR TO SINGLE RECTANGULAR SIGN)



DIAMOND SIGN WITH RECTANGULAR SIGN

(PARTS NOT SHOWN ARE SIMILAR TO DIAMOND SIGN AND RECTANGULAR SIGN)

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

ERECTION DETAILS
POST MOUNTED SIGNS, TYPE D
(STRUCTURE CONNECTIONS)

RECOMMENDED AUG. 1, 1997	RECOMMENDED AUG. 1, 1997	SHT. 2 OF 2
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	CHIEF HIGHWAY ENGINEER	TC8702D

2 POST ASSEMBLIES									
L (m)	H (m)	T (m)							
		0.610	0.915	1.220	1.525	1.830	2.135	2.440	2.745
1.8	1.8	89x140	89x140	89x140	89x140	89x140	-	-	-
	2.4	89x140	89x140	89x140	-	-	-	-	
	3.0	89x140	89x140	-	-	-	-	-	
	3.6	-	-	-	-	-	-	-	
2.4	1.8	89x140	89x140	89x140	-	-	-	-	
	2.4	89x140	89x140	-	-	-			
	3.0	89x140	-	-	-	-			
	3.6	-	-	-	-	-			
3.0	1.8	89x140	89x140	89x140	-	-			
	2.4	89x140	-	-	-	-			
	3.0	-	-	-	-	-			
	3.6	-	-	-	-	-			
	4.2	-	-	-	-	-			
	4.8	-	-	-	-	-			
3.6	1.8	89x140	89x140	-	-	-			
	2.4	89x140	-	-	-	-			
	3.0	-	-	-	-	-			
	3.6	-	-	-	-	-			
	4.2	-	-	-	-	-			
	4.8	-	-	-	-	-			
4.2	1.8	89x140	89x140	140x140	140x140	140x184			
	2.4	89x140	140x140	140x140	140x184	140x184			
	3.0	140x140	140x140	140x184	140x184	140x184			
	3.6	140x140	140x184	140x184	-	-			
	4.2	140x184	140x184	140x184	-	-			
	4.8	140x184	140x184	140x184	-	-			
4.8	1.8	89x140	140x140	140x140	140x184	140x184			
	2.4	140x140	140x140	140x184	140x184	140x184			
	3.0	140x140	140x184	140x184	140x184	-			
	3.6	140x140	140x184	140x184					
	4.2	140x184	140x184	140x184					
	4.8	140x184	140x184	-					
5.4	1.8	89x140	140x140	140x140					
	2.4	140x140	140x140	140x184					
	3.0	140x140	140x184	140x184					
	3.6	140x184	140x184	140x184					
	4.2	140x184	140x184	-					
	4.8	140x184	140x184	-					
6.0	1.8	89x140	140x140	140x140					
	2.4	140x140	140x140	140x184					
	3.0	140x140	140x184	140x184					
	3.6	140x184	140x184	140x184					
	4.2	140x184	140x184	-					

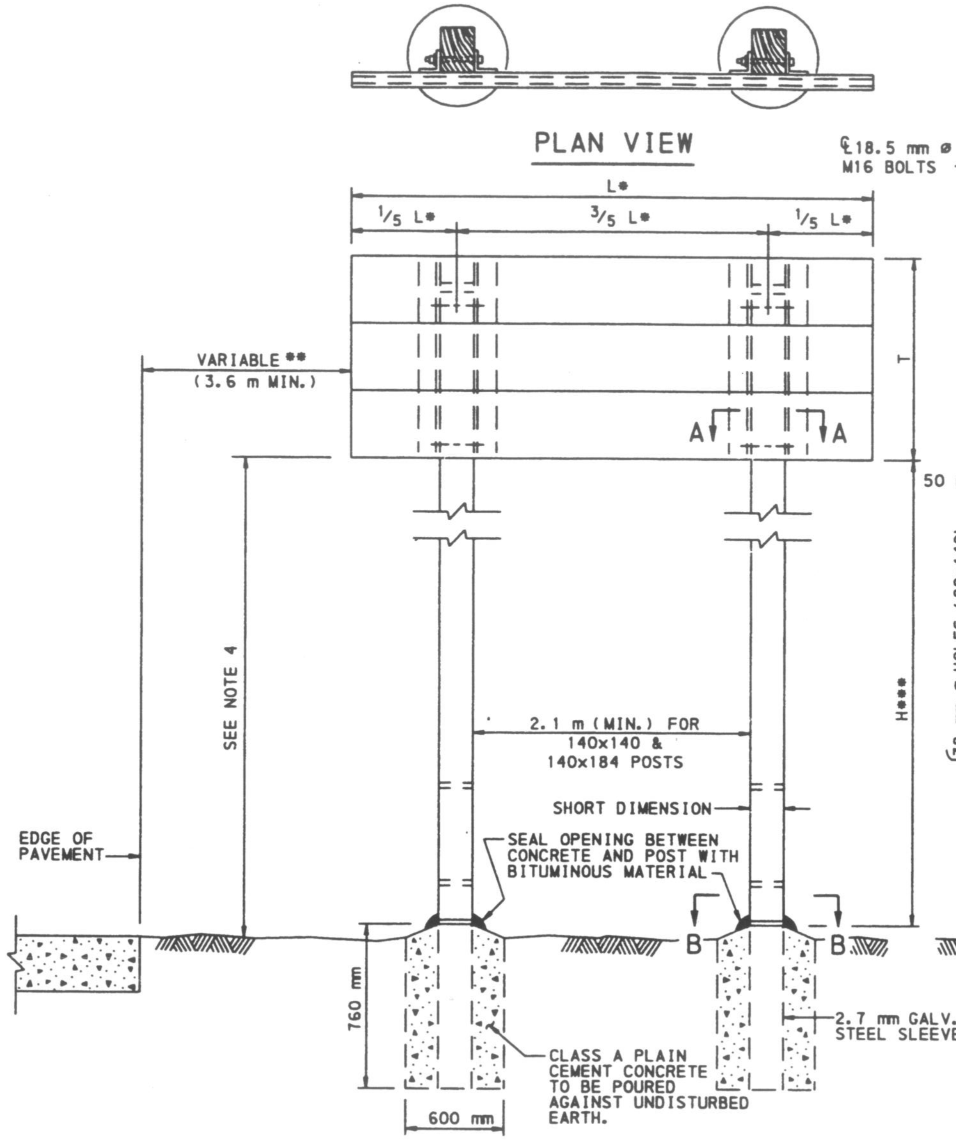
3 POST ASSEMBLIES								
L (m)	H (m)	T (m)						
		0.610	0.915	1.220	1.525	1.830	2.135	2.440
6.6	1.8	89x140	89x140	140x140	140x140	140x184	140x184	140x184
	2.4	89x140	140x140	140x140	140x184	140x184	140x184	-
	3.0	140x140	140x140	140x184	140x184	140x184	-	-
	3.6	140x140	140x184	140x184	140x184	-	-	-
	4.2	140x184	140x184	140x184	140x184	-	-	-
	4.8	140x184	140x184	140x184	-	-	-	-
	5.4	140x184	140x184	-	-	-	-	-
7.2	1.8	89x140	140x140	140x140	140x184	140x184	140x184	140x184
	2.4	140x140	140x140	140x184	140x184	140x184	-	-
	3.0	140x140	140x184	140x184	140x184	-	-	-
	3.6	140x140	140x184	140x184	140x184	-	-	-
	4.2	140x184	140x184	140x184	-	-	-	-
	4.8	140x184	140x184	140x184	-	-	-	-
	5.4	140x184	140x184	-	-	-	-	-
7.8	1.8	89x140	140x140	140x140	140x184	140x184		
	2.4	140x140	140x140	140x184	140x184	140x184		
	3.0	140x140	140x184	140x184	140x184	-		
	3.6	140x140	140x184	140x184	140x184	-		
	4.2	140x184	140x184	140x184	-	-		
	4.8	140x184	140x184	-	-	-		
8.4	1.8	89x140	140x140	140x140	140x184	140x184		
	2.4	140x140	140x140	140x184	140x184	140x184		
	3.0	140x140	140x184	140x184	140x184	-		
	3.6	140x184	140x184	140x184	140x184	-		
	4.2	140x184	140x184	140x184	-	-		
	4.8	140x184	140x184	-	-	-		
9.0	1.8	89x140	140x140	140x140	140x184	140x184		
	2.4	140x140	140x140	140x140	140x184	-		
	3.0	140x140	140x184	140x184	-	-		
	3.6	140x184	140x184	140x184	-	-		
	4.2	140x184	140x184	-	-	-		

PROCEDURE

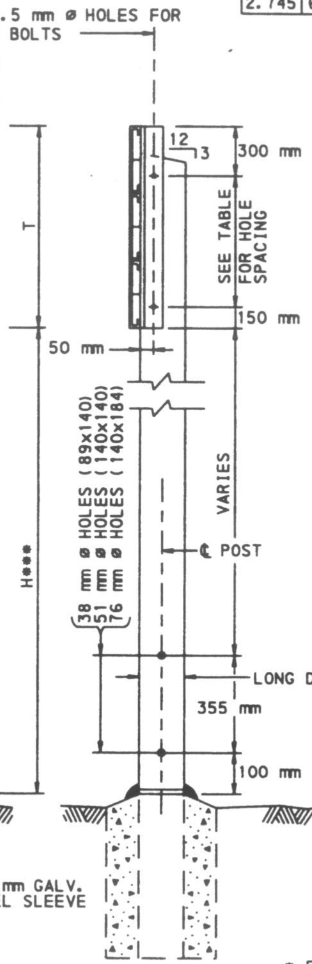
ENTER TABLES WITH MAXIMUM VALUE OF "H" FOR INSTALLATION CONSIDERED AND SELECT POST SELETION FOR SIGN SIZES BETWEEN THOSE GIVEN IN TABLES USE THE NEXT HIGHEST METER.

EXAMPLE: L=4.0 m, T=1.75 m
USE: L=4.2 m, T=1.830 m

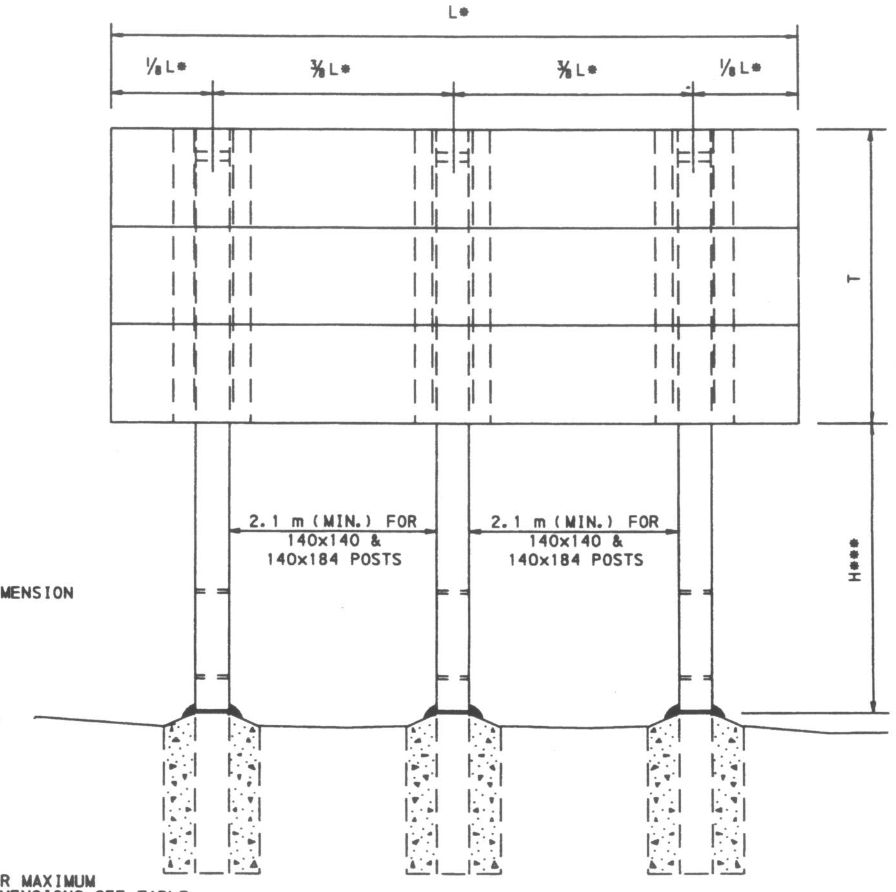
ANGLE CONNECTION BOLT SPACING	
T (m)	SPACES
0.610	1 AT 160.0 mm
0.915	2 AT 232.5 mm
1.220	2 AT 385.0 mm
1.525	3 AT 358.3 mm
1.830	3 AT 460.0 mm
2.135	4 AT 412.5 mm
2.440	6 AT 331.6 mm
2.745	6 AT 382.5 mm



SIGN ELEVATION
TWO-POST ASSEMBLY



END VIEW

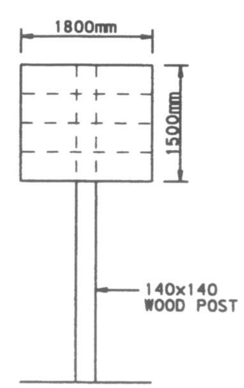


SIGN ELEVATION
THREE-POST ASSEMBLY

• FOR MAXIMUM DIMENSIONS SEE TABLE

•• FOR LOCATIONS WHERE THERE IS A CURB, THE HORIZONTAL CLEARANCE TO EDGE OF SIGN SHALL BE 0.6 m BEYOND THE FACE OF THE CURB

••• H DIMENSION USED FOR ENTERING POST TABLE IS ALWAYS THE LONGEST POST. USE THE SAME SECTION FOR ALL POSTS.



ONE POST
INSTALLATION

NOTES:

1. FOR EXTRUDED ALUMINUM CHANNEL SIGNS SEE TC-8701E.
2. FOR FLAT SHEET ALUMINUM SIGNS WITH STIFFENERS SEE TC-8701S.
3. TWIST-IN TOGGLE STRAPS MAY BE USED ON FLAT SHEET ALUMINUM SIGNS WITH STIFFENERS IN ACCORDANCE WITH TC-8701S AND PUB. 408M.
4. BUSINESS OR URBAN AREAS
   A. IN BUSINESS, COMMERCIAL OR RESIDENTIAL DISTRICTS, OR WHERE PARKING AND/OR PEDESTRIAN MOVEMENTS ARE LIKELY, OR WHERE THE SIGN MAY BLOCK VISIBILITY, THE BOTTOM OF ALL SIGNS (INCLUDING AUXILIARY SIGNS) SHALL BE A MINIMUM OF 2.1 m ABOVE GROUND AND THE NEAR PAVEMENT EDGE.

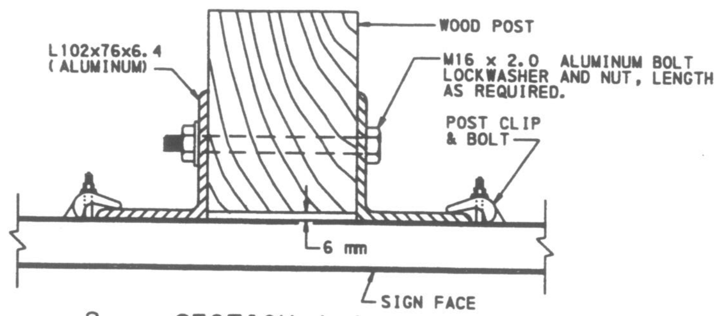
   RURAL AREAS
   B. CONVENTIONAL HIGHWAYS. ALTHOUGH 2.1 m MINIMUM SIGN HEIGHT CLEARANCE IS RECOMMENDED, IN RURAL DISTRICTS WHERE THE CONDITIONS LISTED IN NOTE 4A ARE NOT LIKELY, SIGNS MAY BE MOUNTED AT A MINIMUM CLEARANCE HEIGHT OF 1.5 m. IF A SUPPLEMENTAL SIGN IS INSTALLED BELOW THE MAIN SIGN, THE CLEARANCE HEIGHT OF THE SUPPLEMENTAL SIGN MAY BE 1.2 m.
   C. FREEWAY AND EXPRESSWAYS. SIGNS SHALL HAVE A MINIMUM CLEARANCE HEIGHT OF 2.1 m. HOWEVER, IF A SUPPLEMENTAL SIGN IS INSTALLED BELOW THE MAIN SIGN, THE SUPPLEMENTAL SIGN MAY HAVE A CLEARANCE HEIGHT OF 1.8 m, PROVIDED THAT A 2.1 m CLEARANCE HEIGHT IS MAINTAINED FOR THE MAIN SIGN.
5. SEE SHEET 2 FOR SECTIONS AND DETAILS.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

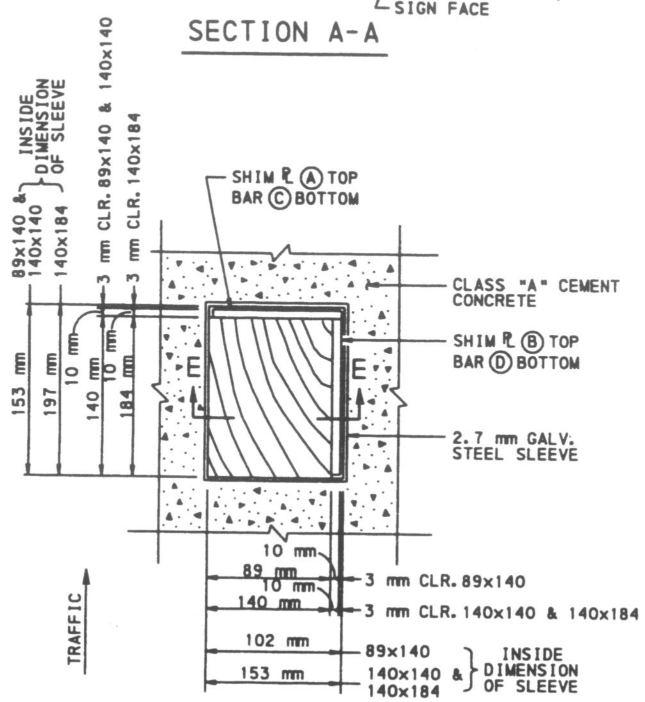
POST-MOUNTED SIGNS, TYPE E

WOOD POSTS
ERECTION DETAILS

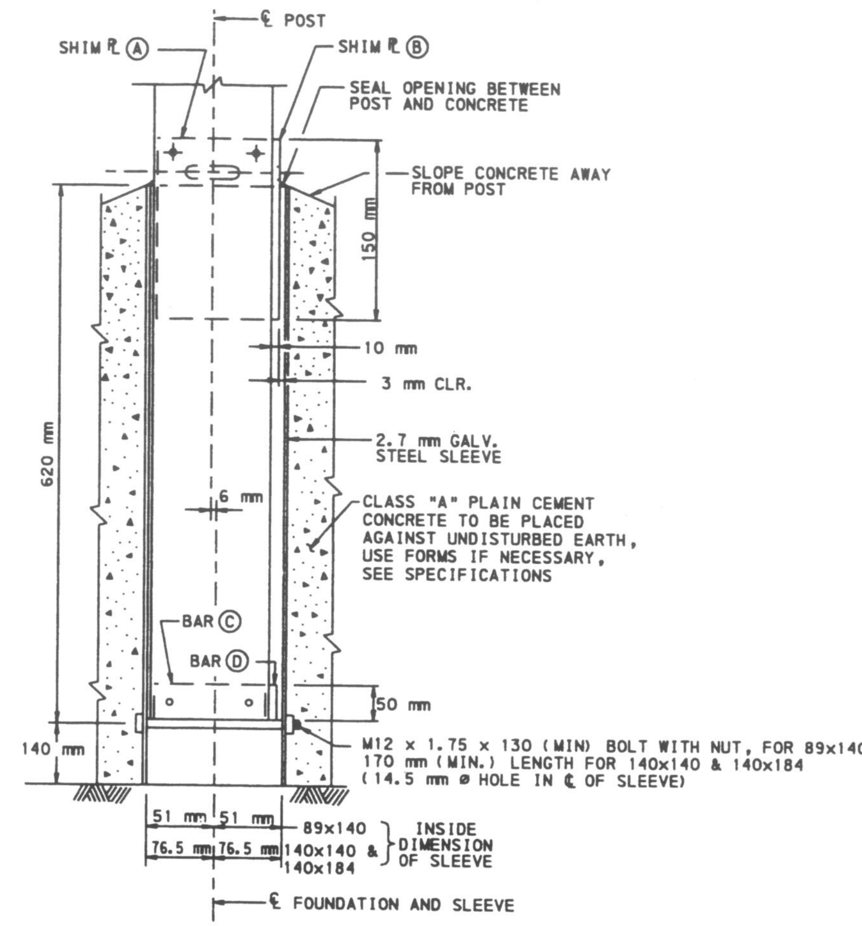
RECOMMENDED AUG. 1, 1998	RECOMMENDED AUG. 1, 1998	SHT. 1 OF 4
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	CHIEF HIGHWAY ENGINEER	TC-8702E



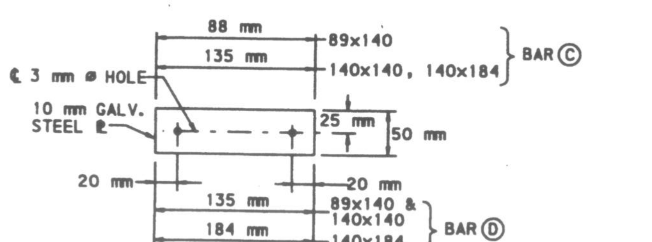
SECTION A-A



SECTION B-B



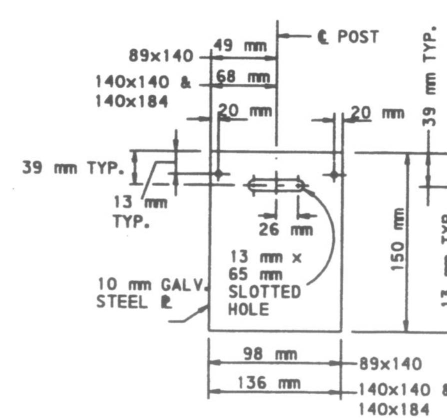
SECTION E-E



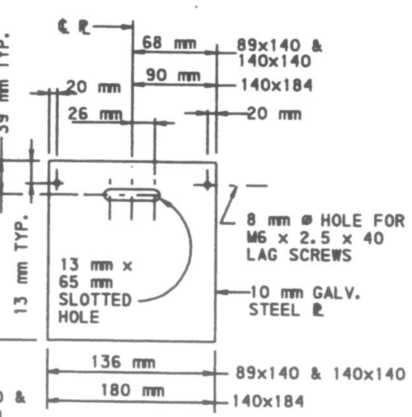
SHIM BAR Ⓒ

SHIM BAR Ⓓ

NOTE:
NAIL SHIM BARS TO POST TO HOLD BARS IN PLACE WHILE POST IS BEING PLACED.



SHIM PLATE Ⓐ



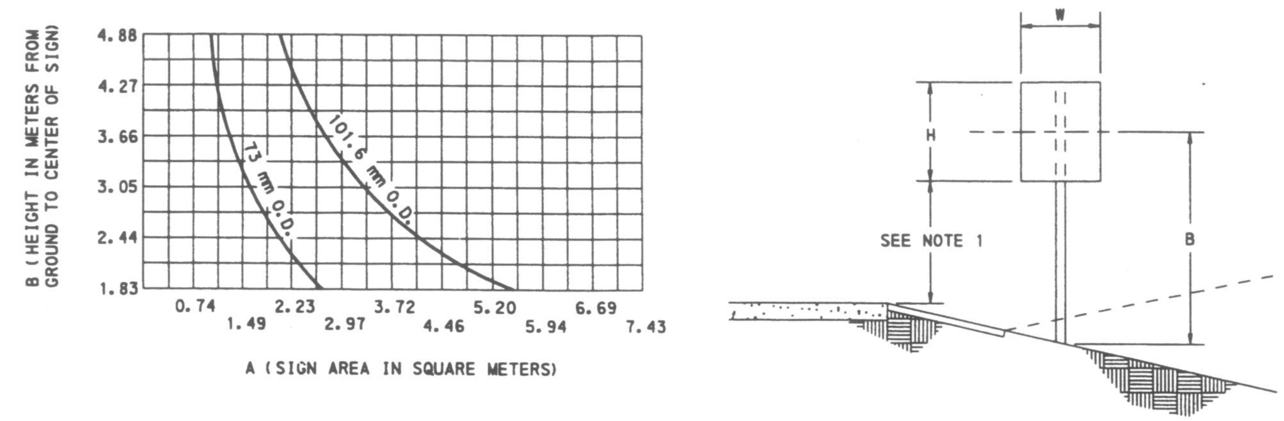
SHIM PLATE Ⓑ

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

POST-MOUNTED SIGNS, TYPE E

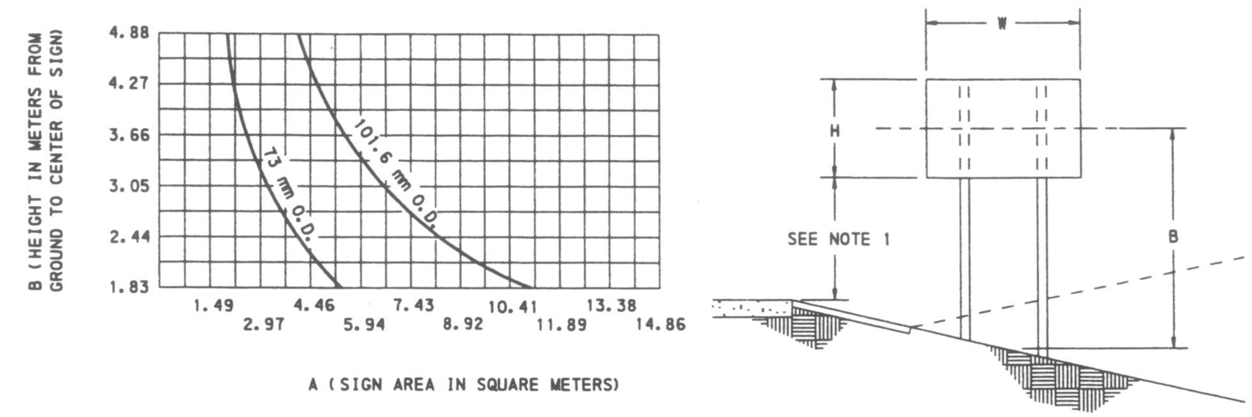
WOOD POSTS
ERECTION DETAILS

RECOMMENDED AUG. 1, 1998 CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED AUG. 1, 1998 CHIEF HIGHWAY ENGINEER	SHT. 2 OF 4 TC-8702E



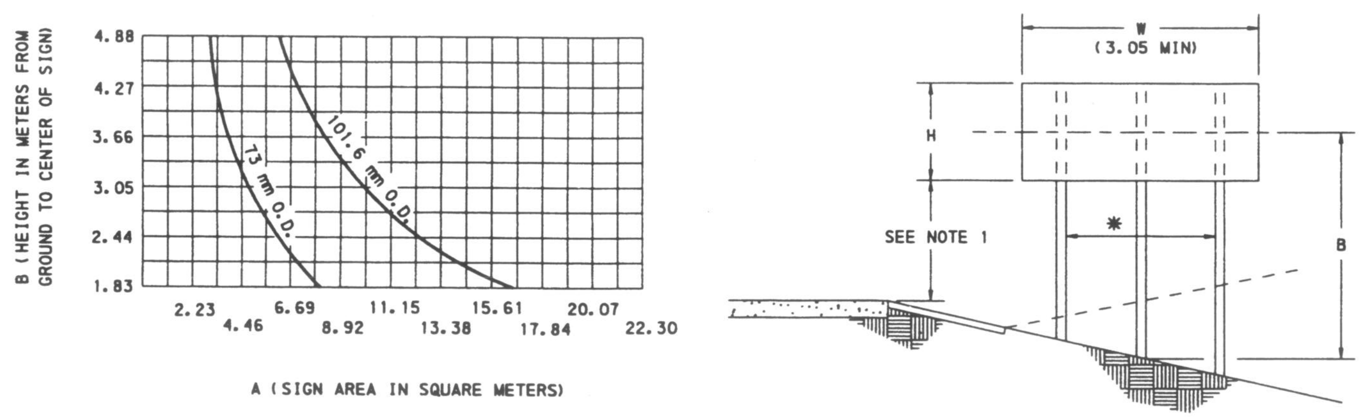
A = SIGN AREA IN SQUARE METERS
(W x H FOR SQUARE OR RECTANGULAR SIGNS)
W = WIDTH OF SIGN IN METERS
H = HEIGHT OF SIGN IN METERS

ONE-POST INSTALLATION



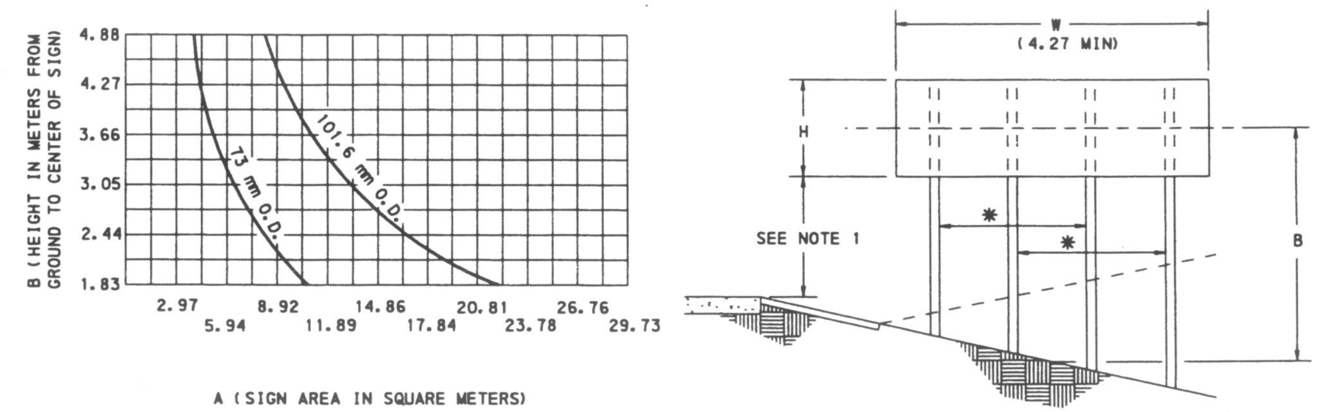
A = SIGN AREA IN SQUARE METERS
(W x H FOR SQUARE OR RECTANGULAR SIGNS)
W = WIDTH OF SIGN IN METERS
H = HEIGHT OF SIGN IN METERS

TWO-POST INSTALLATION



A = SIGN AREA IN SQUARE METERS
(W x H FOR SQUARE OR RECTANGULAR SIGNS)
W = WIDTH OF SIGN IN METERS
H = HEIGHT OF SIGN IN METERS

THREE-POST INSTALLATION



A = SIGN AREA IN SQUARE METERS
(W x H FOR SQUARE OR RECTANGULAR SIGNS)
W = WIDTH OF SIGN IN METERS
H = HEIGHT OF SIGN IN METERS

FOUR-POST INSTALLATION

* NO MORE THAN 2 POSTS MAY BE ERECTED WITHIN ANY 2.1 METER PATH.

NOTE

1. BUSINESS OR URBAN AREAS

   A. IN BUSINESS, COMMERCIAL OR RESIDENTIAL DISTRICTS, OR WHERE PARKING AND/OR PEDESTRIAN MOVEMENTS ARE LIKELY, OR WHERE THE SIGN MAY BLOCK VISIBILITY, THE BOTTOM OF ALL SIGNS (INCLUDING AUXILIARY SIGNS) SHALL BE A MINIMUM OF 2.1 m ABOVE GROUND AND THE NEAR PAVEMENT EDGE.

   RURAL AREAS

   B. CONVENTIONAL HIGHWAYS. ALTHOUGH 2.1 m MINIMUM SIGN HEIGHT CLEARANCE IS RECOMMENDED, IN RURAL DISTRICTS WHERE THE CONDITIONS LISTED IN NOTE 1A ARE NOT LIKELY, SIGNS MAY BE MOUNTED AT A MINIMUM CLEARANCE HEIGHT OF 1.5 m. IF A SUPPLEMENTAL SIGN IS INSTALLED BELOW THE MAIN SIGN, THE CLEARANCE HEIGHT OF THE SUPPLEMENTAL SIGN MAY BE 1.2 m.

   C. FREEWAY AND EXPRESSWAYS. SIGNS SHALL HAVE A MINIMUM CLEARANCE HEIGHT OF 2.1 m. HOWEVER, IF A SUPPLEMENTAL SIGN IS INSTALLED BELOW THE MAIN SIGN, THE SUPPLEMENTAL SIGN MAY HAVE A CLEARANCE HEIGHT OF 1.8 m, PROVIDED THAT A 2.1 m CLEARANCE HEIGHT IS MAINTAINED FOR THE MAIN SIGN.

POST SELECTION EXAMPLE

FOR A SIGN WHERE:
A = 5.57 SQUARE METERS
B = 3.0 METERS
TWO 101.6 mm O.D. POSTS ARE REQUIRED.

INSTRUCTIONS FOR SELECTING SIGN SUPPORTS:

1. TO DETERMINE THE SIZE OF THE SIGN POST REQUIRED, ENTER THE APPROPRIATE GRAPH WITH THE VALUES OF "A" AND "B". THE LINE ON OR ABOVE AND TO THE RIGHT OF THE INTERSECTION OF "A" AND "B" WILL BE THE SIZE POST REQUIRED. FOR DETERMINING THE VALUE OF "A" TAKE W x H, (WHERE "A" = SIGN AREA IN SQUARE METERS, "W" = WIDTH OF THE SIGN IN METERS, "H" = HEIGHT OF SIGN IN METERS). THE VALUE OF "B" WILL BE THE DISTANCE, IN METERS, FROM THE GROUND TO THE CENTER OF THE SIGN.
2. FOR SELECTING THE APPROPRIATE SIZE BASE SLEEVE, REFER TO SHEET 4.
3. FOR SELECTING THE APPROPRIATE ATTACHMENT HARDWARE, REFER TO SHEET 4.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

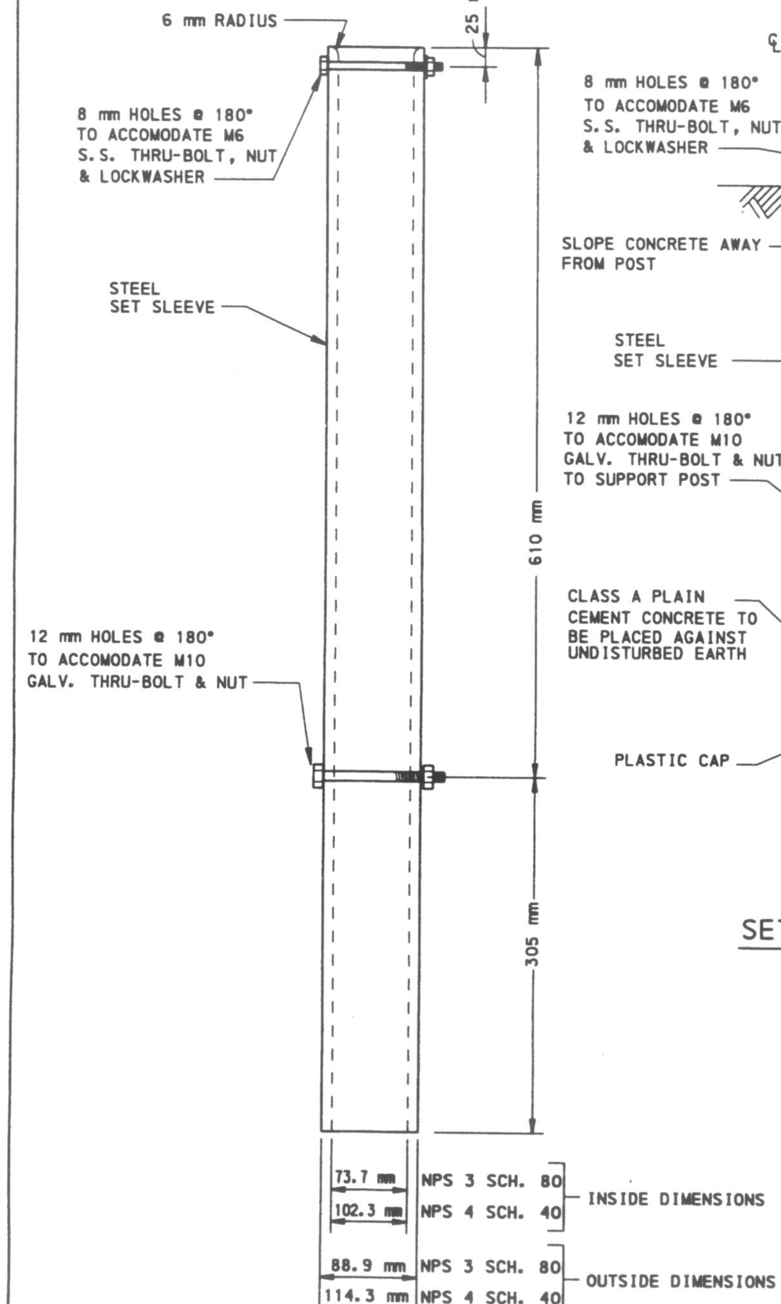
POST-MOUNTED SIGNS, TYPE E

COMPOSITE POSTS SELECTION TABLES

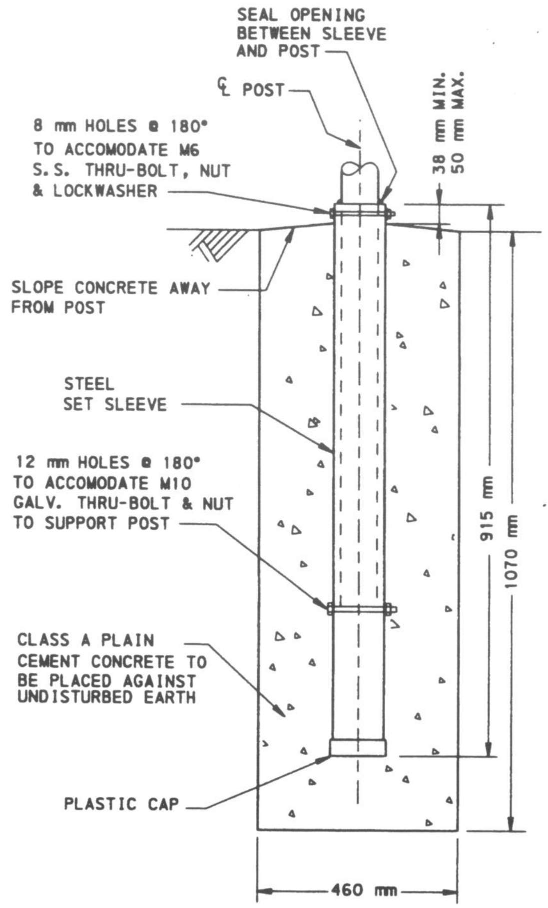
RECOMMENDED AUG. 1, 1998	RECOMMENDED AUG. 1, 1998	SHT. 3 OF 4
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	CHIEF HIGHWAY ENGINEER	TC-8702E

NOTES:

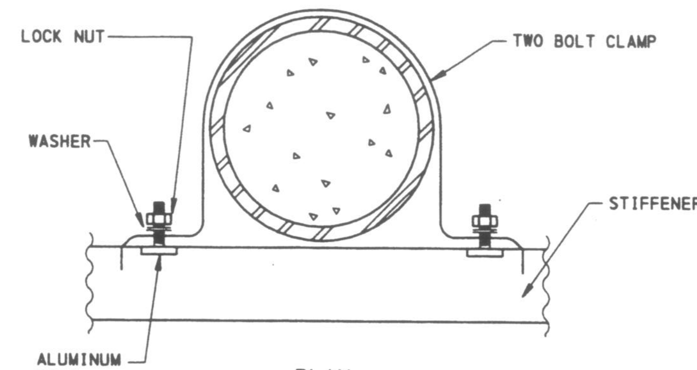
1. ALL SET SLEEVES SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123
2. THRU BOLT SHOWN AT TOP OF SLEEVE SHALL BE M6x1.0x102 STAINLESS STEEL FOR NPS 3 SCH.80 SLEEVES AND M6x1.0x127 STAINLESS STEEL FOR NPS 4 SCH.40 SLEEVES, AS PROVIDED BY THE MANUFACTURER.
3. THRU BOLT SHOWN 610 mm DOWN FROM THE TOP OF SLEEVE SHALL BE M10x1.5x102 GALVANIZED STEEL FOR NPS 3 SCH.80 SLEEVES AND M10x1.5x127 GALVANIZED STEEL FOR NPS 4 SCH.40 SLEEVES, AS PROVIDED BY THE MANUFACTURER.
4. USE CLASS "A" CONCRETE FOR ALL FOOTINGS.
5. CONCRETE FOOTINGS SHALL BE A MINIMUM OF 460 mm WIDE AND 1070 mm IN DEPTH.
6. THE BOTTOM OF THE SET SLEEVE SHALL BE CAPPED SO AS TO PREVENT ANY CONCRETE FROM ENTERING THE SLEEVE DURING INSTALLATION.
7. SLEEVE SHALL BE SET IN THE CONCRETE WITH 38 mm TO 50 mm EXPOSED ABOVE THE FOUNDATION.
8. FOR SINGLE POST INSTALLATIONS, SLEEVE SHALL BE SET SO THAT THE HOLES AT THE TOP OF THE SLEEVE ARE PERPENDICULAR TO THE ROADWAY. THRU-BOLTS ARE NOT REQUIRED FOR MULTIPLE POST INSTALLATIONS.
9. ONCE THE POST HAS BEEN INSTALLED IN THE SLEEVE, INSTALLATION SHALL BE COMPLETED BY SEALING THE OPENING BETWEEN SLEEVE AND POST WITH BITUMINOUS MATERIAL.
10. TWO-BOLT CLAMP SHALL BE STAINLESS STEEL, AND SECURED WITH LOCK NUT AND WASHER.



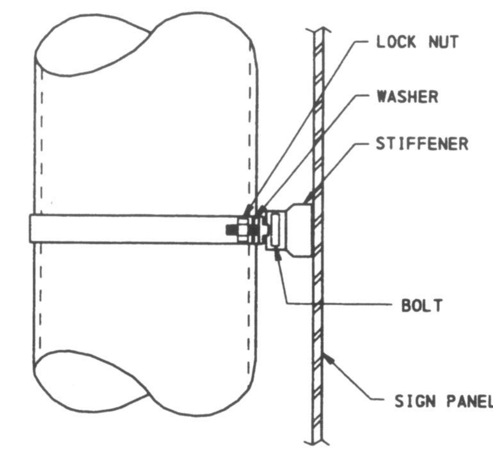
SLEEVE DETAIL



SET SLEEVE FOUNDATION

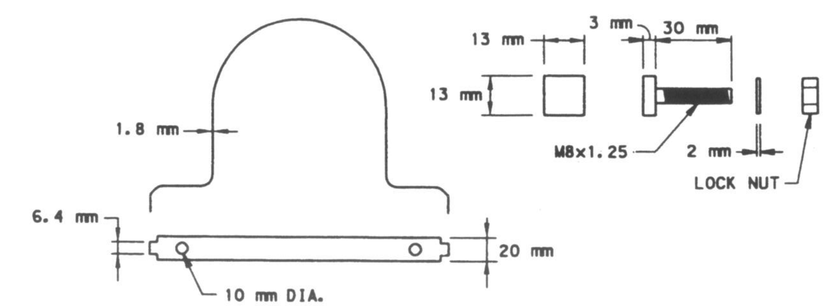


PLAN

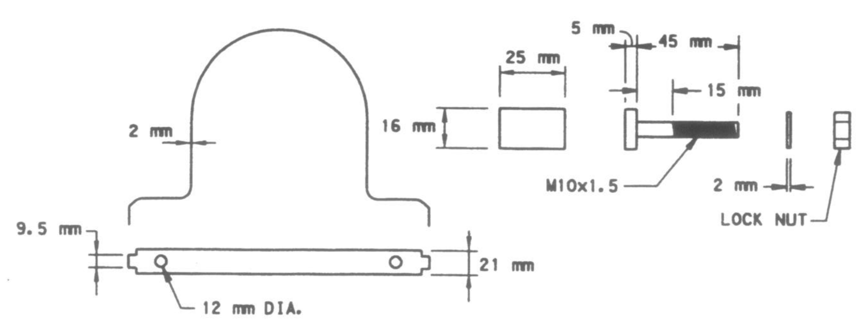


ELEVATION

TWO-BOLT CLAMP:
FLAT SHEET ALUMINUM SIGNS WITH STIFFENERS OR EXTRUDED ALUMINUM CHANNEL SIGNS



FLAT SHEET ALUMINUM SIGNS WITH STIFFENERS:
CLAMP AND BOLT DETAILS



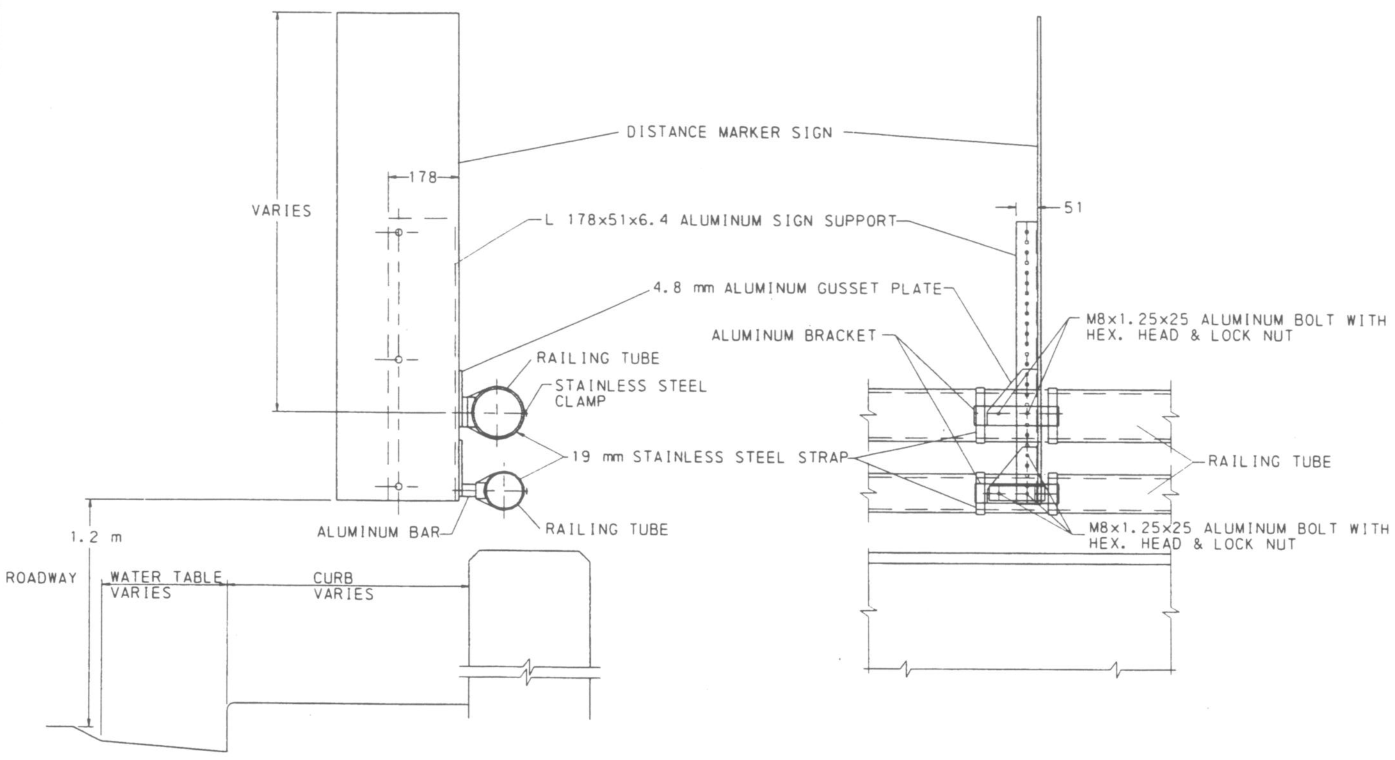
EXTRUDED ALUMINUM CHANNEL SIGNS:
CLAMP AND BOLT DETAILS

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

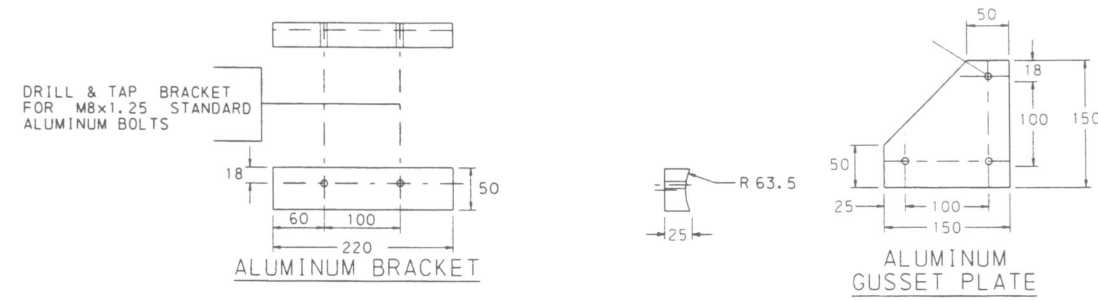
POST-MOUNTED SIGNS, TYPE E

COMPOSITE POSTS
ERECTION DETAILS

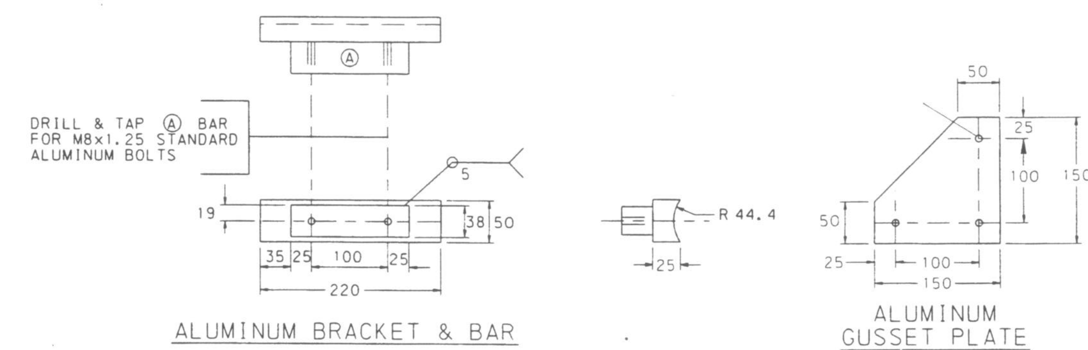
RECOMMENDED AUG. 1, 1998 / CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED AUG. 1, 1998 / CHIEF HIGHWAY ENGINEER	SHT. 4 OF 4 / TC-8702E



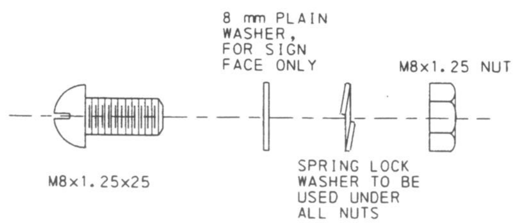
ATTACHMENT OF DISTANCE MARKER ASSEMBLY TO DOUBLE TUBE RAILING



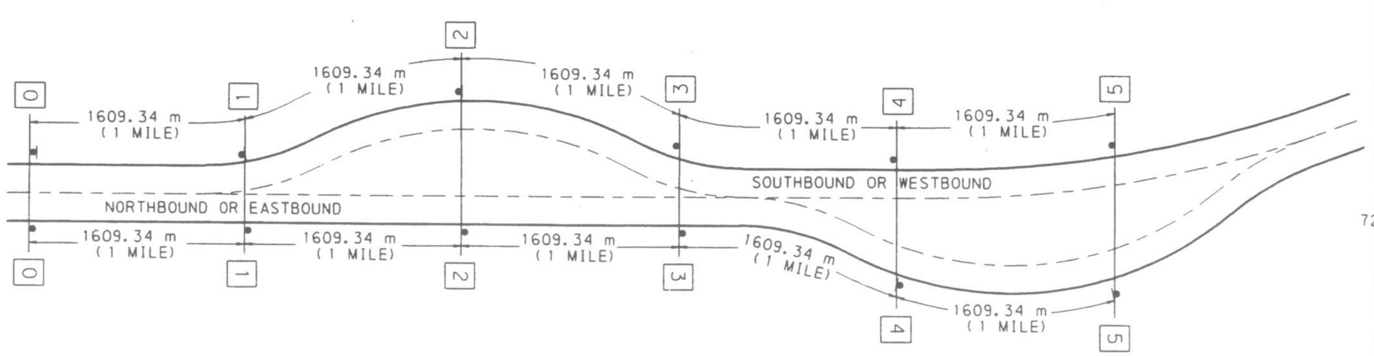
DETAILS FOR TOP RAIL



DETAILS FOR BOTTOM RAIL



BUTTON HEAD BOLT FOR CONNECTING SIGN TO ANGLE

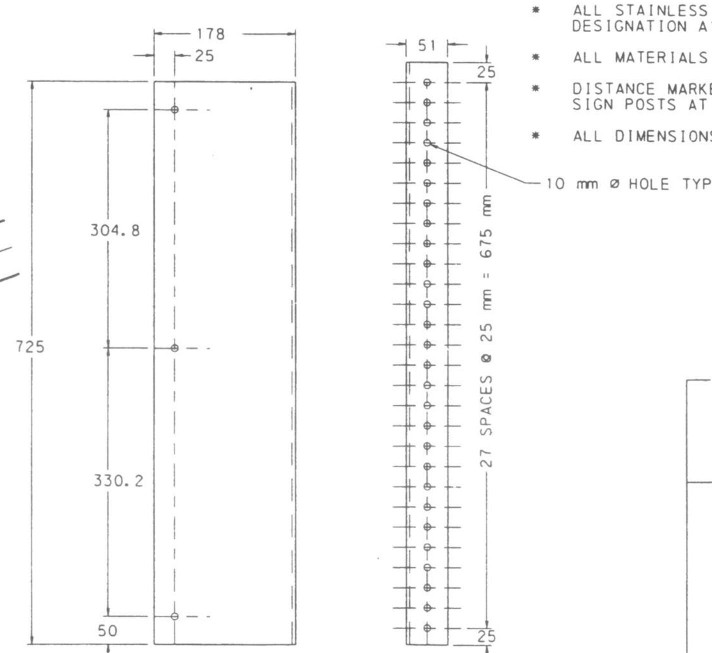


NOTE:

IT SHALL BE THE RESPONSIBILITY OF THE ENGINEER TO ACCURATELY ESTABLISH THE LOCTION OF EACH DISTANCE MARKER.

MEARUREMENTS TO ACCURATELY ESTABLISH THE LOCTION OF DISTANCE MARKERS IN INCREMENTS AT 1609.34 m (1 MILE) WILL BE TAKEN ALONG THE OUTSIDE EDGE OF THE PAVEMENT OF NORTHBOUND OR EASTBOUND ROADWAYS ONLY. DISTANCE MARKERS ON THE SOUTHBOUND OR WESTBOUND ROADWAYS SHALL BE ERECTED OPPOSITE TO THE DISTANCE MARKER LOCATIONS ESTABLISHED ON THE NORTHBOUND OR EASTBOUND ROADWAYS

TYPICAL LOCATION OF DISTANCE MARKERS



SIGN SUPPORT

NOTE:

- ALL MATERIAL SHALL BE ALUMINUM ALLOY, UNLESS OTHERWISE NOTED, AND SHALL CONFORM TO THE APPROPIATE ASTM DESIGNATION AND TEMPER AS SPECIFIED IN PUBLICATION 408M.
- ALL STAINLESS STEEL STRAPS AND CLAMPS SHALL CONFORM TO ASTM DESIGNATION A167.
- ALL MATERIALS AND WORKSMANSHIP SHALL BE IN ACCORDANCE WITH PUBLICATION 408M.
- DISTANCE MARKERS WHICH ARE NOT ON BRIDGES SHALL BE INSTALLED ON TYPE B SIGN POSTS AT A 1.2 m HEIGHT.
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.

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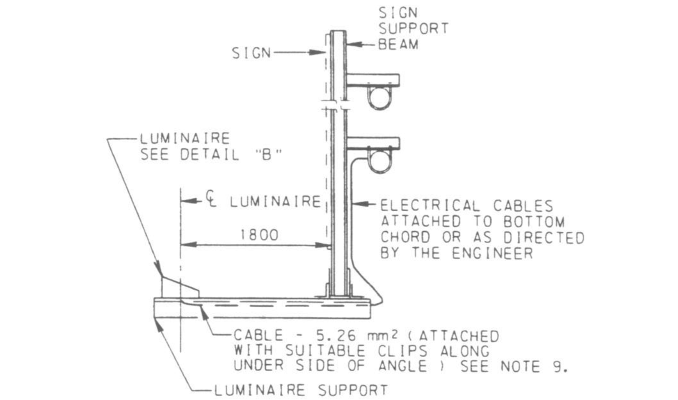
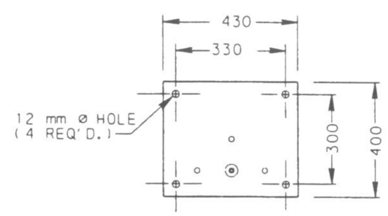
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

DISTANCE MARKERS

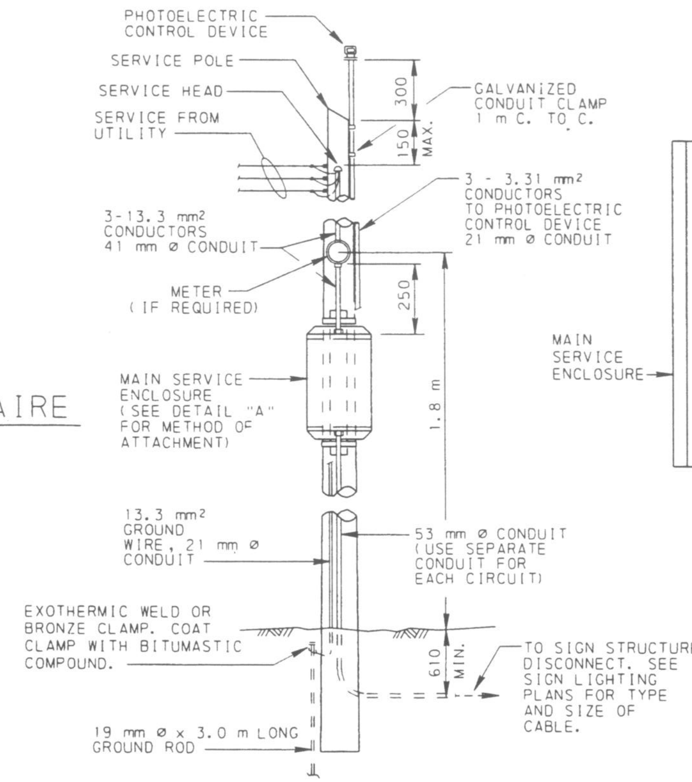
RECOMMENDED AUG. 1, 1997	RECOMMENDED AUG. 1, 1997	SHT. 1 OF 1
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	CHIEF HIGHWAY ENGINEER	TC-8710



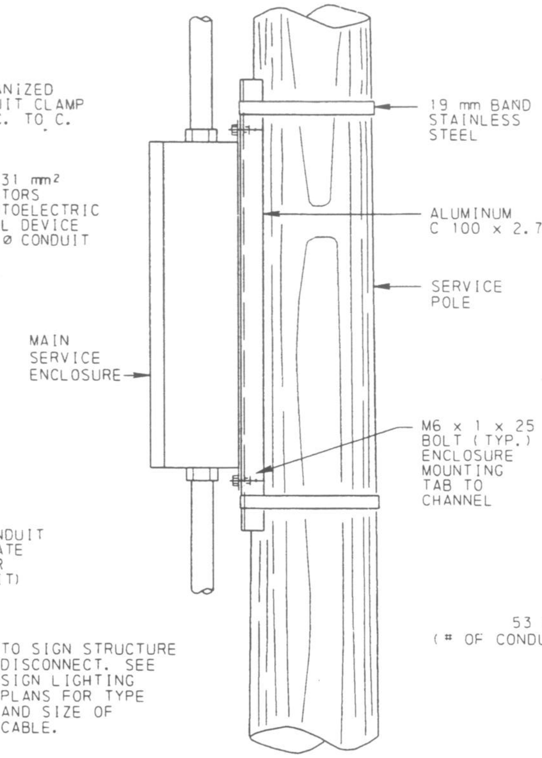
TYPICAL BRACKET MOUNTED LUMINAIRE ON SIGN STRUCTURE



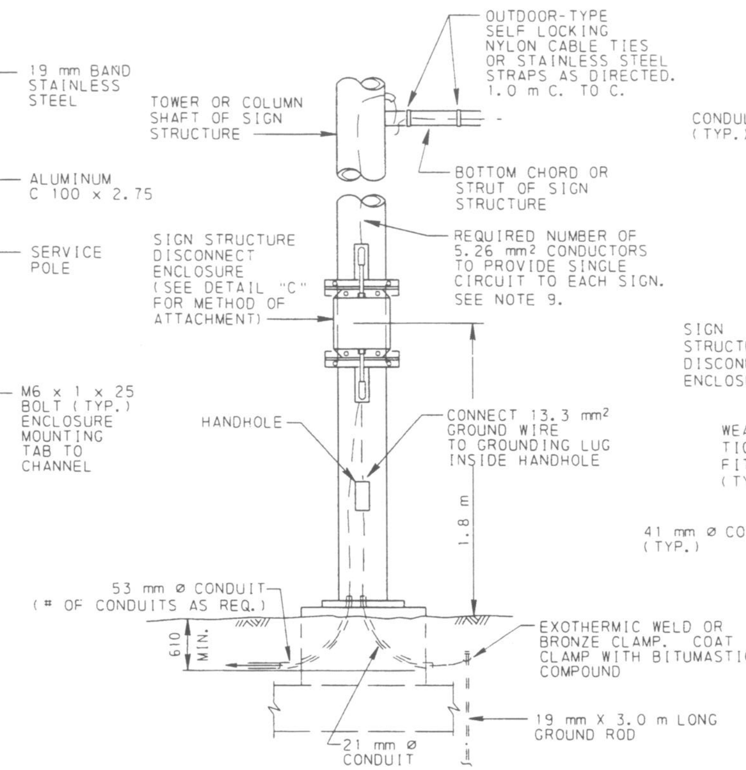
DETAIL "B" LUMINAIRE MOUNTING BRACKET



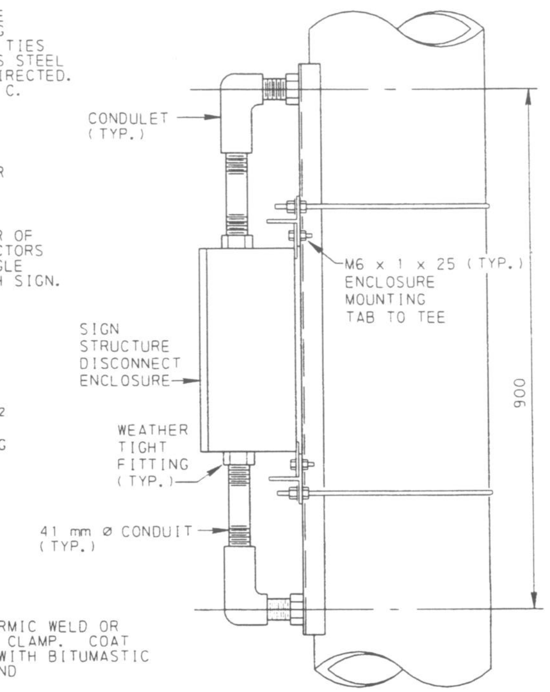
MAIN SERVICE ON SERVICE POLE



DETAIL "A"

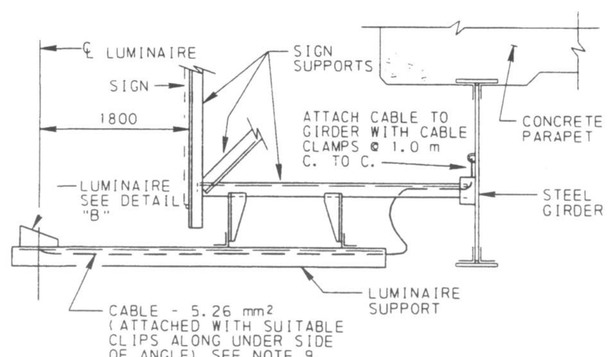


SIGN STRUCTURE DISCONNECT

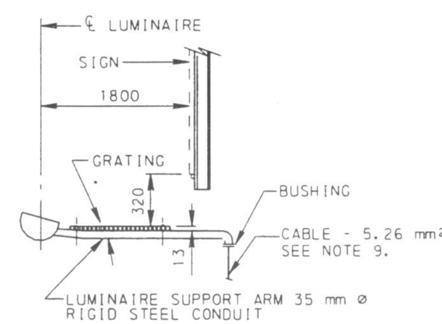


FOR DETAILS OF OTHER MOUNTING HARDWARE, SEE STANDARD DRAWINGS FOR OVERHEAD SIGN STRUCTURES BD-641M, BD-642M, BD-643M, AND BD-644M.

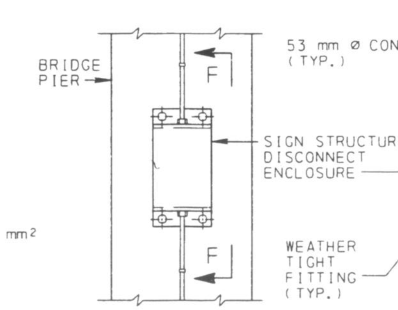
DETAIL "C"



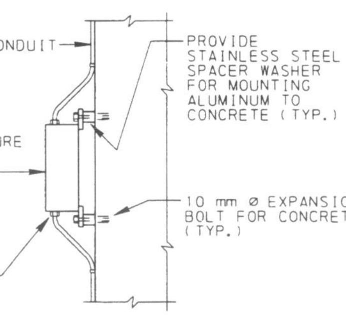
TYPICAL BRACKET MOUNTED LUMINAIRE ON OVERPASS BRIDGE, BRIDGE-MOUNTED SIGN



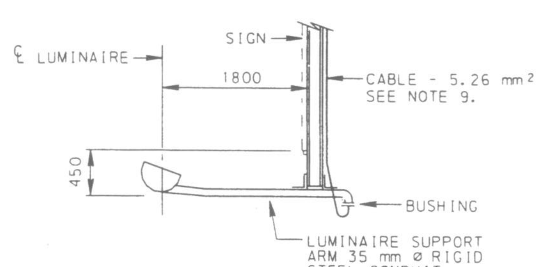
TYPICAL CONDUIT MOUNTED LUMINAIRE ON SIGN STRUCTURE WITH CATWALK*



DETAIL "G"

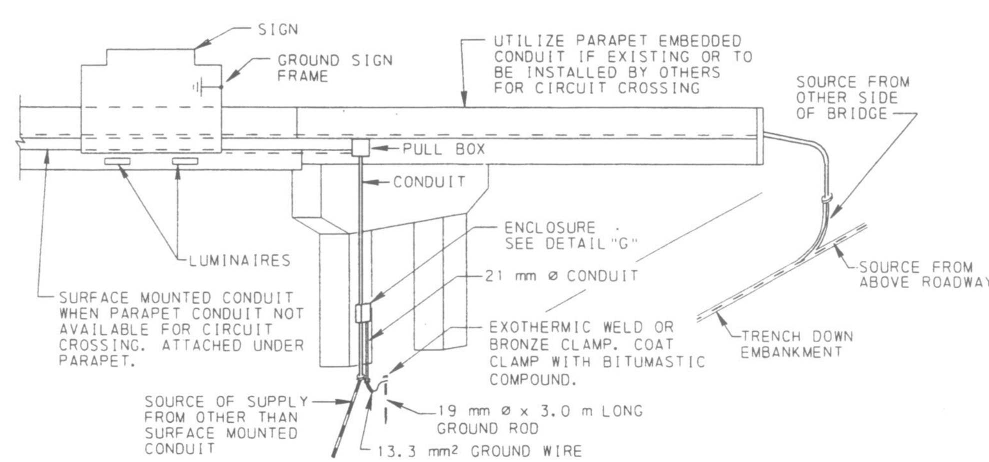


SECTION F-F



TYPICAL CONDUIT MOUNTED LUMINAIRE ON SIGN STRUCTURE*

* NOTE:
LUMINAIRE MOUNTED ON CONDUIT NOT PERMITTED IF LUMINAIRE WEIGHT IS GREATER THAN 9 kg. OTHERWISE MOUNT LUMINAIRE ON ANGLE SUPPORTS



TYPICAL SERVICE FOR LUMINAIRE ON OVERPASS BRIDGE-MOUNTED SIGN

NOTES:

1. PROVIDE COPPER ELECTRIC CONDUCTORS.
2. ELECTRIC COMPANY SERVICE DROPS ARE MADE TO THE SERVICE POLE, UNLESS OTHERWISE SPECIFIED, MEETING THE ELECTRIC COMPANY REQUIREMENTS. WHEN SERVICE DROP IS TO SIGN STRUCTURE, THE SIGN STRUCTURE ENCLOSURE WILL CONTAIN ALL NECESSARY SERVICE AND BRANCH CIRCUIT EQUIPMENT.
3. BOND THE NEUTRAL CONDUCTOR TO THE GROUNDING LUG PROVIDED IN THE HANDHOLE OF THE SIGN STRUCTURE.
4. GROUND THE SIGN FRAME OF OVERPASS BRIDGE-MOUNTED SIGNS.
5. SIGN STRUCTURE DISCONNECT MAY BE OMITTED WHEN THE MAIN SERVICE IS WITHIN 15 m OF THE SIGN STRUCTURE. PROVIDE BRANCH CIRCUIT PROTECTION WITHIN THE MAIN SERVICE ENCLOSURE.
6. MOUNT EACH REMOTE BALLAST ON THE SIGN SUPPORT STRUCTURE AND IDENTIFY THE SIGN AND LUMINAIRE SERVED. MOUNT OVER SHOULDER WHEN FEASIBLE.
7. PROVIDE ALUMINUM, STAINLESS STEEL OR GALVANIZED STEEL HARDWARE, CONDULETS, BOLTS, ETC. ASSOCIATED WITH MOUNTING ENCLOSURE FOR MAIN SERVICE AND SIGN STRUCTURE DISCONNECT.
8. FOR DETAILS OF LUMINAIRE SUPPORTS, SEE STANDARD DRAWINGS BD-641M, BD-642M, BD-643M AND BD-644M.
9. PROVIDE 5.26 mm², 2 CONDUCTOR, TYPE TC CABLE FROM THE SIGN ENCLOSURE TO THE LUMINAIRES.
10. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.

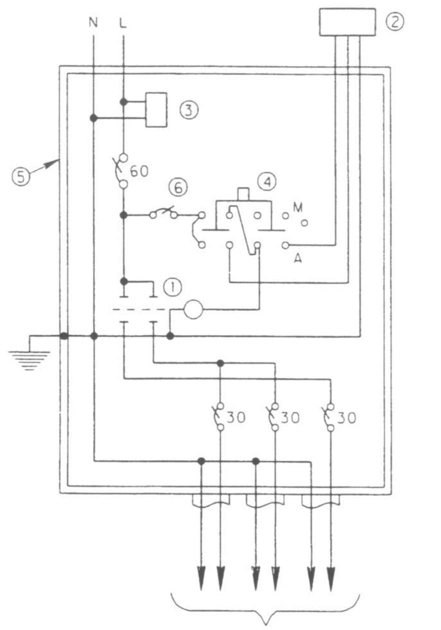
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

SIGN LIGHTING

RECOMMENDED AUG. 1, 1997	RECOMMENDED AUG. 1, 1997	SHT. 1 OF 4
A.H. Brennan CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	Gary L. Hoffman CHIEF HIGHWAY ENGINEER	TC-8715

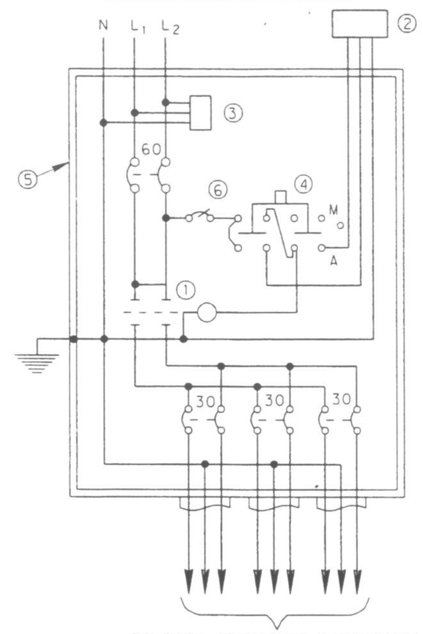
MAIN SERVICE (TYPICAL)

120 V - 2 WIRE SUPPLY
120 V LUMINAIRE



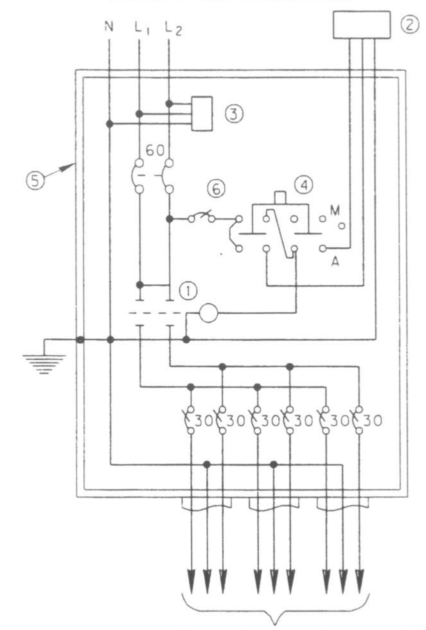
TO SIGN STRUCTURE DISCONNECT SIMILAR TO Ⓐ. NOT MORE THAN 8 LUMINAIRES ON EACH 30 A CIRCUIT.

120/240 V - 3 WIRE SUPPLY
240 V LUMINAIRE



TO SIGN STRUCTURE DISCONNECT SIMILAR TO Ⓑ. NOT MORE THAN 17 LUMINAIRES ON EACH 30 A CIRCUIT.

240/480 V - 3 WIRE SUPPLY
240 V LUMINAIRE



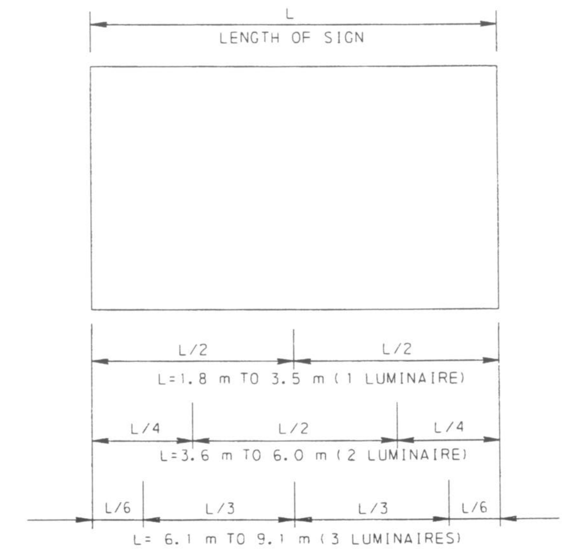
TO SIGN STRUCTURE DISCONNECT SIMILAR TO Ⓒ. NOT MORE THAN 17 LUMINAIRES PER PHASE LEG ON EACH 30 A CIRCUIT.

MAIN SERVICE (TYPICAL)

NOTE: MAIN SERVICE NOT REQUIRED WHEN POWER SUPPLY IS FROM HIGHWAY LIGHTING CIRCUIT.

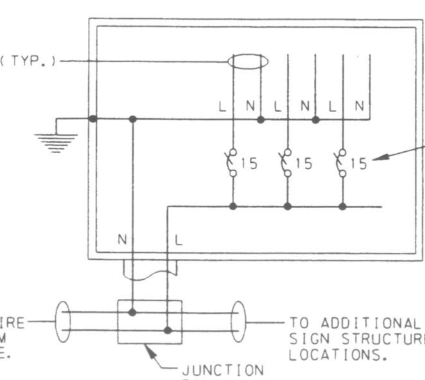
① TWO POLE, 60 A, LIGHTING CONTACTOR
② PHOTOELECTRIC CONTROL DEVICE
③ LIGHTNING ARRESTOR
④ SELECTOR SWITCH (MANUAL-OFF-AUTO.)
⑤ ENCLOSURE
⑥ 15 A, SINGLE POLE CIRCUIT BREAKER

NOTE: PROVIDE A CIRCUIT BREAKER FOR THE MAIN DISCONNECT UNLESS THE POWER COMPANY REQUIRES FUSES.

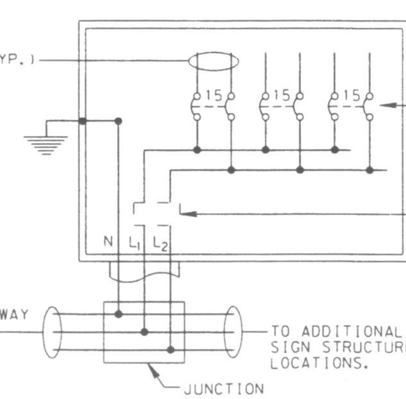


QUANTITY AND LOCATION OF LUMINAIRES

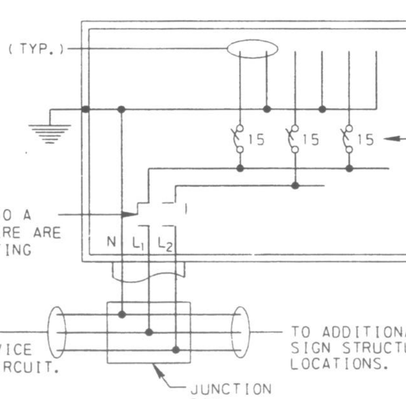
Ⓐ 120 V LUMINAIRE



Ⓑ 240 V LUMINAIRE



Ⓒ 240 V LUMINAIRE



*FOR PROPER PHASE LEG CONNECTION, SEE SIGN LIGHTING PLAN OR HIGHWAY LIGHTING CIRCUIT SCHEMATIC, AS APPLICABLE.

SIGN STRUCTURE DISCONNECT (TYPICAL)

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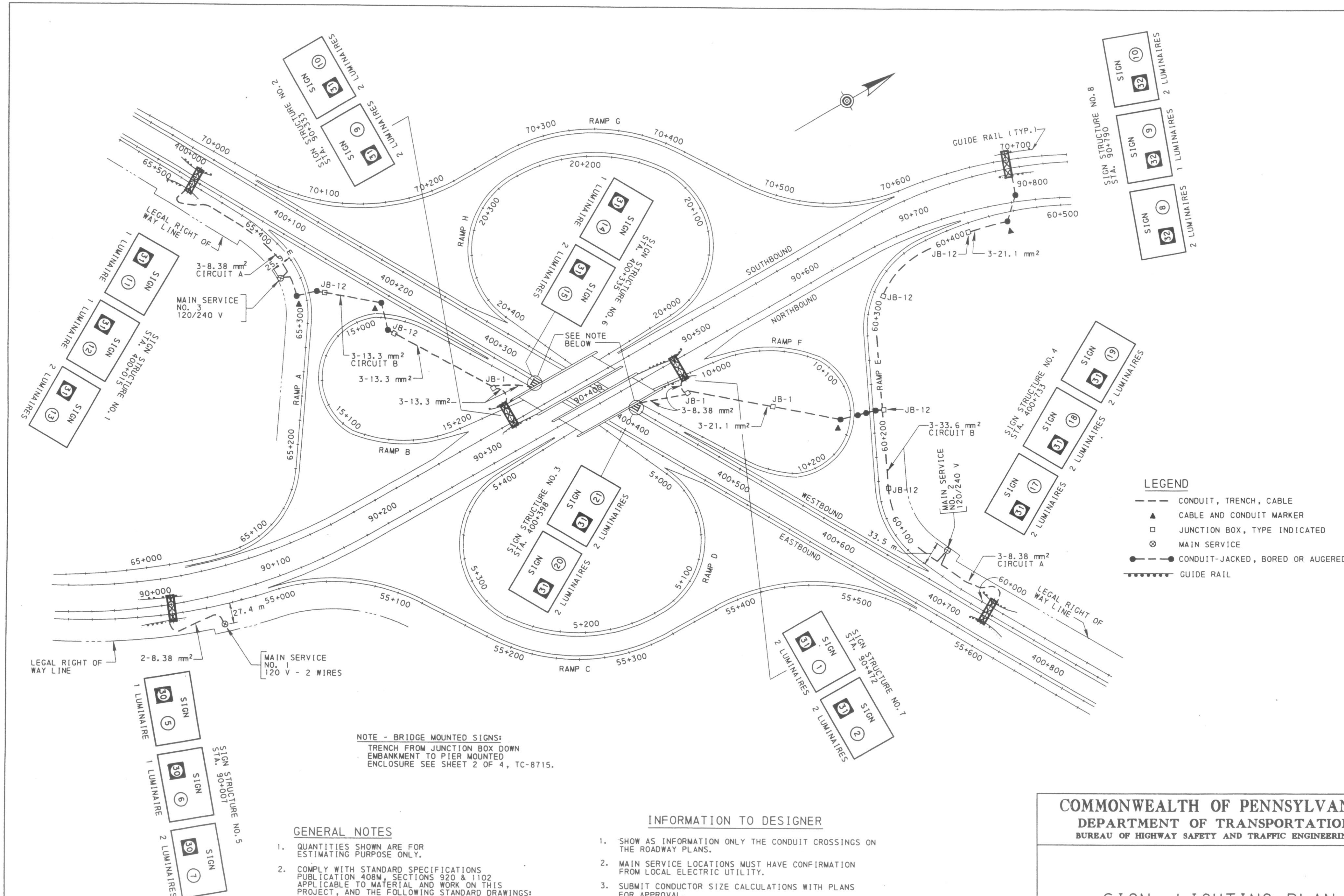
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

SIGN LIGHTING

RECOMMENDED AUG. 1, 1997	RECOMMENDED AUG. 1, 1997	SHT. 2 OF 4
[signature] CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	[signature] CHIEF HIGHWAY ENGINEER	TC-8715



NOTE - BRIDGE MOUNTED SIGNS:
TRENCH FROM JUNCTION BOX DOWN EMBANKMENT TO PIER MOUNTED ENCLOSURE SEE SHEET 2 OF 4, TC-8715.

GENERAL NOTES

1. QUANTITIES SHOWN ARE FOR ESTIMATING PURPOSE ONLY.
2. COMPLY WITH STANDARD SPECIFICATIONS PUBLICATION 408M, SECTIONS 920 & 1102 APPLICABLE TO MATERIAL AND WORK ON THIS PROJECT, AND THE FOLLOWING STANDARD DRAWINGS:

   RC-81M HIGHWAY LIGHTING-JUNCTION BOXES-LIGHT DUTY
   RC-82M HIGHWAY LIGHTING-JUNCTION BOXES-HEAVY DUTY
   RC-84M HIGHWAY LIGHTING-LIGHTING AND ELECTRIC DETAILS
   TC-8715 SIGN LIGHTING

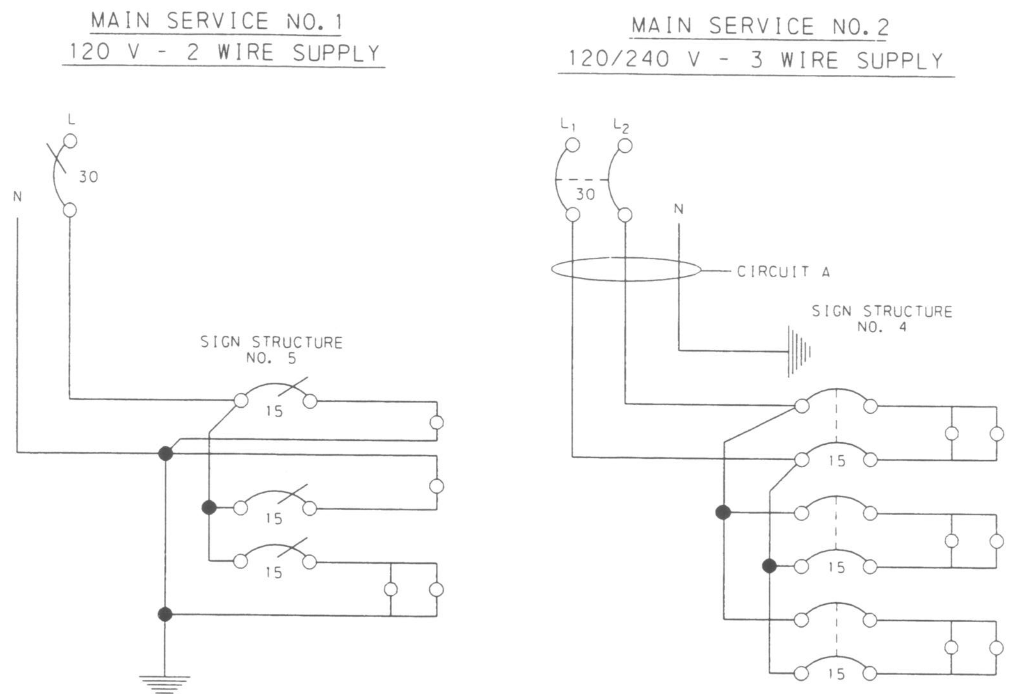
INFORMATION TO DESIGNER

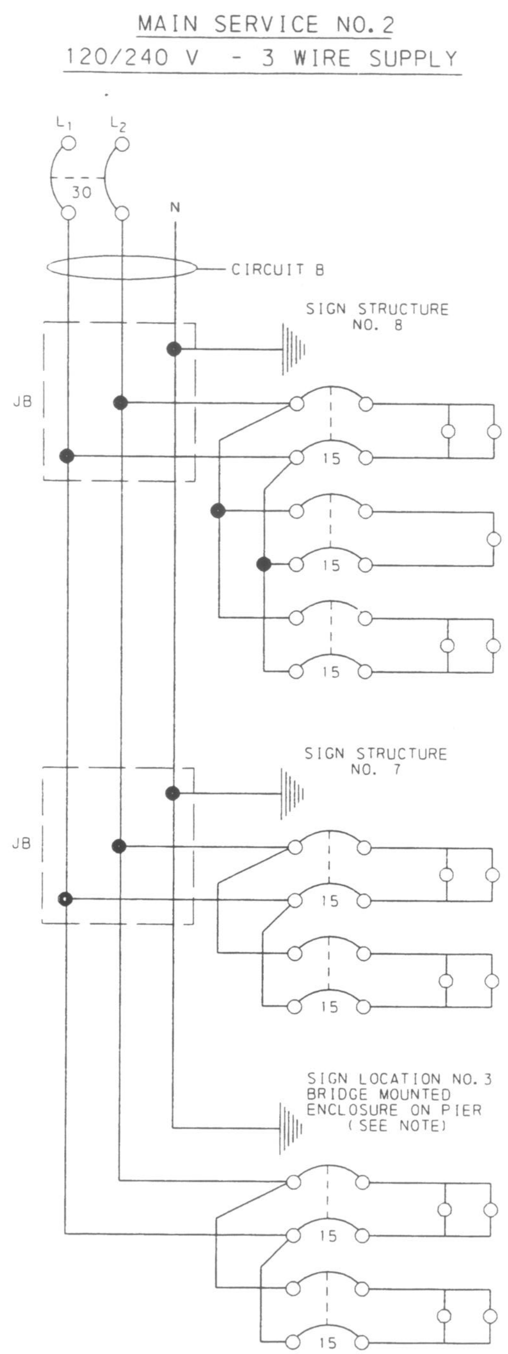
1. SHOW AS INFORMATION ONLY THE CONDUIT CROSSINGS ON THE ROADWAY PLANS.
2. MAIN SERVICE LOCATIONS MUST HAVE CONFIRMATION FROM LOCAL ELECTRIC UTILITY.
3. SUBMIT CONDUCTOR SIZE CALCULATIONS WITH PLANS FOR APPROVAL.
4. LOCATE MAIN SERVICE OUTSIDE CLEAR ZONE AS FAR FROM ROADWAY AS PRACTICAL.
5. SIGN LIGHTING MAY NOT BE REQUIRED ON ALL OVERHEAD SIGNS. SEE STANDARD DRAWING TC-8701A FOR EXCEPTIONS.
6. WHEN NOT INCLUDED IN OTHER CONTRACTS, PROVIDE FOR SEEDING AND MULCHING OF BACKFILLED TRENCH AND OTHER DISTURBED AREAS.

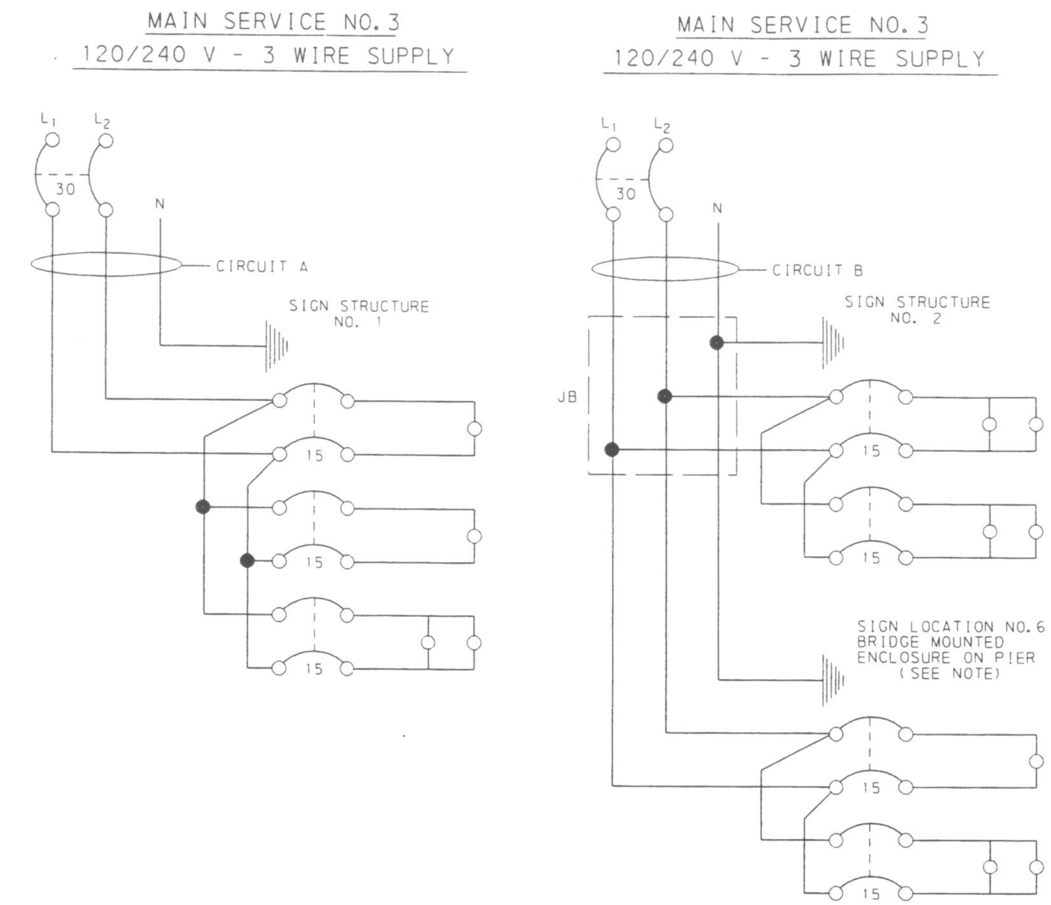
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

SIGN LIGHTING PLAN
(SAMPLE DRAWING)

RECOMMENDED AUG. 1, 1997	RECOMMENDED AUG. 1, 1997	SHT. 3 OF 4
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	CHIEF HIGHWAY ENGINEER	TC-8715







ESTIMATE OF REQUIRED QUANTITIES

MAIN SERVICE REQUIRED QUANTITIES	M.S. #1	M.S. #2	M.S. #3	TOTAL
SERVICE POLE	1	1	1	3
METER BASE (IF REQUIRED)	1	1	1	3
ENCLOSURE	1	1	1	3
WEATHERHEAD & SERVICE CLOSURE	1	1	1	3
LIGHTNING ARRESTER	1	1	1	3
PHOTOELECTRIC CELL	1	1	1	3
GROUND ROD	1	1	1	3
SELECTOR SWITCH	1	1	1	3
LIGHTING CONTACTOR, 2 POLES, 60 A	1	1	1	3
CIRCUIT BREAKER, 1 POLE, 60 A	1			1
CIRCUIT BREAKER, 2 POLES, 60 A		1	1	2
CIRCUIT BREAKER, 1 POLE, 15 A	1	1	1	3
CIRCUIT BREAKER, 1 POLE, 30 A	1			1
CIRCUIT BREAKER, 2 POLES, 30 A		2	2	4
CONDUIT, FITTINGS, MISC. HARDWARE	1	1	1	3

SIGN STRUCTURE DISCONNECT REQUIRED QUANTITIES					
SIGN STRUCTURE	ENCLOSURE	GROUND ROD	15 A 1P, C.B.	15 A 2P, C.B.	175 W LUM.
1	1	1		3	4
2	1	1		2	4
3	1 *	1		2	4
4	1	1		3	6
5	1	1	3		4
6	1 *	1		2	3
7	1	1		2	4
8	1	1		3	5
TOTAL	8	8	3	17	34

* BRIDGE MOUNTED SIGNS - ENCLOSURE MOUNTED ON BRIDGE PIER. SEE SHEET 1 OF 4, TC-8715.

CIRCUIT REQUIRED QUANTITIES - ENTIRE		
ITEM	QUANTITY	REMARKS
33.6 mm², UNDERGROUND CABLE, COPPER, 1 CONDUCTOR	510 m	
21.1 mm², UNDERGROUND CABLE, COPPER, 1 CONDUCTOR	1320 m	
13.3 mm², UNDERGROUND CABLE, COPPER, 1 CONDUCTOR	900 m	
8.38 mm², UNDERGROUND CABLE, COPPER, 1 CONDUCTOR	890 m	
5.26 mm², TYPE TC CABLE, COPPER, 2 CONDUCTOR	460 m	FROM S.S. ENCLOSURE TO LUMINAIRE
CABLE & CONDUIT MARKER	4 EACH	
53 mm ø DIRECT BURIAL CONDUIT	1150 m	
TRENCH	1150 m	
JUNCTION BOX JB-1	3 EACH	
JUNCTION BOX JB-12	6 EACH	

NOTE:

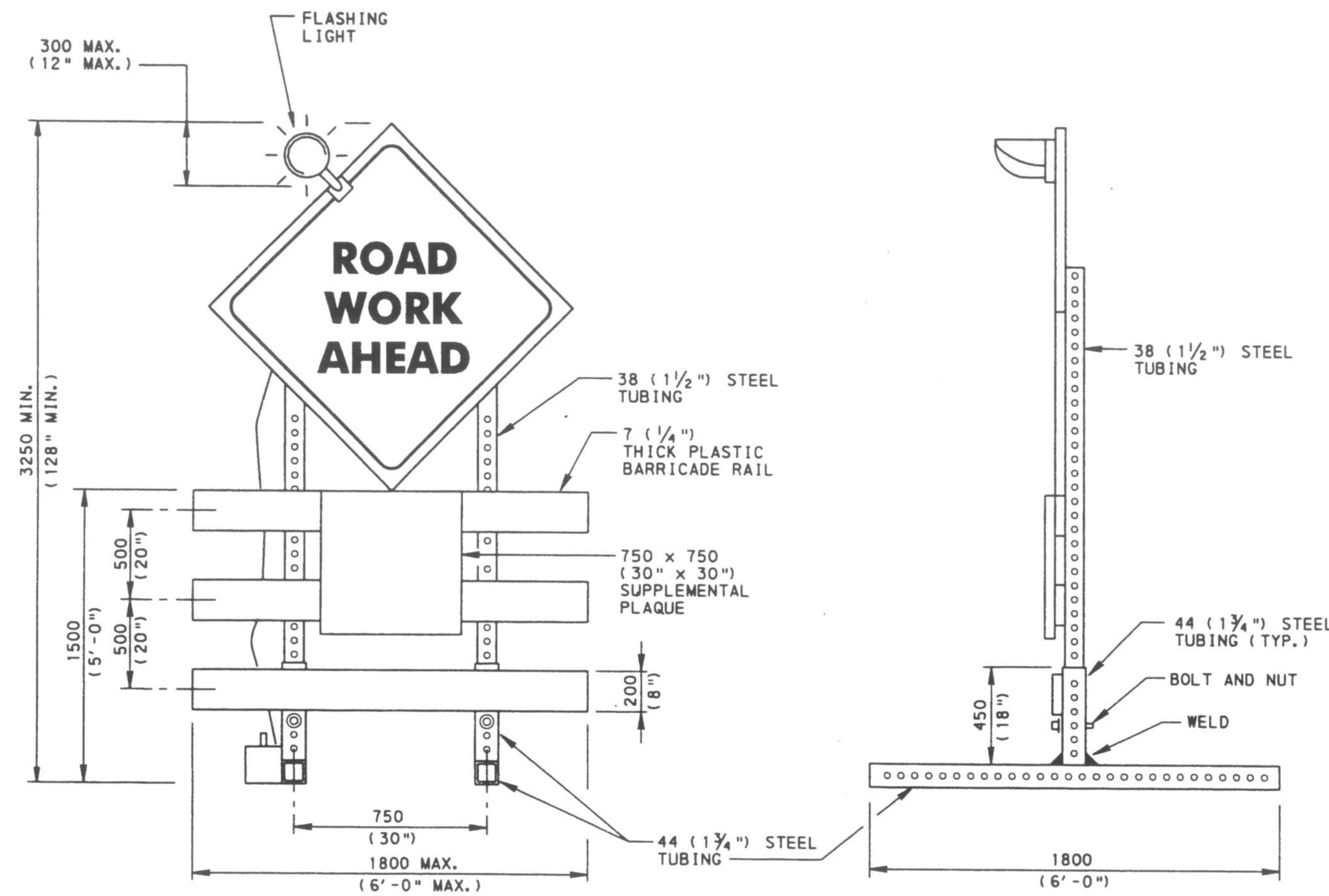
IT MAY BE MORE DESIRABLE TO USE ONE COMMON ENCLOSURE ON NEARBY SIGN STRUCTURE COLUMN FOR BOTH THE STRUCTURE SIGN AND THE BRIDGE-MOUNTED SIGN IN LIEU OF A SEPARATE ENCLOSURE MOUNTED ON THE BRIDGE PIER AS SHOWN ON SHEET 1 OF 4, TC-8715. IF THIS OPTION IS DESIRED, IT MUST BE CLEARLY SPECIFIED ON THIS SHEET. IN THE SAMPLE, ENCLOSURES FOR SIGN LOCATIONS 3 AND 6 WOULD NOT BE SPECIFIED AND A NOTE EXPLAINING THE OMISSION WOULD BE NECESSARY.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

SIGN LIGHTING QUANTITIES AND SCHEMATICS

(SAMPLE DRAWING)

RECOMMENDED AUG. 1, 1997	RECOMMENDED AUG. 1, 1997	SHT. 4 OF 4
A.H. Brenn (signature) CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	Gary L. Hoffman (signature) CHIEF HIGHWAY ENGINEER	TC-8715



SKID-MOUNTED METAL SIGN SUPPORT

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.
2. DIAMOND, RECTANGULAR, OCTAGON AND TRIANGULAR SIGNS ARE PERMITTED. WHILE HAVING NO MAXIMUM AREA, THE MAXIMUM WEIGHT OF THE SIGN MAY NOT EXCEED 11.3 kg (25 lb).
3. MINIMUM MOUNTING HEIGHT TO TOP OF ALL SIGNS IS 3250 (128").
4. SUPPLEMENTAL PLAQUE IS TO BE MOUNTED AS SHOWN.
5. BATTERY CASE MUST BE PLACED AT GROUND LEVEL AND FASTENED TO THE UPRIGHT POST OR BASE LEG.
6. SIGN SUBSTRATE MAY BE PLYWOOD, ALUMINUM, OR FLEXIBLE (ROLL-UP) MATERIAL.
7. SANDBAG BALLAST MAY BE PLACED ON THE BASE.
8. SIGNS AND RAILS ARE TO BE ATTACHED WITH BOLTS AND NUTS.
9. SIGNS THAT ARE INAPPROPRIATE OR NOT APPLICABLE SHOULD BE REMOVED, TURNED 90° OR COVERED. COVER MATERIAL MAY BE CLOTH, TARP, FLEXIBLE PLASTIC, OR SIMILAR MATERIAL, WHICH IS COMPLETELY OPAQUE SO THE SIGN CANNOT BE READ. PLYWOOD, BOARDS OR OTHER RIGID COVERS HUNG OR ATTACHED TO THE SIGN ARE NOT PERMITTED. IF TURNED 90° RETRO REFLECTIVE SHEETING MUST BE PLACED ON THE SIDES SO THAT THE BARRICADE IS CLEARLY VISIBLY TO APPROACHING DRIVERS.
10. MAXIMUM ONE WARNING LIGHT EXCEPT FOR ROAD CLOSED SIGN WHERE TWO ARE ALLOWED.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

TRAFFIC CONTROL SIGNING

TYPE III BARRICADE

RECOMMENDED 10/2/2000	RECOMMENDED 10/2/00	SHT. 1 OF 1
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	CHIEF HIGHWAY ENGINEER	TC-8716