

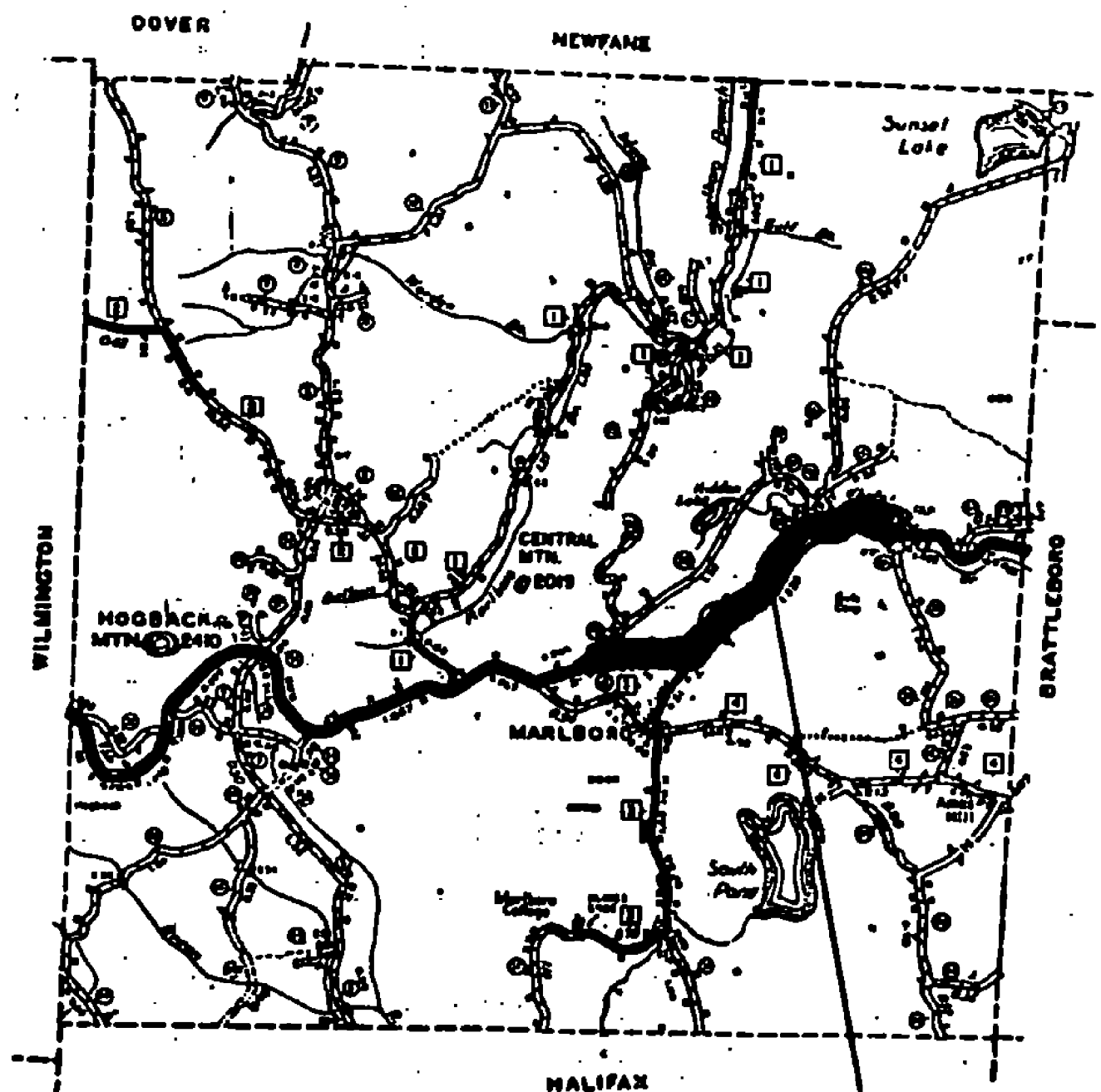
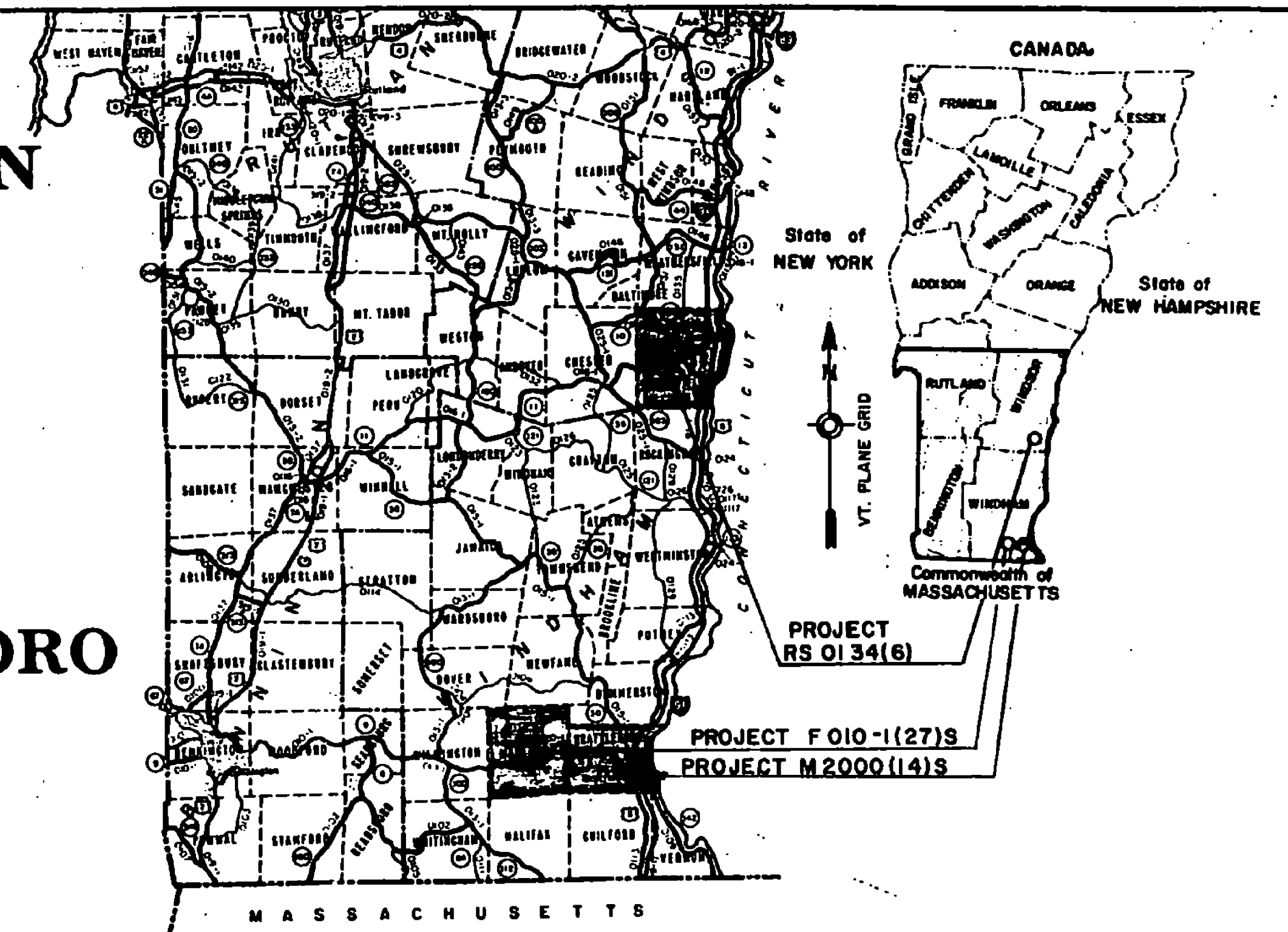
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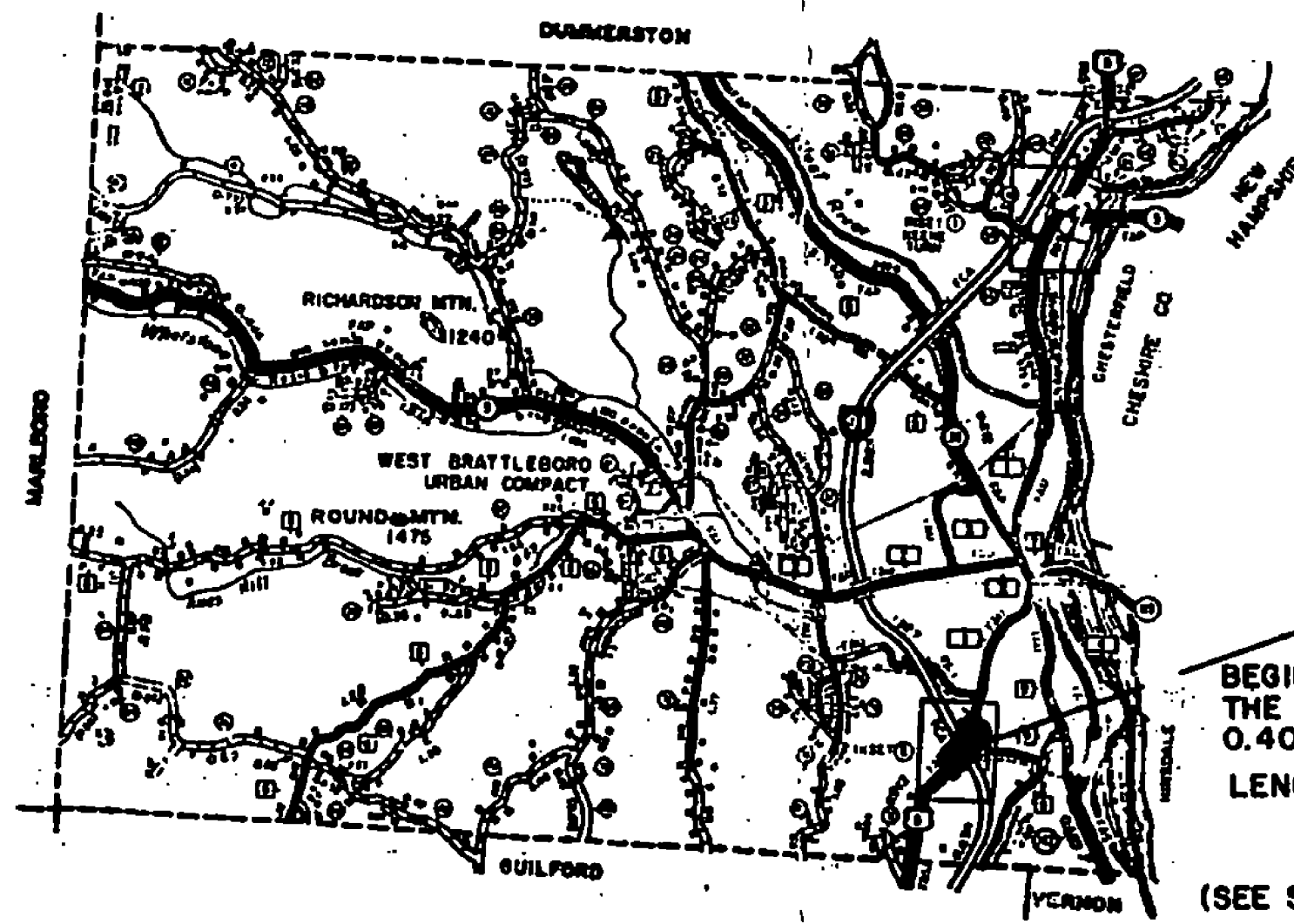
STATE OF VERMONT AGENCY OF TRANSPORTATION



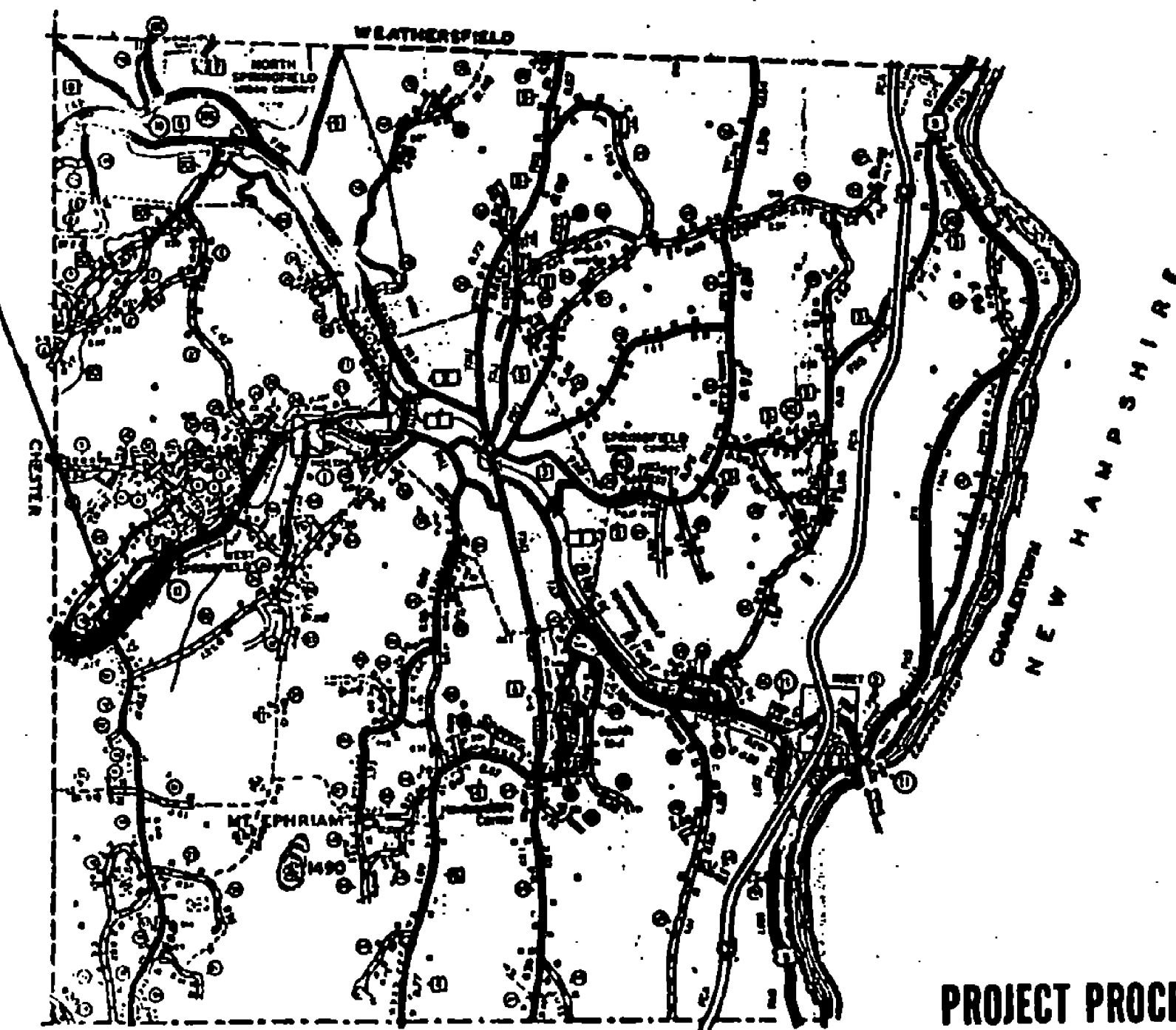
PROPOSED IMPROVEMENT IN THE TOWNS OF: SPRINGFIELD, MARLBORO, & BRATTLEBORO IN THE COUNTIES OF: WINDSOR & WINDHAM VT. RTE. 11, RTE. 9, & U.S. RTE. 5 1986 PAVING PROGRAM DISTRICT 2



MARLBORO F 010-1(27)S
VT. RTE. 9
BEGINNING AT A POINT ON VT. RTE. 9,
4.692 MILES EASTERLY OF THE
WILMINGTON-MARLBORO TOWN LINE
AND EXTENDING EASTERLY 2.608
MILES TO M.M. 7.300.
LENGTH OF PROJECT=13770 FT.=2.608 MI.
1984 ADT= 3880
T = 8 %
(SEE SHEET 2 OF 45 FOR PROJECT DESCRIPTION)



BRATTLEBORO M 2000(14)S
U.S. RTE. 5
BEGINNING AT A POINT ON U.S. RTE. 5, 0.688 MILES NORTH OF
THE GUILFORD-BRATTLEBORO TOWN LINE AND EXTENDING NORTHERLY
0.404 MILES TO THE BRATTLEBORO URBAN COMPACT LIMITS AT M.M. 1.092.
LENGTH OF PROJECT= 2135 FT.=0.404 MI.
1984 ADT= 4500
T = 7 %
(SEE SHEET 4 OF 45 FOR PROJECT DESCRIPTION)



SPRINGFIELD RS 0134(6)
VT. RTE. 11
BEGINNING AT THE CHESTER-SPRINGFIELD TOWN
LINE (MM 0.00) ON VT. RTE. 11 AND EXTENDING
EASTERLY 1.162 MILES TO MM 1.162.
LENGTH OF PROJECT= 6137 FT.= 1.162 MI.
1984 ADT= 2800
T = 8 %
(SEE SHEET 5 OF 45 FOR PROJECT DESCRIPTION)

CONTRACT PLANS
THESE PLANS DO NOT REFLECT
CHANGES MADE ON THE PROJECT.

Date APR 3 1987
Contractor
The Lane Construction Corporation
A.W. Duvell
Signature
PRESIDENT
Title
Jose C. Cramp
Transportation Secretary's Signature

**PROJECT PROCESSED UNDER
SECONDARY ROAD PLAN**

SUBMITTED BY ORDER OF THE STATE TRANSPORTATION BOARD

APPROVED *Frank E. Abbott* DATE *3/12/86*
DIRECTOR OF ENGINEERING AND CONSTRUCTION

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED _____ DATE _____
DIVISION ADMINISTRATOR

1986 PAVING PROGRAM - DISTRICT 2
PROJECT F 010-1(27)S
M 2000(14)S
RS 0134(6)
SHEET 1 OF 45 SHEETS

D-10 BRS 12/17/70



TYPICAL SECTIONS MARLBORO

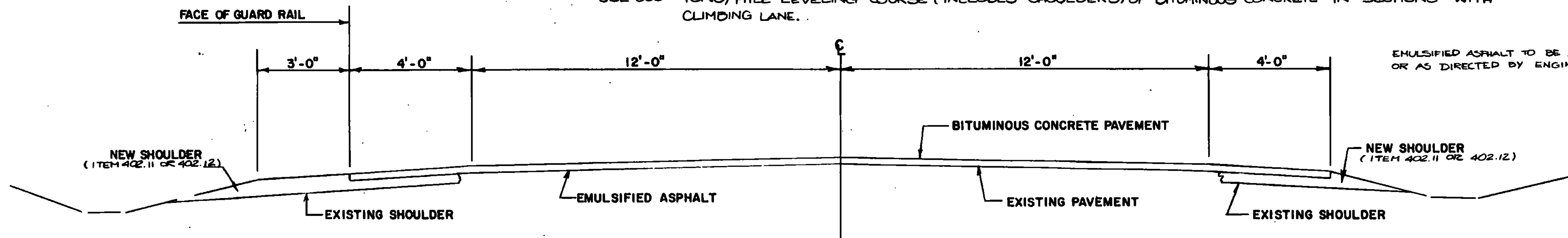
1 1/4" BITUMINOUS CONCRETE PAVEMENT (± 1/4")

USE 655 TONS/MILE LEVELING COURSE (INCLUDES SHOULDERS) OF BITUMINOUS CONCRETE FROM MM 4692-MM 554

USE 350 TONS/MILE LEVELING COURSE (INCLUDES SHOULDERS) OF BITUMINOUS CONCRETE FOR THE REST OF THE PROJECT EXCEPT IN SECTIONS WITH CLIMBING LANE.

USE 880 TONS/MILE LEVELING COURSE (INCLUDES SHOULDERS) OF BITUMINOUS CONCRETE IN SECTIONS WITH CLIMBING LANE.

NOTE: UNLESS OTHERWISE DETERMINED BY THE RESIDENT ENGINEER TYPE IV MIX WILL BE USED FOR LEVELING AND TYPE III MIX WILL BE USED FOR THE WEARING COURSE.



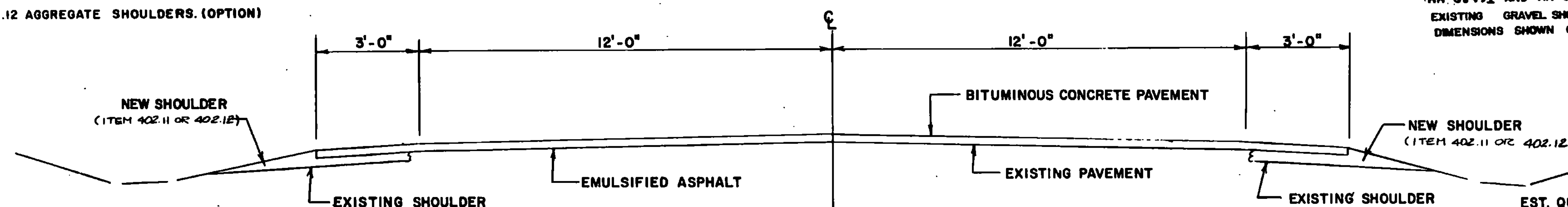
EMULSIFIED ASPHALT TO BE APPLIED AT THE RATE OF 0.015 GAL/SY OR AS DIRECTED BY ENGINEER

NOTE: IF THE SURFACE OF A DRIVE IS DISRUPTED DURING CONSTRUCTION IT SHALL BE REPAIRED. ESTIMATED AMOUNTS OF AGGREGATE AND BITUMINOUS CONCRETE PAVEMENT HAVE BEEN ADDED TO PROJECT QUANTITIES FOR THIS USE. TYPE OF AGGREGATE USED SHALL BE DETERMINED BY THE ENGINEER AND PAID AS ITEM 402.11 AGGREGATE SHOULDERS, TRUCK MEASUREMENT OR ITEM 402.12 AGGREGATE SHOULDERS (OPTION)

USE FROM MM 4.692 TO MM 5.54 &
FROM MM 6.22 TO MM 6.25 &
FROM MM 6.43 TO MM 6.81

PROJECT DESCRIPTION

WORK TO BE PERFORMED UNDER THIS PROJECT CONSISTS OF RESURFACING A PORTION OF VT. RTE. 9 WITH A LEVELING COURSE OVERLAID WITH 1 1/4 INCHES OF BITUMINOUS CONCRETE PAVEMENT. IT ALSO INCLUDES UPGRADING OF GUARD RAIL (BETWEEN MM 6.492 AND MM 6.542) AND EXISTING SIGNING. EXISTING GRAVEL SHOULDERS WILL BE WIDENED AND PAVED ACCORDING TO DIMENSIONS SHOWN ON TYPICAL.



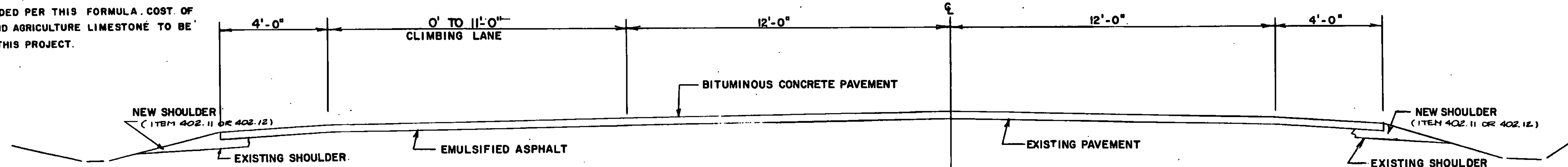
USE FROM MM 6.25 TO MM 6.43 (950')

EST. QUANTITIES TO EXTEND SHOULDERS (ITEM 402.11 OR 402.12)		
EXTENSION	WITH GUARD RAIL	WITHOUT GUARD RAIL
2'		0.46 SQ. FT.
3'	1.00 SQ. FT.	0.63 SQ. FT.
4'	1.46 SQ. FT.	0.80 SQ. FT.

SEEDING FORMULA, RURAL AREAS

% WT.	LBS./A.	NAME	% PUR.	GERM. %
3.33	2	CROWN VETCH	97	75
50.00	30	CREEPING RED FESCUE	98	85
8.33	5	TIMOTHY	99	88
16.67	10	PERENNIAL RYE GRASS (VAR. PENNFINE)	95	85
8.34	5	ALFALFA (VAR. SARANAC)	99	85
8.33	5	BIRDFOOT TREFOIL (VAR. EMPIRE)	98	85
5.00	3	HIGHLAND BENT GRASS	92	85
100.00	50			

NOTE: ALL DISTURBED AREAS TO BE SEEDED PER THIS FORMULA. COST OF SEED, MULCH, FERTILIZER, AND AGRICULTURE LIMESTONE TO BE SUBSIDIARY TO OTHER ITEMS ON THIS PROJECT.



USE FOR CLIMBING LANE
FROM MM 5.54 TO MM 6.22 &
FROM MM 6.81 TO MM 7.30

THE SEED MIXTURE SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE FROM ALL NOXIOUS WEED SEED.

MULCH TO BE PLACED ON ALL EARTH SLOPES AT THE RATE OF TWO TONS PER ACRE.

FERTILIZER SHALL BE MIXED AS FOLLOWS:

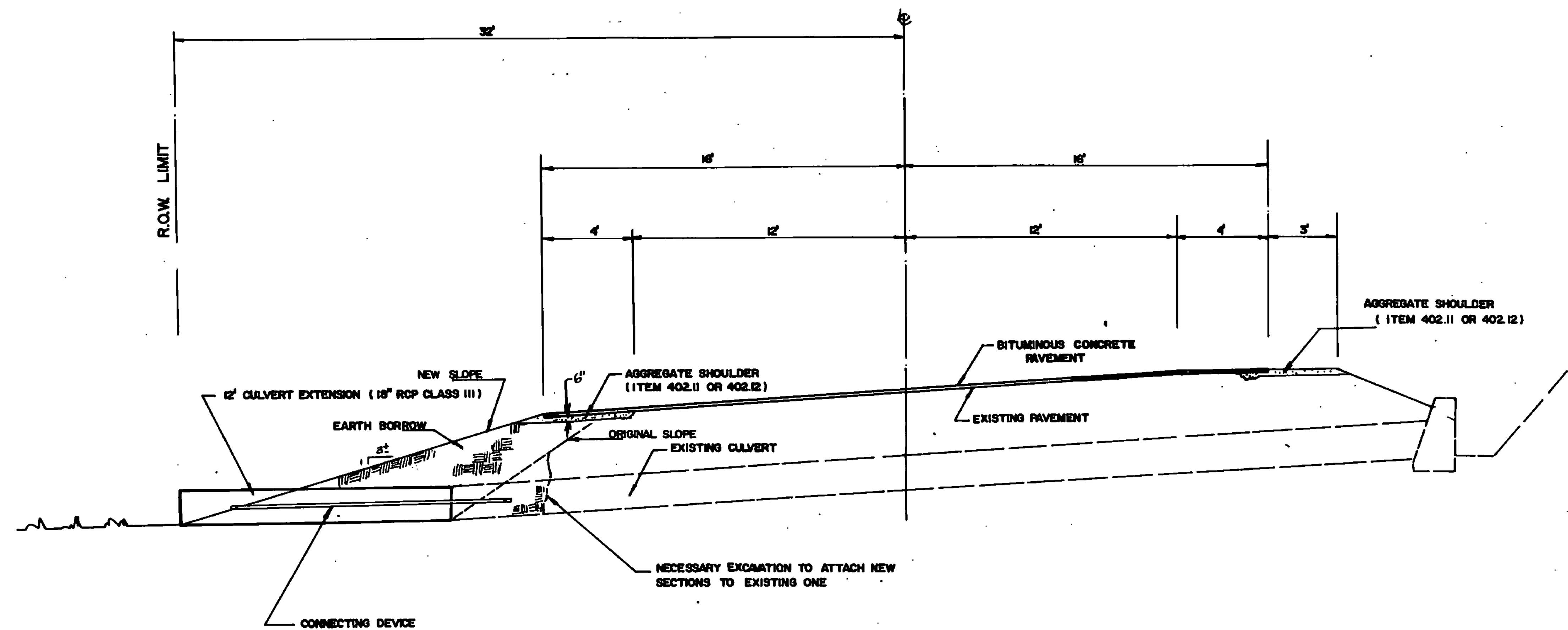
NITROGEN	10 %
PHOSPHORUS	20 %
POTASH	10 %

FERTILIZER SHALL BE DELIVERED IN BAGS OF NOT TO EXCEED 100 LBS. EACH AND IS TO BE APPLIED AT THE RATE OF 500 LBS. PER ACRE.

AGRICULTURAL LIMESTONE TO BE APPLIED TO ALL EARTH SLOPES AT THE RATE OF TWO TONS PER ACRE OR AS DIRECTED BY THE ENGINEER.

MARLBORO

SURVEYED BY	DATE
DRAWN BY SAENZ	DATE 5-88
TRACED BY HARDIE	DATE 5-88
MARLBORO	
VT. RTE 9	
PROJ. F	NO. 010-1(27)S
SHEET 2	OF 45



CULVERT EXTENSION AT MM 5.30

NOTES

1. THIS CROSS SECTION IS APPROXIMATED TO THE ACTUAL SITUATION AND ONLY CAN BE USED AS AN ILLUSTRATION OF THE WORK SCOPE IN THIS AREA.
2. THE INTENT OF EXTENDING THE EXISTING CULVERT ON THE LEFT SIDE OF ROADWAY AT MM 5.30 IS TO INCREASE THE SHOULDER WIDTH IN THIS AREA FROM 1 TO 4 FT.
3. ACCORDING TO RECORD PLANS, THE R.O.W. EXTENDS 32 FT FROM CENTER LINE (C) ON THE LEFT SIDE OF ROADWAY. THEREFORE, NO EMBANKMENT WORK SHOULD BE PERFORMED OUTSIDE THIS LIMIT.
4. THE NECESSARY EXCAVATION TO ATTACH NEW SECTIONS TO EXISTING ONE IS SUBSIDIARY TO PIPE ITEM.
5. THE CONNECTING DEVICE TO ANCHOR NEW CULVERT SECTIONS TO EXISTING ONE SHALL BE INSTALLED AS DESCRIBED IN STANDARD SPECIFICATIONS FOR CONSTRUCTION, 1986, 60407(M), PAGE 6-3. THIS CONNECTING DEVICE IS SUBSIDIARY TO PIPE ITEM.
6. USE EARTH BORROW UP TO 6" BELOW EXISTING GRADE IN EMBANKMENT AREA AND PLACE A LAYER OF AGGREGATE SHOULDER UP TO EXISTING GRADE (ITEM 402.11 OR 402.12) AS SHOWN.

DATUM	
VERTICAL	
HORIZONTAL	

MARLBORO	
SURVEYED BY	DATE
DRAWN BY	DATE
TRACED BY	DATE
MARLBORO	
VT RTE 9	
PROJ. F	NO. 010-1(27)5.
SHEET 3 OF 45	

TYPICAL SECTIONS

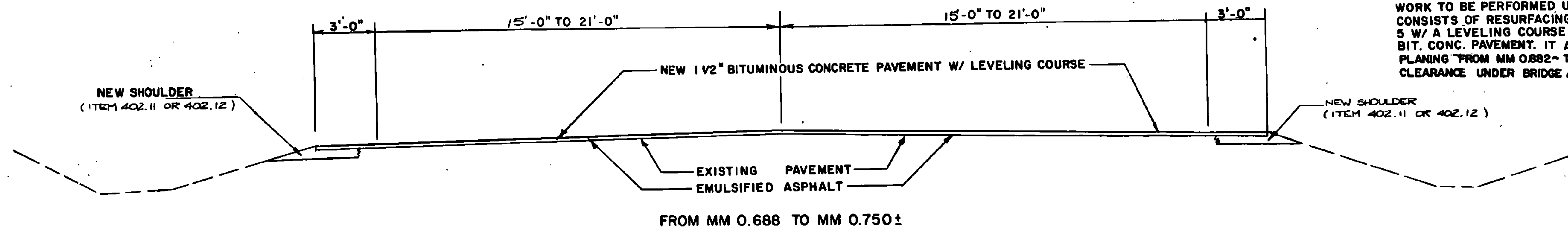
NOTE: IF THE SURFACE OF A DRIVE IS DISRUPTED DURING CONSTRUCTION IT SHALL BE REPAIRED. ESTIMATED AMOUNTS OF AGGREGATE AND BITUMINOUS CONCRETE PAVEMENT HAVE BEEN ADDED TO PROJECT QUANTITIES FOR THIS USE. TYPE OF AGGREGATE USED SHALL BE DETERMINED BY THE ENGINEER AND PAID AS ITEM 402.11 AGGREGATE SHOULDERS, TRUCK MEASUREMENT OR ITEM 402.12 AGGREGATE SHOULDERS, (OPTION)

1 1/2" BITUMINOUS CONCRETE PAVEMENT (1/4")
430 TONS, PER/MILE LEVELING COURSE (INCLUDES SHOULDERS) OF BITUMINOUS CONCRETE EMULSIFIED ASPHALT, TO BE APPLIED AT THE RATE OF .015 GAL/SY. OR AS DIRECTED BY THE ENGINEER.

NOTE: UNLESS OTHERWISE DETERMINED BY THE RESIDENT ENGINEER, TYPE IV MIX WILL BE USED FOR LEVELING AND TYPE III MIX WILL BE USED FOR THE WEARING COURSE.

PROJECT DESCRIPTION

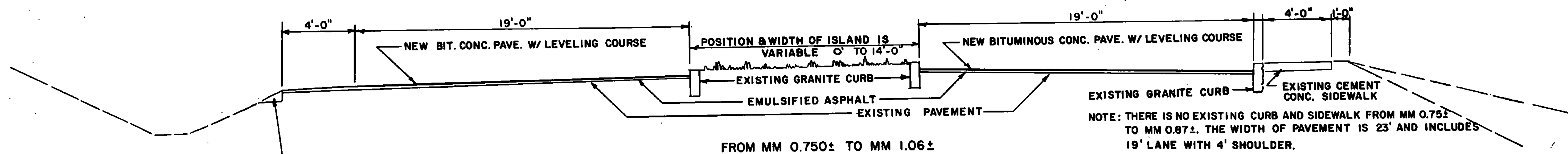
WORK TO BE PERFORMED UNDER THIS PROJECT CONSISTS OF RESURFACING A PORTION OF US RTE. 5 W/ A LEVELING COURSE OVERLAID W/ 1 1/2" OF BIT. CONC. PAVEMENT. IT ALSO INCLUDES COLD PLANING FROM MM 0.882 TO MM 0.902 (MINIMUM CLEARANCE UNDER BRIDGE AFTER PAVING IS 14' 0").



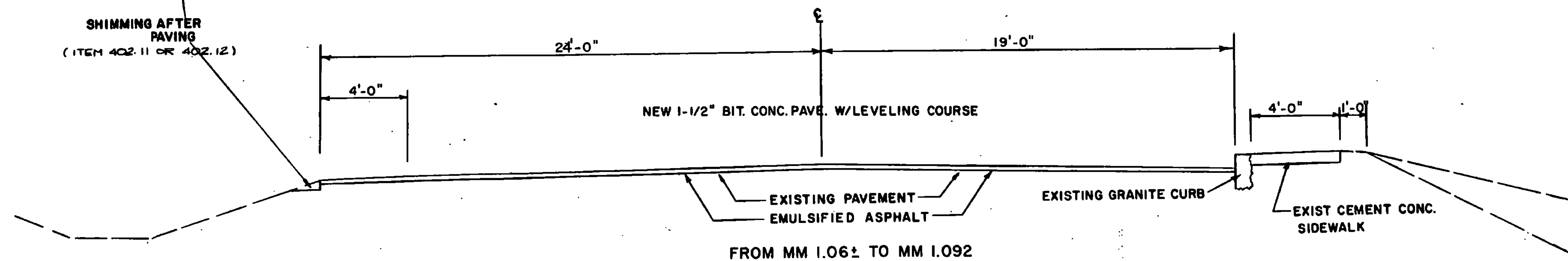
EST. QUANTITIES TO EXTEND SHOULDERS BETWEEN MM 0.688 AND MM 0.750 (ITEM 402.11 OR 402.12)

EXTENSION	LEFT SIDE	RIGHT SIDE
3'	0.81 SQ. FT.	1.00 SQ. FT.

EST. QUANTITY FOR SHIMMING 0.06 SQ. FT.



SHIMMING AFTER PAVING
(ITEM 402.11 OR 402.12)



DATUM
VERTICAL _____
HORIZONTAL _____

BRATTLEBORO

SURVEYED BY _____ DATE _____
DRAWN BY DAENZ DATE 5-06
TRACED BY HARDIE DATE 5-06
BRATTLEBORO US RTE. 5
PROJ. M No. 2000 (14) S
SHEET 4 OF 45

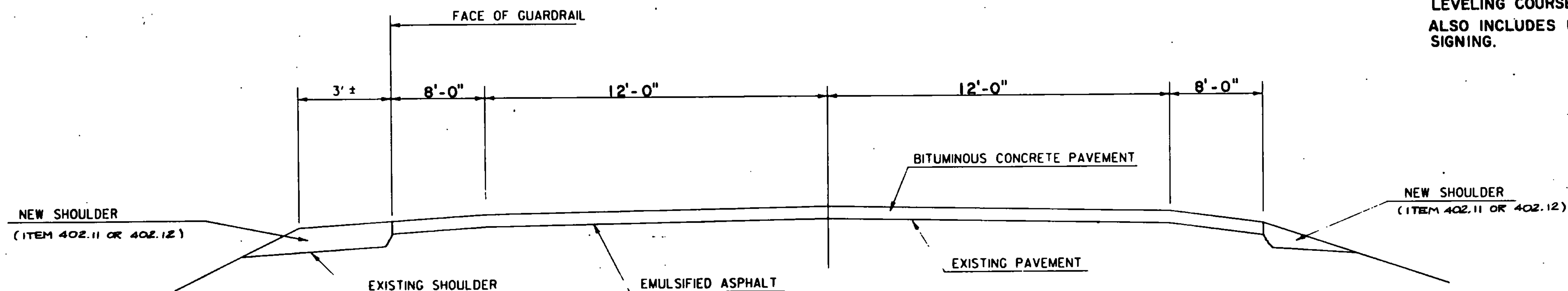
TYPICAL SECTION

1" BITUMINOUS CONCRETE PAVEMENT (1/4")
 455 TONS, PER/MILE LEVELING COURSE (INCLUDES SHOULDERS) OF BITUMINOUS CONCRETE
 EMULSIFIED ASPHALT, TO BE APPLIED AT THE RATE OF .015 GAL./SQ. YD.
 OR AS DIRECTED BY THE ENGINEER.

NOTE: UNLESS OTHERWISE DETERMINED BY THE RESIDENT ENGINEER,
 TYPE IV MIX WILL BE USED FOR LEVELING AND WEARING
 COURSES.

PROJECT DESCRIPTION

WORK TO BE PERFORMED UNDER THIS PROJECT CONSISTS
 OF RESURFACING A PORTION OF VT. RTE 11 WITH A
 LEVELING COURSE OVERLAID WITH 1" OF BIT. CONC. PAVE.
 ALSO INCLUDES UPGRADING EXISTING GUARD RAIL AND
 SIGNING.



ROUTE VT. 11 MILE 0.000 TO 1.162 MILE

NEW PAVED SHOULDERS OVER EXISTING PAVED SHOULDERS

NOTE: IF THE SURFACE OF A DRIVE IS DISRUPTED DURING CONSTRUCTION IT
 SHALL BE REPAIRED. ESTIMATED AMOUNTS OF AGGREGATE AND BITUMINOUS
 CONCRETE PAVEMENT HAVE BEEN ADDED TO PROJECT QUANTITIES FOR
 THIS USE. TYPE OF AGGREGATE USED SHALL BE DETERMINED BY THE
 ENGINEER AND PAID AS ITEM 402.11 AGGREGATE SHOULDERS, TRUCK
 MEASUREMENT OR ITEM 402.12 AGGREGATE SHOULDERS. (OPTION)

NOTE: ALL DISTURBED AREAS TO BE SEEDED PER THIS FORMULA. COST OF
 SEED, HAY MULCH, FERTILIZER, AND AGRICULTURE LIMESTONE TO BE
 SUBSIDIARY TO OTHER ITEMS ON THIS PROJECT.

SEEDING FORMULA, RURAL AREAS

% WT.	LBS./A.	NAME	% PUR.	GERM. %
3.33	2	CROWN VETCH	97	75
50.00	30	CREeping RED FESCUE	98	85
8.33	5	TIMOTHY	99	88
16.67	10	PERENNIAL RYE GRASS (VAR. PENNFINE)	95	85
8.34	5	ALFALFA (VAR. SARANAC)	99	85
8.33	5	BRODSFOOT TREFOIL (VAR. EMPIRE)	98	85
5.00	3	HIGHLAND BENT GRASS	92	85
100.00	50			

THE SEED MIXTURE SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40 % BY
 WEIGHT AND SHALL BE FREE FROM ALL NOXIOUS WEED SEED.

HAY MULCH TO BE PLACED ON ALL EARTH SLOPES AT THE
 RATE OF TWO TONS PER ACRE.

FERTILIZER SHALL BE MIXED AS FOLLOWS:

NITROGEN	10 %
PHOSPHORUS	20 %
POTASH	10 %

FERTILIZER SHALL BE DELIVERED IN BAGS OF NOT TO EXCEED 100 LBS. EACH
 AND IS TO BE APPLIED AT THE RATE OF 500 LBS. PER ACRE.

AGRICULTURAL LIMESTONE TO BE APPLIED TO ALL EARTH SLOPES AT THE
 RATE OF TWO TONS PER ACRE OR AS DIRECTED BY THE ENGINEER.

EST. QUANTITIES OF AGGREGATE SHOULDERS (ITEM 402.11 / 402.12)

WITH GUARDRAIL	WITHOUT GUARDRAIL
0.81 SQ. FT.	0.06 SQ. FT.

DATUM
 VERTICAL _____
 HORIZONTAL _____

SPRINGFIELD

SURVEYED BY _____ DATE _____
 DRAWN BY HARDIE DATE 8-8
 TRACED BY HARDIE DATE 8-8
 SPRINGFIELD VT RTE 11
 PROJ. RS NO 0134(6)
 SHEET 5 OF 45

STATE OF VERMONT
AGENCY OF TRANSPORTATION

[illegible]

0-1 JAN 88

**STATE OF VERMONT
AGENCY OF TRANSPORTATION**

[illegible][illegible]

1986 PAVING PROGRAM

ITEM DETAIL SHEET

MILE MARKER	POS	REM. TREES		UNCL. EXC.	EARTH BORROW CY	TRENCH EARTH	TRENCH ROCK	CHG ELEV EA	METAL PIPE			RCP PIPE			MES	RCPES	CONC	STEEL	GRATE TYPE B	STONE FILL		TIMBER CURB	ITEM 004.40	GUARDRAIL ITEMS				DEL	OPTION		NEW MAILBOX	REMARKS		
		D	L						TH	D	L	CL	I	II						63L20	63L25			63L50	63L50	AGG SHOUL CY	AGG SHOUL TON							
MARLBORO FOIO-1(27)S																																		
4.62-7.30																												463	810			BRING UNPAVED PORTION OF SHOULDER UP TO EXISTING GRADE (BEFORE LEVELING) AND SHIMMING OF SHOULDER EDGE AFTER PAVING. CONSTRUCT TOWN HIGHWAY APPROACHES & DRIVES.		
5.30	LT				75							18	12	III																			EXTEND 12' EXISTING 18' ROP. (SEE SHEET 3 OF 45)	
5.31-5.39	LT				670																												CONSTRUCT LEFT SHOULDER	
6.49-6.53																						224			325	1	3		36	63			CONSTRUCT SHOULDER IN AREA WITH GUARD RAIL AS SHOWN ON GUARD RAIL DETAIL SHEET. REPLACE EXISTING GUARD RAIL ON RIGHT SIDE AND EXTEND BOTH ENDS WITH 12.5' PLUS ECT. (TOTAL LENGTH WITHOUT ECT'S = 137.5'). REPLACE EXISTING GUARD RAIL ON LEFT SIDE AND EXTEND EASTERLY END WITH 12.5' + ECT. EXTEND THE WESTERLY END WITH 50' AND A G1-d (R=16') TERMINAL AND WRAP AROUND DRIVE (TOTAL LENGTH WITHOUT ECT = 175'). POST SPACING IN FRONT OF UTILITY POLE SHOULD BE 3'-12" (FOR A LENGTH OF 12.5' EITHER SIDE OF POLE. PAY LENGTH OF GUARD RAIL HAS BEEN INCREASED BY 04' 25" = 10 FT. FOR SHORTER POST SPACING (SEE PAGE G-39 STAND. SPEC. FOR CONSTRUCTION)	
6.30	LT																											40	70	1			REMOVE EXISTING MAILBOX AND REPLACE IT WITH NEW ONE ACCORDING TO CRITERIA SHOWN ON SHEET 11 OF 45.	
6.33	LT																											40	70	1			REMOVE EXISTING MAILBOX AND REPLACE IT WITH NEW ONE ACCORDING TO CRITERIA SHOWN ON SHEET 11 OF 45.	
6.35	LT																											40	70	1			REMOVE EXISTING MAILBOX AND REPLACE IT WITH NEW ONE ACCORDING TO CRITERIA SHOWN ON SHEET 11 OF 45.	
TOTALS					745							12										224			325	1	3		619	1083	3			

DISTRICT 2
1986 PAVING PROGRAM
MARLBORO FOIO-1(27)S

SHEET 2 OF 45 SHEET

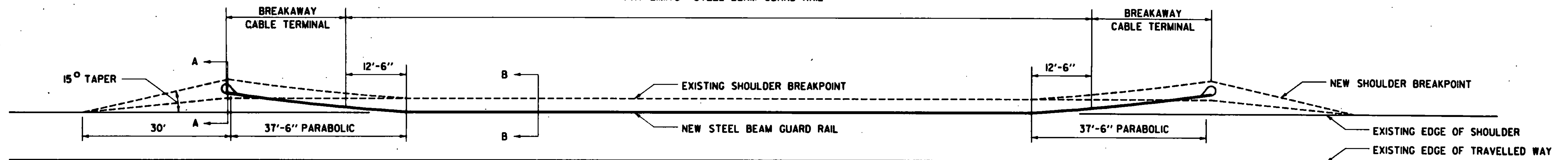
1986 PAVING PROGRAM

ITEM DETAIL SHEET

MILE MARKER	POS	REM. TREES		UNCL. EXC.	EARTH BORROW	TRENCH EARTH	TRENCH ROCK	CHG ELEV	METAL PIPE			RCP PIPE			MES	RCPS	CONC	STEEL	GRATE TYPE B	STONE FILL		TRENCH CLOS	ITEM NO.	GUARDRAIL ITEMS					DEL	OPTION			REMARKS
		SMALL	LARGE						D	L	TH	D	L	CL						I	B			LF	LF	EA	EA	AGG SHOUL		AGG SHOUL	COLD PLANING		
					CY			EA																									

GUARD RAIL DETAILS

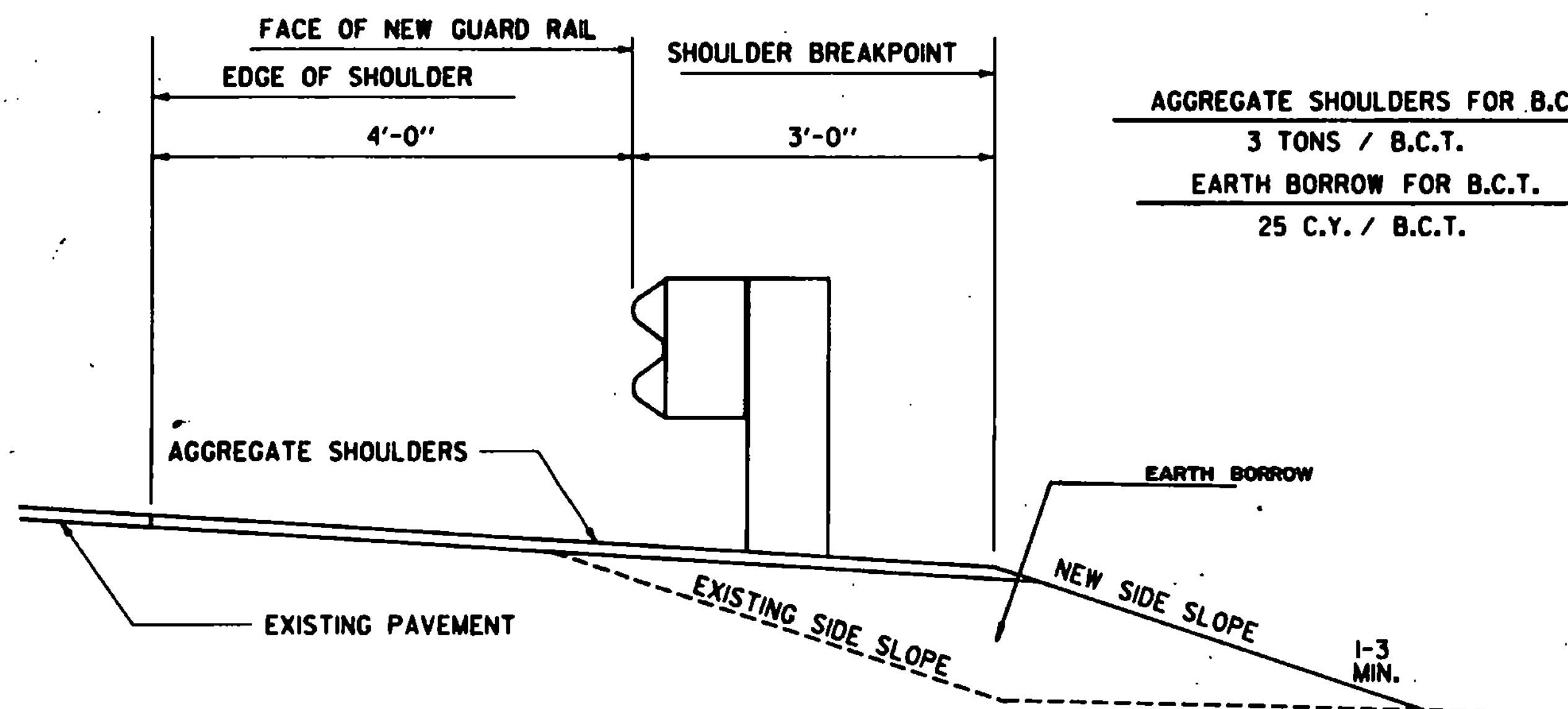
PAY LIMITS STEEL BEAM GUARD RAIL



TYPICAL GUARD RAIL INSTALLATION

ESTIMATING CONSTANTS

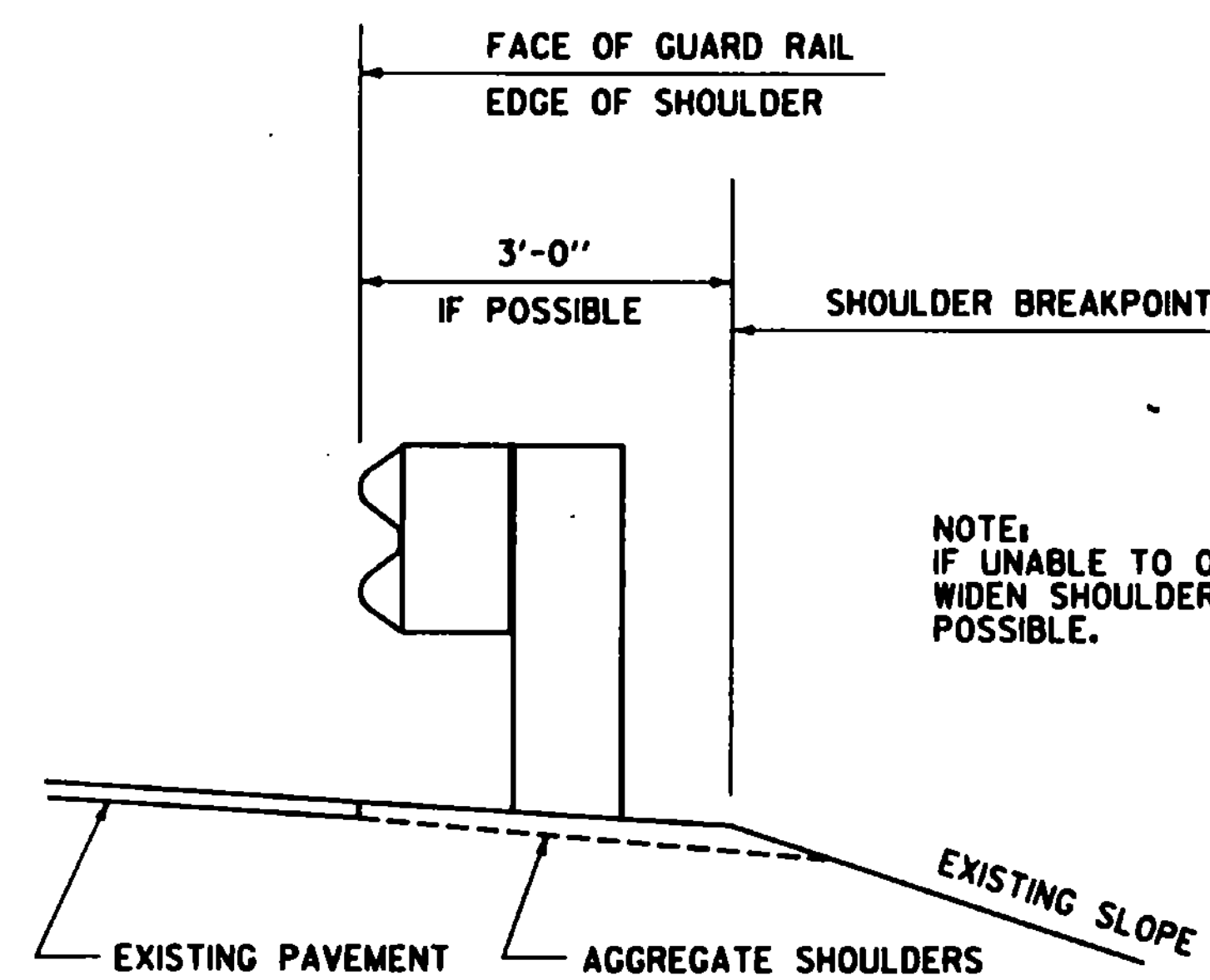
AGGREGATE SHOULDERS FOR B.C.T.
3 TONS / B.C.T.
EARTH BORROW FOR B.C.T.
25 C.Y. / B.C.T.



SECTION A-A

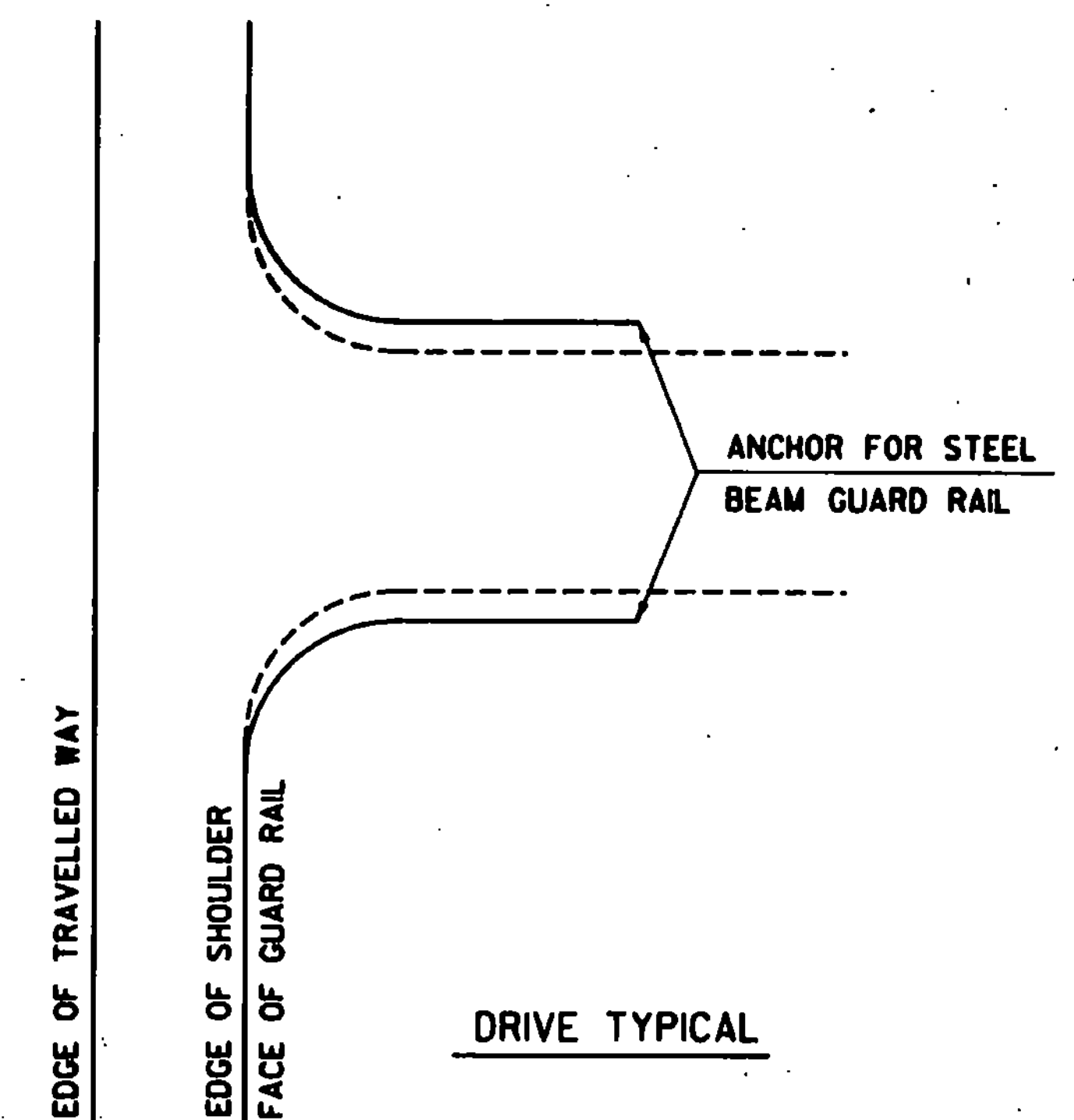
NOTE:
CONTRACTOR WILL GRADE AS NECESSARY
TO ENSURE PROPER DRAINAGE IN AREAS
WIDENED FOR GUARD RAIL INSTALLATION.

USE EARTH BORROW UP TO EXISTING GRADE WHEN
CONSTRUCTION OF EMBANKMENT FOR FLARE IS NEEDED
AND PLACE A LAYER OF AGGREGATE SHOULDERS UP
TO FINISHED GRADE AS SHOWN.



SECTION B-B

NOTE:
IF UNABLE TO OBTAIN 3' WIDTH
WIDEN SHOULDER AS MUCH AS
POSSIBLE.



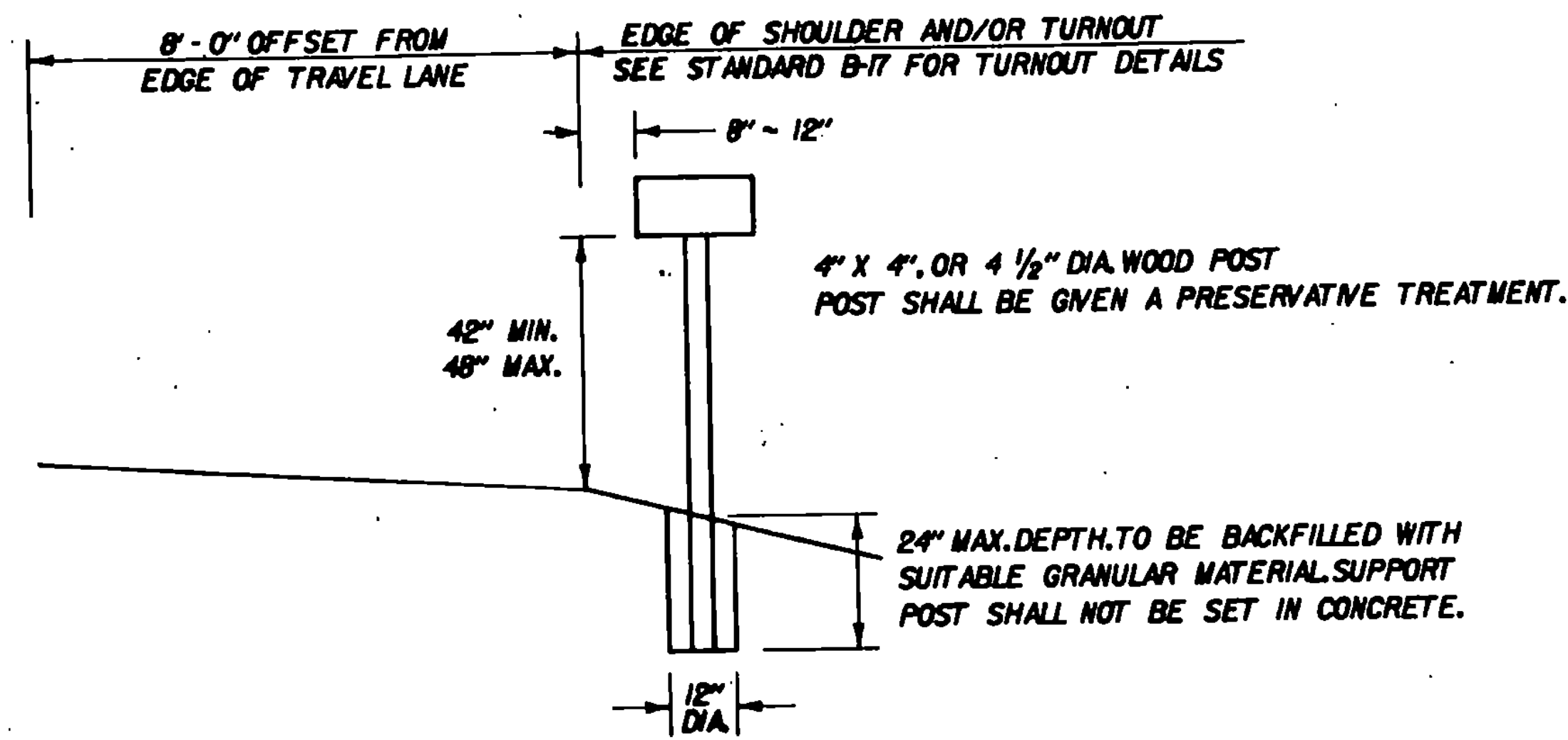
DRIVE TYPICAL

DATUM
VERTICAL _____
HORIZONTAL _____

SURVEYED BY _____ DATE _____
DRAWN BY _____ DATE _____
TRACED BY _____ DATE _____
DISTRICT
1988 PAYING PROGRAM
10-1-88

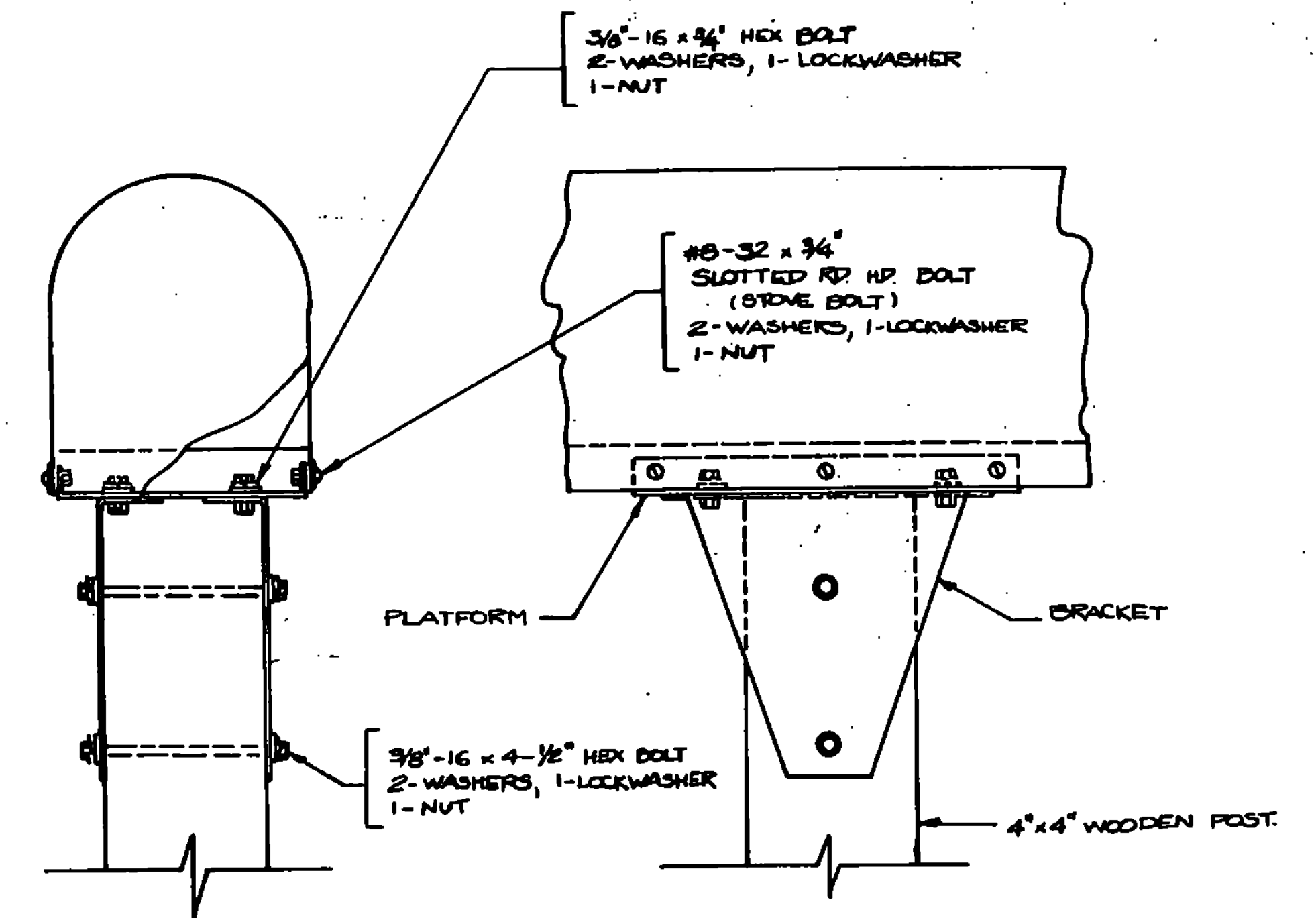
MAILBOX SUPPORT HARDWARE

(COMPILED FROM "A GUIDE FOR ERECTING MAILBOXES ON HIGHWAYS" AASHTO, 1985)

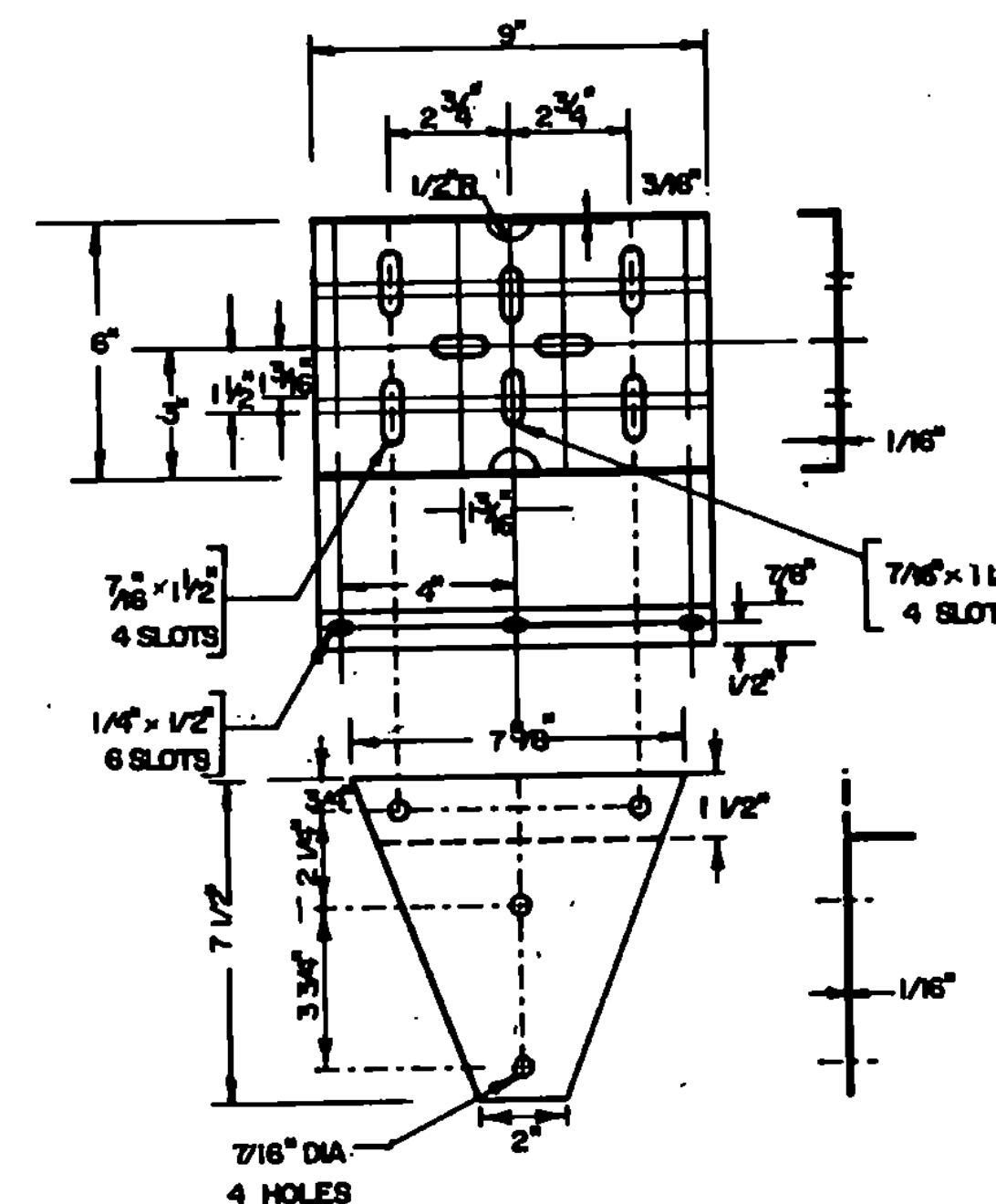


NOTES

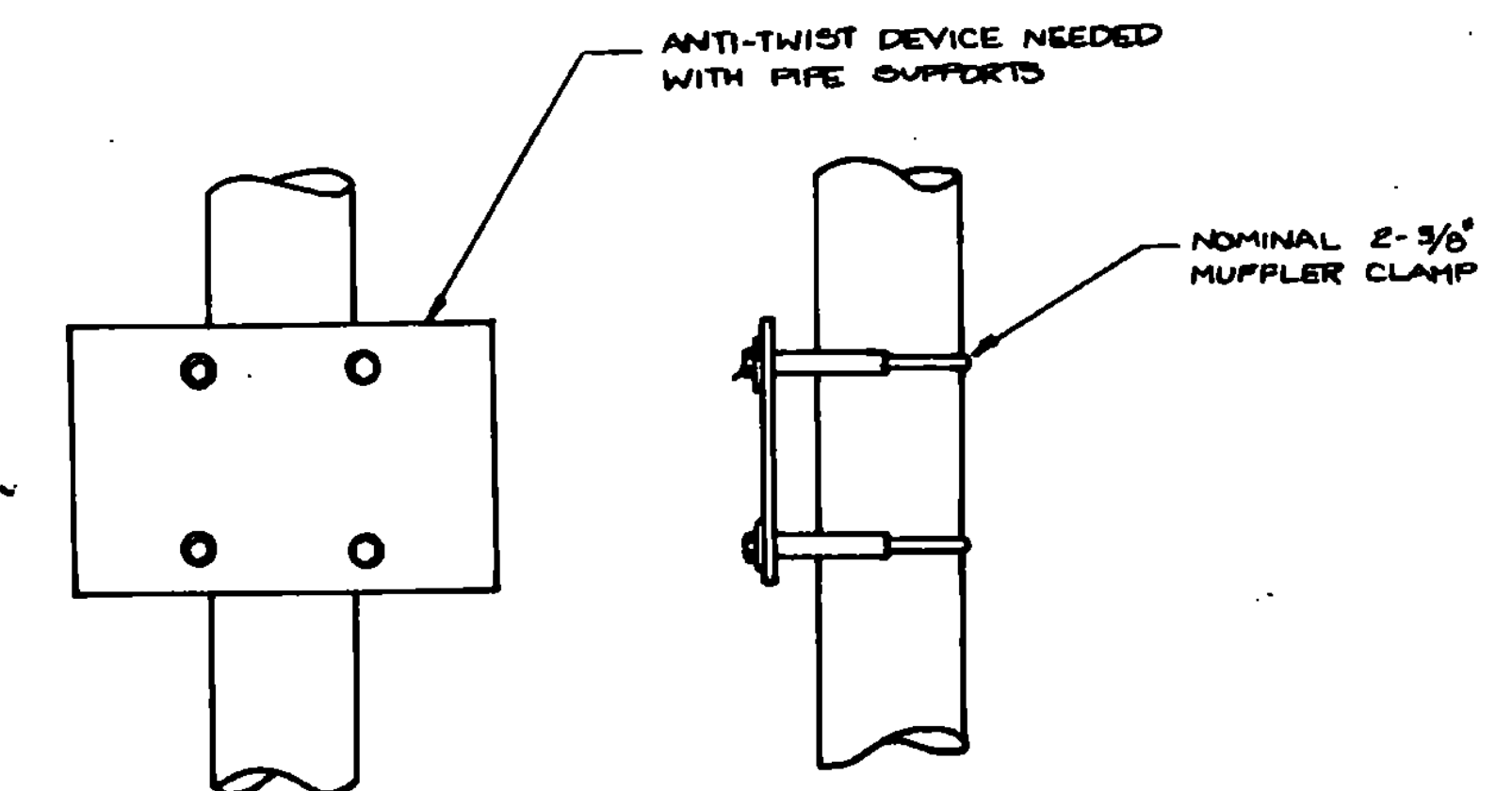
1. ONLY LIGHTWEIGHT MAILBOXES MADE OF LIGHT SHEET METAL OR PLASTIC SHALL BE USED. MAILBOXES SHALL MEET REQUIREMENTS AND APPROVAL OF THE U.S. POSTAL SERVICE.
2. AN ALTERNATE MAILBOX SUPPORT STRUCTURE DESIGN AND CONSTRUCTION MAY BE USED AS LONG AS PROVEN CRASHWORTHY AND MEETS GUIDELINES AS SET OUT IN AASHTO'S GUIDE FOR ERECTING MAILBOXES ON HIGHWAYS. SUPPORT STRUCTURE SHALL ALSO MEET REQUIREMENTS OF THE U.S. POSTAL SERVICE.
3. MAILBOX TURNOUT SHALL MEET B-17 STANDARD AS SET OUT IN STATE OF VERMONT DEPT. OF HIGHWAYS. DESIGN STANDARDS FOR ROAD AND BRIDGE CONSTRUCTION.
4. IF THE STANDARD TURNOUT OFFSET CANNOT BE ATTAINED DUE TO RIGHT-OF-WAY CONSTRAINTS OR OTHER REASONS THE TURNOUT SHALL BE MODIFIED AS DIRECTED BY THE ENGINEER.



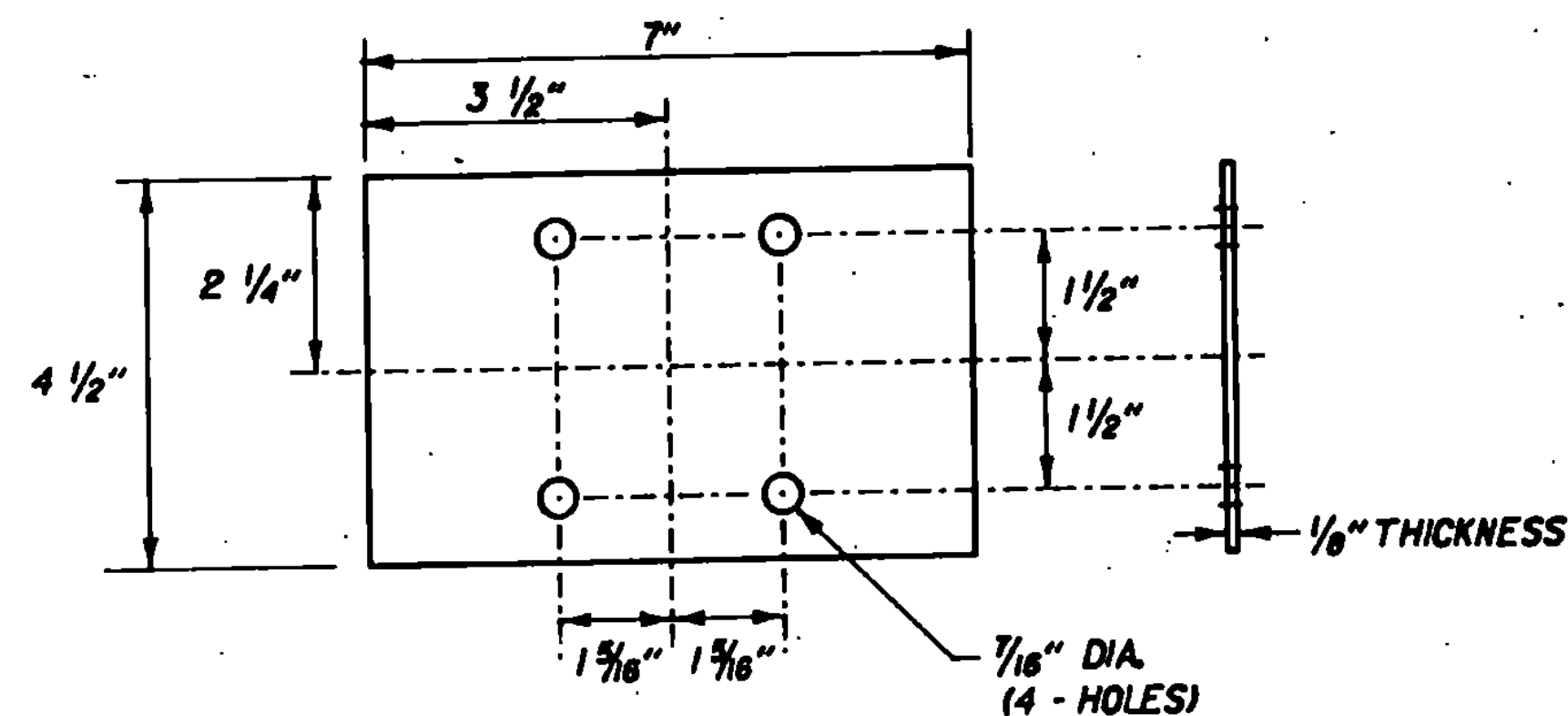
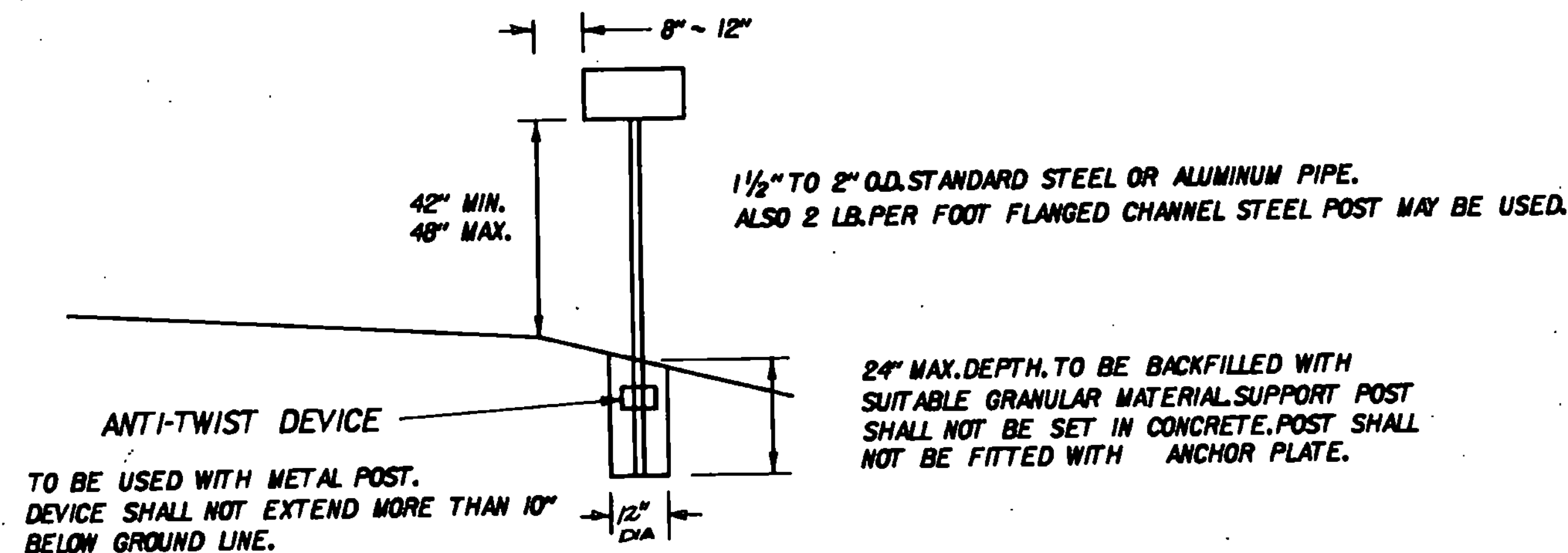
MAILBOX ASSEMBLY
N.T.S.



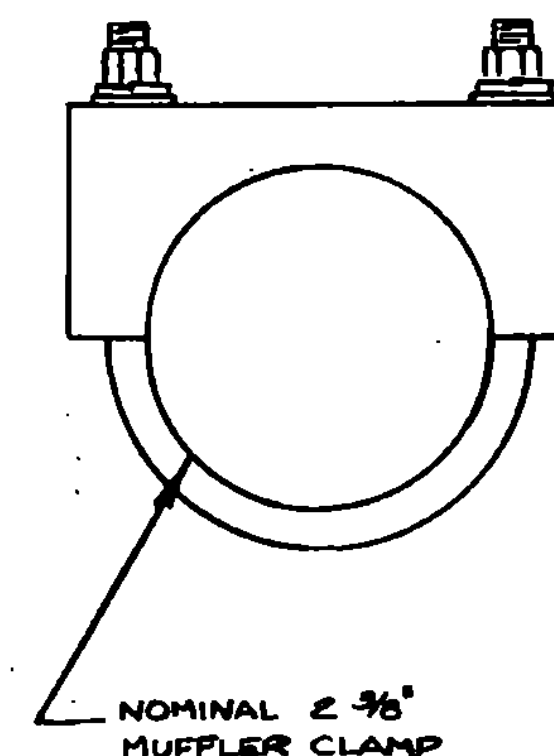
PLATFORM & BRACKET DETAIL



ANTI-TWIST DEVICE ASSEMBLY
N.T.S.



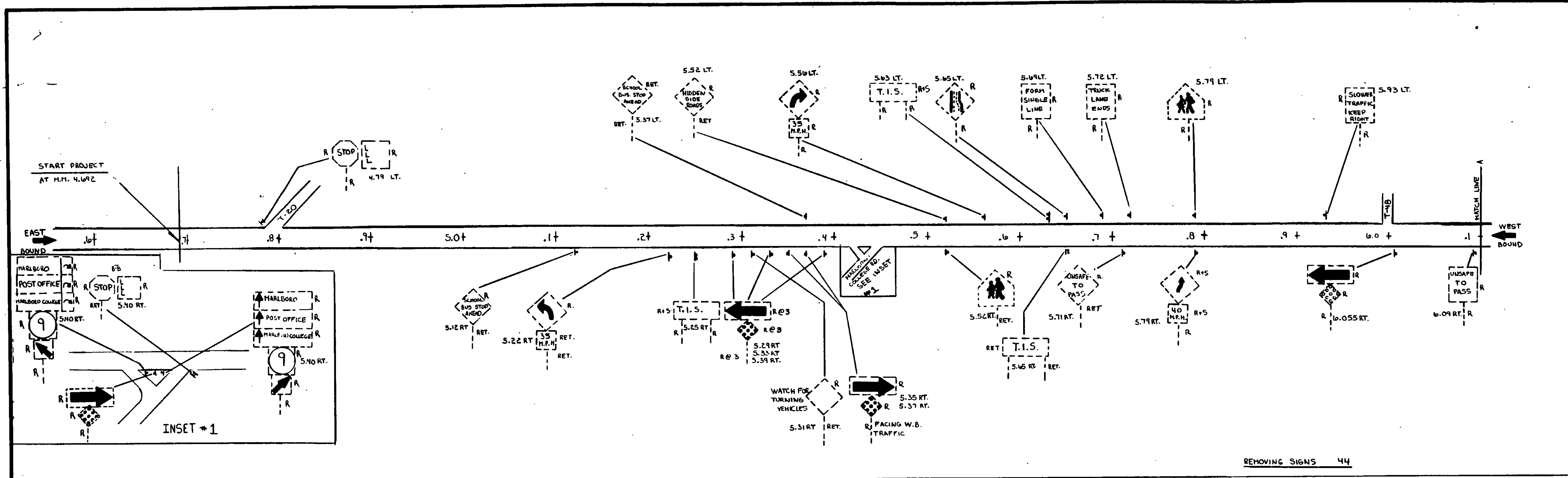
ANTI-TWIST DEVICE DETAIL



DATUM
VERTICAL _____
HORIZONTAL _____

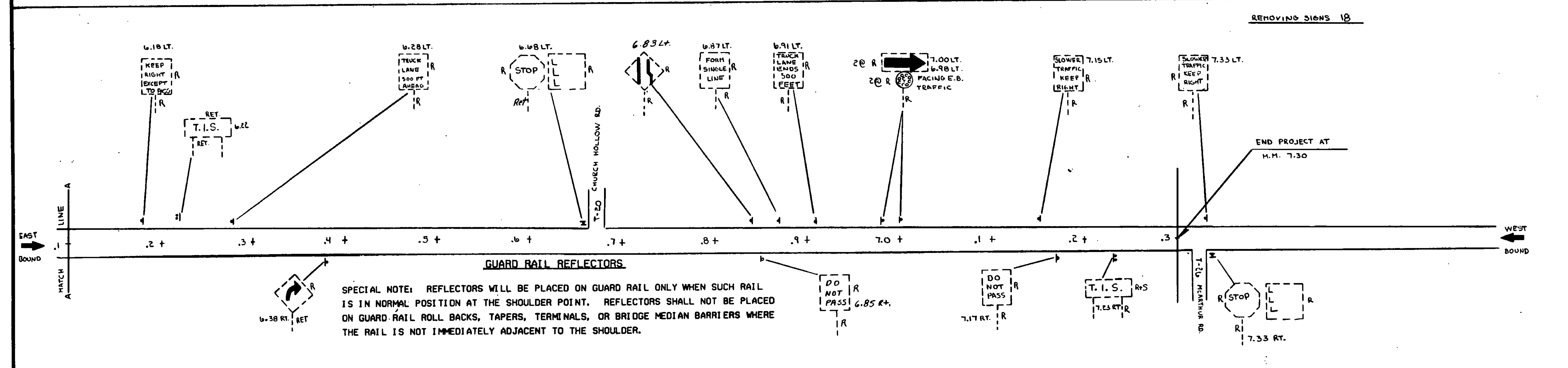
MAILBOX DETAILS

SURVEYED BY _____ DATE _____
DRAWN BY SAENZ DATE JULY 88
TRACED BY SAENZ DATE JULY 88
1986 PAVING PROGRAM
DISTRICT 2
SHEET 11 OF 45



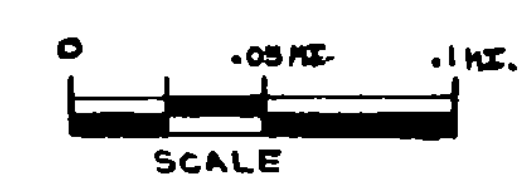
REMOVING SIGNS 44

REMOVING SIGNS 18

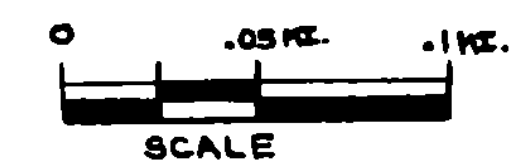
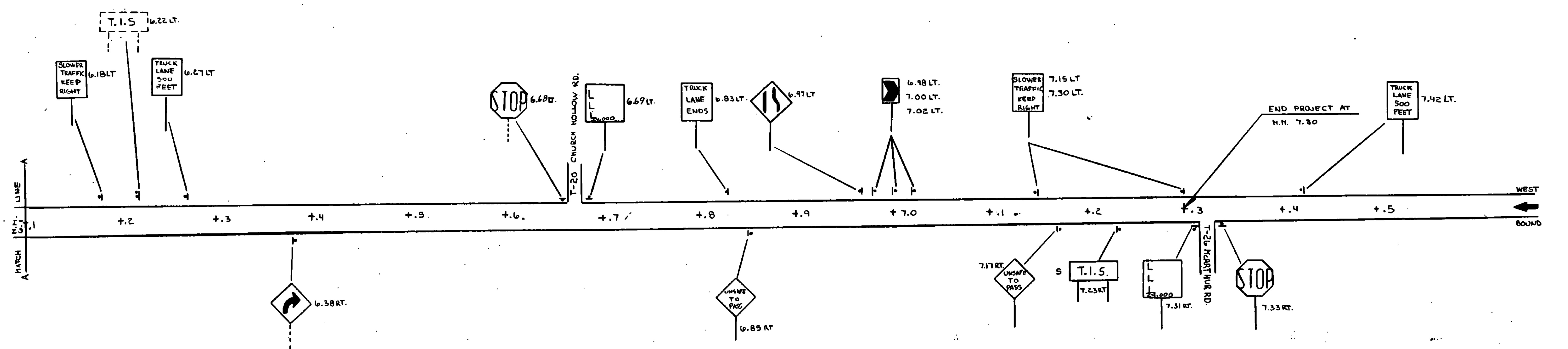
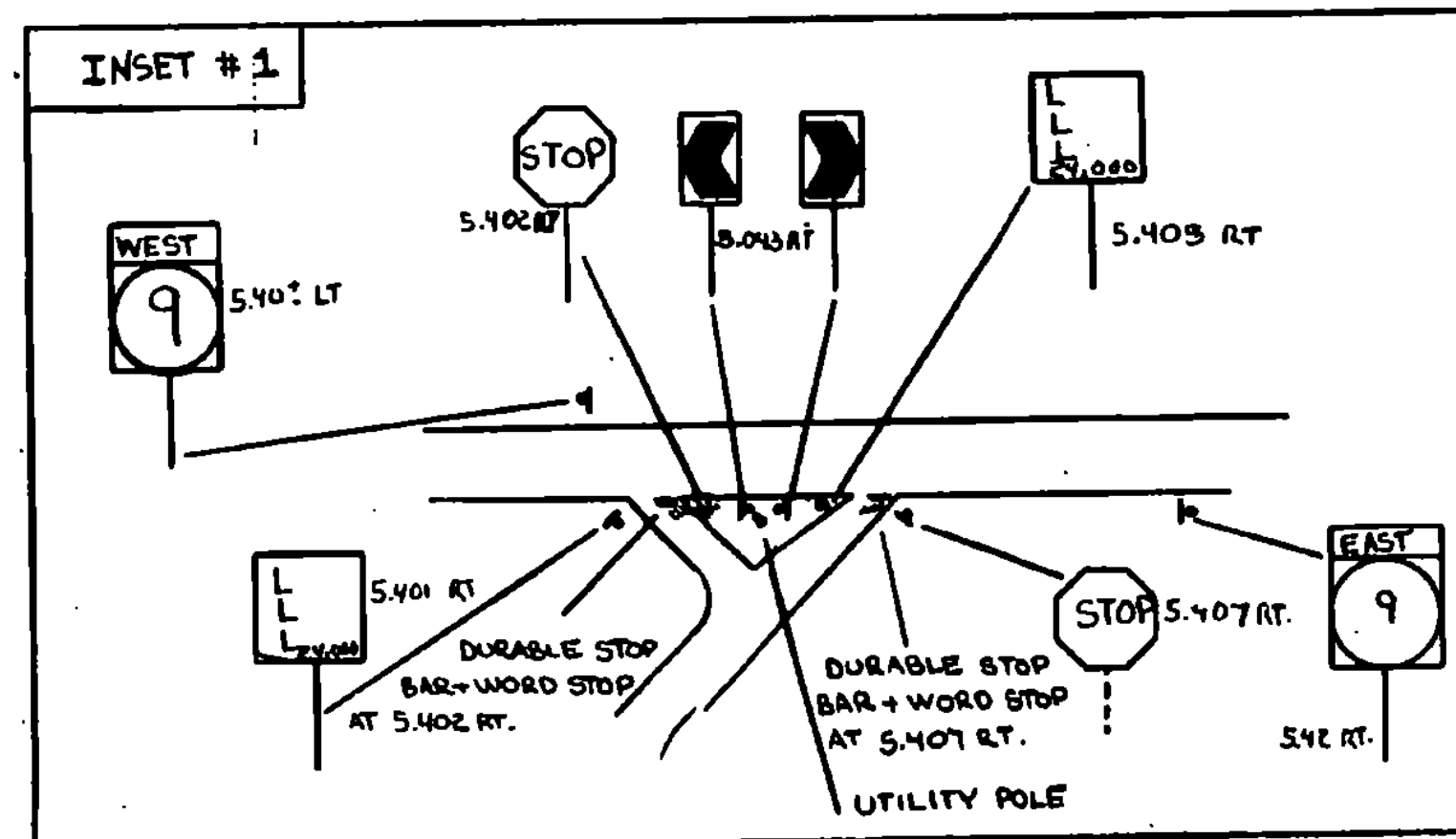
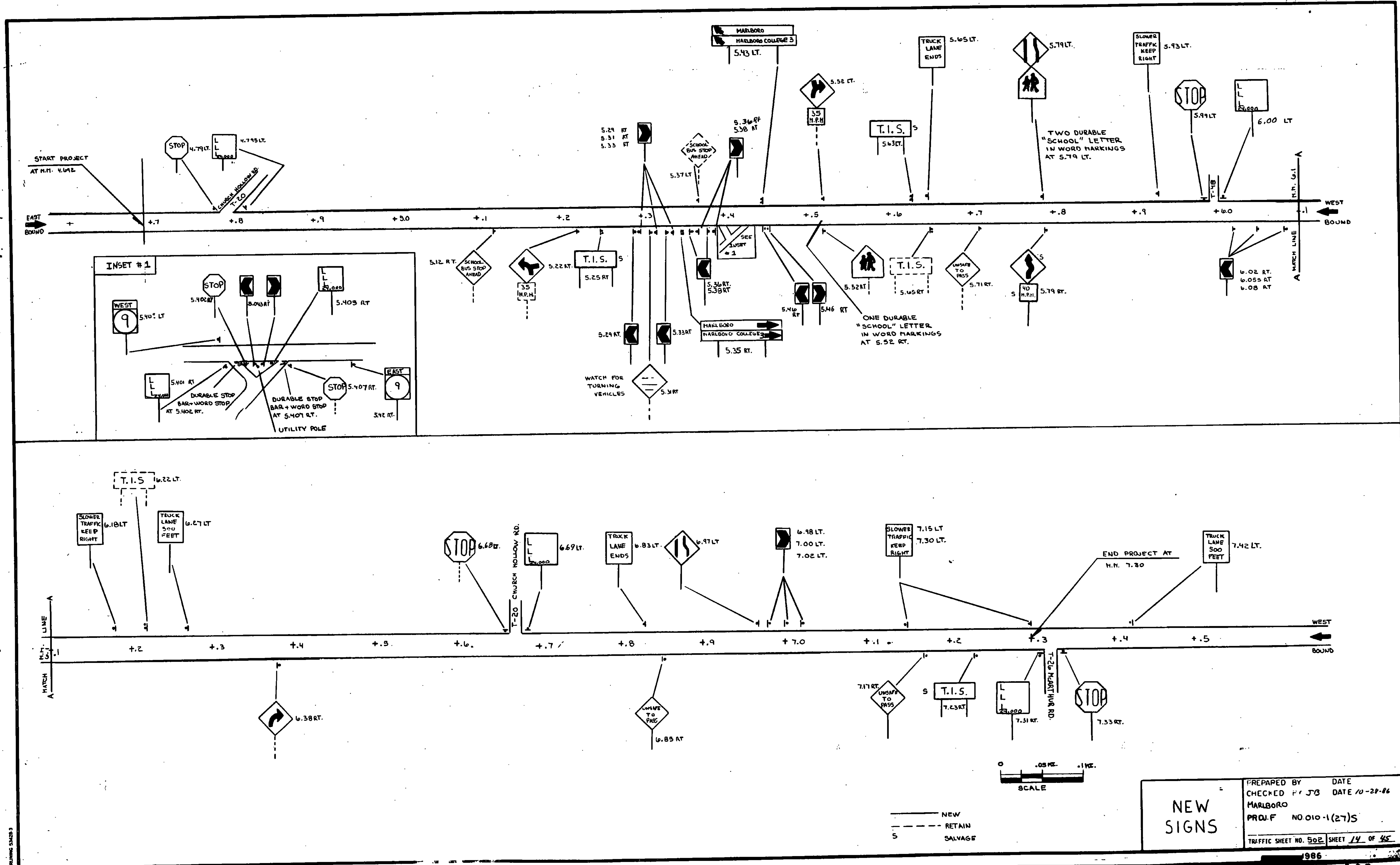


LEGEND

- EXISTING
- R REMOVE
- RET RETAIN
- R/S REMOVE AND SALVAGE



EXISTING SIGNS	PREPARED BY	DATE
	CHECKED BY J.B.	DATE 10-28-96
	MARLBORO	
	PROJ. F NO 010-1(27)S	
TRAFFIC SHEET NO. 501		SHEET 13 OF 25



— NEW
- - - RETAIN
S SALVAGE

NEW SIGNS	PREPARED BY	DATE
	CHECKED BY J.B.	DATE 10-28-86
	MARLBORO	
	PROJ. F NO. 010-1(27)S	
TRAFFIC SHEET NO. 502		SHEET 14 OF 45

TRAFFIC SIGN SUMMARY SHEET

MILEMARKER, STATION, OR SIGN NUMBER		SIGN LEGEND	SIGN DIMENSIONS	EXISTING SIGNS TO BE SALVAGED REMOVE (FA) RETAIN (X)		NEW AND SALVAGED SIGNS				EXISTING POSTS				NEW SIGN POSTS								REMARKS	FOR SIGN DETAIL SHEET		
						NEW "A" (S.F.)	NEW "B" (S.F.)	SALV. SIGN (EA.)	SALV. T.I.S.(S.F.)	RET.	DRILL	REM.	SALV.	NUMBER OF POSTS	FLANGED CHANNEL			TUBULAR ALUMINUM			W SHAPED STEEL			PLAN SHEET NUMBER	STD. SHEET NUMBER
															2.0 LB./FT.	2.5 LB./FT.	3.0 LB./FT.	3.0" Ø	3.0" □	4.0" Ø	4.0" Ø MOD.	POST SIZE	WEIGHT	PTG. SIZE 24" 30"	
4.79 LT.		STOP	30"x30"			6.25								1	X										E-15C
4.79 LT.		24x00	24"x24"			4								1	X										E-15A
5.18 RT.		SCHOOL BUS STOP AHEAD	36"x36"			9.0				X															SEE T.S. # 507
5.22 RT.			30"x30"			6.25				X															SEE T.S. # 507
5.25 RT.		T.I.S. *						*8.25					*2				*X								* Item 680.20 MOD. (NON-FER PARTICIPATING)
5.29 RT.			18"x24"			3								1	X										E-19
5.19 RT.			18"x24"			3								1	X										FACING WEST BOUND TRAFFIC E-19
5.31 RT.		WATCH FOR TURNING VEHICLES	36"x36"			9				X															SEE T.S. # 507
5.31 RT.			18"x24"			3								1	X										FACING WEST BOUND TRAFFIC E-19
5.33 RT.			18"x24"			3								1	X										E-19
5.33 RT.			18"x24"			3								1	X										FACING WEST BOUND TRAFFIC E-19
5.35 RT.		HARBORO HARBOR COLLEGE 3	72"x10" 72"x10"			5 5								2	X										6" Series 'C' 6" Series 'B'-Reduce Spacing 25% E-23 E-23
5.34 RT.			18"x24"			3								1	X										E-19
5.34 RT.			18"x24"			3								1	X										FACING WEST BOUND TRAFFIC E-19
5.34 RT.			18"x24"			3								1	X										E-19
5.34 RT.			18"x24"			3								1	X										FACING WEST BOUND TRAFFIC E-19
SIGNS INSIDE OF INSET 1																									E-15
5.40 LT.		WEST / 9	24"x12" 24"x24"			2 4								1	X										E-15 E-15
TOTALS						77.5		*8.25							450#										FINAL LENGTHS ARE TO BE DETERMINED IN THE FIELD, POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE DESIGN DIVISION'S "SIGN POST DESIGN MANUAL". PREPARED BY _____ DATE _____ CHECKED BY J.B. DATE 10-28-78 PROJ. HARBORO NO. 010-1(27)S TRAFFIC SHEET NO. 503 SHEET 15 OF 45 1986

TRAFFIC SIGN SUMMARY SHEET

MILEMARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS	EXISTING SIGNS		NEW AND SALVAGED SIGNS				EXISTING POSTS				NEW SIGN POSTS											REMARKS	FOR SIGN DETAIL SHEET										
			TO BE SALVAGED REMOVE (E.A.)	RETAIN (X)	NEW "A" (S.F.)	NEW "B" (S.F.)	SALV. SIGN (E.A.)	SALV. T.I.S. (S.F.)	RET.	DRILL	REM.	SALV.	NUMBER OF POSTS	FLANGED CHANNEL			TUBULAR ALUMINUM				W SHAPED STEEL				PLAN SHEET NUMBER	STD. SHEET NUMBER									
														2.0 LB./FT.	2.5 LB./FT.	3.0 LB./FT.	3.0" Ø	3.0" □	4.0" Ø	4.0" Ø MOD.	POST SIZE	WEIGHT	FTG. SIZE 24" 30"												
5.401 RT.		24" X 24"			4								1	X																	E-15A				
5.402 RT.		30" X 30"			6.25								1	X																	E-15C				
5.408 RT.		18" X 24"			3								1	X																	FACING WEST BOUND TRAFFIC	E-19			
5.403 RT.		18" X 24"			3								1	X																		E-19			
5.405 RT.		24" X 24"			4								1	X																		E-15A			
5.407 RT.		30" X 30"			6.25					X																						E-15C			
5.412 RT.	EAST	24" X 12"			2																											E-13			
		24" X 24"			4								1	X																		E-13			
5.415 LT.	MARLBORO	72" X 10"			5								2	X																					
	MARLBORO COLLEGE 3	72" X 10"			5																														
5.416 RT.		18" X 24"			3								1	X																			E-13		
5.416 RT.		18" X 24"			3								1	X																			FACING WEST BOUND TRAFFIC	E-13	
5.52 RT.		30" X 30"			6.25																														
		18" X 18"			2.3					X																								SEE T.S. #507	E-19B
5.52 RT.		36" X 36"			9					X																								SEE T.S. #507	
5.61 LT.	T.I.S. *																																	* From 680.20 MOD. (NON-FED-PARTICIPATING)	
5.65 RT.	TRUCK LANE ENDS	24" X 30"			5								1	X																				E-15A	
5.71 RT.	UNSAFE TO PASS	36" X 36"			9					X																								SEE T.S. #507	
5.79 LT.		36" X 36"			9								1																					SEE T.S. #507	E-19A
5.79 RT.								X					1																						
5.93 LT.	SLOWER TRAFFIC KEEP RIGHT	24" X 30"			5								1	X																					E-15A
5.99 LT.		30" X 30"			6.25								1	X																					E-15C
6.00 LT.		24" X 24"			4								1	X																					E-15A
TOTALS					101.3			2		8.25				362		48	38																	FINAL LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE DESIGN DIVISION'S "SIGN POST DESIGN MANUAL".	PREPARED BY _____ DATE _____ CHECKED BY JTB DATE 10-21-88 PROJ. MARLBORO NO. 010-(127)S TRAFFIC SHEET NO. 504 SHEET 16 OF 45

TRAFFIC SIGN SUMMARY SHEET

MILEMARKER, STATION OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS	EXISTING SIGNS		NEW AND SALVAGED SIGNS				EXISTING POSTS				NEW SIGN POSTS												REMARKS	FOR SIGN DETAIL SHEET					
			TO BE SALVAGED REMOVED (EA.)	RETAIN (X)	NEW 'A' (S.F.)	NEW 'B' (S.F.)	SALV. SIGN (EA.)	SALV. T.I.S. (S.F.)	RET.	DRILL	REM.	SALV.	NUMBER OF POSTS	FLANGED CHANNEL			TUBULAR ALUMINUM				W SHAPED STEEL					PLAN SHEET NUMBER	STD. SHEET NUMBER				
														2.0 LB./FT.	2.5 LB./FT.	3.0 LB./FT.	3.0" Ø	3.0" □	4.0" Ø	4.0" Ø MOD.	POST SIZE	WEIGHT	FTG. SIZE 24" 30"								
6.02 RT		18"x24"			3							1	X																E-19		
6.05 RT		18"x24"			3							1	X																E-19		
6.08 RT		18"x24"			3							1	X																E-19		
6.18 LT		24"x30"			5							1	X																E-18A		
6.27 LT		24"x30"			5							1	X																E-18A		
6.38 RT		30"x30"			6.25				X																				E-19A		
6.68 LT		30"x30"			6.25				X																						
6.69 LT		24"x24"			4							1	X																	E-18A	
6.85 LT		24"x30"			5							1	X																	E-18A	
6.89 RT		36"x36"			9							1				X														SEE T.S. # 507	
6.97 LT		36"x36"			9							1				X														E-19A	
6.98 LT		18"x24"			3							1	X																	FACING EAST BOUND TRAFFIC	
7.00 LT		18"x24"			3							1	X																	E-19	
7.02 LT		18"x24"			3							1	X																	E-19	
7.15 LT		24"x30"			5							1	X																	E-18A	
7.17 RT		36"x36"			9.00							1				X														SEE T.S. # 507	
7.23 RT									* 8.25			* 2				* X															* Item 680.20 MOD. (NON-FED-PARTICIPATING)
7.30 LT		24"x30"			5							1	X																	E-18A	
TOTALS					86.5				* 8.25					330		465		135													FINAL LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE DESIGN DIVISION'S 'SIGN POST DESIGN MANUAL'.

PREPARED BY _____ DATE _____
 CHECKED BY J.B. DATE 10-22-88
 PROJ. MARLBORO NO. 010-1(27)S
 TRAFFIC SHEET NO. 505 SHEET 12 OF 45

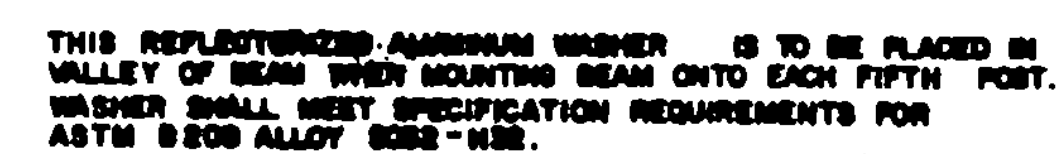
1986

17

[illegible]

NOTES AND DETAILS

TEMPORARY 4" WHITE LINE						
MILE	MILE	LT.	RT.	QTY. LEFT	£ SMALL DASH	QTY. RT. (LF) TOTAL
4.682	7.30	SOLID	SOLID	13770		13770 27940
5.623	6.18	CLIMBING DASH	CLIMBING DASH		700	700
6.83	7.3	CLIMBING DASH	CLIMBING DASH		620	620
						TOTAL 28860



18

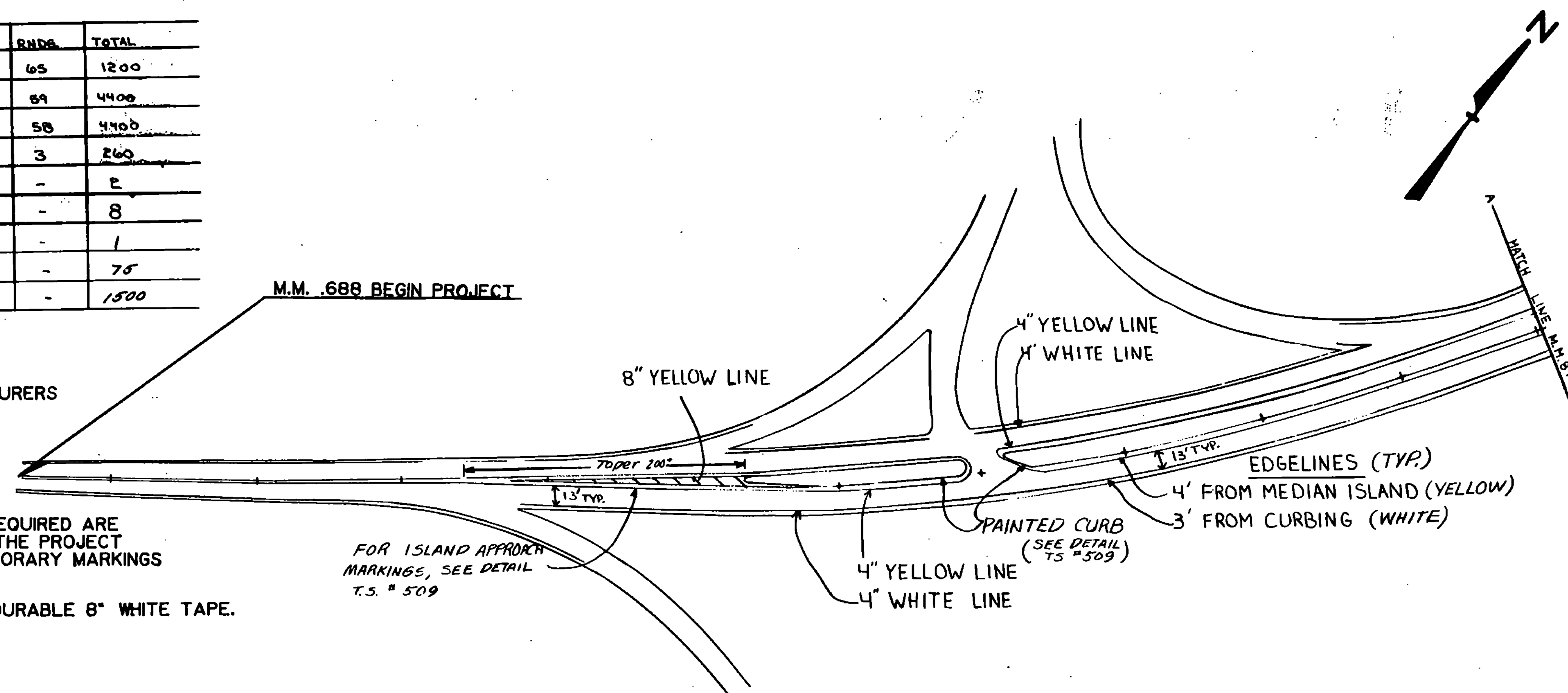
TRAFFIC ITEM SUMMARY						
ITEM NO.	ITEM	UNIT	QUANTITY	RNDG	TOTAL	
WLB-21	PAINTED CURB	LF	1135	65	1200	
MOD. WLB-30	DURABLE 4" WHITE LINE	LF	4341	69	4410	
MOD. WLB-31	DURABLE 4" YELLOW LINE	LF	4342	58	4400	
MOD. WLB-32	DURABLE 8" YELLOW LINE	LF	257	3	260	
MOD. WLB-42	DURABLE ARROW MARKING	EA.	2	-	2	
MOD. WLB-43	DURABLE LETTER IN WORD MARKING	EA.	8	-	8	
MOD. WLB-44	DURABLE 8" WHITE LINE	LF	1	-	1	
MOD. WLB-45	TEMP 4" WHITE LINE	LF	75	-	75	
MOD. WLB-46	TEMP 4" YELLOW LINE	LF	1500	-	1500	

NOTE:

ALL DURABLE MARKINGS ON THE FINAL COURSE SHALL BE INLAID DURABLE TAPE AND APPLIED AS PER MANUFACTURERS SPECIFICATIONS. SPECIFICATIONS SHALL BE SUBMITTED TO TRAFFIC DESIGN FOR APPROVAL PRIOR TO APPLICATION. FAILURE TO COMPLY SHALL RESULT IN NONPAYMENT FOR MARKINGS.

TEMPORARY MARKINGS SHALL BE APPLIED AT THE END OF EACH WORK DAY. TEMPORARY 4" YELLOW MARKINGS REQUIRED ARE APPROACHES TO ISLANDS AT THE BEGINNING AND END OF THE PROJECT AND 4" WHITE FOR THE LEFT TURN LANE LINE. ALL TEMPORARY MARKINGS SHALL BE TEMPORARY TAPE.

RAMP GORE MARKINGS, IF REQUIRED, ARE TO BE INLAID DURABLE 8" WHITE TAPE.



DURABLE LETTER IN WORD MARKING

"ONLY"
"ONLY" (AS SHOWN)

DURABLE 8" YELLOW LINE

PAINTED ISLAND-DIAGONAL LINES
(AS SHOWN)
(SEE DETAIL TS "509")

DURABLE ARROW MARKINGS

"←" "→" (AS SHOWN)

PAINTED CURB

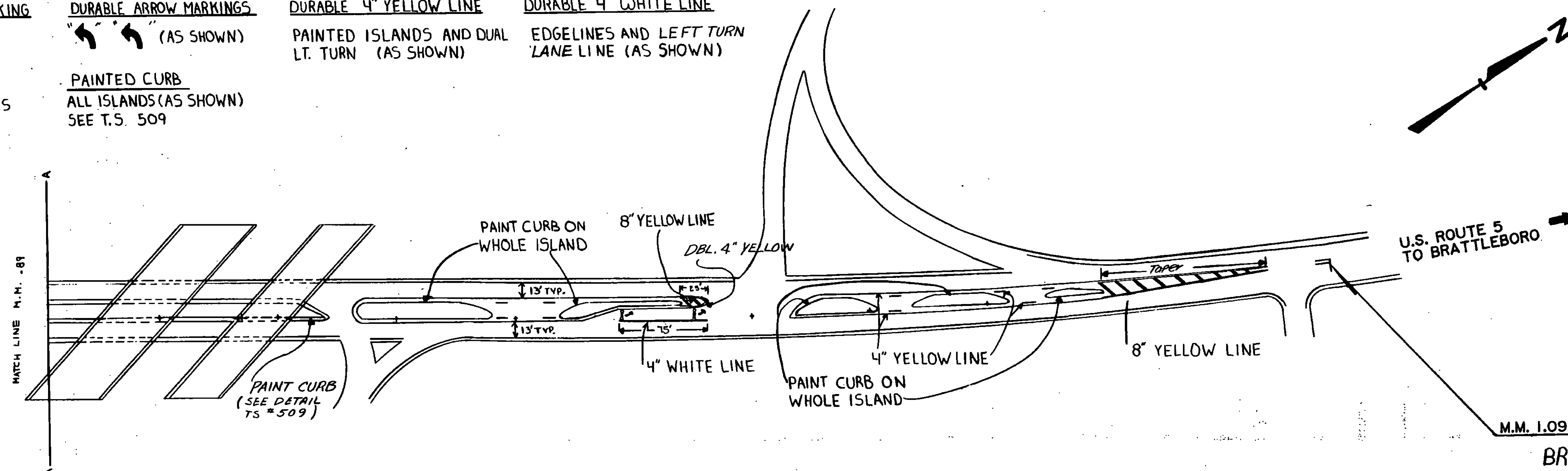
ALL ISLANDS (AS SHOWN)
SEE T.S. 509

DURABLE 4" YELLOW LINE

PAINTED ISLANDS AND DUAL
LT. TURN (AS SHOWN)

DURABLE 4" WHITE LINE

EDGELINES AND LEFT TURN
LANE LINE (AS SHOWN)



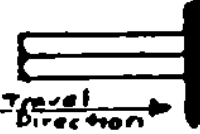
SCALE IN FEET
0 25 50 100

PREPARED BY _____ DATE _____
CHECKED BY JB DATE 10-21-8
BRATTLEBORO
PROJECT NO. 2000(14)5
THESE SHEETS NO. 1382 SHEET 20 OF 45

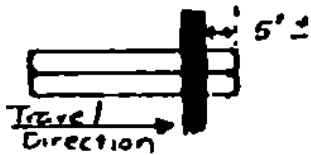


1. THE STOP LINE SHOULD BE PLACED AT THE DESIRED STOPPING POINT. IN NO CASE MORE THAN 30' OR LESS THAN 4' FROM THE NEAREST EDGE OF THE INTERSECTING ROADWAY.
2. WHEN A TRAFFIC SIGNAL IS PRESENT, DELETE WORDING "STOP" AND PLACE STOP BAR A MINIMUM OF 40' FROM THE NEAREST SIGNAL HEAD.
3. ON ONE-WAY RAMPS THE 4" DOUBLE YELLOW CENTERLINE SHALL BE REPLACED WITH A 4" SINGLE YELLOW EDGE LINE.
4. ON ONE-WAY RAMPS THE STOP SIGN SHALL BE REPLACED WITH A TYPE "R" ASSEMBLY ON EACH SIDE OF THE RAMP. A TYPE "A" ASSEMBLY CONSIST OF A STOP SIGN, A "DO NOT ENTER" SIGN AND TWO "ONE WAY" SIGNS.

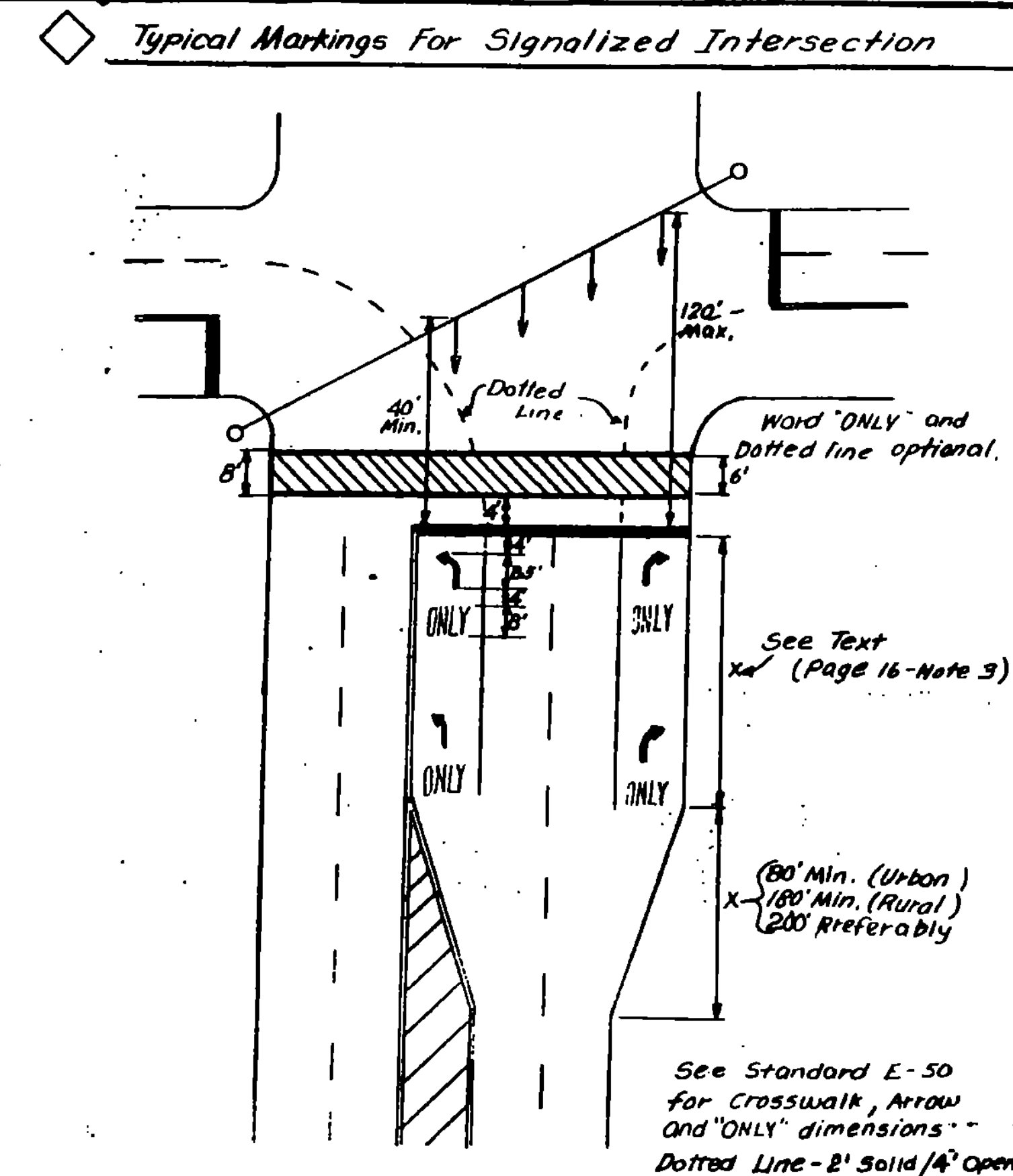
APPLICATION NOTES

1. Edge lines shall be placed 1'-0" from curb, minimum.
 2. Lane widths should be based on available roadway width. Preference shall be given to thru lanes with a preferred width of 12'. Left and right turn lanes may be between 10'-12' in width.
 3. Exclusive turn lanes (left or right) - Turn lane lanes shall be solid and extend back from the stopbar an adequate distance to store turning vehicles. Generally, the lane line will extend back to the point of full lane width. The edge line taper rate should be 56:1 (minimum). In urban areas an 80' minimum is required. In both rural and urban areas a 200' taper is desirable. An estimate of length required can be determined by dividing the average hourly turning volume by the number of cycles per hour. Multiply the result by 25' per vehicle and then multiply by 1.5 to 2.0. Existing geometry may restrict turn lane length.
 4. Turn arrows shall be placed at the begin and end of the left or right turn lane and in the middle if the lane length exceeds 200'.
 5. Turn arrows placed at the end of the lane with the stop bar shall be placed with a 4' gap between the stop bar and arrow.
 6. There shall be a 4' gap between turn arrows and word markings.
 7. When word markings are used at the beginning of a turn lane the markings shall begin at the start of the solid white lane line.
 8. The word marking STOP shall be placed with a 4' gap between the marking and the stop bar.
 9. Word markings shown are only approximate. Marking shall be as detailed on Standard Sheet E-50.
 10. Stopbars shall be located no closer than 40' from the nearest signal face and no further than 120' from the furthest face. At intersections where there are existing vehicle detector loops, care should be taken in locating the stop bar. In most cases the stopbar should be at or just behind the front edge of the loop.
- 

OR


- If loop locations are not known, contact either the Maintenance Division or Traffic Design for information.
11. Dotted line extensions (lane lines and/or centerline) may be used at some intersections to emphasize turning paths.
 12. When two line text is used for pavement markings (Signal Ahead, etc.) the two words shall read up and have a space of 32' between them. The corresponding sign shall be half way between the words.

Revision - 11/84
Note 3 revised
Notes 10 & 11 added
Note 12 added 8/85



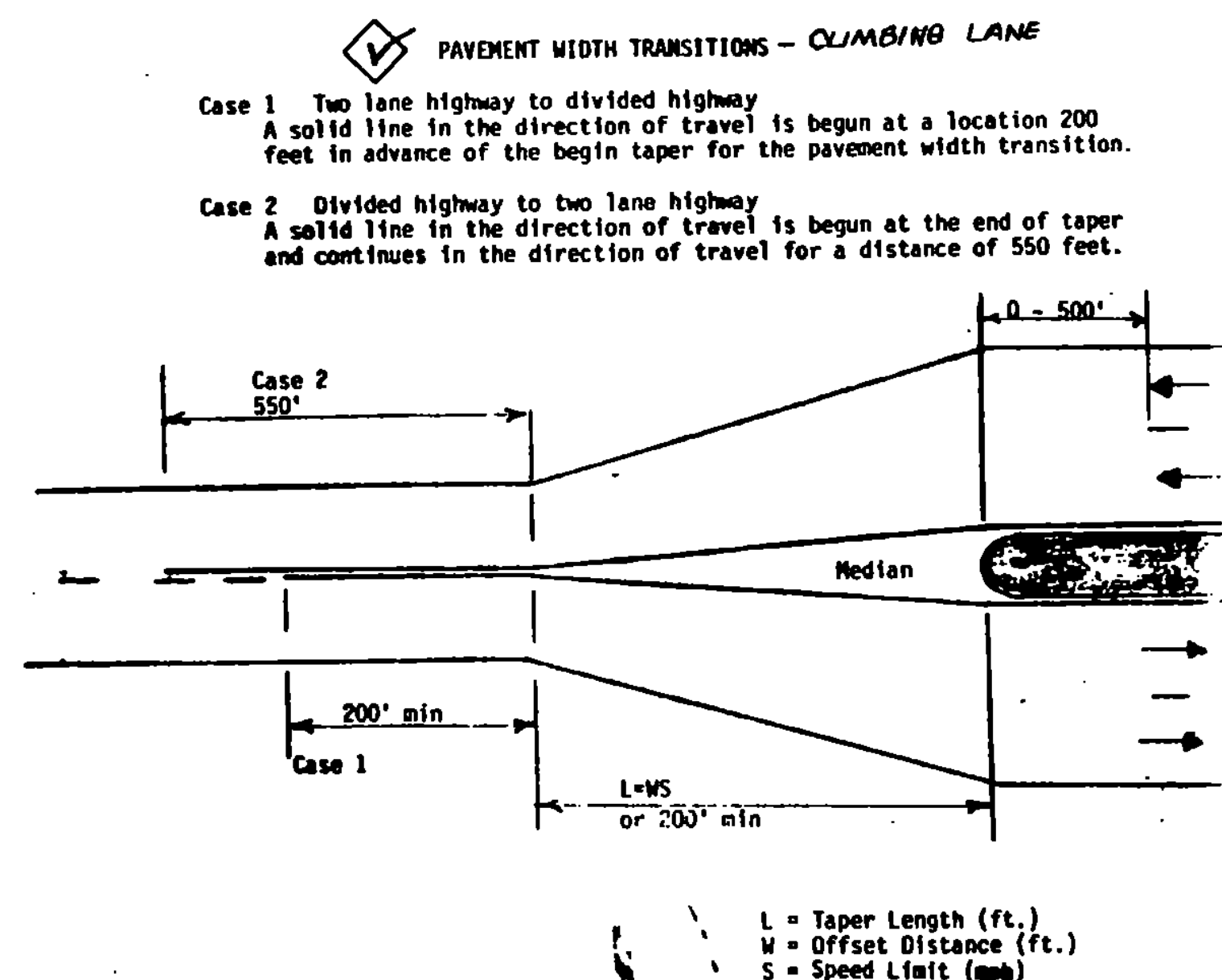
 GUIDELINES FOR MINIMUM INTERIM PAVEMENT MARKINGS
IN CONSTRUCTION ZONES

- A. CENTERLINE AND GORE AREA MARKINGS SHALL BE APPLIED AT THE END OF EACH WORKING DAY. THE FOLLOWING LAYOUT REQUIREMENTS SHALL BE MET:
- NO PASSING BARRIER
SOLID STRIPES.
- DASHED LINE
10-FOOT SOLID LINE WITH 30-FOOT GAP.
- GORE AREA
(GORE AREAS TO INCLUDE IF 8' CHANNELIZING LINE AND DASHED LINE)
PER STANDARD SHEET E-50
- B. EDGE LINES
WHEN SPECIFIED, EDGE LINES ARE NOT REQUIRED UNTIL COMPLETION OF THE PROJECT. ON INTERSTATE PROJECTS, TEMPORARY EDGE LINES SHOULD BE APPLIED WHERE TRAFFIC VOLUMES AND SPEEDS ARE HIGH AND DELAY OF SEVERAL DAYS IS ANTICIPATED.
- C. TEMPORARY MARKINGS MAY CONSIST OF PAINT, TAPE OR RAISED PAVEMENT MARKERS (RPM'S). THE TAPE SHALL BE A RETRO-REFLECTIVE FILM ON A CONFORMABLE METALLIC BACKING THAT CAN BE PAVED OVER. TAPE MAY BE USED ON THE FINAL SURFACE COURSE IF IT WILL NOT INTERFERE WITH THE FINAL MARKING APPLICATION. TEMPORARY TAPE MARKINGS WILL BE OFFSET AND REMOVED WHEN PROJECT IS FINISHED AND FINAL CENTERLINE PAINTED. THE TAPE SHALL BE THE TYPE THAT IS REMOVABLE INTACT AND NOT SEPERATE AT ANY TIME. THE RPM'S SHALL HAVE A SELF-ADHESIVE BACKING EASILY REMOVED BEFORE PAVING AND SHALL CONFORM TO THE FOLLOWING LAYOUT PATTERN:
- NO PASSING BARRIER
NO RPM'S ALLOWED.
- DASHED LINE
FOUR RETRO-REFLECTIVE RPM'S ON 3 1/2 FOOT CENTERS WITH A 30' GAP.
- SOLID LINE - EDGE LINES
INTERSTATE MEDIAN SIDE-RETRO-REFLECTIVE RPM'S ON 4 TO 5 FOOT CENTER.
DRIVERS RIGHT SIDE-RPM'S NOT ALLOWED.
- D. WHEN PAINT IS USED FOR TEMPORARY MARKING, AN ALTERNATE MATERIAL SUCH AS TAPE OR RPM'S SHALL BE ON HAND IN THE EVENT RAIN PREVENTS THE PAINT APPLICATION FROM BEING COMPLETED. ALL PAINT SHALL BE REFLECTORIZED.
- E. PAYMENT FOR PAINT AND TAPE SHALL BE COMPUTED ON A LINEAR FOOT BASIS AS IF PAINT WAS USED. PAYMENT FOR THE RPM'S SHALL BE COMPUTED AS IF AN EQUIVALENT PAINT LINE WAS USED. (FOR EXAMPLE, DASHED LINE PAID AS 10 FEET OF PAINT, SOLID LINE PAID AS THE TOTAL DISTANCE COVERED WITH THE MARKERS).
- F. PRIOR TO ACCEPTANCE, THE PAVEMENT MARKINGS SHALL BE COMPLETED FOR THE ENTIRE PROJECT BY THE CONTRACTOR AS DETAILED ON THE PLANS OR DIRECTED BY THE RESIDENT ENGINEER.

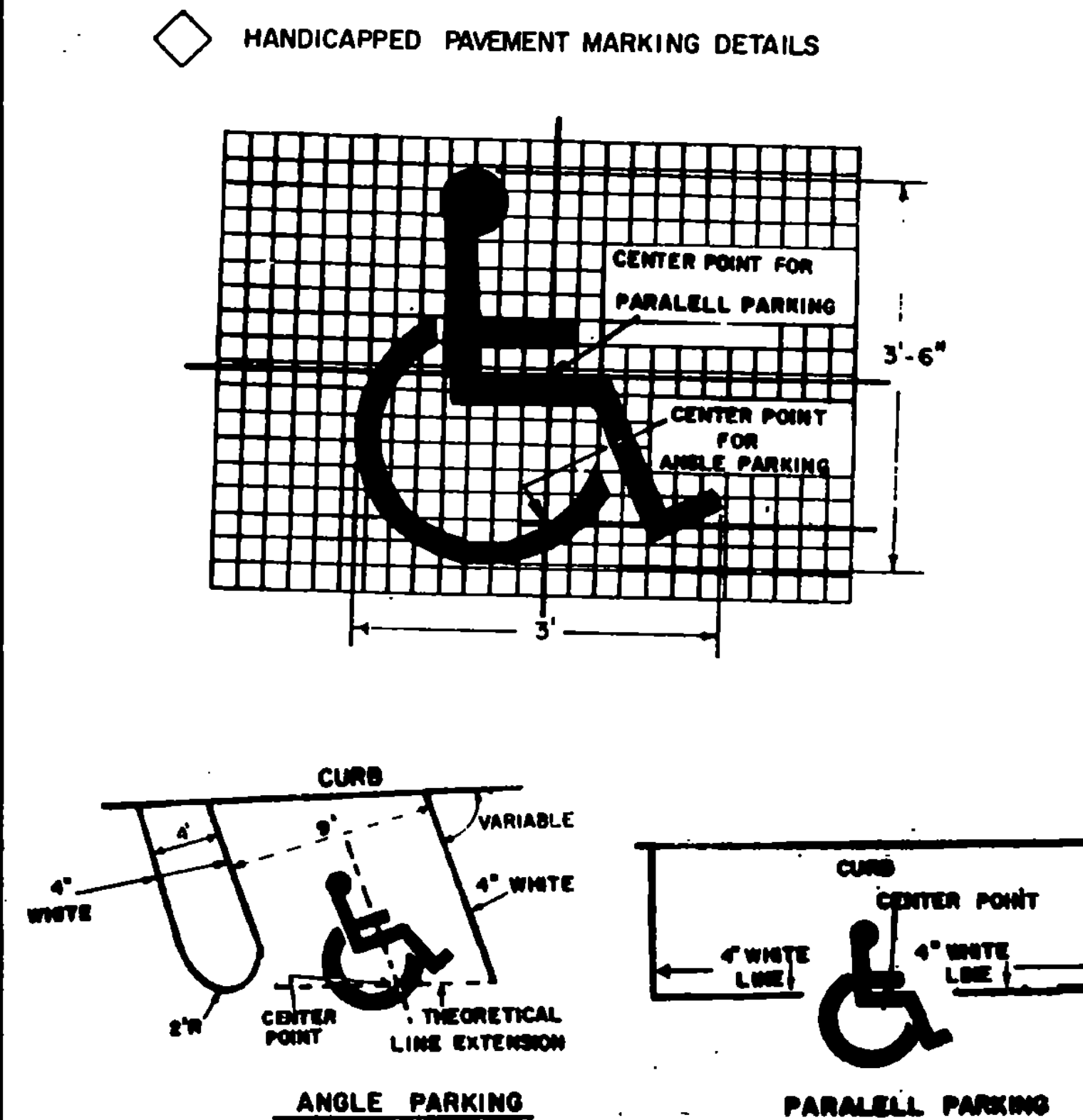
REVISED
02/11/85



* Centerline treatment shall consist of a minimum of 400 feet of solid line in advance of the intersection and shall be paired with either a solid or dashed line depending on sight distance availability in the opposing lane.



L = Taper Length (ft.)
W = Offset Distance (ft.)
S = Speed Limit (mph)

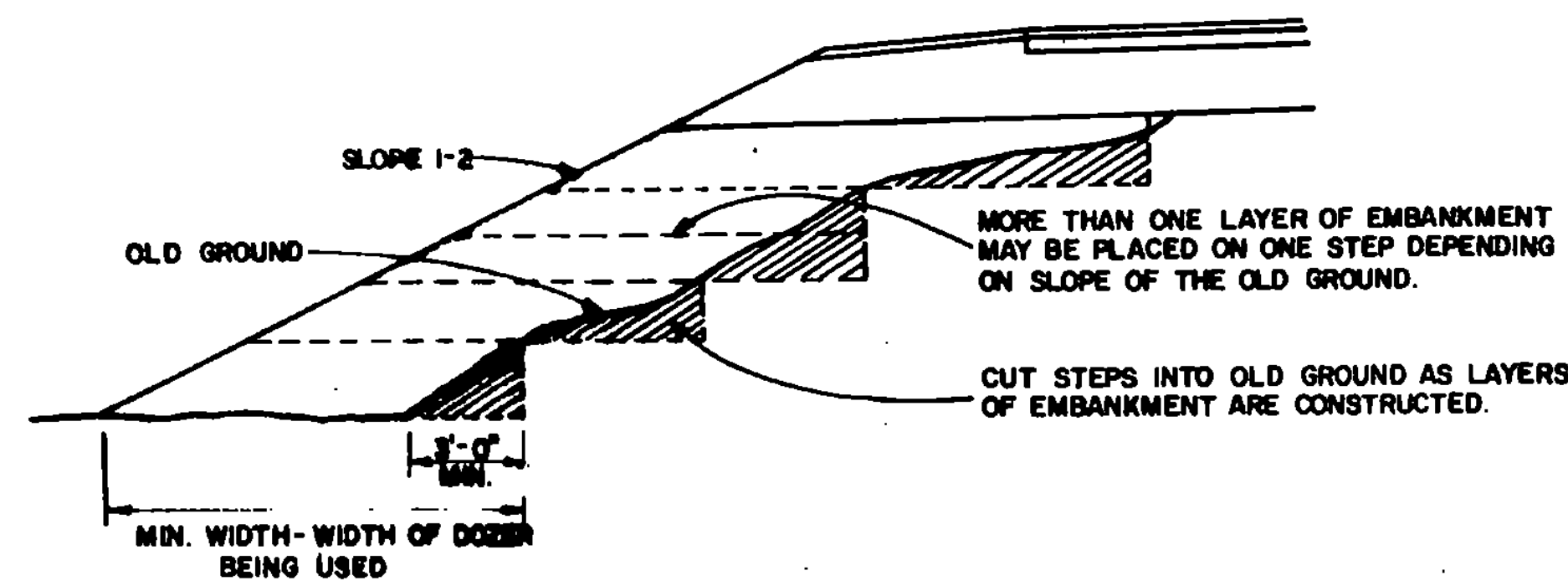


LEGEND

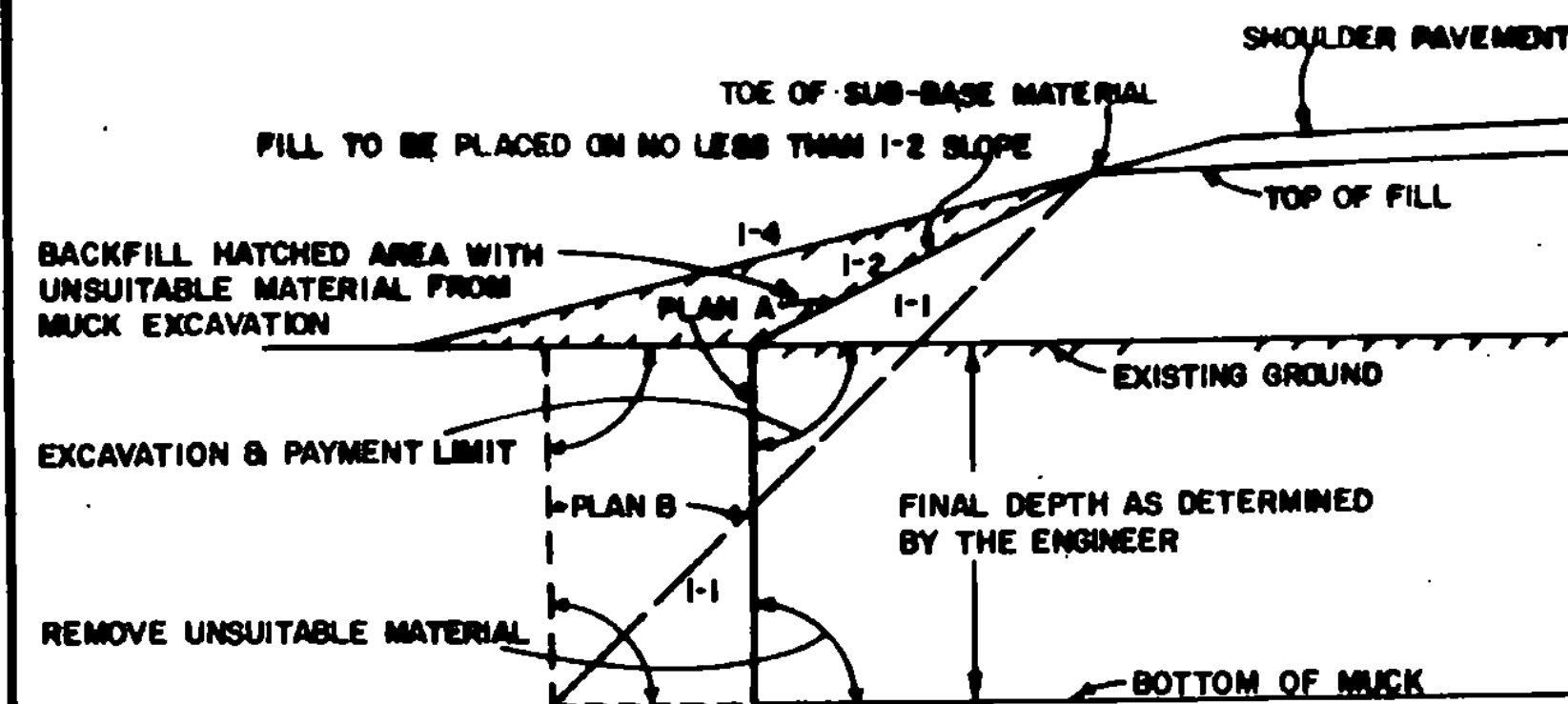
 = TO BE USED WITH THIS PROJECT

PAVEMENT MARKING DETAILS

SURVEYED BY _____ DATE _____
DRAWN BY _____ DATE _____
TRACED BY _____ DATE _____
DIST. 2 1986 PAVING
PROJ. NO.
TRAFFIC SHEET NO. 502 SHEET 21 OF 46

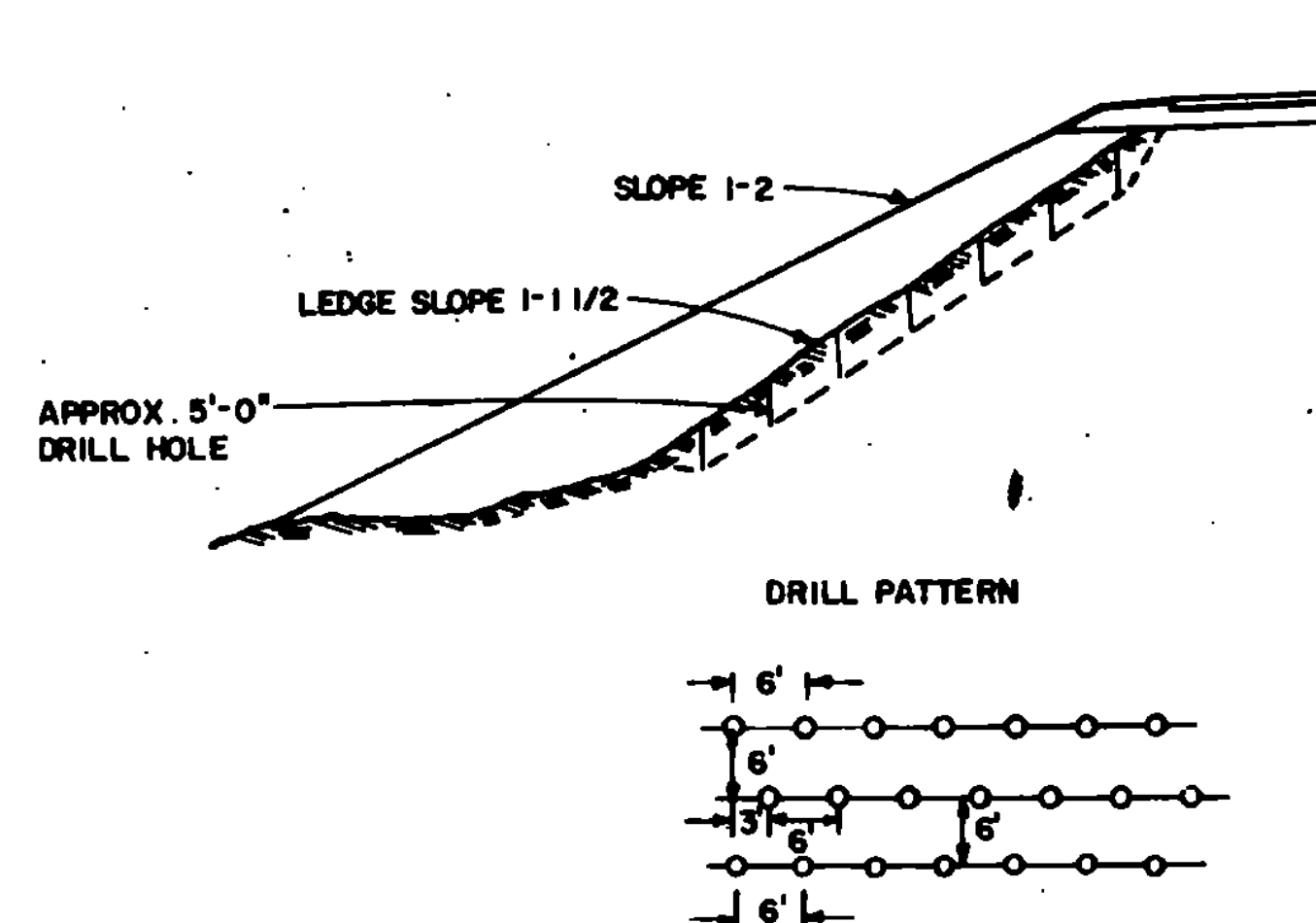


METHOD FOR CONSTRUCTING AN EMBANKMENT ON EARTH SLOPE



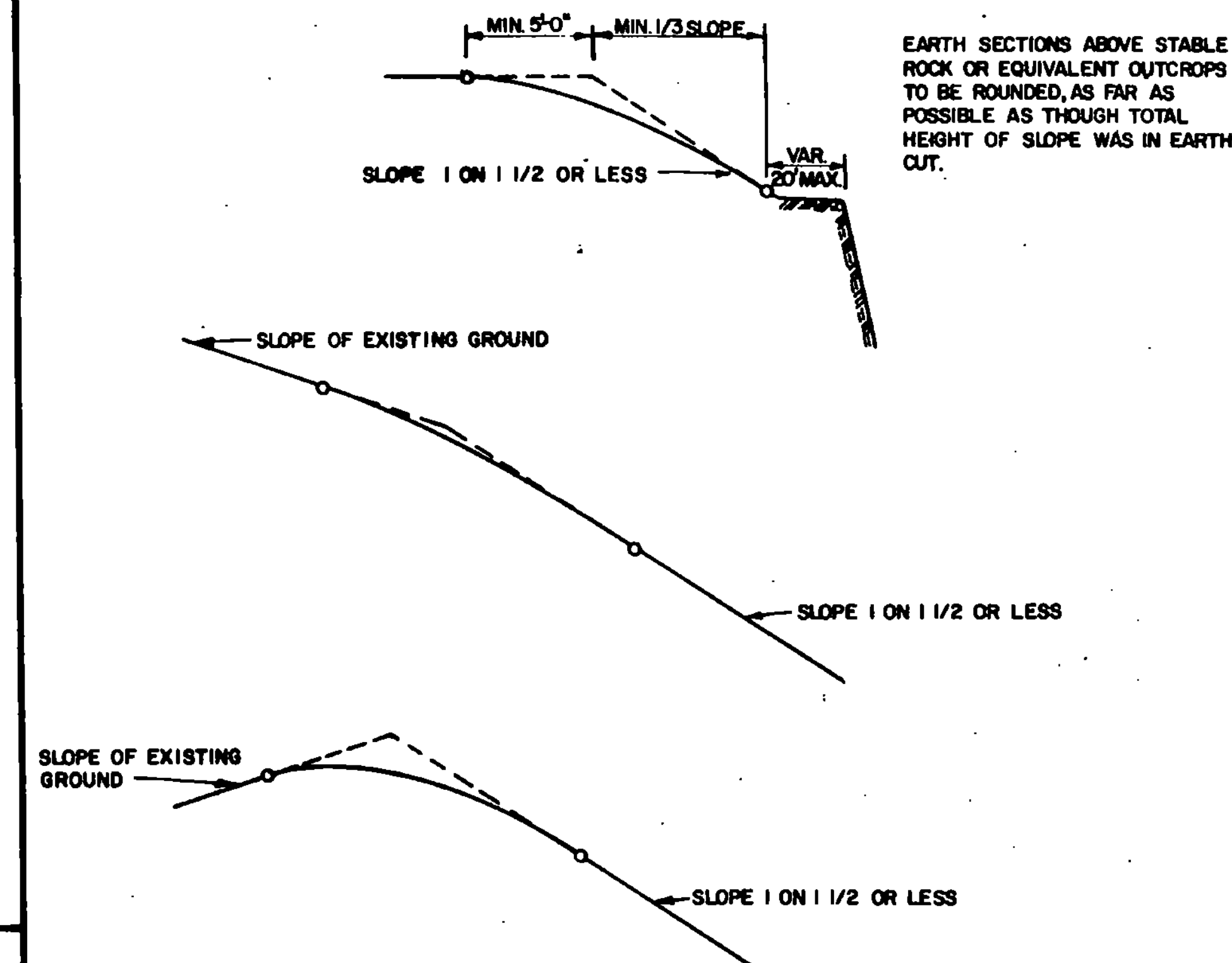
GENERAL NOTES:
THE MUCK OR UNSUITABLE MATERIAL SHALL BE EXCAVATED TO THE NEAT LINES SHOWN ON THE PLANS OR AS DETERMINED BY THE ENGINEER.
EXCAVATION AND PAYMENT LIMIT WILL BE DETERMINED FROM EITHER PLAN "A" OR PLAN "B", WHICHEVER PRODUCES THE GREATER WIDTH IN A GIVEN MUCK AREA.
BACKFILL MATERIAL MUST MEET THE REQUIREMENTS SET FORTH UNDER MUCK EXCAVATION, SECTION 203.

TYPICAL NEAT PAY LINES FOR MUCK EXCAVATION

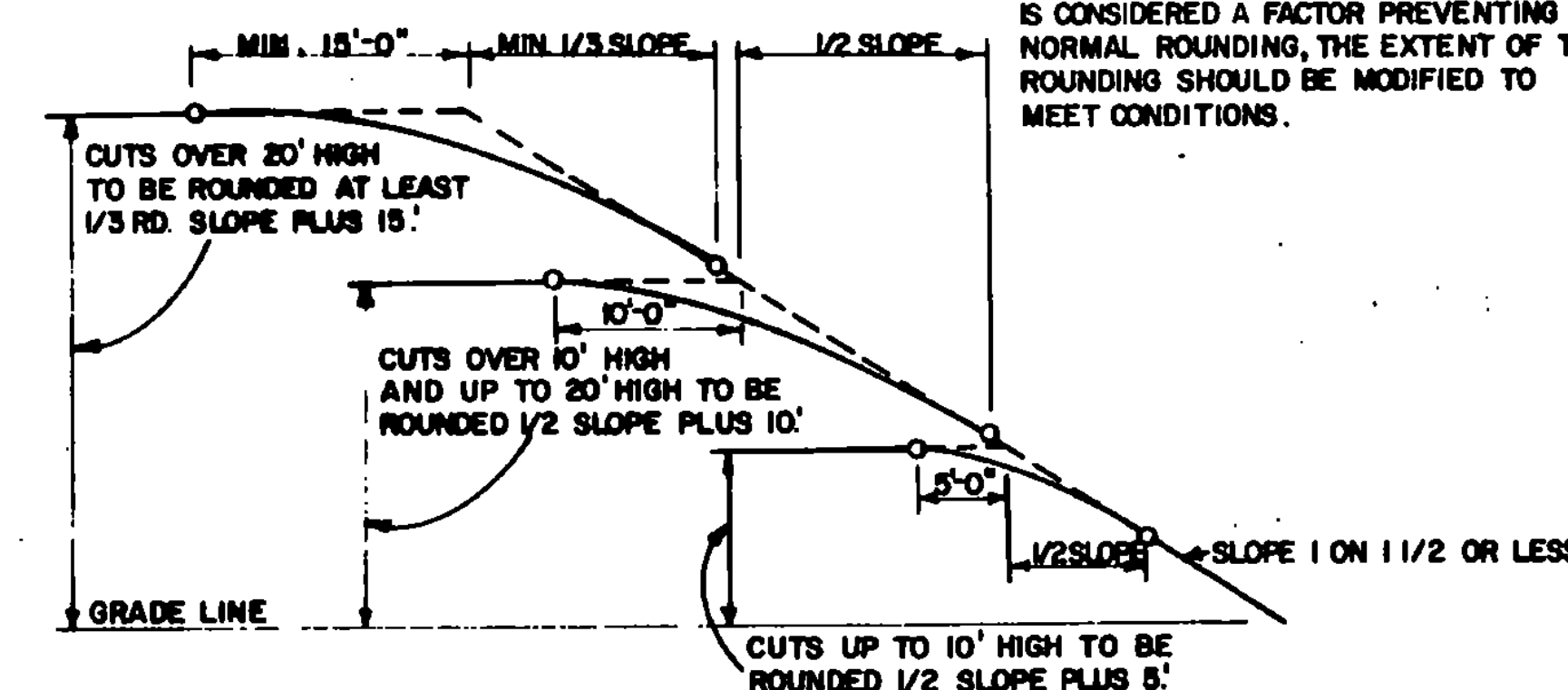


DRILLING AND BLASTING OF SOLID ROCK.
PROCEDURE TO BE FOLLOWED WHEN LEDGE SLOPE ON OLD GROUND IS BETWEEN A 1 ON 1 AND A 1 ON 5 SLOPE.
ALL HOLES TO BE APPROXIMATELY 5'-0" DEEP. HOLES TO BE IN ROWS, SPACED AND STAGGERED AS SHOWN IN DRILL PATTERN, OR AS DIRECTED BY THE ENGINEER, SEE SECTION 205.

A METHOD FOR PREPARING LEDGE SLOPE BEFORE CONSTRUCTING AN EMBANKMENT



SLOPES TO BE ROUNDED AS SHOWN IN ORDER TO ALLOW FOR PERSPECTIVE FORESHORTENING AS SEEN FROM THE ROAD AND SO THAT FINISHED SLOPES WILL BETTER SUPPORT VEGETATIVE COVER.
ROUNDING TO MERGE WITH EXISTING GROUND SURFACE SO THAT NO HARD GRADE LINE WILL REMAIN WITHIN THE LINE OF SIGHT.
WHEN STEEPNESS OF EXISTING GROUND OR PRESENCE OF EXISTING VEGETATION IS CONSIDERED A FACTOR PREVENTING NORMAL ROUNDING, THE EXTENT OF THE ROUNDING SHOULD BE MODIFIED TO MEET CONDITIONS.



TYPICAL SLOPE ROUNDING

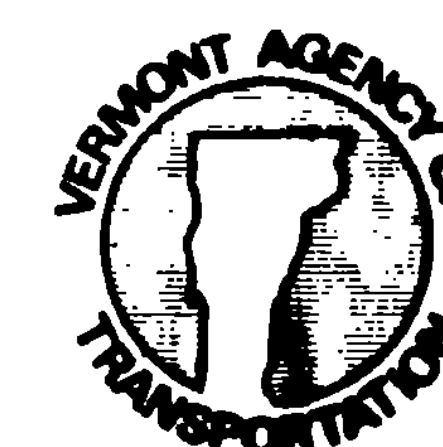
REVISIONS AND CORRECTIONS

APPROVED:

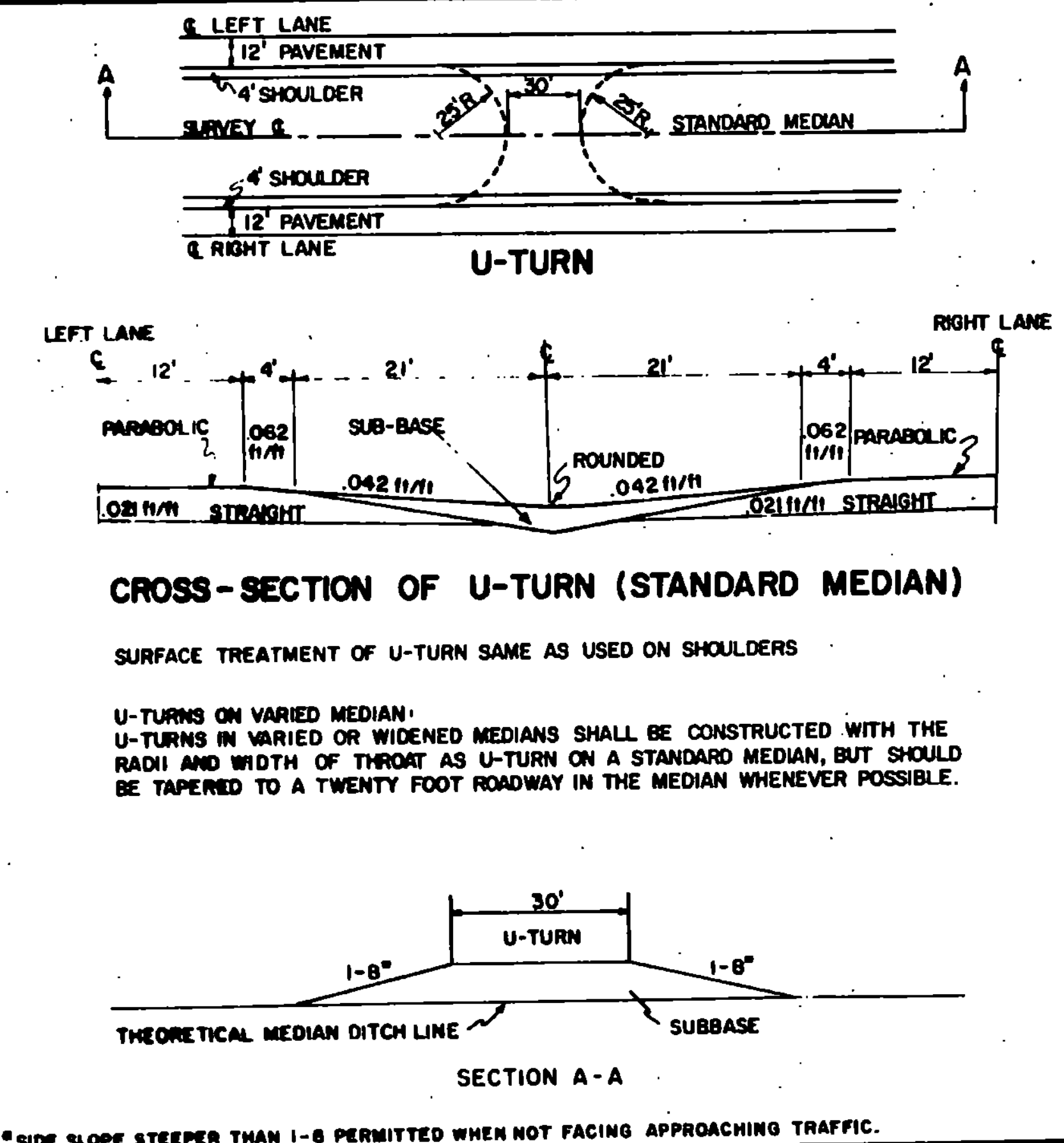
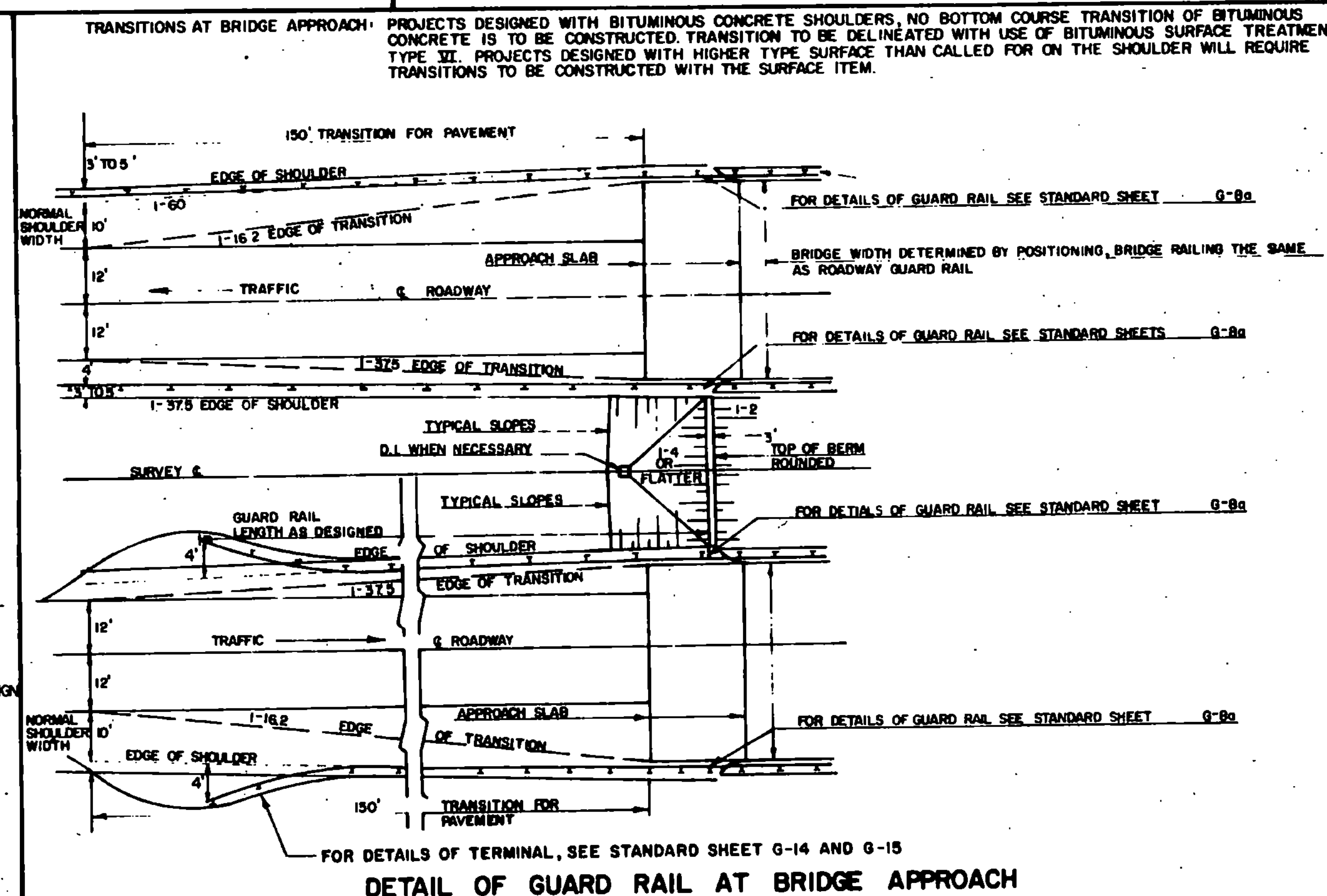
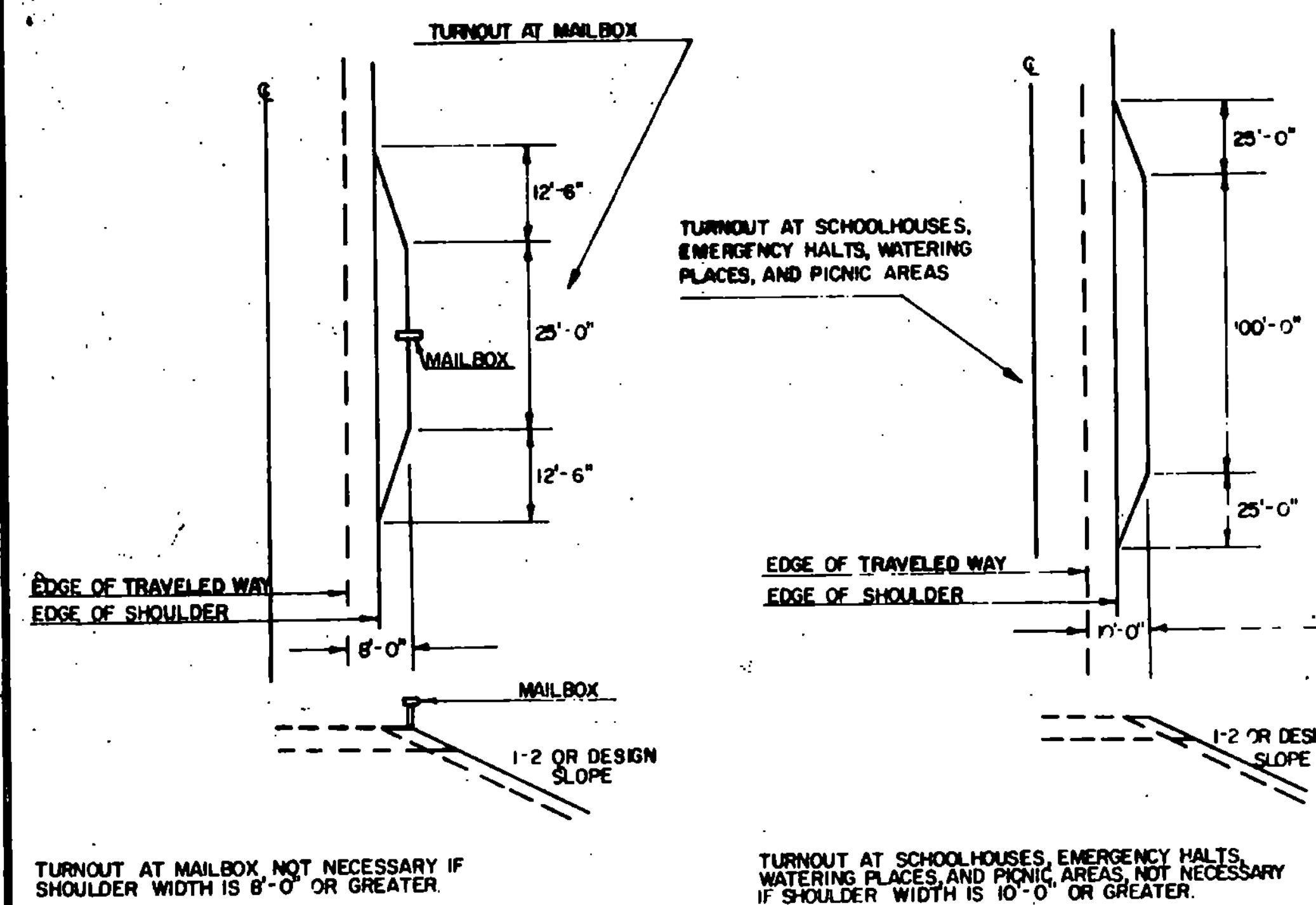
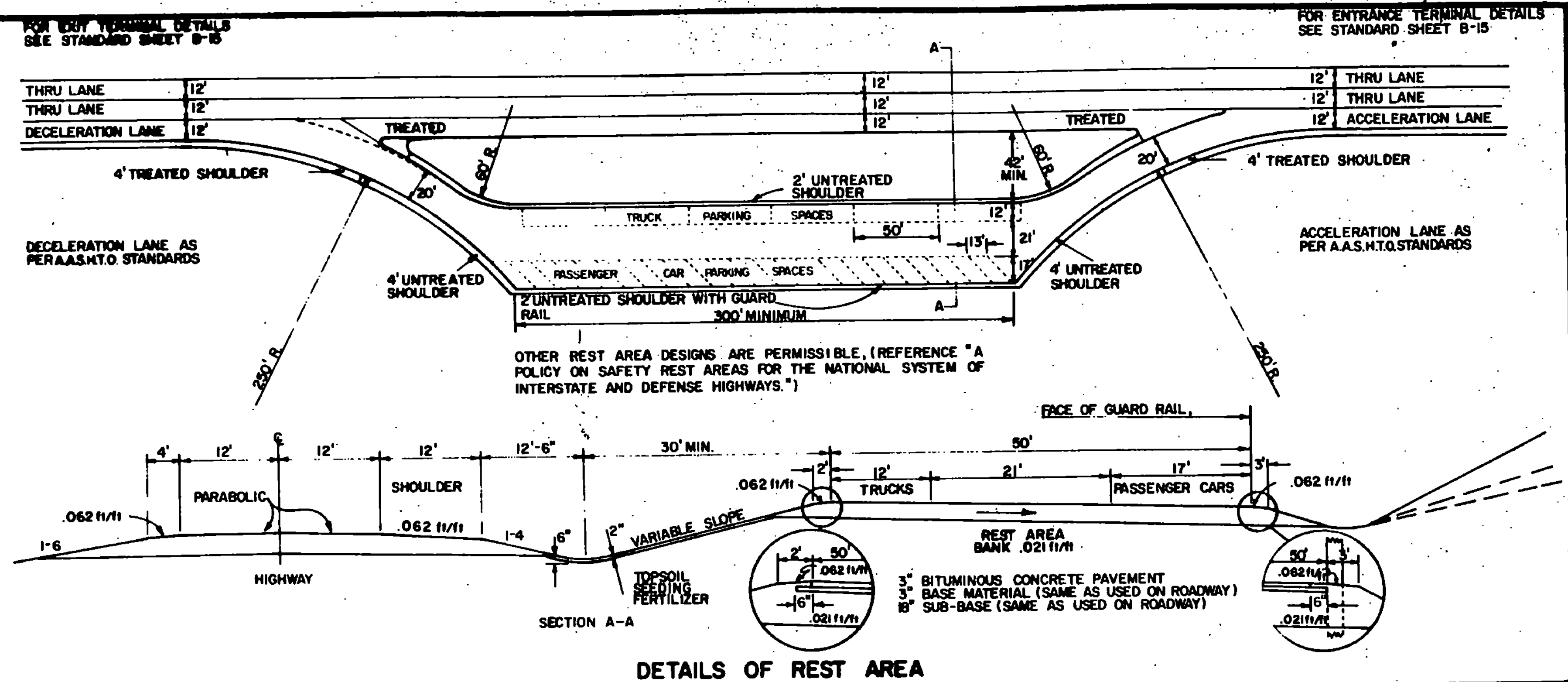
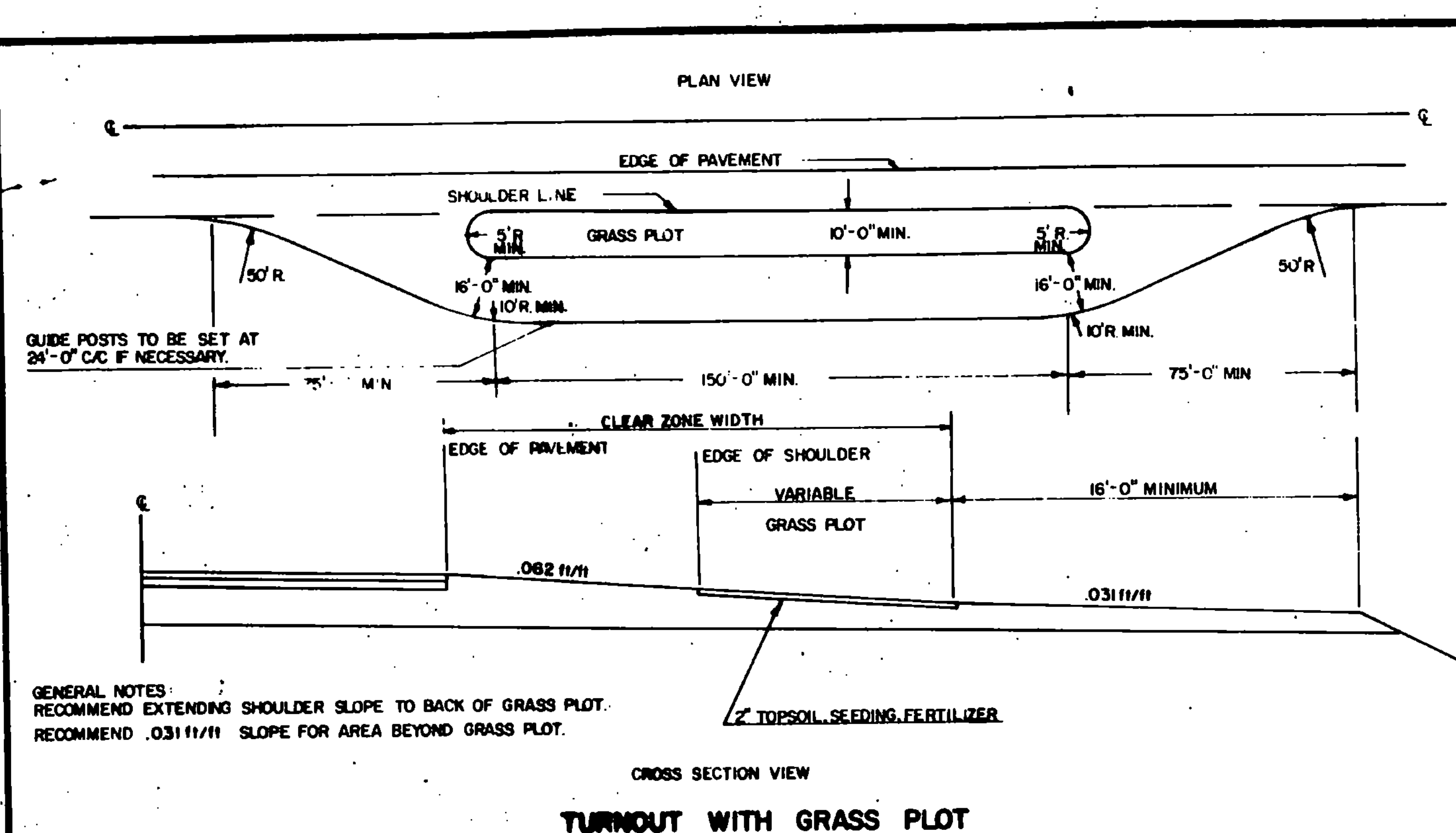
DATE Dec 6, 1971

R. H. Arnold
CHIEF ENGINEER
E. H. Hickney
ASST. CHIEF ENGINEER
G. M. Lane
HIGHWAY ENGINEER

EMBANKMENT ON EARTH SLOPE
EMBANKMENT ON ROCK SLOPE
MUCK EXCAVATION
TYPICAL SLOPE ROUNDING



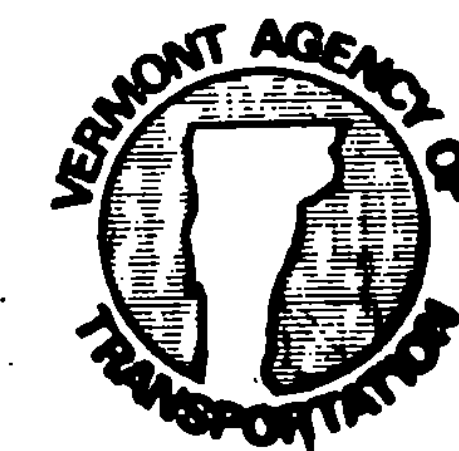
STANDARD
B-5



REVISIONS AND CORRECTIONS	
DEC. 19, 1972	REFERENCE TO G-8 REMOVED. CEDAR LOG GUARD RAIL REMOVED FROM REST AREA.
JUNE 11, 1973	G-8 ADDED TO EXIT SIDE OF STRUCTURES.
DEC. 16, 1980	INCREASED SHOULDER WIDENING FOR GUARDRAIL; ADDED CLEAR ZONE WIDTH TO DETAIL OF TURNOUT W/GRASS PLOT; ADDED SECTION A-A FOR U-TURN.
OCT. 25, 1985	REVISED TO CONFORM TO 1986 SPECIFICATIONS, GUARD RAIL AT BRIDGE APPROACHES

APPROVED: _____
LATE: DEC. 3, 1971
R. L. Arnold
CHIEF ENGINEER
E. H. Stokely
ASST. CHIEF ENGINEER
G. M. Lane
PLANT ENGINEER

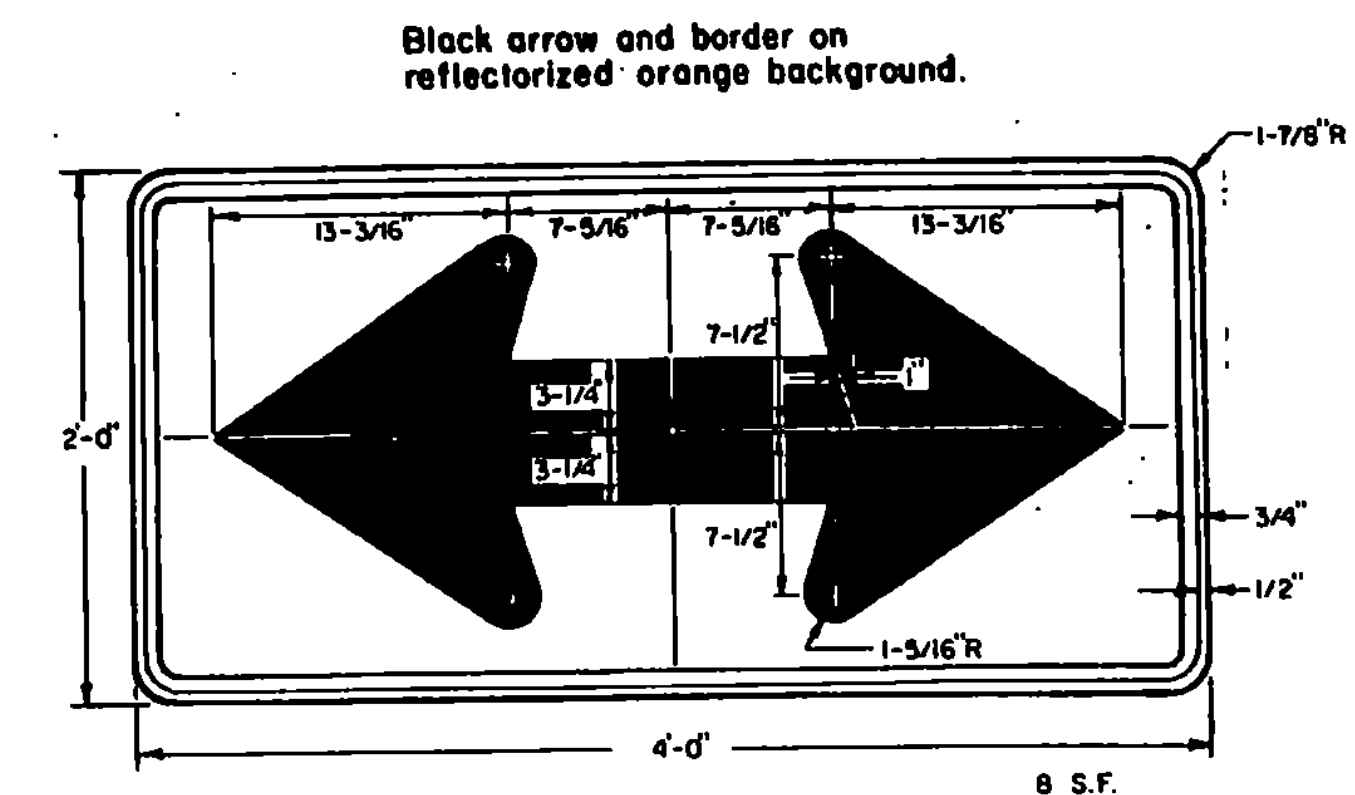
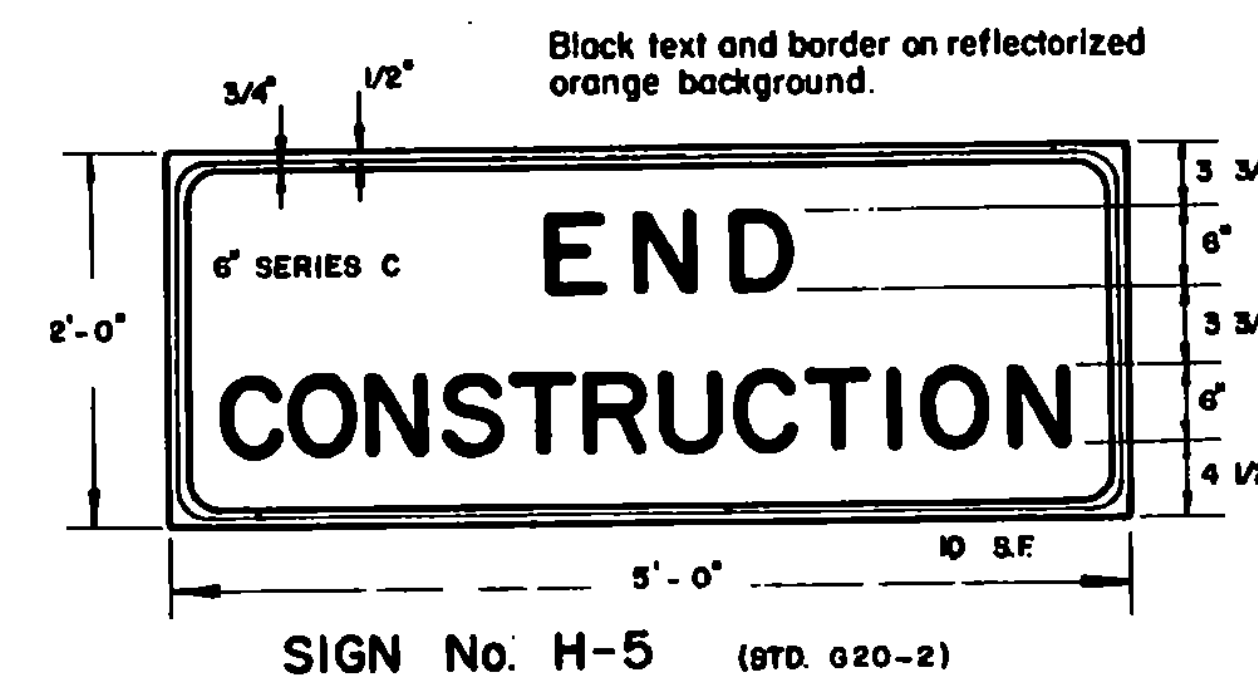
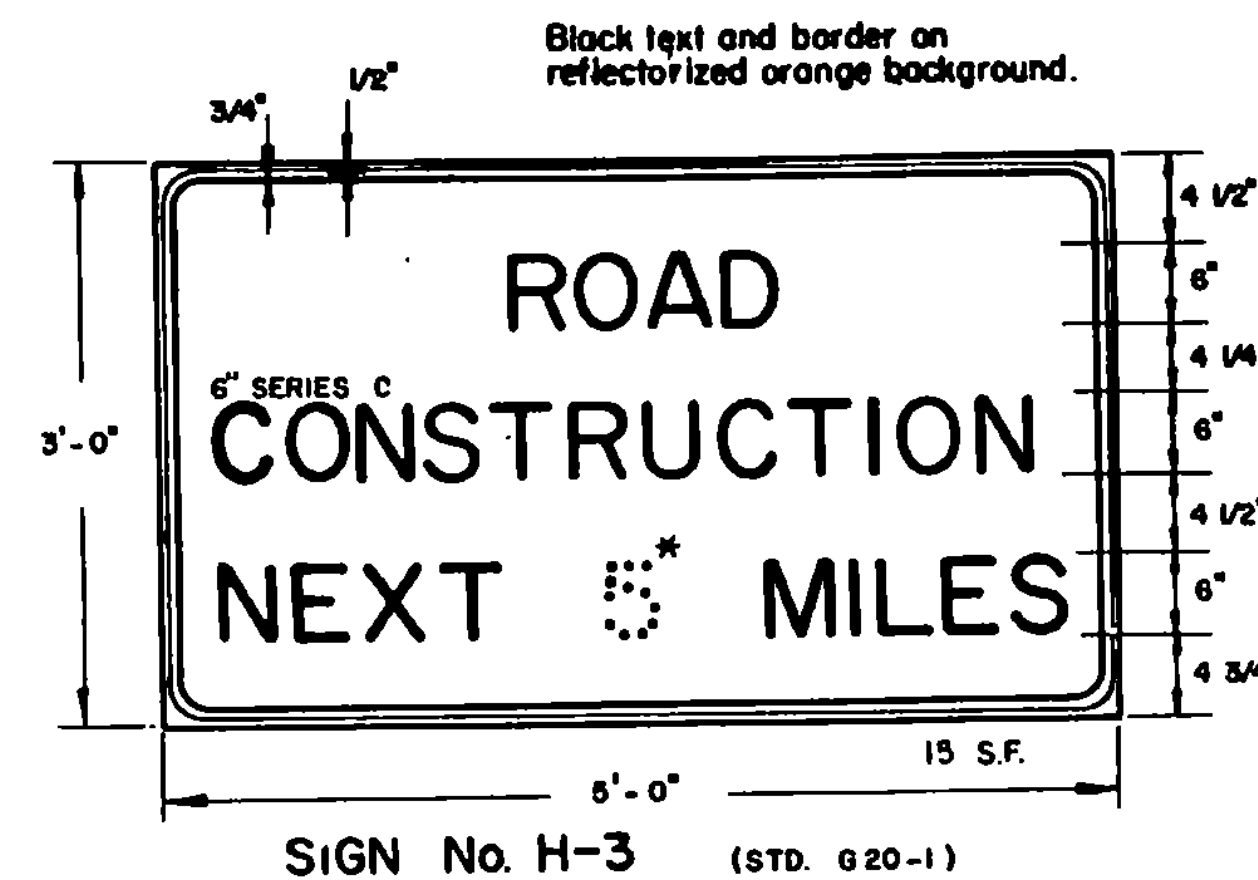
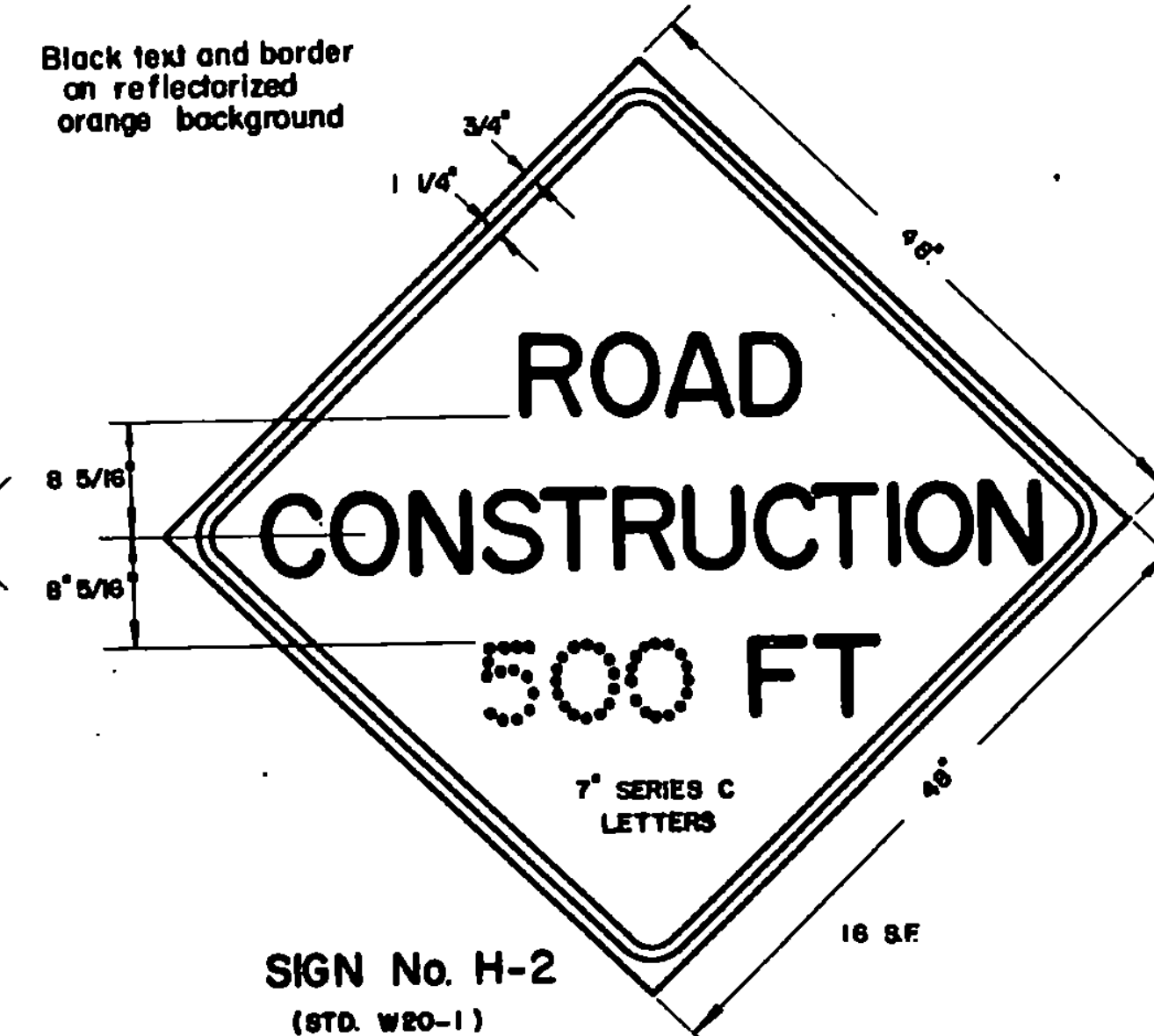
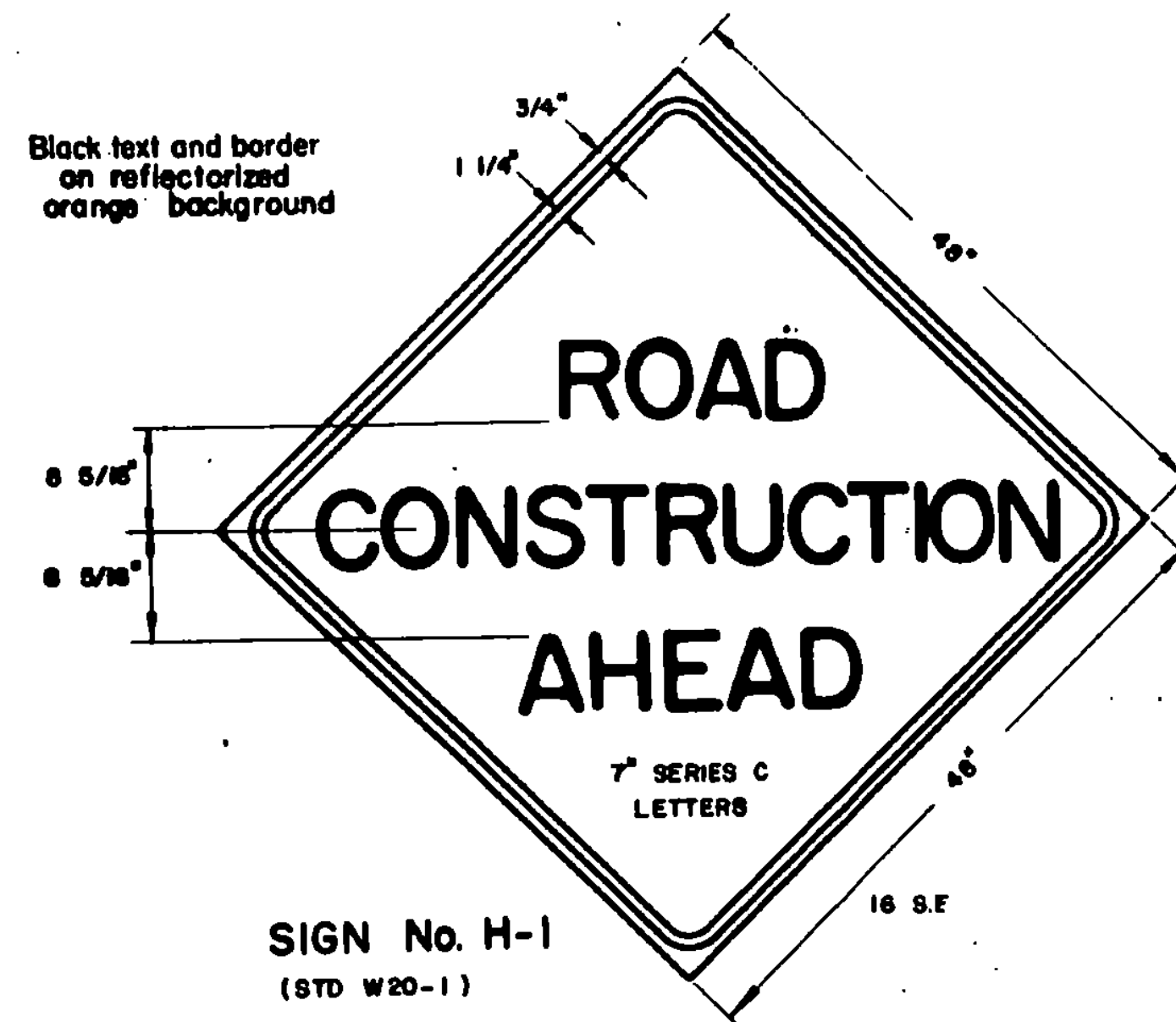
DETAIL OF GUARD RAIL AT BRIDGE APPROACH
DETAIL OF REST AREA
DETAIL OF U-TURN
TURNOUTS



STANDARD
B-17

SIGN H-3 IS TO BE USED WHEN PROJECT LENGTH EXCEEDS 2 MILES, OR AS REQUESTED BY THE RESIDENT ENGINEER. THE TEXT MAY BE AS SHOWN OR MAY READ AS FOLLOWS "CONSTRUCTION AREA NEXT — MILES"

* Show mileage to nearest 1/4 mile



The road construction approach signs shown on this sheet are intended for use in providing advance warning and information on construction projects over which traffic will be maintained. When additional approach signs or other types of advance signing or control are necessary, the Plans and/or the Specifications for that project will give the details of the signs and devices required.

LOCATION

Construction approach signs shall be located as detailed on this sheet or otherwise shown on the Plans. They shall appear at each end of the highway under construction, and on all intersecting public highways. The exact placement of any sign will depend upon the alignment of the highway and the character of the roadways. The location measurements on this sheet are intended to indicate the sequence to be followed, and the minimum spacing to be observed by the Engineer in determining exact locations.

DESIGN

The designs of the signs shall conform with the details shown on this sheet and with the standards prescribed in the Manual on Uniform Traffic Control Devices prepared by National Joint Committee on Uniform Traffic Control Devices.

MATERIALS

The signs shall be of metal, wood, plywood, hardboard or any other material satisfactory to the Engineer. No material will be approved that will deteriorate by exposure to the weather during the required life of the sign.

REFLECTORIZATION

All reflectorized material shall consist of encapsulated lens reflective sheeting.

INSTALLATION

The signs shall be in place at the time the project officially commences. Each sign shall be erected in a neat and workmanlike manner on wood or metal posts set securely in the ground. The bottom of a sign shall be at least 5 feet above road level, and the nearest edge of a sign shall be at least 6 feet outside the shoulder point or 2 feet outside guard rail, curbing or sidewalk. Posts and signs shall be braced or reinforced in back as necessary. The installation of signs shall be subject to approval of the Engineer. In urban areas, the bottom of the sign shall be at least 7 feet above the sidewalk.

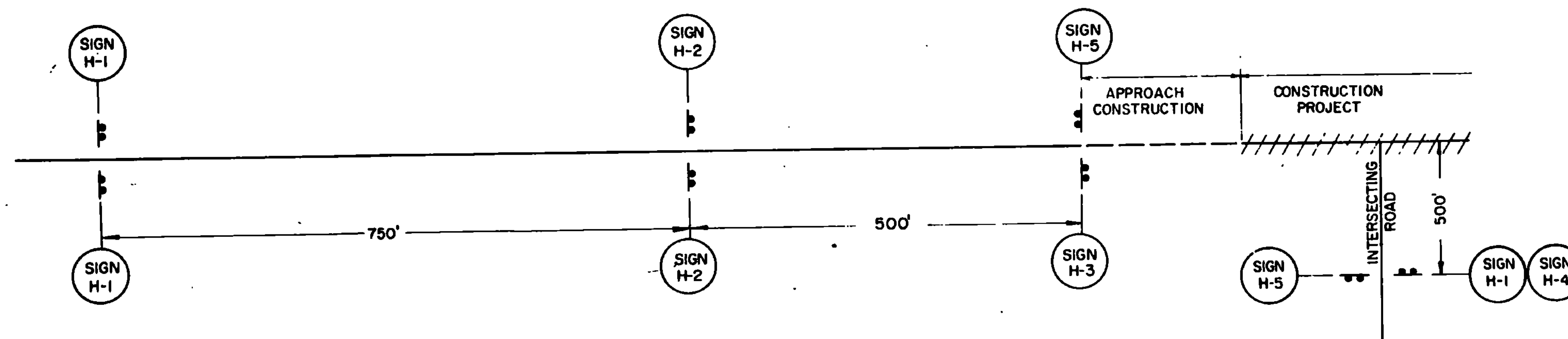
MAINTENANCE

Signs shall be maintained in a clean and legible condition satisfactory to the Engineer. They shall be completely visible to approaching traffic at all times. They shall be kept plumb and level, and always present a neat appearance. Damaged, defaced or dirty signs shall be repaired, cleaned or replaced as ordered by the Engineer.

GENERAL

The cost of furnishing, erecting, maintaining and removing all construction approach signs will be considered subsidiary work pertaining to the project as a whole and shall be included in the contract unit price bid for various items involved in the contract. In all phases of construction of approach signing, the requirements set forth in the Manual on Uniform Traffic Control Devices shall be met (See Standard Specifications, Section 107, Article 107.08 Traffic Control Devices).

When project is closed down for temporary periods the signs shall be covered in a workmanlike manner.



REVISIONS AND CORRECTIONS

SEPT. 11, 1973 - REVISED PER ORDER OF FHWA, SEPT. 11, 1973

OCT. 19, 1973 - SIGN H-4 REMOVED.

MAY 14, 1974 - REFLECTIVE MATERIAL CHANGE

JUNE 7, 1977 - REFLECTIVE MATERIAL NOTE CHANGED.

DEC. 19, 1978 - ILLUMINATION DELETED.

DEC. 17, 1979 - SIGN H-3 REVISED, SIGN H-4 ADDED.

MAR. 4, 1981 - SIGN H-3 TEXT CHANGED, NOTE ADDED.

FEB. 8, 1985 - UPDATED TO 1985 SPECIFICATIONS

APPROVED

Dec. 14, 1971

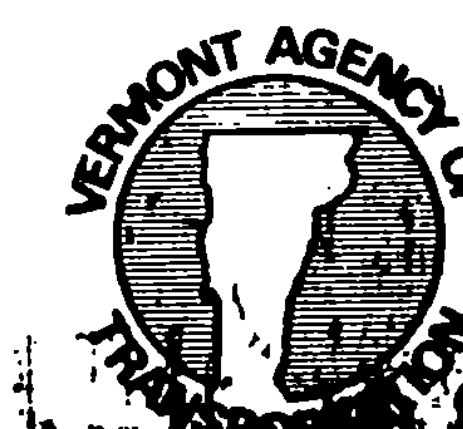
R. H. Arnold
CHIEF ENGINEER

E. H. McKinney
ASST. CHIEF ENGINEER

G. M. Lane
HIGHWAY ENGINEER

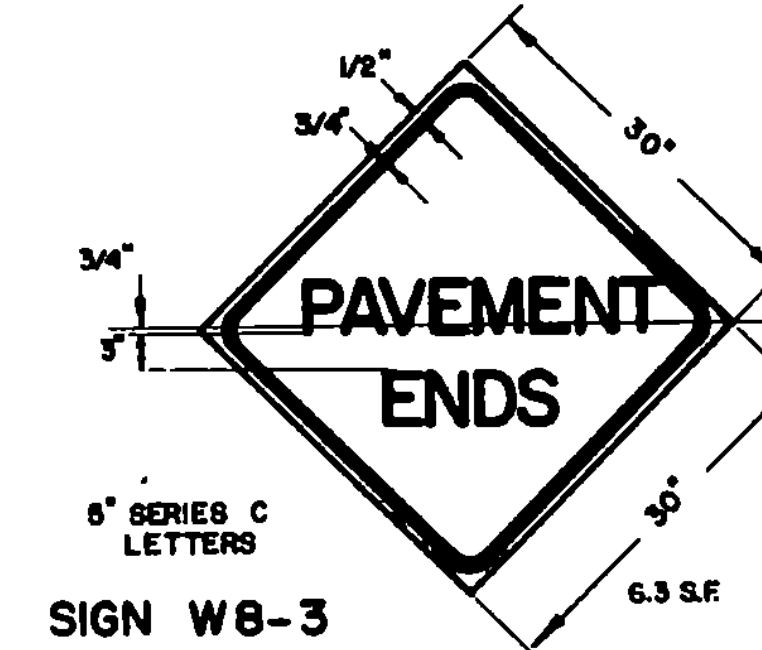
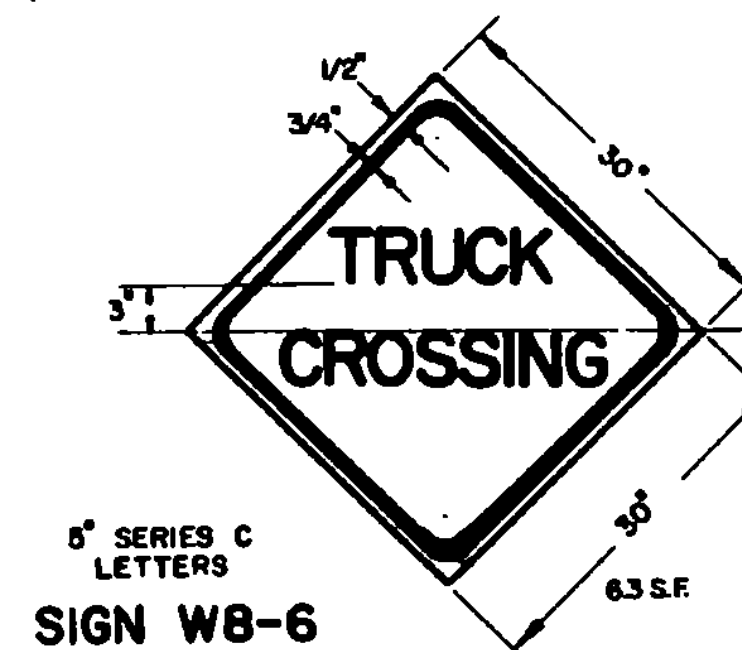
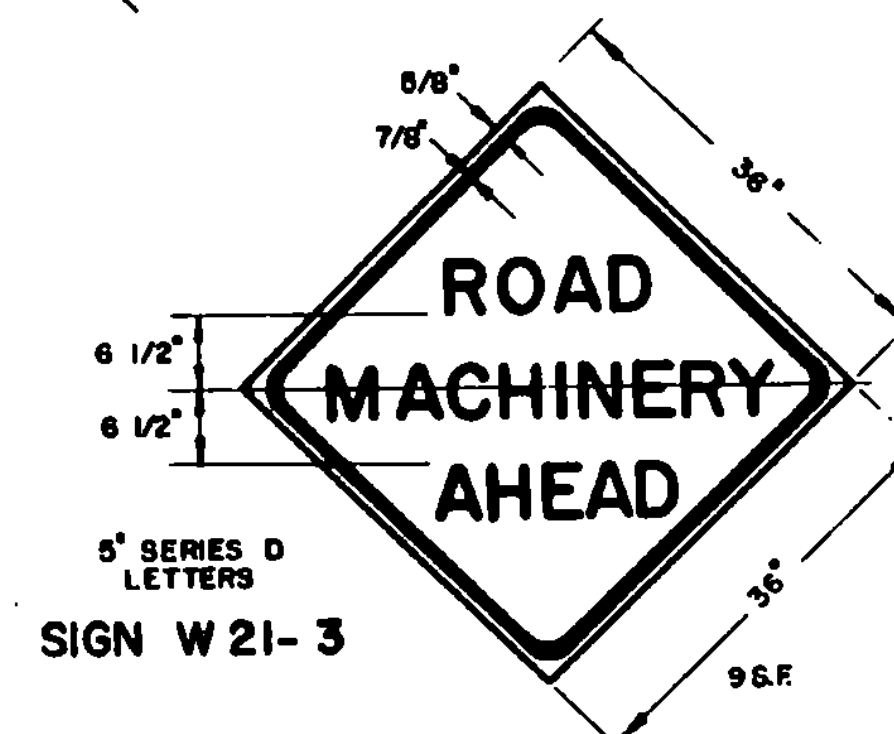
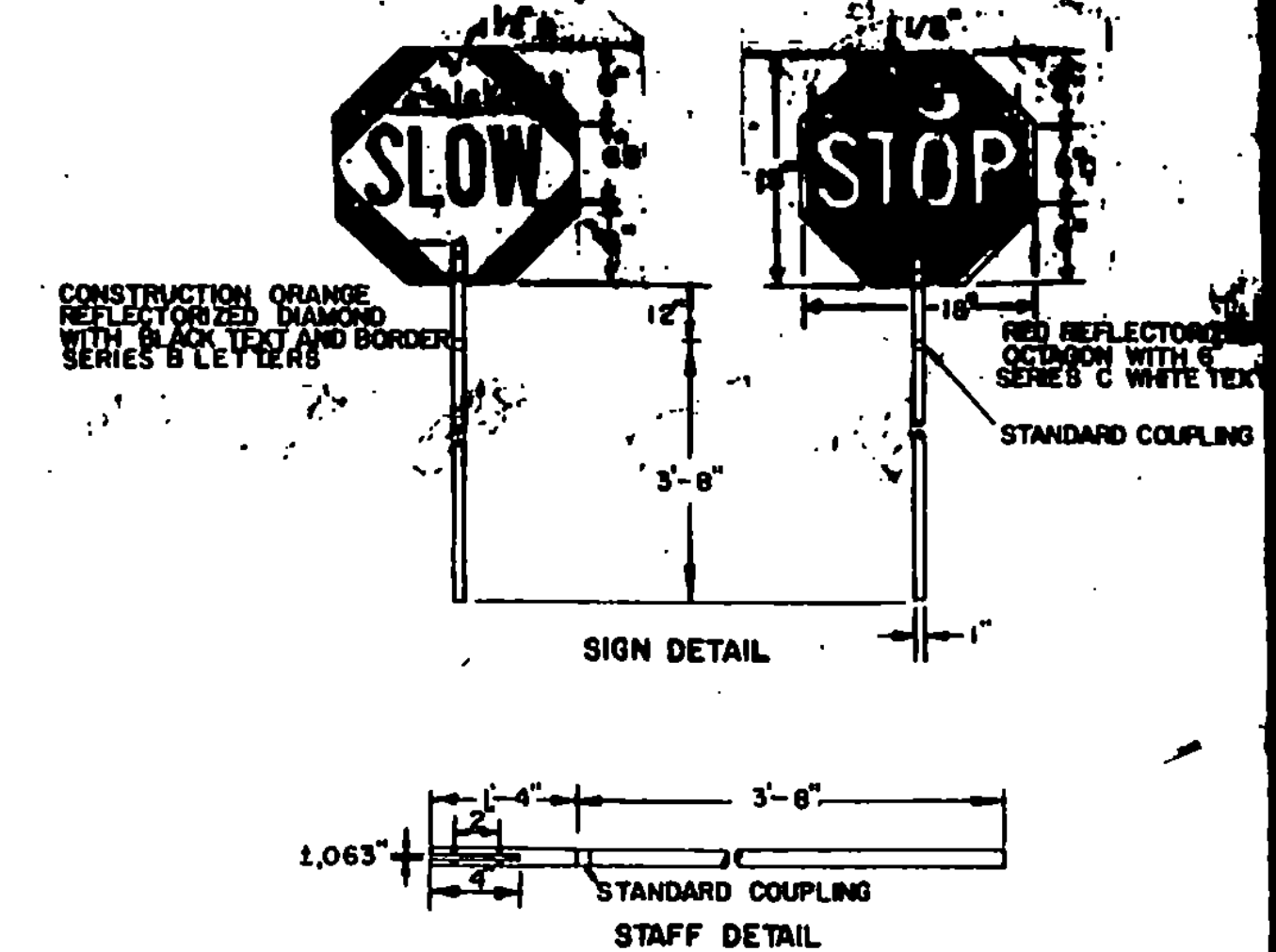
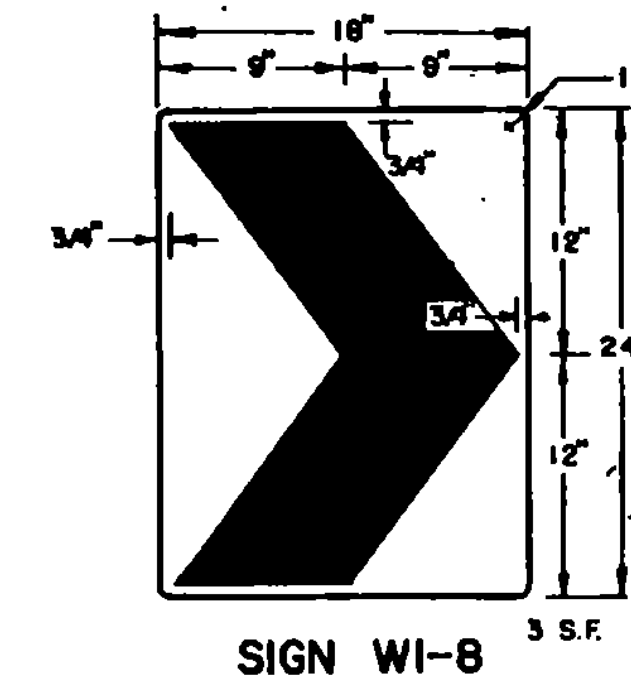
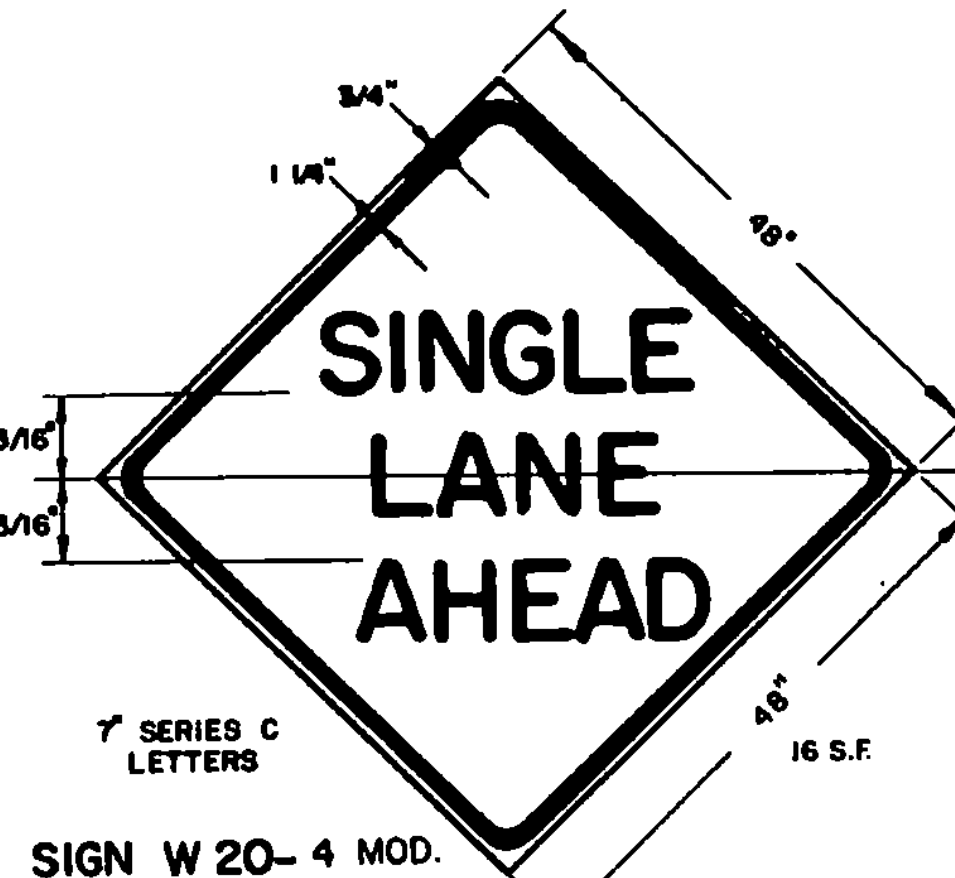
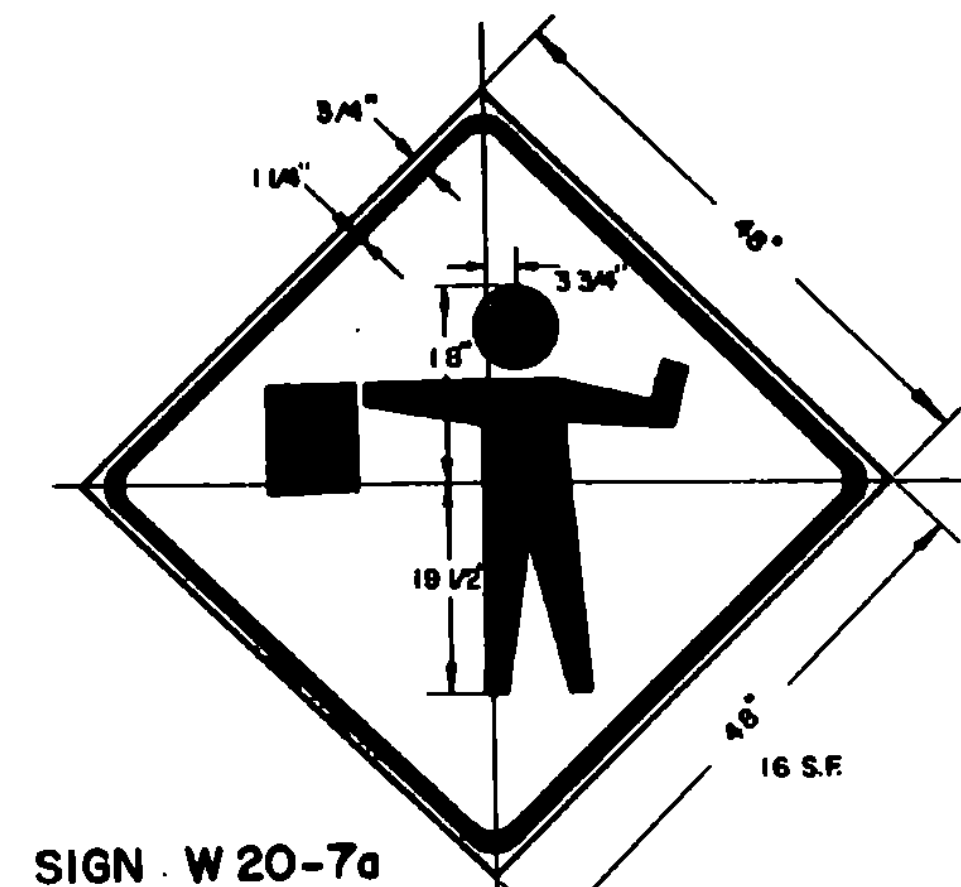
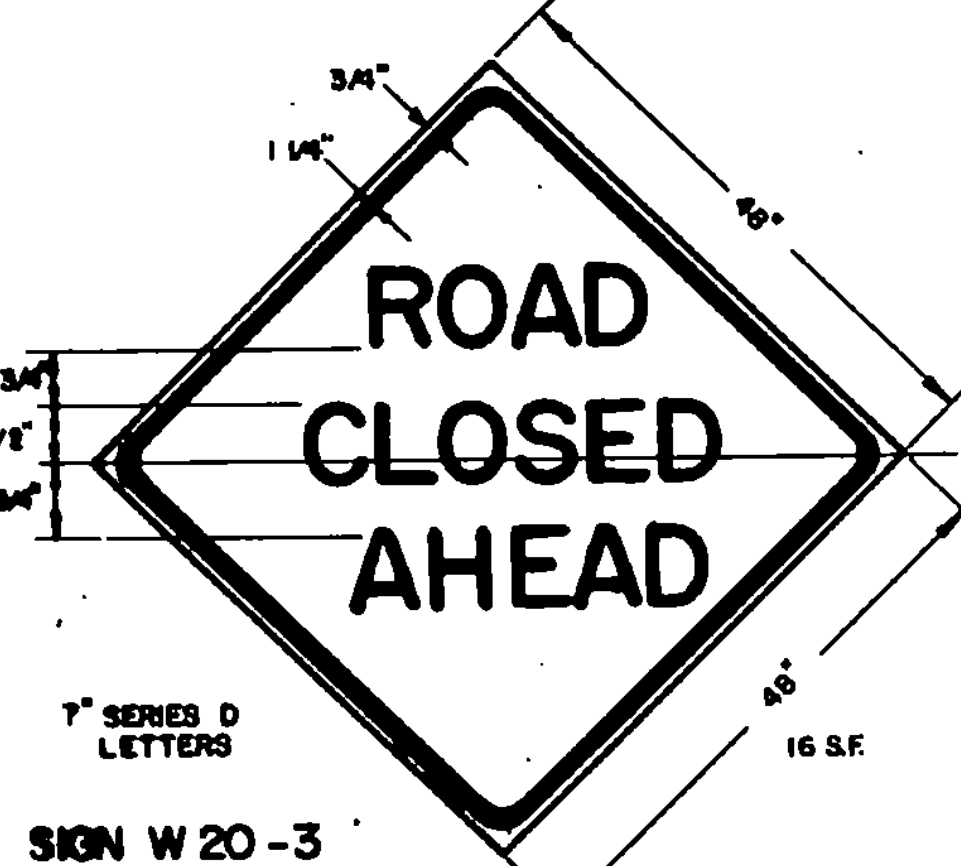
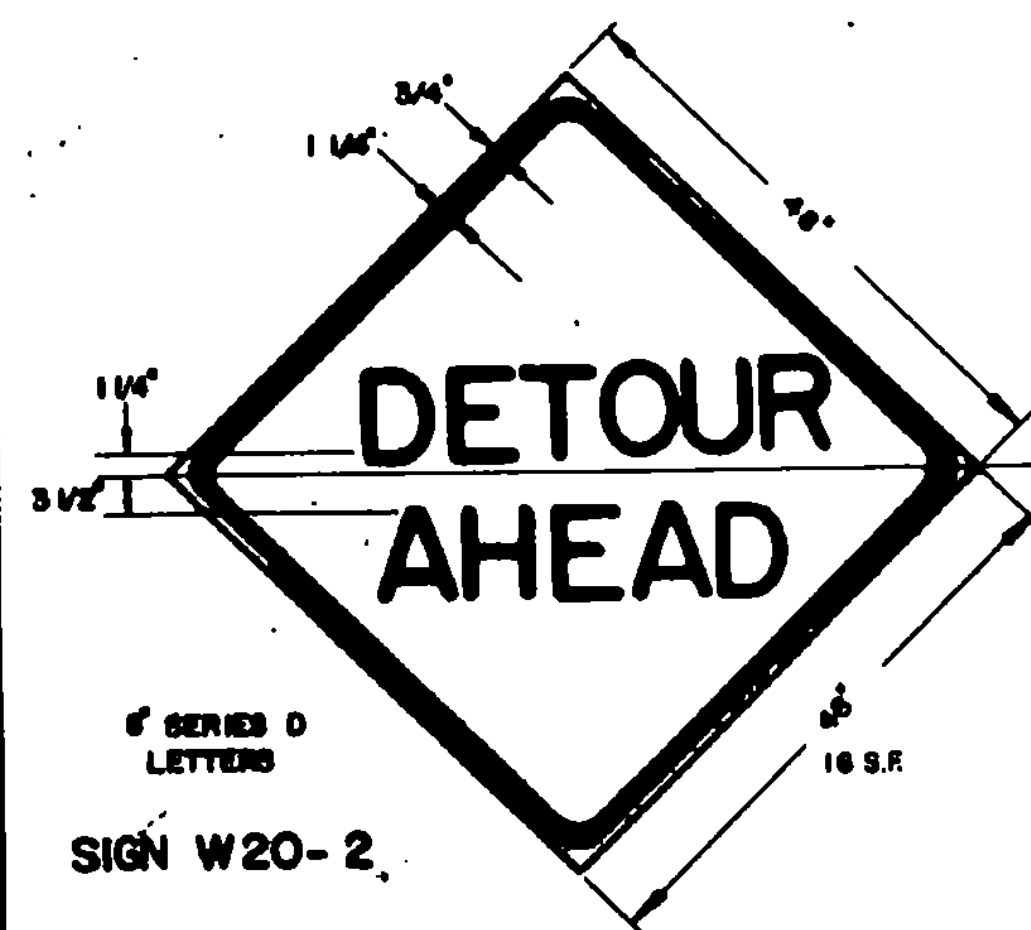
TRAFFIC SIGNS

ROAD CONSTRUCTION APPROACH SIGNS



STANDARD

E-2



NOTES

APPLICATION OF STANDARDS

Since it is not possible to prescribe detailed standards of application for all of the situations that may conceivably arise on a construction project, reference must be made to the Manual on Uniform Traffic Control Devices for the principles, procedures and standards that will be required in connection with on-project construction signs and barricades. The signs here shown represent a sample of those that probably will be most used.

DESIGN

The designs of the signs and barricades shall conform with the details shown on this sheet and with the standards prescribed in the Manual. Deviations will not be permitted.

MATERIALS

The signs shall be of metal, wood, plywood, hardwood or any other material satisfactory to the Engineer. No material will be approved that will deteriorate by exposure to the weather during the required life of the sign.

REFLECTORIZATION AND COLORS

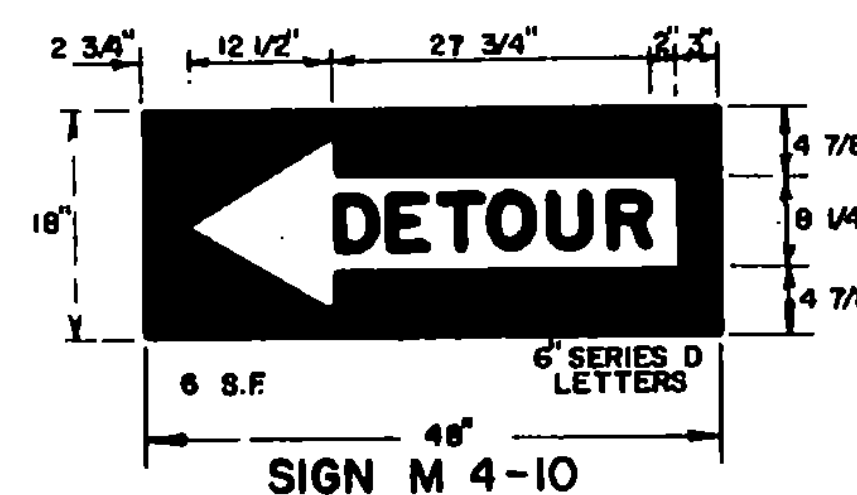
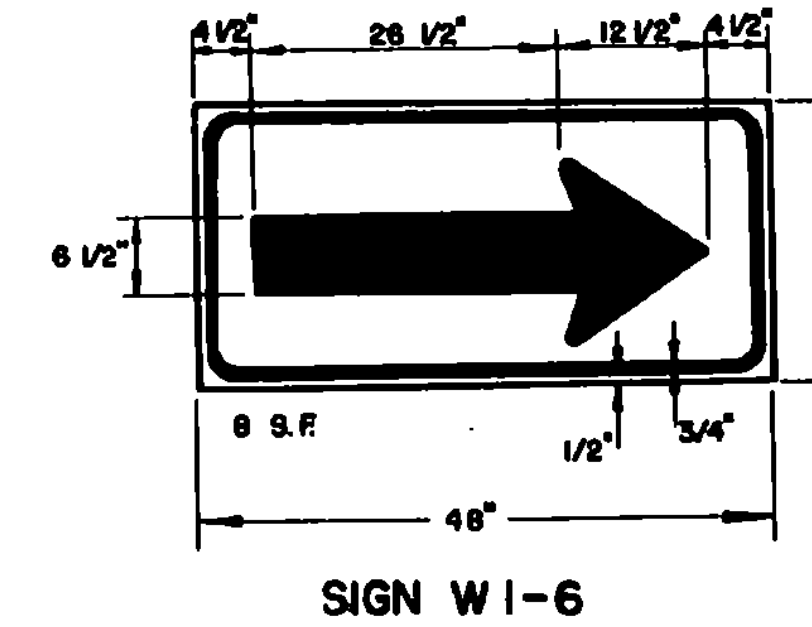
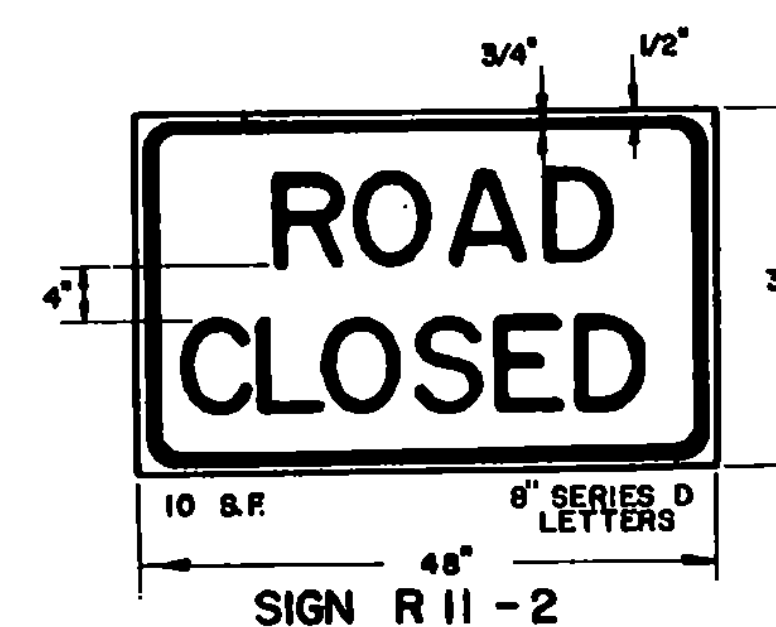
All signs except sign R11-2 and the sign paddle shall have black text and borders on an encapsulated lens reflective orange background. Sign R11-2 shall have black text and border on an encapsulated lens reflective white background.

INSTALLATION

Signs and barricades shall be in place prior to the start of the construction operation to which they apply, and shall be removed promptly when the need no longer exists. Each sign shall be erected in a neat and workmanlike manner on wood or metal posts set securely in the ground, or on portable supports for temporary use, or on barricades when appropriate. As a general rule, roadside signs shall be 5 feet above road level with the nearest edge at least 6 feet outside the shoulder point. The installation of all signs and barricades shall be subject to the approval of the Engineer.

MAINTENANCE

Signs shall be kept in a clean and legible condition at all times with the reflective quality completely unimpaired. Signs, sign supports, and barricades shall be repaired, cleaned, repainted or replaced whenever necessary. Weeds, shrubbery, construction materials, equipment, and snow shall not be allowed to obscure any sign or barricade. The maintenance of all traffic control devices shall be subject to the orders of the Engineer.



The on-project construction signs covered by this sheet are intended to be used as the situations apply within normal two-lane highway construction areas, for the protection of the public and workmen and for the guidance of traffic through or around construction operations. When messages other than those shown here are needed, the signs and their applications shall conform with the standards set forth in the Manual on Uniform Traffic Control Devices.

The cost of furnishing, erecting, maintaining and removing all construction approach signs shall be considered as subsidiary work pertaining to the project as a whole and shall be included in the contract unit price bid for various items involved in the contract.

REVISIONS AND CORRECTIONS
DEC. 14, 1973 - BEADS ON PAINT FOR BACKGROUND MATERIAL REMOVED.
MAY 14, 1974 - REFLECTIVE MATERIAL CHANGE.
JUNE 7, 1977 - REFLECTIVE MATERIAL NOTE CHANGED.
JUNE 7, 1977 - SIGNS REFERENCED TO NUMBERS IN M.U.T.C.D.
APR. 20, 1978 - FLAGPERSON SIGN CHANGED TO SYMBOL.
DEC. 15, 1978 - ILLUMINATION DELETED.
FEB. 27, 1980 - SIGN W1-8 AND SIGN PADDLE ADDED. SIGN DETAILS REVISED.
APR. 1, 1980 - SIGN PADDLE SIGN REVISED.
FEB. 2, 1986 - UPDATED TO 1986 SPECIFICATIONS

APPROVED
Dec 14 1971
DATE
R. H. Canale
CHIEF ENGINEER
E. H. Stickney
ASST. CHIEF ENGINEER
G. M. Lane
HIGHWAY ENGINEER

TRAFFIC SIGNS

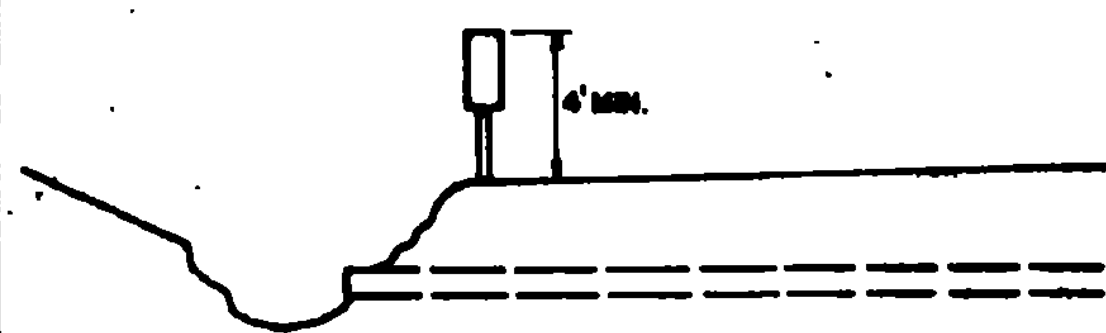
ON-PROJECT CONSTRUCTION SIGNS



STANDARD

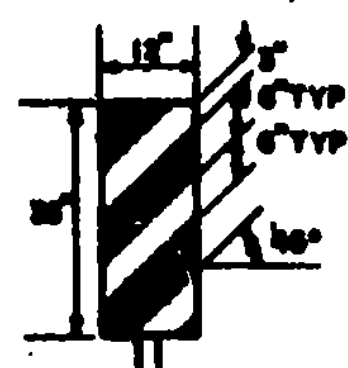
E-6

DELINEATOR AND HAZARD MARKER DETAILS FOR CONSTRUCTION AREAS WHERE TRAFFIC IS MAINTAINED



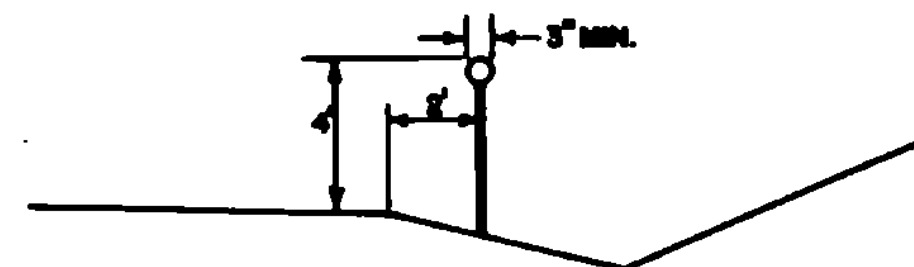
HAZARD MARKER TYPICAL

OBJECTS ADJACENT TO THE ROADWAY SHALL REQUIRE A HAZARD MARKER TO MARK THE OBSTRUCTION. IN SOME CASES THERE MAY NOT BE A PHYSICAL OBJECT INVOLVED BUT OTHER ROADSIDE CONDITIONS SUCH AS NARROW SHOULDER DROP-OFFS, GORDES, D.I. EXCAVATIONS OR ABRUPT CHANGE IN THE ROADWAY ALIGNMENT MAY MAKE IT UNDESIRABLE FOR A DRIVER TO LEAVE THE ROADWAY. THE INSIDE EDGE OF THE HAZARD MARKER SHALL BE IN LINE WITH THE INNER SIDE OF THE OBSTRUCTION, WHENEVER POSSIBLE.



VERTICAL PANEL

VERTICAL PANELS SHALL HAVE ALTERNATING ORANGE AND WHITE REFLECTORIZED STRIPS (SLOPING DOWNWARD IN THE DIRECTION TRAFFIC IS TO PASS). THESE DEVICES MAY BE USED FOR TRAFFIC SEPARATION OR SHOULDER BARRICADES WHERE SPACE IS AT A PREMIUM.

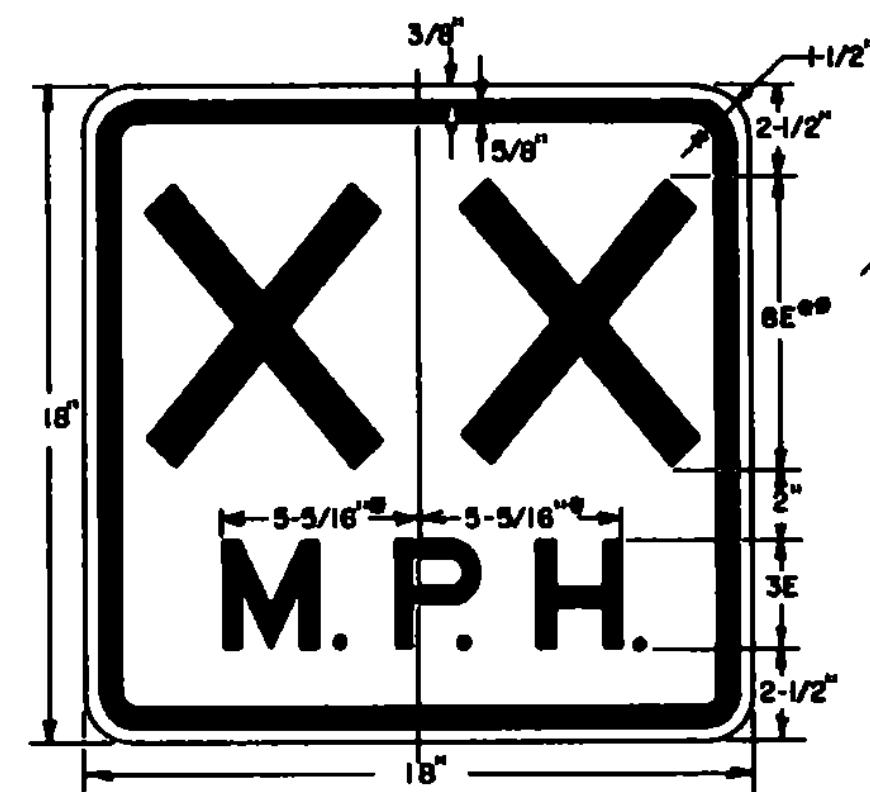


SYMBOL

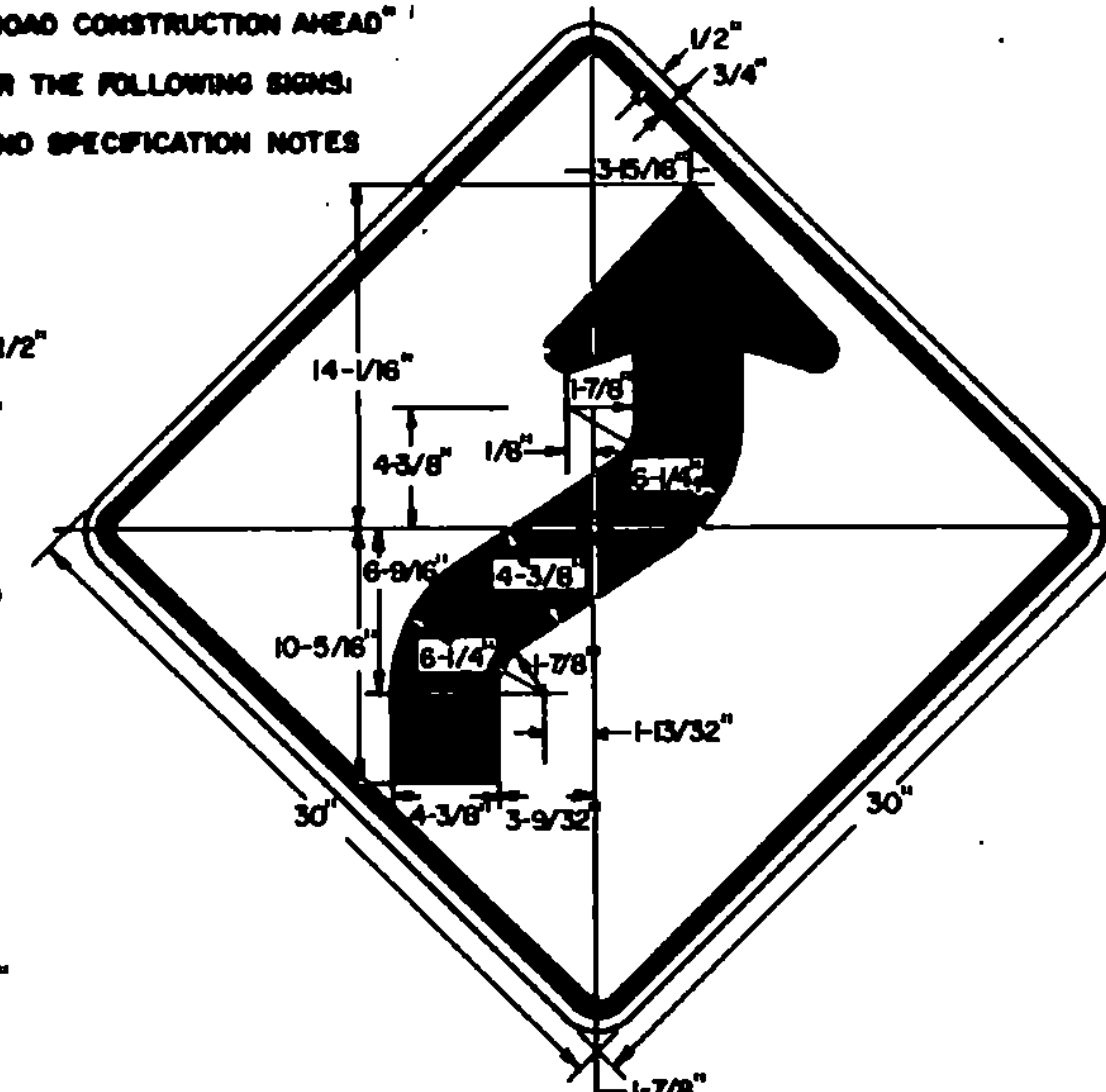
DELINEATOR TYPICAL

DELINEATORS SHALL BE OF A REFLECTORIZED WHITE COLOR. THEY SHALL HAVE A MINIMUM OF 7 SQUARE INCHES. THEY MAY BE ROUND, SQUARE, OR OBLONG. THEY SHALL BE OF THE FOLLOWING:
1- REFLECTORIZED TAPE WITH METAL BACKING.
2- REFLECTORIZED TAPE APPLIED DIRECTLY TO POSTS.
3- REFLECTORIZED PAINT APPLIED DIRECTLY TO POSTS WHEN PAINT OR TAPE IS APPLIED DIRECTLY TO POST, A SURFACE OF 3' MINIMUM WIDTH FACING TRAFFIC IS REQUIRED.

SEE STANDARD SHEET E-2 FOR SIGN DETAILS FOR "ROAD CONSTRUCTION AHEAD" AND "END CONSTRUCTION" SIGNS.
SEE STANDARD SHEET E-6 FOR SIGN DETAILS FOR THE FOLLOWING SIGNS: "DETOUR AHEAD", "ROAD CLOSED", "DETOUR" ARROW.
SEE STANDARD SHEET E-8 FOR SIGN MATERIAL AND SPECIFICATION NOTES FOR ALL SIGNS DETAILED ON THIS SHEET.



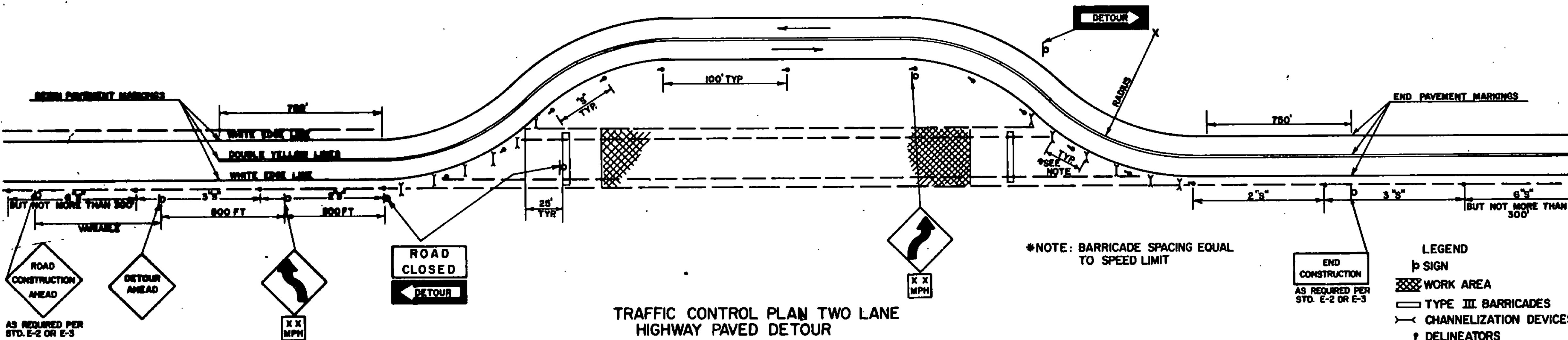
*INCREASE SPACING 100%
**OPTICALLY SPACE NUMERALS ABOUT VERT. CENTERLINE.



NOTES

1. SIGNS & DELINEATION SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. CHANNELIZING DEVICES SHALL CONSIST OF TYPE II BARRICADES WITH STEADY BURN LIGHTS EXCEPT ON THE FIRST AND LAST BARRICADES WHICH SHALL HAVE A FLASHING LIGHT.
3. FLASHING WARNING LIGHTS MAY BE USED TO CALL ATTENTION TO THE EARLY WARNING SIGNS.
4. CONTRACTOR IS RESPONSIBLE FOR PAVEMENT MARKING AND SHALL REMOVE ANY CONFLICTING OR CONFUSING EXISTING MARKINGS.
5. ADDITIONAL SIGNING MAY BE REQUIRED AT THE DISCRETION OF THE ENGINEER.
6. UNPAVED DETOURS REQUIRE PAVEMENT MARKINGS FOR TRANSITIONS ON EXISTING PAVEMENT.

DESIGN SPEED	REQUIRED RADIUS	SPACING - "S"
MPH	FT	FT
25	150	30
30	250	40
40	450	60
50	750	75



TRAFFIC CONTROL PLAN TWO LANE
HIGHWAY PAVED DETOUR

*NOTE: BARRICADE SPACING EQUAL TO SPEED LIMIT

LEGEND

- SIGN
- ▨ WORK AREA
- ▬ TYPE III BARRICADES
- CHANNELIZATION DEVICES
- DELINEATORS

BARRICADES

APPLICATION NOTES

TYPE I BARRICADES ARE TO BE USED ON CONVENTIONAL ROADS OR URBAN STREET AND ARTERIALS TO MARK A SPECIFIC HAZARD TO CHANNELIZE TRAFFIC.

TYPE II BARRICADES ARE TO BE USED ON EXPRESSWAYS AND FREEWAYS, SERVING THE SAME FUNCTIONS AS THE TYPE I BARRICADES.

TYPE III (SEE STANDARD E-7A) SHALL ONLY BE USED WHEN A ROAD SECTION IS CLOSED TO TRAFFIC TO BE ERECTED AT THE POINT OF CLOSURE.

MATERIALS

THE BARRICADES SHOWN ON THIS SHEET NORMALLY WILL BE OF LIGHTWEIGHT MATERIAL. IF WOOD IS USED THE FOLLOWING CONDITIONS SHALL APPLY.

1. WOODEN BARRICADES (TYPES I AND II)

A. SHALL NOT BE USED TO CHANNELIZE OR DELINEATE WORK AREAS WITHIN THE CLEAR ZONE OF ANY HIGHWAY WHERE OPERATING SPEEDS IN EXCESS OF 20 MILES PER HOUR ARE EXPECTED UNLESS INSTALLED FOR PEDESTRIAN CONTROL BEHIND APPROVED POSITIVE BARRIERS.

B. MAY BE USED IF OPERATING SPEEDS OF 20 M.P.H. OR LESS ARE EXPECTED.

2. TYPE III WOODEN BARRICADES SHALL NOT BE USED WITHIN THE CLEAR ZONE OF ANY HIGHWAY REGARDLESS OF THE TRAFFIC OPERATING SPEED.

DESIGN

THE DESIGN OF THE BARRICADES SHALL CONFORM WITH THE DETAILS SHOWN ON THIS SHEET AND THE MARKINGS ON THE BARRICADES SHALL BE ALTERNATE ORANGE AND WHITE STRIPES (SLOPING DOWNWARD AT AN ANGLE OF 45° IN THE DIRECTION TRAFFIC IS TO PASS).

COLORS

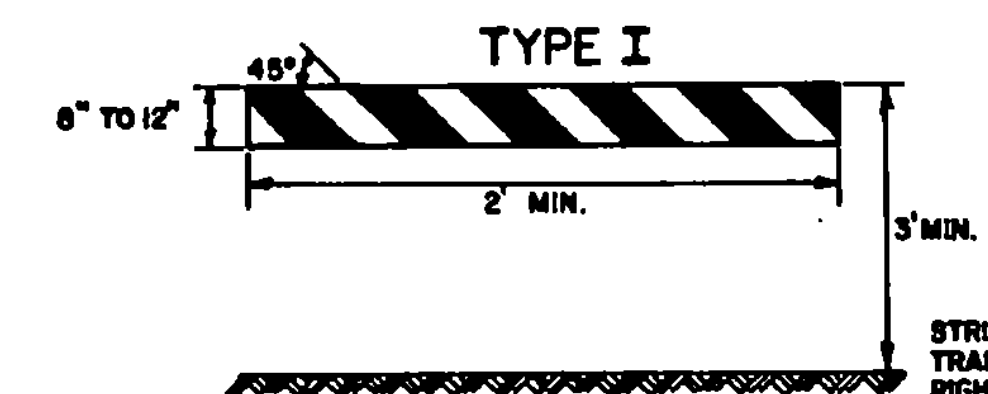
THE BARRICADES PANELS SHOWN ON THIS SHEET SHALL HAVE ALTERNATING REFLECTORIZED WHITE AND ORANGE STRIPES. THE ORANGE SHALL CONFORM WITH THE STANDARD COLORS ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY & TRANSPORTATION OFFICIALS AND APPROVED BY THE U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION. THE BARRICADE COMPONENTS SHALL BE WHITE EXCEPT THAT UNPAINTED METAL OR ALUMINUM MAY BE USED.

REFLECTORIZATION

THE BARRICADES SHALL BE REFLECTORIZED WITH REFLECTIVE SHEETINGS.

LOCATION

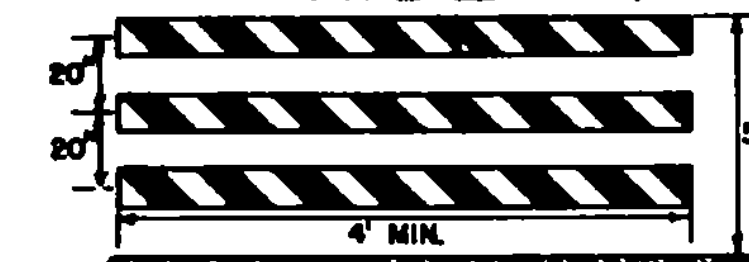
THE BARRICADES SHOWN ON THIS SHEET WILL BE LOCATED BY THE ENGINEER IN THE FIELD OR AS SHOWN ON THE PLANS. THE LOCATION OF THE BARRICADES SHALL FOLLOW THE PROCEDURES SET FORTH IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, OR AS OTHERWISE NOTED.



TYPE II



TYPE III



BARRICADE	CHARACTERISTICS	I	II
WIDTH OF RAIL		6" MIN. 12" MAX.	6" MIN. 12" MAX.
LENGTH OF RAIL		2' MIN.	2' MIN.
WIDTH OF STRIPS		6"	6"
HEIGHT		3' MIN.	3' MIN.
TYPE OF FRAME		DEMOUNTABLE OR A FRAME	LIGHT A FRAME NO STRY BRACE
FLEXIBILITY		ESSENTIALLY MOVEABLE	PORTABLE
ANGLE OF STRIPE		45°	45°
COLOR OF STRIPS		ORANGE AND WHITE	ORANGE AND WHITE

MAINTENANCE

BARRICADES SHALL BE MAINTAINED IN A CLEAN AND LEGIBLE CONDITION SATISFACTORY TO THE ENGINEER. THEY SHALL BE COMPLETELY VISIBLE TO APPROACHING TRAFFIC AT ALL TIMES. DAMAGED, DEFACED, OR DIRTY BARRICADES SHALL BE REPAIRED, CLEANED, OR REPLACED AS ORDERED BY THE ENGINEER.

LIGHTING

FOR NIGHTTIME USE ADD FLASHING WARNING LIGHTS WHEN BARRICADES ARE USED SLOWLY AND STEADY BURN LIGHTS WHEN BARRICADES ARE USED IN A SERIES FOR CHANNELIZATION. THE LIGHTING DEVICES SHALL CONFORM TO THOSE SPECIFIED IN THE MUTCD.

REVISIONS AND CORRECTIONS

FEB. 12, 1982 MATERIALS NOTE CLARIFIED, SIGN ADDITIONS.
FEB. 2, 1983 NOTE # 6 RE: UNPAVED DETOURS ADDED.

FEB. 2, 1984 - UPDATED TO 1986 SPECIFICATIONS

APPROVED:

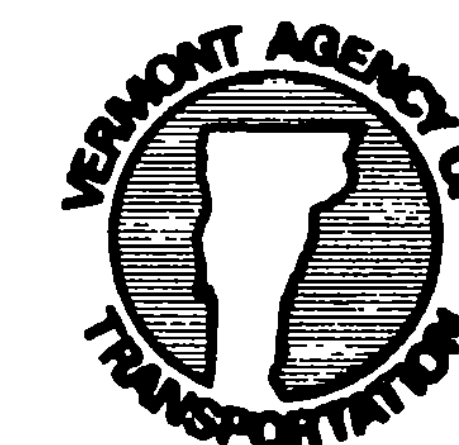
SEPT. 22, 1981
DATE

DIRECTOR OF ENGINEERING AND CONSTRUCTION

CHIEF OF DESIGN

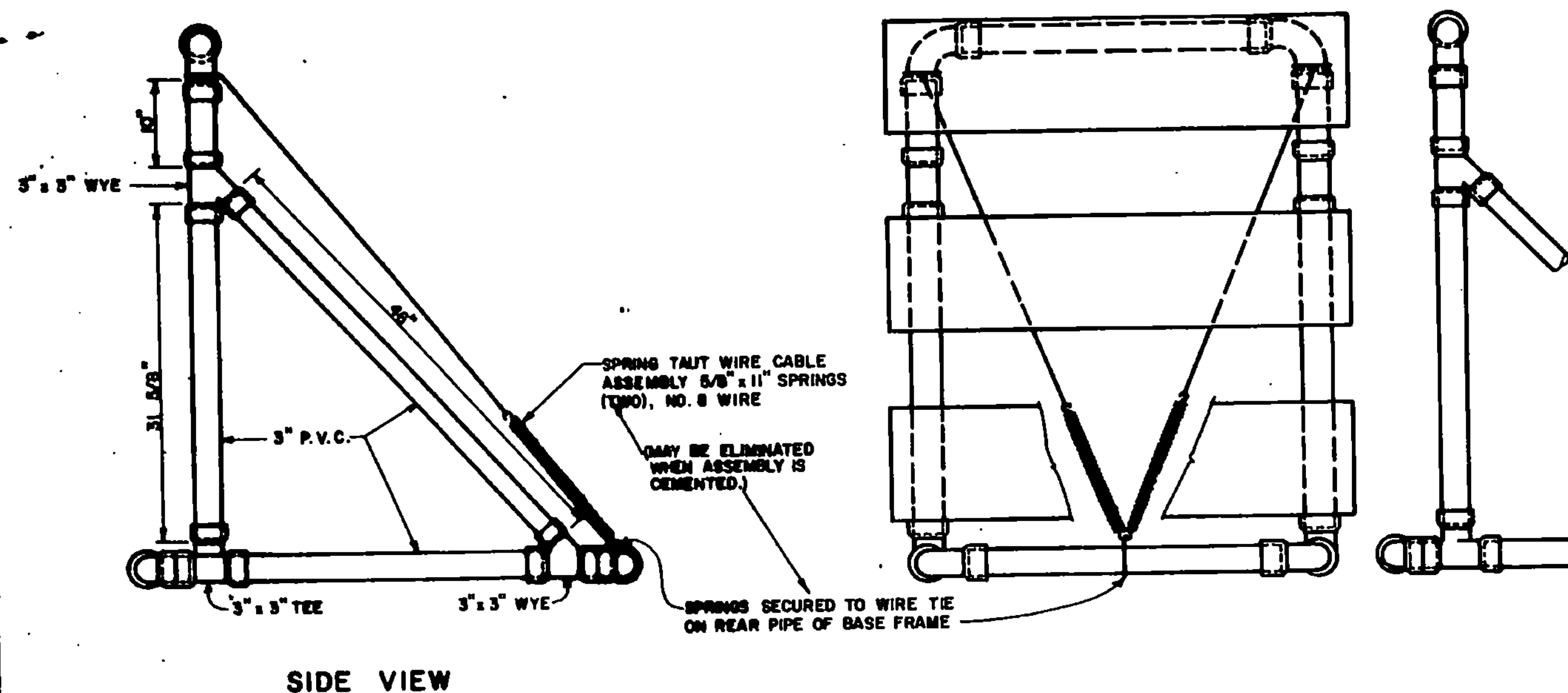
TRANSPORTATION DESIGN ENGINEER

DELINEATION, BARRICADES AND DETOURS FOR CONSTRUCTION AREAS



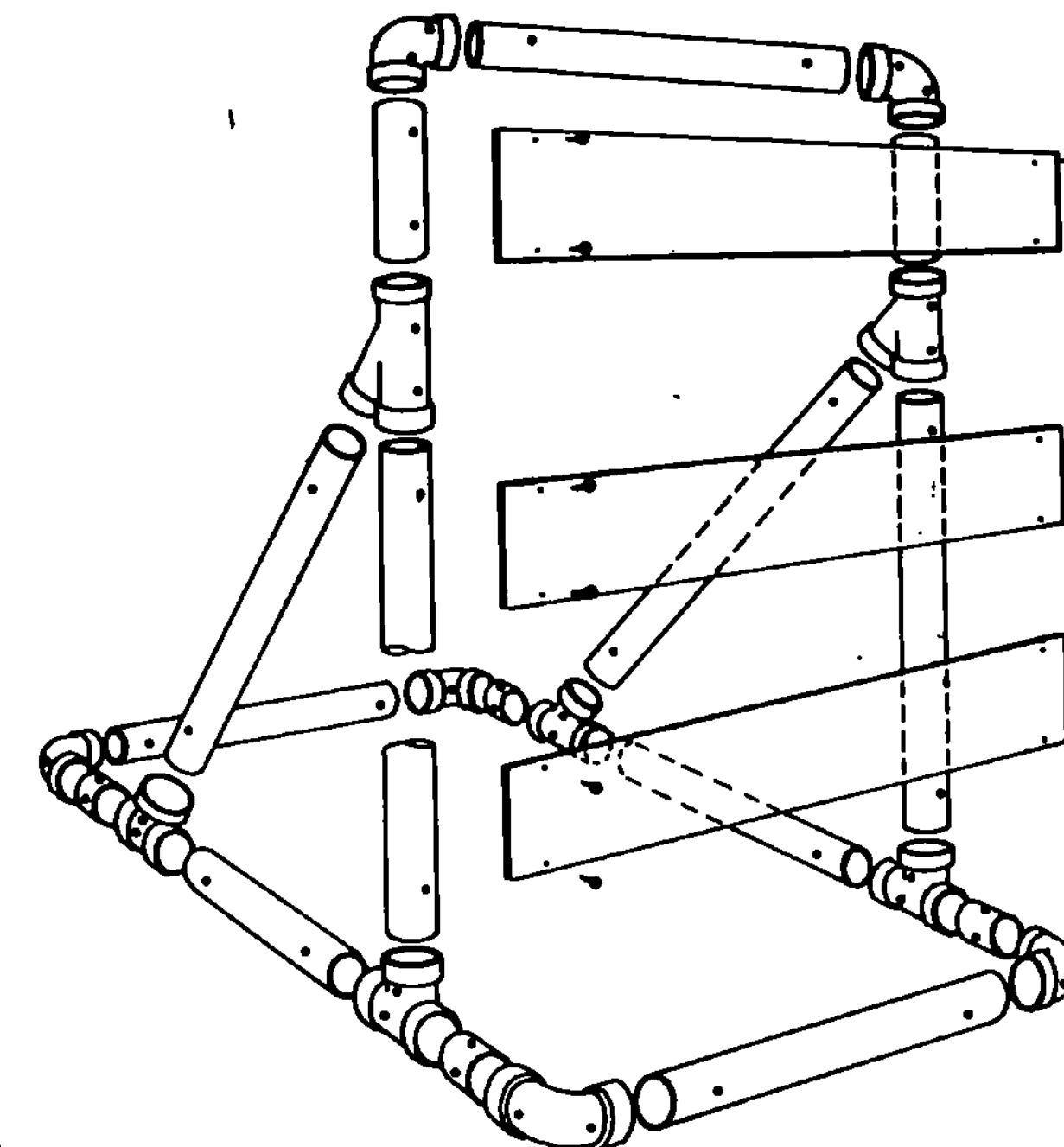
STANDARD

E-7



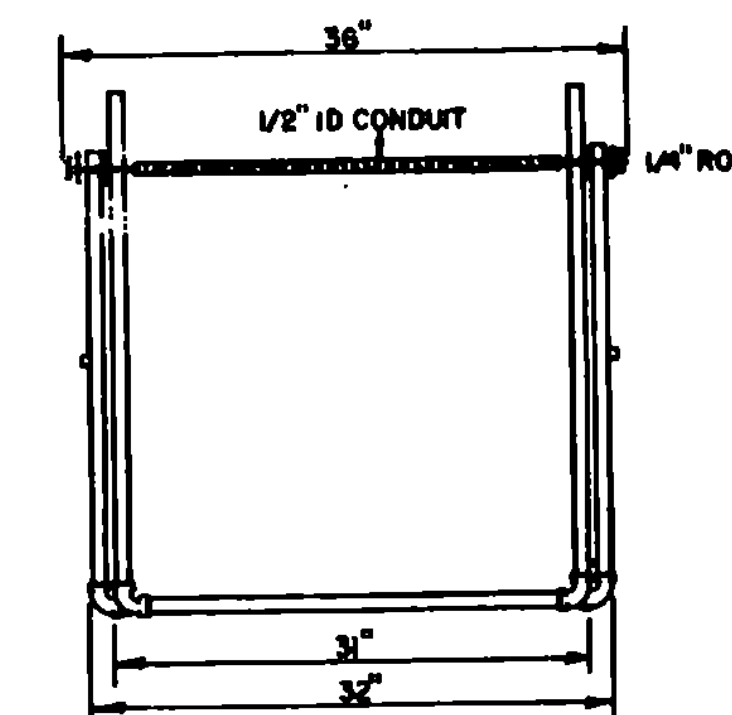
BARRICADES SHALL BE STABILIZED WITH SAND BAGS OF MINIMUM WEIGHT WHICH WILL NOT CONSTITUTE A HAZARD WHEN BARRICADE IS HIT. THEY SHALL BE PLACED ONLY ON THE BASE FRAME OF THE BARRICADE. STABILIZERS SHALL BE SO PLACED AS NOT TO BE A HAZARD TO VEHICLES PASSING ON EITHER SIDE.

IF BARRICADE REPLACEMENT COSTS CAN BE CONSIDERED NEGIGIBLE, GLUED JOINTS MAY PROVIDE ADDITIONAL STABILITY TO THE INSTALLATION.



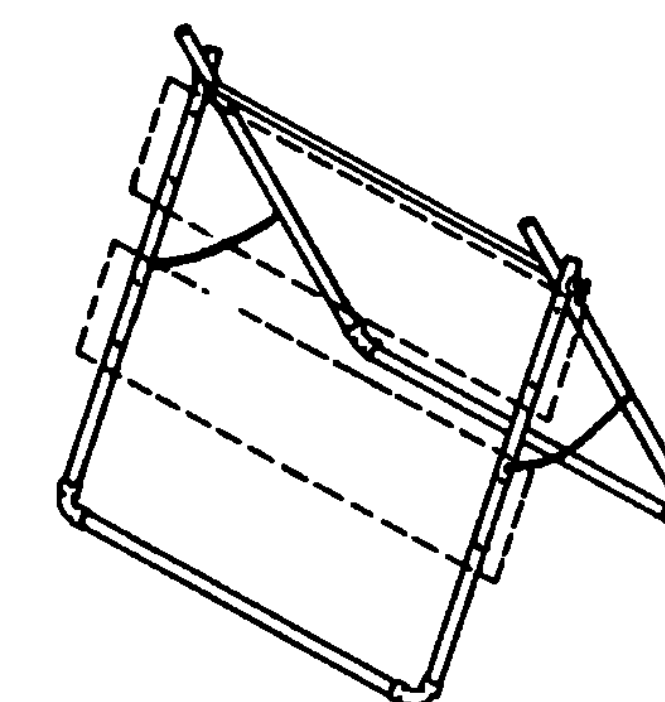
BARRICADE ASSEMBLY

MATERIALS LIST FOR ONE BARRICADE	
3" Diameter Pipe	30 LF
3" 1/4 Bend Elbow	6 EA
3" Tees	2 EA
3" Wyes	4 EA
8" x 48" x 0.25 Barricade Panels	3 EA
5/8" x 11" No. 8 Spring	2 EA
1" No. 14 Pan Head Metal Screws	12 EA
No. 14 Black Annealed Tie Wire	15 LF



MATERIALS FOR TYPE I & II BARRICADES

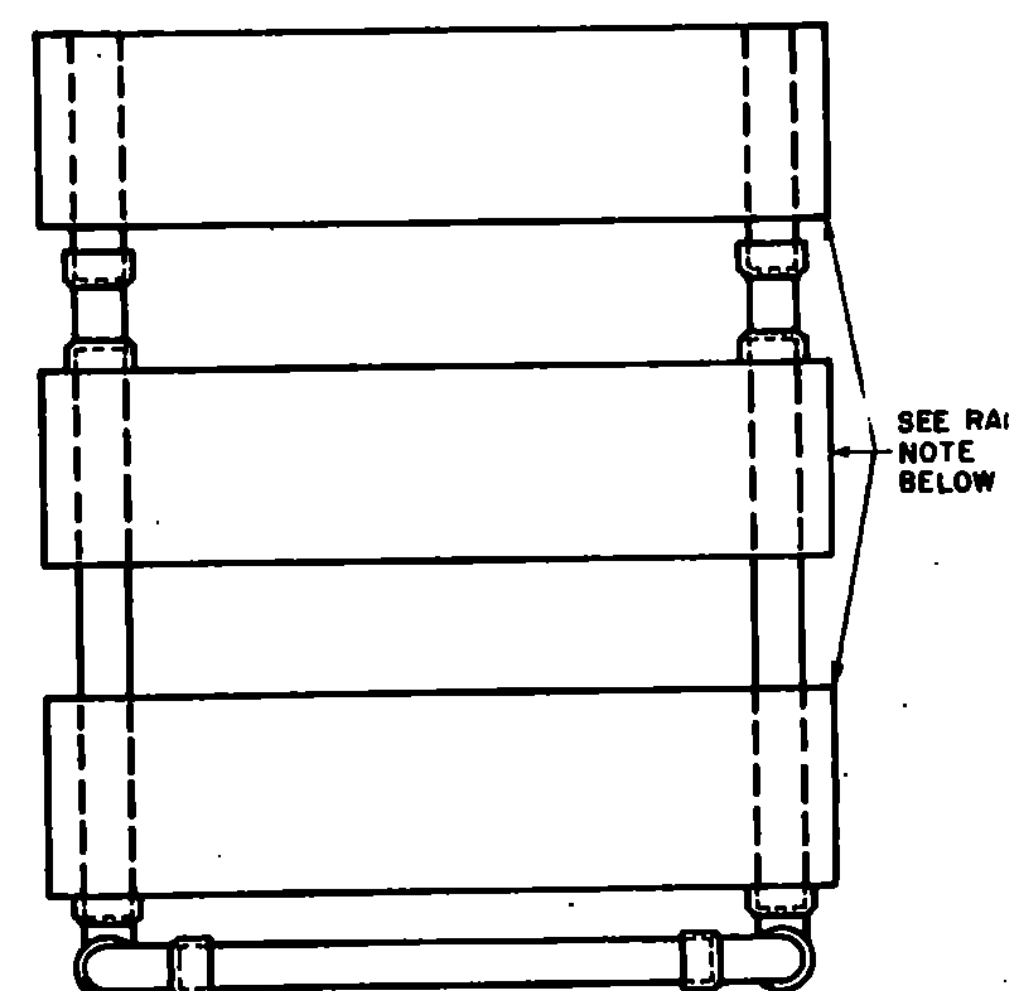
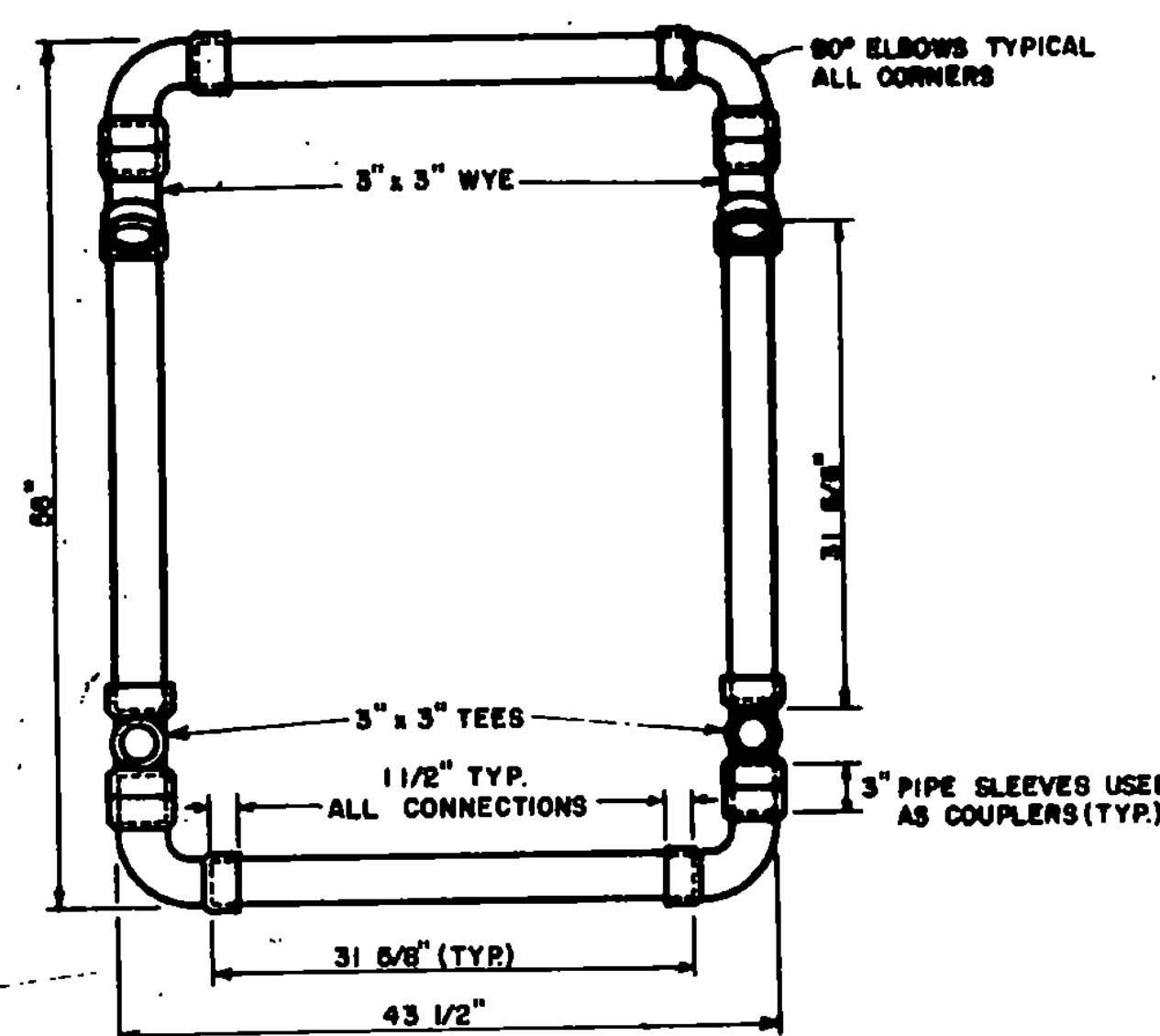
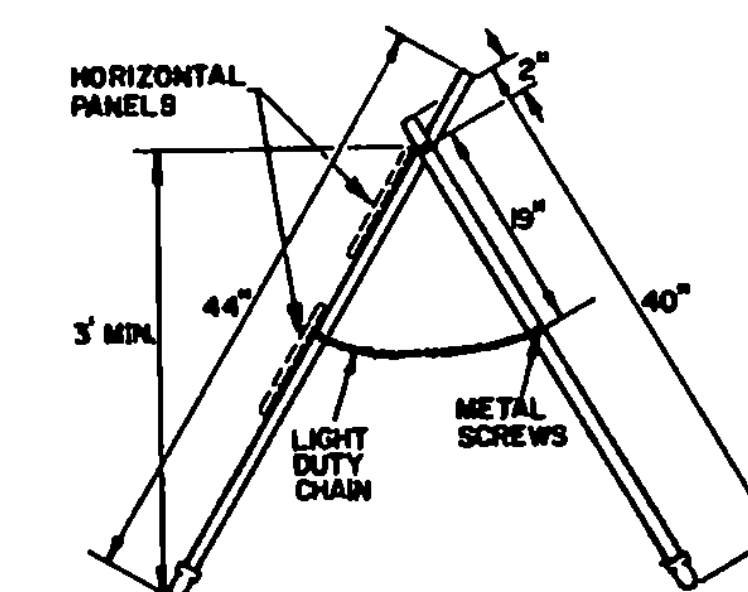
- 20'-1" PVC
4-1" PVC 90° ELBOWS
30'-1/2" ID THINWALL CONDUIT
36'-1/4" STEEL ROD
4-1" WASHERS
24'- LIGHT DUTY CHAIN
4-METAL SCREWS
2-3/4" COTTER PINS



TYPE I BARRICADES SHALL CONSIST OF ONE HORIZONTAL PANEL.

TYPE II BARRICADES SHALL CONSIST OF AN ADDITIONAL HORIZONTAL PANEL MOUNTED BELOW THE OTHER.

SEE STD E-7 FOR USE REQUIREMENTS.



SEE STANDARD E-7 FOR RAIL DETAILS.
RAILS ATTACHED WITH 1" NO. 14 PAN HEAD METAL SCREW.

WARNING LIGHTS

WARNING LIGHTS, IF REQUIRED BY THE PLANS OF RESIDENT ENGINEER, SHALL BE AFFIXED TO THE TOP OF THESE BREAKAWAY BARRICADES WITH A MINIMUM MOUNTING HEIGHT OF 36 INCHES TO THE BOTTOM OF THE LENS. A FLASHING WARNING LIGHT SHOULD BE PLACED ON BARRICADES USED SINGLY AND STEADY BURN WARNING LIGHTS SHOULD BE PLACED ON BARRICADES USED IN A SERIES FOR TRAFFIC CHANNELIZATION. THE WARNING LIGHTS SHALL CONFORM TO THE REQUIREMENTS FOUND IN THE M.U.T.C.D. WHEN THE INTEGRAL WARNING LIGHT UNIT IS USED, THE BATTERY PACK SHALL CONTAIN A LIGHT WEIGHT DRY CELL BATTERY AND THE UNIT SHALL BE RESTRAINED, WITH A TETHER CABLE OR WIRE (12' LENGTH) SECURELY FASTENED TO THE BARRICADES SO AS TO AVOID HAVING THE UNIT BECOME A DANGEROUS FLYING OBJECT IF THE BARRICADE IS HIT.

REVISIONS & CORRECTIONS

REVISED & CORRECTED

JAN. 11, 1977 - REVISED ACCORDING TO FHWA
REQUIREMENTS.

JUNE 8, 1977 - MATERIALS LIST ADDED.

APR. 8, 1982 - CEMENTING NOTE AND BARRICADES TYPE
TABLE ADDED.

JUNE 13, 1984 - REVISIONS MADE FROM 9" TO 8".

JUNE 8, 1985 - SAND AND WARNING LIGHT NOTE ADDED.

FEB. 3, 1986 - UPDATED TO 1986
SPECIFICATIONS

APPROVED

Dec 30, 1976
DATE

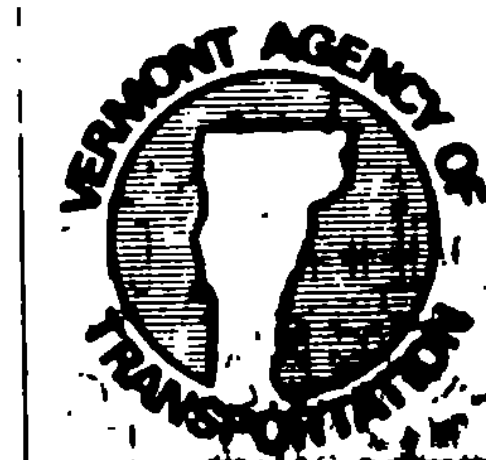
E. H. Stinson
CHIEF ENGINEER

ASST CHIEF ENGINEER

Lois L. Jones
HIGHWAY ENGINEER

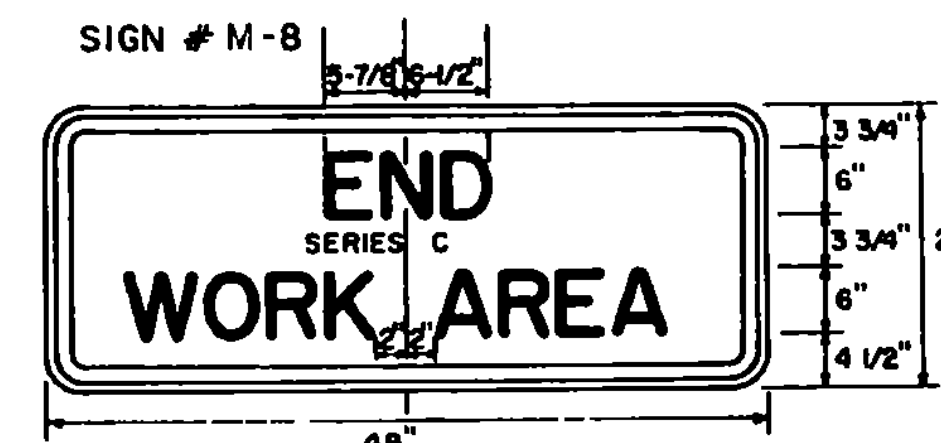
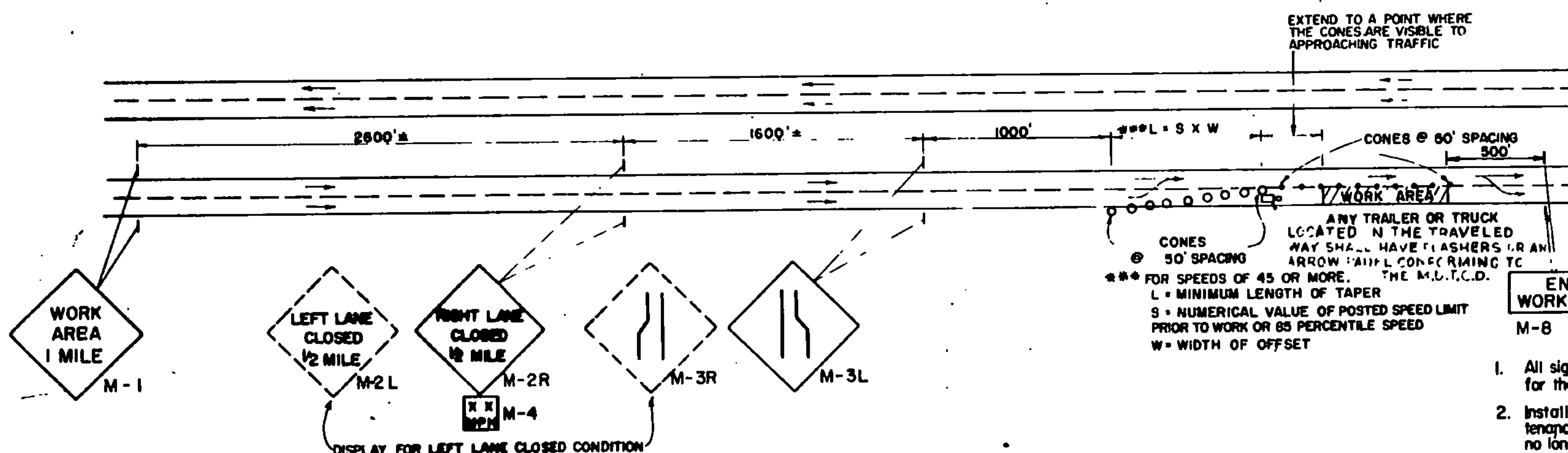
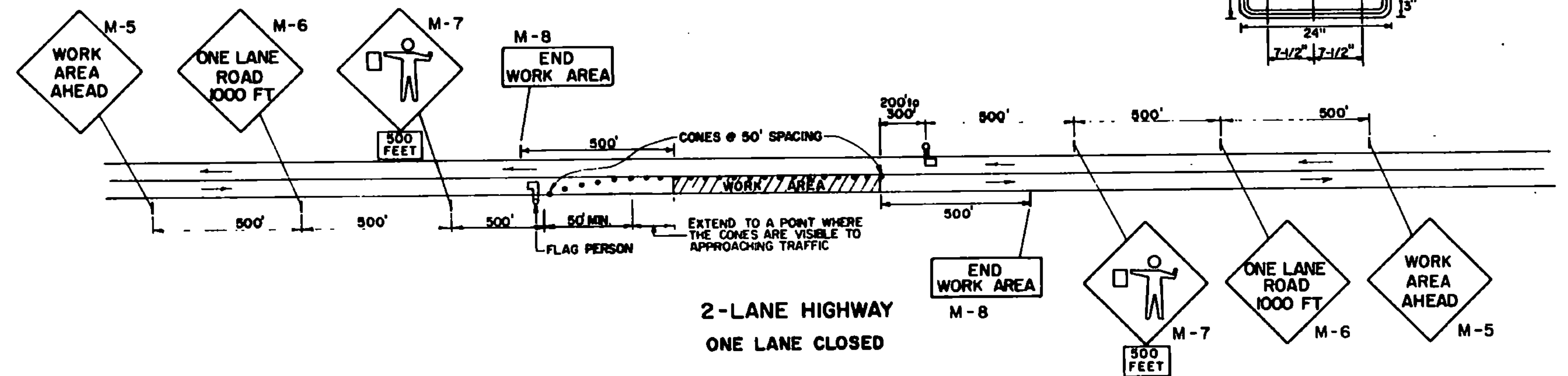
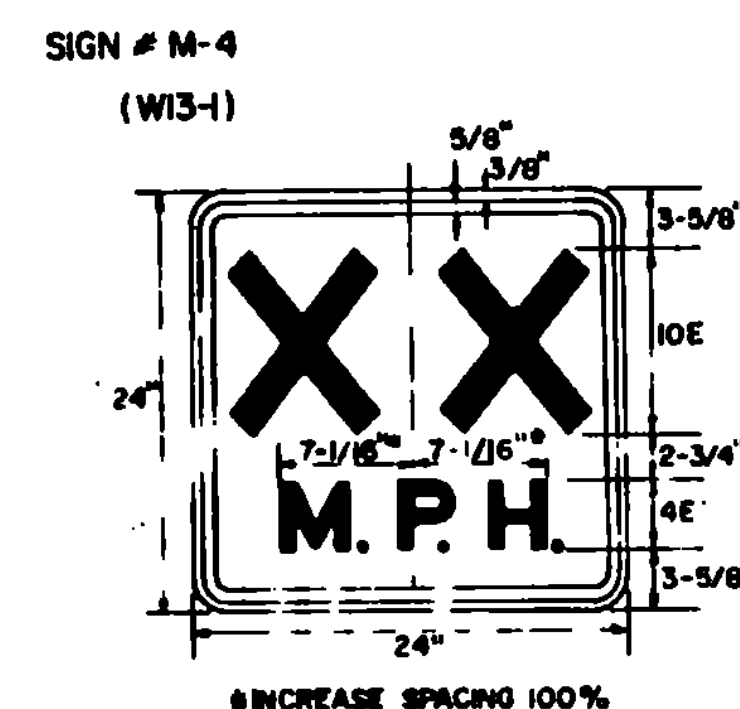
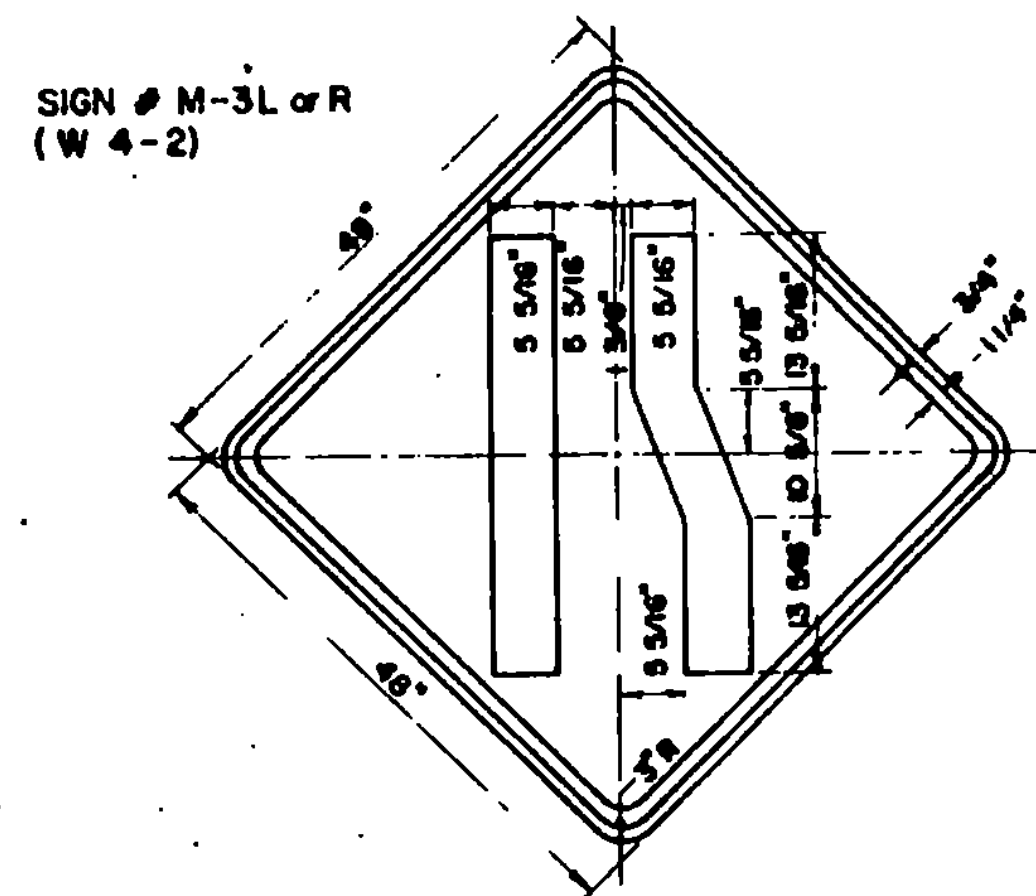
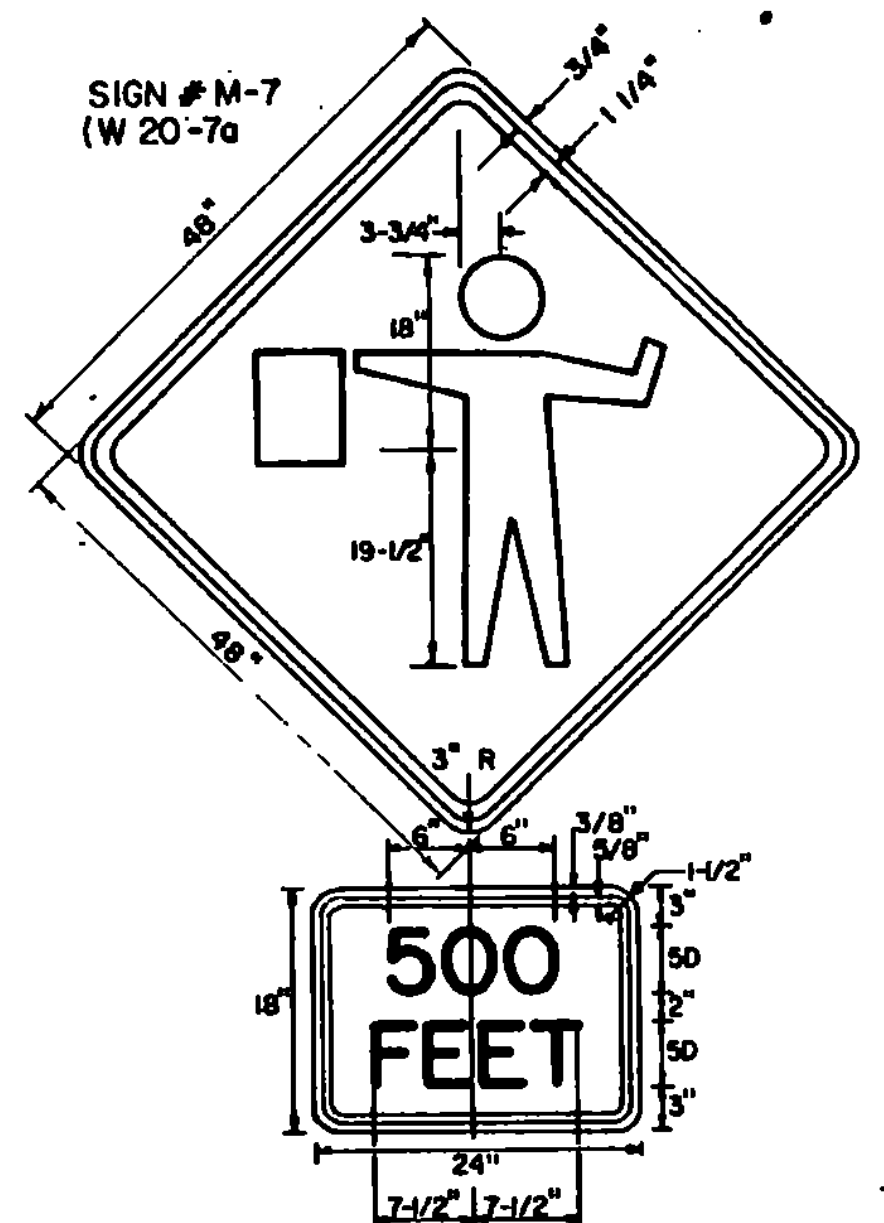
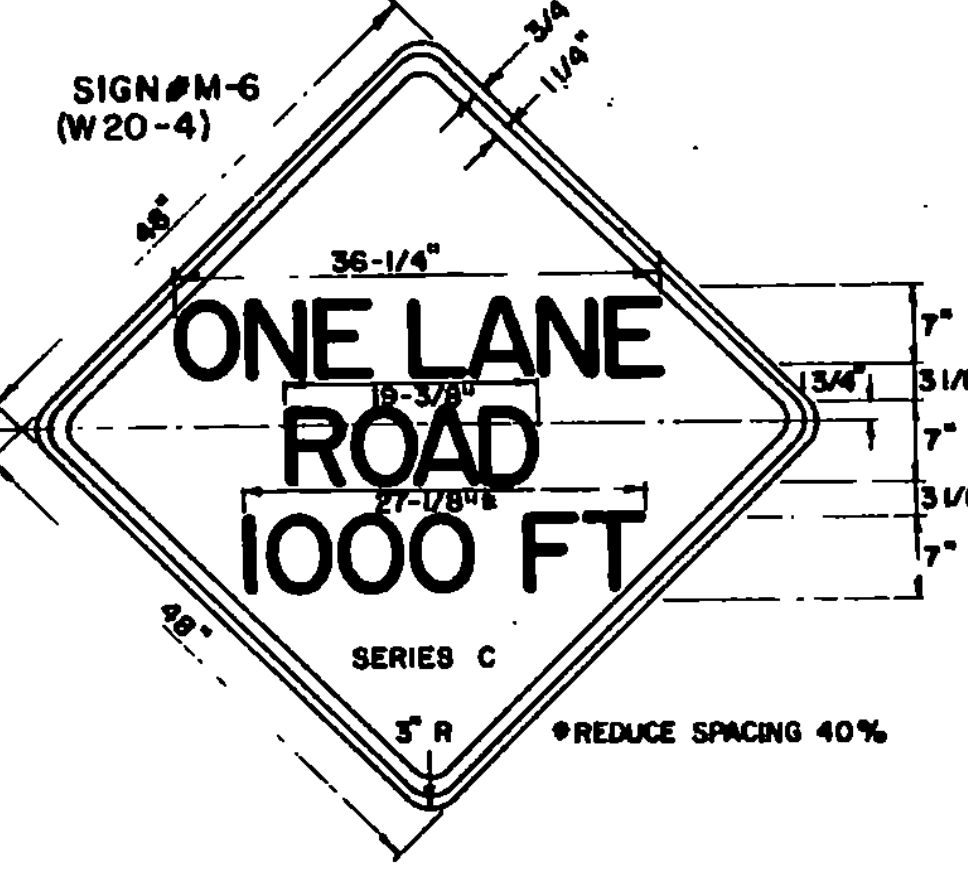
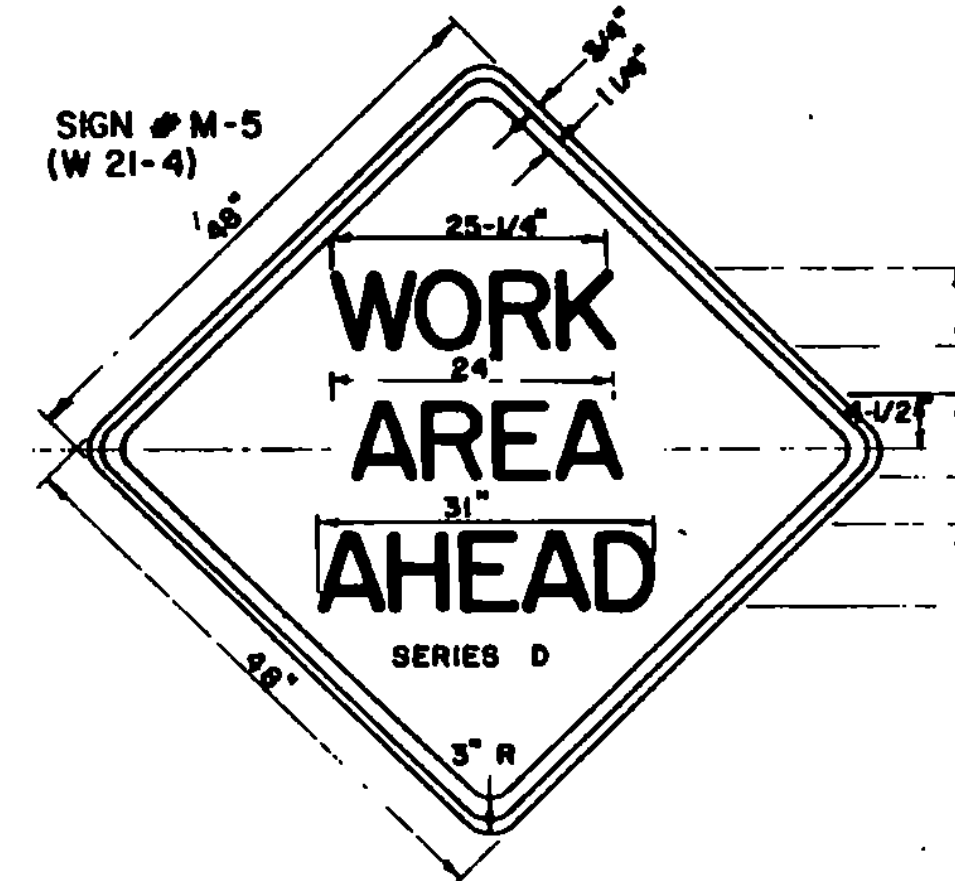
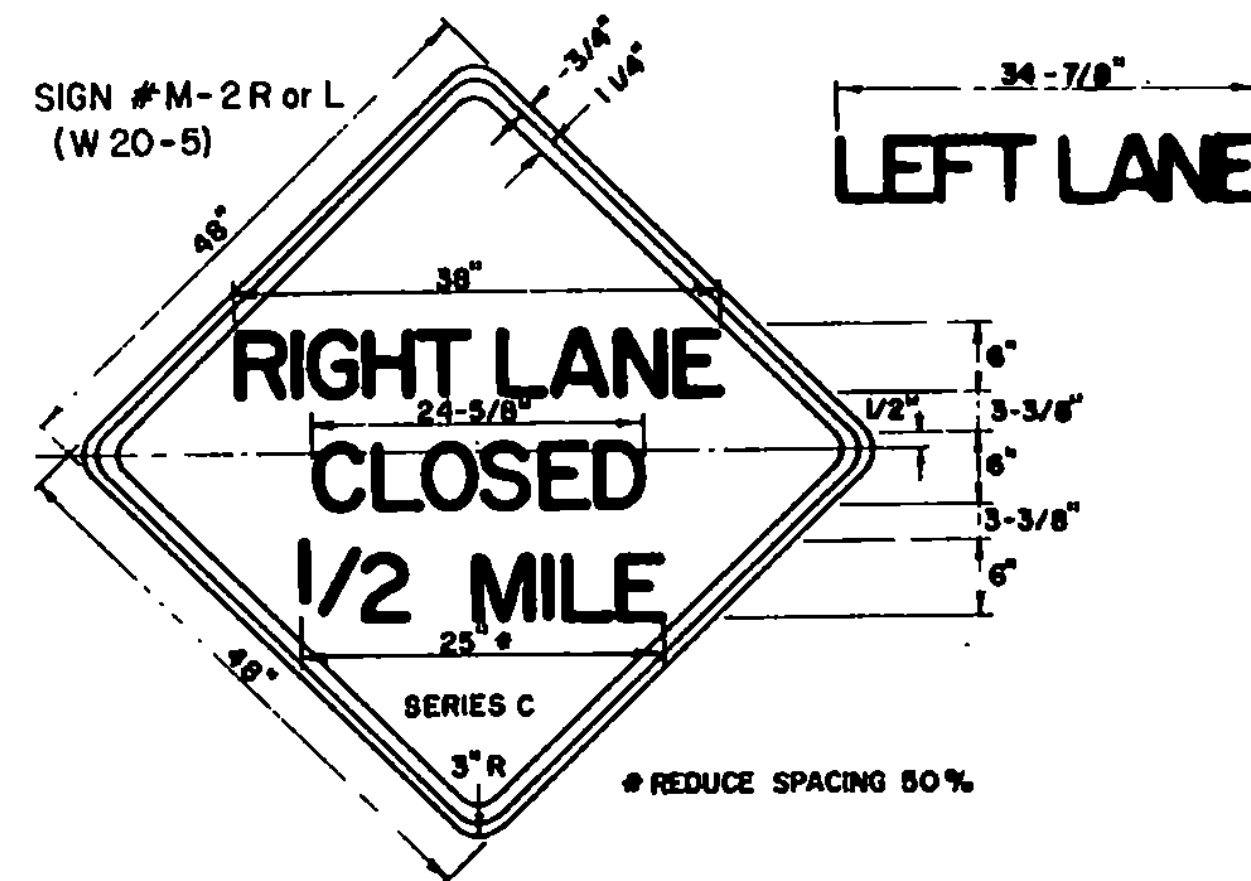
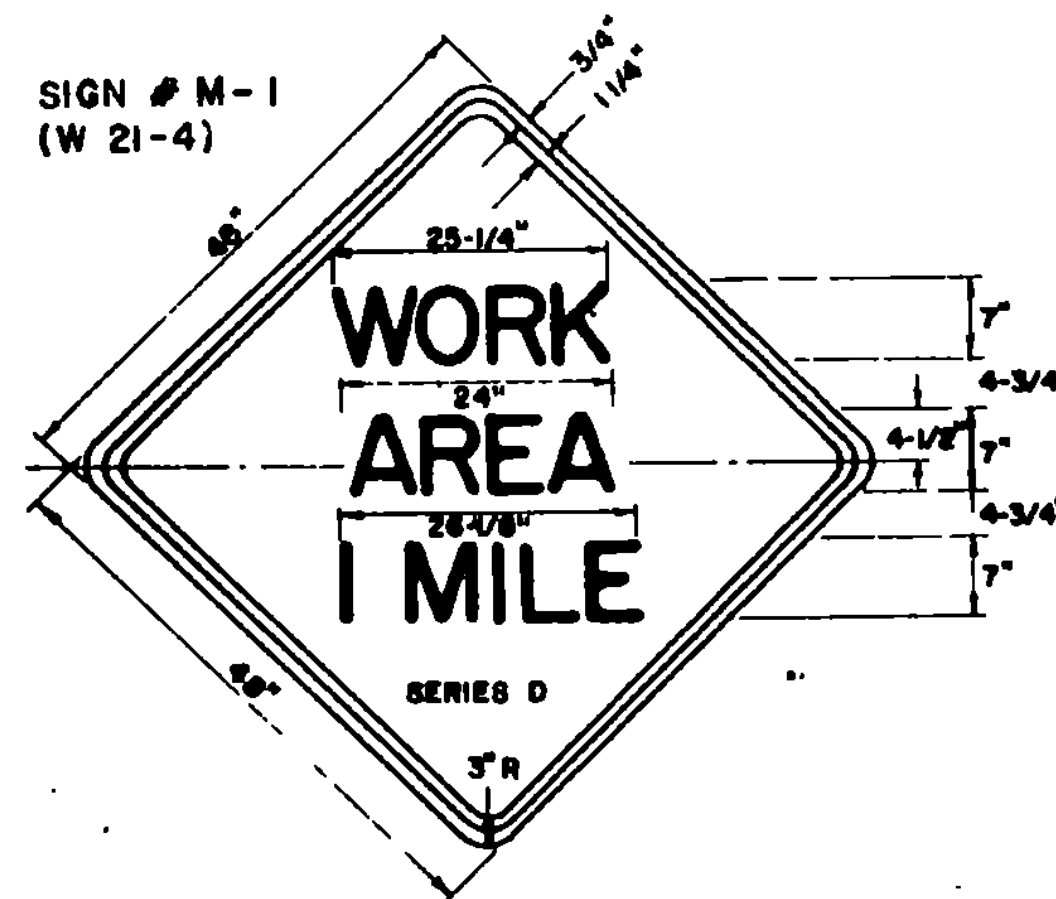
TRAFFIC SIGNS

BREAKAWAY BARRICADE DETAILS



STANDARD

E-7a



NOTES

1. All signs shall be covered or removed at the end of the working day unless required for the protection and safety of the traveling public.
2. Installation: Signs and barricades shall be in place prior to the start of the maintenance operation to which they apply and shall be removed promptly when the need no longer exists. Each sign shall be erected in a neat and workmanlike manner on wood or metal posts set securely in the ground, or on portable supports for temporary use, or on barricades when appropriate. As a general rule, roadside signs shall be 5 feet above road level with the nearest edge at least 6 feet outside the shoulder point. The installation of all signs and barricades shall be subject to the approval of the Engineer.
3. Numbers in parenthesis indicate M.U.T.C.D. sign designations.
4. "ROAD WORK" or "BRIDGE WORK" may be substituted as the appropriate legend for signs # M-1 or M-5.

Reflectorization

All reflectorized material shall consist of encapsulated lens reflective sheeting. The text and borders may be screened, lettering film, or hand painted. Cones used for traffic control at night shall have a minimum 6" wide reflectorized material.

Colors

The warning signs shown on this sheet shall have black text, border, and symbols on a reflectorized orange background. The orange shall conform with the standard colors adopted by the American Association of State Highway and Transportation Officials and approved by the U.S. Department of Transportation, Federal Highway Administration.

Text Design

Letters, digits, spacing, and text dimensions shall conform with the standard alphabets and design prescribed in the manual on Uniform Traffic Control Devices.

Specifications

Warning signs shall meet the standard state specifications for traffic signs.

Sign Base Material

The sign base material used for the warning signs on this sheet may be of any of the following, with minimum thickness as noted:

Flat sheet aluminum	0.125 Inches
High density overlaid plywood	3/4 Inches
Galvanized sheet steel	12 Gauge

5. ON TOWN, CITY AND INCORPORATED VILLAGE HIGHWAY SYSTEMS THE MINIMUM NUMBER OF SIGNS IS AS FOLLOWS:

MINIMUM NUMBER OF SIGNS REQUIRED ARE M-6 AND M-7.

MINIMUM SIZE OF THE SIGNS SHALL BE 36" x 36".

THIS SIGN SIZE REDUCTION IS FOR DAYTIME MAINTENANCE OPERATIONS OF SHORT DURATION.

REVISIONS & CORRECTIONS

FEB. 29, 1972: SIGN ADDED UNDER DIRECTION OF FEDERAL HIGHWAY ADMINISTRATION
MAY 14, 1974: REFLECTIVE MATERIAL CHANGE.
JUNE 8, 1977: REFLECTIVE MATERIAL NOTE CHANGED. SIGNS REFERENCED TO NUMBERS IN M.U.T.C.D. SIGNS NUMBERED.
AUG. 4, 1977: FLAGPERSON SIGN CHANGED TO SYMBOL.
SEPT. 12, 1977: NOTE ADDED FOR REDUCED NUMBER AND SIZE OF SIGNS.
JUNE 8, 1978: REVISED REDUCED SPEED SIGN PER FHWA.
NOV. 23, 1981: "WORK AREA" LEGEND AND NOTES ADDED, GENERAL SIGN REVISIONS.
JUNE 18, 1988: TRUCK/TRAILER W/ FLASHER NOTE CLARIFIED

FEB. 3, 1988 - UPDATED TO 1988

APPROVED:

DATE

Jan. 26, 1972

R. W. Arnold
CHIEF ENGINEER

E. J. O'Sullivan
ASST. CHIEF ENGINEER

G. M. Lane
HIGHWAY ENGINEER

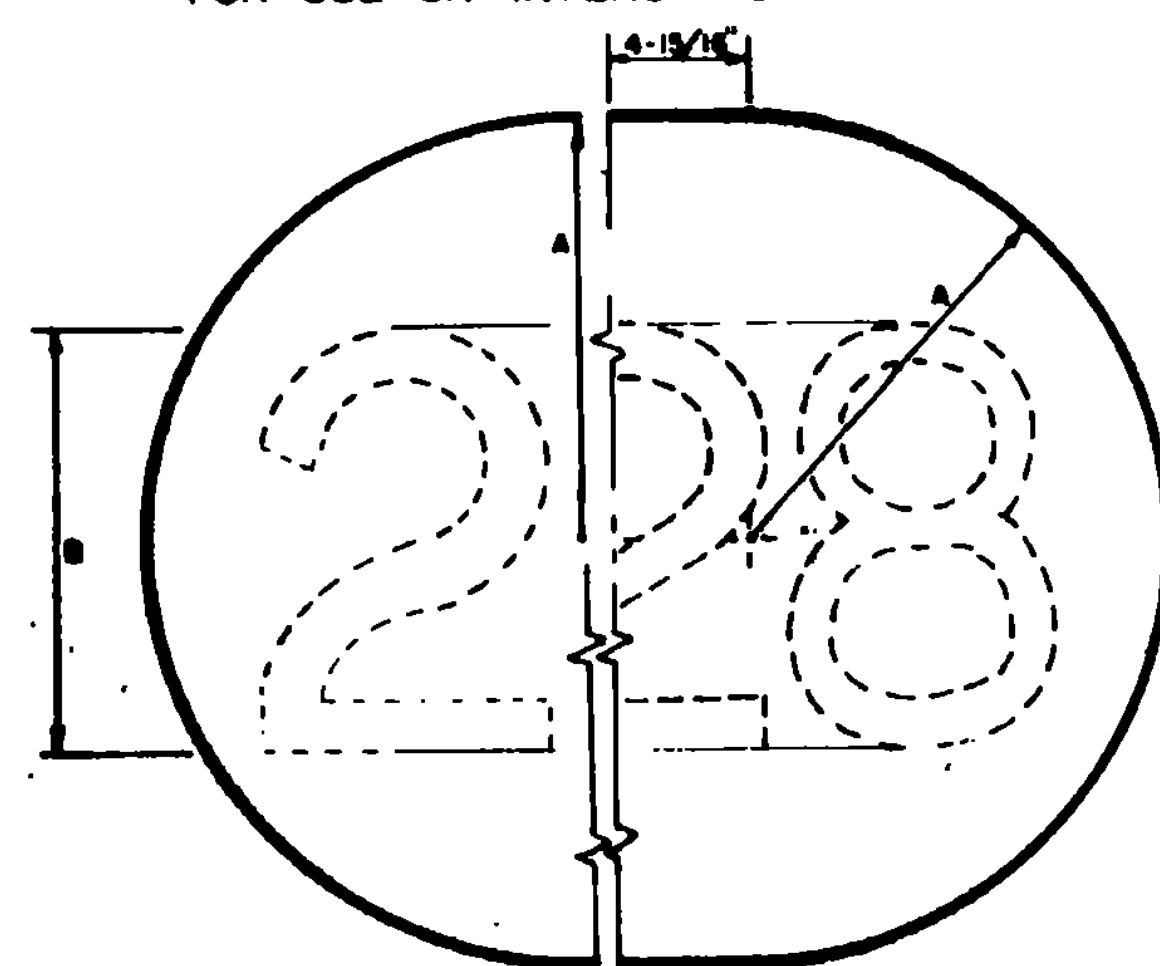
TYPICAL MAJOR MAINTENANCE OPERATION (BRIDGE AND ROADWAY) APPROACH SIGNS



STANDARD

E-8

STATE ROUTE MARKER
FOR USE ON INTERSTATE GUIDE SIGNS

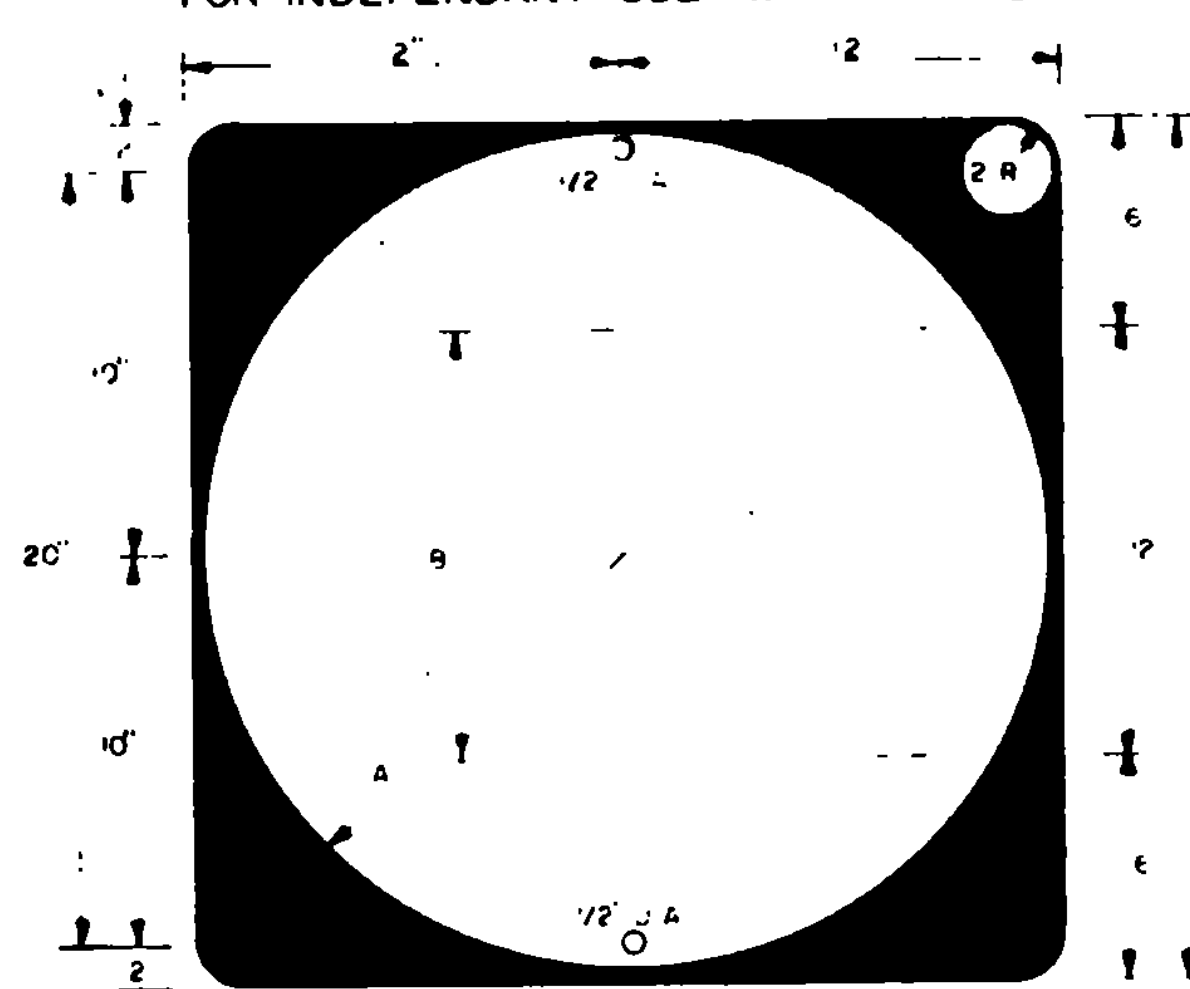


1 OR 2 DIGIT
(HALF SIGN)

ROUTE NUMBER	A	B	SERIES
1 DIGIT	10"	10"	D
2 DIGITS	16"	16"	D
3 DIGITS	18"	18"	D

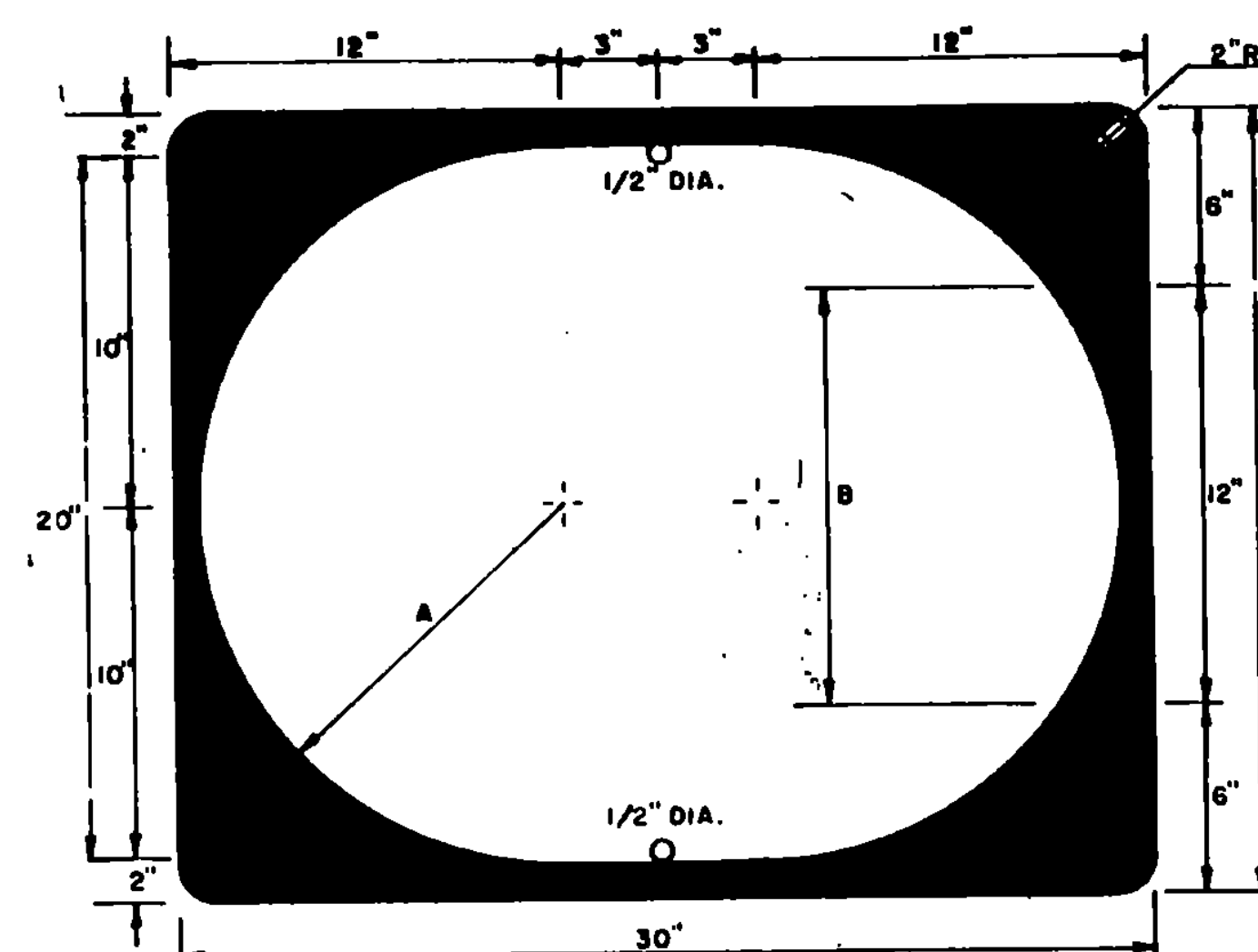
3 DIGIT
(HALF SIGN)

STATE ROUTE MARKER
FOR INDEPENDANT USE WITH MARKER ASSEMBLIES



1 OR 2 DIGIT

ROUTE NUMBER	A	B	SERIES
DIGIT	11"	2"	D
2 DIGITS	11"	2"	D
3 DIGITS	11"	12"	D



3 DIGIT
SEE CHART AT LEFT

MATERIALS

The sign base material may be any of the following, of the minimum thickness noted:

FLAT SHEET ALUMINUM

Less than 24" x 24" - 0.060"
24" x 24", 24" x 30" - 0.080"

HIGH DENSITY OVERLAID PLYWOOD

Less than 24" x 24" - 3/8"
24" x 24", 24" x 30" - 1/2"

GALVANIZED FLAT SHEET STEEL

Less than 24" x 24" - 18 gage
24" x 24", 24" x 30" - 16 gage

Route markers to be mounted on interstate guide signs, shall be of a thickness as for signs less than 24" x 24"

The reflective material shall be white or silver reflective sheeting, applied to the entire background. The texts may be lettering film, silk screened, or hand painted.

COLORS

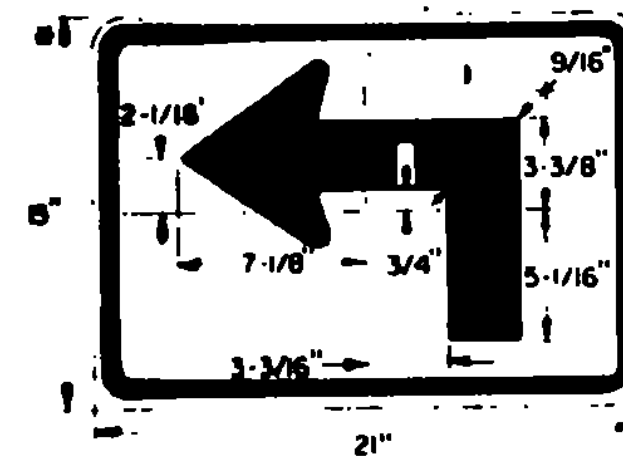
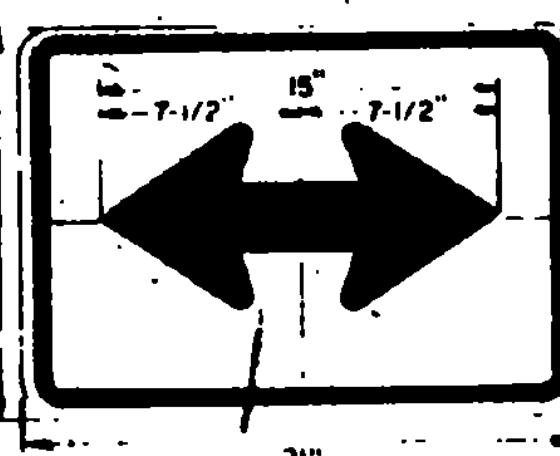
State route markers and auxiliary markers shall have black texts on reflectorized white or silver backgrounds.

LETTERING

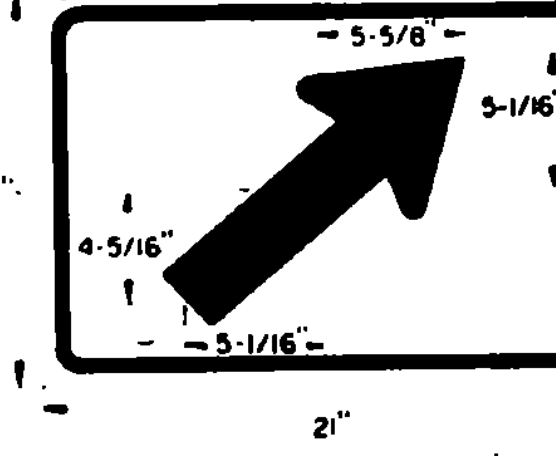
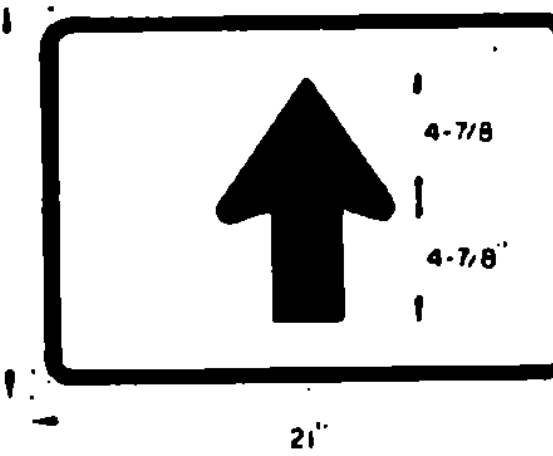
Letters and digits shall conform with the standard alphabets for highway signs approved by the National Joint Committee on Uniform Traffic Control Devices.

SPECIFICATIONS

State route markers and auxiliary route markers shall meet the standard state specifications for "Traffic Signs".



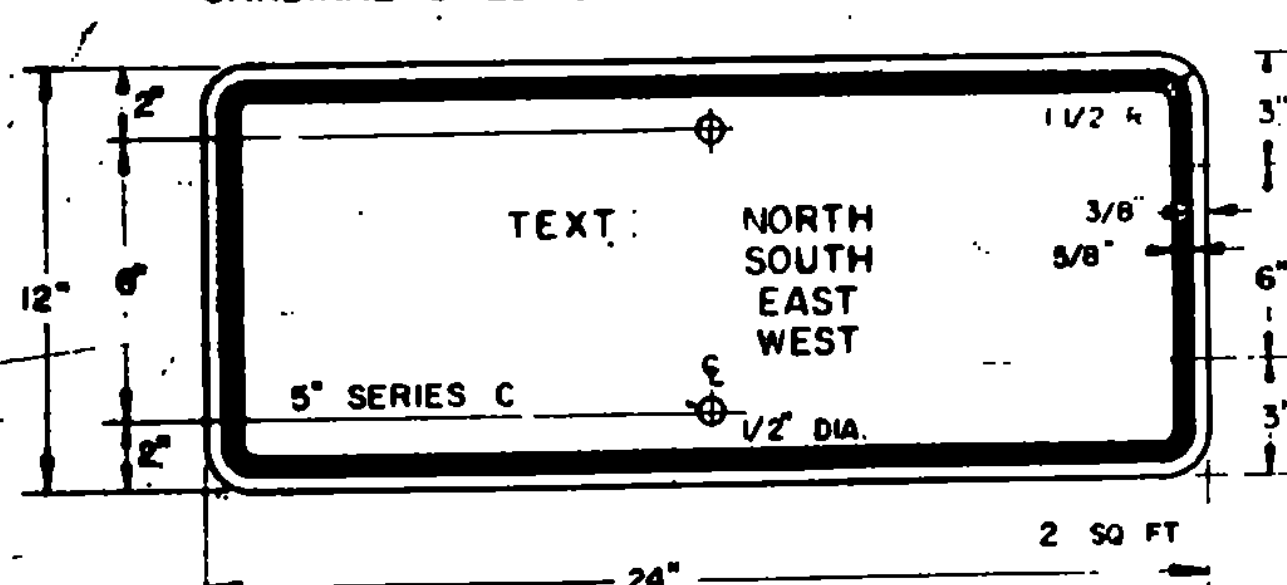
* OTHER DIMENSIONS
SEE ADVANCE TURN
ARROW.



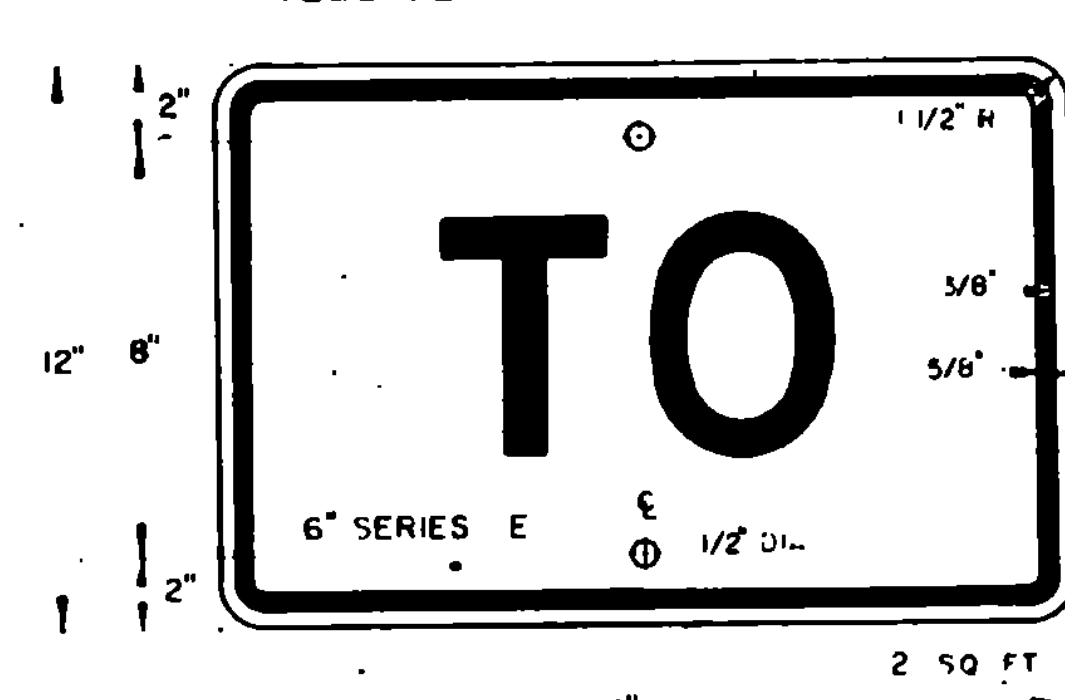
DESIGNS

The designs of state route markers and auxiliary markers shall conform with the requirements set forth in the Manual on Uniform Traffic Control Devices prepared by the National Joint Committee on Traffic Control Devices.

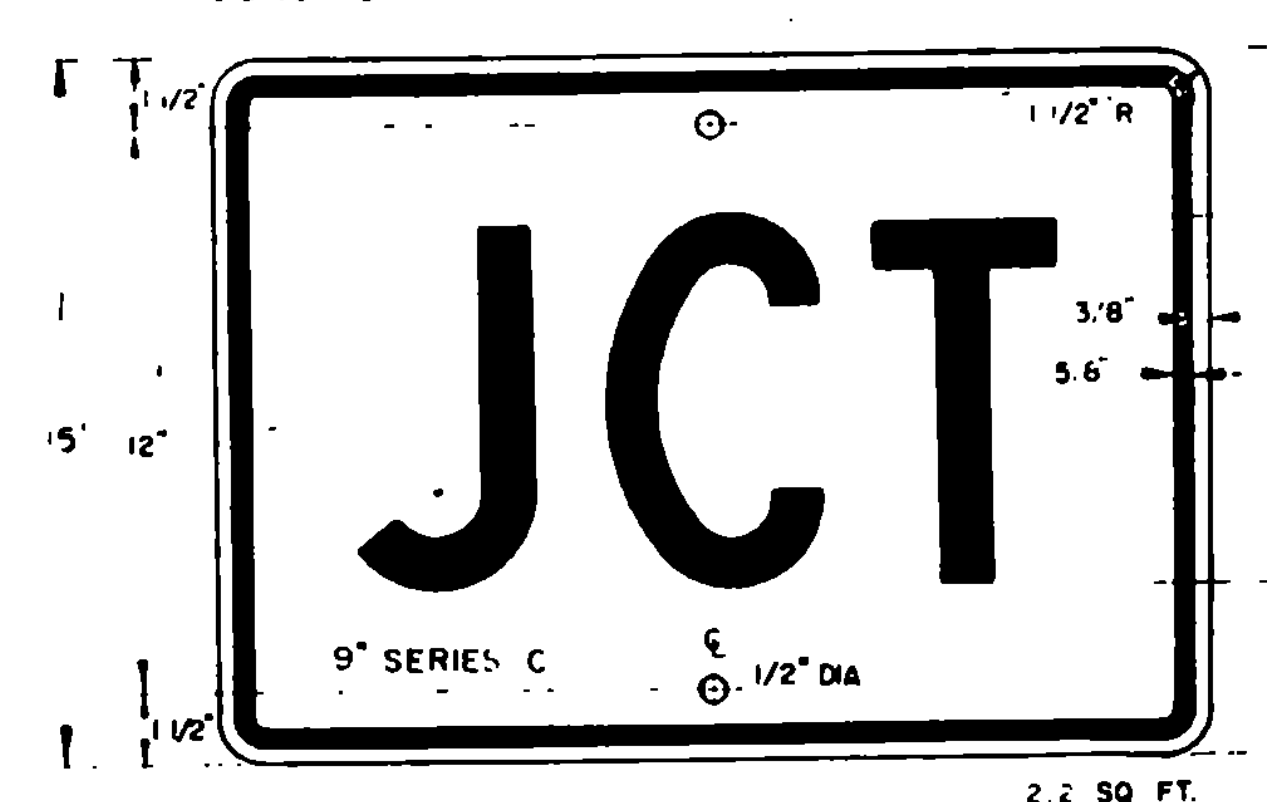
CARDINAL DIRECTION MARKER



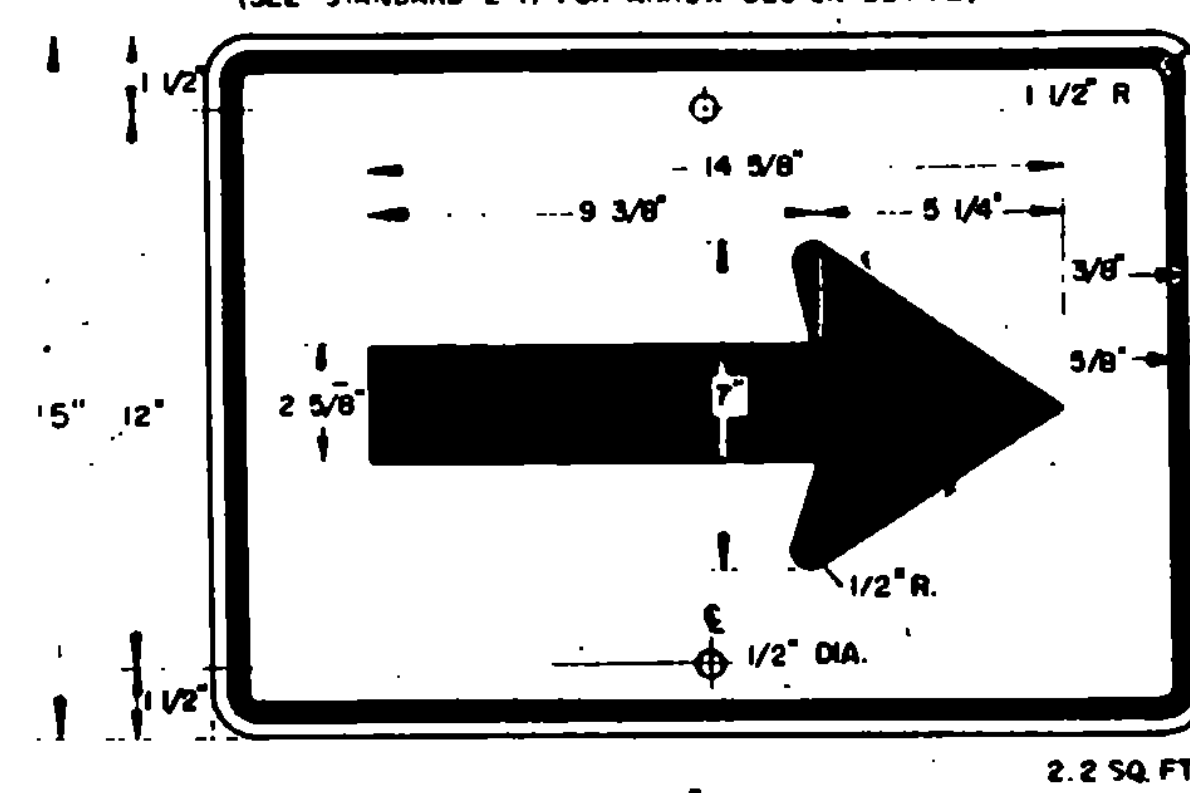
TRAILBLAZER



JUNCTION MARKER



DIRECTION ARROW OR
ADVANCE TURN ARROW
(SEE STANDARD E-11 FOR ARROW DESIGN DETAIL)



REVISIONS AND CORRECTIONS

MAY 3, 1982 - ADDITIONAL ADVANCE TURN ARROWS ADDED, BORDER DIMENSION CHANGED ON GUIDE SIGNS.
12/2/82 - ADDED THREE DIGIT DETAILS
FEB 5, 1988 - UPDATED TO 1988 SPECIFICATIONS

APPROVED.

DATE Dec 29, 1971

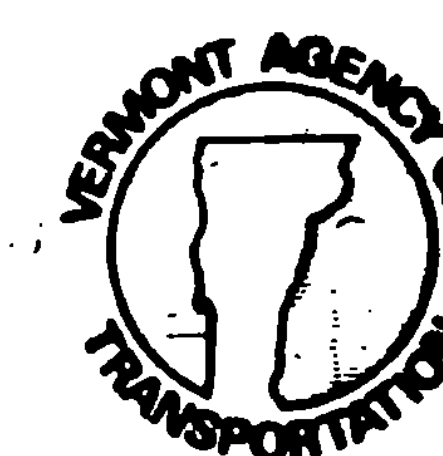
R. H. Arnold
CHIEF ENGINEER

E. W. Stikney
ASST CHIEF ENGINEER

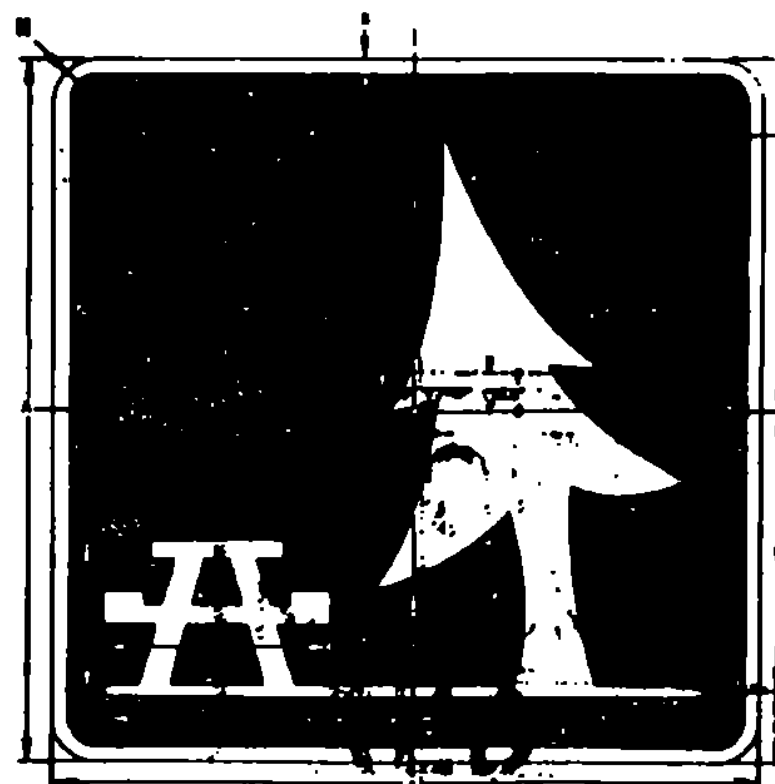
G. M. Lane
HIGHWAY ENGINEER

DRAWN AWC
TRACED A.J.A.

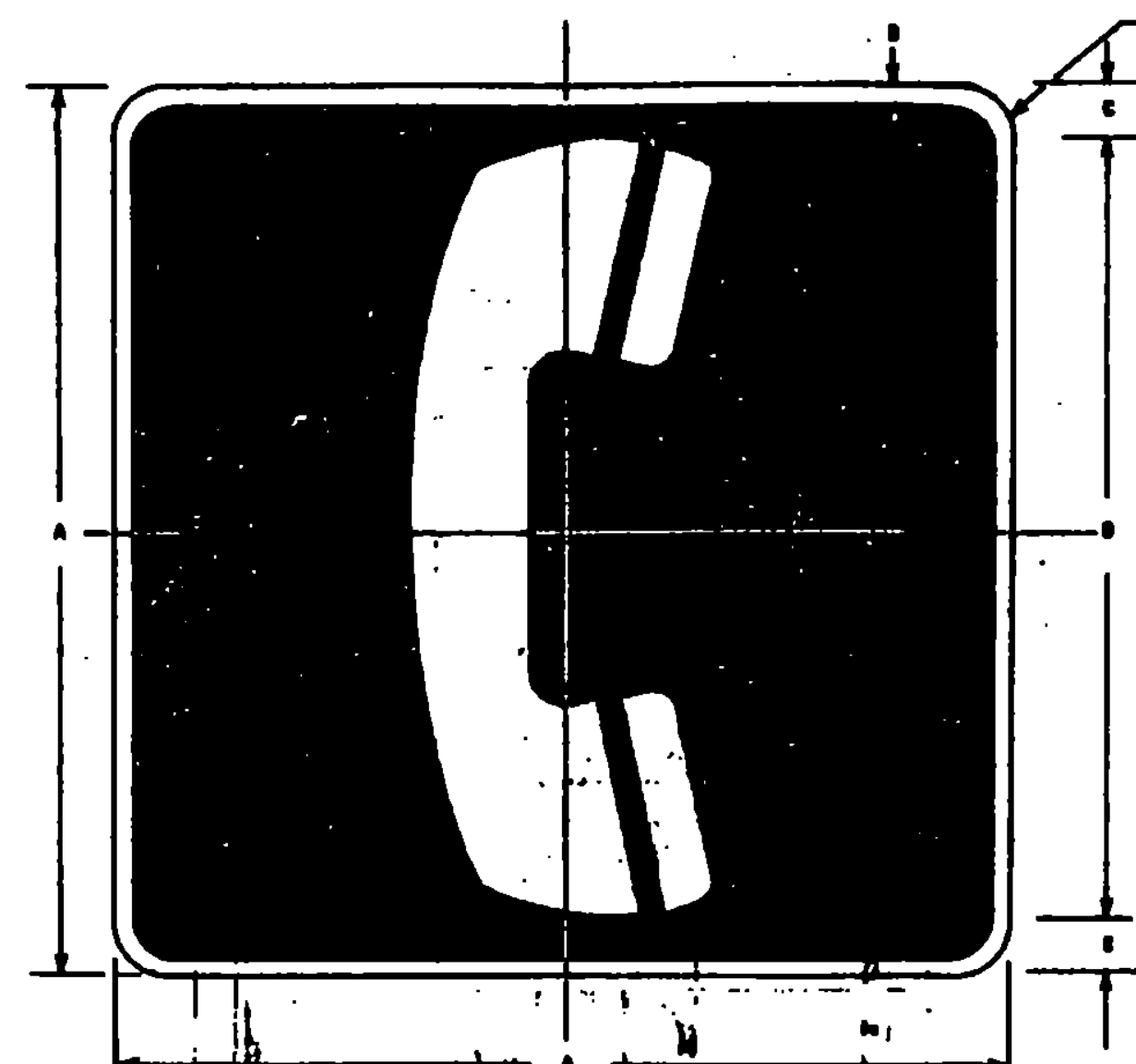
TRAFFIC SIGNS (GUIDE SIGNS)
STATE ROUTE MARKERS
AND AUXILIARY MARKERS



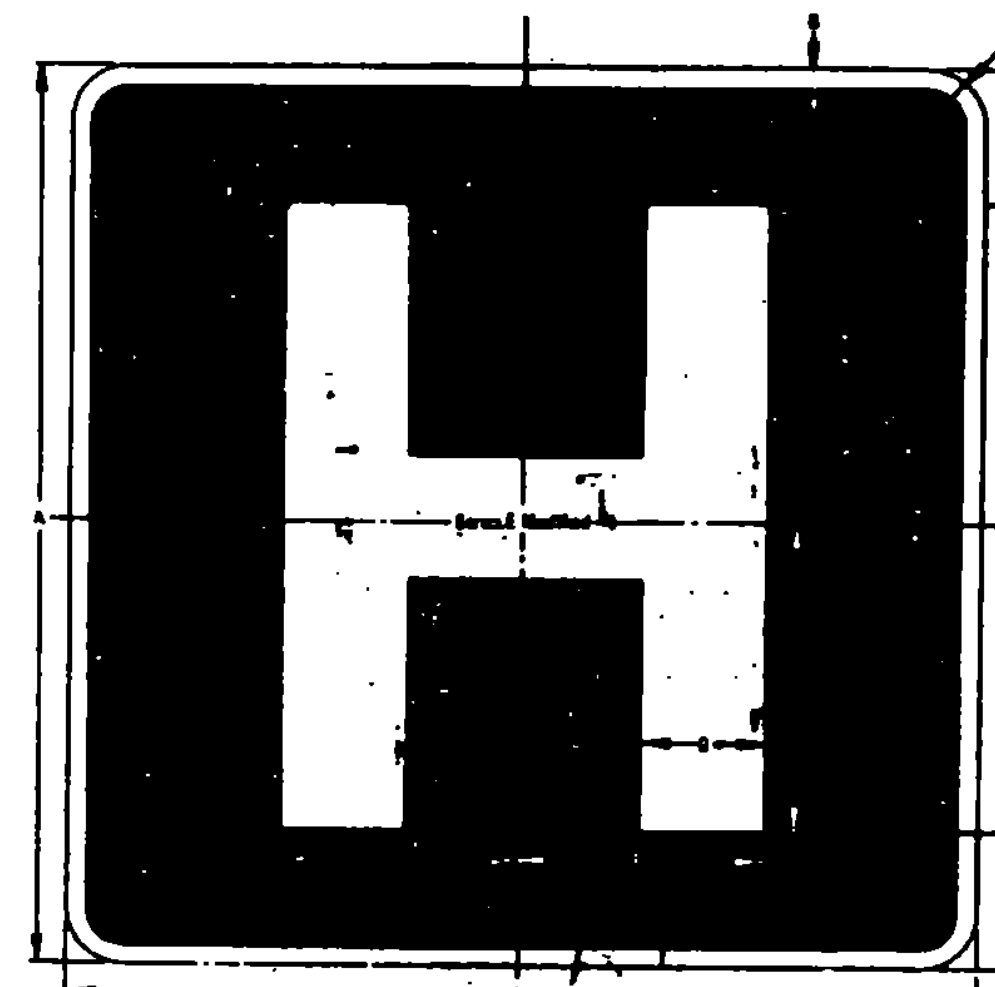
STANDARD
E-13



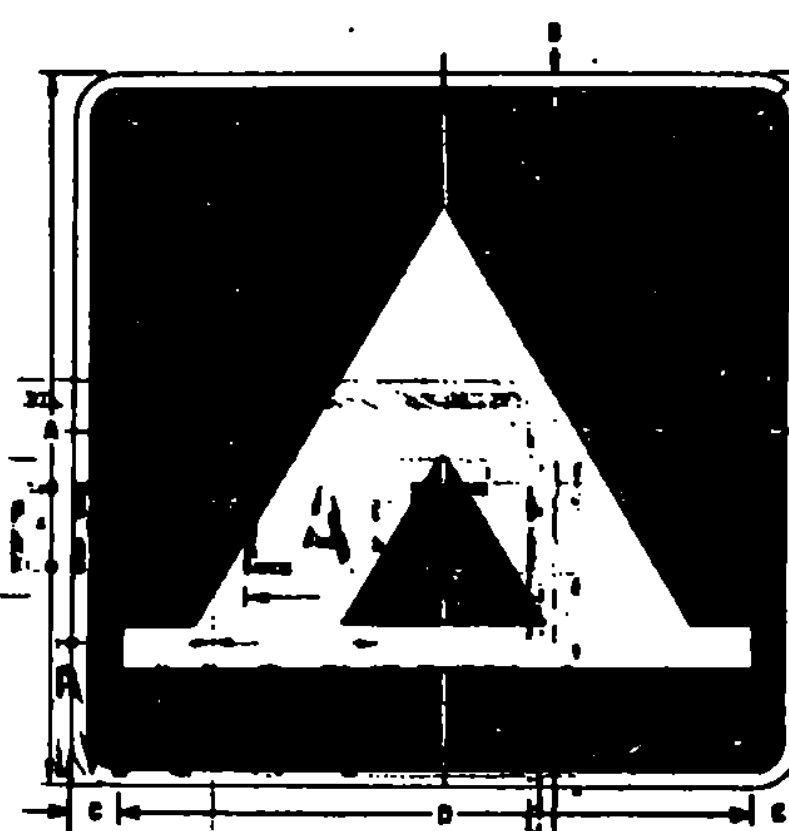
SIZE	DIMENSIONS (INCHES)									
STD. & MIN.	A	B	C	D	E	F	G	H	I	J
STD.	24	1/2	1-1/2	10-1/2	9-1/2	2-1/2	6-1/4	8	10	1-1/2
SPECIAL	30	3/4	1-7/8	13-1/8	11-7/8	3-1/8	8-9/16	10	12-1/2	1-7/8



SIZE	DIMENSIONS (INCHES)				
STD.	A	B	C	D	E
STD.	24	1/2	1-1/2	21	1-1/2
SPECIAL	30	3/4	2	26	1-7/8



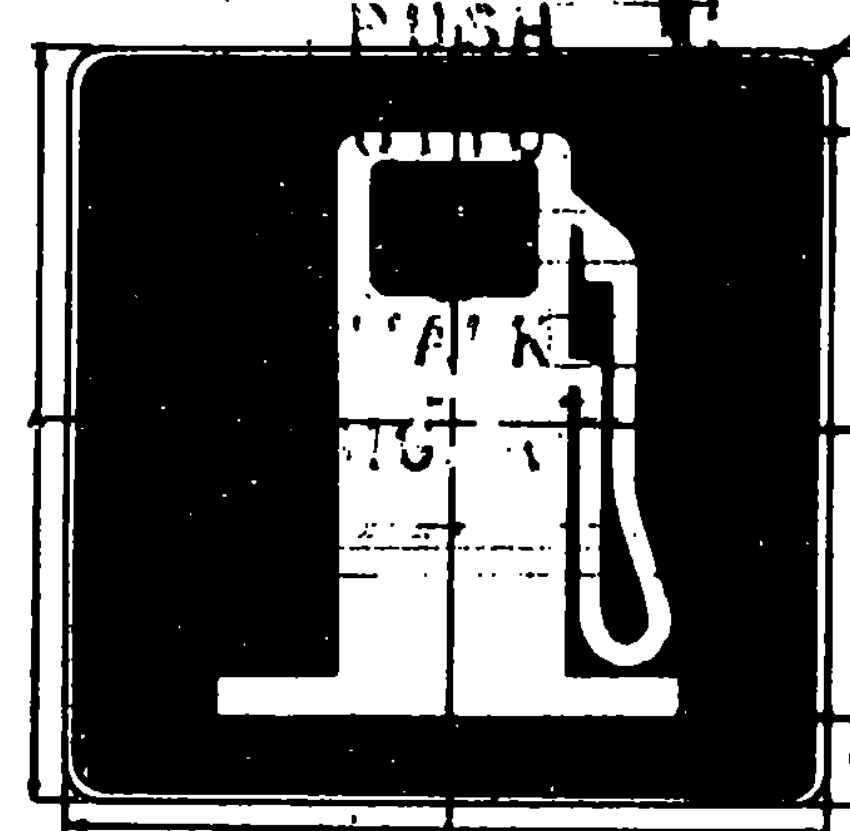
SIZE	DIMENSIONS (INCHES)							
STD. & MIN.	A	B	C	D	E	F	G	H
STD.	24	1/2	4	10	6-3/8	6-3/8	2-1/4	1-1/2
SPECIAL	30	3/4	5	20	8	10-3/8	4	1-7/8



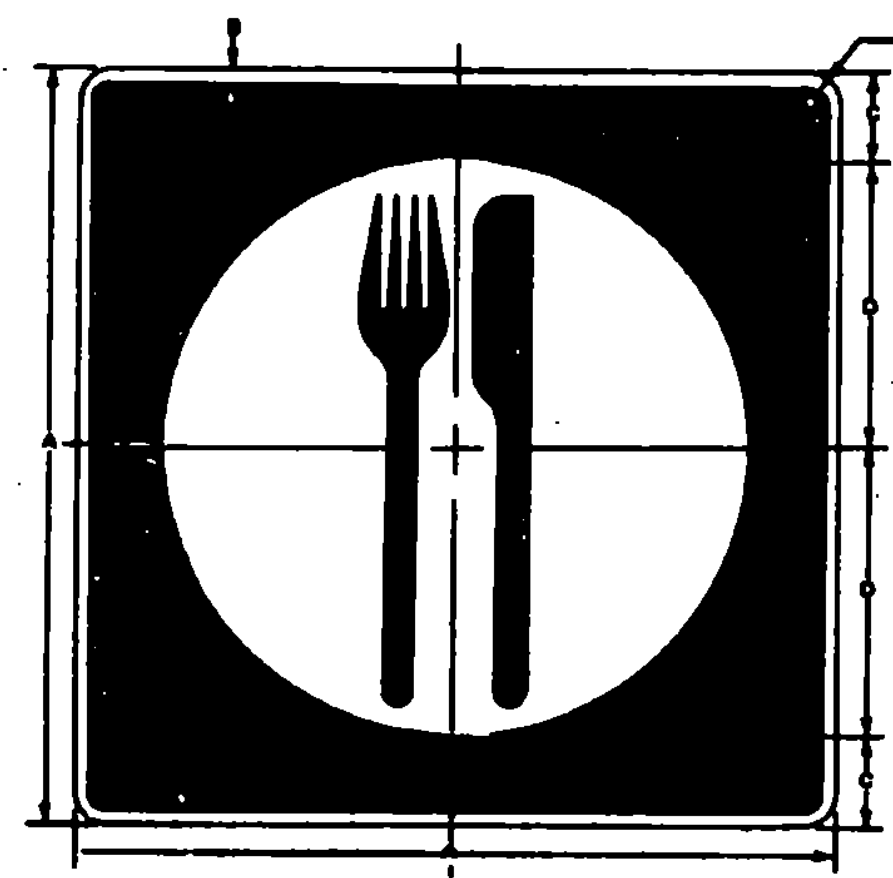
SIZE	DIMENSIONS (INCHES)					
STD. & MIN.	A	B	C	D	E	F
STD.	24	1/2	1-1/2	25	8	1-1/2
SPECIAL	30	3/4	2	25	10	1-7/8



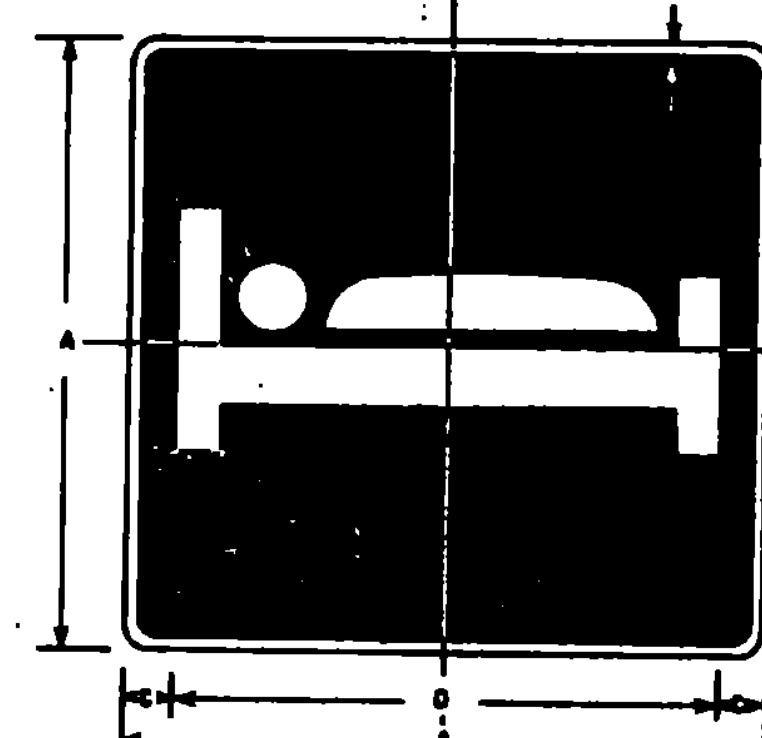
SIZE	DIMENSIONS (INCHES)				
STD. & MIN.	A	B	C	D	E
STD.	24	1/2	3	10	1-1/2
SPECIAL	30	3/4	3-3/4	22 1/2	1-7/8



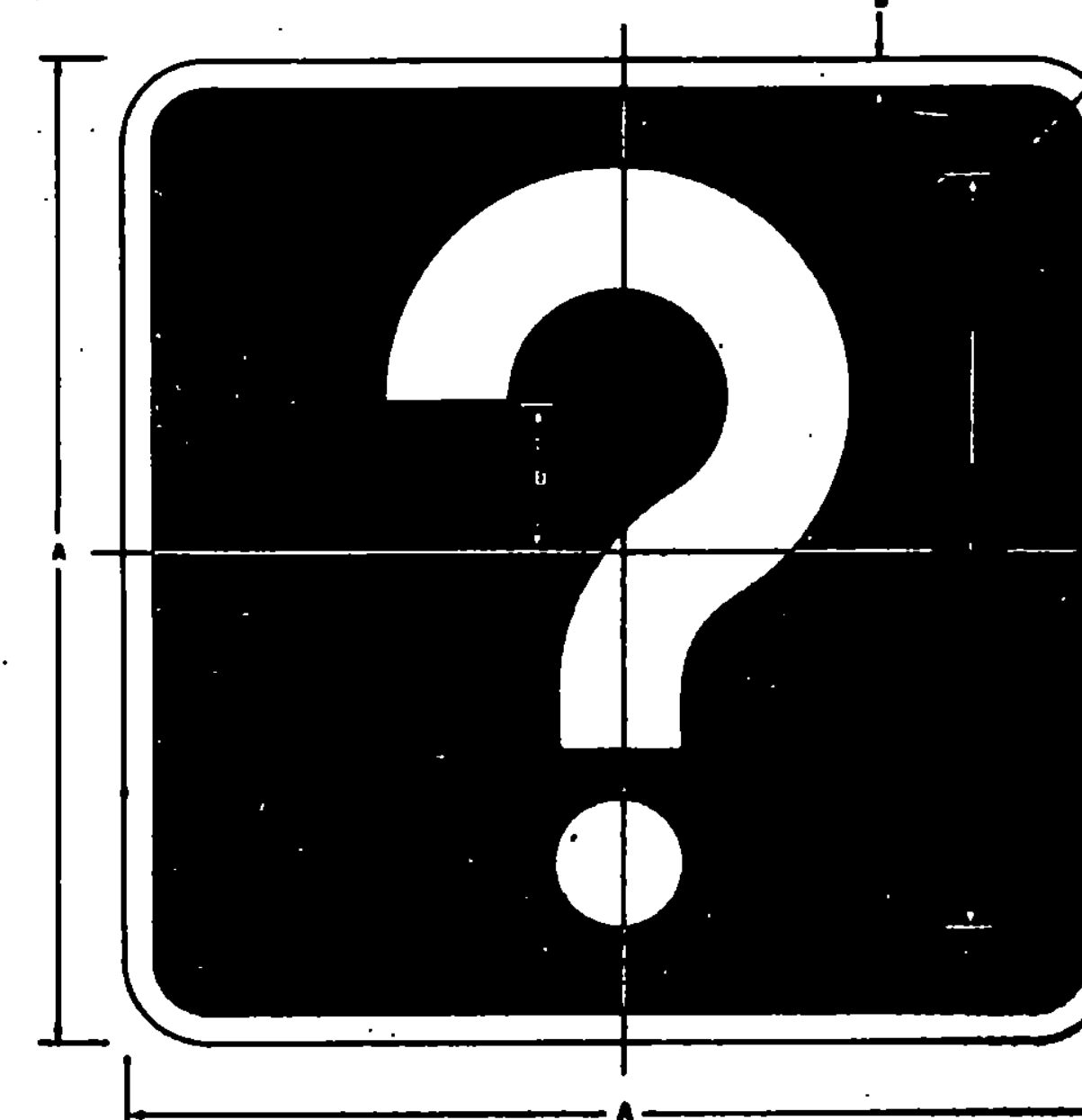
SIZE	DIMENSIONS (INCHES)					
STD.	A	B	C	D	E	F
STD.	24	1/2	3	9	1-1/2	24
SPECIAL	30	3/4	3-3/4	11-1/4	1-7/8	24



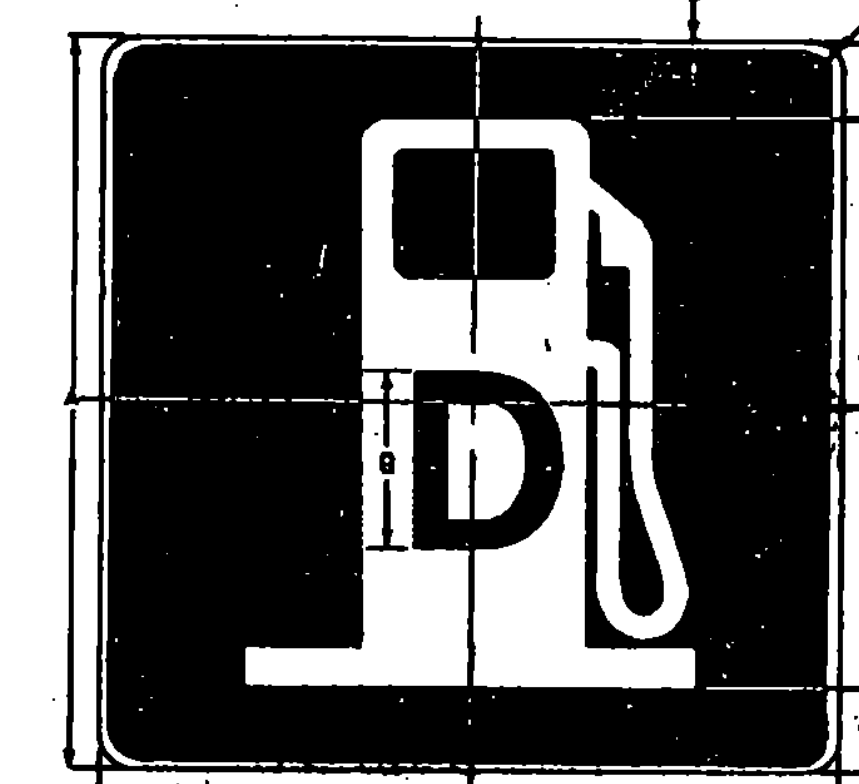
SIZE	DIMENSIONS (INCHES)					
STD.	A	B	C	D	E	F
STD.	24	1/2	3	9	1-1/2	24
SPECIAL	30	3/4	3-3/4	11-1/4	1-7/8	24



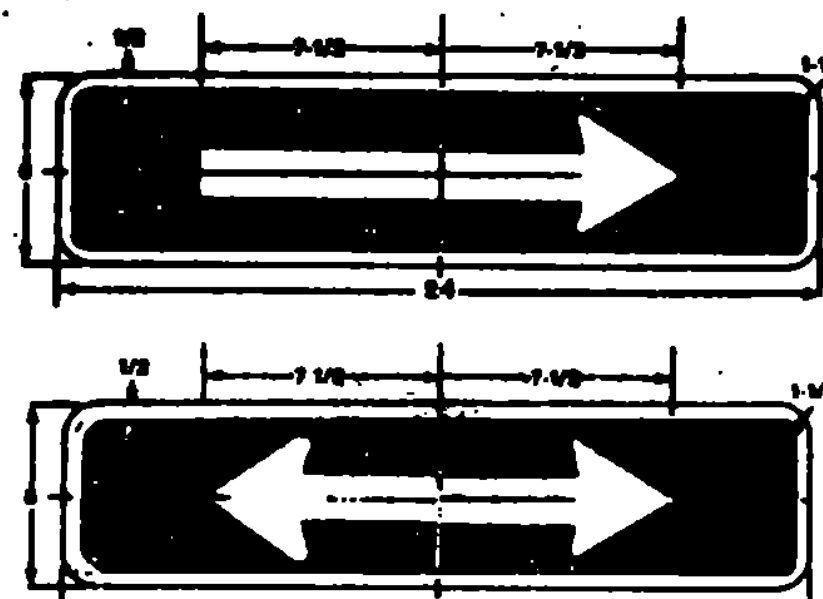
SIZE	DIMENSIONS (INCHES)					
STD.	A	B	C	D	E	F
STD.	24	1/2	1-1/2	21	1-1/2	24
SPECIAL	30	3/4	2	25	1-7/8	24



SIZE	DIMENSIONS (INCHES)				
STD.	A	B	C	D	E
STD.	24	1/2	10-1/2	3-3/4	1-1/2
SPECIAL	30	3/4	23-1/4	4-3/4	1-7/8



SIZE	DIMENSIONS (INCHES)							
	A	B	C	D	E	F	G	
STD	24	1/2	3	9	1-1/2	24	24	
SPECIAL	30	3/4	3-3/4	11-1/4	1-7/8	24	24	



MATERIALS

The sign base material used for the guide signs shown on this sheet may be any of the following minimum thicknesses noted.

- A-FLAT SHEET ALUMINUM - 0.060
- B-HIGH DENSITY OVERLAID PLYWOOD - 1/2"
- C-GALVANIZED FLAT SHEET STEEL - 16 GA.

COLORS

The signs shall be white or silver reflectorized sheeting with a reverse screened blue background. The blue shall conform with the standard colors adopted by the American Association of State

Highway Officials and approved by the U.S. Dept. of Transportation, Federal Highway Administration.

LETTERING

Letters shall conform with the requirements found in the publication Standard Alphabets for Highway Signs and Pavement Markings printed by the Federal Highway Administration.

DESIGN

The design of these signs shall conform with the details set

forth in the manual "Standard Highway Signs" as specified in "The Manual on Uniform Traffic Control Devices" Letter-numeral designation under each symbol is identification in manual.

SPECIFICATIONS

These signs shall meet the standard state specifications for "Traffic Signs."

REVISIONS AND CORRECTIONS
2. 1966 - UPDATED TO 1966 SPECIFICATIONS

APPROVED:

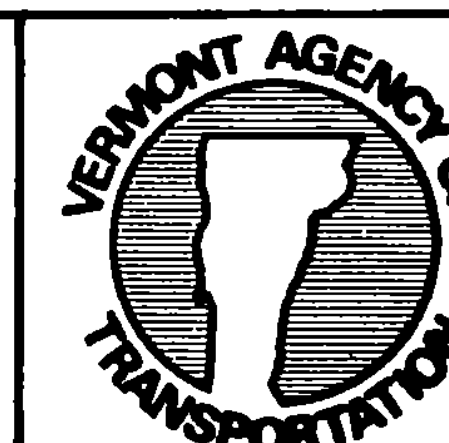
DATE 3/9/66

DIRECTOR OF ENGINEERING AND CONSTRUCTION

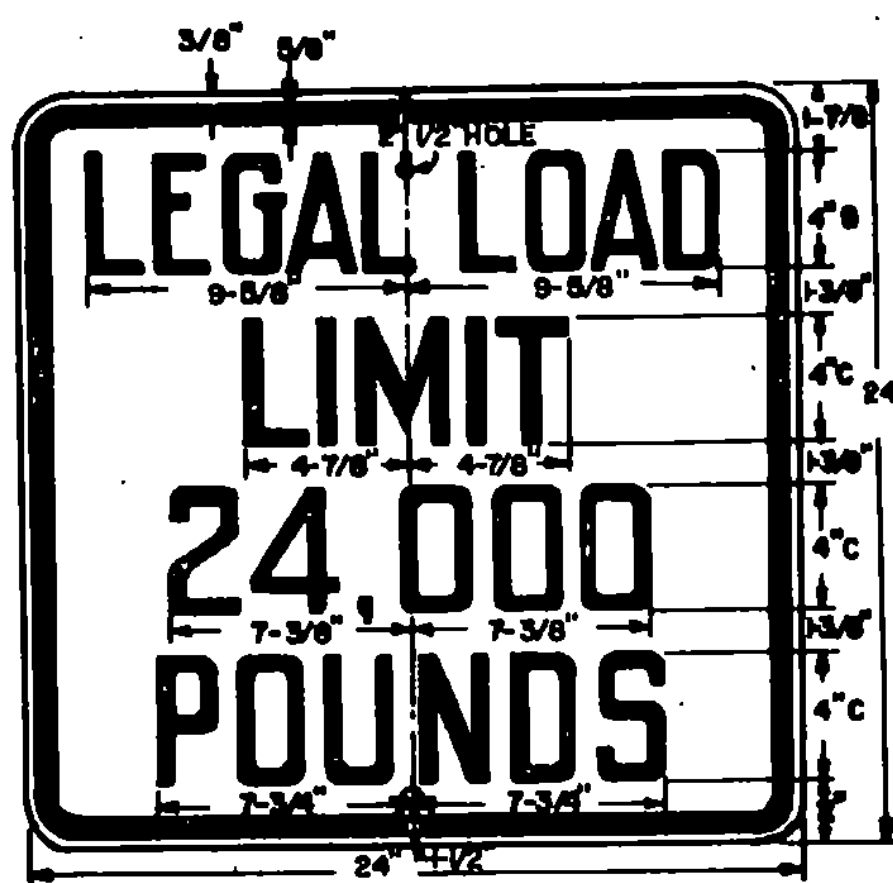
CHIEF OF DESIGN

SURVEY AND PLANS ENGINEER

GENERAL SERVICES SIGNS (GUIDE SIGNS)



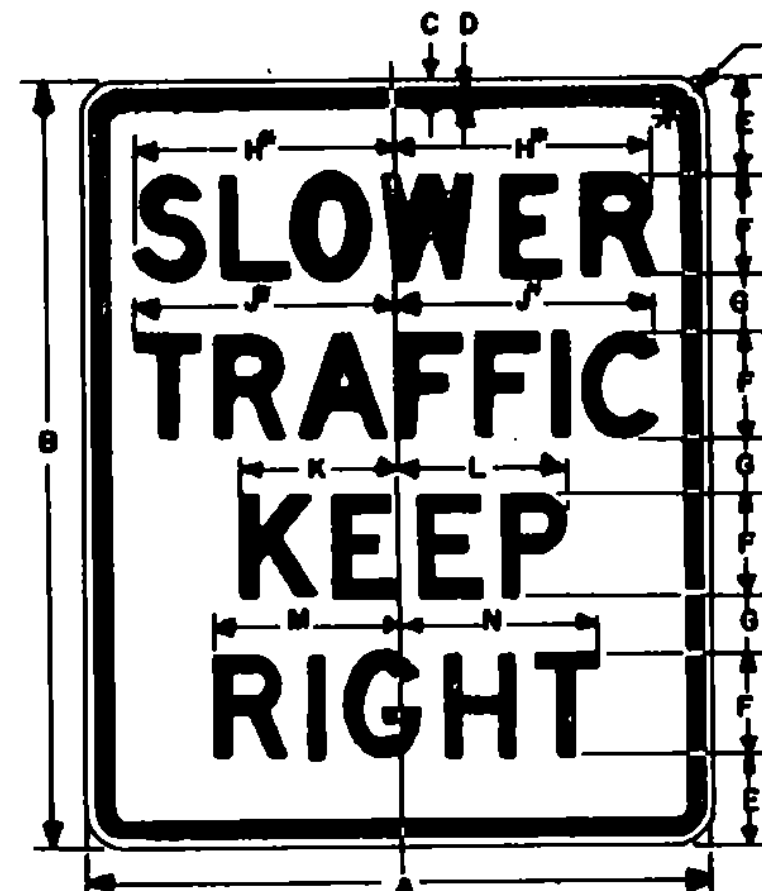
STANDARD
E-14B



LINE 3 ALTERNATE - 16,000

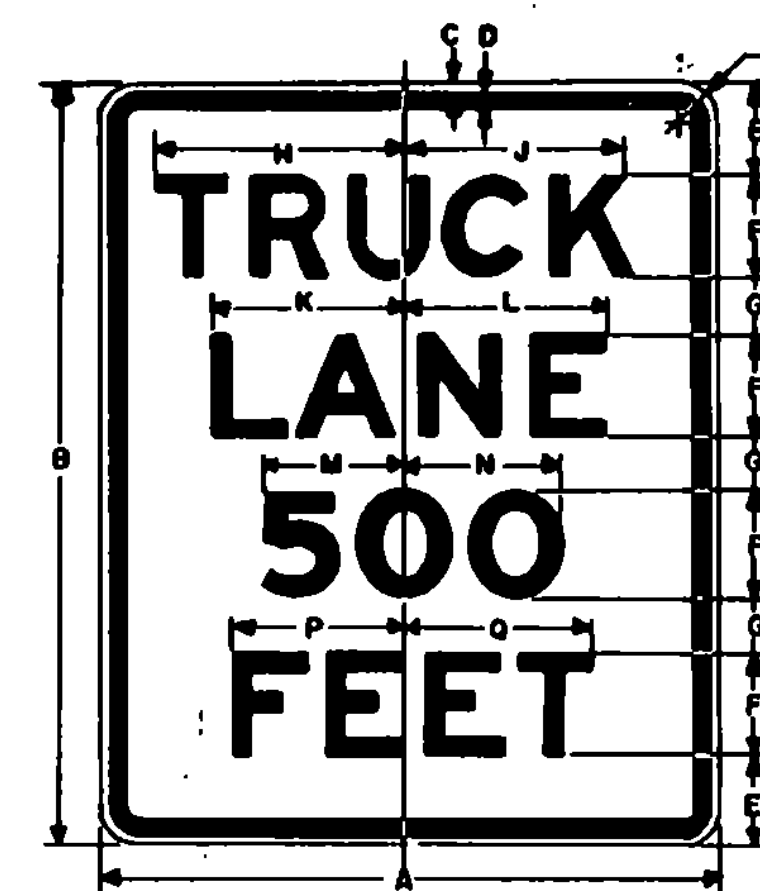


SIGN	A	B	C	D	E	F	G	H	J	K	L	M	N
STD. 24	30	3/8	5/8	5/8	4	2 1/4	9 1/4	9 1/4	9 1/4	3 1/2	10	1 1/2	
SPECIAL 36	48	5/8	7/8	6	6	4	14	14 1/8	9 3/4	5 1/4	15	2 1/4	
SPECIAL 48	60	3/4	1 1/4	7 1/4	6	4 1/2	18 1/2	18 1/4	5 1/8	7	20	3	



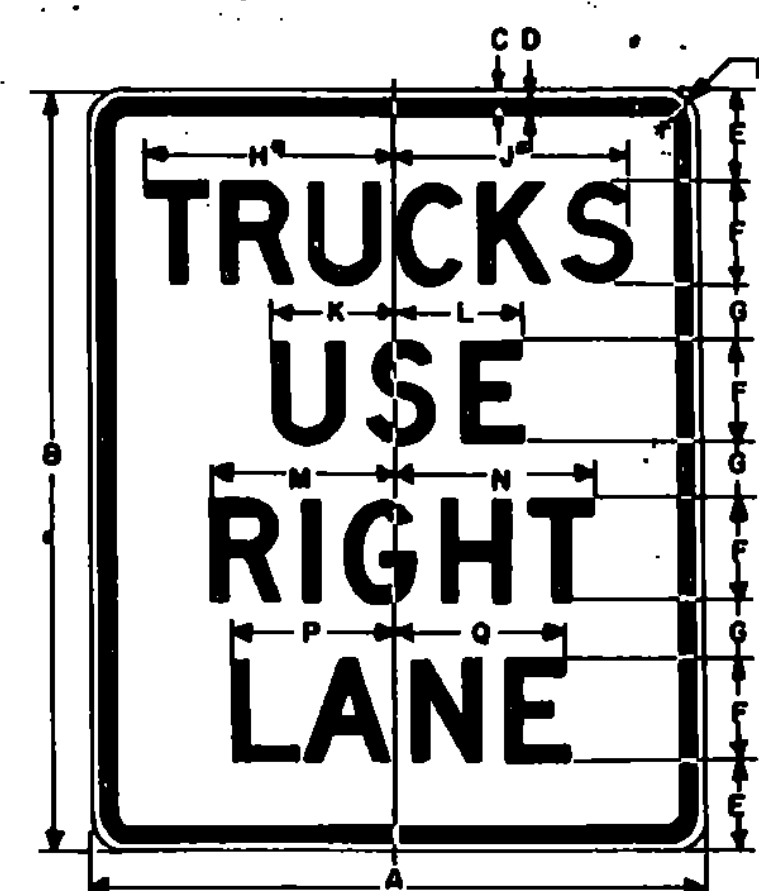
*REDUCE SPACING 25%

SIGN	A	B	C	D	E	F	G	H	J	K	L	M	N	P
MIN. B. STD.	24	30	3/8	5/8	3 3/8	4	2 1/4	9 3/4	10	6	9 1/8	7 1/8	7 5/8	1 1/2
EXP. WY.	36	48	5/8	7/8	6	6	4	14 5/8	15	9	9 1/8	10 1/16	10 1/16	2 1/4
FWY.	48	60	3/4	1 1/4	7 1/4	6	4 1/2	18 1/2	20	12	13 1/8	14 1/4	15 1/4	3



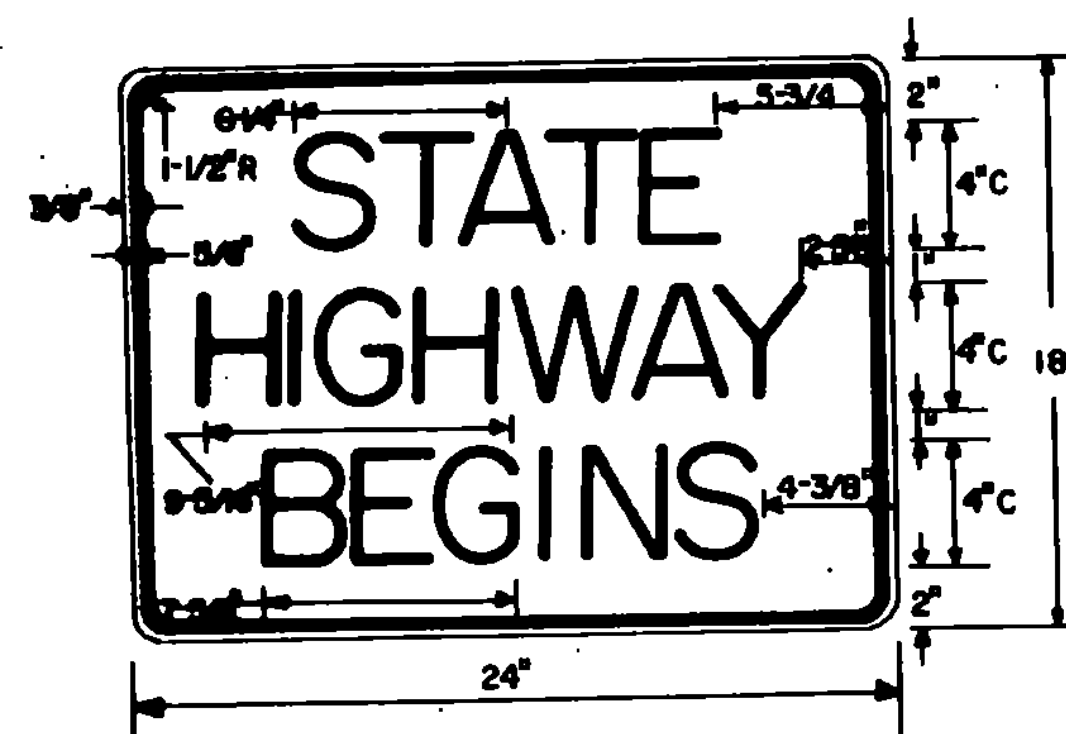
*REDUCE SPACING 32%

SIGN	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
MIN. B. STD.	24	30	3/8	5/8	3 3/8	4	2 1/4	9 3/4	10	6	9 1/8	7 1/8	7 5/8	1 1/2		
EXP. WY.	36	48	5/8	7/8	6	6	4	14 5/8	15	9	9 1/8	10 1/16	10 1/16	2 1/4		
FWY.	48	60	3/4	1 1/4	7 1/4	6	4 1/2	18 1/2	20	12	13 1/8	14 1/4	15 1/4	3		



*REDUCE SPACING 32%

SIGN	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
MIN. B. STD.	24	30	3/8	5/8	3 3/8	4	2 1/4	9 3/4	10	6	9 1/8	7 1/8	7 5/8	1 1/2		
EXP. WY.	36	48	5/8	7/8	6	6	4	14 5/8	15	9	9 1/8	10 1/16	10 1/16	2 1/4		
FWY.	48	60	3/4	1 1/4	7 1/4	6	4 1/2	18 1/2	20	12	13 1/8	14 1/4	15 1/4	3		



OR ENDS

COLORS:

THE REGULATORY SIGNS SHOWN ON THIS SHEET SHALL HAVE BLACK TEXT ON REFLECTORIZED WHITE BACKGROUND. THE COLORS SHALL CONFORM WITH THE COLORS ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS AND APPROVED BY THE DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION.

MATERIALS:

THE SIGN BASE MATERIALS USED FOR THE REGULATORY SIGNS SHOWN ON THIS SHEET MAY BE ANY OF THE FOLLOWING OF THE MINIMUM THICKNESS NOTED.

	18" X 24"	24" X 30"	36" X 48"
FLAT SHEET ALUMINUM	0.060"	0.080"	0.100"
HIGH DENSITY OVERLAID PLYWOOD	1/2"	1/2"	5/8"
GALVANIZED FLAT SHEET STEEL	18 GAGE	16 GAGE	14 GAGE

THE REFLECTIVE MATERIAL FOR GROUND MOUNTED SIGNS SHALL BE FLAT TOP WHITE REFLECTIVE SHEETING APPLIED TO THE ENTIRE BACKGROUND OF THE SIGN.

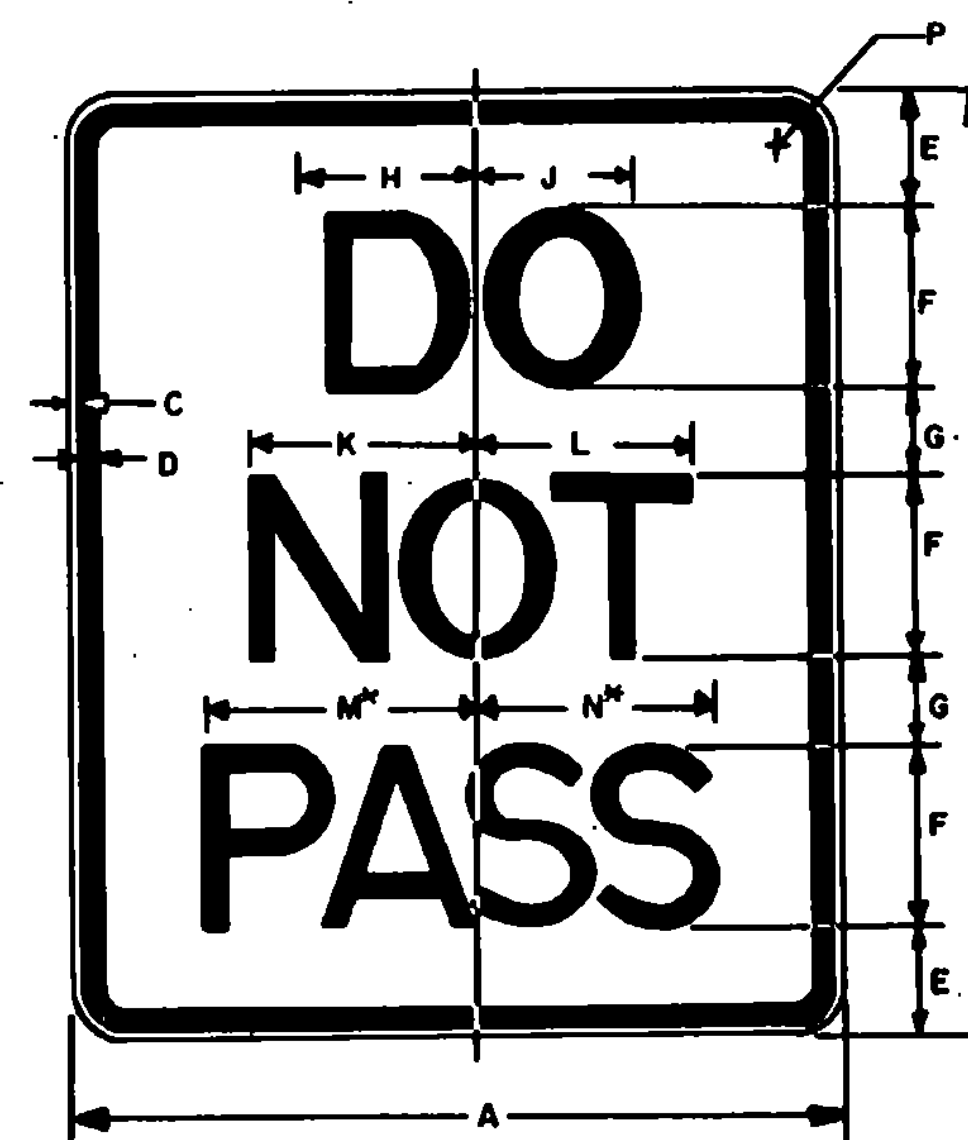
THE TEXT OF THE SIGNS MAY BE LETTERING FILM, SILK SCREENED OR HAND PAINTED. WHEN HAND PAINTED, POOR WORKMANSHIP SHALL BE CAUSE FOR REJECTION.

SPECIFICATIONS:

REGULATORY SIGNS SHALL MEET THE STANDARD STATE SPECIFICATIONS FOR TRAFFIC SIGNS.

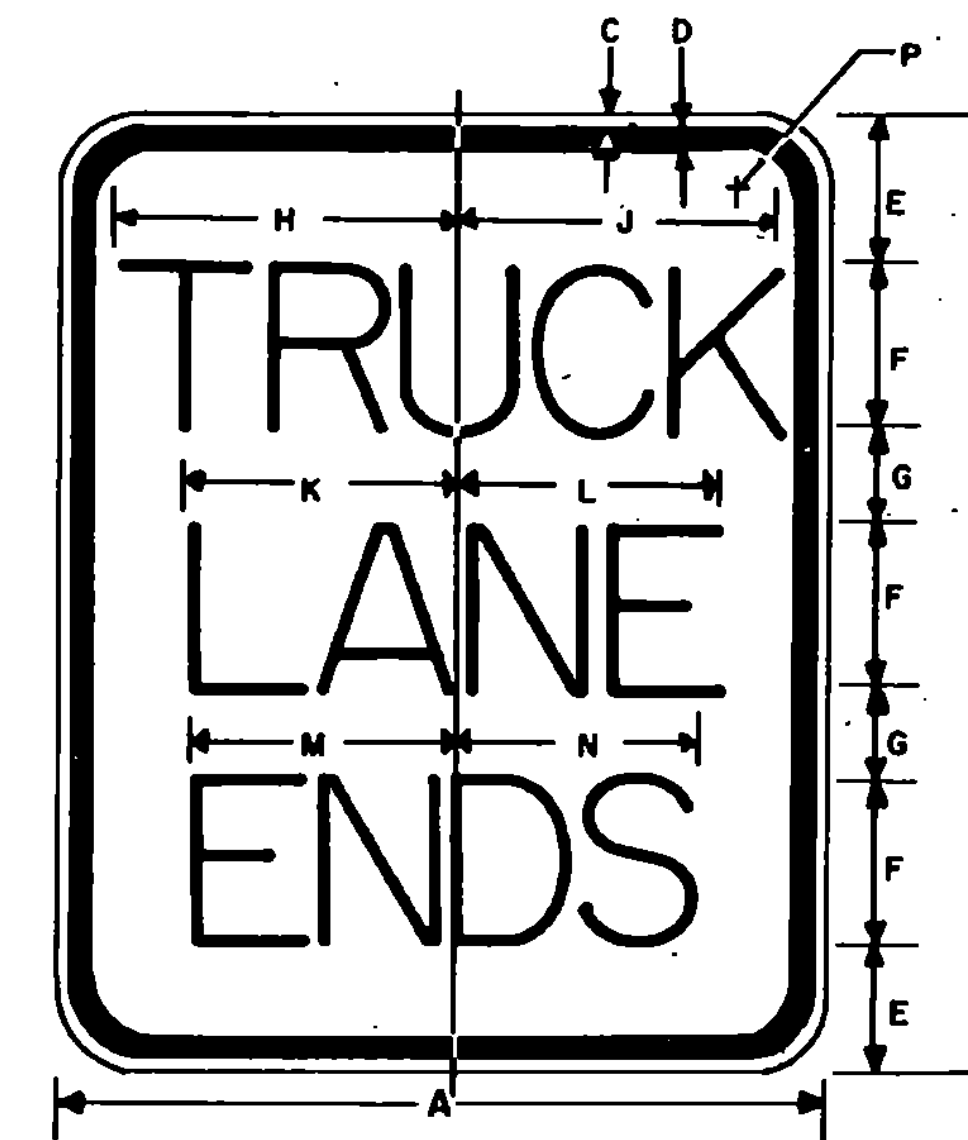
TEXT DESIGN:

LETTERS, DIGITS, ARROWS, SPACINGS, AND TEXT DIMENSIONS SHALL CONFORM WITH THE STANDARD ALPHABETS AND DESIGNS PRESCRIBED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES PREPARED BY THE NATIONAL JOINT COMMITTEE ON UNIFORM TRAFFIC CONTROL DEVICES.



*REDUCE SPACING 40%

SIGN	A	B	C	D	E	F	G	H	J	K	L	M	N	P
MIN.	18	24	3/8	5/8	3 1/2	4	2 1/2	3 1/8	3 1/8	4 3/4	4 3/4	6 1/4	6 1/2	1 1/2
STD.	24	30	3/8	5/8	3 1/2	4	2 1/2	4 1/8	5	7 1/8	7 3/8	9 3/8	9 3/4	1 1/2
EXP. WY.	36	48	5/8	7/8	7	6	5	6 1/4	6 5/8	9 1/2	9 3/4	12 1/2	12 1/2	2 1/4
FWY.	48	60	3/4	1 1/4	8	10	7	7 3/4	8 3/8	11 7/8	12 1/4	15 5/8	16 1/4	3



*REDUCE SPACING 40%

SIGN	A	B	C	D	E	F	G	H	J	K	L	M	N	P
MIN. B. STD.	24	30	3/8	5/8	3 1/2	4	2 1/2	3 1/8	3 1/8	4 3/4	4 3/4	6 1/4	6 1/2	1 1/2
EXP. WY.	36	48	5/8	7/8	7	6	5	6 1/4	6 5/8	9 1/2	9 3/4	12 1/2	12 1/2	2 1/4
FWY.	48	60	3/4	1 1/4	8	10	7	7 3/4	8 3/8	11 7/8	12 1/4	15 5/8	16 1/4	3

REVISIONS AND CORRECTIONS
FEB. 2, 1988 - UPDATED TO 1985 SPECIFICATIONS

APPROVED

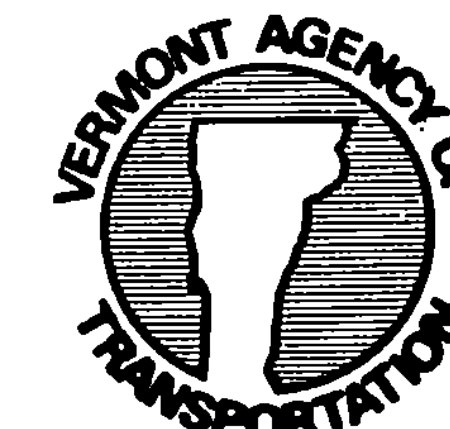
DATE JULY 18, 1984

DIRECTOR OF ENGINEERING AND CONSTRUCTION

Arthur J. Goss
CHIEF OF DESIGN

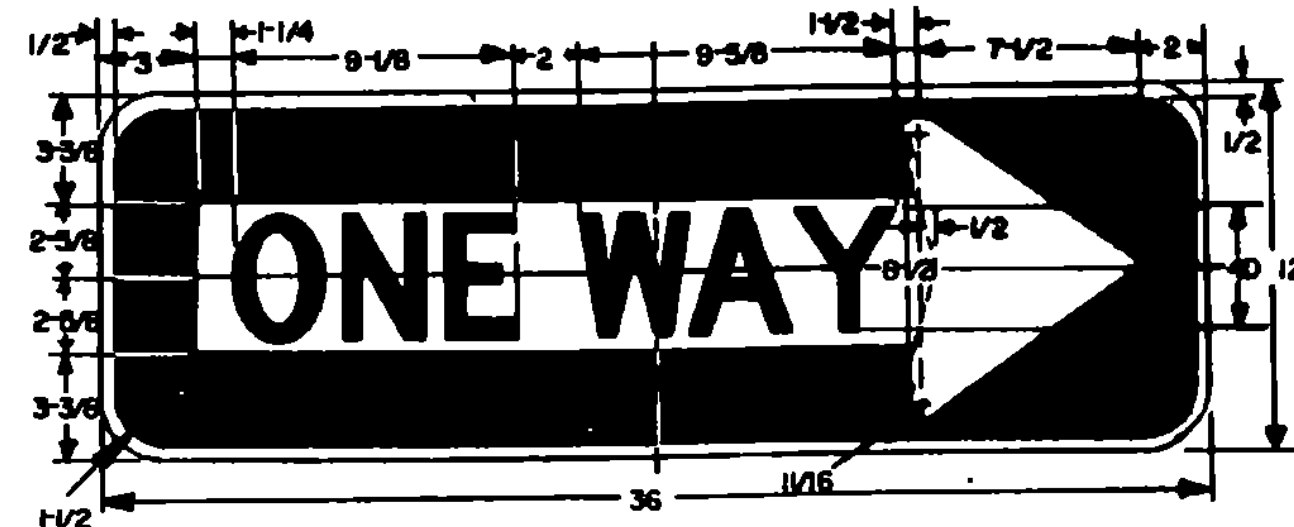
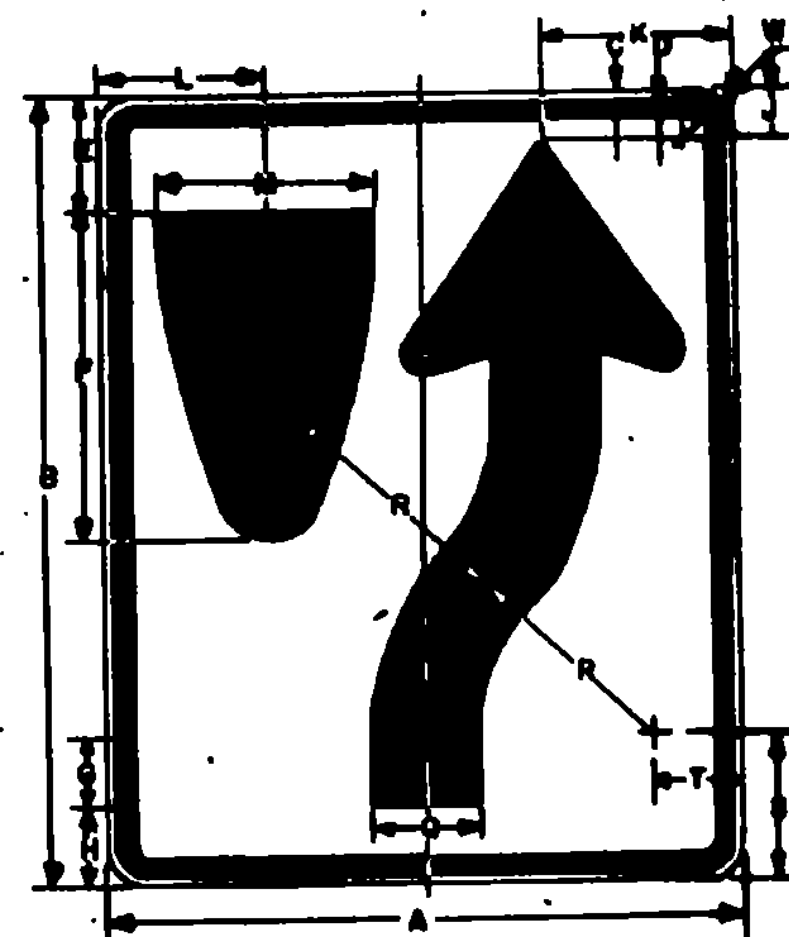
Paul C. Evans
SURVEY AND PLANS ENGINEER

REGULATORY SIGNS



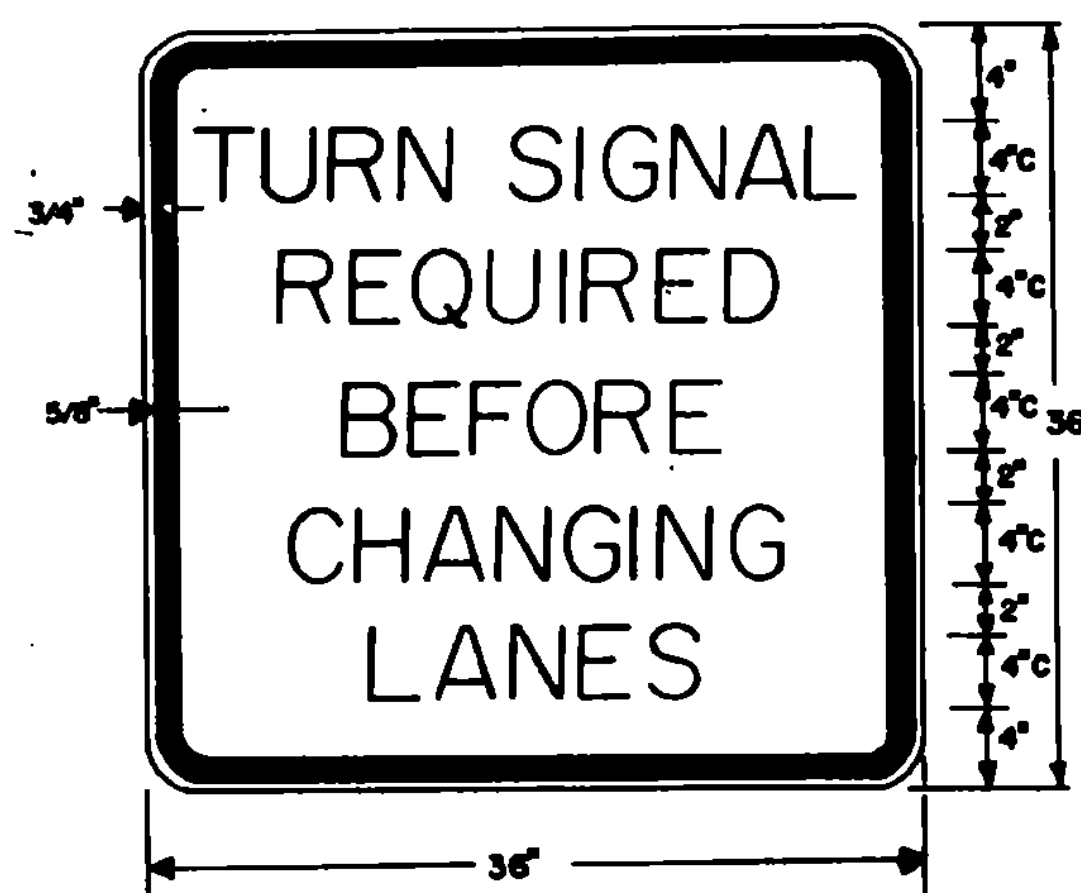
STANDARD

E-15 A



SIGN	A	B	C	D	E	F	G	H	I	J	K	L
MIN.	18	24	3/8	5/8	3-3/8	9-3/8	1-7/8	2-1/4	1-3/8	5-1/2		
STD.	24	30	3/8	5/8	4-1/2	12-1/2	2-1/2	3	1-7/8	7-3/8		
EXPWY.	36	48	3/8	7/8	6-3/4	18-3/4	3-3/4	4-1/2	2-3/8	11-1/8		
FWY.	48	60	3/4	1-1/4	9	25	5	6	3-3/4	14-3/16		

SIGN	L	M	N	P	Q	R	S	T	U	V	W	X
MIN.	4-11/16	6	22-1/2	1-1/2	3	6-3/4	4-1/8	2-1/4	1-1/16	7-7/8	1-1/2	
STD.	6-1/4	8	30	2	4	9	5-1/2	3	1-3/8	9-1/8	1-1/2	
EXPWY.	9-3/8	12	45	3	6	13-1/2	8-1/4	4-1/2	2	12-3/4	2-1/4	
FWY.	12-1/2	16	60	4	8	18	11	6	2-11/16	16		

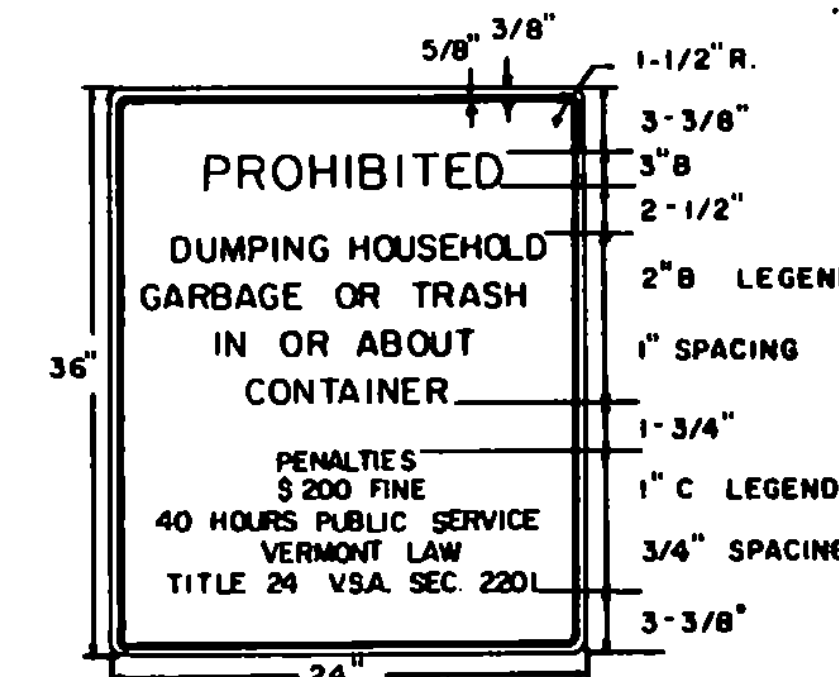
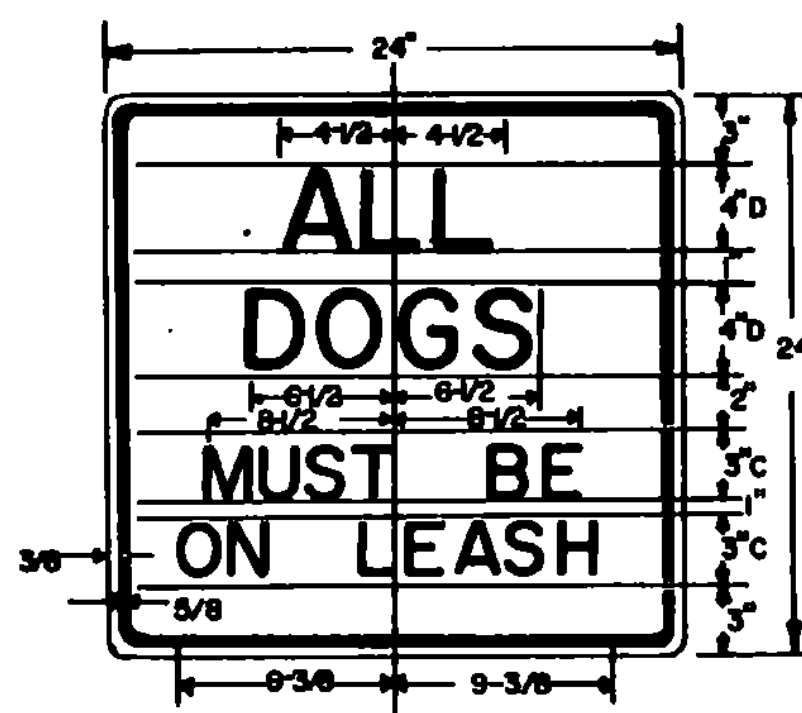
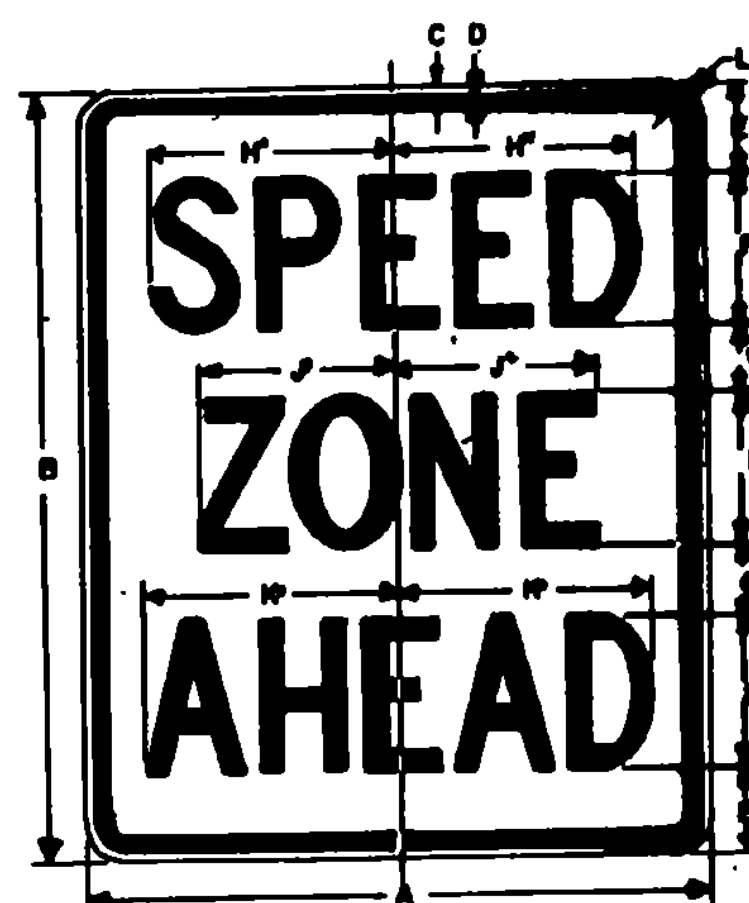


SIGN	A	B	C	D	E	F	G	H	I	J	K	L
MIN.	18	24	3/8	5/8	3	3E	2	8E	1-1/2	7-3/16	5-1/2	
STD.	24	30	3/8	5/8	4	4E	2	10E	1-1/2	9-9/16	7-5/16	
EXPWY.	36	48	3/8	7/8	6	6E	5	14E	2-1/4	14-3/8	11	
FWY.	48	60	3/4	1-1/4	8	8E	4	20E	3	19-1/8	14-5/8	

* OPTICALLY SPACE NUMERALS ABOUT VERTICAL CENTERLINE.

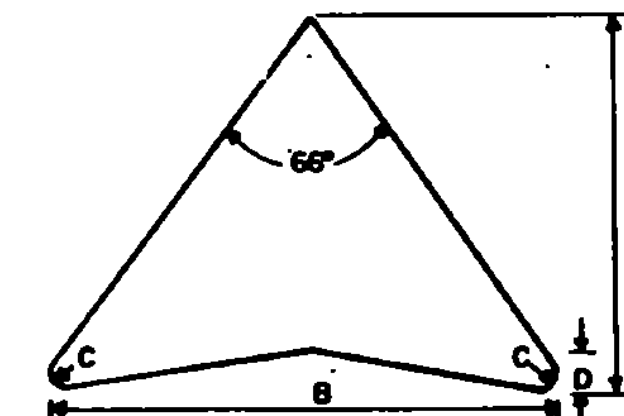
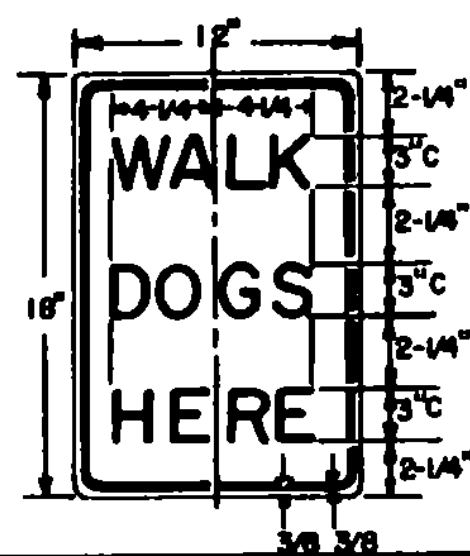
SIGN	A	B	C	D	E	F	G	H	I	J	K	L
STD. & MIN.	24	30	3/8	5/8	4	4C	2	10D	1-1/2	9-3/16	6-13/16	
EXPWY.	36	48	3/8	7/8	6	6C	5	14D	2-1/4	13-5/4	10-5/16	
FWY.	48	60	3/4	1-1/4	8	8C	6	16D	3	18-3/8	13-5/8	

* OPTICALLY SPACE NUMERALS ABOUT VERTICAL CENTERLINE.



SIGN	A	B	C	D	E	F	G	H	I	J	K	L
MIN.	18	24	3/8	5/8	3-1/2	4C	2-1/2	9-3/16	5-1/2	7	1-1/2	
STD.	24	30	3/8	5/8	3-1/2	6C	2-1/2	9-3/16	7-9/16	9-3/4	1-1/2	
EXPWY.	36	48	3/8	7/8	7	8C	5	13-5/8	11-1/16	14	2-1/4	
FWY.	48	60	3/4	1-1/4	9	10C	6	17	15-5/16	17-1/2	3	

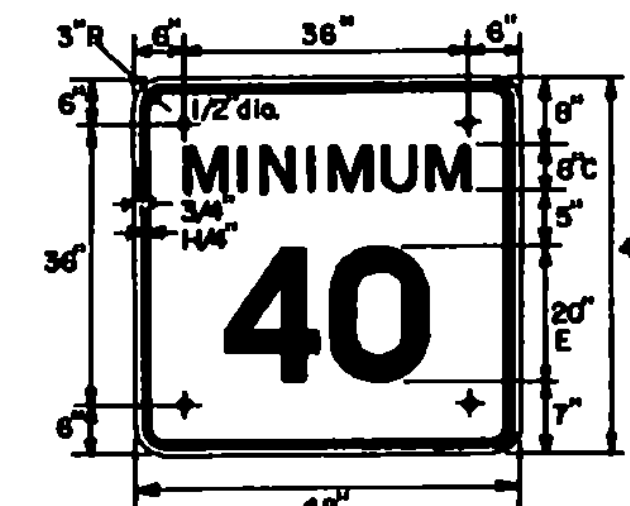
* FOR STD SIZE, REDUCE SPACING 40%.



ARROW HEAD	SIZE	A	B	C	D
MINIMUM	18X24	7-1/8	8-1/2	3/8	1-1/8
STANDARD	24X30	9-1/2	11-3/8	1	1-1/2
EXPRESSWAY	36X48	14-1/4	17	1-3/8	2-1/4
FREEWAY	48X60	19	22-5/8	1-7/8	3

SIGN	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P
EXPWY.	30	24	3/8	5/8	3-1/2	4C	2-1/2	4D	12-1/2	13	12-3/4	6-7/16	7	1-1/2	
FWY.	48	36	3/8	7/8	5	6D	4	6D	20-7/16	21-1/8	19-1/8	10-1/16	10-9/16	21/4	

* FOR FWY SIZE, REDUCE SPACING 50%.



TO BE USED WITH "SPEED LIMIT 55" SIGN-FWY ONLY.

MATERIALS:
THE SIGN BASE MATERIALS USED FOR THE REGULATORY SIGNS SHOWN ON THIS SHEET MAY BE ANY OF THE FOLLOWING OF THE MINIMUM THICKNESS NOTED.

	12" X 18"	18" X 24"	24" X 30"	30" X 36"	36" X 48"	48" X 60"
FLAT SHEET ALUMINUM	0.050"	0.050"	0.050"	0.050"	0.050"	0.050"
HIGH DENSITY OVERLAP PLYWOOD	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
GALVANIZED FLAT SHEET STEEL	18 GAGE	16 GAGE	16 GAGE	14 GAGE	14 GAGE	14 GAGE

THE REFLECTIVE MATERIAL FOR GROUND MOUNTED SIGNS SHALL BE FLAT TOP WHITE REFLECTIVE SHEETING APPLIED TO THE ENTIRE BACKGROUND OF THE SIGN.

THE TEXT OF THE SIGNS MAY BE LETTERING FILM SILK SCREENED OR HAND PAINTED. WHEN HAND PAINTED, POOR WORKMANSHIP SHALL BE CAUSE FOR REJECTION.

SPECIFICATIONS:
REGULATORY SIGNS SHALL MEET THE STANDARD STATE SPECIFICATIONS FOR TRAFFIC SIGNS.

TEXT DESIGN:
LETTERS, DIGITS, ARROWS, SPACINGS, AND TEXT DIMENSIONS SHALL CONFORM WITH THE STANDARD ALPHABETS AND DESIGNS PRESCRIBED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES PREPARED BY THE NATIONAL JOINT COMMITTEE ON UNIFORM TRAFFIC CONTROL DEVICES.

REVISIONS AND CORRECTIONS

SEPT. 28, 1984 - ADDED "MINIMUM 40" SIGN - CHANGED "SPEED LIMIT 50" (FWY. - 6 B.H.)
- CHANGED "PROHIBITED DUMPING HOUSEHOLD GARBAGE" SIGN
DEC. 27, 1984 - CLARIFIED KEEP RIGHT SYMBOL
FEB. 3, 1986 - UPDATED TO 1986 SPECIFICATIONS

APPROVED

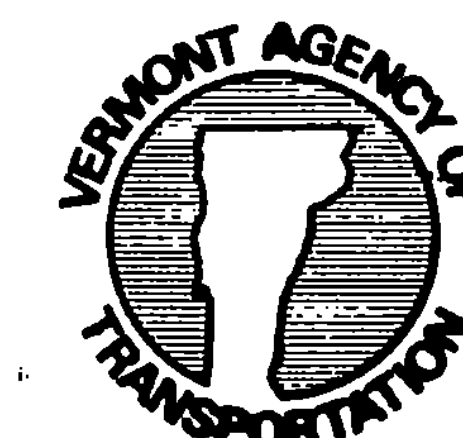
DATE JULY 18, 1984

DIRECTOR OF ENGINEERING AND CONSTRUCTION

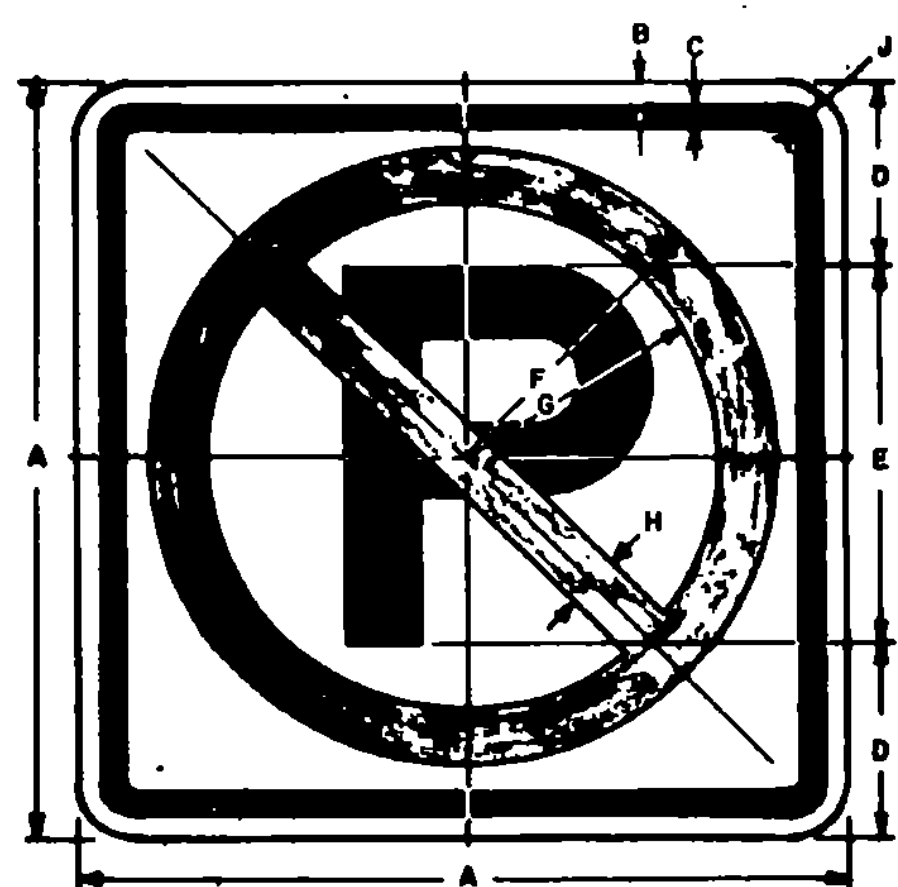
Arthur J. Goss
CHIEF OF DESIGN

Paul C. Evans
SURVEY AND PLANS ENGINEER

REGULATORY SIGNS

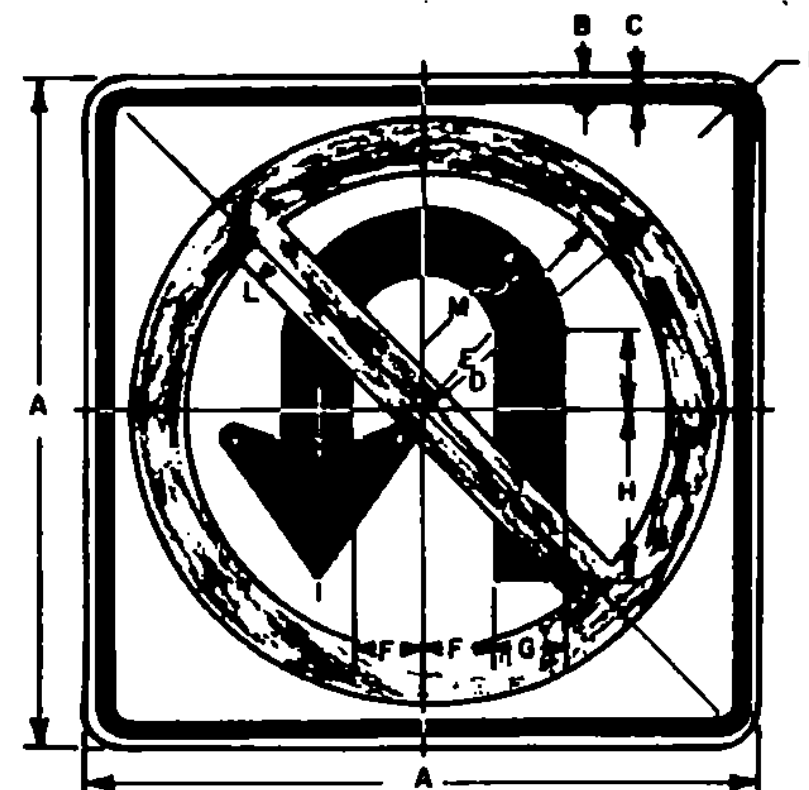


STANDARD
E-15B



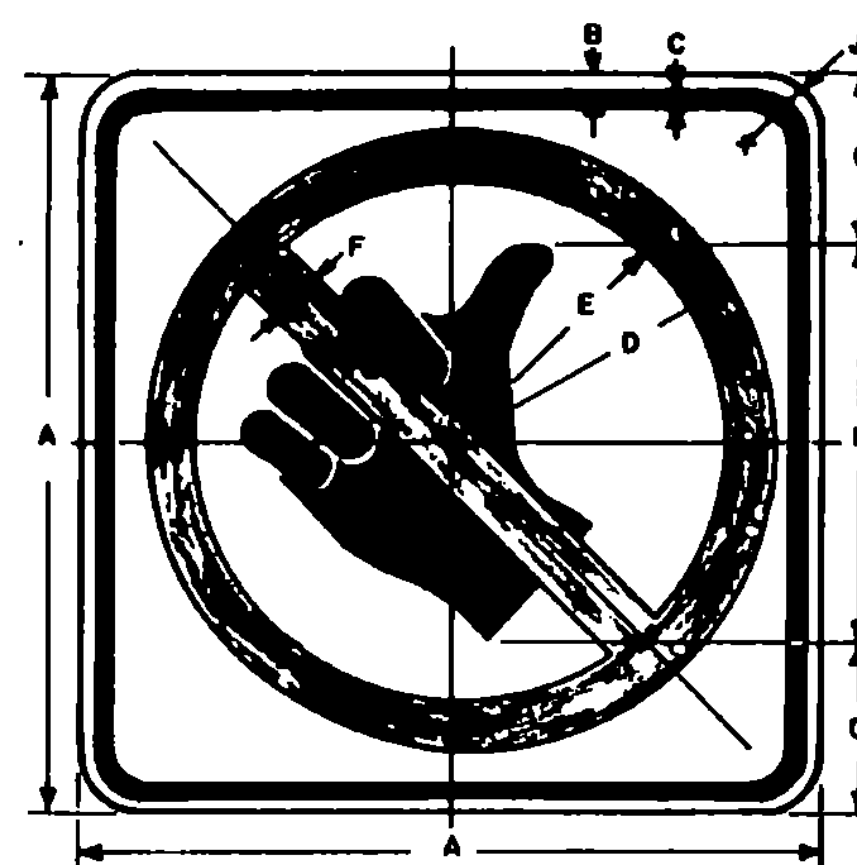
COLORS
CIRCLE AND DIAGONAL - RED (REFL-RURAL)
SYMBOL AND BORDER - BLACK (NON-REFL)
BACKGROUND - WHITE (REFL-RURAL)

SIGN	DIMENSIONS (INCHES)									
	A	B	C	D	E	F	G	H	J	
URBAN MIN. & STD.	12	3/8	3/8	3	6E(M)	4-7/8	3-7/8	1	1-1/2	
RURAL MIN. & STD.	24	3/8	6/8	6	12E(M)	10-1/2	8-1/2	2	1-1/2	
EXPWY.	36	5/8	7/8	9	18E(M)	15-3/4	12-3/4	3	2-1/4	
FWY.	48	3/4	1-1/4	12	24E(M)	21	17	4	3	



COLORS
CIRCLE AND DIAGONAL - RED (REFL)
ARROW AND BORDER - BLACK (NON-REFL)
BACKGROUND - WHITE (REFL)

SIGN	DIMENSIONS (INCHES)												
	A	B	C	D	E	F	G	H	J	K	L	M	
STD. & MIN.	24	3/8	5/8	10-1/2	8-1/2	2-1/2	2-1/2	6	2-1/4	1-1/2	2	5	
SPECIAL	30	1/2	3/4	13-1/8	10-5/8	3-1/8	3-1/8	7-1/2	2-13/16	1-7/8	2-1/2	6-1/4	
EXPWY.	36	5/8	7/8	15-3/4	12-3/4	3-3/4	3-3/4	9	3-3/8	2-1/4	3	7-1/2	
SPECIAL	48	3/4	1-1/4	21	17	5	5	12	4-1/2	3	4	10	



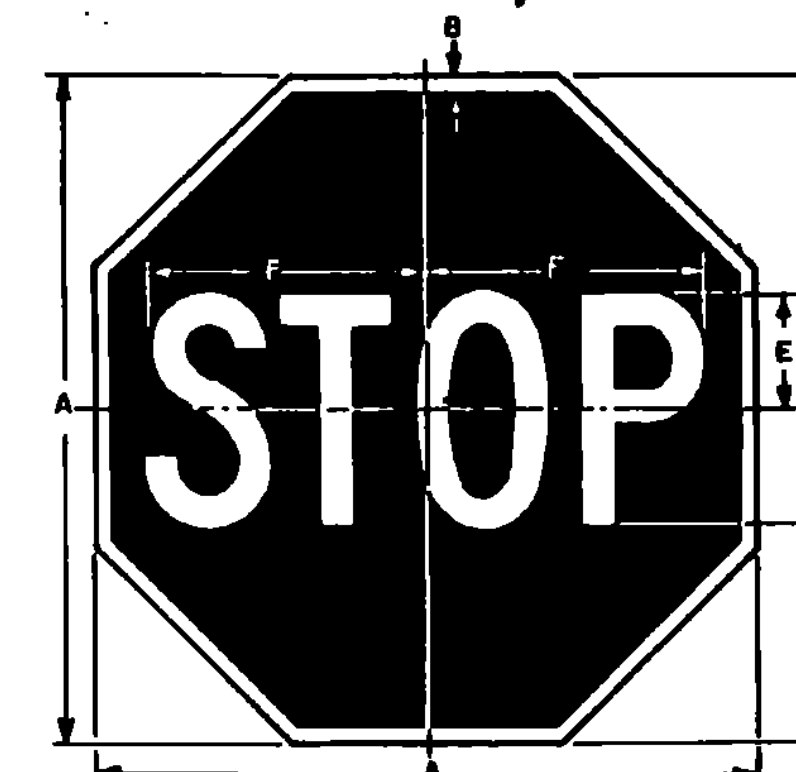
COLORS
CIRCLE AND DIAGONAL - RED (REFL)
SYMBOL AND BORDER - BLACK (NON-REFL)
BACKGROUND - WHITE (REFL)

SIGN	DIMENSIONS (INCHES)									
	A	B	C	D	E	F	G	H	J	
MIN.	18	3/8	5/8	7-7/8	6-3/8	1-1/2	3-3/4	10-1/2	1-1/2	
STD.	24	3/8	5/8	10-1/2	8-1/2	2	5	14	1-1/2	



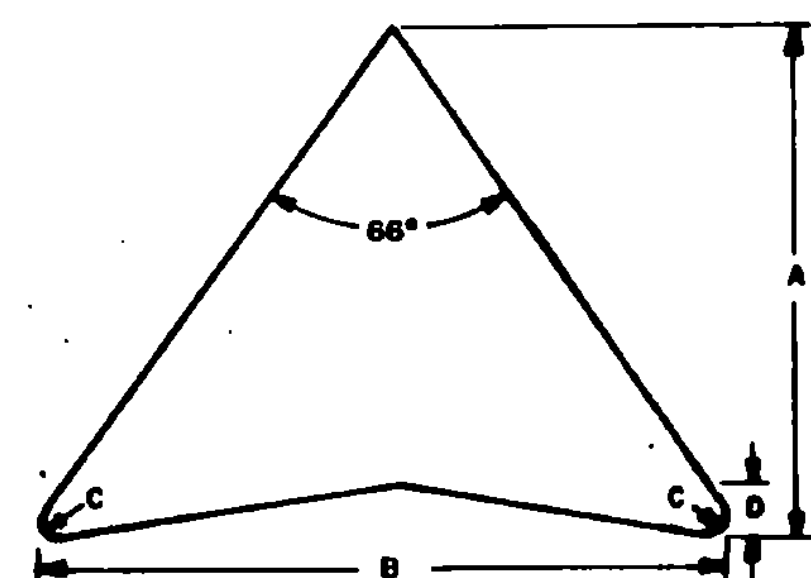
COLORS
LEGEND - WHITE (REFL)
BACKGROUND - RED (REFL)

SIGN	DIMENSIONS (INCHES)									
	A	B	C	D	E	F	G	H	J	
MIN.	30	18	5/8	3	5D	2	11-1/16	6-11/16	1-1/2	
STD.	36	24	3/4	4-1/2	6D	3	13-5/16	8-1/16	1-1/2	
SPECIAL	42	30	7/8	5	8D	4	17-3/4	10-3/4	1-7/8	

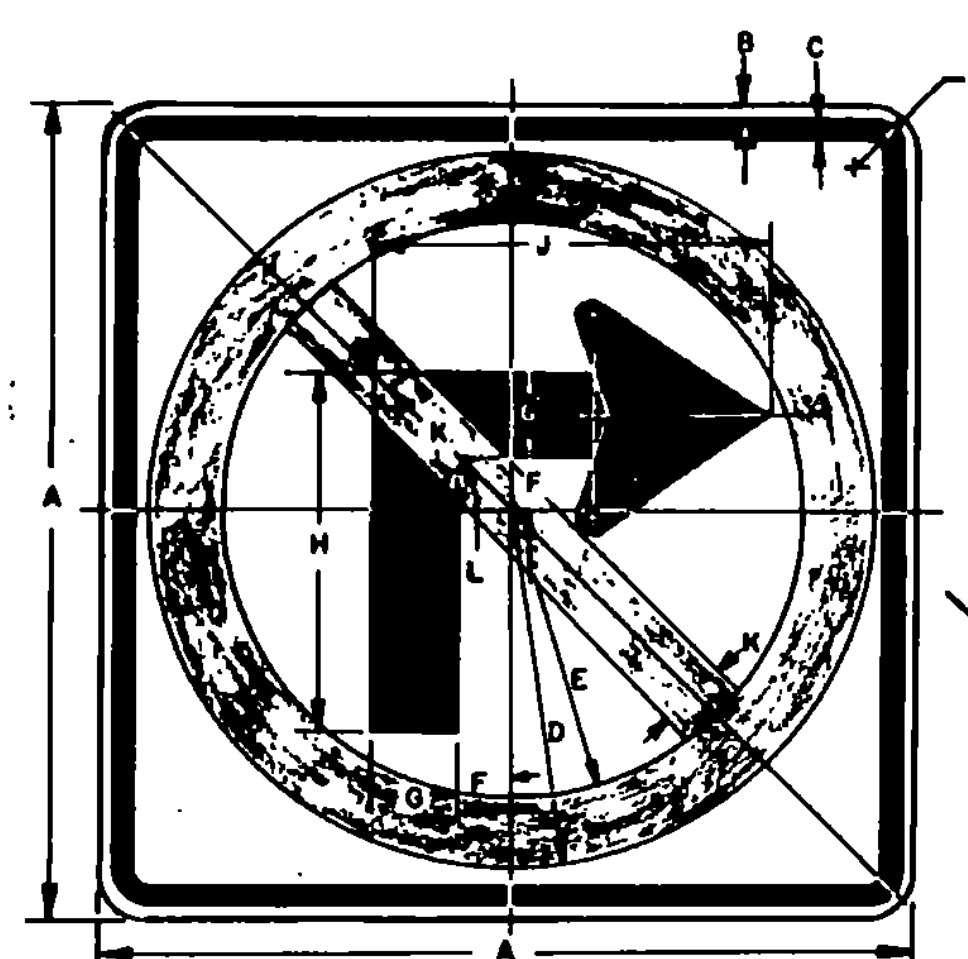


COLORS
LEGEND - WHITE (REFL)
BACKGROUND - RED (REFL)

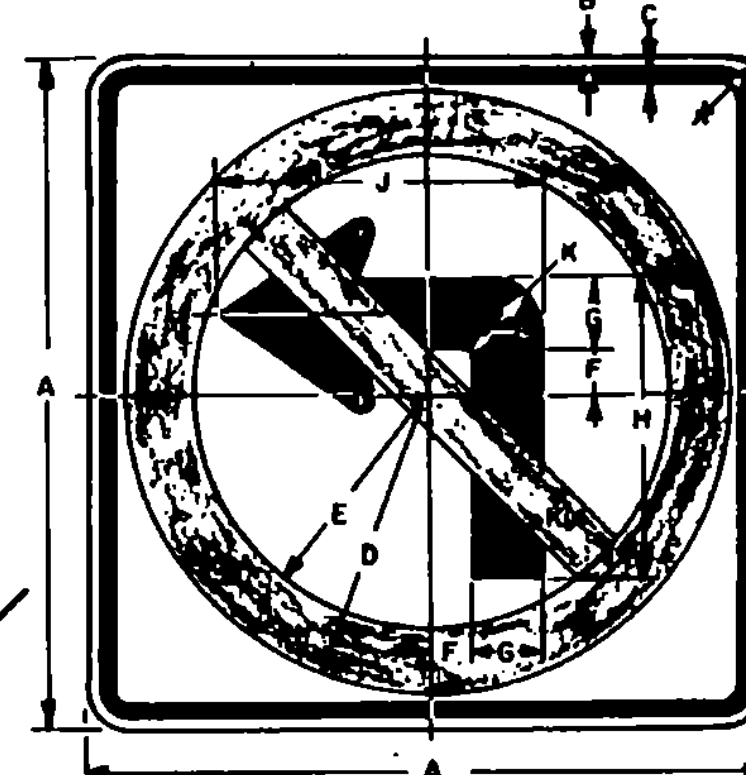
SIGN	DIMENSIONS (INCHES)						
	A	B	C	D	E	F	
BIKE	18	3/8	6	6C	3	7-3/4	
MIN.	24	5/8	8	8C	4	10	
STD.	30	3/4	10	10C	5	12-1/2	
EXPWY.	36	7/8	12	12C	6	15	
SPECIAL	48	1-1/4	16	16C	8	20	



ARROW HEAD	DIMENSIONS (INCHES)			
	SIZE	A	B	C
MIN. & STD.	24" X 24"	6	7-1/8	5/8
SPECIAL	30" X 30"	7-1/2	8-7/8	3/4
EXPWY.	36" X 36"	8-7/8	10-5/8	7/8
SPECIAL	48" X 48"	11-7/8	14-1/8	1-1/8

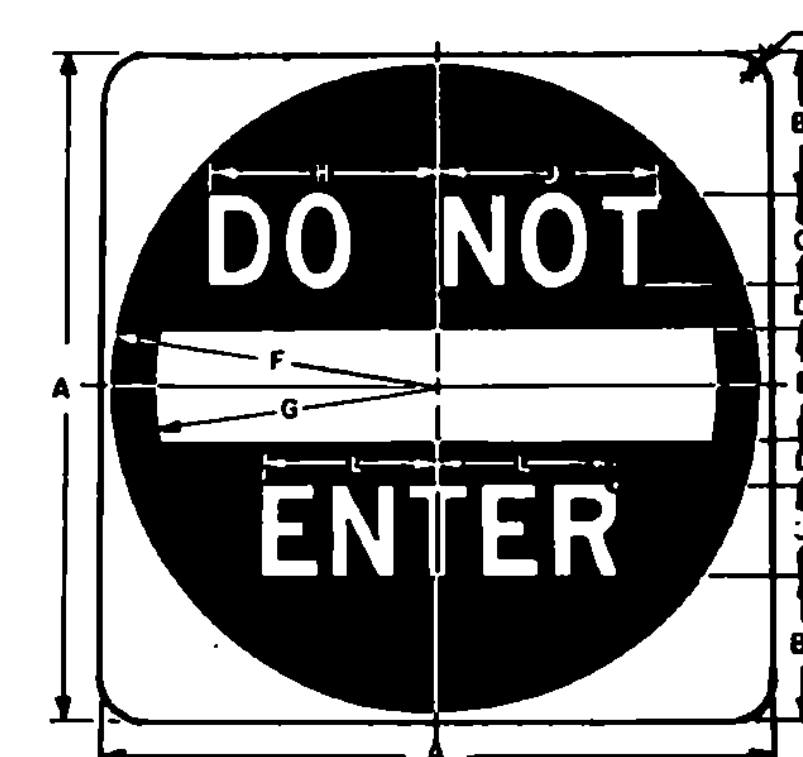


COLORS
CIRCLE & DIAGONAL - RED (REFL)
ARROW & BORDER - BLACK (NON-REFL)
BACKGROUND - WHITE (REFL)



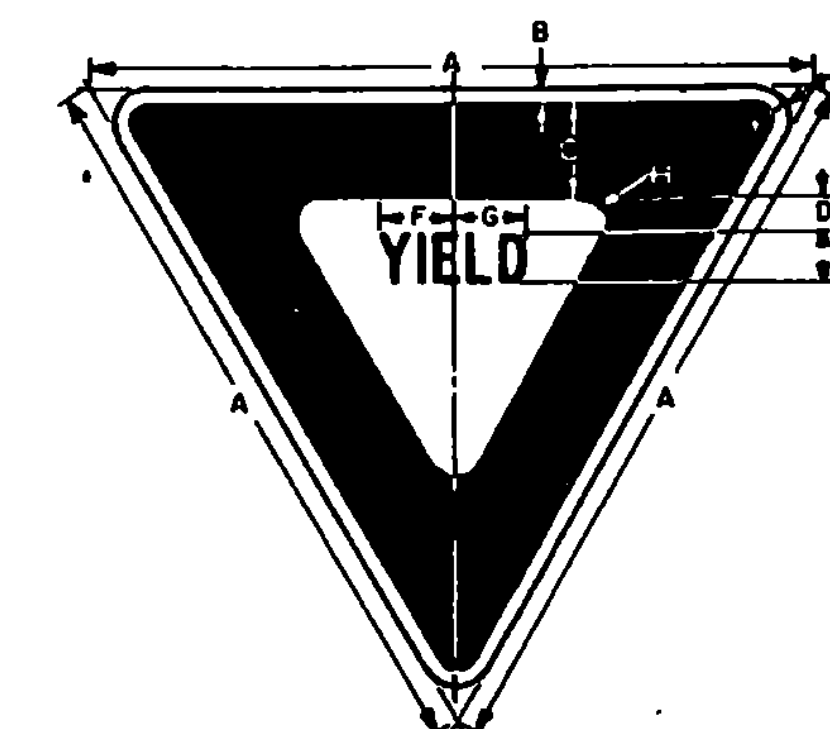
COLORS & DIMENSIONS
APPLY TO BOTH SIGNS

SIGN	DIMENSIONS (INCHES)												
	A	B	C	D	E	F	G	H	J	K	L		
STD. & MIN.	24	3/8	5/8	10-1/2	8-1/2	1-1/2	2-1/2	10-1/2	11-1/2	2	1/2		
SPECIAL	30	1/2	3/4	13-1/8	10-5/8	1-7/8	3-1/8	13-1/8	14-1/2	2-1/2	5/8		
EXPWY.	36	5/8	7/8	15-3/4	12-3/4	2-1/4	3-3/4	15-3/4	17-1/4	3	3/4		
SPECIAL	48	3/4	1-1/4	21	17	3	5	21	23	4	1		



COLORS
SYMBOL - RED (REFL)
LEGEND & BACKGROUND - WHITE (REFL)

SIGN	DIMENSIONS (INCHES)											
	A	B	C	D	E	F	G	H	J	K	L	
STD. & MIN.	30	6-1/2	40	2	5	14-1/2	12-1/2	9-3/4	10	1-7/8	7-7/8	
EXPWY.	36	7-1/2	50	2-1/2	6	17-1/2	15	12	12 3/8	2-1/4	9-13/16	
SPECIAL	48	11	60	3	8	23-1/2	20	14-1/2	15	3	11-3/4	



COLORS
LEGEND & BORDER - RED (REFL)
BACKGROUND - WHITE (REFL)

SIGN	DIMENSIONS (INCHES)									
	A	B	C	D	E	F	G	H	J	
BIKE	24	3/8	3	1-3/8	2C	3-1/4	3	7/8	1-1/2	
MIN.	30	5/8	4	1-3/4	2-1/2C	3-15/16	3-5/8	7/8	1-1/2	
STD.	36	3/4	5	2	3C	4-1/16	4-3/8	1-1/4	2	
EXPWY.	48	1	6	2-3/4	4C	6-1/4	5-7/8	2	3	
FWY.	60	1-1/2	8	3-1/2	5C	7-7/8	7-1/4	2-1/2	4	

MATERIALS:

THE SIGN BASE MATERIALS USED FOR THE REGULATORY SIGNS SHOWN ON THIS SHEET MAY BE ANY OF THE FOLLOWING OF THE MINIMUM THICKNESS NOTED.

	12" X 12"	24" X 24"	36" X 36"	48" X 48"
FLAT SHEET ALUMINUM	0.080"	0.080"	0.100"	0.125"
HIGH DENSITY OVERLAID PLYWOOD	1/2"	1/2"	5/8"	5/8"
GALVANIZED FLAT SHEET STEEL	18 GAGE	16 GAGE	14 GAGE	12 GAGE

THE REFLECTIVE MATERIAL SHALL BE ENCAPSULATED LENS WHITE OR SILVER REFLECTIVE SHEETING APPLIED TO THE ENTIRE BACKGROUND OF THE SIGN.

THE BLACK PORTIONS OF THE SIGNS MAY BE LETTERING FILM, SILK SCREENED OR HAND PAINTED. WHEN HAND PAINTED, POOR WORKMANSHIP SHALL BE CAUSE FOR REJECTION.

COLORS:

THE REGULATORY SIGNS SHOWN ON THIS SHEET SHALL BE AS DETAILED FOR EACH SIGN. THE COLORS SHALL CONFORM WITH THE COLORS ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS AND APPROVED BY THE DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION.

SPECIFICATIONS:

REGULATORY SIGNS SHALL MEET THE STANDARD STATE SPECIFICATIONS FOR TRAFFIC SIGNS.

TEXT DESIGN:

LETTERS, DIGITS, ARROW, SPACINGS AND TEXT DIMENSIONS SHALL CONFORM WITH THE STANDARD ALPHABETS AND DESIGNS PRESCRIBED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES PREPARED BY THE NATIONAL JOINT COMMITTEE ON UNIFORM TRAFFIC CONTROL DEVICES.

REVISIONS AND CORRECTIONS

FEB. 3, 1986-UPDATED TO 1986 SPECIFICATIONS

APPROVED

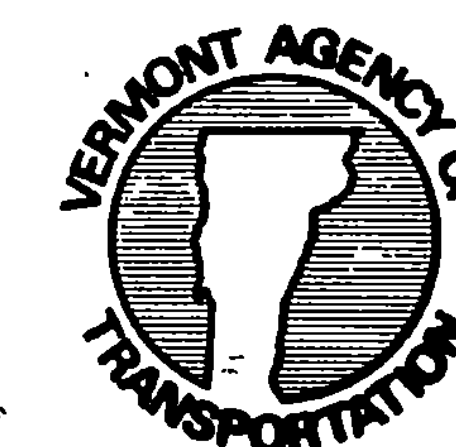
DATE JULY 18, 1984

DIRECTOR OF ENGINEERING AND CONSTRUCTION

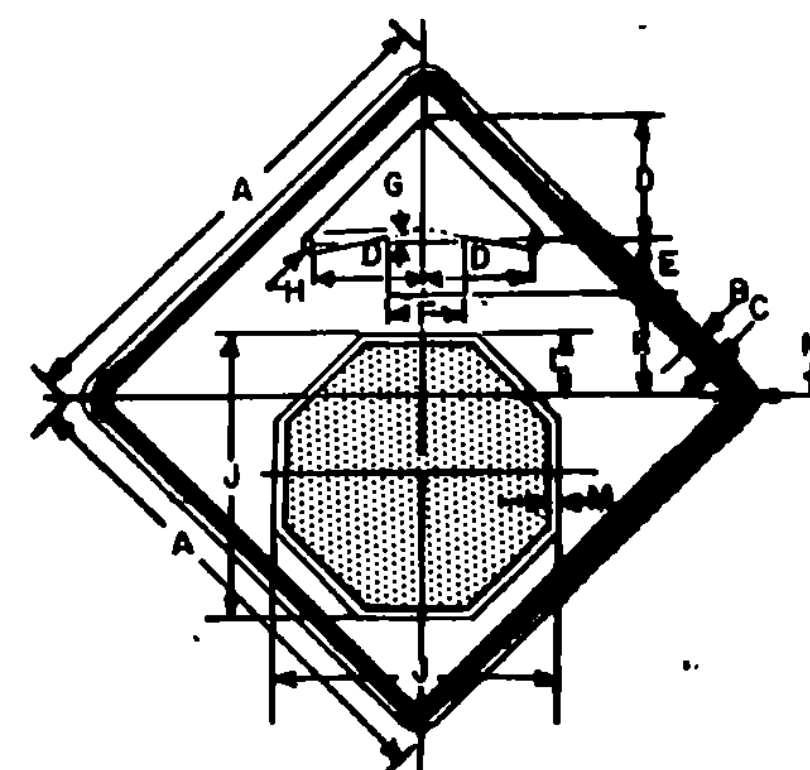
Arthur J. Goss
CHIEF OF DESIGN

John E. Evans
SURVEY AND PLANS ENGINEER

REGULATORY SIGNS

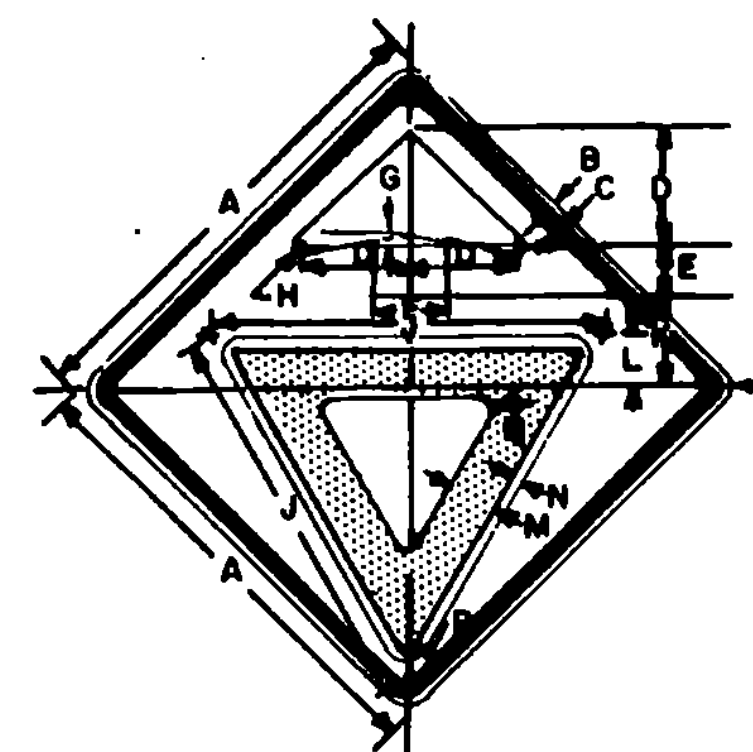


STANDARD
E-15C



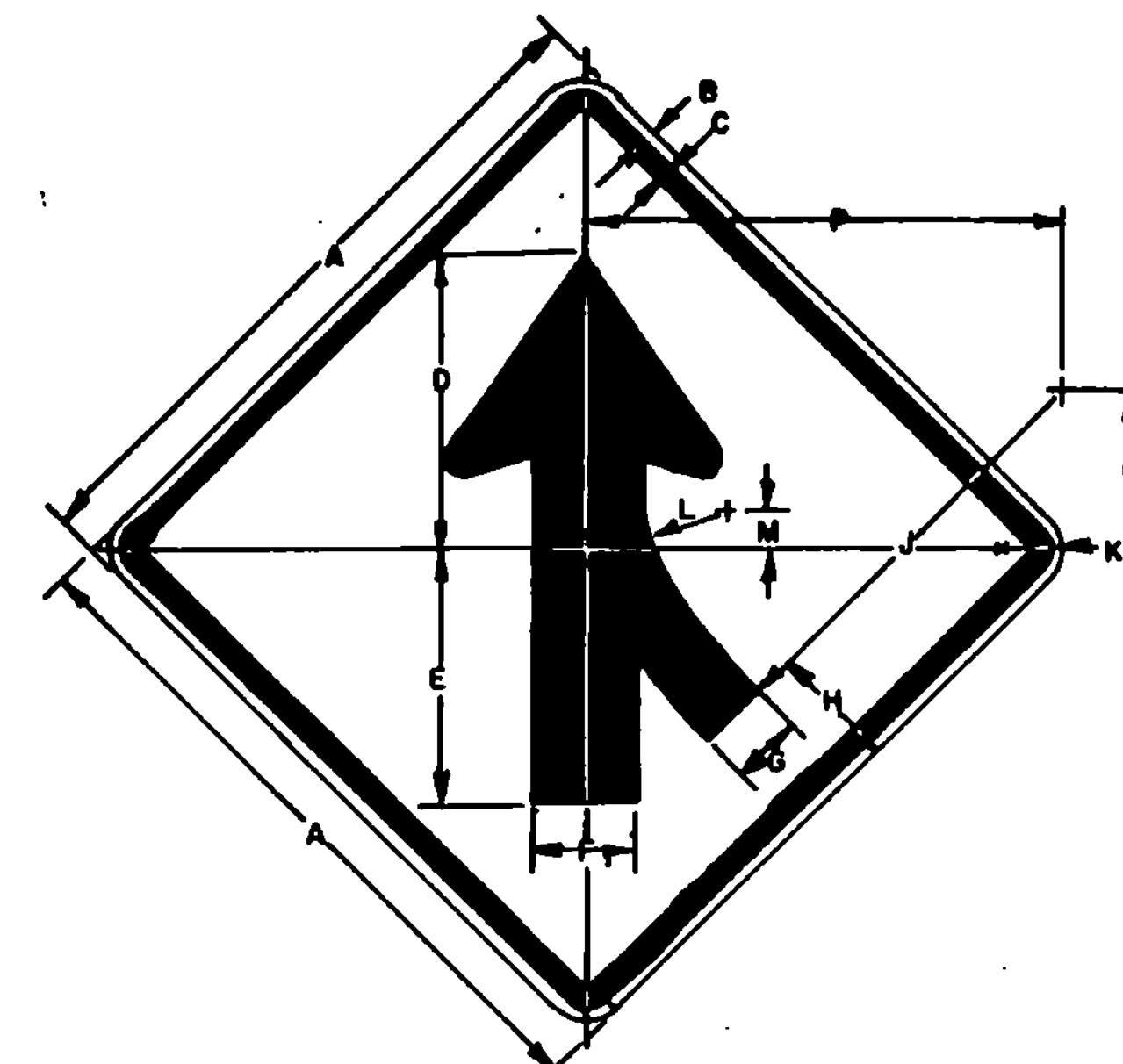
COLORS
BORDER AND ARROW - BLACK (NON-REFL)
SYMBOL - WHITE BORDER ON RED BACKGROUND (REFL)
BACKGROUND - YELLOW (REFL)

SIGN	DIMENSIONS (INCHES)													
	A	B	C	D	E	F	G	H	J	K	L	M	N	P
MIN.	30	1/2	3/4	7-1/2	3-3/4	5	5/8	5/16	3-3/4	8-1/4	2-7/8	1/2	1-7/8	
STD.	36	5/8	7/8	9	4-1/2	6	3/4	3/8	19	7-1/2	3-1/2	5/8	3-1/4	
SPECIAL	48	3/4	1-1/4	12	6	8	1	1/2	25-1/2	10	4-1/2	3/4	3	



COLORS
BORDER AND ARROW - BLACK (NON-REFL)
SYMBOL - RED BORDER ON WHITE BACKGROUND (REFL)
BACKGROUND - YELLOW (REFL)

SIGN	DIMENSIONS (INCHES)													
	A	B	C	D	E	F	G	H	J	K	L	M	N	P
MIN.	30	1/2	3/4	7-1/2	3-3/4	5	5/8	5/16	25	6-1/4	3	3-3/8	1/2	1-7/8
STD.	36	5/8	7/8	9	4-1/2	6	3/4	3/8	28	7-1/2	3-3/8	3-3/4	5/8	1-3/8
SPECIAL	48	3/4	1-1/4	12	6	8	1	1/2	38	10	4-1/2	5	3/4	17/8



COLORS
LEGEND - BLACK (NON-REFL)
BACKGROUND - YELLOW (REFL)

SIGN	DIMENSIONS (INCHES)													
	A	B	C	D	E	F	G	H	J	K	L	M	N	P
MIN.	24	3/8	5/8	10-1/4	8-3/4	3-1/2	23/8	4-3/16	22-1/4	1-1/2	6-3/8	25/8	10-3/8	23-3/8
STD.	30	1/2	3/4	13	11	4-3/8	3	5-1/4	28	1-7/8	8	3	13	27-3/4
EXPWY.	36	5/8	7/8	15-3/4	13-1/4	5-1/4	3-3/8	5-1/2	33-3/8	2-1/4	9-3/8	4	15-5/8	33-1/8
FWY.	48	3/4	1-1/4	20-1/2	17-1/2	7	4-3/4	8-3/8	45	3	12-3/16	5-1/4	20-3/4	44-3/8

COLORS

THE WARNING SIGNS SHOWN ON THIS SHEET SHALL BE AS DETAILED FOR EACH SIGN. THE COLORS SHALL CONFORM WITH THE COLORS ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS APPROVED BY THE DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION.

MATERIALS

THE SIGN BASE MATERIALS USED FOR THE WARNING SIGNS SHOWN ON THIS SHEET MAY BE ANY OF THE FOLLOWING OF THE MINIMUM THICKNESS NOTED.

	12" x 18"	24" x 24"	36" x 36"	48" x 48"
FLAT SHEET ALUMINUM	0.060"	0.080"	0.100"	0.125"
HIGH DENSITY OVERLAP PLYWOOD	1/2"	1/2"	5/8"	3/4"
GALVANIZED FLAT SHEET STEEL	18 GAGE	16 GAGE	14 GAGE	12 GAGE

THE REFLECTIVE MATERIAL SHALL BE REFLECTIVE SHEETING APPLIED TO THE ENTIRE BACKGROUND OF THE SIGN.

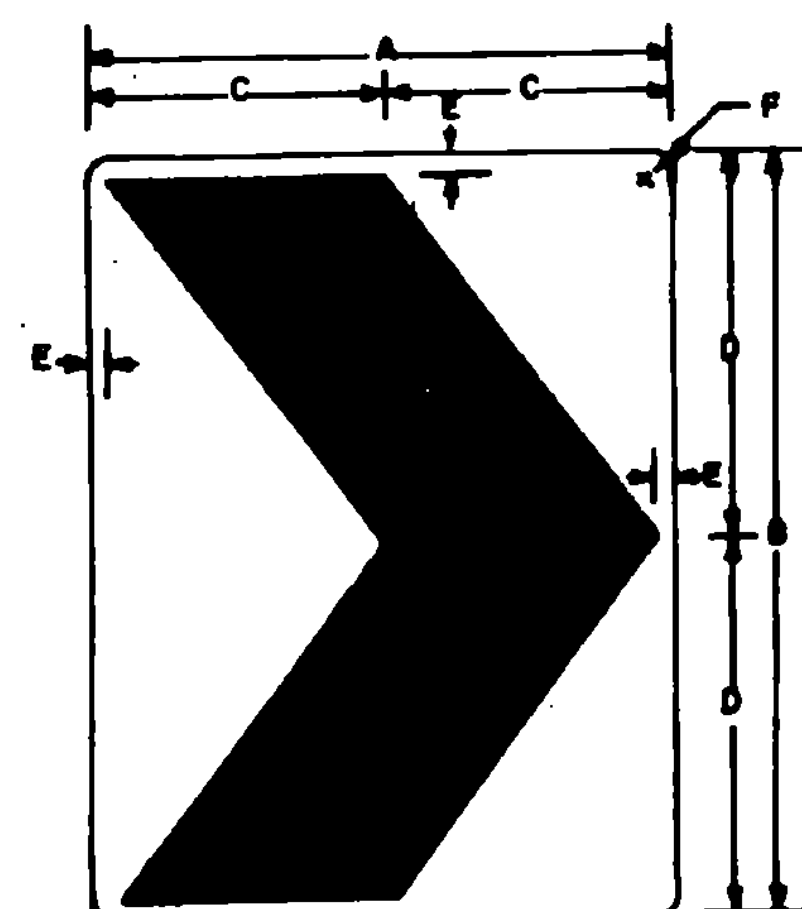
THE BLACK PORTIONS OF THE SIGNS MAY BE LETTERING FILM, SILK SCREENED OR HAND PAINTED. WHEN HAND PAINTED, POOR WORKMANSHIP SHALL BE CAUSE FOR REJECTION.

SPECIFICATIONS

WARNING SIGNS SHALL MEET THE STANDARD STATE SPECIFICATIONS FOR TRAFFIC SIGNS.

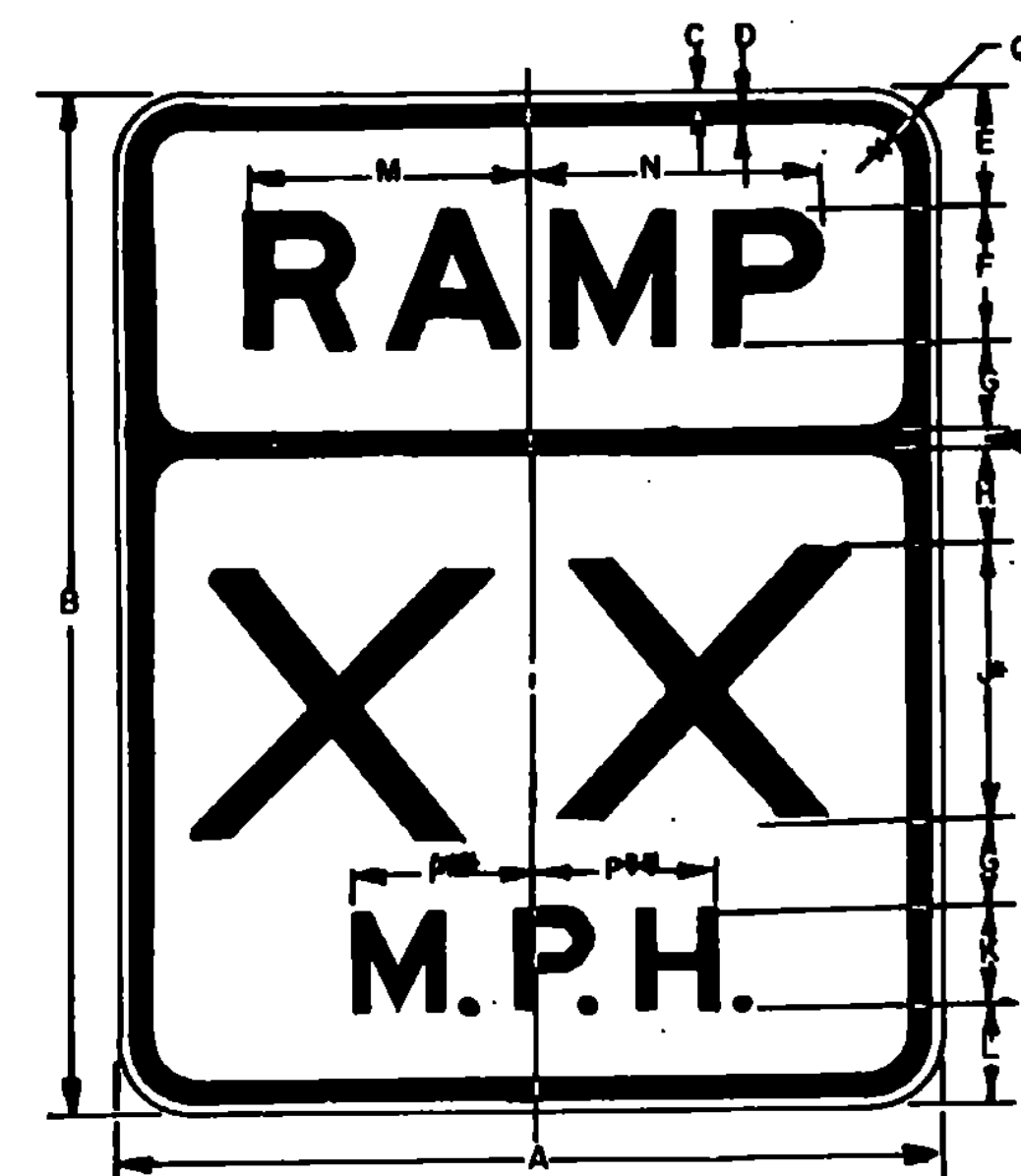
TEXT DESIGN

LETTERS, DIGITS, ARROW, SPACINGS AND TEXT DIMENSIONS SHALL CONFORM WITH THE STANDARD ALPHABETS AND DESIGNS PRESCRIBED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES PREPARED BY THE NATIONAL JOINT COMMITTEE ON UNIFORM TRAFFIC CONTROL DEVICES.



COLORS
CHEVRON - BLACK (NON-REFL)
BACKGROUND - YELLOW (REFL)

SIGN	DIMENSIONS (INCHES)					
	A	B	C	D	E	F
MIN.	12	18	6	9	1/2	1-1/2
STD.	18	24	9	12	3/4	1-1/2
SPECIAL	24	30	12	15	7/8	1-7/8
EXPWY.	30	36	15	18	1	1-7/8
FWY.	36	48	18	24	1-1/8	2-1/4



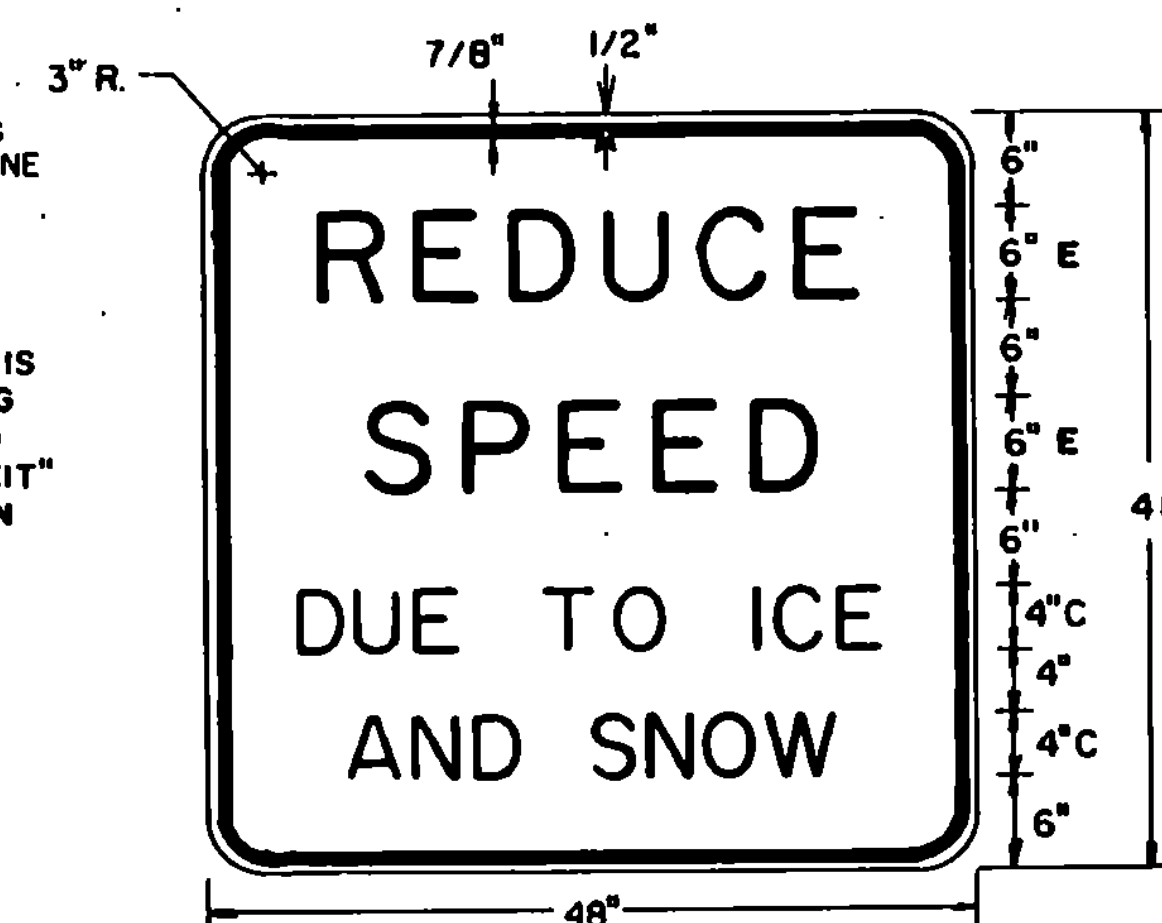
COLORS
LEGEND - BLACK (NON-REFL)
BACKGROUND - YELLOW (REFL)

SIGN	DIMENSIONS (INCHES)													
	A	B	C	D	E	F	G	H	J	K	L	M	N	P
MIN. & STD.	24	30	3/8	5/8	3-1/2	4E	2-1/2	2-7/8	8E	3E	3	8-1/4	8-1/2	5-5/16
EXPWY.	36	48	5/8	7/8	6	6E	4	5-1/8	12E	4E	6	12-3/8	12-3/4	7-1/8
FWY.	48	60	3/4	1-1/4	7	8E	5	5-3/4	16E	6E	6	16-1/2	17	10-5/8

OR "EXIT"

* OPTICALLY SPACE NUMBERS ABOUT VERTICAL CENTERLINE
** INCREASE SPACING 100%

THE "RAMP" SPEED SIGN IS USED ON RAMP LEADING FROM ONE FREEWAY TO ANOTHER AND THE "EXIT" SPEED SIGN IS USED ON NORMAL EXITS.



COLORS
LEGEND - BLACK (NON-REFL.)
BACKGROUND - YELLOW (REFL.)

REVISIONS AND CORRECTIONS

APRIL 18, 1985 - RAMP AND EXIT SIGN USE NOTE ADDED.
"REDUCE SPEED DUE TO ICE AND SNOW" SIGN ADDED.

FEB. 3, 1986 - UPDATED TO 1986 SPECIFICATIONS

APPROVED

DATE OCT. 3, 1984

DIRECTOR OF ENGINEERING AND CONSTRUCTION

CHIEF OF DESIGN

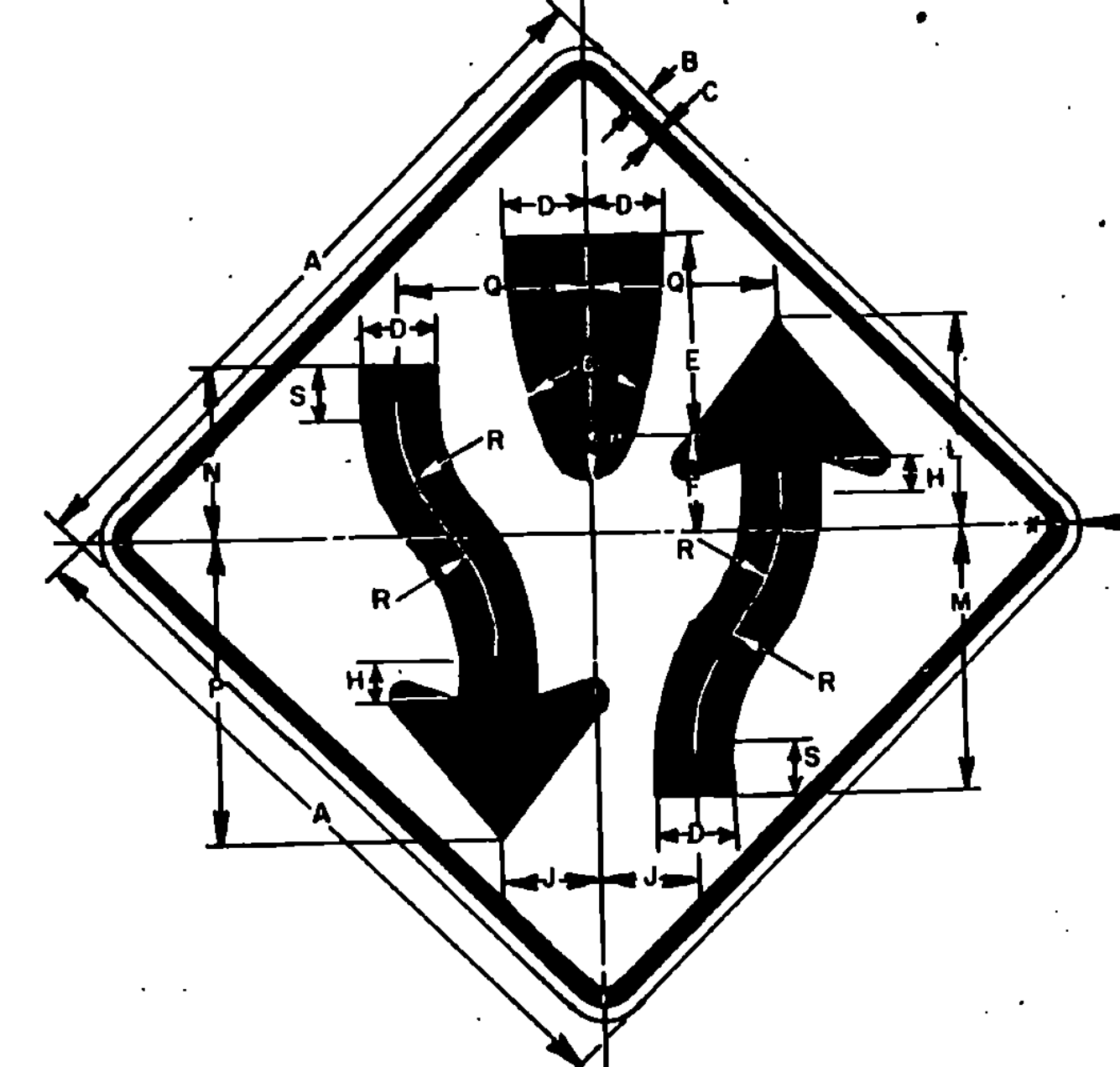
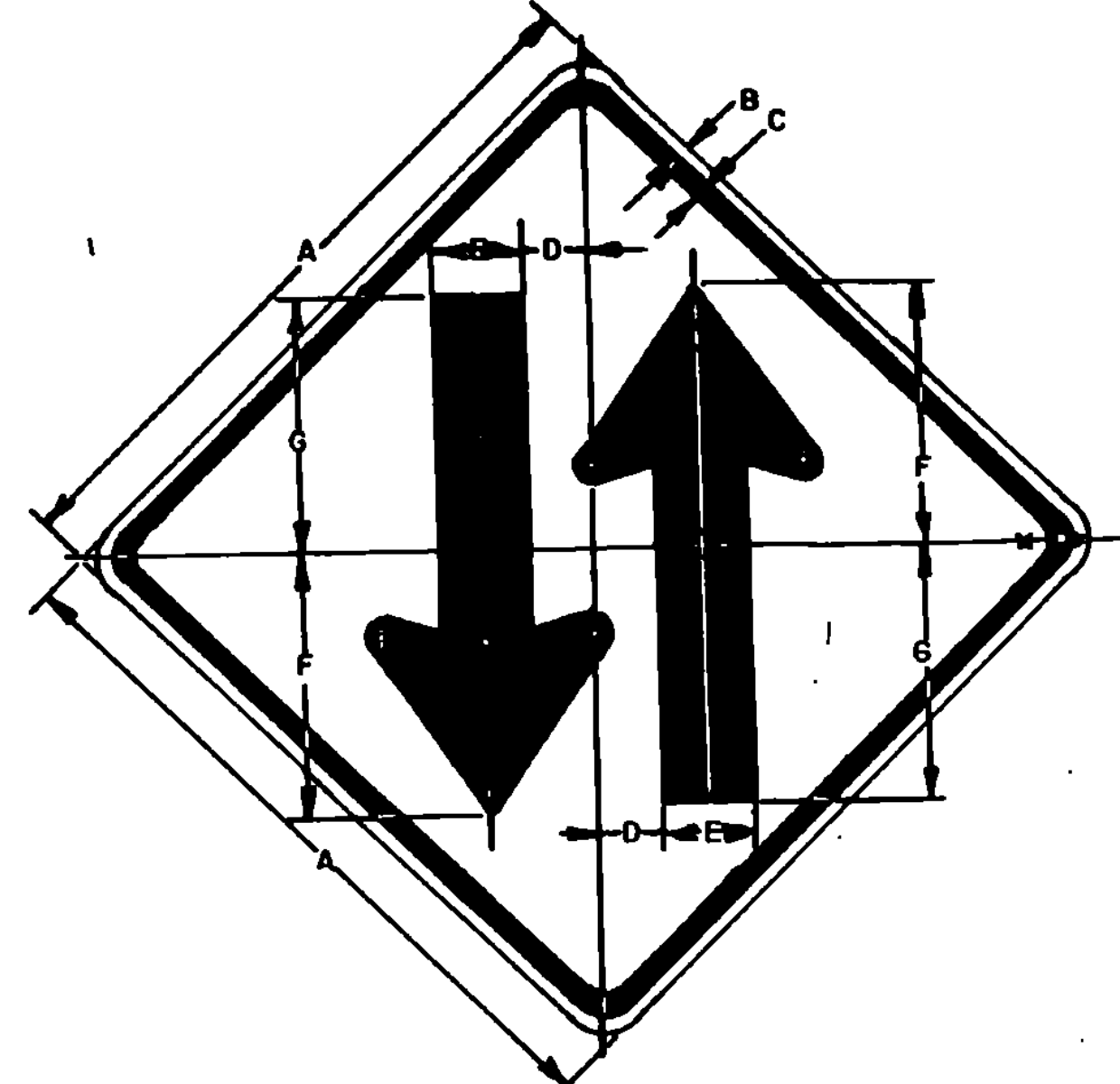
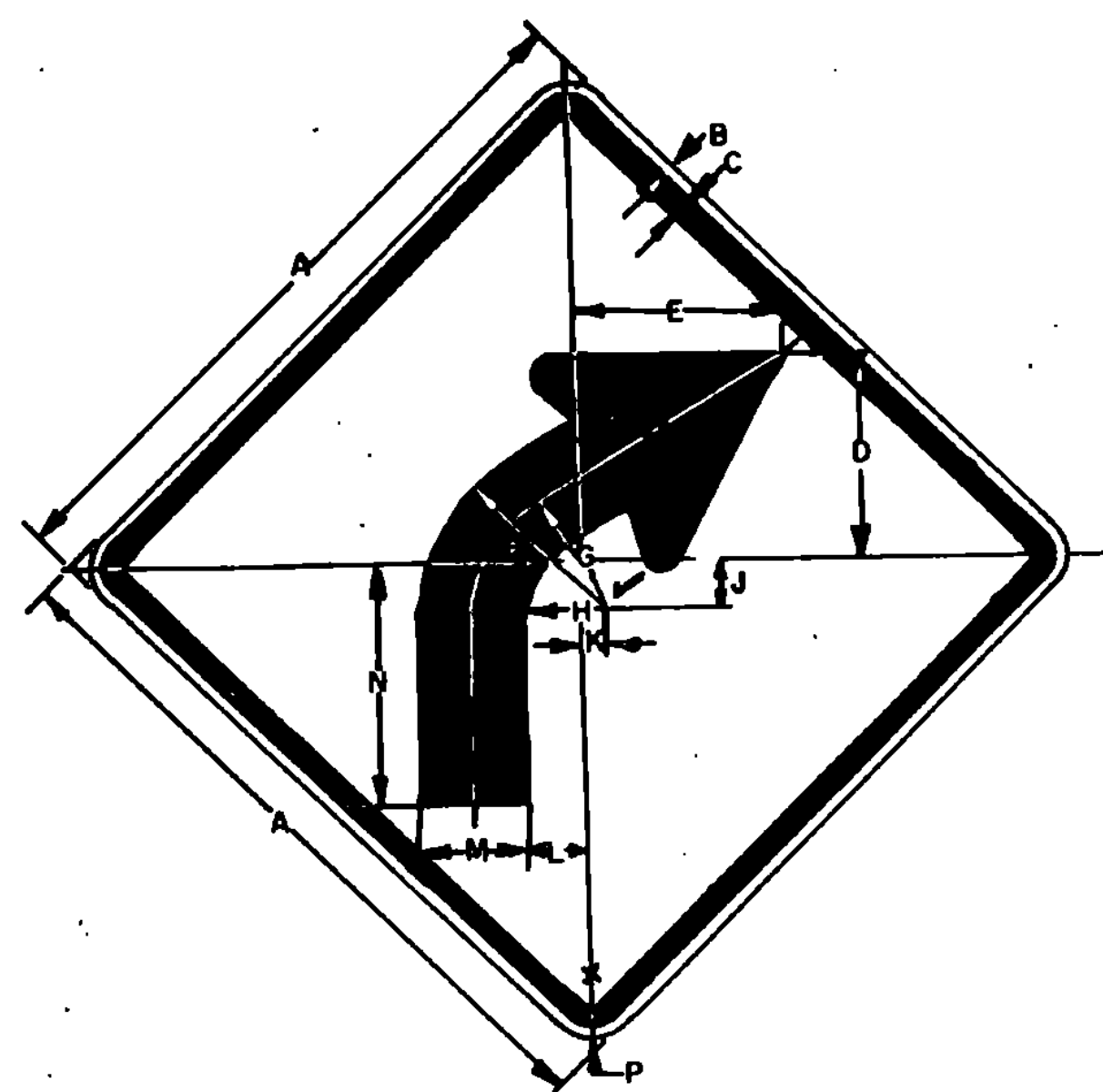
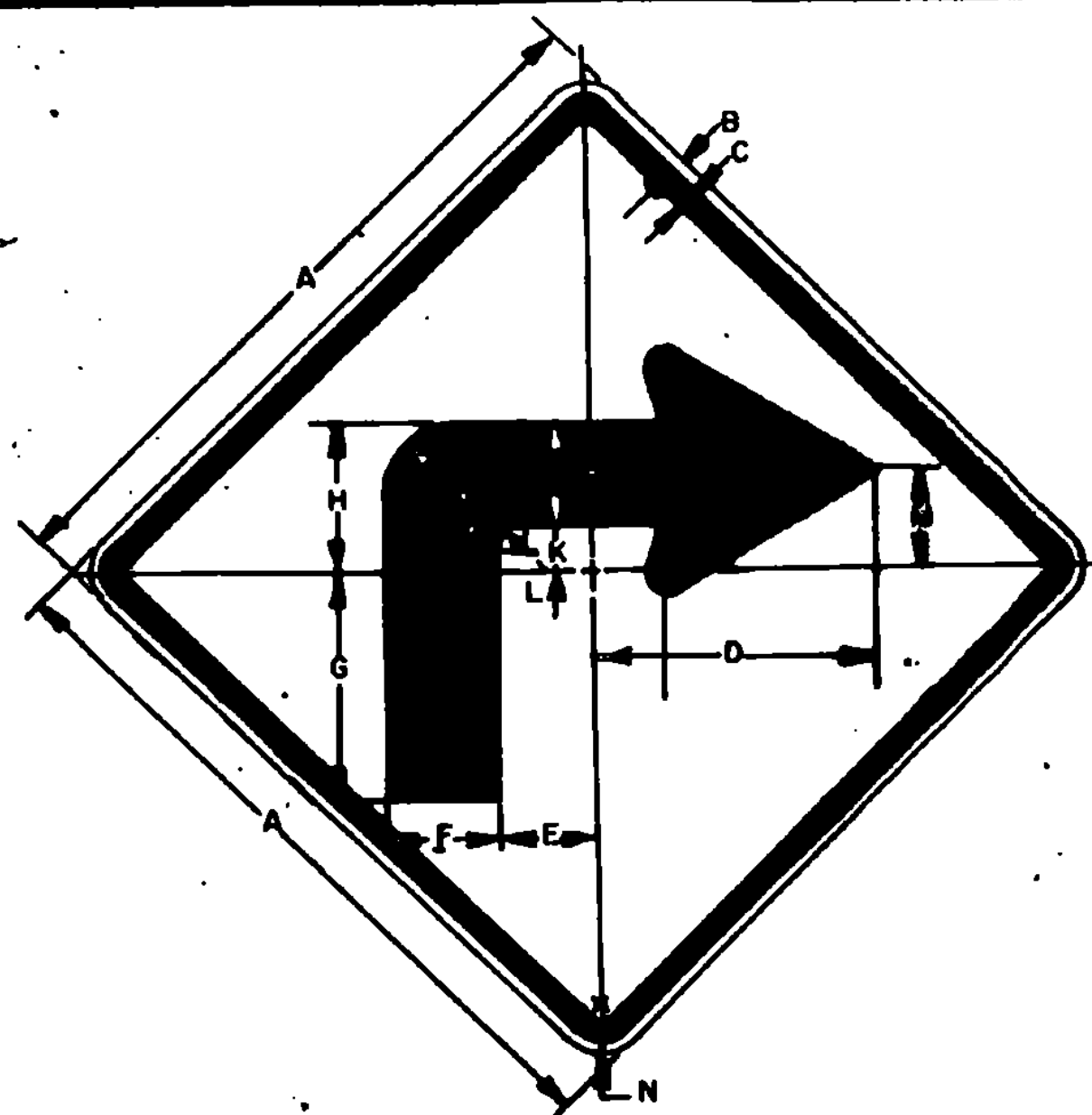
SURVEY AND PLANS ENGINEER

WARNING SIGNS



STANDARD

E-19

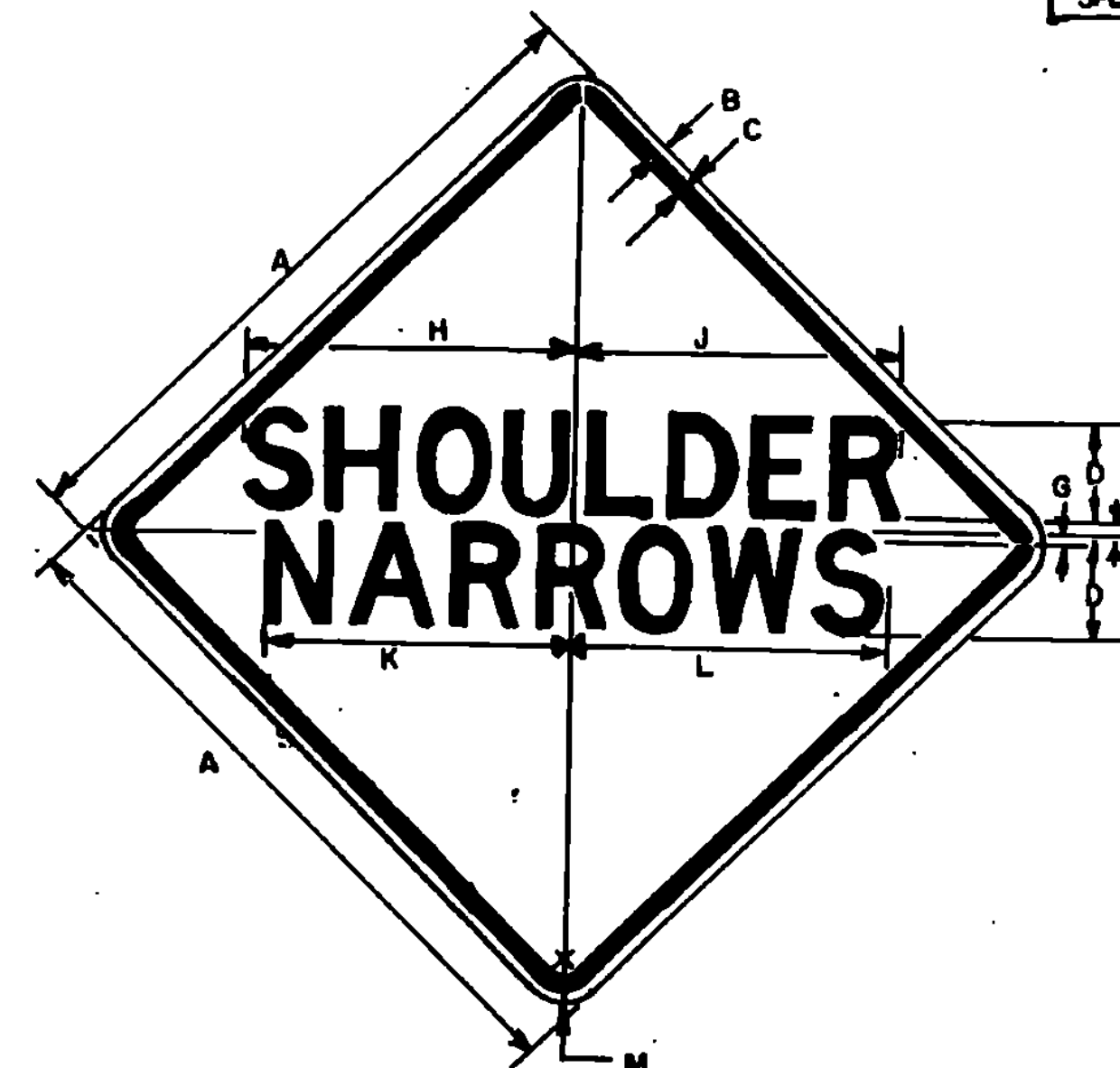
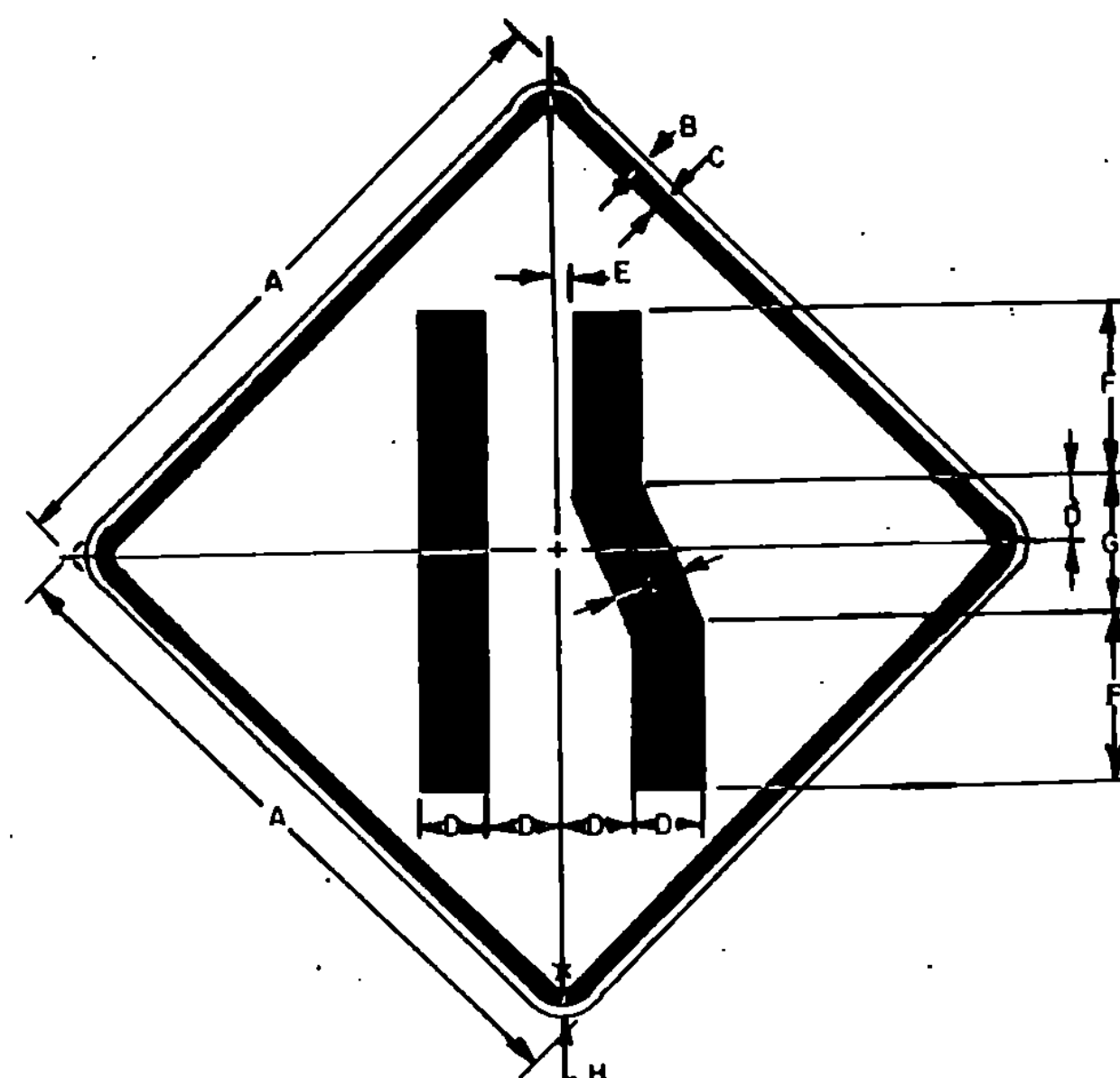
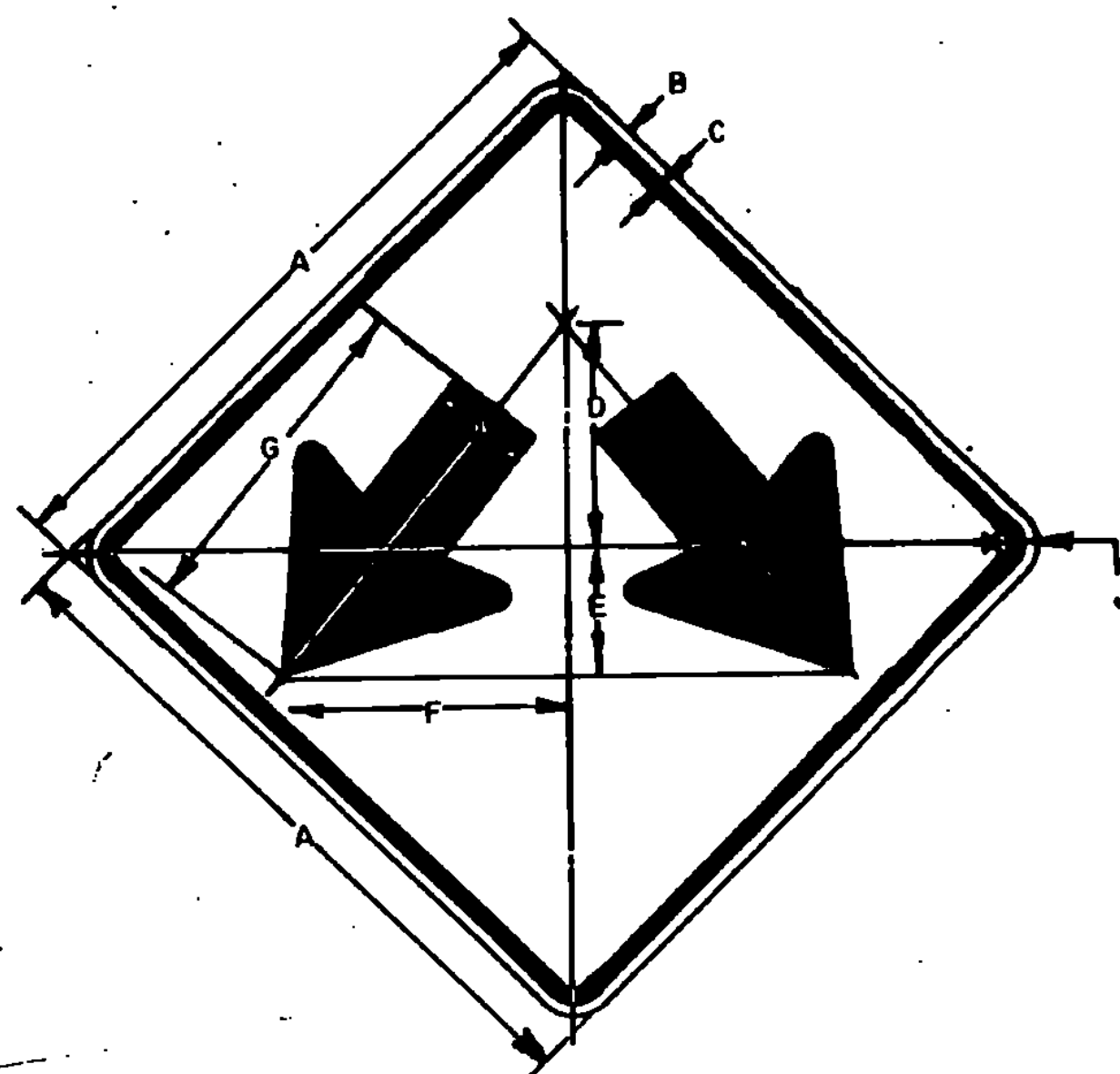


SIGN	DIMENSIONS (INCHES)												
	A	B	C	D	E	F	G	H	I	J	K	L	M
BIKE	18	3/8	5/8	7-1/4	2-1/4	2-5/8	5-7/8	3-3/4	1-7/8	5/8	2-1/2	1-1/2	
MIN.	24	3/8	5/8	9-5/8	3	3-1/2	7-3/4	5	3-1/4	1-1/2	13/16	3-1/4	1-1/2
STD.	30	1/2	3/4	12	3-3/4	4-3/8	9-11/16	6-1/4	3	1-7/8	1	4-1/16	1-7/8
EXPWY.	36	5/8	7/8	14-3/8	4-1/2	5-1/4	11-5/8	7-1/2	3-5/8	2-1/4	1-1/4	4-7/8	2-1/4
SPECIAL	48	3/4	1-1/4	19-3/16	6	7	15-1/2	10	4-5/8	3	1-5/8	6-1/2	3

SIGN	DIMENSIONS (INCHES)												
	A	B	C	D	E	F	G	H	I	J	K	L	M
BIKE	18	3/8	5/8	5-3/8	5-1/2	6	4-3/4	3-3/8	1-3/4	1-1/4	2	2-5/8	6-1/4
MIN.	24	3/8	5/8	7-1/8	7-1/4	8	6-1/4	4-1/2	2-11/32	1-3/4	2-3/4	3-1/2	8-1/4
STD.	30	1/2	3/4	8-7/8	9-1/8	10	7-13/16	5-5/8	2-13/16	2-3/16	3-7/16	4-3/8	10-5/16
EXPWY.	36	5/8	7/8	10-5/8	10-7/8	12	9-3/8	6-3/4	3-1/2	2-5/8	4-1/8	5-1/4	12-3/8
FWY.	48	3/4	1-1/4	14-3/16	14-1/2	16	12-1/2	9	4-11/16	3-1/2	5-1/2	7	16-1/2

SIGN	DIMENSIONS (INCHES)							
	A	B	C	D	E	F	G	H
MIN.	24	3/8	5/8	2	3	9	8-1/2	1-1/2
STD.	30	1/2	3/4	2-7/16	3-3/4	11-1/4	10-5/8	1-7/8
EXPWY.	36	5/8	7/8	2-5/16	4-1/2	13-1/2	12-3/4	2-1/4
SPECIAL	48	3/4	1-1/4	3-7/8	6	18	17	3

SIGN	DIMENSIONS (INCHES)															
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q
MIN.	30	1/2	3/4	3-5/16	8-5/16	4-1/8	25	1-11/16	4-1/8	1-7/8	10	11-5/8	7-15/16	13-11/16	7-7/8	8-5/16
STD. & EXPWY.	36	5/8	7/8	4	10	5	30	2	5	2-1/4	12	14	9-1/2	16-1/2	9-1/2	10
SPECIAL	48	3/4	1-1/4	5-1/4	13-1/8	6-9/16	39-5/16	2-5/8	6-9/16	3	16	18-11/16	12-11/16	22	12-7/16	13-1/8



COLORS

THE WARNING SIGNS SHOWN ON THIS SHEET SHALL HAVE BLACK TEXT AND SYMBOLS ON REFLECTORIZED YELLOW BACKGROUND. THE COLORS SHALL CONFORM WITH THE COLORS ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS AND APPROVED BY THE DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION.

MATERIALS

THE SIGN BASE MATERIALS USED FOR THE WARNING SIGNS SHOWN ON THIS SHEET MAY BE ANY OF THE FOLLOWING, OF THE MINIMUM THICKNESS NOTED.

	24"X24"	30"X30"	36"X36"	48"X48"
FLAT SHEET ALUMINUM	0.060"	0.080"	0.100"	0.125"
HIGH DENSITY OVERLAID FLYWOOD	1/2"	1/2"	5/8"	5/8"
GALVANIZED FLAT SHEET STEEL	18 GAGE	16 GAGE	14 GAGE	12 GAGE

THE REFLECTIVE MATERIAL SHALL BE REFLECTIVE SHEETING APPLIED TO THE ENTIRE BACKGROUND OF THE SIGN.

THE TEXT OF THE SIGNS MAY BE LETTERING FILM, SILK SCREENED OR HAND PAINTED. WHEN HAND PAINTED, POOR WORKMANSHIP SHALL BE CAUSE FOR REJECTION.

TEXT DESIGN

LETTERS, ARROWS, SPACINGS, AND TEXT DIMENSIONS SHALL CONFORM WITH THE STANDARD ALPHABETS AND DESIGNS PRESCRIBED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES PREPARED BY THE NATIONAL JOINT COMMITTEE ON UNIFORM TRAFFIC CONTROL DEVICES.

SPECIFICATIONS

WARNING SIGNS SHALL MEET THE STANDARD STATE SPECIFICATIONS FOR TRAFFIC SIGNS.

SIGN	DIMENSIONS (INCHES)									
	A	B	C	D	E	F	G	H	J	
STD. & MIN.	24	3/8	5/8	8	4-1/8	9-3/4	11-5/8	3-1/8	1-1/2	
SPECIAL	30	1/2	3/4	10	5-1/4	12-3/8	14-11/16	4	1-7/8	
SPECIAL	36	5/8	7/8	12	6-1/8	14-5/8	17-1/2	4-3/4	2-1/4	

SIGN	DIMENSIONS (INCHES)							
	A	B	C	D	E	F	G	H
MIN.	30	1/2	3/4	3-3/8	13/16	8-7/16	6-3/4	1-7/8
STD. & EXPWY.	36	5/8	7/8	4	1	10	8	2-1/4
FWY.	48	3/4	1-1/4	5-5/16	1-3/8	13-5/16	10-5/8	3

SIGN	DIMENSIONS (INCHES)										
	A	B	C	D	E	F	G	H	I	J	K
MIN. & STD.	36	5/8	7/8	5C	3	6D	1	13-11/16	13-1/16	17-3/8	18-1/4
EXPWY.	48	3/4	1-1/4	7D	3-1/2	7D	1	23-13/16	23-7/8	21-1/2	21-9/16

REVISIONS AND CORRECTIONS
FEB. 3, 1985 - UPDATED TO 1985
SPECIFICATIONS

APPROVED
DATE OCT. 3, 1984

DIRECTOR OF ENGINEERING AND CONSTRUCTION

CHIEF OF DESIGN

SURVEY AND PLANS ENGINEER

WARNING SIGNS



STANDARD
E-19A

STANDARD MOUNTING OF ROUTE MARKER ASSEMBLIES, DESTINATION ASSEMBLIES AND TOWN LINE POSTS

- A - CARDINAL DIRECTION MARKER
- B - ROUTE NUMBER
- C - ADVANCE TURN ARROW OR DIRECTIONAL ARROW

STREET SIGNS: MATERIALS

THE SIGN BASE MATERIALS USED FOR THE STREET SIGNS MAY BE EITHER OF THE FOLLOWING:
A - EXTRUDED ALUMINUM BLADES WITH REFLECTIVE SHEETING
B - FLAT ALUMINUM BLADES WITH REFLECTIVE SHEETING

COLORS

THE SIGNS SHALL HAVE A REFLECTORIZED WHITE OR SILVER TEXT (STICK ON REFLECTIVE LETTERS) ON A REFLECTORIZED GREEN BACKGROUND. THE COLORS SHALL CONFORM WITH THOSE FOUND IN STANDARD COLOR TOLERANCE CHARTS AS APPROVED BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION.

LETTERING

LETTERS AND DIGITS SHALL CONFORM WITH THE STANDARD ALPHABETS FOR HIGHWAY SIGNS PRINTED BY THE FEDERAL HIGHWAY ADMINISTRATION.

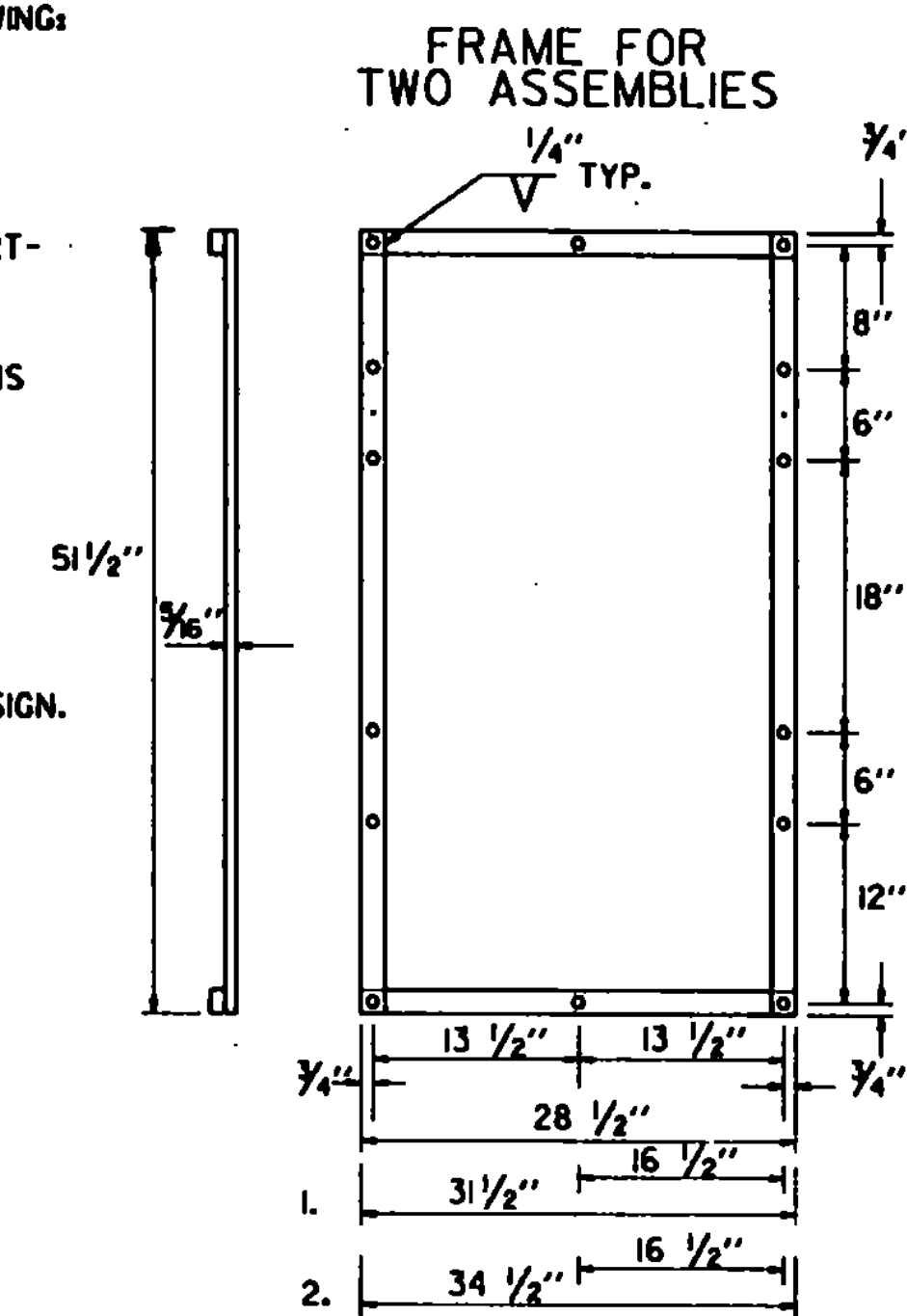
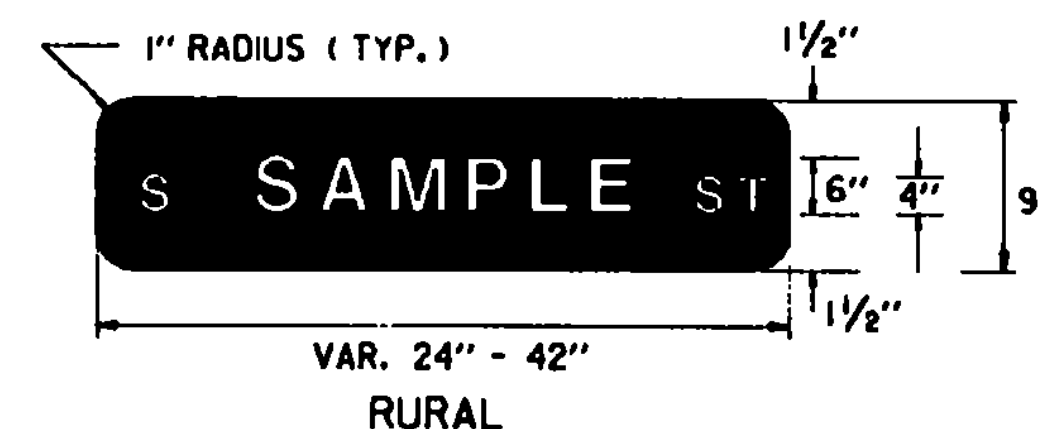
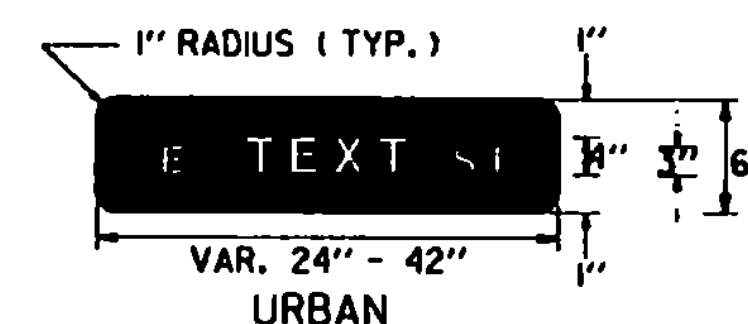
SPECIFICATIONS

THE SIGN SHALL MEET THE STANDARD STATE SPECIFICATIONS FOR "TRAFFIC SIGNS". THE MATERIAL FOR THE BLADES SHALL BE EITHER EXTRUDED ALUMINUM WITH A 0.25 INCH FLANGE THICKNESS AND A 0.090 INCH WEBB (MIN.) OR FLAT SHEET ALUMINUM WITH A MINIMUM THICKNESS OF 0.125 INCH. THE PREFERRED MOUNTING METHOD FOR STREET SIGNS IS THE POST TOP MOUNTING BRACKETS. HARDWARE FOR MOUNTING SIGNS TO POST SHALL BE SUBSIDIARY TO OTHER ITEMS. MOUNTING METHOD WILL BE AS SHOWN ON THE PLANS AND SHOULD HAVE A VERTICAL CLEARANCE OF 8 FEET TO THE BOTTOM OF THE SIGN. FOR POST TOP MOUNTINGS, SIGNS SHALL HAVE TEXT ON BOTH SIDES.

SIZES ARE AS FOLLOWS

RURAL AREAS - USE A 9 INCH HIGH BLADE IN LENGTHS OF 24", 30", 36" OR 42".
USE SERIES "B" LETTERING (MINIMUM) WITH 6 INCH HIGH LETTERS FOR STREET NAME, 4 INCH OTHER.
URBAN AREAS - USE A 6 INCH HIGH BLADE IN LENGTHS OF 24", 30", 36" OR 42".
USE SERIES "B" LETTERING (MINIMUM) WITH 4 INCH HIGH LETTERS FOR STREET NAME, 3 INCH OTHER.

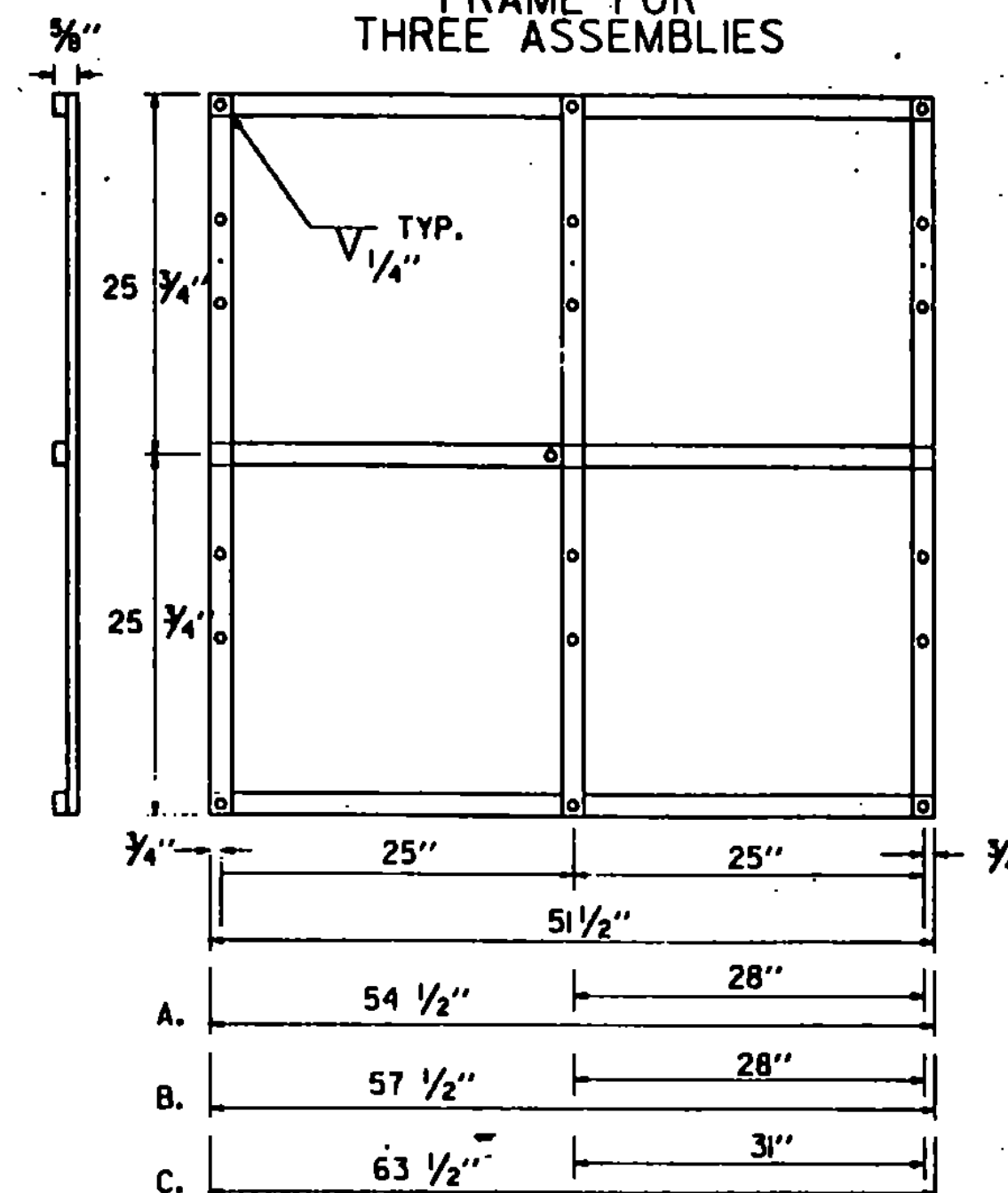
DESIGN SAMPLE



- NOTE:
1. WITH ONE 30" THREE DIGIT SIGN
 2. WITH TWO 30" THREE DIGIT SIGN

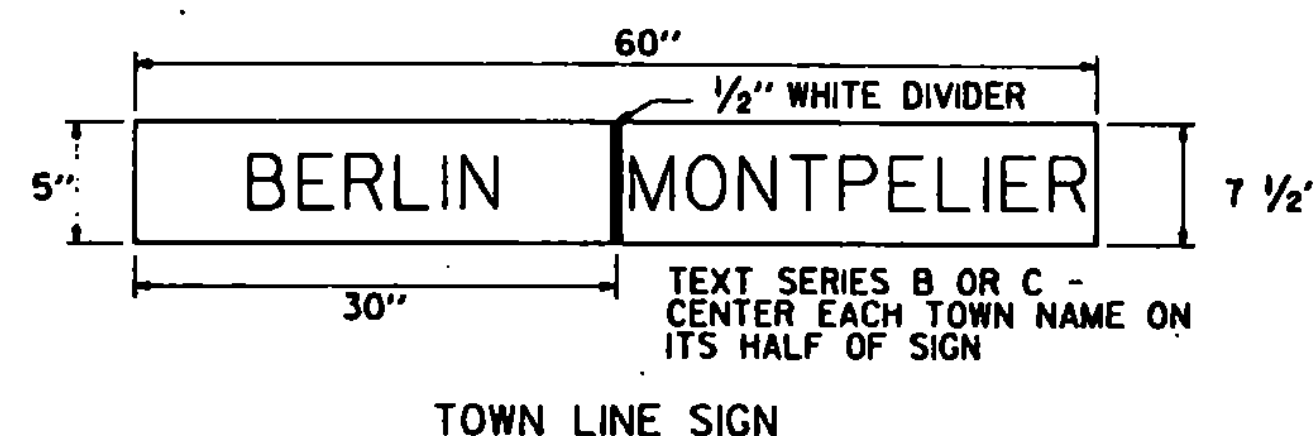
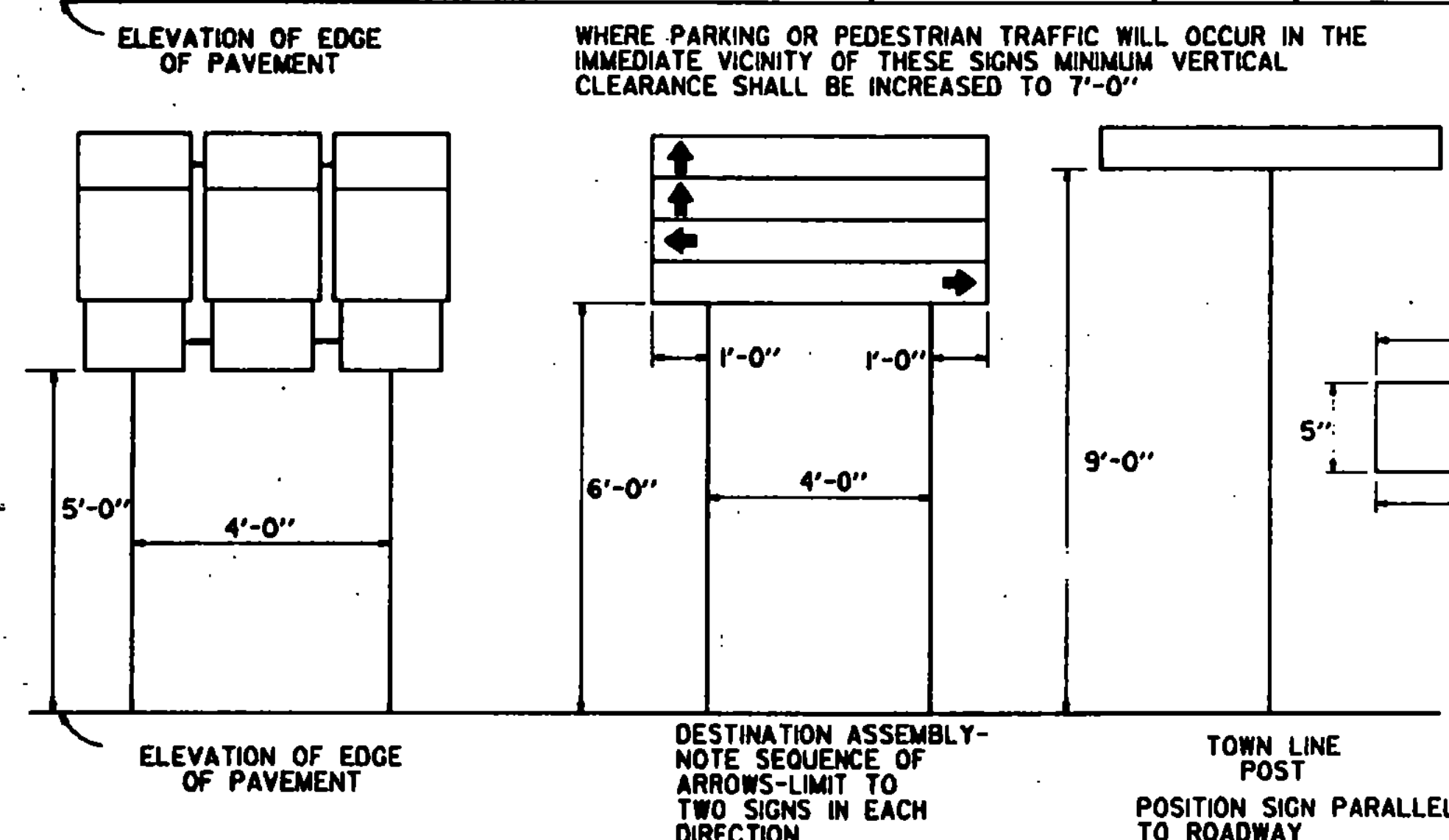
ROUTE MARKER ASSEMBLY FRAMES

FRAME FOR THREE ASSEMBLIES

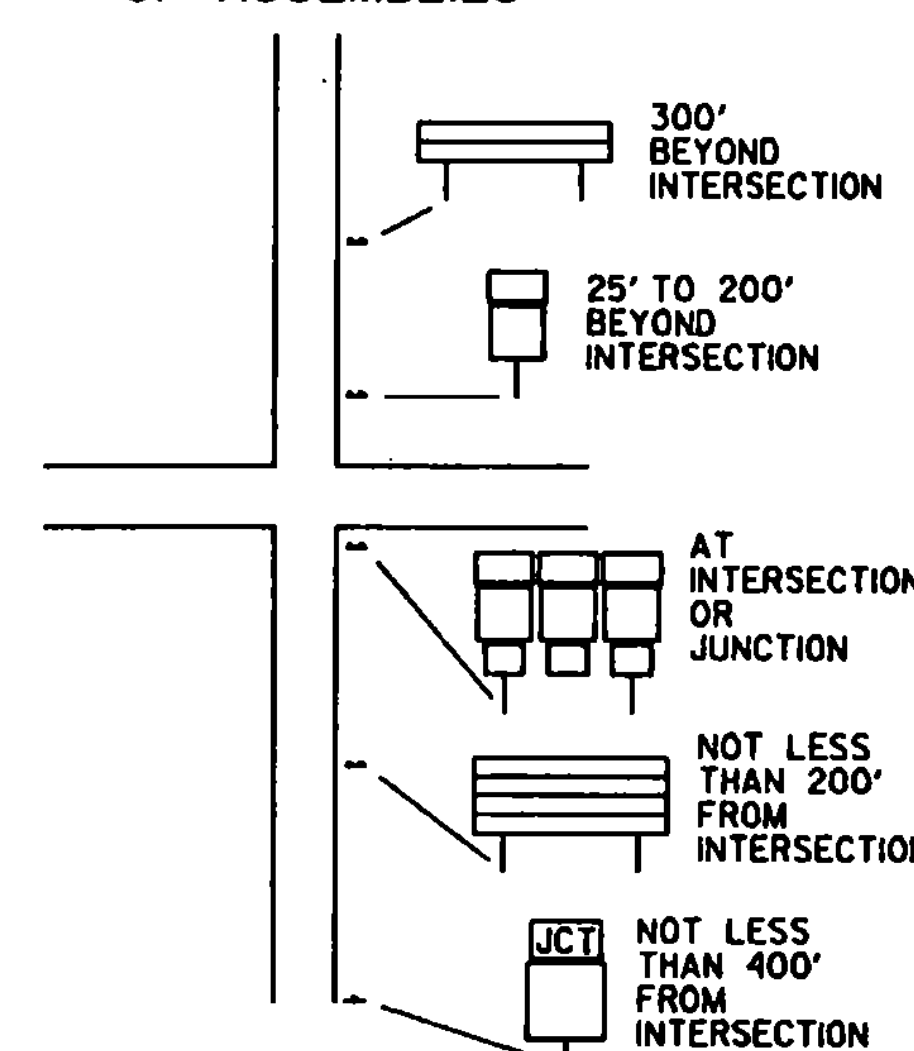


- NOTE:
- A. WITH ONE 30" THREE DIGIT SIGN IN AN OUTSIDE POSITION
 - B. WITH ONE 30" THREE DIGIT SIGN IN THE CENTER POSITION OR TWO SUCH SIGNS IN THE OUTSIDE POSITIONS
 - C. WITH THREE 30" THREE DIGIT SIGNS

STANDARD FRAMES SHALL BE 3/4" x 1 1/2" WROUGHT IRON WELDED. ALL HOLES SHALL BE 7/16" DIAMETER. FOR OTHER SIGN COMBINATIONS THAN ABOVE, THE FRAME DIMENSIONS AND HOLE SPACING SHALL BE MODIFIED AS NECESSARY. THE FRAME SHALL BE PAINTED WITH ONE COAT OF PRIMER AND A SECOND COAT OF GOOD GRADE BLACK PAINT.



TYPICAL LOCATION OF ASSEMBLIES



ROUTE AND DESTINATION SIGNS:

MATERIALS

THE SIGN BASE MATERIAL FOR STANDARD DESTINATION SIGNS SHALL BE HIGH DENSITY OVERLAP PLYWOOD 3/8 INCH THICK OR FLAT SHEET ALUMINUM 0.125 INCH THICK. THE REFLECTIVE MATERIAL SHALL BE GREEN REFLECTIVE SHEETING APPLIED TO THE ENTIRE BACKGROUND OF THE SIGN. THE TEXT SHALL BE CUT-OUT REFLECTORIZED WHITE OR SILVER LETTERS.

COLORS

DESTINATION SIGNS SHALL HAVE A REFLECTORIZED WHITE OR SILVER TEXT ON A REFLECTORIZED GREEN BACKGROUND.

LETTERING

LETTERS AND DIGITS SHALL CONFORM WITH THE STANDARD ALPHABETS FOR HIGHWAY SIGNS APPROVED BY THE NATIONAL JOINT COMMITTEE ON UNIFORM TRAFFIC CONTROL DEVICES.

SPECIFICATIONS

DESTINATION SIGNS SHALL MEET THE STATE SPECIFICATIONS FOR "TRAFFIC SIGNS". FOR DESIGNS, COLORS OR MATERIALS OF ROUTE MARKERS AND AUXILIARY MARKERS, SEE STANDARD SHEETS E-11, E-12, AND E-13.

REVISIONS AND CORRECTIONS

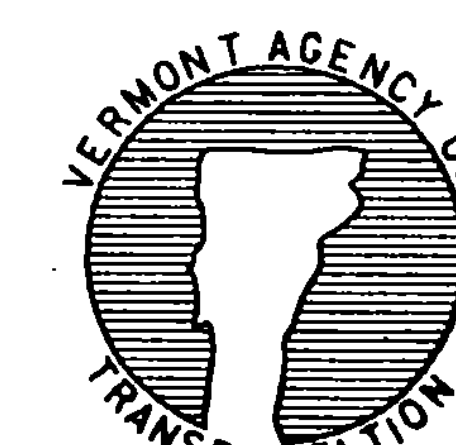
REVISIONS AND CORRECTIONS

12/1/82
ADDED 2 FRAME ASSEMBLY TO 2 POST ASSEMBLY
ADDED MINOR DESTINATION SIGN, MOUNTING HEIGHT
REVISED
2/10/83
SIGN HEIGHT CHANGED TO 7 FT.
FEB. 3, 1986 - UPDATED TO 1986
SPECIFICATIONS
DEC. 3, 1988 - MAJOR REVISIONS

APPROVED:

Dec 29, 1971
R.H. Cundell
CHIEF ENGINEER
E.H. Stickney
ASST. CHIEF ENGINEER
D.J. Mc Lane
HIGHWAY ENGINEER

GUIDE SIGNS

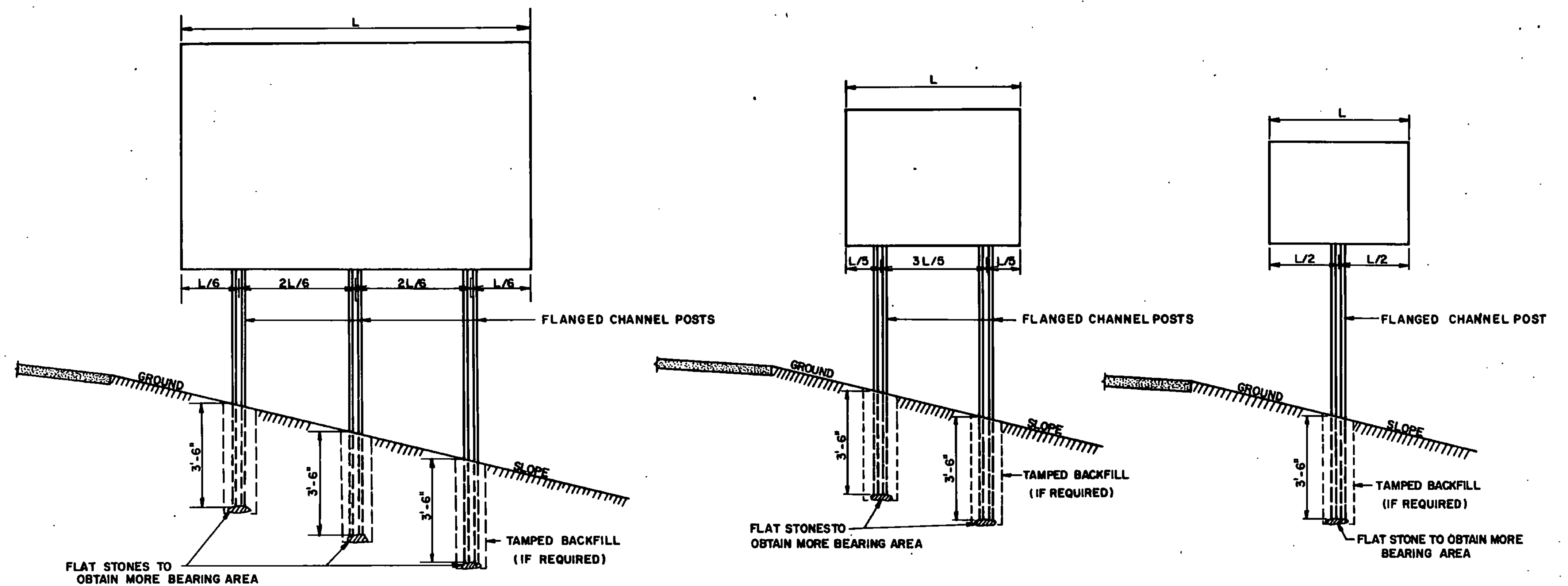


STANDARD E-23

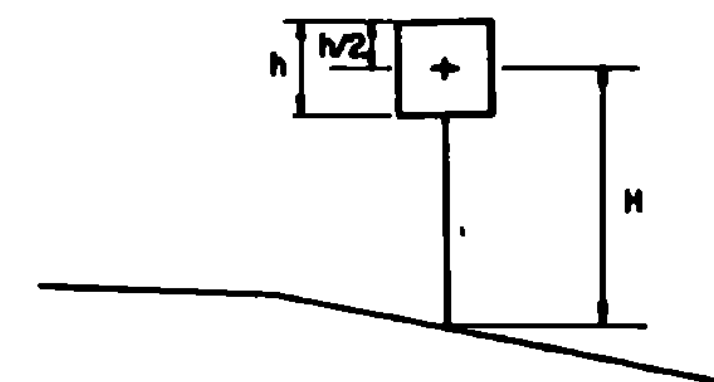
GENERAL NOTES

ALL MATERIAL SHALL BE AS SPECIFIED UNDER SECTION 675 - 675 - TRAFFIC SIGNS

CONSTRUCTION METHODS - POSTS MAY BE DRIVEN OR SET IN A DUG HOLE AND BACKFILLED. IF DRIVEN, A DRIVING CAP SHALL BE USED. IF SET IN A DUG HOLE, THE EXCAVATION AND BACKFILL WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED AS BEING INCLUDED IN UNIT PRICES FOR OTHER ITEMS IN THE CONTRACT. THE DUG HOLE INSTALLATION SHALL BE USED IN AREAS OF POOR SOIL CONDITIONS OR AS DIRECTED BY THE ENGINEER.



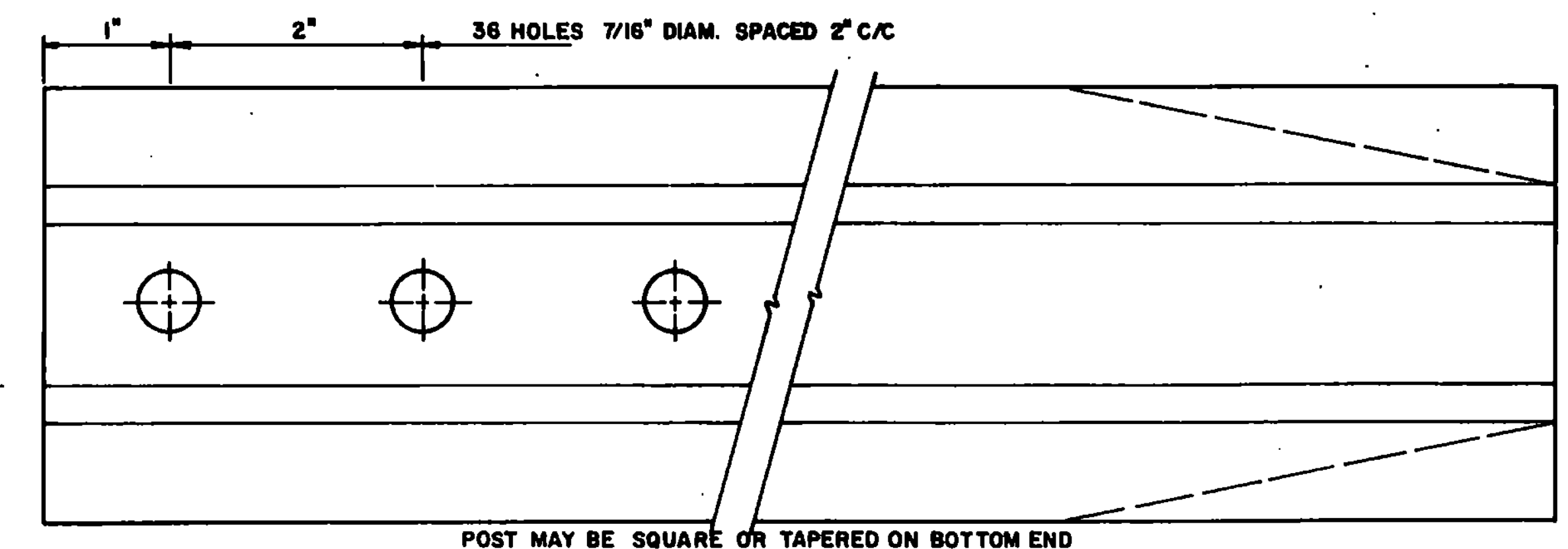
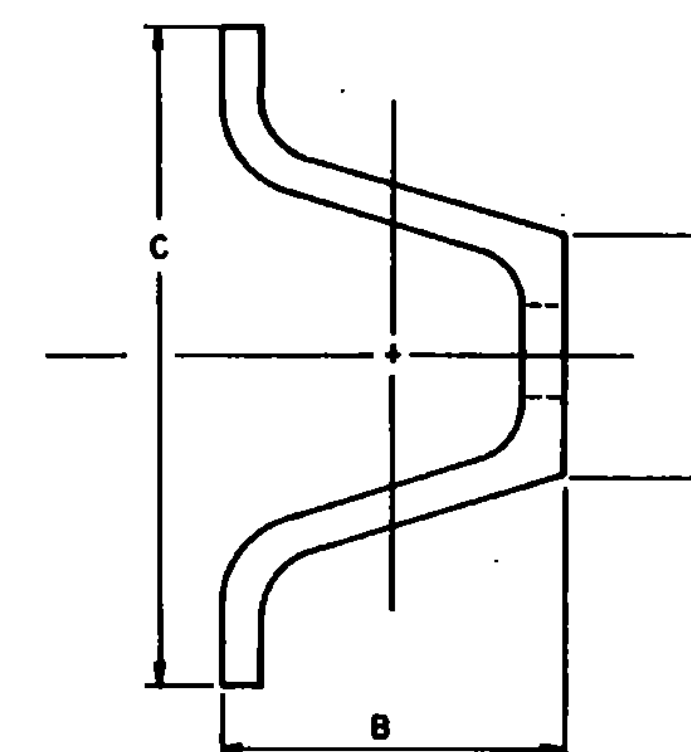
IN AREAS WHERE LEDGE ROCK IS ENCOUNTERED STEEL POSTS WILL BE SET AND GROUTED 12" DEEP IN THE LEDGE.



POST SELECTION CHART		
SIGN AREA (FT ²) x H (FT) ≤ Sv (SELECTION VALUE)		
POST SIZE	Sv	DESIGN CRITERIA
2 LB/FT.	62	WIND SPEED = 60 MPH (10-YEAR MEAN RECURRENCE INTERVAL) WIND PRESSURE = 12 PSF STEEL MIN YIELD Fy = 50,000 PSI ALLOWABLE STRESS = (1/4)0.55Fy
2 1/2 LB/FT.	77	
3 LB/FT.	107	

POST SIZE POUNDS PER LINEAR FOOT	DIMENSIONS			PLASTIC SECTION MODULUS, Z
	A	B	C	
2	1 9/32"	1 31/64"	3 1/16"	0.26 IN ³
2 1/2	1 9/32"	1 35/64"	3 1/16"	0.40 IN ³
3	1 5/16"	1 7/8"	3 1/2"	0.53 IN ³

SIMILAR DIMENSIONS ARE ACCEPTABLE, HOWEVER PLASTIC SECTION MODULUS VALUES MUST NOT BE EXCEEDED.

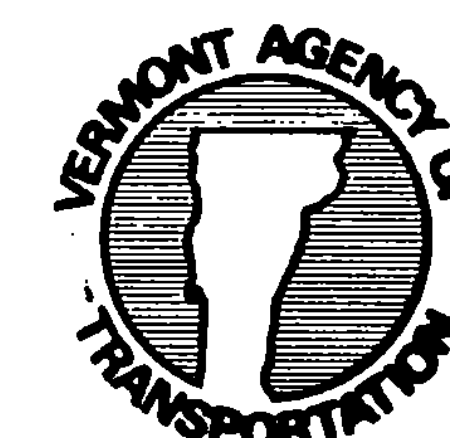


POST MAY BE SQUARE OR TAPERED ON BOTTOM END

REVISIONS AND CORRECTIONS
FEB. 8, 1978 - HEIGHT OF SIGNS ADDED.
DEC. 15, 1978 - RAIL STEEL DELETED
JAN. 8, 1981 - ADDED POST SIZE & SELECTION CHARTS;
REVISED NOTES & DIMENSIONS
FEB. 3, 1986 - UPDATED TO 1986
SPECIFICATIONS

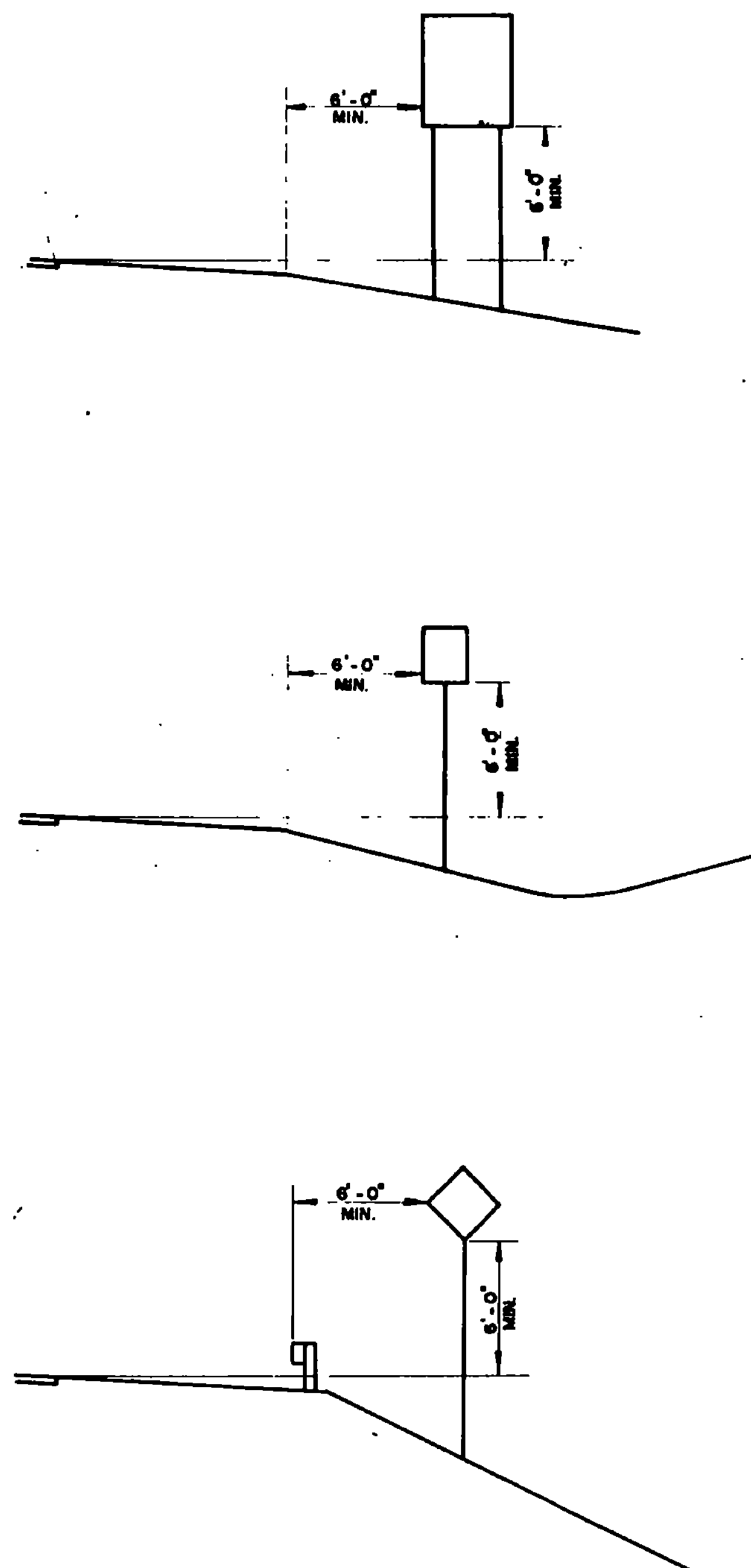
APPROVED
DATE *Nov 24, 1976*
CHIEF ENGINEER *C. H. Stickney*
ASST. CHIEF ENGINEER *R. O. Munn*
HIGHWAY ENGINEER *Loan C. Jones*

FLANGED CHANNEL STEEL SIGN SUPPORTS

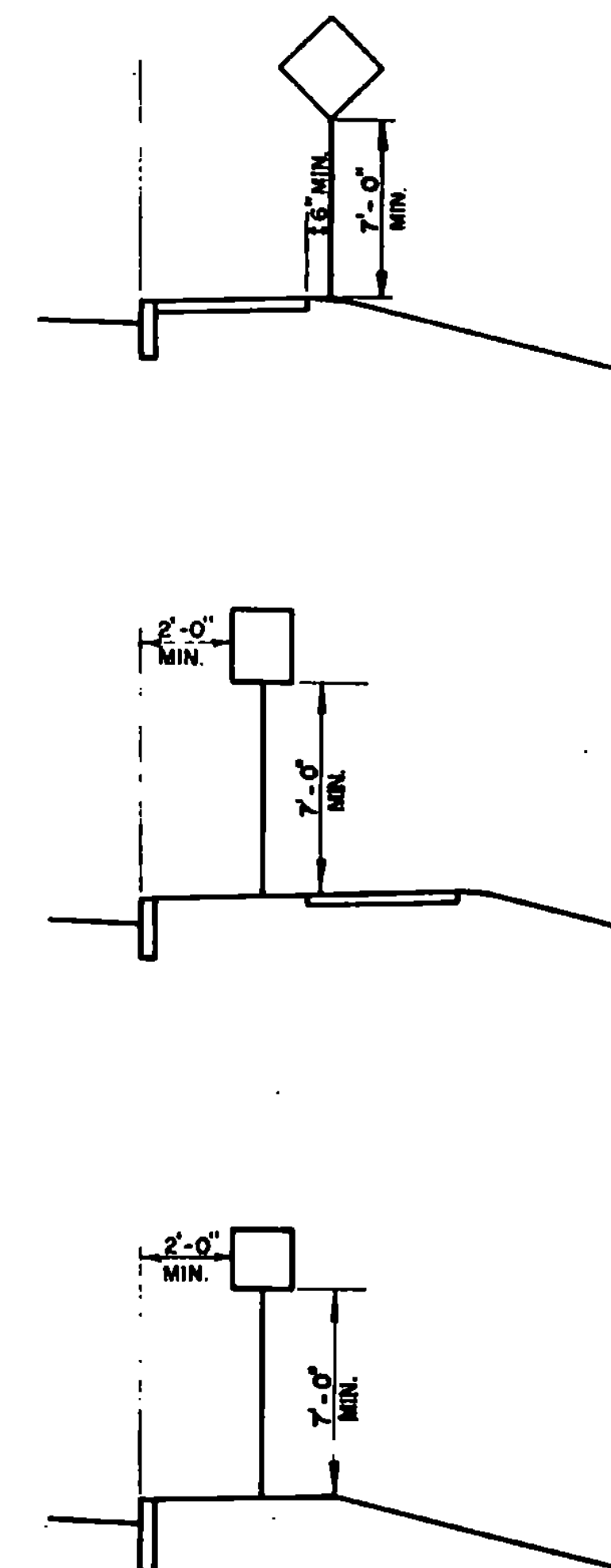


STANDARD
E-24-A

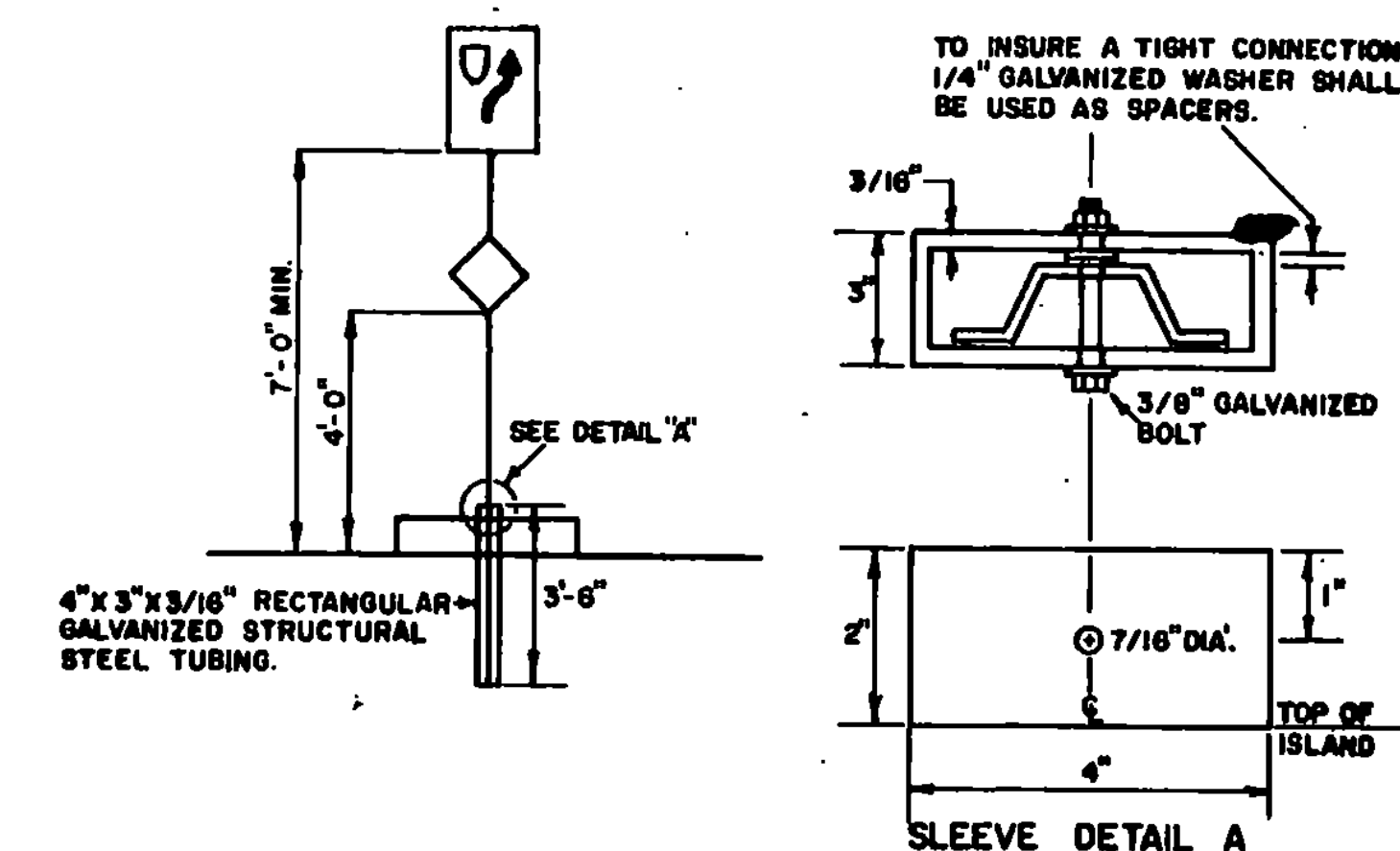
RURAL



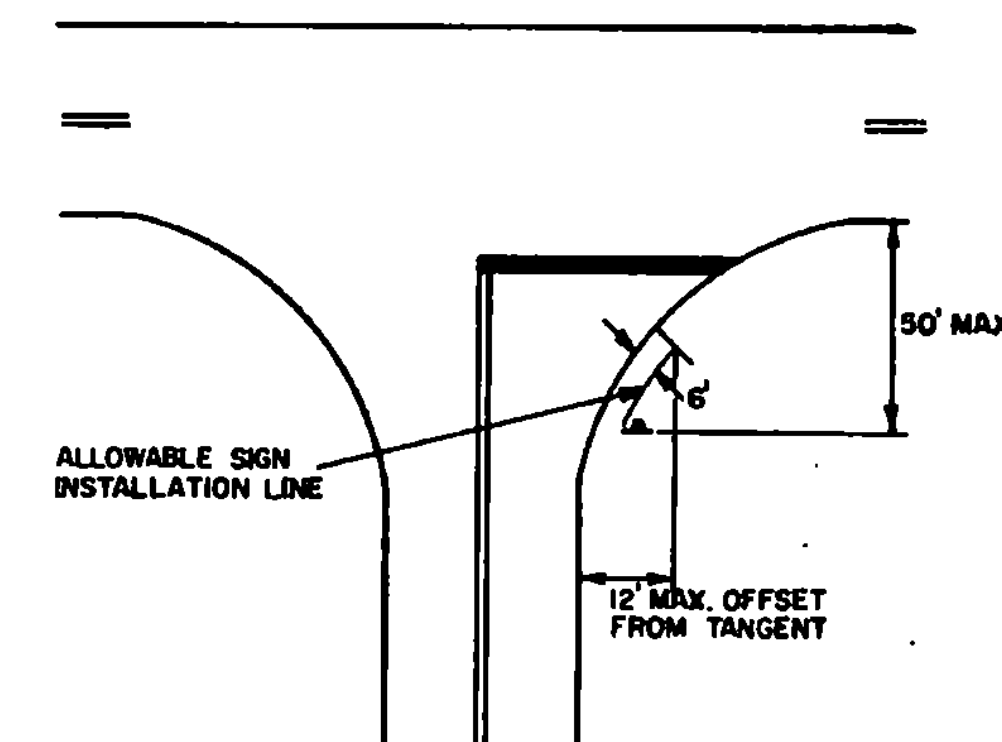
URBAN



WARNING SIGNS ON ISLAND IN THE LINE OF TRAFFIC



STOP OR YIELD SIGNS AT WIDE THROAT INTERSECTIONS



NOTES 1) IN BOTH RURAL AND URBAN LOCATIONS, IF A SECONDARY SIGN IS MOUNTED BELOW ANOTHER SIGN, THE MINIMUM CLEARANCE MAY BE REDUCED BY ONE FOOT.
2) IN RURAL AREAS WITH NO SHOULDER, THE MINIMUM LATERAL CLEARANCE SHOULD BE 12' FROM EDGE OF THE TRAVELED WAY.

REVISIONS AND CORRECTIONS
JAN. 23, 1978 - DIMENSION FROM SHOULDER TO SIGN CHANGED PER FHWA.
AUG. 25, 1981 - ADDED STOP AND ISLAND DETAILS, REVISED CURB OFFSET
FEB. 3, 1988 - UPDATED TO 1986 SPECIFICATIONS

APPROVED
Dec. 29, 1971

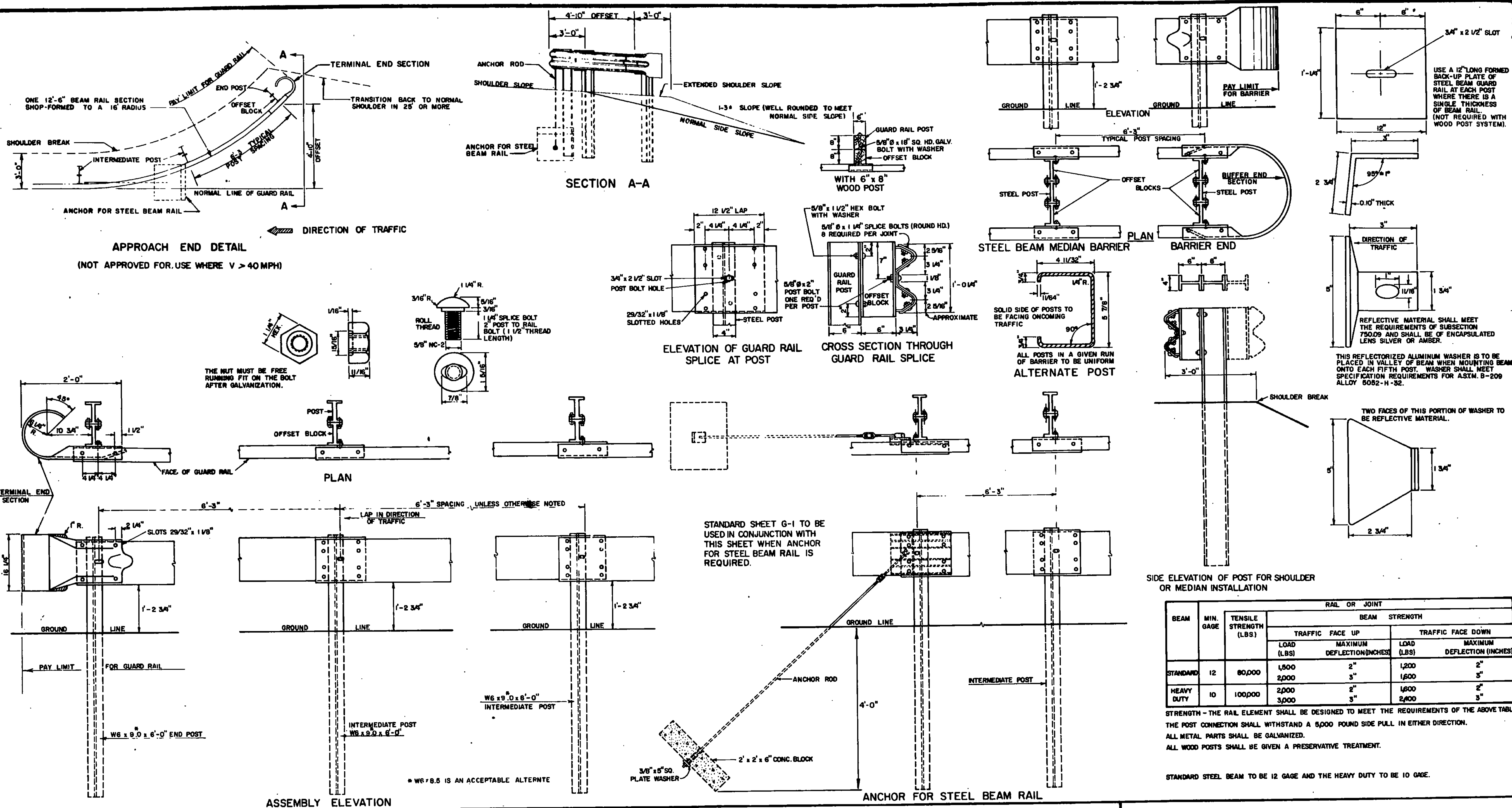
R. H. Arnold
CHIEF ENGINEER
E. H. Stickney
ASST. CHIEF ENGINEER
G. M. Lane
HIGHWAY ENGINEER

STANDARD SIGN PLACEMENT CONVENTIONAL ROAD

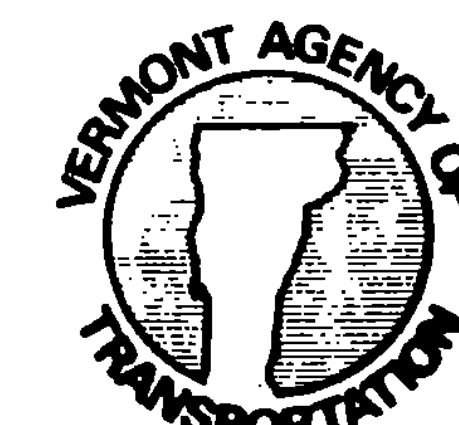


STANDARD

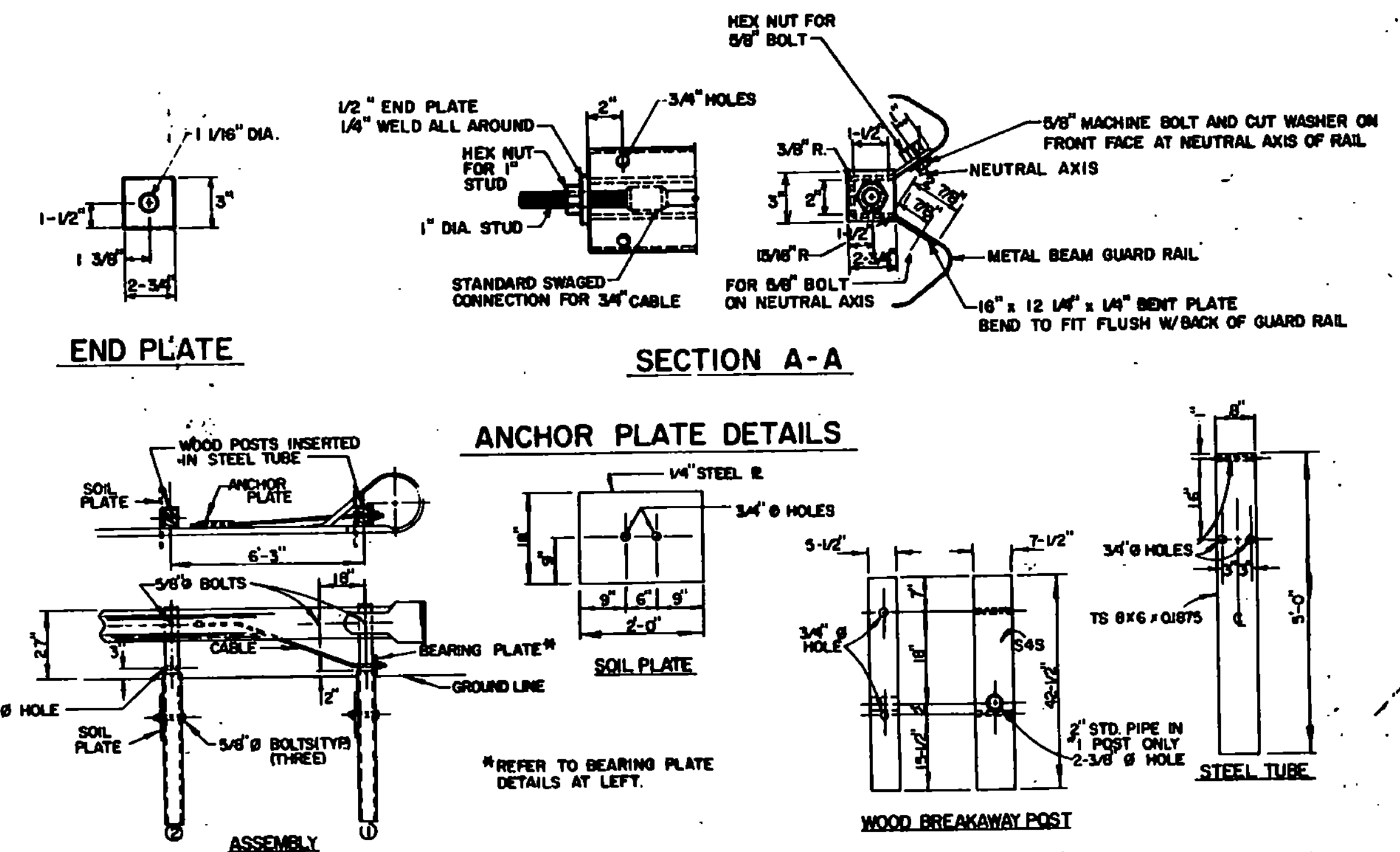
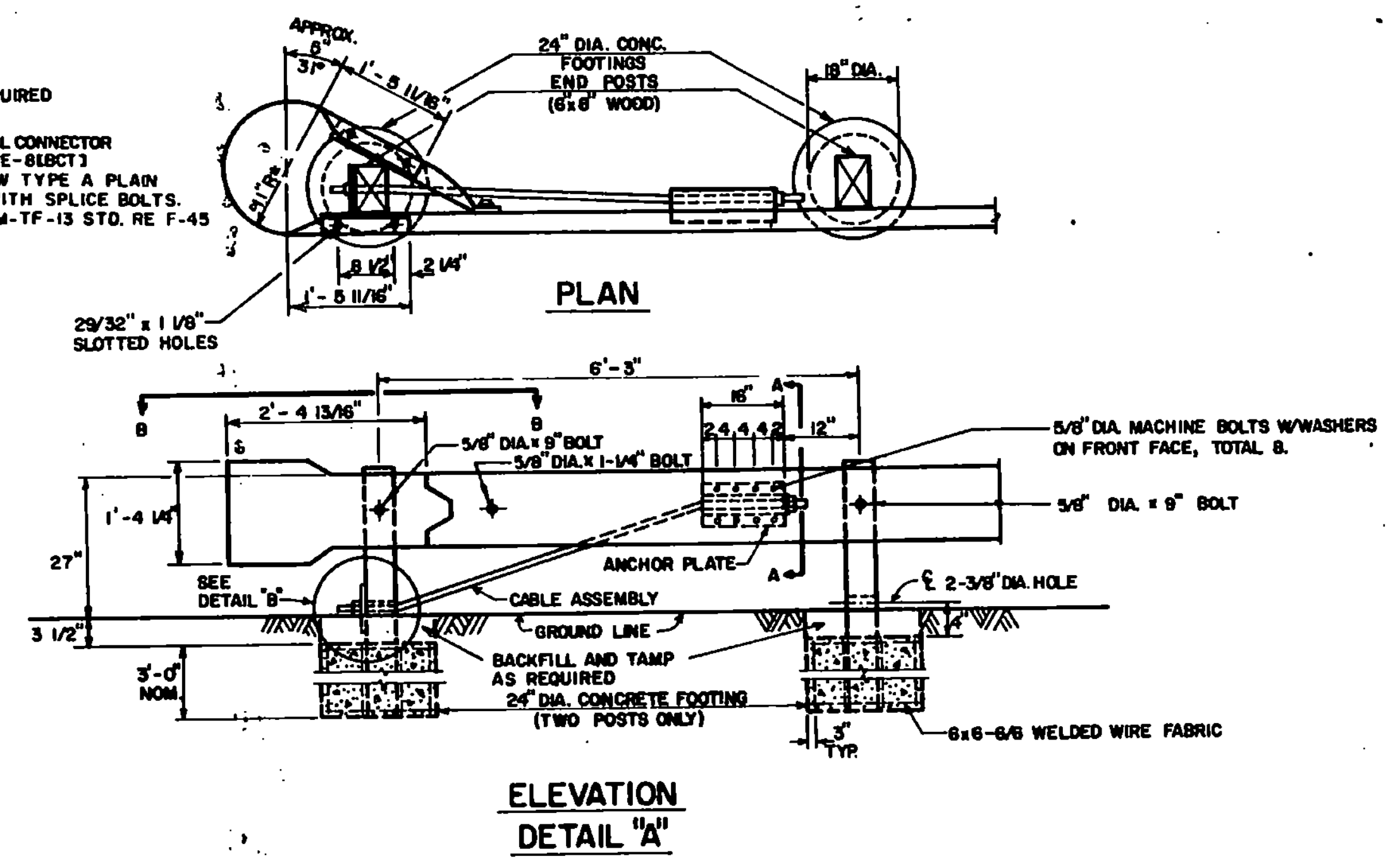
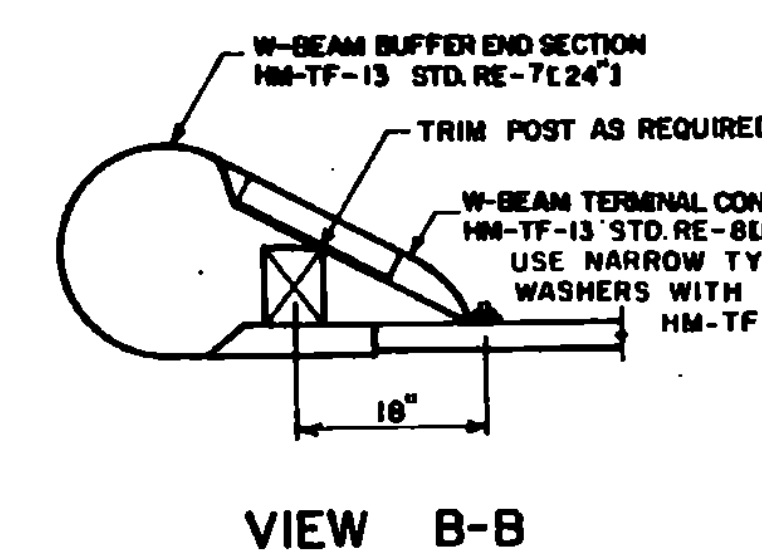
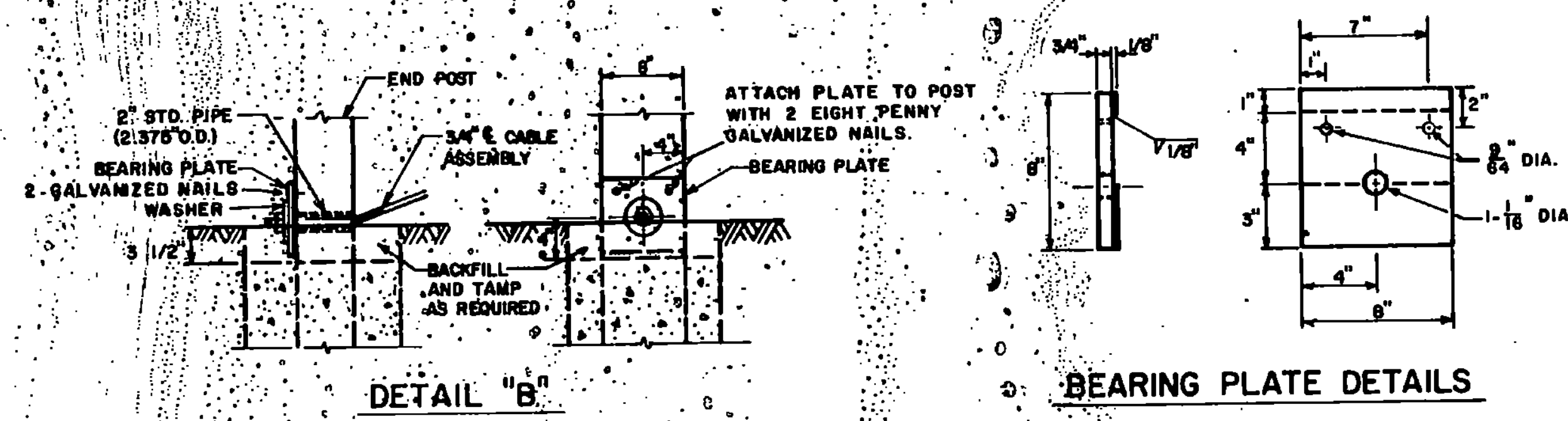
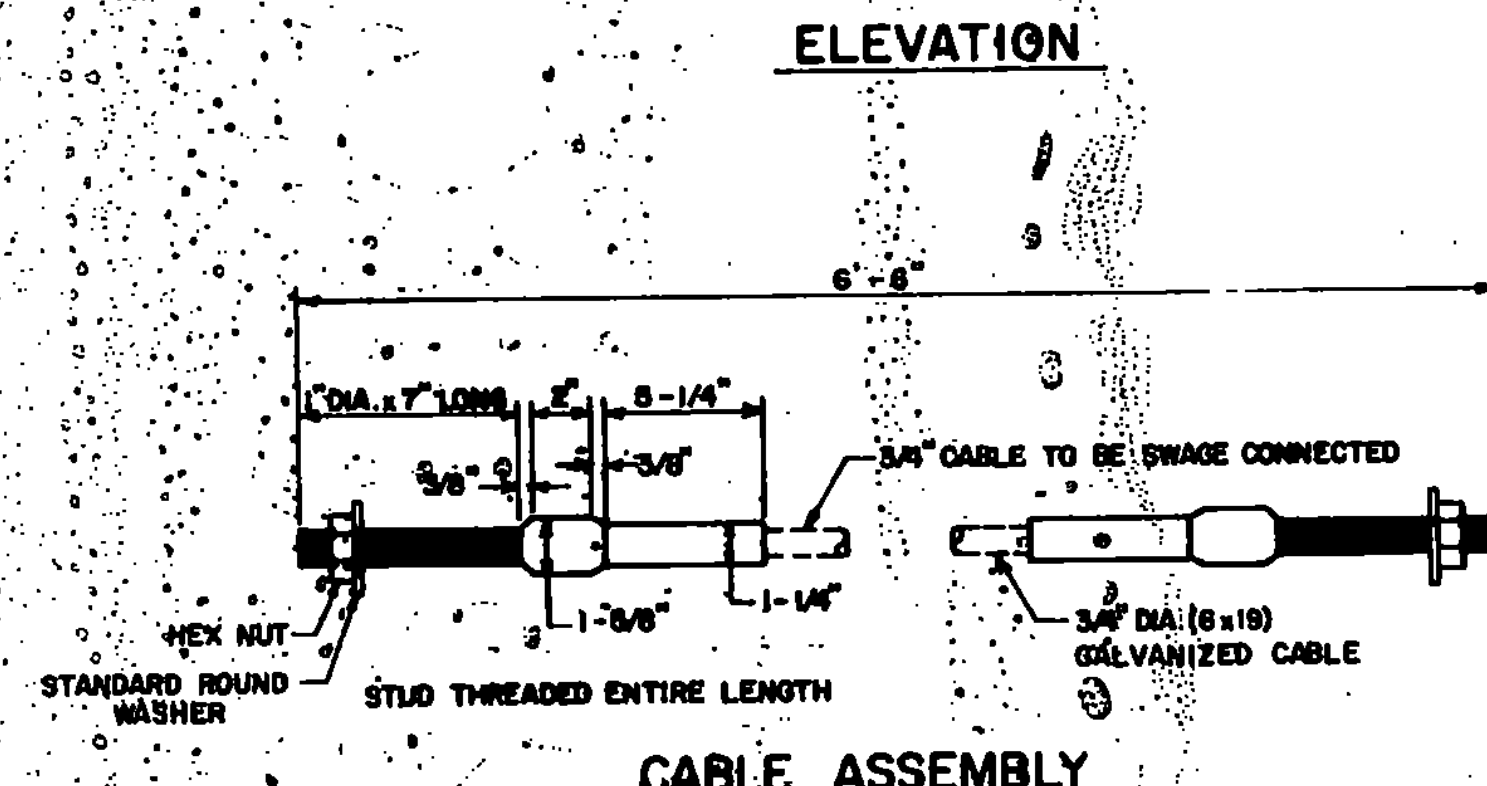
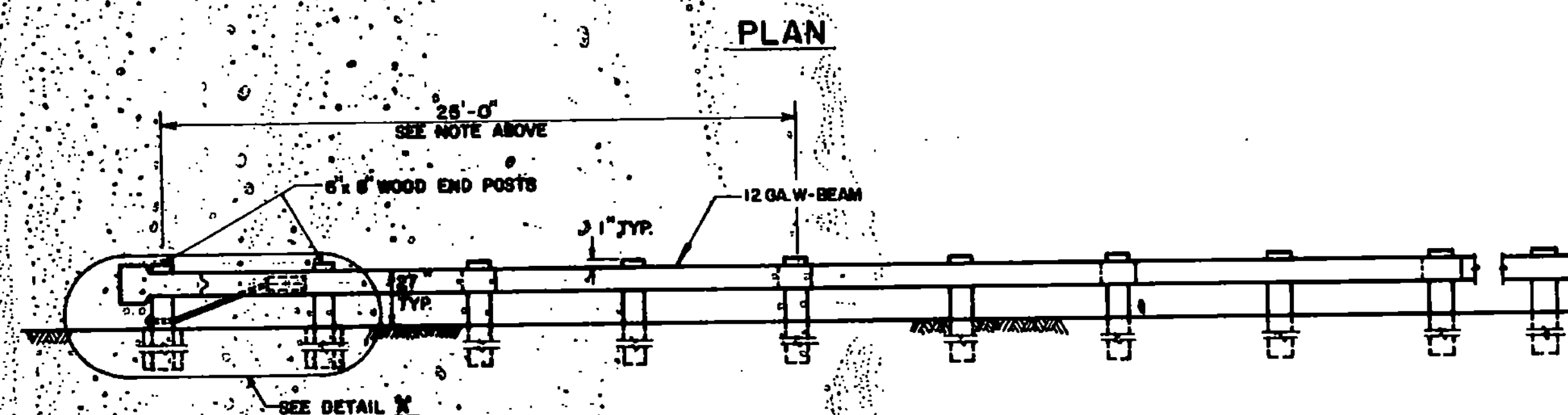
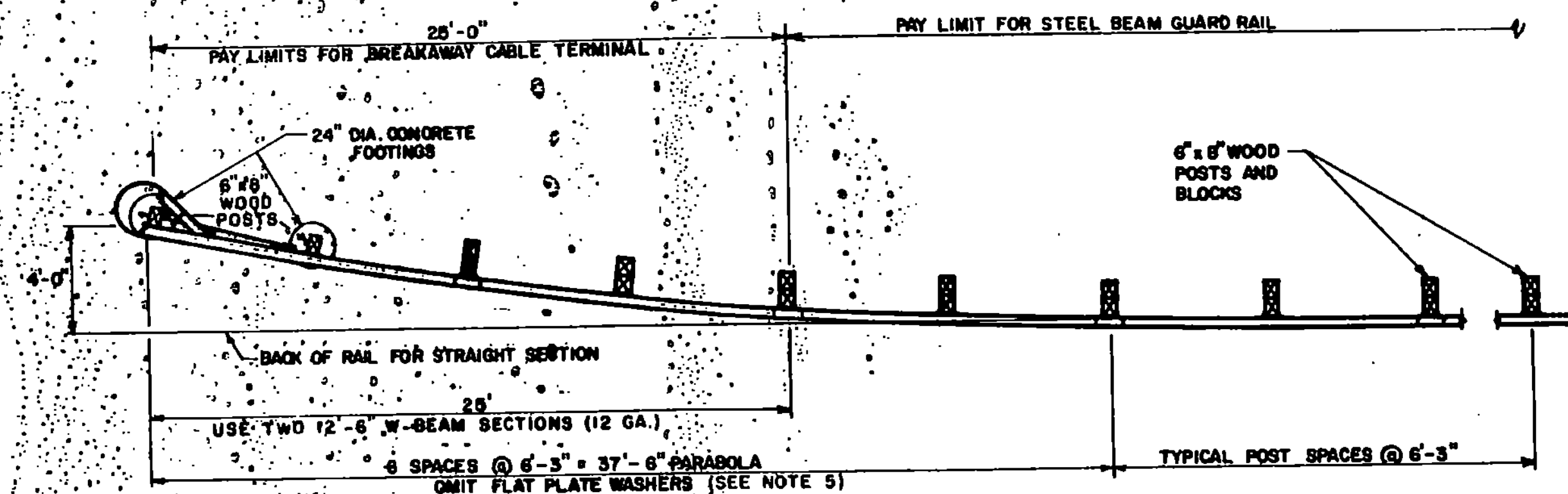
E-29



STEEL BEAM GUARD RAIL
HEAVY DUTY STEEL BEAM GUARD RAIL
STEEL BEAM MEDIAN BARRIER
ANCHOR FOR STEEL BEAM RAIL



STANDARD
G-1d



- NOTES:
1. OTHER ANCHOR CABLE ASSEMBLIES MAY BE USED. MINIMUM BREAKING STRENGTH OF ASSEMBLY SHOULD BE 40,000 LBS.
 2. CONCRETE FOOTINGS ARE CLASS B. IN SANDY FILL AREAS, CONSIDERATION TO INCREASING SIZE OF END FOOTING IS SUGGESTED.
 3. A DOUBLE WRAP OF ASPHALT TREATED FELT AROUND END POSTS BEFORE CONCRETE PLACEMENT WILL FACILITATE REPLACEMENT OF DAMAGED POSTS.
 4. STANDARD SHEET G-1 WILL BE USED IN CONJUNCTION WITH THIS STANDARD.
 5. FLAT PLATE WASHERS ARE NOT USED ON NEW INSTALLATIONS. ON RETROFIT INSTALLATIONS THE FLAT PLATE WASHERS MUST BE OMITTED WITHIN THE 37'-6" PARABOLIC SECTION TO ENSURE PROPER PERFORMANCE UNDER IMPACT.
 6. FOR ADDITIONAL DETAILS ON HARDWARE SEE THE LATEST EDITION OF AASHTO-AGC-ARTBA PUBLICATION "A GUIDE TO STANDARDIZED HIGHWAY BARRIER RAIL HARDWARE."

ALTERNATE FOUNDATION DETAILS

BREAKAWAY CABLE TERMINAL WITH WOOD POSTS

REVISIONS AND CORRECTIONS

APR 21, 1977	BREAKAWAY DETAIL LOWERED TO GROUND LINE
JAN 19, 1981	ALTERNATE FOUNDATION DETAILS ADDED, MISCELLANEOUS CLARIFICATION OF NOTES AND DETAILS
AUG 12, 1981	REMOVED BEARING PLATE DETAIL FROM ALTERNATE FOUNDATION DETAILS
AUG 27, 1984	BACK-UP PLATE REQUIREMENT DELETED, NEW NOTE 5 ADDED
DEC 21, 1984	REVISED NOTE 6, NEW NOTE 6 ADDED
OCT 31, 1985	REMOVED 25' W-BEAM SECTION, REVISED TO CONFORM W/86 SPECS

APPROVED: DATE July 21, 1976

E. H. Stuckney
CHIEF ENGINEER

R. O. Munn
ASST. CHIEF ENGINEER

Louie C. Jones
HIGHWAY ENGINEER

STANDARD

G-14