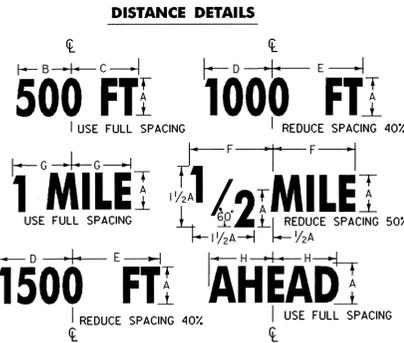


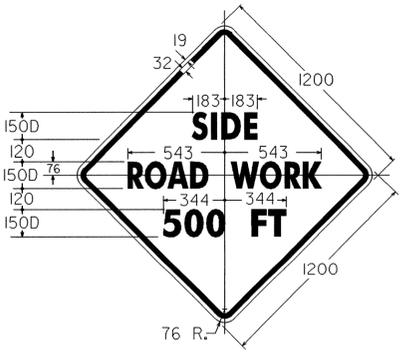
W21-4 * SEE DISTANCE DETAILS



COLORS
TEXT AND BORDER - BLACK (NON-REFL.)
BACKGROUND - ORANGE (REFL.)

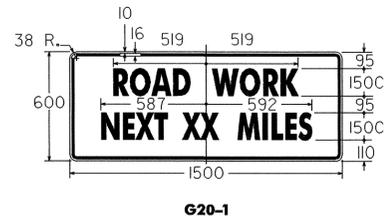
SIGN	DIMENSIONS (mm)									
	A	B	C	D	E	F	G	H	J	K
MIN.	750	13	19	1000	73	67	171	178	183	48
STD.	900	16	22	1250	89	83	213	225	229	57
SPECIAL	1200	19	32	1750	121	114	297	316	321	76

DIMENSIONS (mm)							
A	B	C	D	E	F	G	H
150C	264	267	286	305	318	232	267
175C	305	310	333	356	370	270	311
125D	259	275	295	286	241	276	
150D	310	329	324	343	343	300	333
175D	362	384	378	400	400	332	394
200D	413	438	432	457	457	365	443



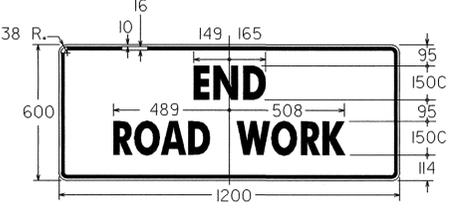
VC-839

OR LEFT - 451
RIGHT - 559
500 - 375
FT - 205



G20-1

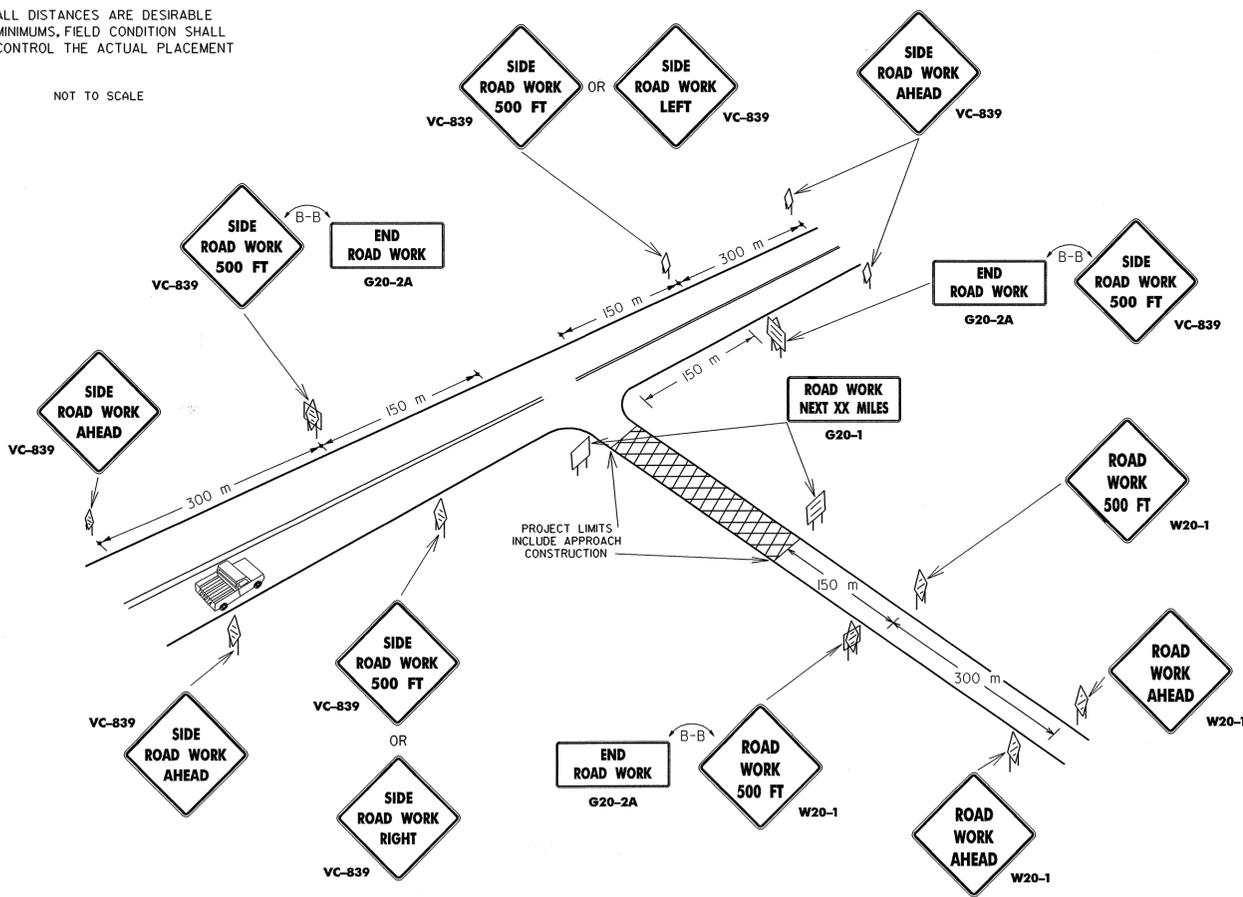
THIS SIGN TO BE USED WHEN PROJECT LENGTH EXCEEDS 3 km OR AS REQUESTED BY THE RESIDENT ENGINEER. SHOW MILEAGE TO NEAREST 1/4 MILE* USING FRACTIONS, NOT DECIMALS. HAND LETTERING OF MILEAGE WILL NOT BE ALLOWED.



G20-2A

ALL DISTANCES ARE DESIRABLE MINIMUMS. FIELD CONDITION SHALL CONTROL THE ACTUAL PLACEMENT

NOT TO SCALE



SIDE ROAD CONSTRUCTION APPROACH SIGNING (TO BE USED WHEN CONSTRUCTION IS UP TO 300m FROM THE INTERSECTION)

NOTES

THE 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. FOR ON-PROJECT CONSTRUCTION SIGNS, REFER TO APPROPRIATE STANDARD SHEETS.

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 SHALL BE MADE TO THE 'MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES', FOR THE PRINCIPLES, PROCEDURES, AND STANDARDS THAT WILL BE REQUIRED IN CONNECTION WITH ADVANCED WARNING AND ON-PROJECT CONSTRUCTION SIGNS AND BARRICADES. THE SIGNS SHOWN IN E-101M AND E-102M REPRESENT A SAMPLE OF THOSE MORE COMMONLY USED.

LOCATION

THE SIGNS SHALL BE LOCATED AS DETAILED ON THIS SHEET OR AS 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 INTENDED TO INDICATE THE SEQUENCE TO BE FOLLOWED, AND THE APPROXIMATE SPACING TO BE OBSERVED. THE ENGINEER SHALL DETERMINE THE EXACT LOCATIONS.

DESIGN

LETTERS, DIGITS, ARROWS SPACING AND TEXT DIMENSIONS SHALL CONFORM WITH THE 'STANDARD ALPHABET FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS' AND DESIGNS PRESCRIBED IN THE STANDARD HIGHWAY SIGNS AS SPECIFIED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES ADOPTED BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMIN..

MATERIALS

THE SIGN BASE MATERIAL USED FOR THE SIGNS ON THIS SHEET MAY BE ANY OF THE FOLLOWING, WITH MINIMUM THICKNESS AS NOTED.
FLAT SHEET ALUMINUM 3.18 mm
HIGH DENSITY OVERLAYED PLYWOOD 13mm, 16mm OR 19mm
GALVANIZED SHEET STEEL 2.77mm

REFLECTORIZATION

ALL REFLECTORIZED MATERIAL SHALL CONSIST OF TYPE 118 OR TYPE 111 SHEETING.

COLORS

THE COLORS 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. COLORS SHOWN ON THIS SHEET CONSIST OF BLACK TEXT AND BORDER ON A REFLECTORIZED ORANGE BACKGROUND.

INSTALLATION

THE SIGNS SHALL BE ERECTED BEFORE THE START OF ANY WORK AND SHALL BE COVERED UNTIL WORK COMMENCES. DURING PERIODS OF INACTIVITY, OR UPON COMPLETION OF THE WORK, SIGNS MAY BE REMOVED UPON COMPLETION OF THE WORK AT THE DISCRETION OF THE ENGINEER. EACH SIGN SHALL BE ERECTED IN A NEAT AND WORKMANLIKE MANNER ON POSTS SET SECURELY IN THE GROUND. THE BOTTOM OF A SIGN SHALL BE AT LEAST 2100 mm ABOVE THE EDGE OF PAVEMENT, AND THE NEAREST EDGE OF A SIGN SHALL BE AT LEAST 1800 mm OUTSIDE THE SHOULDER POINT, 1200 mm OUTSIDE GUARD RAIL, OR 600 mm OUTSIDE CURBING OR SIDEWALK. THE INSTALLATION OF SIGNS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER. IN URBAN AREAS, THE BOTTOM OF THE SIGN SHALL BE AT LEAST 2100 mm 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, INSTALLING, 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. DURING ALL PHASES OF CONSTRUCTION THE REQUIREMENTS SET FORTH IN THE 'MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES' SHALL BE MET. WHEN THE PROJECT IS CLOSED DOWN FOR TEMPORARY PERIODS THE SIGNS SHALL BE COVERED IN A WORKMANLIKE MANNER.

SIGN COVERS

SIGN COVERS SHALL CONSIST OF A PANEL PAINTED FLAT BLACK, THE SAME SIZE AS THE SIGN IT COVERS. THE PANEL SHALL BE OF WOOD, PLYWOOD, HARDBOARD OR ANY MATERIAL SATISFACTORY TO THE ENGINEER. NO MATERIAL WILL BE APPROVED THAT WILL DETERIORATE BY EXPOSURE TO THE WEATHER DURING THE PROJECT. MOUNTING OF THE PANEL SHALL BE DONE IN SUCH A WAY AS NOT TO DAMAGE THE SIGN FACE MATERIAL. CONTRACTORS SHALL COORDINATE THEIR SIGNING ACTIVITIES WITH OTHER CONTRACTORS WITHIN THE PROJECT LIMITS, AS DIRECTED BY THE REGIONAL CONSTRUCTION ENGINEER.

SIGN POSTS

WHERE CONSTRUCTION SIGN INSTALLATIONS ARE NOT PROTECTED BY GUARD RAIL OR OTHER APPROVED TRAFFIC BARRIERS, THE POSTS ON WHICH THE SIGNS ARE MOUNTED SHALL BE YIELDING METAL POSTS AS DESIGNATED IN THE E SERIES OF STANDARD DRAWINGS OR YIELDING WOODEN POSTS IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS: WOODEN POSTS ARE ACCEPTABLE FOR USE WITH CONSTRUCTION SIGNS. THESE POSTS SHALL HAVE A UNIFORM CROSS-SECTION AND SHALL BE MADE FROM GRADE 2, AIR-DRYED SOUTHERN YELLOW PINE OR ANOTHER EQUIVALENT SOFTWOOD. AN ACCEPTABLE EQUIVALENT SOFTWOOD SHALL HAVE AN EXTREME FIBER IN BENDING "Fb" DESIGN VALUE NOT TO EXCEED 8700 kPa AND HORIZONTAL SHEAR "Fv" DESIGN VALUE NOT TO EXCEED 620 kPa. SPECIFICATION: "DESIGN VALUES FOR WOOD CONSTRUCTION" AND RELATED SUPPLEMENT, DATED 1986.

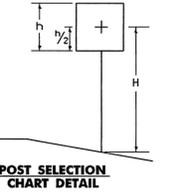
AS ESTABLISHED BY THE NATIONAL FOREST PRODUCTS ASSOCIATION IN THEIR NATIONAL DESIGN THE FOLLOWING ARE CONSIDERED TO BE ACCEPTABLE WOODEN POSTS:

- 100 x 100 (ACTUAL DIMENSIONS ARE 90 x 90)
A) ACCEPTABLE FOR SINGLE OR DUAL POSTS INSTALLATION WITH NO MODIFICATIONS.
- 100 x 150 (ACTUAL DIMENSIONS ARE 90 x 140)
A) ACCEPTABLE FOR SINGLE POST INSTALLATIONS ONLY WHEN MODIFIED BY DRILLING TWO 38 mm DIAMETER HOLES, ONE AT 100 mm AND THE OTHER 460 mm ABOVE THE GROUND LINE AND PERPENDICULAR TO THE ROADWAY CENTERLINE.
- 150 x 150 (ACTUAL DIMENSIONS ARE 140 x 140)
A) ACCEPTABLE FOR SINGLE POST INSTALLATIONS ONLY WHEN MODIFIED BY DRILLING TWO 51 mm DIAMETER HOLES, ONE AT 100 mm AND THE OTHER AT 460 mm ABOVE THE GROUND LINE AND PERPENDICULAR TO ROADWAY CENTERLINE.
- 150 x 200 (ACTUAL DIMENSIONS ARE 140 x 190)
A) ACCEPTABLE FOR SINGLE POST INSTALLATIONS ONLY WHEN MODIFIED BY DRILLING TWO 76 mm DIAMETER HOLES, ONE AT 100 mm AND THE OTHER AT 460 mm ABOVE THE GROUND LINE AND PERPENDICULAR TO THE ROADWAY CENTERLINE.

ADDITIONAL DESIGN CRITERIA:

THE LONGER DIMENSION OF THE POST(S), SUCH AS THE 150 mm DIMENSION OF THE 100 x 150 POST, SHALL BE PLACED PARALLEL TO THE ROADWAY CENTERLINE. ALL WOODEN POSTS SHALL HAVE AN EMBEDMENT DEPTH OF 1200 mm. NO CROSS-BRACING OR BACK-BRACING TO KEEP THE POSTS PLUMB WILL BE ALLOWED. CONCRETE FOUNDATIONS COLLARS OR SOIL BEARING PLATES ARE NOT PERMITTED. CONSTRUCTION SIGNS SHALL BE PLACED ON TWO OR MORE POSTS WHEN ANY OF THE FOLLOWING CONDITIONS GOVERN:
A) THE SIGN WIDTH (HORIZONTAL DIMENSIONS FOR DIAMOND SHAPED SIGNS) EXCEEDS 1050 mm.
B) THE EXPOSED SIGN AREA OF ANY SINGLE SIGN OR ASSEMBLY EXCEEDS 1.125 m².
C) THE S_v OF A SINGLE POST IS EXCEEDED. (SEE THE POST SELECTION CHART BELOW)

WOOD POST SELECTION CHART		
SIGN AREA (m ²) X HEIGHT (m) < S _v (SELECTION VALUE)	S _v	DESIGN CRITERIA:
100 X 100	1.54	WIND SPEED = 100km/h (10-YEAR MEAN OCCURENCE INTERVAL)
100 X 150	3.51	WIND PRESSURE = 740 Pa
150 X 150	5.17	ALLOWABLE BENDING STRESS F _b = 9700 kPa
150 X 200	9.30	



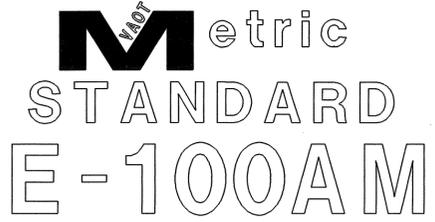
OTHER STDS. REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS
FEB 2, 1998 - DATE OF ORIGINAL ISSUE

APPROVED
[Signature]
DIRECTOR OF PROJECT DEVELOPMENT
[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

SIDE ROAD CONSTRUCTION APPROACH SIGNS



NOTES CONT.

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, DEFACTED OR DIRTY SIGNS SHALL BE REPAIRED, CLEANED OR REPLACED AS ORDERED BY THE ENGINEER.

GENERAL

THE COST OF FURNISHING, INSTALLING, MAINTAINING AND REMOVING ALL CONSTRUCTION APPROACH SIGNS WILL BE CONSIDERED INCIDENTAL 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. DURING ALL PHASES OF CONSTRUCTION, THE REQUIREMENTS SET FORTH IN THE 'MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES' SHALL BE MET.

SIGN COVERS

SIGN COVERS SHALL CONSIST OF A PANEL PAINTED FLAT BLACK THAT IS THE SAME SIZE AS THE SIGN IT COVERS. THE PANEL SHALL BE OF WOOD, PLYWOOD, HARDBOARD OR ANY MATERIAL SATISFACTORY TO THE ENGINEER. NO MATERIAL WILL BE APPROVED THAT WILL DETERIORATE BY EXPOSURE TO THE WEATHER DURING THE PROJECT. MOUNTING OF THE PANEL SHALL BE DONE IN SUCH A WAY AS NOT TO DAMAGE THE SIGN FACE MATERIAL.

CONTRACTORS SHALL COORDINATE THEIR SIGNING ACTIVITIES WITH OTHER CONTRACTORS WITHIN THE PROJECT LIMITS, AS DIRECTED BY THE REGIONAL CONSTRUCTION ENGINEER.

SIGN POSTS

WHERE CONSTRUCTION SIGN INSTALLATIONS ARE NOT PROTECTED BY GUARD RAIL OR OTHER APPROVED TRAFFIC BARRIERS, THE POSTS ON WHICH THE SIGNS ARE MOUNTED SHALL BE YIELDING METAL POSTS AS DESIGNATED IN THE E SERIES OF STANDARD DRAWINGS OR YIELDING WOODEN POSTS IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:

WOODEN POSTS ARE ACCEPTABLE FOR USE WITH CONSTRUCTION SIGNS. THESE POSTS SHALL HAVE A UNIFORM CROSS-SECTION AND SHALL BE MADE FROM GRADE 2, AIR-DRIED SOUTHERN YELLOW PINE OR ANOTHER EQUIVALENT SOFTWOOD. AN ACCEPTABLE EQUIVALENT SOFTWOOD SHALL HAVE AN EXTREME FIBER IN BENDING "Fb" DESIGN VALUE NOT TO EXCEED 9700 KPa AND HORIZONTAL SHEAR "Fv" DESIGN VALUE NOT TO EXCEED 620 KPa. SPECIFICATION: "DESIGN VALUES FOR WOOD CONSTRUCTION" AND RELATED SUPPLEMENT, LATEST EDITION.

AS ESTABLISHED BY THE NATIONAL FOREST PRODUCTS ASSOCIATION IN THEIR NATIONAL DESIGN, THE FOLLOWING ARE CONSIDERED TO BE ACCEPTABLE FOR SINGLE OR DUAL WOODEN POSTS INSTALLATION WITH NO MODIFICATIONS.

- 1. 100 X 100 (ACTUAL DIMENSIONS ARE 84 X 89)

ALL WOODEN POSTS SHALL HAVE AN EMBEDMENT DEPTH OF 1200 mm. NO CROSS-BRACING OR BACK-BRACING TO KEEP THE POSTS PLUMB WILL BE ALLOWED. CONCRETE FOUNDATIONS, COLLARS, OR SOIL BEARING PLATES ARE NOT PERMITTED. CONSTRUCTION SIGNS SHALL BE PLACED ON TWO OR MORE POSTS WHEN ANY OF THE FOLLOWING CONDITIONS GOVERN:

- A) THE SIGN WIDTH (HORIZONTAL DIMENSIONS FOR DIAMOND SHAPED SIGNS) EXCEEDS 1050 mm.
- B) THE EXPOSED SIGN AREA OF ANY SINGLE SIGN OR ASSEMBLY EXCEEDS .65 SQUARE METERS.
- C) THE SV OF A SINGLE POST IS 1.54

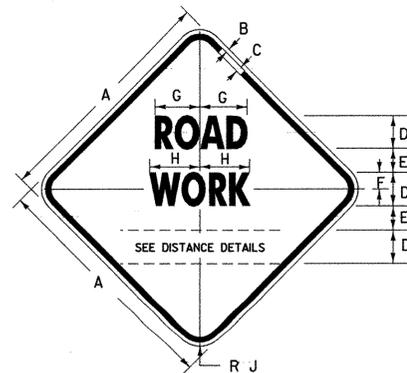
OTHER STDS. E-101M, E-102M

REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

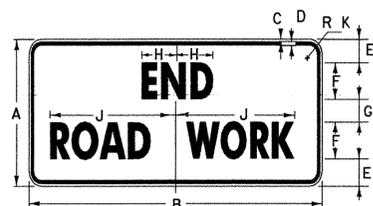


Metric
STANDARD
E-100M



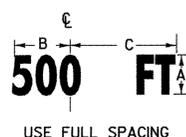
W20-1

DIMENSIONS (mm)									
URBAN	A	B	C	D	E	F	G	H	J
	900	15	25	125D	90	60	210	220	40
STD.	1200	20	30	175D	120	90	290	295	70



G20-2A

SIGN	DIMENSIONS (mm)									
	A	B	C	D	E	F	G	H	J	K
MIN.	450	900	15	25	94	100C	62	100.5	316	60
STD.	600	1200	20	30	102.5	150C	95	155	500	75



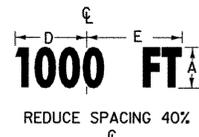
USE FULL SPACING



USE FULL SPACING



REDUCE SPACING 40%



REDUCE SPACING 40%



REDUCE SPACING 50%



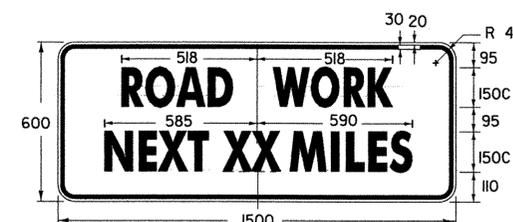
USE FULL SPACING

DISTANCE DETAILS

DIMENSIONS (mm)							
A	B	C	D	E	F	G	H
125D	258	274	295	285	285	241	276
150C	263	266	285	304	317	232	267
175C	305	310	333	355	370	270	311
200D	412	438	432	457	457	365	443

NOTE:

THE 'END ROAD WORK' SIGN MAY BE PLACED BACK TO BACK WITH THE 'ROAD WORK 500 FT.' SIGN THAT WILL BE SET UP FOR CARS TRAVELING IN THE OPPOSITE DIRECTION.



G20-1

THIS SIGN TO BE USED WHEN PROJECT LENGTH EXCEEDS 3 km OR AS REQUESTED BY THE RESIDENT ENGINEER, SHOW DISTANCE TO NEAREST 1/4 MILE USING FRACTIONS, NOT DECIMALS. HAND LETTERING OF DISTANCE WILL NOT BE ALLOWED.

NOTES

THE SIGNS SHOWN ON THIS SHEET ARE INTENDED FOR USE IN PROVIDING ADVANCE WARNING AND INFORMATION ON CONSTRUCTION PROJECTS OVER WHICH TRAFFIC WILL BE MAINTAINED. WHERE 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. FOR ON-PROJECT CONSTRUCTION SIGNS, REFER TO APPROPRIATE STANDARD SHEETS.

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 SHALL BE MADE TO THE 'MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES' FOR THE PRINCIPLES, PROCEDURES AND STANDARDS THAT WILL BE REQUIRED IN CONNECTION WITH ADVANCED WARNING AND ON-PROJECT CONSTRUCTION SIGNS AND BARRICADES. THE SIGNS SHOWN IN E-101M AND E-102M REPRESENT A SAMPLE OF THOSE MORE COMMONLY USED.

LOCATION

THE SIGNS SHALL BE LOCATED AS DETAILED ON THIS SHEET OR AS OTHERWISE SHOWN ON THE PLANS. THEY SHALL APPEAR AT EACH END OF THE HIGHWAY UNDER CONSTRUCTION AND ON ALL INTERSECTING PUBLIC HIGHWAYS. THE ENGINEER SHALL DETERMINE THE EXACT LOCATIONS.

DESIGN

LETTERS, DIGITS, ARROWS, SPACING AND TEXT DIMENSIONS SHALL CONFORM WITH THE "STANDARD HIGHWAY SIGNS BOOK" AND DESIGNS PRESCRIBED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) ADOPTED BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION (FHWA).

MATERIALS

THE SIGN BASE MATERIAL USED FOR THE SIGNS ON THIS SHEET MAY BE ANY OF THE FOLLOWING, WITH MINIMUM THICKNESS AS NOTED.

FLAT SHEET ALUMINUM	3.18 mm
HIGH DENSITY OVERLAPPED PLYWOOD	16 mm

REFLECTORIZATION

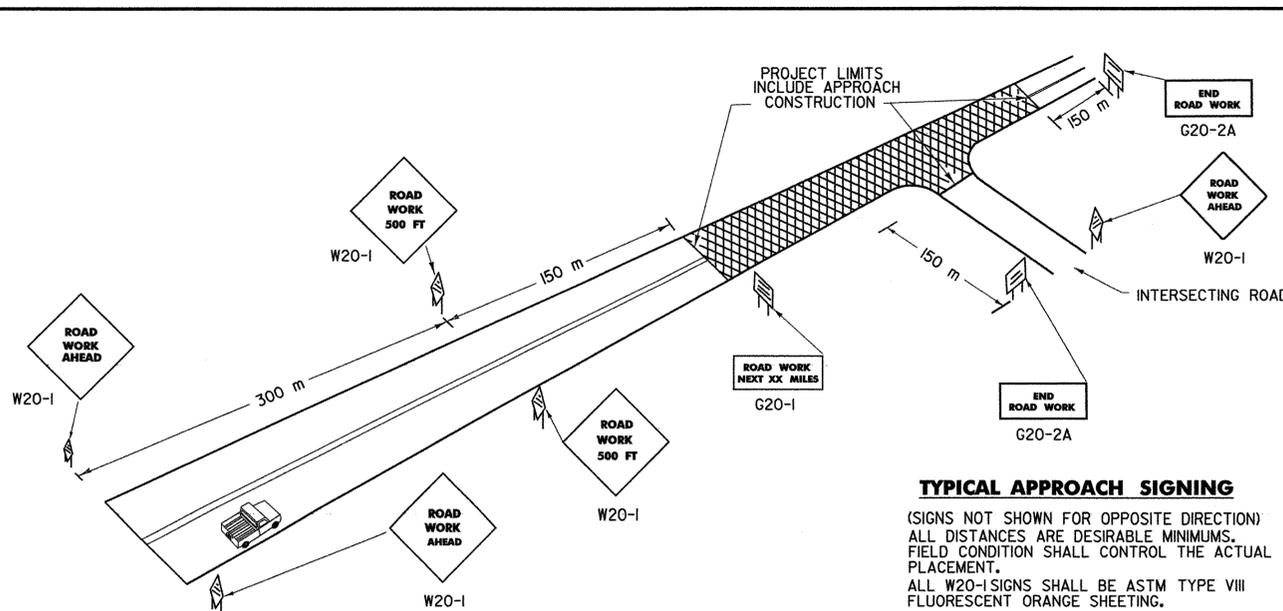
ALL LEAD SIGNS (W20-1) ON THIS SHEET SHALL BE ASTM TYPE VIII FLUORESCENT ORANGE SHEETING. ALL OTHER SIGNS ON THIS SHEET SHALL BE ASTM TYPE III RETROREFLECTORIZED SHEETING.

COLORS

THE COLORS SHALL CONFORM WITH THE STANDARD COLORS ADOPTED BY AASHTO AND APPROVED BY THE FHWA. COLORS SHOWN ON THIS SHEET CONSIST OF BLACK TEXT AND BORDER ON A RETROREFLECTORIZED ASTM TYPE III OR TYPE VIII ORANGE BACKGROUND.

INSTALLATION

THE SIGNS SHALL BE ERECTED BEFORE THE START OF ANY WORK AND SHALL BE COVERED UNTIL WORK COMMENCES. DURING PERIODS OF INACTIVITY, OR UPON COMPLETION OF THE WORK, EACH SIGN SHALL BE ERECTED IN A NEAT AND WORKMANLIKE MANNER ON POSTS SET SECURELY IN THE GROUND. THE BOTTOM OF A SIGN SHALL BE AT LEAST 2100 mm ABOVE THE EDGE OF PAVEMENT. THE NEAREST EDGE OF A SIGN SHALL BE AT LEAST 1800 mm OUTSIDE THE SHOULDER POINT, 1200 mm OUTSIDE GUARD RAIL, OR 600 mm OUTSIDE CURBING OR SIDEWALK. THE INSTALLATION OF SIGNS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER. IN URBAN AREAS, THE BOTTOM OF THE SIGN SHALL BE AT LEAST 2100 mm ABOVE THE SIDEWALK. SIGNS MAY BE REMOVED UPON COMPLETION OF THE WORK AT THE DISCRETION OF THE ENGINEER.



TYPICAL APPROACH SIGNING

(SIGNS NOT SHOWN FOR OPPOSITE DIRECTION)
ALL DISTANCES ARE DESIRABLE MINIMUMS. FIELD CONDITION SHALL CONTROL THE ACTUAL PLACEMENT.
ALL W20-1 SIGNS SHALL BE ASTM TYPE VIII FLUORESCENT ORANGE SHEETING.

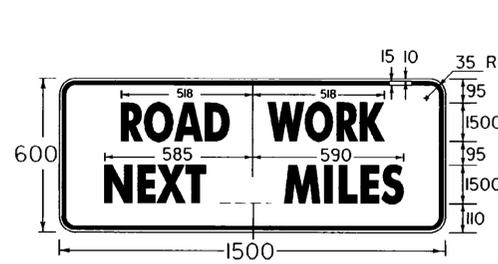
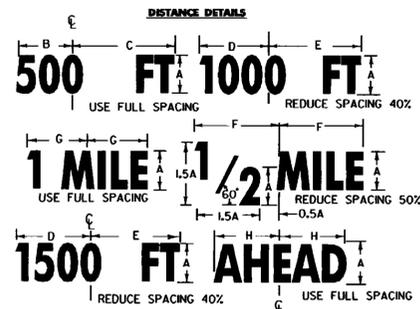
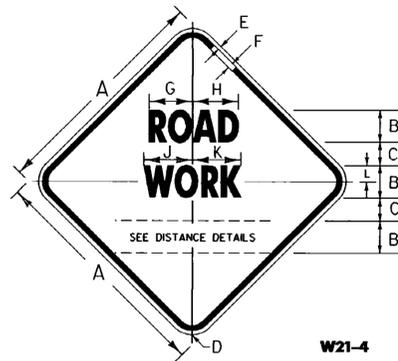
REVISIONS AND CORRECTIONS

JUNE 13, 1997 - ORIGINAL APPROVAL DATE
MAR. 01, 2004 - CHANGED REFLECTIVE SHEETING TO ASTM TYPE III OR TYPE VIII

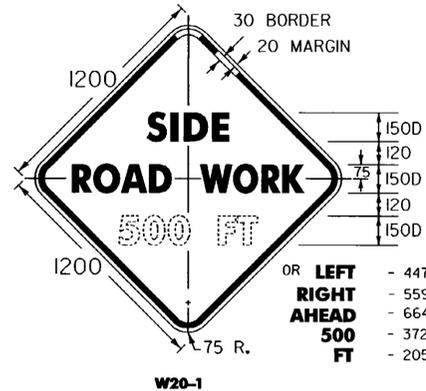
APPROVED

[Signature]
DIRECTOR OF PROGRAM DEVELOPMENT
[Signature]
TRAFFIC OPERATIONS ENGINEER
[Signature]
FEDERAL HIGHWAY ADMINISTRATION

CONSTRUCTION APPROACH SIGNS



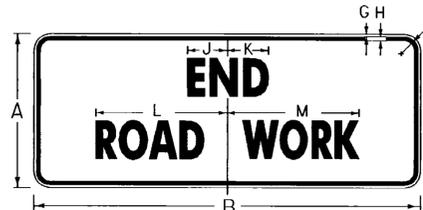
THIS SIGN TO BE USED WHEN PROJECT LENGTH EXCEEDS 3 km OR AS REQUESTED BY THE RESIDENT ENGINEER. SHOW DISTANCE TO NEAREST 1/4 MILE USING FRACTIONS, NOT DECIMALS. HAND LETTERING OF DISTANCE WILL NOT BE ALLOWED.



OR LEFT
RIGHT
AHEAD
500
FT
- 447
- 559
- 664
- 372
- 205

DIMENSIONS (mm)											
STD.	A	B	C	D	E	F	G	H	J	K	L
URBAN	1200	175C	120	75 R.	20	30	244	253	267	268	114
	900	125C	88	55 R.	15	20	173	180	189	192	82

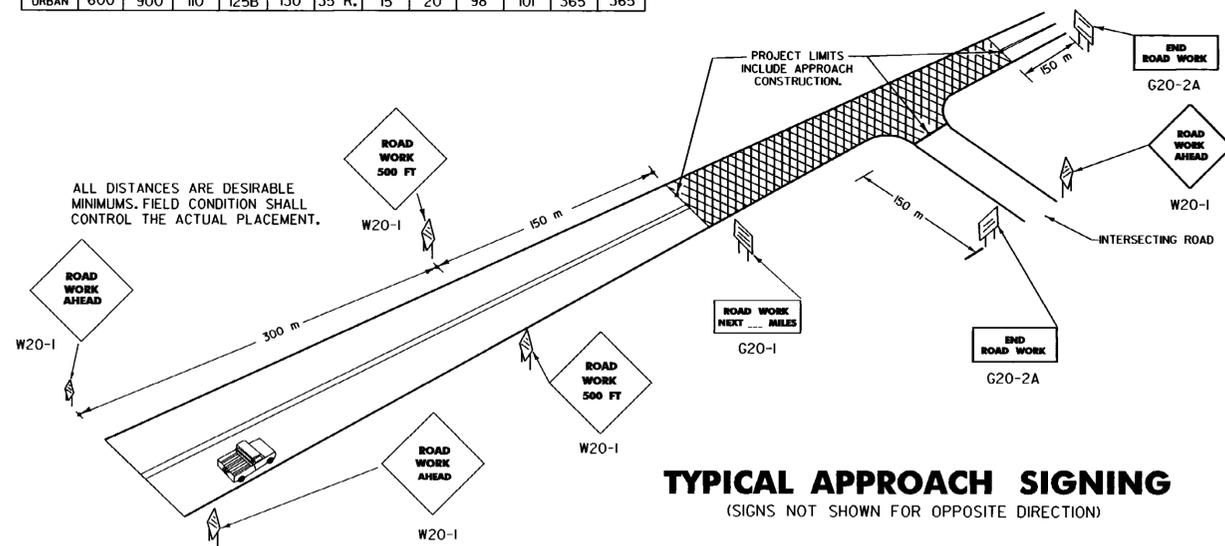
DIMENSIONS (mm)							
A	B	C	D	E	F	G	H
1250	258	274	295	285	285	241	276
150C	263	266	285	304	317	232	267
175C	305	310	333	355	370	270	311
2000	412	438	432	457	457	365	443



DIMENSIONS (mm)												
STD.	A	B	C	D	E	F	G	H	J	K	L	M
URBAN	600	1500	95	150C	110	35 R.	10	15	148	152	517	518
	600	900	110	125B	130	35 R.	15	20	98	101	365	365

NOTE:

THE 'END ROAD WORK' SIGN MAY BE PLACED BACK TO BACK WITH THE 'ROAD WORK 500 FT.' SIGN THAT WILL BE SET UP FOR CARS TRAVELING IN THE OPPOSITE DIRECTION.



TYPICAL APPROACH SIGNING
(SIGNS NOT SHOWN FOR OPPOSITE DIRECTION)

NOTES

THE SIGNS SHOWN ON THIS SHEET ARE INTENDED FOR USE IN PROVIDING ADVANCE WARNING AND INFORMATION ON CONSTRUCTION PROJECTS OVER WHICH TRAFFIC WILL BE MAINTAINED. WHERE 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. FOR ON-PROJECT CONSTRUCTION SIGNS, REFER TO APPROPRIATE STANDARD SHEETS.

APPLICATION OF STANDARDS

BECAUSE IT IS NOT POSSIBLE TO PRESCRIBE DETAILED STANDARDS OF APPLICATION FOR ALL OF THE SITUATIONS THAT MAY CONCEIVABLY ARISE ON A CONSTRUCTION PROJECT, REFERENCE SHALL BE MADE TO THE MUTCD FOR THE PRINCIPLES, PROCEDURES AND STANDARDS THAT WILL BE REQUIRED IN CONNECTION WITH ADVANCED WARNING AND ON-PROJECT CONSTRUCTION SIGNS AND BARRICADES. THE SIGNS SHOWN IN E-101M AND E-102M REPRESENT A SAMPLE OF THOSE MORE COMMONLY USED.

LOCATION

THE SIGNS SHALL BE LOCATED AS DETAILED ON THIS SHEET OR AS 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 INTENDED TO INDICATE THE SEQUENCE TO BE FOLLOWED AND THE APPROXIMATE SPACING TO BE OBSERVED. THE ENGINEER SHALL DETERMINE THE EXACT LOCATIONS.

DESIGN

THE DESIGN OF THE SIGNS SHALL CONFORM WITH THE DETAILS SHOWN ON THIS SHEET AND WITH THE STANDARDS PRESCRIBED IN THE MUTCD.

MATERIALS

THE SIGN BASE MATERIAL USED FOR THE SIGNS ON THIS SHEET MAY BE ANY OF THE FOLLOWING, WITH MINIMUM THICKNESS AS NOTED.
 FLAT SHEET ALUMINUM 3.0 mm
 HIGH DENSITY OVERLAYED PLYWOOD 13 mm, 15 mm OR 19 mm
 GALVANIZED SHEET STEEL 2.77 mm

REFLECTORIZATION

ALL REFLECTORIZED MATERIAL SHALL CONSIST OF TYPE IIB OR TYPE III SHEETING.

COLORS

THE COLORS SHALL CONFORM WITH THE STANDARD COLORS ADOPTED BY AASHTO AND APPROVED BY THE FHWA. COLORS SHOWN ON THIS SHEET CONSIST OF BLACK TEXT AND BORDER ON A REFLECTORIZED ORANGE BACKGROUND.

INSTALLATION

THE SIGNS SHALL BE ERECTED BEFORE THE START OF ANY WORK AND SHALL BE COVERED UNTIL WORK COMMENCES. DURING PERIODS OF INACTIVITY, OR UPON COMPLETION OF THE WORK, SIGNS MAY BE REMOVED UPON COMPLETION OF THE WORK AT THE DISCRETION OF THE ENGINEER. EACH SIGN SHALL BE ERECTED IN A NEAT AND WORKMANLIKE MANNER ON POSTS SET SECURELY IN THE GROUND. THE BOTTOM OF A SIGN SHALL BE AT LEAST 200 mm ABOVE THE EDGE OF PAVEMENT, THE NEAREST EDGE OF A SIGN SHALL BE AT LEAST 1800 mm OUTSIDE THE SHOULDER POINT, 1200 mm OUTSIDE GUARD RAIL, OR 600 mm OUTSIDE CURBING OR SIDEWALK. THE INSTALLATION OF SIGNS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER. IN URBAN AREAS, THE BOTTOM OF THE SIGN SHALL BE AT LEAST 200 mm 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.

NOTES CONT.

GENERAL

THE COST OF FURNISHING, INSTALLING, 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. DURING ALL PHASES OF CONSTRUCTION, THE REQUIREMENTS SET FORTH IN THIS MANUAL SHALL BE MET. WHEN THE PROJECT IS CLOSED DOWN FOR TEMPORARY PERIODS, THE SIGNS SHALL BE COVERED IN A WORKMANLIKE MANNER.

SIGN COVERS

SIGN COVERS SHALL CONSIST OF A PANEL PAINTED FLAT BLACK THAT IS THE SAME SIZE AS THE SIGN IT COVERS. THE PANEL SHALL BE OF WOOD, PLYWOOD, HARDBOARD OR ANY MATERIAL SATISFACTORY TO THE ENGINEER. NO MATERIAL WILL BE APPROVED THAT WILL DETERIORATE BY EXPOSURE TO THE WEATHER DURING THE PROJECT. MOUNTING OF THE PANEL SHALL BE DONE IN SUCH A WAY AS NOT TO DAMAGE THE SIGN FACE MATERIAL.

CONTRACTORS SHALL COORDINATE THEIR SIGNING ACTIVITIES WITH OTHER CONTRACTORS WITHIN THE PROJECT LIMITS, AS DIRECTED BY THE REGIONAL CONSTRUCTION ENGINEER.

SIGN POSTS

WHERE CONSTRUCTION SIGN INSTALLATIONS ARE NOT PROTECTED BY GUARD RAIL OR OTHER APPROVED TRAFFIC BARRIERS, THE POSTS ON WHICH THE SIGNS ARE MOUNTED SHALL BE YIELDING METAL POSTS AS DESIGNATED IN THE E SERIES OF STANDARD DRAWINGS OR YIELDING WOODEN POSTS IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:

WOODEN POSTS ARE ACCEPTABLE FOR USE WITH CONSTRUCTION SIGNS. THESE POSTS SHALL HAVE A UNIFORM CROSS-SECTION AND SHALL BE MADE FROM GRADE 2, AIR-DRIED SOUTHERN YELLOW PINE OR ANOTHER EQUIVALENT SOFTWOOD. AN ACCEPTABLE EQUIVALENT SOFTWOOD SHALL HAVE AN EXTREME FIBER IN BENDING "Fb" DESIGN VALUE NOT TO EXCEED 9700 kPa AND HORIZONTAL SHEAR "Fv" DESIGN VALUE NOT TO EXCEED 620 kPa. SPECIFICATION: "DESIGN VALUES FOR WOOD CONSTRUCTION" AND RELATED SUPPLEMENT, LATEST EDITION.

AS ESTABLISHED BY THE NATIONAL FOREST PRODUCTS ASSOCIATION IN THEIR NATIONAL DESIGN, THE FOLLOWING ARE CONSIDERED TO BE ACCEPTABLE WOODEN POSTS:

- 100 x 100 (ACTUAL DIMENSIONS ARE 90 x 90)
 - ACCEPTABLE FOR SINGLE OR DUAL POSTS INSTALLATION WITH NO MODIFICATIONS.
 - ACCEPTABLE FOR THREE POSTS (OR MORE) INSTALLATION ONLY IF THERE ARE NO MORE THAN TWO POSTS IN A 200 mm PATH.
- 100 x 150 (ACTUAL DIMENSIONS ARE 90 x 140)
 - ACCEPTABLE FOR SINGLE POST INSTALLATIONS ONLY IF MODIFIED BY DRILLING TWO 38-mm DIAMETER HOLES, ONE AT 100 mm AND THE OTHER AT 460 mm ABOVE THE GROUND LINE AND PERPENDICULAR TO THE ROADWAY CENTERLINE.
 - ACCEPTABLE FOR MULTIPLE POSTS (TWO OR MORE) INSTALLATIONS ONLY IF MODIFIED AS ABOVE AND THE MINIMUM SPACING BETWEEN POSTS IS 200 mm.
- 150 x 150 (ACTUAL DIMENSIONS ARE 140 x 140)
 - ACCEPTABLE FOR SINGLE POST INSTALLATIONS ONLY IF MODIFIED BY DRILLING TWO 51-mm DIAMETER HOLES, ONE AT 100 mm AND THE OTHER AT 460 mm ABOVE THE GROUND LINE AND PERPENDICULAR TO ROADWAY CENTERLINE.
 - ACCEPTABLE FOR MULTIPLE POST INSTALLATION ONLY IF MODIFIED AS ABOVE AND THE MINIMUM SPACING BETWEEN POSTS IS 200 mm.
- 150 x 200 (ACTUAL DIMENSIONS ARE 140 x 190)
 - ACCEPTABLE FOR SINGLE POST INSTALLATIONS ONLY IF MODIFIED BY DRILLING TWO 76-mm DIAMETER HOLES, ONE AT 100 mm AND THE OTHER AT 460 mm ABOVE THE GROUND LINE AND PERPENDICULAR TO THE ROADWAY CENTERLINE.
 - ACCEPTABLE FOR MULTIPLE POST INSTALLATIONS ONLY IF MODIFIED AS ABOVE AND THE MINIMUM SPACING BETWEEN POSTS IS 200 mm.

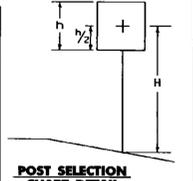
ADDITIONAL DESIGN CRITERIA

THE LONGER DIMENSION OF THE POST(S), SUCH AS THE 150-mm DIMENSION OF THE 100 x 150 POST, SHALL BE PLACED PARALLEL TO THE ROADWAY CENTERLINE. ALL WOODEN POSTS SHALL HAVE AN EMBEDMENT DEPTH OF 1200 mm.

NO CROSS-BRACING OR BACK-BRACING TO KEEP THE POSTS PLUMB WILL BE ALLOWED. CONCRETE FOUNDATIONS, COLLARS, OR SOIL BEARING PLATES ARE NOT PERMITTED. CONSTRUCTION SIGNS SHALL BE PLACED ON TWO OR MORE POSTS WHEN ANY OF THE FOLLOWING CONDITIONS GOVERN:

- THE SIGN WIDTH (HORIZONTAL DIMENSIONS FOR DIAMOND SHAPED SIGNS) EXCEEDS 1050 mm.
- THE EXPOSED SIGN AREA OF ANY SINGLE SIGN OR ASSEMBLY EXCEEDS 1125 m².
- THE Sv OF A SINGLE POST IS EXCEEDED. (SEE THE POST SELECTION CHART BELOW).

WOOD POST SELECTION CHART		
SIGN AREA (m ²) X HEIGHT (m) < Sv (SELECTION VALUE)		
POST SIZE	Sv	DESIGN CRITERIA:
100 x 100	1.54	WIND SPEED = 100 km/h (10-YEAR MEAN OCCURRENCE INTERVAL)
100 x 150	3.51	WIND PRESSURE = 740 Pa
150 x 150	5.17	ALLOWABLE BENDING STRESS F _b = 9700 kPa
150 x 200	9.30	



REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

[Signature]
DIRECTOR OF ENGINEERING
[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

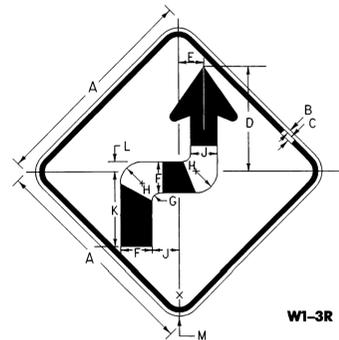
CONSTRUCTION APPROACH SIGNS

OTHER STDS. REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

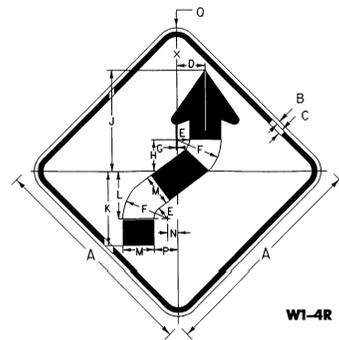


Metric STANDARD E-100M



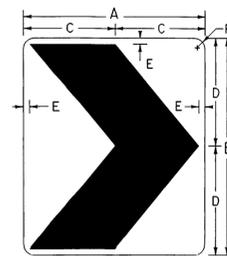
W1-3R

SIGN	DIMENSIONS (mm)												
	A	B	C	D	E	F	G	H	J	K	L	M	
STD. & MIN.	900	15	20	435	105	130	30	90	110	310	40	55	
SPECIAL	1200	20	30	580	140	175	40	120	150	415	55	75	



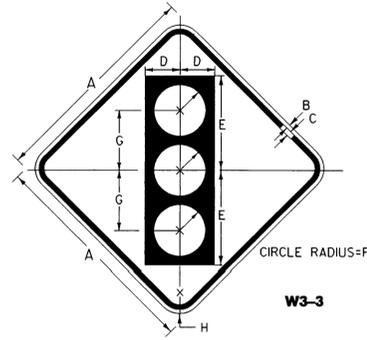
W1-4R

SIGN	DIMENSIONS (mm)														
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	O
STD. & MIN.	900	15	20	116	55	185	4	130	420	310	195	130	45	100	55
SPECIAL	1200	20	30	157	75	250	5.5	175	560	410	260	175	55	130	75



W1-8

SIGN	DIMENSIONS (mm)					
	A	B	C	D	E	F
STD.	450	600	225	300	20	35
SPECIAL	600	750	300	375	20	35
EXPWY.	750	900	375	450	25	45
FRWY.	900	1200	450	600	30	55

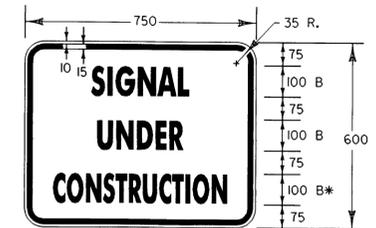


W3-3

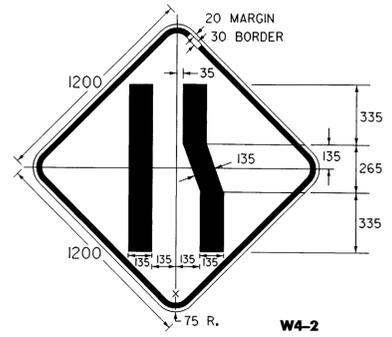
SIGN	DIMENSIONS (mm)							
	A	B	C	D	E	F	G	H
STD. & MIN.	900	15	20	145	395	105	250	55
SPECIAL	1200	20	30	190	500	125	315	75

COLORS

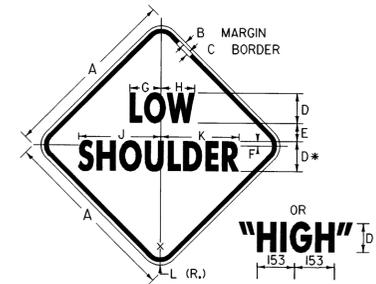
TOP CIRCLE RED (REFL)
MIDDLE CIRCLE YELLOW (REFL)
BOTTOM CIRCLE GREEN (REFL)
SYMBOL & LEGEND - BLACK (NON-REFL)
BACKGROUND - ORANGE (REFL)



* REDUCE SPACING 50%



W4-2



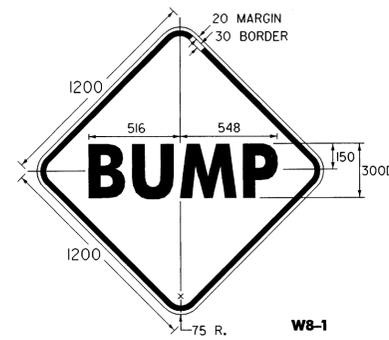
OR
"HIGH"

* REDUCE SPACING 25%

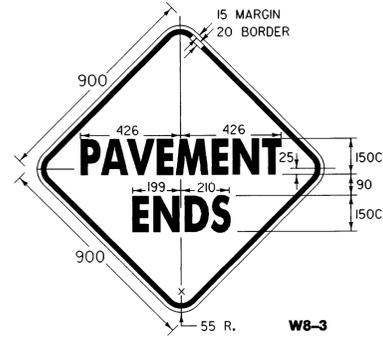
SIGN	DIMENSIONS (INCHES)										
	A	B	C	D	E	F	G	H	J	K	L
STD.	750	10	20	125C	75	20	131	143	348	331	45
FWY.	1200	20	30	200C	125	30	210	229	556	532	75

NOTES

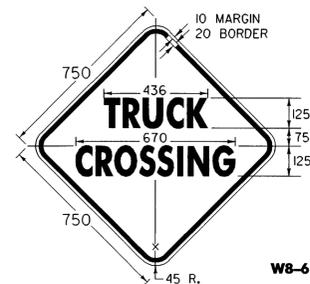
SEE STANDARD SHEET E-100M FOR NOTES AND TEXT DETAILS.
COLORS FOR SIGNS SHOWN ON THIS SHEET SHALL BE BLACK TEXT, BORDER AND SYMBOLS ON A REFLECTORIZED TYPE IIB OR TYPE III ORANGE BACKGROUND, UNLESS OTHERWISE NOTED.
SIGNS USED ONLY FOR DAYTIME MAINTENANCE OPERATIONS DO NOT NEED TO BE REFLECTORIZED; HOWEVER, THESE SIGNS SHALL BE LABELED "DAYTIME USE ONLY" ON THE BACK OF THE SIGN PANEL WITH 75-mm SERIES C LETTERS.



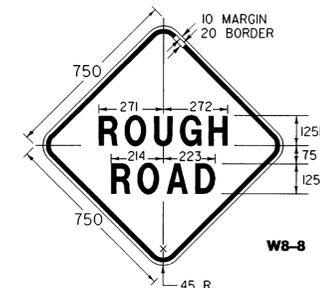
W8-1



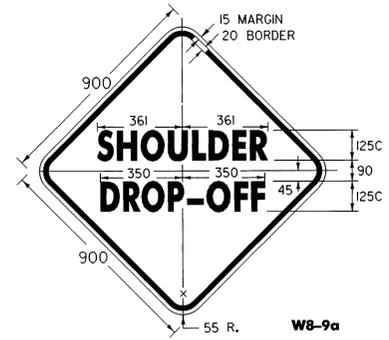
W8-3



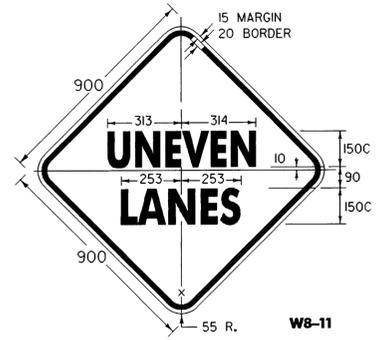
W8-6



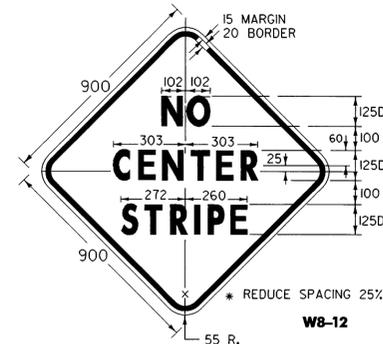
W8-8



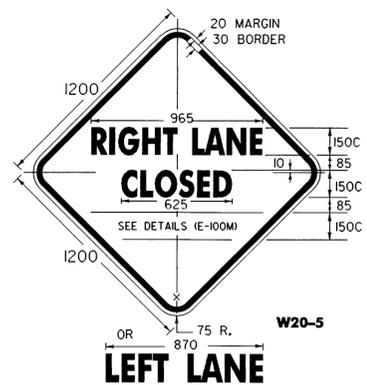
W8-9a



W8-11



W8-12



W20-5

OTHER STDS. E-100M REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS

JUNE 13, 1997 - ORIGINAL APPROVAL DATE
May 30, 2003 - Superseded

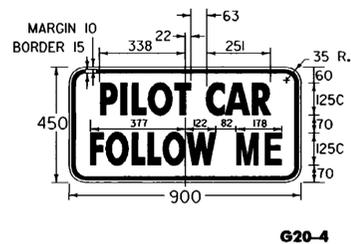
APPROVED

[Signature]
DIRECTOR OF ENGINEERING
[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

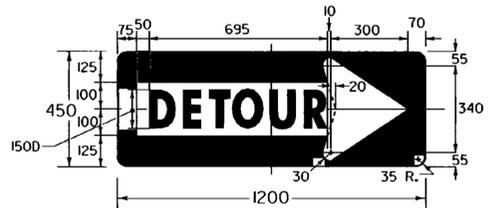
**CONSTRUCTION SIGN
DETAILS**



**Metric
STANDARD
E-101M**



G20-4

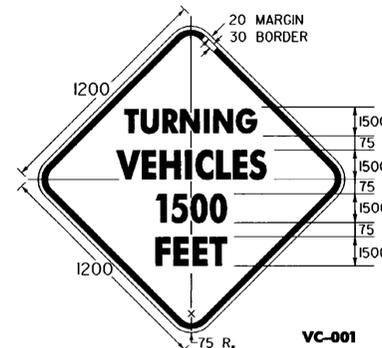


M4-10(R)

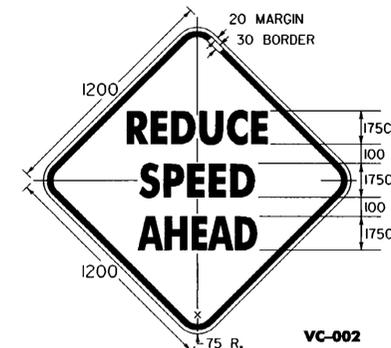


R11-2

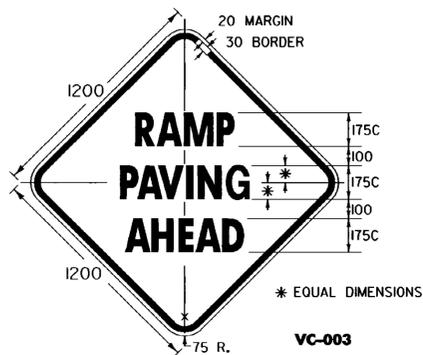
COLORS:
BLACK TEXT AND BORDER
WHITE REFLECTORIZED BACKGROUND



VC-001

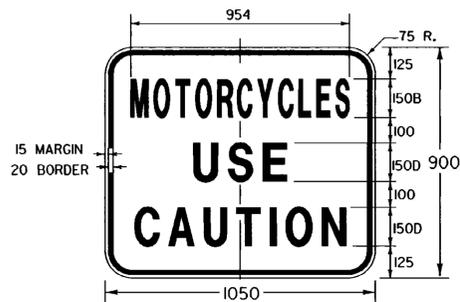


VC-002

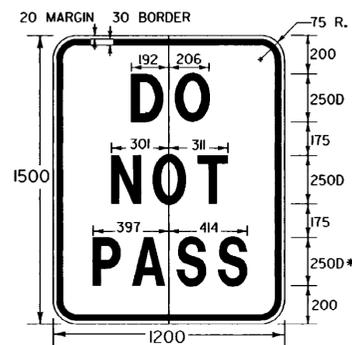


VC-003

* EQUAL DIMENSIONS

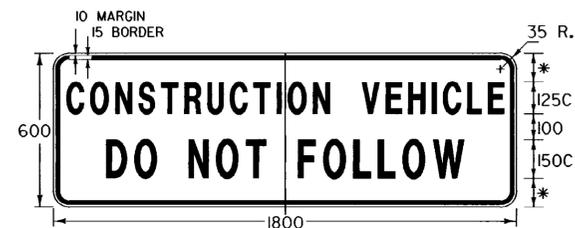


VC-004



VC-005

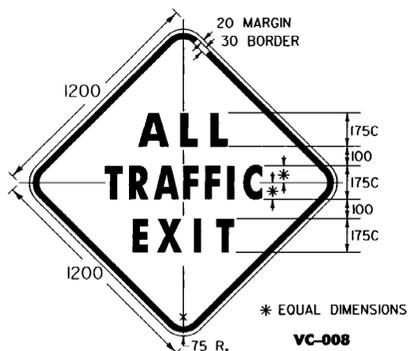
* REDUCE SPACING BY 40%



VC-007

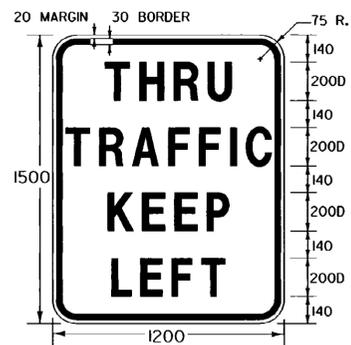
* EQUAL DIMENSIONS

IT IS SUGGESTED THAT THIS SIGN BE DESIGNED TO FOLD, (DOWN OR ACROSS), OR BE COVERED, OR BE REMOVED WHEN NOT IN USE. THE SIGN SHOULD ALSO BE MOUNTED AS TO NOT INTERFERE WITH THE VISIBILITY OF DIRECTIONAL OR TAIL LIGHTS AS REQUIRED BY LAW.



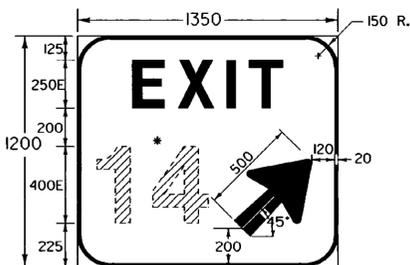
VC-008

* EQUAL DIMENSIONS



VR-118

COLORS: BLACK BORDER & TEXT
WHITE (REFL.) BACKGROUND



E5-1a

* EXIT NUMBER AS PER PLANS
OPTICALLY SPACED

COLORS:
BACKGROUND - GREEN (REFL.)
BORDER, ARROW AND LEGEND - WHITE (REFL.)

NOTES

SEE STANDARD SHEET E-100M FOR NOTES AND TEXT DETAILS.

COLORS FOR SIGNS SHOWN ON THIS SHEET SHALL BE BLACK TEXT, BORDER AND SYMBOLS SHALL BE ON A REFLECTORIZED ORANGE BACKGROUND OF TYPE IIB OR TYPE III REFLECTIVE SHEETING, UNLESS OTHERWISE NOTED.

SIGNS USED ONLY FOR DAYTIME MAINTENANCE OPERATIONS DO NOT NEED TO BE REFLECTORIZED, HOWEVER, THESE SIGNS SHALL BE LABELED "DAYTIME USE ONLY" ON THE BACK OF THE SIGN PANEL WITH 75-mm SERIES C LETTERS.

OTHER STDS. E-100M REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS

JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

[Signature]
DIRECTOR OF ENGINEERING

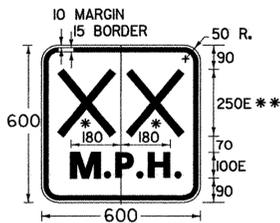
[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

**CONSTRUCTION SIGN
DETAILS**



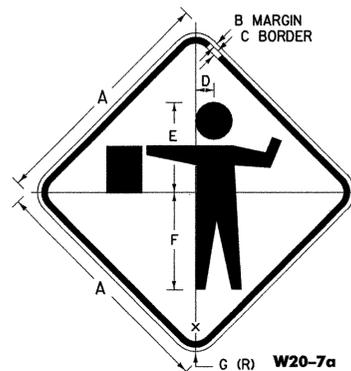
Metric
STANDARD
E-102AM

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



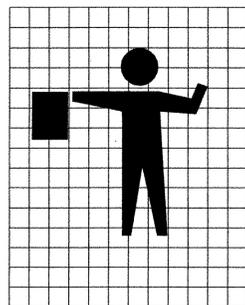
**X* DENOTES ADVISORY SPEED AS SHOWN ON THE PLANS

W13-1

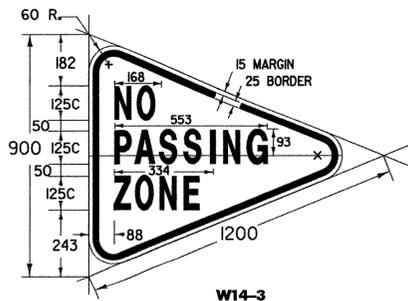


W20-7a

SIGN	DIMENSIONS (mm)						
	A	B	C	D	E	F	G
STD.	900	15	25	70	335	365	60
FWY.	1200	20	30	95	450	485	70



W16-2a



W14-3



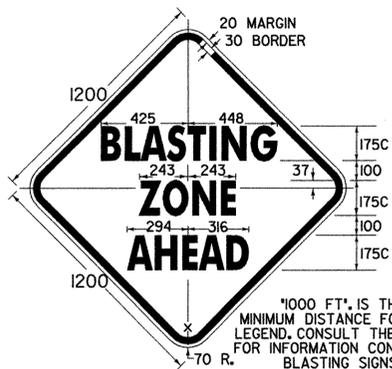
W20-7b

COLORS:
 BLACK BORDER AND TEXT (NON RETRORFL.)
 ORANGE BACKGROUND (RETRORFL.)

W3-4

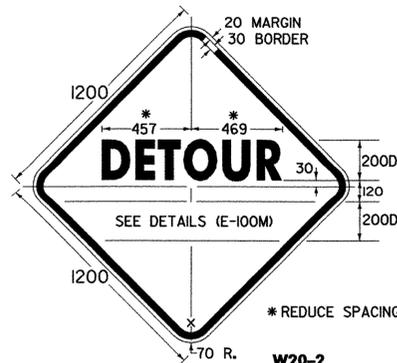
COLORS:
 BLACK BORDER AND TEXT (NON RETRORFL.)
 YELLOW BACKGROUND (RETRORFL.)

SIGN	DIMENSIONS (MM)											
	A	B	C	D	E	F	G	H	J	K	L	
MIN.	900	15	25	150C	90	23	93	410	327	346	60	
STD.	1200	20	30	200C	120	30	124	546	435	462	70	
EXPWY.	1500	20	30	225C	135	35	139	614	486	505	70	

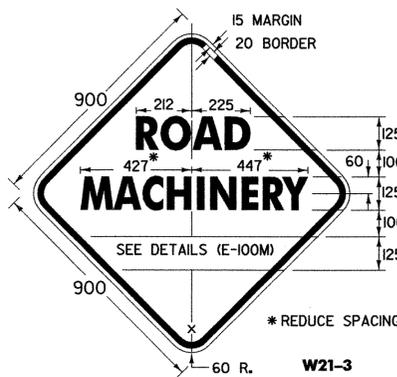


W22-1

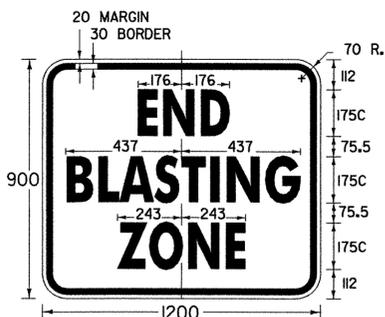
*1000 FT. IS THE MINIMUM DISTANCE FOR SIGN LEGEND. CONSULT THE MUTCD FOR INFORMATION CONCERNING BLASTING SIGNS.



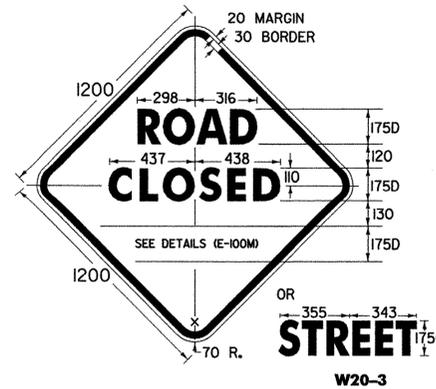
W20-2



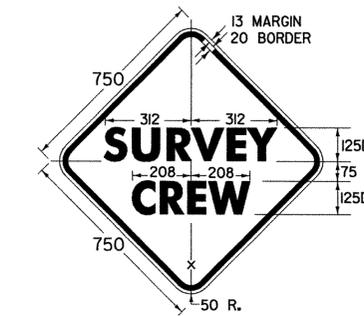
W21-3



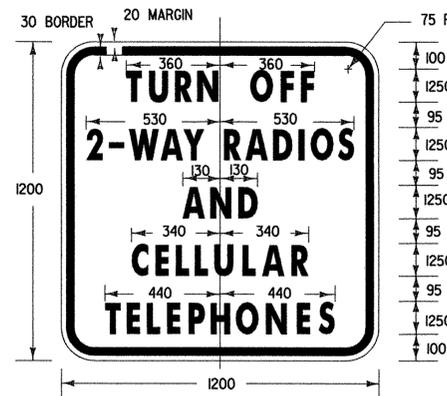
W22-3



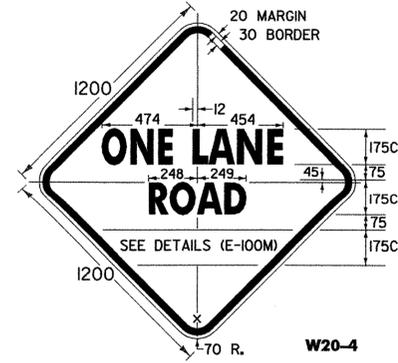
W20-3



W21-6



W22-1

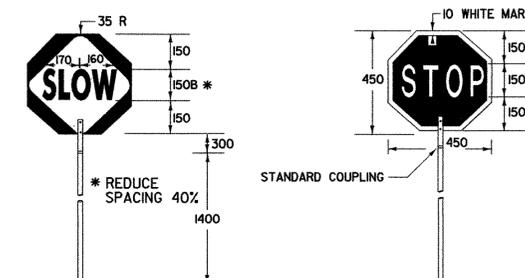


W20-4

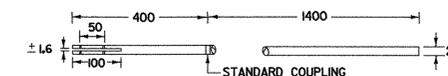
SIGN PADDLE FOR FLAGPERSON

ORANGE ASTM TYPE III OR TYPE VI RETROREFLECTORIZED DIAMOND WITH BLACK TEXT AND BORDER

RED ASTM TYPE III OR TYPE VI RETROREFLECTORIZED OCTAGON WITH WHITE ASTM TYPE III OR TYPE VI RETROREFLECTORIZED TEXT



SIGN DETAIL



STAFF DETAIL

MATERIALS
 THE SIGN MATERIALS SHALL BE 1.6-mm ALUMINUM WITH COLORS AS INDICATED ON DETAILS.
 THE STAFF SHALL BE DN21 TO DN35 RIGID ALUMINUM CONDUIT/TUBING WITH A WALL THICKNESS OF 3.18 mm, OR DN27 TO DN41 RIGID PVC CONDUIT/TUBING WITH A 3.18-mm WALL THICKNESS.

MOUNTING
 THE STAFF SHALL BE MOUNTED WITH EITHER TWO M6 x 1 ALUMINUM BOLTS OR TWO M6 ALUMINUM RIVETS.

NOTES

SEE STANDARD SHEET E-100M FOR NOTES AND TEXT DETAILS. COLORS FOR SIGNS SHOWN ON THIS SHEET SHALL BE BLACK TEXT, BORDER AND SYMBOLS ON ASTM TYPE III OR TYPE VI RETROREFLECTIVE ORANGE BACKGROUND, UNLESS OTHERWISE NOTED.

OTHER STDS. E-100M REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS

JUNE 13, 1997 - ORIGINAL APPROVAL DATE
 JUNE 30, 2003 - CHANGED REFLECTIVE SHEETING TO ASTM TYPE III OR TYPE VI CHANGED TEXT ON W20-7b SIGN

APPROVED

[Signature]
 DIRECTOR OF PROGRAM DEVELOPMENT

[Signature]
 TRAFFIC OPERATIONS ENGINEER

[Signature]
 FEDERAL HIGHWAY ADMINISTRATION

CONSTRUCTION SIGN DETAILS



Metric STANDARD E-102M

TRAVEL LANE REQUIREMENTS

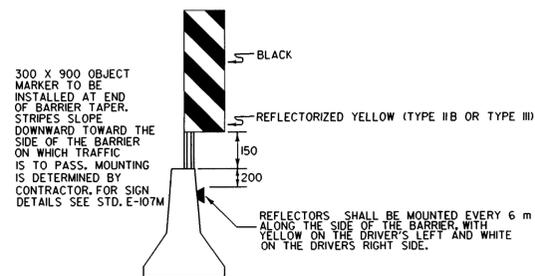
BARRIER SHALL BE PLACED AS CLOSE AS POSSIBLE TO THE CENTERLINE TO ALLOW THE TRAFFIC TO USE THE NORMAL LANE WIDTH.

EDGELINES SHALL BE REMOVED AND NEW TEMPORARY TAPE EDGELINES APPLIED. THE DRIVER'S LEFT EDGELINE SHALL BE A MINIMUM OF 300 mm, (600 mm IS DESIRABLE) FROM BARRIER. TRAVEL LANE SHALL BE 3.6 m WIDE.

THE TEMPORARY TAPE PAVEMENT MARKINGS SHALL BE OF A TYPE WHICH CAN BE COMPLETELY REMOVED AFTER THE PROJECT IS COMPLETED WITHOUT SCARRING OR MARKING THE PAVEMENT SURFACE. PAYMENT FOR THE TAPE MARKINGS SHALL BE UNDER THE APPROPRIATE ITEM NUMBERS.

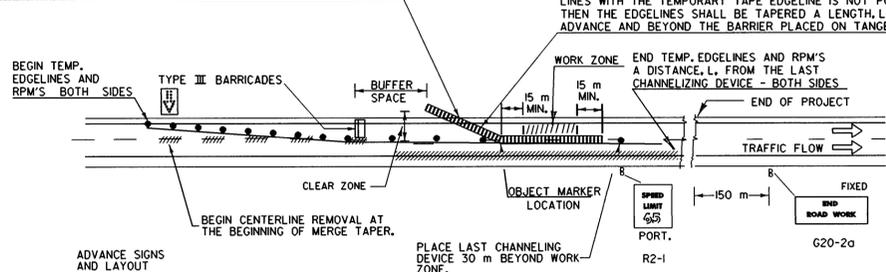
PAVEMENT MARKING REMOVALS SHALL BE PAID UNDER THE APPROPRIATE ITEM NUMBER. TEMPORARY TAPE REMOVAL IS NOT PAID UNDER THE REMOVAL ITEM, IT IS SUBSIDIARY TO THE TAPE ITEM.

THE RAISED PAVEMENT MARKERS (RPM'S) SHALL BE OF A TYPE WHICH CAN BE EASILY REMOVED AND THEY SHALL BE PLACED TO THE OUTSIDE OF THE TEMPORARY TAPE PAVEMENT MARKINGS. THE RPM'S SHALL BE SPACED AT 6 m. THE RPM'S ARE TO BE PAID UNDER THE ITEM TEMPORARY RAISED PAVEMENT MARKINGS, IF RPM'S ARE INCLUDED AS AN INTEGRAL PART OF THE TEMPORARY TAPE PAVEMENT MARKINGS, THEN THE COST OF THE RAISED MARKERS SHALL BE CONSIDERED A PART OF THE TEMPORARY PAVEMENT MARKING ITEM AND SEPERATE RPM'S SHALL NOT BE REQUIRED.



"CONCRETE MEDIAN BARRIER" PROVIDE A MINIMUM TAPER RATE (SEE TABLE ON STD. E-106M) WITH A MINIMUM OF 15 m OF TANGENT SECTION ON EACH END OF THE WORK ZONE. THE END OF THE BARRIER FACING APPROACHING TRAFFIC SHALL MEET THE FOLLOWING REQUIREMENT: WHERE NO GUARDRAIL IS PRESENT, USE THE CLEAR ZONE MEASURED FROM THE EDGE OF TRAVELED WAY. IF GUARDRAIL IS PRESENT, THEN CONCRETE BARRIER CAN BE TAPERED TO A DISTANCE BEYOND THE DEFLECTION DISTANCE OF THE GUARDRAIL. IF AN OFFSET EQUAL TO THE CLEAR-ZONE DISTANCE IS NOT ATTAINABLE OR THE BARRIER CANNOT BE LOCATED TO A DISTANCE BEYOND THE DEFLECTION DISTANCE OF THE GUARDRAIL, THEN A CRASH ATTENUATOR DESIGNED FOR THE REGULATORY SPEED LIMIT OF THE ROADWAY SHALL BE PROVIDED.

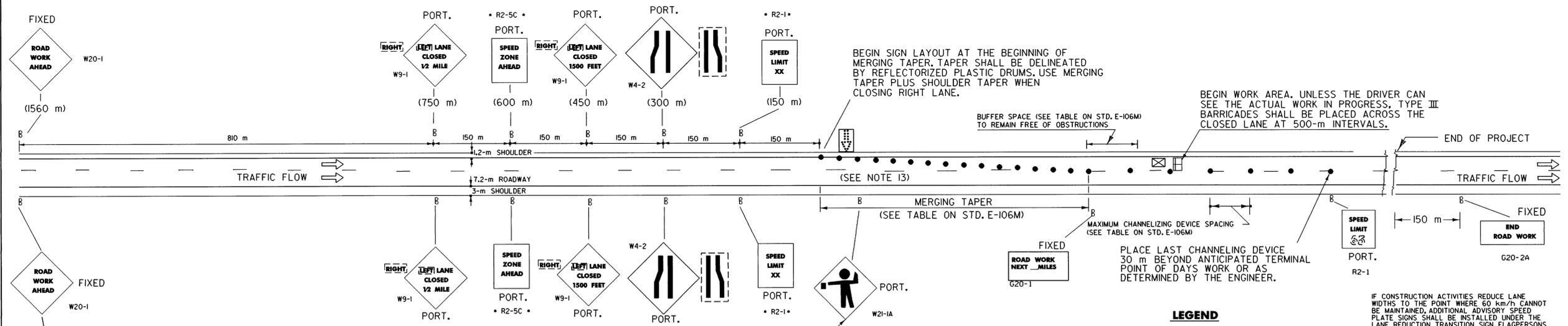
IF THE BARRIER IS PLACED SUCH THAT THE TEMPORARY TAPE CAN BE PLACED OVER THE EXISTING DASHED LINE, THEN THE EDGELINES DO NOT NEED TO BE TAPERED BEFORE THE BARRIER AND THE DASHED MARKINGS DO NOT NEED TO BE REMOVED IN THE TANGENT SECTION. IF THE BARRIER IS PLACED SUCH THAT COVERING THE DASHED LINES WITH THE TEMPORARY TAPE EDGELINE IS NOT POSSIBLE THEN THE EDGELINES SHALL BE TAPERED A LENGTH, L, BOTH IN ADVANCE AND BEYOND THE BARRIER PLACED ON TANGENT.



ONE LANE CLOSED WITH POSITIVE BARRIER PROTECTION

NOTES

- WHEN CONSTRUCTION EQUIPMENT IS WORKING AT OR NEAR THE EXIT OR ENTRANCE RAMP, FLAGPERSONS OR UNIFORMED TRAFFIC CONTROL OFFICERS (UTO'S) SHOULD BE USED TO ASSIST IN CONTROLLING TRAFFIC. SEE STD. E-106M FOR TRAFFIC CONTROL DETAILS.
- ALL SIGNS SHALL BE PLACED BEFORE ANY WORK BEGINS OR EQUIPMENT IS PUT ON THE ROADWAY. SIGNS SHALL BE COVERED OR REMOVED WHEN NOT APPLICABLE. SEE STANDARD SHEET E-100M FOR REQUIREMENTS.
- CONTRACTOR SHALL HAVE CHANNELIZING DEVICES AND SIGNS FOR LEFT SIDE CLOSURE AND RIGHT SIDE CLOSURE ON PROJECT BEFORE STARTING PROJECT.
- EXISTING SPEED LIMIT SIGNS SHALL BE COVERED WHEN REDUCED SPEED SIGNS ARE POSTED.
- CHANNELIZING DEVICES OTHER THAN REFLECTORIZED PLASTIC DRUMS WILL BE ALLOWED ALONG TANGENT SECTIONS AS LONG AS THEY CONFORM TO THE MUTCD AND ARE APPROVED BY THE RESIDENT ENGINEER. THE TYPE OF DEVICE SHALL BE CONSISTENT THROUGHOUT THE TANGENT SECTION.
- THE "SPEED LIMIT XX" AND OTHER RELATED SIGNS SHALL BE REMOVED OR COVERED WHEN WORK IS NOT IN PROGRESS AND ROADWAY IS NOT RESTRICTED.
- "REDUCED SPEED AHEAD" SIGNS MAY BE USED IN LIEU OF "SPEED ZONE AHEAD".
- FOR RELATIVELY SHORT TERM PROJECTS WITH NO OFFICIAL SPEED ZONE ENACTMENT, ADVISORY SPEED PLAQUES MOUNTED AS SUPPLEMENTAL SIGNS ON OTHER WARNING SIGNS.
- ALL FIXED SIGNS SHALL BE MOUNTED ON YIELDING STEEL, ALUMINUM OR WOOD SUPPORTS AS SHOWN ON APPROPRIATE STANDARD SHEETS.
- PORTABLE SIGNS SHALL BE KEPT LEVEL WHERE PLACED ON THE EDGE OF ROADWAY AND ALL VEGETATION THAT INTERFERES WITH VISIBILITY OF THE SIGNS SHALL BE REMOVED. PAYMENT SUBSIDIARY TO OTHER ITEMS. WHERE PLACED BEHIND GUARDRAIL, THE BOTTOM OF THE SIGN FACES SHALL BE PLACED ABOVE THE TOP OF THE GUARDRAIL.
- WARNING LIGHTS SHALL NOT BE USED ON CHANNELIZING DEVICES.
- THE NUMBER OF CHANNELIZING DEVICES, TYPE III BARRICADES AND OTHER TRAFFIC CONTROL DEVICES SHOWN ON THIS SHEET ARE FOR ILLUSTRATIVE PURPOSES ONLY. THE ACTUAL NUMBER REQUIRED ARE TO BE DETERMINED BASED ON INDIVIDUAL DETOUR CONDITIONS (TAPERS, SPEED LIMITS, LENGTH OF DETOUR CURVE, ETC.)
- FOR ANY LONG TERM CLOSURE (GREATER THAN 3 DAYS), EXISTING CENTERLINE SHALL BE COVERED WITH BLACK TAPE OR REMOVED AND TEMPORARY EDGELINES PLACED AS SHOWN WITH POSITIVE BARRIER.



LEGEND

- (150 m)- DENOTES DISTANCE FROM BEGIN MERGE TAPER
- FLASHER - FLASHING ARROW PANEL
- REFLECTORIZED PLASTIC DRUM
- PAVEMENT MARKING REMOVAL
- CONCRETE MEDIAN BARRIER
- TYPE III BARRICADE
- TRUCK/TRAILER MOUNTED ATTENUATOR (OPTIONAL)

IF CONSTRUCTION ACTIVITIES REDUCE LANE WIDTHS TO THE POINT WHERE 60 km/h CANNOT BE MAINTAINED, ADDITIONAL ADVISORY SPEED PLATE SIGNS SHALL BE INSTALLED UNDER THE LANE REDUCTION TRANSITION SIGN. FLAGPERSONS AND UTO'S SHALL NOT BE ALLOWED TO INTERFERE WITH TRAFFIC BY STEPPING INTO THE LANE TO REDUCE THE DRIVER'S SPEED.

USE PORTABLE "RIGHT OR LEFT LANE CLOSED 1/2 MILE" WHEN SIGN PACKAGE IS MOVED FORWARD. SIGNS NOTED AS FIXED SHALL REMAIN IN PLACE THROUGH THE ENTIRE PROJECT. SIGNS NOTED AS PORTABLE SHALL MOVE AS THE WORK AREA CHANGES. ALL SIGNS SHALL BE REMOVED OR COVERED WHEN NOT NEEDED.

R2-5C AND R2-1 TO BE USED ONLY WITH REGULATORY, TEMPORARY SPEED LIMITS, OTHERWISE USE W13-1 ADVISORY SPEED PLATES.

OTHER STDS. REQUIRED: E-100M E-101M E-102M E-102AM E-106M E-107AM

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

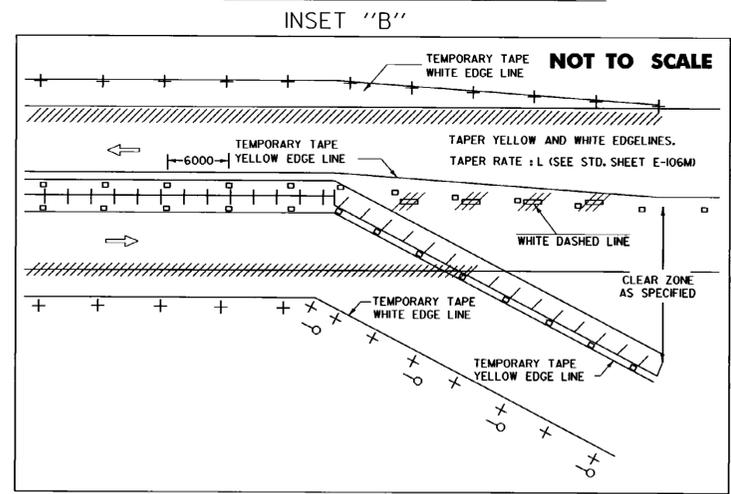
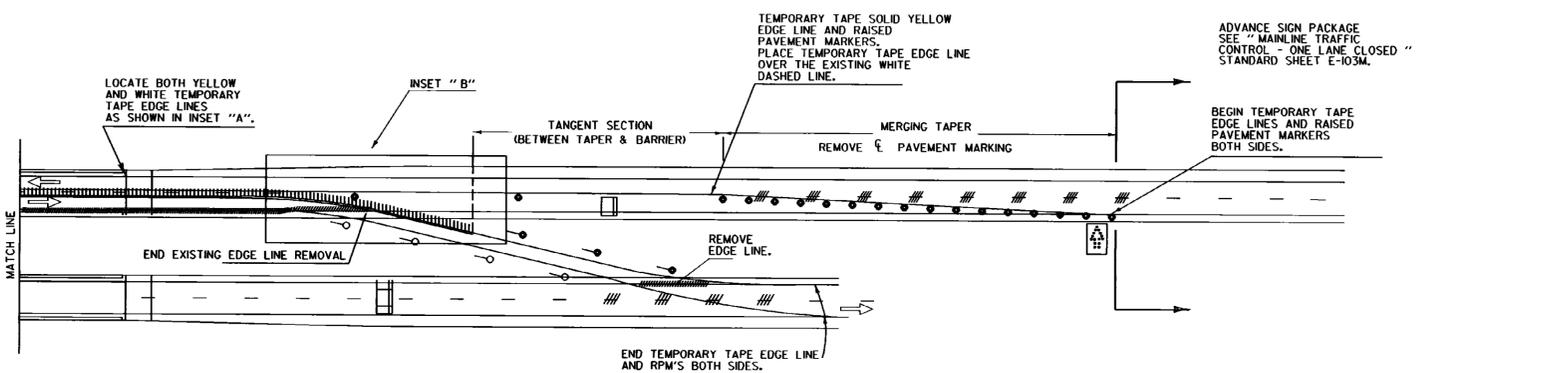
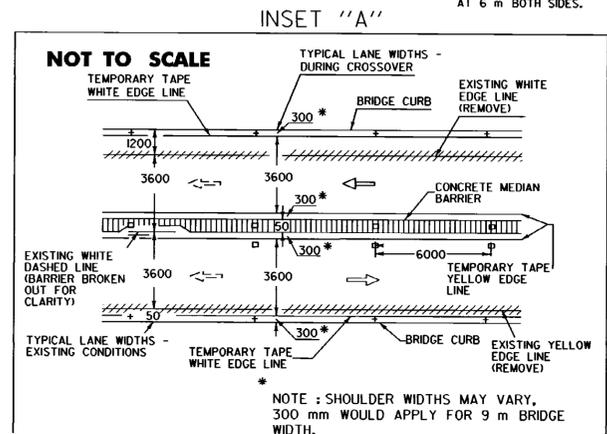
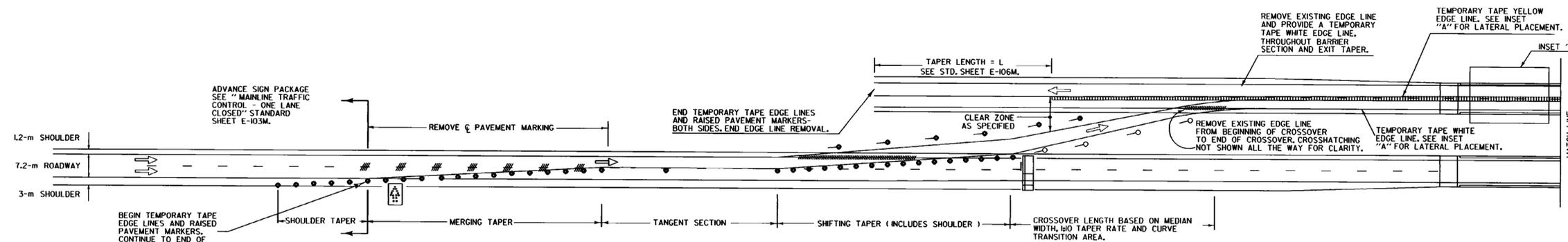
REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED
[Signature]
DIRECTOR OF ENGINEERING
[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

MAINLINE TRAFFIC CONTROL DIVIDED HIGHWAY ONE LANE CLOSED



Metric STANDARD E-103M



- LEGEND**
- /// - PAVEMENT MARKING REMOVAL
 - - REFLECTORIZED PLASTIC DRUM
 - - TYPE I DELINEATOR (YELLOW)
 - - TYPE I DELINEATOR (WHITE)
 - ||||| - CONCRETE MEDIAN BARRIER
 - ≡≡≡ - TYPE III BARRICADE
 - ⚡ - FLASHING ARROW PANEL
 - ⊕ - WHITE RAISED PAVEMENT MARKER
 - ⊖ - YELLOW RAISED PAVEMENT MARKER
 - ↔ - ORIGINAL DIRECTION OF TRAFFIC FLOW
 - ⇒ - TEMPORARY DIRECTION OF TRAFFIC FLOW

- NOTES**
- 1) THE TEMPORARY TAPE PAVEMENT MARKINGS SHALL BE OF A TYPE WHICH CAN BE COMPLETELY REMOVED AFTER THE PROJECT WITHOUT SCARRING OR MARKING THE PAVEMENT SURFACE. PAYMENT FOR THE TAPE MARKINGS SHALL BE PAID FOR UNDER THE APPROPRIATE ITEM NUMBERS.
 - 2) PAVEMENT MARKING REMOVALS SHALL BE PAID FOR UNDER THE APPROPRIATE ITEM NUMBER. TEMPORARY TAPE REMOVAL IS NOT PAID FOR UNDER THE REMOVAL ITEM, IT IS SUBSIDIARY TO THE TAPE ITEM.
 - 3) THE RAISED PAVEMENT MARKINGS (RPM'S) SHALL BE OF A TYPE WHICH CAN BE EASILY REMOVED AND THEY SHALL BE PLACED TOWARDS THE OUTSIDE OF THE TEMPORARY TAPE PAVEMENT MARKINGS. THE RPM'S SHALL BE SPACED AT 6-m INTERVALS. THE RPM'S ARE TO BE PAID UNDER THE ITEM TEMPORARY RAISED PAVEMENT MARKINGS. IF RPM'S ARE BUILT INTO AND INCLUDED AS A PART OF THE TEMPORARY TAPE PAVEMENT MARKINGS, THEN THE COST OF THE RAISED MARKERS SHALL BE CONSIDERED AS PART OF THE TEMPORARY PAVEMENT MARKING ITEM AND SEPERATE RPM'S ARE NOT REQUIRED.
 - 4) TAPE OR PAINT SHALL NOT BE ALLOWED ON THE SIDE OF THE CONCRETE MEDIAN BARRIER.

NOT TO SCALE

REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

Paul C. Swan
DIRECTOR OF ENGINEERING

James D. MacArthur
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

PAVEMENT MARKING DETAILS
DIVIDED HIGHWAY
ONE ROADWAY CLOSED

OTHER STDS. E-103M E-106M
REQUIRED: E-104M E-107AM
NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.



Metric
STANDARD
E-104AM

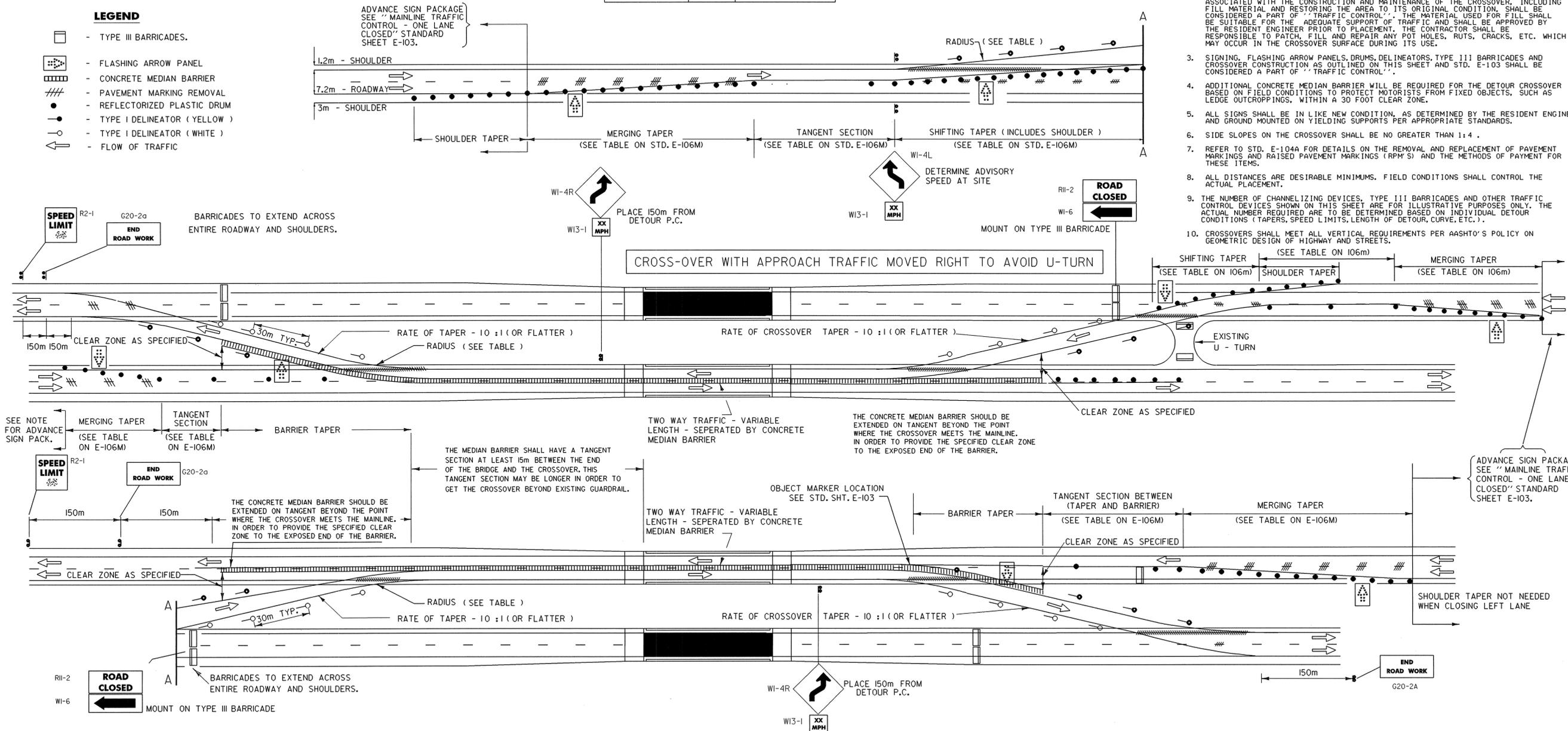
POSTED SPEED OR 85th PERCENTILE SPEED (mph)	DESIGN SPEED (km/h)	RADIUS (NO SUPERELEVATION) (PER AASHTO STD.) (m)
≤40	60	190
45	70	275
50	80	360
55	90	490
60 & 65	100	655
70	110	865

LEGEND

- TYPE III BARRICADES.
- FLASHING ARROW PANEL
- CONCRETE MEDIAN BARRIER
- PAVEMENT MARKING REMOVAL
- REFLECTORIZED PLASTIC DRUM
- TYPE I DELINEATOR (YELLOW)
- TYPE I DELINEATOR (WHITE)
- FLOW OF TRAFFIC

NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND REINSTALLATION OF EXISTING GUARDRAIL WHICH MUST BE REMOVED TO ACCOMMODATE THE LAYOUT OF THE CROSSOVER. WHEN TRAFFIC IS REQUIRED TO TRAVEL "AGAINST" THE OVERLAP OF THE EXISTING GUARDRAIL, THE GUARDRAIL SHALL BE REMOVED AND REASSEMBLED WITH THE LAP CHANGE TO GO "WITH" THE FLOW OF TRAFFIC. IT SHALL BE RETURNED TO ITS ORIGINAL LAP WHEN THE LANE IS AGAIN OPENED TO THE ORIGINAL DIRECTION OF TRAVEL. COST TO DO THIS WORK SHALL BE CONSIDERED A PART OF "TRAFFIC CONTROL", UNLESS OTHERWISE NOTED ON THE PLANS.
2. THE DETOUR SHALL BE PAVED TO A DEPTH OF 50MM AND A WIDTH OF 4.8M. PAVEMENT SHALL BE PAID UNDER "BITUMINOUS CONCRETE PAVEMENT". ALL OTHER COSTS ASSOCIATED WITH THE CONSTRUCTION AND MAINTENANCE OF THE CROSSOVER, INCLUDING FILL MATERIAL AND RESTORING THE AREA TO ITS ORIGINAL CONDITION, SHALL BE CONSIDERED A PART OF "TRAFFIC CONTROL". THE MATERIAL USED FOR FILL SHALL BE SUITABLE FOR THE ADEQUATE SUPPORT OF TRAFFIC AND SHALL BE APPROVED BY THE RESIDENT ENGINEER PRIOR TO PLACEMENT. THE CONTRACTOR SHALL BE RESPONSIBLE TO PATCH, FILL AND REPAIR ANY POT HOLES, RUTS, CRACKS, ETC. WHICH MAY OCCUR IN THE CROSSOVER SURFACE DURING ITS USE.
3. SIGNING, FLASHING ARROW PANELS, DRUMS, DELINEATORS, TYPE III BARRICADES AND CROSSOVER CONSTRUCTION AS OUTLINED ON THIS SHEET AND STD. E-103 SHALL BE CONSIDERED A PART OF "TRAFFIC CONTROL".
4. ADDITIONAL CONCRETE MEDIAN BARRIER WILL BE REQUIRED FOR THE DETOUR CROSSOVER BASED ON FIELD CONDITIONS TO PROTECT MOTORISTS FROM FIXED OBJECTS, SUCH AS LEDGE OUTCROPPINGS, WITHIN A 30 FOOT CLEAR ZONE.
5. ALL SIGNS SHALL BE IN LIKE NEW CONDITION, AS DETERMINED BY THE RESIDENT ENGINEER, AND GROUND MOUNTED ON YIELDING SUPPORTS PER APPROPRIATE STANDARDS.
6. SIDE SLOPES ON THE CROSSOVER SHALL BE NO GREATER THAN 1:4.
7. REFER TO STD. E-104A FOR DETAILS ON THE REMOVAL AND REPLACEMENT OF PAVEMENT MARKINGS AND RAISED PAVEMENT MARKINGS (RPM'S) AND THE METHODS OF PAYMENT FOR THESE ITEMS.
8. ALL DISTANCES ARE DESIRABLE MINIMUMS. FIELD CONDITIONS SHALL CONTROL THE ACTUAL PLACEMENT.
9. THE NUMBER OF CHANNELIZING DEVICES, TYPE III BARRICADES AND OTHER TRAFFIC CONTROL DEVICES SHOWN ON THIS SHEET ARE FOR ILLUSTRATIVE PURPOSES ONLY. THE ACTUAL NUMBER REQUIRED ARE TO BE DETERMINED BASED ON INDIVIDUAL DETOUR CONDITIONS (TAPERS, SPEED LIMITS, LENGTH OF DETOUR, CURVE, ETC.).
10. CROSSOVERS SHALL MEET ALL VERTICAL REQUIREMENTS PER AASHTO'S POLICY ON GEOMETRIC DESIGN OF HIGHWAY AND STREETS.



REVISIONS AND CORRECTIONS
 JUNE 13, 1997 - ORIGINAL APPROVAL DATE
 JANUARY 9, 1998 - ADDED CROSS-OVER WITH
 APPROACH TRAFFIC TO THE RIGHT
 FEB. 3, 1999 - ADDED ARROW BOARD

APPROVED

 DIRECTOR OF PROJECT DEVELOPMENT

MAINLINE TRAFFIC CONTROL DIVIDED HIGHWAY ONE ROADWAY CLOSED

OTHER STDS. E-103M E-106M
 REQUIRED: E-104AM E-107AM
 NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.



Metric
 STANDARD
 E-104M

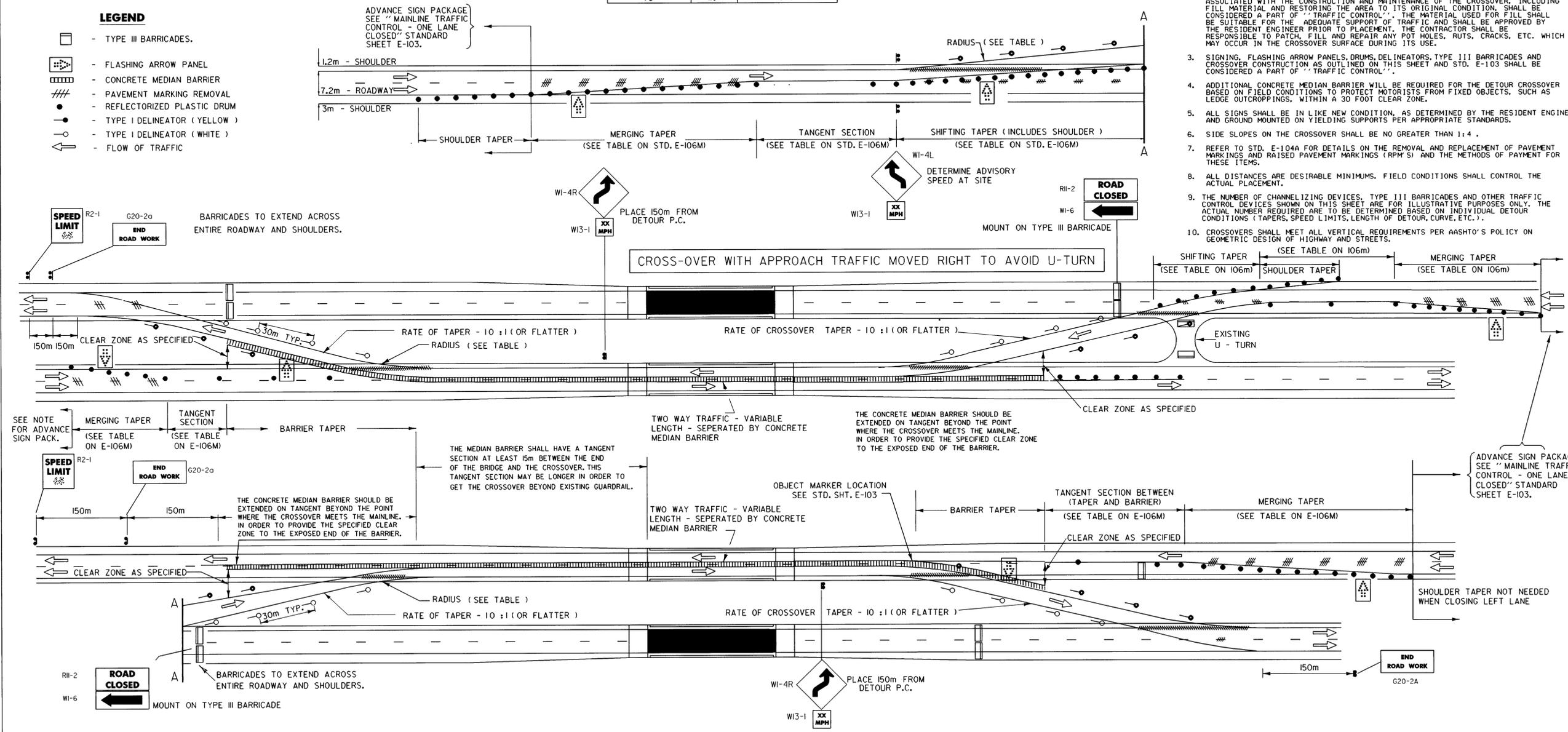
POSTED SPEED OR 85th PERCENTILE SPEED (mph)	DESIGN SPEED (km/h)	RADIUS (NO SUPERELEVATION) (PER AASHTO STD.) (m)
≤40	60	190
45	70	275
50	80	360
55	90	490
60 & 65	100	655
70	110	865

LEGEND

- TYPE III BARRICADES.
- FLASHING ARROW PANEL
- CONCRETE MEDIAN BARRIER
- PAVEMENT MARKING REMOVAL
- REFLECTORIZED PLASTIC DRUM
- TYPE I DELINEATOR (YELLOW)
- TYPE I DELINEATOR (WHITE)
- FLOW OF TRAFFIC

NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND REINSTALLATION OF EXISTING GUARDRAIL WHICH MUST BE REMOVED TO ACCOMMODATE THE LAYOUT OF THE CROSSOVER. WHEN TRAFFIC IS REQUIRED TO TRAVEL "AGAINST" THE OVERLAP OF THE EXISTING GUARDRAIL, THE RAIL SHALL BE REMOVED AND REASSEMBLED WITH THE LAP CHANGE TO GO "WITH" THE FLOW OF TRAFFIC. IT SHALL BE RETURNED TO ITS ORIGINAL LAP WHEN THE LANE IS AGAIN OPENED TO THE ORIGINAL DIRECTION OF TRAVEL. COST TO DO THIS WORK SHALL BE CONSIDERED A PART OF "TRAFFIC CONTROL", UNLESS OTHERWISE NOTED ON THE PLANS.
2. THE DETOUR SHALL BE PAVED TO A DEPTH OF 50MM AND A WIDTH OF 4.8M. PAVEMENT SHALL BE PAID UNDER "BITUMINOUS CONCRETE PAVEMENT". ALL OTHER COSTS ASSOCIATED WITH THE CONSTRUCTION AND MAINTENANCE OF THE CROSSOVER, INCLUDING FILL MATERIAL AND RESTORING THE AREA TO ITS ORIGINAL CONDITION, SHALL BE CONSIDERED A PART OF "TRAFFIC CONTROL". THE MATERIAL USED FOR FILL SHALL BE SUITABLE FOR THE ADEQUATE SUPPORT OF TRAFFIC AND SHALL BE APPROVED BY THE RESIDENT ENGINEER PRIOR TO PLACEMENT. THE CONTRACTOR SHALL BE RESPONSIBLE TO PATCH, FILL AND REPAIR ANY POT HOLES, RUTS, CRACKS, ETC. WHICH MAY OCCUR IN THE CROSSOVER SURFACE DURING ITS USE.
3. SIGNING, FLASHING ARROW PANELS, DRUMS, DELINEATORS, TYPE III BARRICADES AND CROSSOVER CONSTRUCTION AS OUTLINED ON THIS SHEET AND STD. E-103 SHALL BE CONSIDERED A PART OF "TRAFFIC CONTROL".
4. ADDITIONAL CONCRETE MEDIAN BARRIER WILL BE REQUIRED FOR THE DETOUR CROSSOVER BASED ON FIELD CONDITIONS TO PROTECT MOTORISTS FROM FIXED OBJECTS, SUCH AS LEDGE OUTCROPPINGS, WITHIN A 30 FOOT CLEAR ZONE.
5. ALL SIGNS SHALL BE IN LIKE NEW CONDITION, AS DETERMINED BY THE RESIDENT ENGINEER, AND GROUND MOUNTED ON YIELDING SUPPORTS PER APPROPRIATE STANDARDS.
6. SIDE SLOPES ON THE CROSSOVER SHALL BE NO GREATER THAN 1:4.
7. REFER TO STD. E-104A FOR DETAILS ON THE REMOVAL AND REPLACEMENT OF PAVEMENT MARKINGS AND RAISED PAVEMENT MARKINGS (RPM'S) AND THE METHODS OF PAYMENT FOR THESE ITEMS.
8. ALL DISTANCES ARE DESIRABLE MINIMUMS. FIELD CONDITIONS SHALL CONTROL THE ACTUAL PLACEMENT.
9. THE NUMBER OF CHANNELIZING DEVICES, TYPE III BARRICADES AND OTHER TRAFFIC CONTROL DEVICES SHOWN ON THIS SHEET ARE FOR ILLUSTRATIVE PURPOSES ONLY. THE ACTUAL NUMBER REQUIRED ARE TO BE DETERMINED BASED ON INDIVIDUAL DETOUR CONDITIONS (TAPERS, SPEED LIMITS, LENGTH OF DETOUR, CURVE, ETC.).
10. CROSSOVERS SHALL MEET ALL VERTICAL REQUIREMENTS PER AASHTO'S POLICY ON GEOMETRIC DESIGN OF HIGHWAY AND STREETS.



OTHER STDS. REQUIRED: E-103M E-106M E-104AM E-107AM
 NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS
 JUNE 13, 1997 - ORIGINAL APPROVAL DATE
 JANUARY 9, 1998 - ADDED CROSS-OVER WITH APPROACH TRAFFIC TO THE RIGHT

APPROVED

 DIRECTOR OF PROJECT DEVELOPMENT

 DIRECTOR OF CONSTRUCTION AND MAINTENANCE

MAINLINE TRAFFIC CONTROL DIVIDED HIGHWAY ONE ROADWAY CLOSED

Metric
 STANDARD
 E-104M

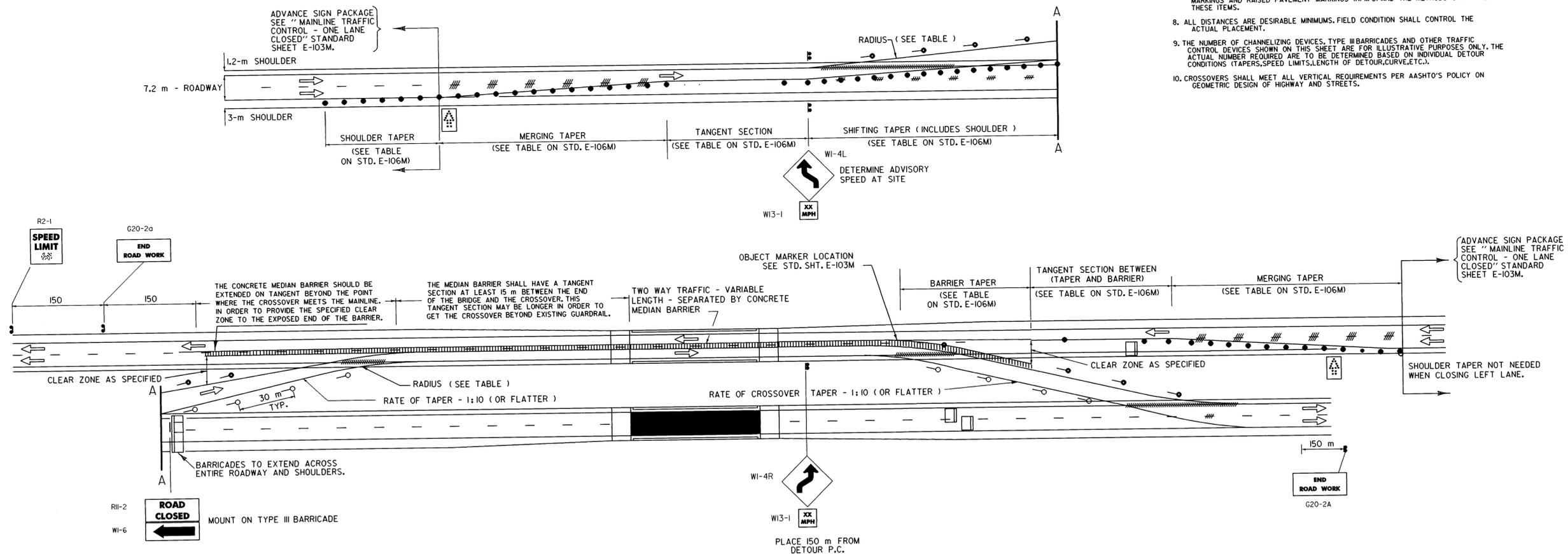
POSTED SPEED OR 85th PERCENTILE SPEED (mph)	DESIGN SPEED (km/h)	RADIUS (NO SUPERELEVATION) (PER AASHTO STD.) (m)
≤40	60	190
45	70	275
50	80	360
55	90	490
60 & 65	100	655
70	110	865

LEGEND

- TYPE III BARRICADES.
- FLASHING ARROW PANEL
- CONCRETE MEDIAN BARRIER
- PAVEMENT MARKING REMOVAL
- REFLECTORIZED PLASTIC DRUM
- TYPE I DELINEATOR (YELLOW)
- TYPE I DELINEATOR (WHITE)
- FLOW OF TRAFFIC

NOTES

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND REINSTALLATION OF EXISTING GUARDRAIL WHICH MUST BE REMOVED TO ACCOMMODATE THE LAYOUT OF THE CROSSOVER, WHERE TRAFFIC IS REQUIRED TO TRAVEL "AGAINST" THE OVERLAP OF THE EXISTING GUARDRAIL. THE RAIL SHALL BE REMOVED AND REASSEMBLED WITH THE LAP CHANGE TO GO "WITH" THE FLOW OF TRAFFIC. IT SHALL BE RETURNED TO ITS ORIGINAL LAP WHEN THE LANE IS AGAIN OPENED TO THE ORIGINAL DIRECTION OF TRAVEL. COST TO DO THIS WORK SHALL BE CONSIDERED A PART OF "TRAFFIC CONTROL", UNLESS OTHERWISE NOTED ON THE PLANS.
- THE DETOUR SHALL BE PAVED TO A DEPTH OF 50 mm AND A WIDTH OF 4.8 m. PAVEMENT SHALL BE PAID UNDER "BITUMINOUS CONCRETE PAVEMENT". ALL OTHER COSTS ASSOCIATED WITH THE CONSTRUCTION AND MAINTENANCE OF THE CROSSOVER, INCLUDING FILL MATERIAL AND RESTORING THE AREA TO ITS ORIGINAL CONDITION, SHALL BE CONSIDERED A PART OF "TRAFFIC CONTROL". THE MATERIAL USED FOR FILL SHALL BE SUITABLE FOR THE ADEQUATE SUPPORT OF TRAFFIC AND SHALL BE APPROVED BY THE RESIDENT ENGINEER PRIOR TO PLACEMENT. THE CONTRACTOR SHALL BE RESPONSIBLE TO PATCH, FILL AND REPAIR ANY POT HOLES, RUTS, CRACKS, ETC. WHICH MAY OCCUR IN THE CROSSOVER SURFACE DURING ITS USE.
- SIGNING, FLASHING ARROW PANELS, DRUMS, DELINEATORS, TYPE III BARRICADES AND CROSSOVER CONSTRUCTION AS OUTLINED ON THIS SHEET AND STD. E-103M SHALL BE CONSIDERED A PART OF "TRAFFIC CONTROL".
- ADDITIONAL CONCRETE MEDIAN BARRIER WILL BE REQUIRED FOR THE DETOUR CROSSOVER BASED ON FIELD CONDITIONS TO PROTECT MOTORISTS FROM FIXED OBJECTS, SUCH AS LEDGE OUTCROPPINGS, WITHIN THE CLEAR ZONE.
- ALL SIGNS SHALL BE IN LIKE NEW CONDITION, AS DETERMINED BY THE RESIDENT ENGINEER, AND GROUND MOUNTED ON YIELDING SUPPORTS PER APPROPRIATE STANDARDS.
- SIDE SLOPES ON THE CROSSOVER SHALL BE NO GREATER THAN 1:4.
- REFER TO STD. E-104AM FOR DETAILS ON THE REMOVAL AND REPLACEMENT OF PAVEMENT MARKINGS AND RAISED PAVEMENT MARKINGS (RPMS) AND THE METHODS OF PAYMENT FOR THESE ITEMS.
- ALL DISTANCES ARE DESIRABLE MINIMUMS. FIELD CONDITION SHALL CONTROL THE ACTUAL PLACEMENT.
- THE NUMBER OF CHANNELIZING DEVICES, TYPE III BARRICADES AND OTHER TRAFFIC CONTROL DEVICES SHOWN ON THIS SHEET ARE FOR ILLUSTRATIVE PURPOSES ONLY. THE ACTUAL NUMBER REQUIRED ARE TO BE DETERMINED BASED ON INDIVIDUAL DETOUR CONDITIONS (TAPERS, SPEED LIMITS, LENGTH OF DETOUR, CURVE, ETC.).
- CROSSOVERS SHALL MEET ALL VERTICAL REQUIREMENTS PER AASHTO'S POLICY ON GEOMETRIC DESIGN OF HIGHWAY AND STREETS.



OTHER STDS. E-103M E-106M
 REQUIRED: E-104AM E-107AM
 NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS
 JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

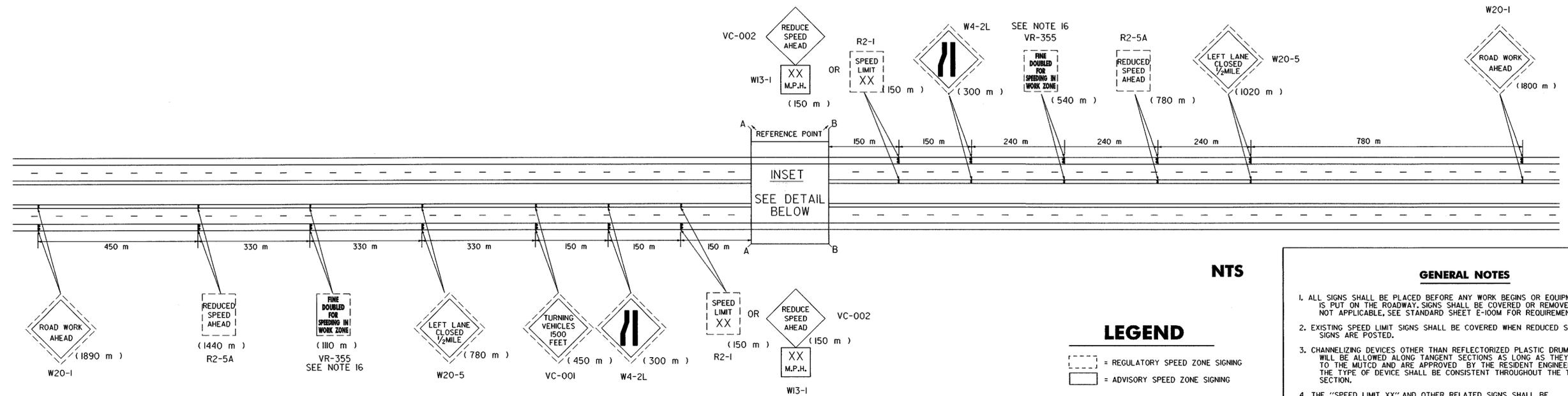
 DIRECTOR OF ENGINEERING

 DIRECTOR OF CONSTRUCTION AND MAINTENANCE

**MAINLINE TRAFFIC CONTROL
 DIVIDED HIGHWAY ONE
 ROADWAY CLOSED**



**Metric
 STANDARD
 E-104M**



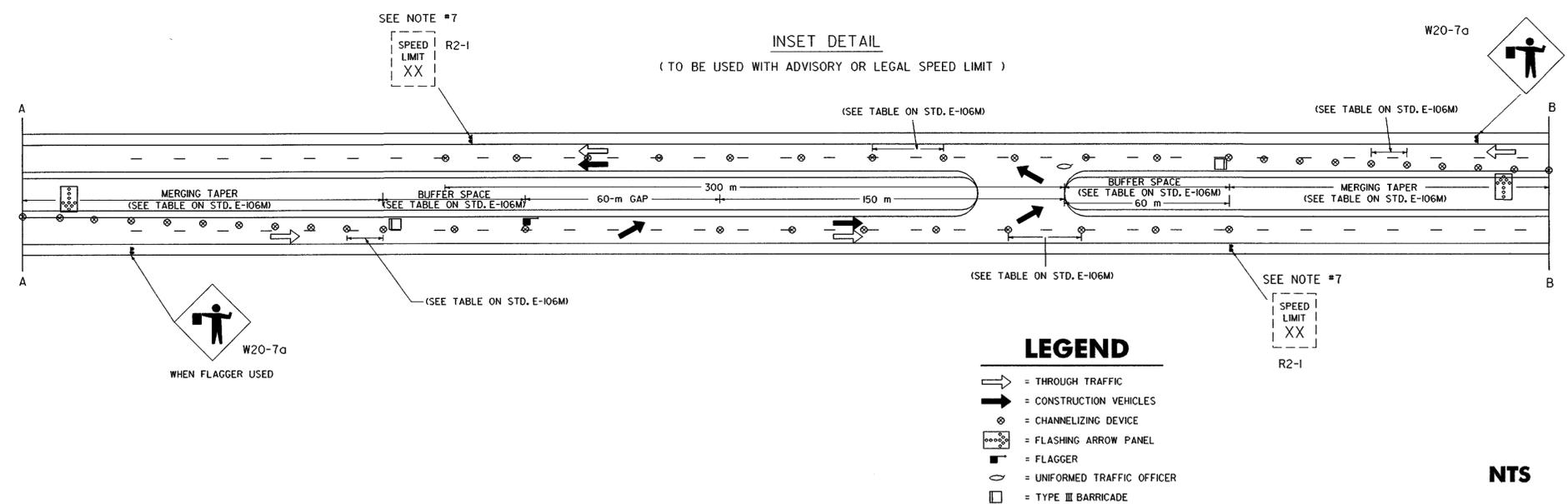
NTS

LEGEND

- = REGULATORY SPEED ZONE SIGNING
- = ADVISORY SPEED ZONE SIGNING

GENERAL NOTES

1. ALL SIGNS SHALL BE PLACED BEFORE ANY WORK BEGINS OR EQUIPMENT IS PUT ON THE ROADWAY. SIGNS SHALL BE COVERED OR REMOVED WHEN NOT APPLICABLE, SEE STANDARD SHEET E-100M FOR REQUIREMENTS.
2. EXISTING SPEED LIMIT SIGNS SHALL BE COVERED WHEN REDUCED SPEED SIGNS ARE POSTED.
3. CHANNELIZING DEVICES OTHER THAN REFLECTORIZED PLASTIC DRUMS WILL BE ALLOWED ALONG TANGENT SECTIONS AS LONG AS THEY CONFORM TO THE MUTCD AND ARE APPROVED BY THE RESIDENT ENGINEER. THE TYPE OF DEVICE SHALL BE CONSISTENT THROUGHOUT THE TANGENT SECTION.
4. THE "SPEED LIMIT XX" AND OTHER RELATED SIGNS SHALL BE REMOVED OR COVERED WHEN WORK IS NOT IN PROGRESS AND ROADWAY IS NOT RESTRICTED.
5. "SPEED ZONE AHEAD" SIGNS MAY BE USED IN LIEU OF "REDUCED SPEED AHEAD".
6. FOR RELATIVELY SHORT TERM PROJECTS WITH NO OFFICIAL REGULATORY SPEED ZONE ENACTMENT, ADVISORY SPEED PLAQUES MOUNTED AS SUPPLEMENTAL SIGNS ON OTHER WARNING SIGNS MAY BE USED.
7. WHEN REDUCED REGULATORY SPEED LIMITS ARE USED THEN A SIGN, INFORMING MOTORIST THAT THE TEMPORARY SPEED ZONE HAS ENDED, SHALL BE INSTALLED AT THE END OF THE WORK AREA.
8. ALL FIXED SIGNS SHALL BE MOUNTED ON YIELDING STEEL, ALUMINUM OR WOOD SUPPORTS AS SHOWN ON STANDARD SHEETS E-100M AND E-121M.
9. PORTABLE SIGNS SHALL BE KEPT LEVEL WHEN PLACED ON THE EDGE OF ROADWAY AND ALL VEGETATION THAT INTERFERES WITH VISIBILITY OF THE SIGNS SHALL BE REMOVED. WHEN PLACED BEHIND GUARDRAIL, THE BOTTOM OF THE SIGN FACES SHALL BE PLACED ABOVE THE TOP OF THE GUARDRAIL.
10. WARNING LIGHTS SHALL NOT BE USED ON CHANNELIZING DEVICES.
11. WHEN SIGNING FOR THIS OPERATION INTERFERES WITH THAT FOR WORK ON THE MAINLINE, THE RESIDENT ENGINEER SHALL ESTABLISH THE APPROPRIATE SIGN REQUIREMENTS.
12. THE CHOICE OF USING FLAGGERS OR UNIFORMED OFFICERS IS AT THE DISCRETION OF THE ENGINEER.
13. THE FLASHING ARROW PANELS SHALL BE LOCATED AS NEAR TO THE FRONT OF THE TAPER AS POSSIBLE WHILE STILL REMAINING INSIDE THE CHANNELIZING DEVICES.
14. MERGING TAPERS SHOULD BE DESIGNED FOR THE SPEED LIMIT OF THE ROADWAY PRIOR TO CONSTRUCTION.
15. CONSTRUCTION VEHICLES USED FOR HAULING MATERIAL AT THE WORK SITE AND TRAVELLING ON PUBLIC HIGHWAYS SHOULD HAVE A "CONSTRUCTION VEHICLE DO NOT FOLLOW" SIGN MOUNTED ON THE REAR OF THE VEHICLE.
16. ONLY USE IF TEMPORARY SPEED LIMIT FORM HAS BEEN FILED.



NTS

LEGEND

- = THROUGH TRAFFIC
- = CONSTRUCTION VEHICLES
- = CHANNELIZING DEVICE
- = FLASHING ARROW PANEL
- = FLAGGER
- = UNIFORMED TRAFFIC OFFICER
- = TYPE III BARRICADE

OTHER STDS. E-100M E-102M E-106M E-121M
 REQUIRED: E-101M E-102AM E-107AM E-142M

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS
 JUNE 13, 1997 - ORIGINAL APPROVAL DATE
 SEPT. 24, 1998 - ADDED THE FINE SIGN VR-355
 APRIL 1, 1999 - ADDED NOTE 16

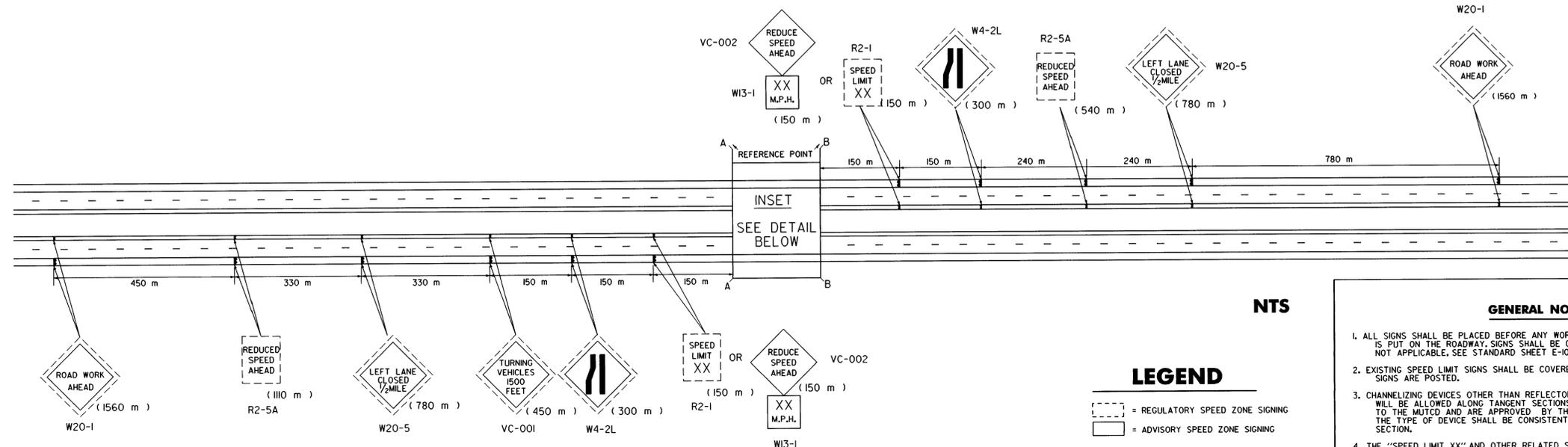
APPROVED

 DIRECTOR OF PROJECT DEVELOPMENT

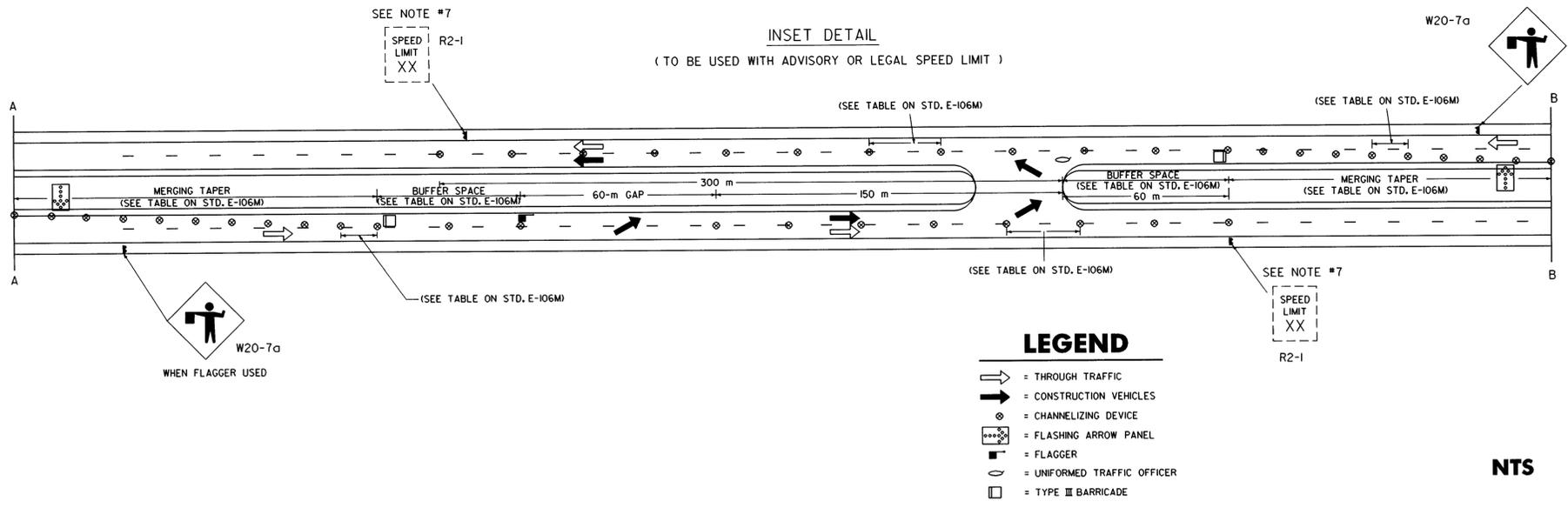
TRAFFIC CONTROL FOR
 CONSTRUCTION VEHICLE
 U-TURNS ON DIVIDED HIGHWAY



Metric
 STANDARD
 E-105 M



- GENERAL NOTES**
- ALL SIGNS SHALL BE PLACED BEFORE ANY WORK BEGINS OR EQUIPMENT IS PUT ON THE ROADWAY. SIGNS SHALL BE COVERED OR REMOVED WHEN NOT APPLICABLE. SEE STANDARD SHEET E-100M FOR REQUIREMENTS.
 - EXISTING SPEED LIMIT SIGNS SHALL BE COVERED WHEN REDUCED SPEED SIGNS ARE POSTED.
 - CHANNELIZING DEVICES OTHER THAN REFLECTORIZED PLASTIC DRUMS WILL BE ALLOWED ALONG TANGENT SECTIONS AS LONG AS THEY CONFORM TO THE MUTCD AND ARE APPROVED BY THE RESIDENT ENGINEER. THE TYPE OF DEVICE SHALL BE CONSISTENT THROUGHOUT THE TANGENT SECTION.
 - THE "SPEED LIMIT XX" AND OTHER RELATED SIGNS SHALL BE REMOVED OR COVERED WHEN WORK IS NOT IN PROGRESS AND ROADWAY IS NOT RESTRICTED.
 - "SPEED ZONE AHEAD" SIGNS MAY BE USED IN LIEU OF "REDUCED SPEED AHEAD".
 - FOR RELATIVELY SHORT TERM PROJECTS WITH NO OFFICIAL REGULATORY SPEED ZONE ENACTMENT, ADVISORY SPEED PLAQUES MOUNTED AS SUPPLEMENTAL SIGNS ON OTHER WARNING SIGNS MAY BE USED.
 - WHEN REDUCED REGULATORY SPEED LIMITS ARE USED THEN A SIGN, INFORMING MOTORIST THAT THE TEMPORARY SPEED ZONE HAS ENDED, SHALL BE INSTALLED AT THE END OF THE WORK AREA.
 - ALL FIXED SIGNS SHALL BE MOUNTED ON YIELDING STEEL, ALUMINUM OR WOOD SUPPORTS AS SHOWN ON STANDARD SHEETS E-100M AND E-121M.
 - PORTABLE SIGNS SHALL BE KEPT LEVEL WHEN PLACED ON THE EDGE OF ROADWAY AND ALL VEGETATION THAT INTERFERES WITH VISIBILITY OF THE SIGNS SHALL BE REMOVED, WHEN PLACED BEHIND GUARDRAIL, THE BOTTOM OF THE SIGN FACES SHALL BE PLACED ABOVE THE TOP OF THE GUARDRAIL.
 - WARNING LIGHTS SHALL NOT BE USED ON CHANNELIZING DEVICES.
 - WHEN SIGNING FOR THIS OPERATION INTERFERES WITH THAT FOR WORK ON THE MAINLINE, THE RESIDENT ENGINEER SHALL ESTABLISH THE APPROPRIATE SIGN REQUIREMENTS.
 - THE CHOICE OF USING FLAGGERS OR UNIFORMED OFFICERS IS AT THE DISCRETION OF THE ENGINEER.
 - THE FLASHING ARROW PANELS SHALL BE LOCATED AS NEAR TO THE FRONT OF THE TAPER AS POSSIBLE WHILE STILL REMAINING INSIDE THE CHANNELIZING DEVICES.
 - MERCING TAPERS SHOULD BE DESIGNED FOR THE SPEED LIMIT OF THE ROADWAY PRIOR TO CONSTRUCTION.
 - CONSTRUCTION VEHICLES USED FOR HAULING MATERIAL AT THE WORK SITE AND TRAVELLING ON PUBLIC HIGHWAYS SHOULD HAVE A "CONSTRUCTION VEHICLE DO NOT FOLLOW" SIGN MOUNTED ON THE REAR OF THE VEHICLE.



OTHER STDS. REQUIRED: E-100M E-101M E-102M E-102AM E-106M E-107AM E-121M E-142M

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

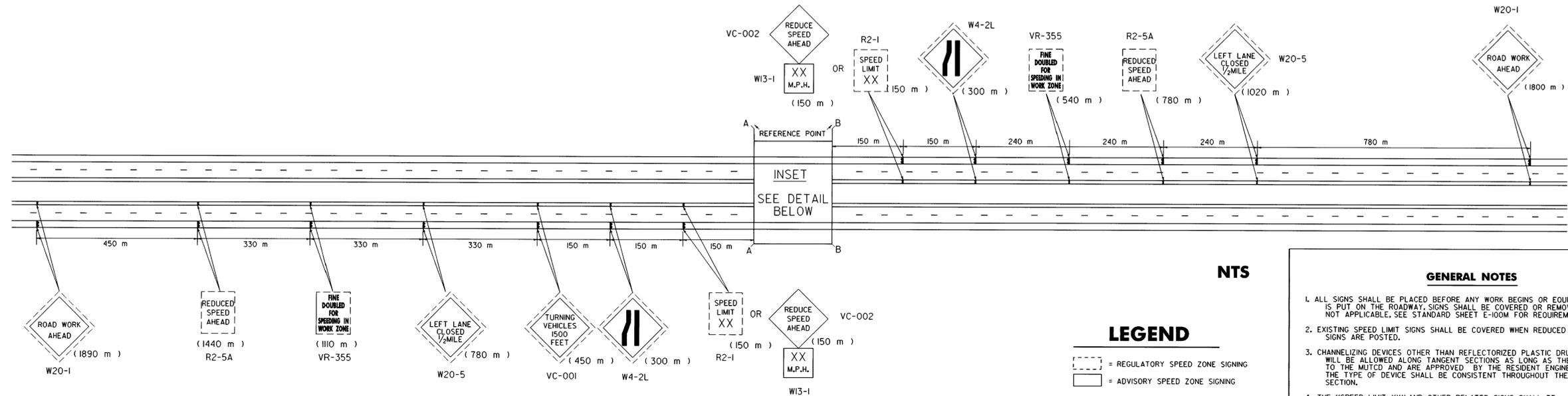
[Signature]
DIRECTOR OF ENGINEERING

[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

TRAFFIC CONTROL FOR CONSTRUCTION VEHICLE U-TURNS ON DIVIDED HIGHWAY



Metric
STANDARD
E-105M



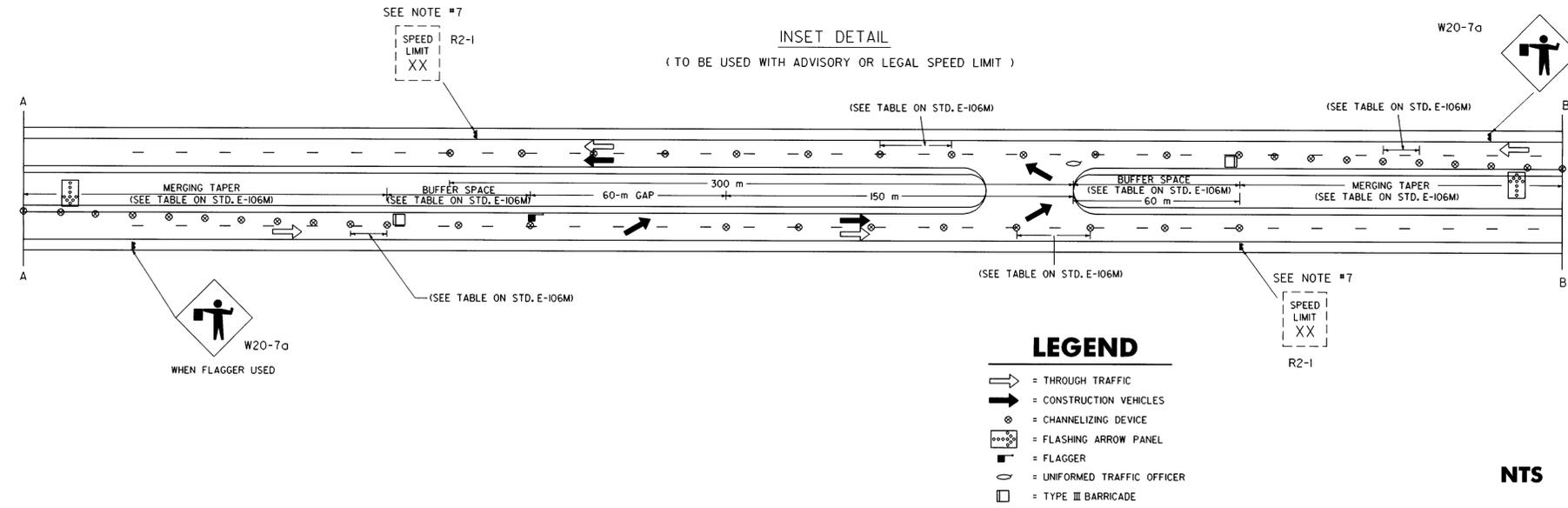
NTS

LEGEND

- = REGULATORY SPEED ZONE SIGNING
- = ADVISORY SPEED ZONE SIGNING

GENERAL NOTES

1. ALL SIGNS SHALL BE PLACED BEFORE ANY WORK BEGINS OR EQUIPMENT IS PUT ON THE ROADWAY. SIGNS SHALL BE COVERED OR REMOVED WHEN NOT APPLICABLE. SEE STANDARD SHEET E-100M FOR REQUIREMENTS.
2. EXISTING SPEED LIMIT SIGNS SHALL BE COVERED WHEN REDUCED SPEED SIGNS ARE POSTED.
3. CHANNELIZING DEVICES OTHER THAN REFLECTORIZED PLASTIC DRUMS WILL BE ALLOWED ALONG TANGENT SECTIONS AS LONG AS THEY CONFORM TO THE MUTCD AND ARE APPROVED BY THE RESIDENT ENGINEER. THE TYPE OF DEVICE SHALL BE CONSISTENT THROUGHOUT THE TANGENT SECTION.
4. THE "SPEED LIMIT XX" AND OTHER RELATED SIGNS SHALL BE REMOVED OR COVERED WHEN WORK IS NOT IN PROGRESS AND ROADWAY IS NOT RESTRICTED.
5. "SPEED ZONE AHEAD" SIGNS MAY BE USED IN LIEU OF "REDUCED SPEED AHEAD".
6. FOR RELATIVELY SHORT TERM PROJECTS WITH NO OFFICIAL REGULATORY SPEED ZONE ENACTMENT, ADVISORY SPEED PLAQUES MOUNTED AS SUPPLEMENTAL SIGNS ON OTHER WARNING SIGNS MAY BE USED.
7. WHEN REDUCED REGULATORY SPEED LIMITS ARE USED THEN A SIGN, INFORMING MOTORIST THAT THE TEMPORARY SPEED ZONE HAS ENDED, SHALL BE INSTALLED AT THE END OF THE WORK AREA.
8. ALL FIXED SIGNS SHALL BE MOUNTED ON YIELDING STEEL, ALUMINUM OR WOOD SUPPORTS AS SHOWN ON STANDARD SHEETS E-100M AND E-121M.
9. PORTABLE SIGNS SHALL BE KEPT LEVEL WHEN PLACED ON THE EDGE OF ROADWAY AND ALL VEGETATION THAT INTERFERES WITH VISIBILITY OF THE SIGNS SHALL BE REMOVED. WHEN PLACED BEHIND GUARDRAIL, THE BOTTOM OF THE SIGN FACES SHALL BE PLACED ABOVE THE TOP OF THE GUARDRAIL.
10. WARNING LIGHTS SHALL NOT BE USED ON CHANNELIZING DEVICES.
11. WHEN SIGNING FOR THIS OPERATION INTERFERES WITH THAT FOR WORK ON THE MAINLINE, THE RESIDENT ENGINEER SHALL ESTABLISH THE APPROPRIATE SIGN REQUIREMENTS.
12. THE CHOICE OF USING FLAGGERS OR UNIFORMED OFFICERS IS AT THE DISCRETION OF THE ENGINEER.
13. THE FLASHING ARROW PANELS SHALL BE LOCATED AS NEAR TO THE FRONT OF THE TAPER AS POSSIBLE WHILE STILL REMAINING INSIDE THE CHANNELIZING DEVICES.
14. MERGING TAPERS SHOULD BE DESIGNED FOR THE SPEED LIMIT OF THE ROADWAY PRIOR TO CONSTRUCTION.
15. CONSTRUCTION VEHICLES USED FOR HAULING MATERIAL AT THE WORK SITE AND TRAVELLING ON PUBLIC HIGHWAYS SHOULD HAVE A "CONSTRUCTION VEHICLE DO NOT FOLLOW" SIGN MOUNTED ON THE REAR OF THE VEHICLE.



NTS

LEGEND

- = THROUGH TRAFFIC
- = CONSTRUCTION VEHICLES
- = CHANNELIZING DEVICE
- = FLASHING ARROW PANEL
- = FLAGGER
- = UNIFORMED TRAFFIC OFFICER
- = TYPE III BARRICADE

REVISIONS AND CORRECTIONS
 JUNE 13, 1997 - ORIGINAL APPROVAL DATE
 SEPT. 24, 1998 - ADDED THE FINE SIGN VR-355

APPROVED

 DIRECTOR OF PROJECT DEVELOPMENT

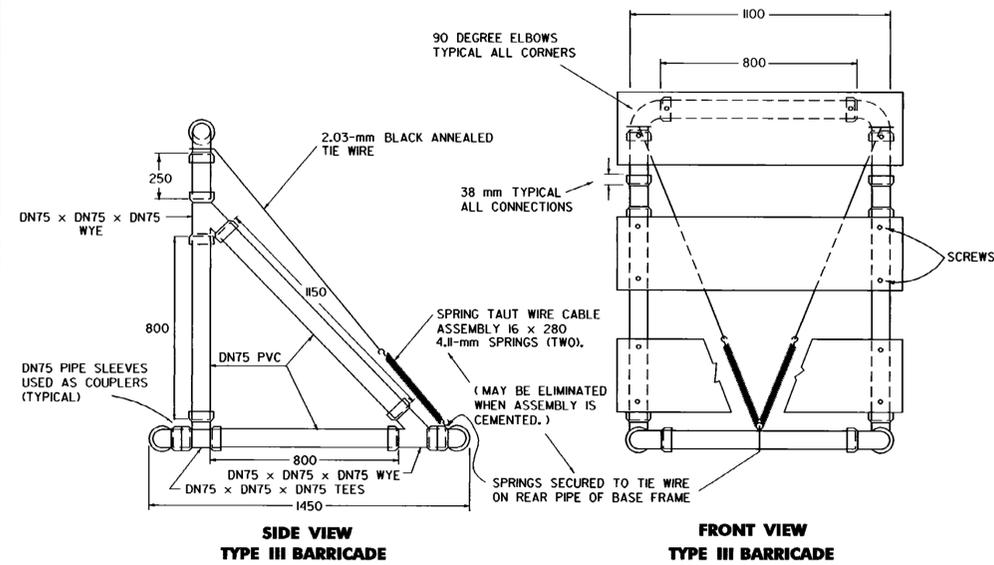
**TRAFFIC CONTROL FOR
 CONSTRUCTION VEHICLE
 U-TURNS ON DIVIDED HIGHWAY**

OTHER STDS. REQUIRED: E-100M E-101M E-102M E-102AM E-106M E-107AM E-121M E-142M

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.



Metric
 STANDARD
 E-105M

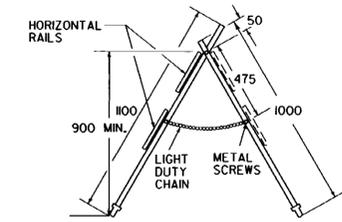


**SIDE VIEW
TYPE III BARRICADE**

**FRONT VIEW
TYPE III BARRICADE**

- MATERIALS FOR TYPE I AND II BARRICADES**
- 6 m - DN25 PVC
 - 4 - DN25 PVC 90° ELBOWS
 - 750 mm - DN15 THINWALL PVC CONDUIT
 - 900 mm - 6-mm STEEL ROD
 - 4 - M24 WASHERS
 - 600 mm - LIGHT DUTY CHAIN
 - M6 x 1 x 14 PAN HEAD METAL SCREWS (AS REQUIRED)
 - 2 - M20 COTTER PINS
 - 2 OR 4 - 200 OR 300 X 900 X 0.64 BARRICADE RAILS (AS REQUIRED)

- MATERIALS FOR TYPE III BARRICADES**
- 9 m - DN75 PVC PIPE
 - 6 - DN75 90° ELBOWS
 - 2 - DN75 TEES
 - 4 - DN75 WYES
 - 3 - 200 OR 300 X 1200 X 0.64 BARRICADE RAILS
 - 2 - 16 X 280, 4.11-mm SPRINGS (IF ASSEMBLY IS NOT CEMENTED)
 - 12 - M6 x 1 x 25 PAN HEAD METAL SCREWS
 - 4.5 m - 2.03-mm BLACK ANNEALED TIE WIRE (IF ASSEMBLY IS NOT CEMENTED)



MATERIALS

THE PIPE, WYES, TEES AND ELBOWS USED TO CONSTRUCT BARRICADES SHALL CONFORM TO THE REQUIREMENTS OF ASTM D 2241 FOR PVC 1120 OR PVC 1220, SDR-21, PRESSURE RATING 1380 kPa. THE WYES, TEES AND ELBOWS SHALL CONFORM TO THE REQUIREMENTS OF ASTM D 2466, TYPE II, GRADE 1. ALL JOINTS SHALL BE SLIP-FIT AND MAY BE LIGHTLY CEMENTED. THE BARRICADE RAILS SHALL BE FABRICATED FROM 0.64-mm ANODIZED ALUMINUM AND SHALL HAVE REFLECTORIZED ALTERNATING ORANGE AND WHITE STRIPES (SLOPING DOWNWARD AT AN ANGLE OF 45° IN THE DIRECTION TRAFFIC IS TO PASS).

MAINTENANCE

BARRICADES SHALL BE MAINTAINED IN CLEAN AND LEGIBLE CONDITIONS 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. THE PVC PIPE AND FITTINGS SHALL BE WHITE IN COLOR. AT LEAST TWO (2) HOLES SHALL BE DRILLED (5 mm DIAM.) IN EACH SECTION OF PIPE AND FITTINGS IF THE ASSEMBLY IS NOT CEMENTED.

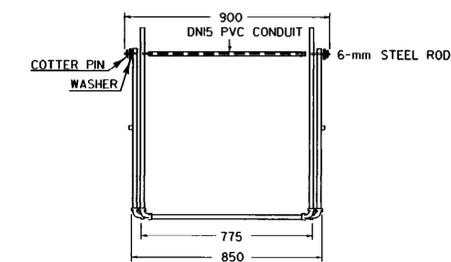
BARRICADES SHALL BE STABILIZED WITH SAND BAGS OF MINIMUM MASS WHICH WILL NOT CONSTITUTE A HAZARD IF THE BARRICADE IS HIT, THESE SHALL BE PLACED ONLY ON THE FRONT AND REAR PIPES OF THE BASE FRAME OF THE BARRICADE. SAND BAG STABILIZERS SHALL BE SO PLACED AS NOT TO A HAZARD TO VEHICLES PASSING ON EITHER SIDE. GLUED JOINTS MAY PROVIDE ADDITIONAL STABILITY TO THE INSTALLATION.

TYPE I BARRICADES SHALL UTILIZE ONE HORIZONTAL RAIL IN EACH DIRECTION.

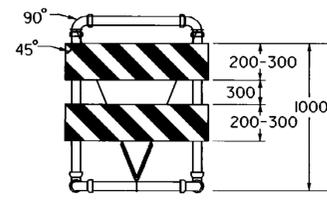
TYPE II BARRICADES SHALL BE A TYPE I BARRICADE WITH AN ADDITIONAL HORIZONTAL RAIL MOUNTED BELOW THE OTHER IN EACH DIRECTION.

TYPE III BARRICADES (MODIFIED) SHALL CONSIST OF THE BREAKAWAY DN75 PVC DESIGN SHOWN ON THIS SHEET WITH THE TWO-RAIL LAYOUT DETAILED ABOVE LEFT.

SEE STD E-107M FOR ADDITIONAL INFORMATION.



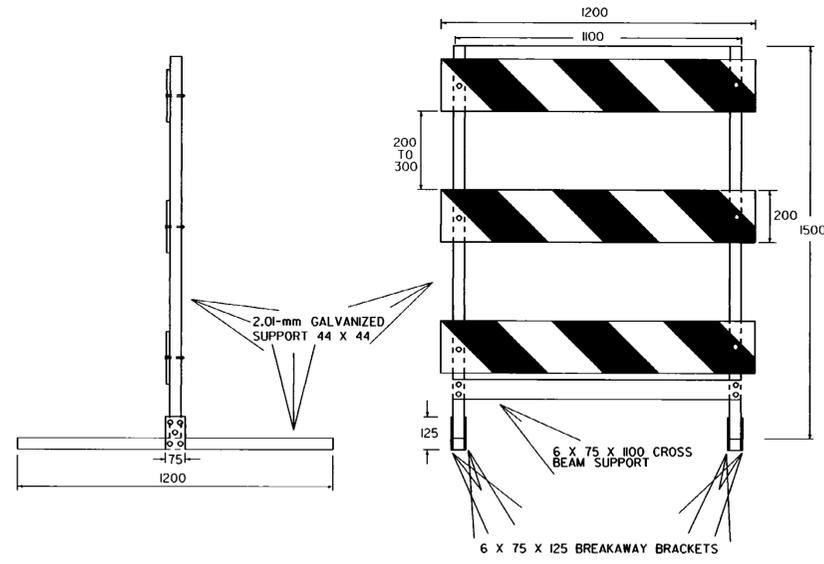
TYPE I AND TYPE II BARRICADE



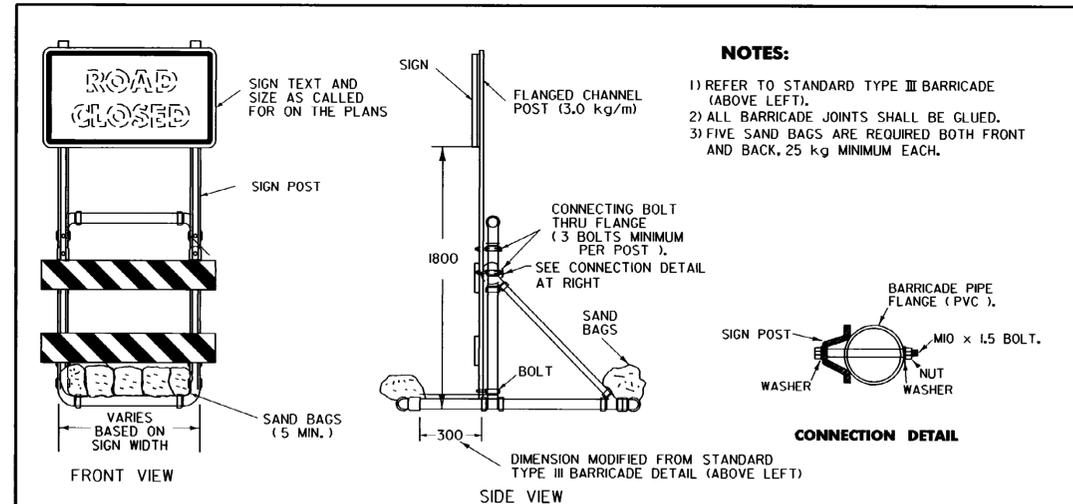
**TYPE III (MODIFIED) BARRICADE
(STRIPING IS SHOWN WITH TRAFFIC PASSING TO THE RIGHT).**

MATERIALS FOR METAL TYPE III BARRICADES

- PANELS (3):**
200 X 1200 GALVANIZED STEEL...COVERED FOR 2 SIDES WITH WHITE/ORANGE, DIAGONALLY STRIPED REFLECTIVE SHEETING
- VERTICAL SUPPORTS (2):** 2.01-mm GALVANIZED TUBING 44 X 44 X 1500
- HORIZONTAL SUPPORTS (2):** 2.01-mm GALVANIZED TUBING 44 X 44 X 1200
- CROSS BEAM SUPPORT (1):** COLD GALVANIZED STEEL 6 X 75 X 1100
- BREAKAWAY BRACKETS (4):** COLD GALVANIZED STEEL 6 X 75 X 125
- FASTENERS:**
6 - SHEAR BOLTS WITH LOCK NUTS M6 X 1 X 70
4 - FULCRUM BOLTS WITH LOCK NUTS M10 X 1.5 X 70
4 - FASTENER BOLTS WITH LOCK NUTS M10 X 1.5 X 70
6 - PANEL BOLTS WITH LOCK NUTS AND WASHERS M6 X 1 X 50
- ALL FASTENERS GALVANIZED STEEL.
ALL BOLTS HEX HEAD.



SIDE AND FRONT VIEW OF TYPE III METAL BARRICADE



**SIGN MOUNTING ON
TYPE III BARRICADE (MODIFIED)**

NOTES:

- 1) REFER TO STANDARD TYPE III BARRICADE (ABOVE LEFT).
- 2) ALL BARRICADE JOINTS SHALL BE GLUED.
- 3) FIVE SAND BAGS ARE REQUIRED BOTH FRONT AND BACK, 25 kg MINIMUM EACH.

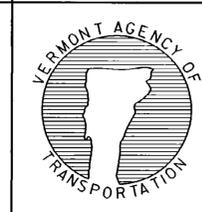
**OTHER STDS. E-107M
REQUIRED:**

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

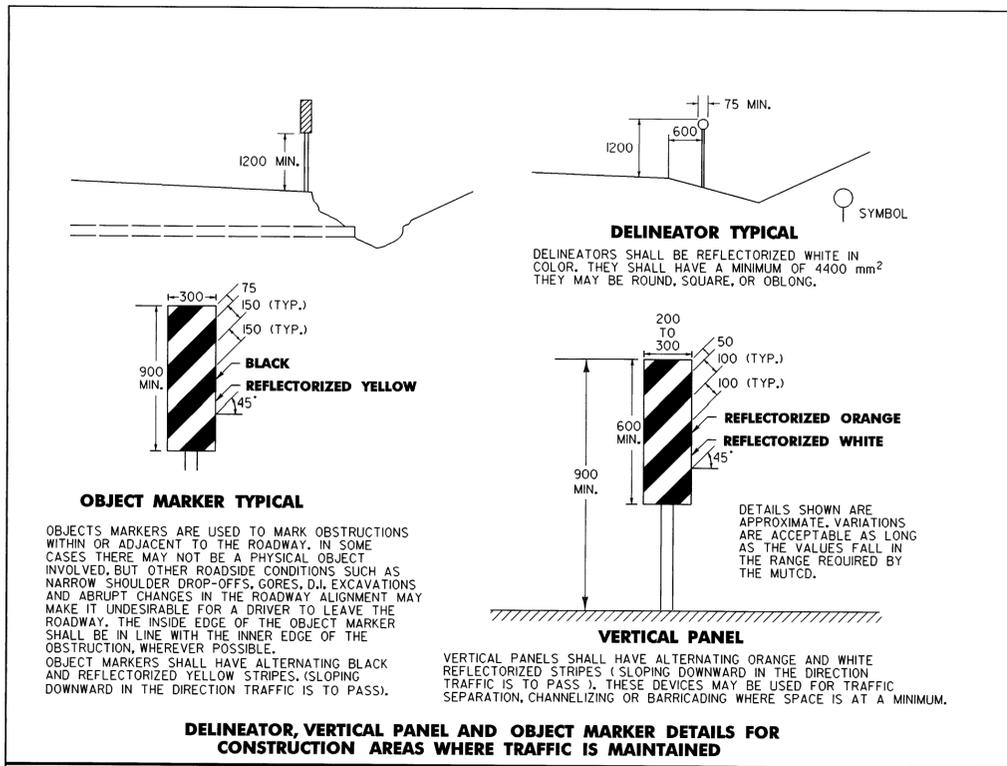
REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED
[Signature]
DIRECTOR OF ENGINEERING
[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

**BREAKAWAY BARRICADE
DETAILS**

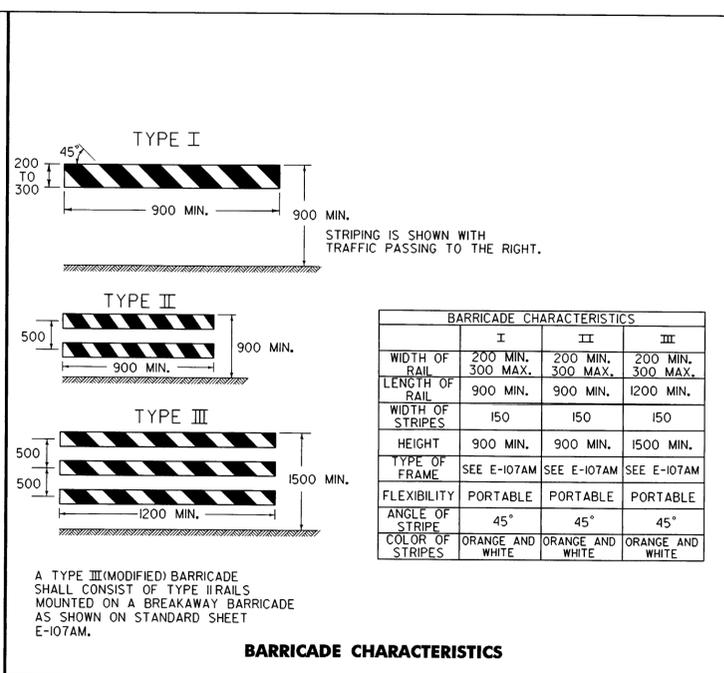


**Metric
STANDARD
E-107AM**



DELINEATOR, VERTICAL PANEL AND OBJECT MARKER DETAILS FOR CONSTRUCTION AREAS WHERE TRAFFIC IS MAINTAINED

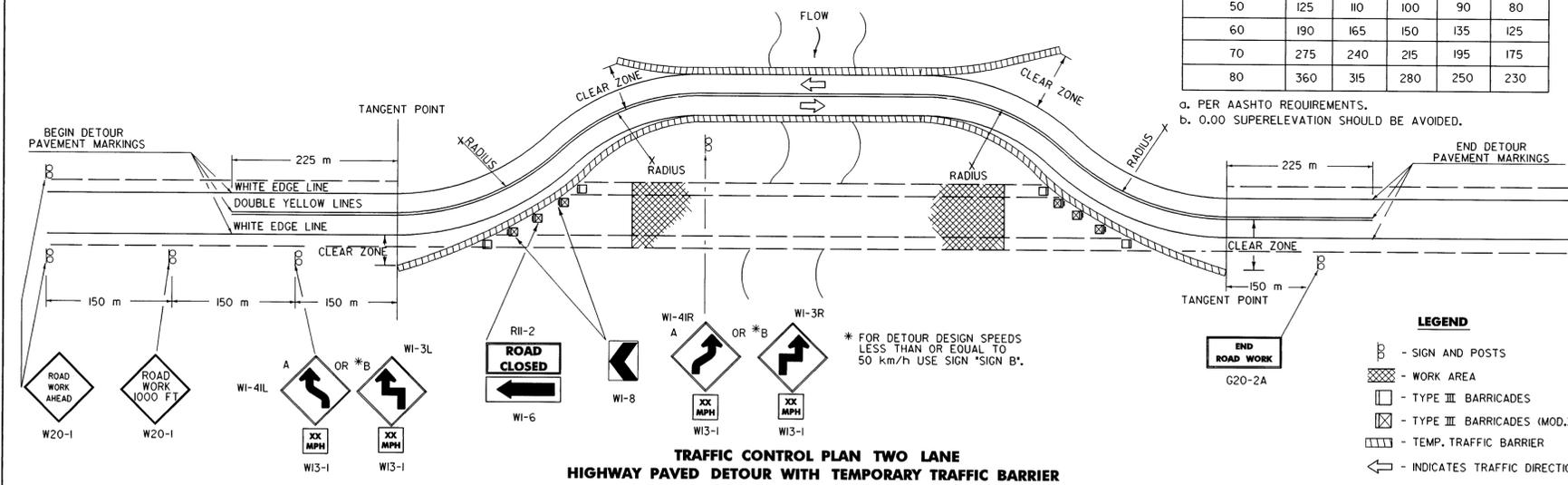
ALL SIGN PLACEMENT DISTANCES ARE DESIRABLE SPECIFICATIONS. FIELD CONDITIONS SHALL CONTROL THE ACTUAL PLACEMENT. PROJECT CONSTRUCTION APPROACH SIGNING PLACEMENT SHALL TAKE INTO CONSIDERATION SPACING REQUIREMENTS FOR THE DETOUR SIGN LAYOUT REQUIREMENTS.



BARRICADE CHARACTERISTICS

DETOUR DESIGN SPEED km/h	MINIMUM RADIUS (m) ^a				
	SUPERELEVATION				
	0.000 ^b	0.020	0.040	0.060	0.080
30	40	35	35	30	30
40	75	65	60	55	50
50	125	110	100	90	80
60	190	165	150	135	125
70	275	240	215	195	175
80	360	315	280	250	230

a. PER AASHTO REQUIREMENTS.
 b. 0.00 SUPERELEVATION SHOULD BE AVOIDED.



BARRICADES

APPLICATION NOTES
 TYPE I BARRICADES SHALL BE USED ON CONVENTIONAL ROADS OR URBAN STREETS AND ARTERIALS TO MARK A SPECIFIC HAZARD.
 TYPE II BARRICADES SHALL BE USED ON EXPRESSWAYS AND FREEWAYS, SERVING THE SAME FUNCTIONS AS TYPE I BARRICADES.
 TYPE III BARRICADES (SEE STD. E-107AM) SHALL ONLY BE USED WHEN A ROAD SECTION OR LANE IS CLOSED TO TRAFFIC AND ARE TO BE ERECTED AT THE POINT OF CLOSURE.

MATERIALS
 THE BARRICADES SHOWN ON THIS SHEET SHOULD BE OF LOW MASS MATERIAL. IF WOOD IS USED THE FOLLOWING CONDITIONS SHALL APPLY:
 1. WOODEN BARRICADES (TYPE 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 mph ARE EXPECTED UNLESS INSTALLED FOR PEDESTRIAN CONTROL BEHIND APPROVED POSITIVE BARRIERS.
 B) MAY BE USED WHERE OPERATING SPEEDS OF 20 mph OR LESS ARE EXPECTED.
 2. TYPE III WOODEN BARRICADES SHALL NOT BE USED.

COLORS
 THE BARRICADE PANELS SHOWN ON THIS SHEET SHALL HAVE ALTERNATING REFLECTORIZED WHITE AND ORANGE STRIPES. THE ORANGE SHALL CONFORM WITH THE STANDARD COLORS ADOPTED BY AASHTO AND APPROVED BY THE FHWA. THE BARRICADE COMPONENTS SHALL BE WHITE UNLESS UNPAINTED METAL OR ALUMINUM IS USED.

REFLECTORIZATION
 THE REFLECTIVE SHEETING ON BARRICADE PANELS SHALL BE TYPE III.

LOCATION
 THE BARRICADES SHOWN ON THIS SHEET WILL BE LOCATED BY THE RESIDENT ENGINEER IN THE FIELD OR AS SHOWN ON THE PLANS. THE LOCATION OF THE BARRICADES SHALL FOLLOW THE PROCEDURES SET FORTH IN THE "MUTCD" OR AS OTHERWISE NOTED.

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

DETOUR NOTES

- 1.) SIGNS AND DELINEATION SHOWN FOR ONE DIRECTION OF TRAFFIC ONLY.
- 2.) THE CONTRACTOR IS RESPONSIBLE FOR PAVEMENT MARKING AND SHALL REMOVE ANY CONFLICTING OR CONFUSING EXISTING MARKINGS.
- 3.) ADDITIONAL SIGNING MAY BE REQUIRED AT THE DISCRETION OF THE RESIDENT ENGINEER.
- 4.) UNPAVED DETOURS REQUIRE PAVEMENT MARKINGS FOR TRANSITIONS FROM EXISTING PAVEMENT.
- 5.) THE NUMBER OF CHANNELIZING DEVICES, BARRICADES AND OTHER TRAFFIC CONTROL DEVICES SHOWN ON THIS SHEET ARE FOR ILLUSTRATIVE PURPOSES ONLY. THE ACTUAL NUMBER REQUIRED SHALL BE DETERMINED BASED ON INDIVIDUAL DETOUR CONDITIONS (TAPERS, SPEED LIMITS, LENGTH OF DETOUR CURVE, ETC.).
- 6.) AASHTO CLEAR ZONE REQUIREMENTS SHOULD BE MET. IF NOT THEN AN APPROVED ENERGY ABSORPTION ATTENUATOR SUITABLE FOR THE TEMPORARY TRAFFIC BARRIER USED AND FOR THE DESIGN SPEED SHALL BE INSTALLED PER THE CURRENT AASHTO ROADSIDE DESIGN GUIDE.
- 7.) THE DETOUR DESIGN SPEED SHOULD BE NO LESS THAN 15 km/h BELOW THE POSTED SPEED LIMIT, UNLESS PHYSICAL RESTRICTIONS PREVENT THIS.
- 8.) SEE STANDARD SHEETS E-100M, E-101M AND E-102M FOR SIGN DETAIL AND MATERIAL REQUIREMENTS.
- 9.) IF THE USE OF TEMPORARY TRAFFIC BARRIER IS NOT REQUIRED, THEN REFLECTORIZED PLASTIC DRUMS SHALL BE USED.

REVISIONS AND CORRECTIONS
 JUNE 13, 1997 - ORIGINAL APPROVAL DATE
 June 30, 2008 - Superseded

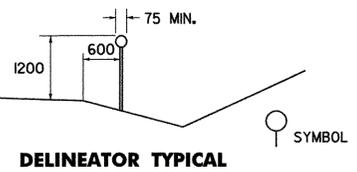
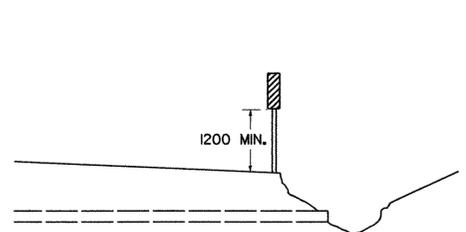
APPROVED
 [Signature] DIRECTOR OF ENGINEERING
 [Signature] DIRECTOR OF CONSTRUCTION AND MAINTENANCE

DELINEATION, BARRICADES AND
 DETOURS FOR CONSTRUCTION
 AREAS

OTHER STDS. REQUIRED: E-100M E-101M E-102M E-102AM E-107AM

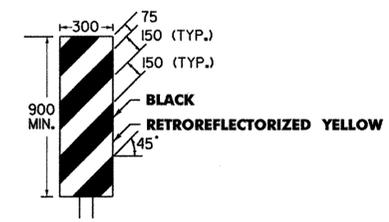
NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

VERMONT AGENCY OF TRANSPORTATION
Metric STANDARD E-107M



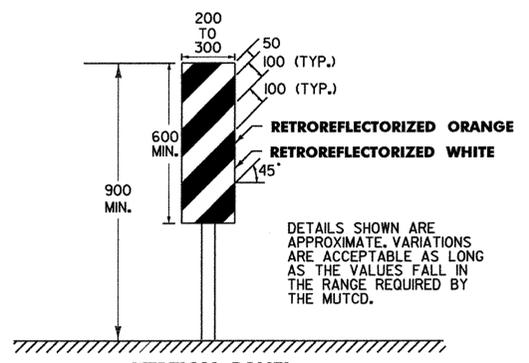
DELINEATOR TYPICAL

THE STANDARD COLOR FOR DELINEATORS USED ALONG BOTH SIDES OF TWO-WAY STREETS AND HIGHWAYS AND THE RIGHT SIDE OF ONE-WAY STREETS SHALL BE WHITE. DELINEATORS USED ALONG THE LEFT SIDE OF ONE-WAY ROADWAYS SHALL BE YELLOW. THEY SHALL HAVE A MINIMUM AREA OF 4400mm². THEY MAY BE ROUND, SQUARE, OR OBLONG, FOR ALTERNATES SEE STD. E-198.



OBJECT MARKER TYPICAL

OBJECT MARKERS ARE USED TO MARK OBSTRUCTIONS WITHIN OR ADJACENT TO THE ROADWAY. IN SOME CASES THERE MAY NOT BE A PHYSICAL OBJECT INVOLVED, BUT OTHER ROADSIDE CONDITIONS SUCH AS NARROW SHOULDER DROP-OFFS, GORES, D.I. EXCAVATIONS AND ABRUPT CHANGES IN THE ROADWAY ALIGNMENT MAY MAKE IT UNDESIRABLE FOR A DRIVER TO LEAVE THE ROADWAY. THE INSIDE EDGE OF THE OBJECT MARKER SHALL BE IN LINE WITH THE INNER EDGE OF THE OBSTRUCTION, WHEREVER POSSIBLE. OBJECT MARKERS SHALL HAVE ALTERNATING BLACK AND RETROREFLECTORIZED YELLOW STRIPES. (SLOPING DOWNWARD IN THE DIRECTION TRAFFIC IS TO PASS).

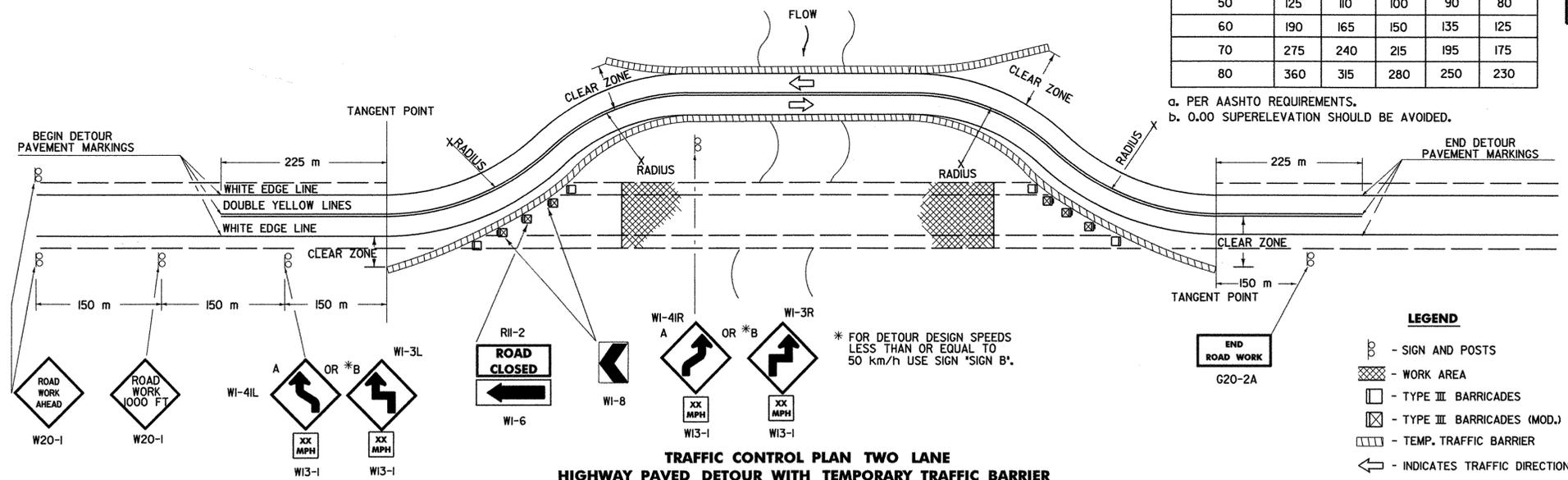


VERTICAL PANEL

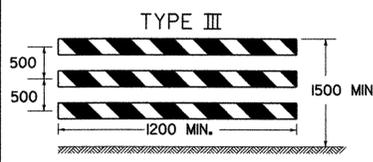
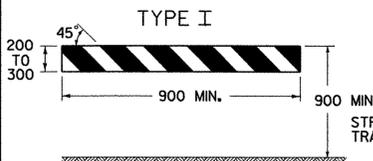
VERTICAL PANELS SHALL HAVE ALTERNATING ORANGE AND WHITE RETROREFLECTORIZED STRIPES (SLOPING DOWNWARD IN THE DIRECTION TRAFFIC IS TO PASS). THESE DEVICES MAY BE USED FOR TRAFFIC SEPARATION, CHANNELIZING OR BARRICADING WHERE SPACE IS AT A MINIMUM.

DELINEATOR, VERTICAL PANEL AND OBJECT MARKER DETAILS FOR CONSTRUCTION AREAS WHERE TRAFFIC IS MAINTAINED

ALL SIGN PLACEMENT DISTANCES ARE DESIRABLE SPECIFICATIONS. FIELD CONDITIONS SHALL CONTROL THE ACTUAL PLACEMENT. PROJECT CONSTRUCTION APPROACH SIGNING PLACEMENT SHALL TAKE INTO CONSIDERATION SPACING REQUIREMENTS FOR THE DETOUR SIGN LAYOUT REQUIREMENTS.



TRAFFIC CONTROL PLAN TWO LANE HIGHWAY PAVED DETOUR WITH TEMPORARY TRAFFIC BARRIER



A TYPE III (MODIFIED) BARRICADE SHALL CONSIST OF TYPE II RAILS MOUNTED ON A BREAKAWAY BARRICADE AS SHOWN ON STANDARD SHEET E-107AM.

	BARRICADE CHARACTERISTICS		
	I	II	III
WIDTH OF RAIL	200 MIN. 300 MAX.	200 MIN. 300 MAX.	200 MIN. 300 MAX.
LENGTH OF RAIL	900 MIN.	900 MIN.	1200 MIN.
WIDTH OF STRIPES	150	150	150
HEIGHT	900 MIN.	900 MIN.	1500 MIN.
TYPE OF FRAME	SEE E-107AM	SEE E-107AM	SEE E-107AM
FLEXIBILITY	PORTABLE	PORTABLE	PORTABLE
ANGLE OF STRIPE	45°	45°	45°
COLOR OF STRIPES	ORANGE AND WHITE	ORANGE AND WHITE	ORANGE AND WHITE

BARRICADE CHARACTERISTICS

DETOUR DESIGN SPEED km/h	MINIMUM RADIUS (m) ^a				
	SUPERELEVATION				
	0.000 ^b	0.020	0.040	0.060	0.080
30	40	35	35	30	30
40	75	65	60	55	50
50	125	110	100	90	80
60	190	165	150	135	125
70	275	240	215	195	175
80	360	315	280	250	230

a. PER AASHTO REQUIREMENTS.
b. 0.00 SUPERELEVATION SHOULD BE AVOIDED.

BARRICADES

APPLICATION NOTES

TYPE I BARRICADES SHALL BE USED ON CONVENTIONAL ROADS OR URBAN STREETS AND ARTERIALS TO MARK A SPECIFIC HAZARD.
TYPE II BARRICADES SHALL BE USED ON EXPRESSWAYS AND FREEWAYS, SERVING THE SAME FUNCTIONS AS TYPE I BARRICADES.
TYPE III BARRICADES (SEE STD. E-107AM) SHALL ONLY BE USED WHEN A ROAD SECTION OR LANE IS CLOSED TO TRAFFIC AND ARE TO BE ERECTED AT THE POINT OF CLOSURE.

MATERIALS

THE BARRICADES SHOWN ON THIS SHEET SHOULD BE OF LOW MASS MATERIAL. IF WOOD IS USED THE FOLLOWING CONDITIONS SHALL APPLY:

- WOODEN BARRICADES (TYPE I AND II)
 - SHALL NOT BE USED TO CHANNELIZE OR DELINEATE WORK AREAS WITHIN THE CLEAR ZONE OF ANY HIGHWAY WHERE OPERATING SPEEDS IN EXCESS OF 20 MPH ARE EXPECTED UNLESS INSTALLED FOR PEDESTRIAN CONTROL BEHIND APPROVED POSITIVE BARRIERS.
 - MAY BE USED WHERE OPERATING SPEEDS OF 20 mph OR LESS ARE EXPECTED.
- TYPE III WOODEN BARRICADES SHALL NOT BE USED.

COLORS

THE BARRICADE PANELS SHOWN ON THIS SHEET SHALL HAVE ALTERNATING RETROREFLECTORIZED WHITE AND ORANGE STRIPES. THE ORANGE SHALL CONFORM WITH THE STANDARD COLORS ADOPTED BY AASHTO AND APPROVED BY THE FHWA. THE BARRICADE COMPONENTS SHALL BE WHITE UNLESS UNPAINTED METAL OR ALUMINUM IS USED.

REFLECTORIZATION

THE RETROREFLECTIVE SHEETING ON BARRICADE PANELS SHALL BE ASTM TYPE III.

LOCATION

THE BARRICADES SHOWN ON THIS SHEET WILL BE LOCATED BY THE RESIDENT ENGINEER IN THE FIELD OR AS SHOWN ON THE PLANS. THE LOCATION OF THE BARRICADES SHALL FOLLOW THE PROCEDURES SET FORTH IN THE 'MUTCD' OR AS OTHERWISE NOTED.

MAINTENANCE

BARRICADES SHALL BE MAINTAINED IN CLEAN CONDITION, SATISFACTORY TO THE RESIDENT 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 RESIDENT ENGINEER.

DETOUR NOTES

- SIGNS AND DELINEATION SHOWN FOR ONE DIRECTION OF TRAFFIC ONLY.
- THE CONTRACTOR IS RESPONSIBLE FOR PAVEMENT MARKING AND SHALL REMOVE ANY CONFLICTING OR CONFUSING EXISTING MARKINGS.
- ADDITIONAL SIGNING MAY BE REQUIRED AT THE DISCRETION OF THE RESIDENT ENGINEER.
- UNPAVED DETOURS REQUIRE PAVEMENT MARKINGS FOR TRANSITIONS FROM EXISTING PAVEMENT.
- THE NUMBER OF CHANNELIZING DEVICES, BARRICADES AND OTHER TRAFFIC CONTROL DEVICES SHOWN ON THIS SHEET ARE FOR ILLUSTRATIVE PURPOSES ONLY. THE ACTUAL NUMBER REQUIRED SHALL BE DETERMINED BASED ON INDIVIDUAL DETOUR CONDITIONS (TAPERS, SPEED LIMITS, LENGTH OF DETOUR CURVE, ETC.).
- AASHTO CLEAR ZONE REQUIREMENTS SHOULD BE MET. IF NOT THEN AN APPROVED ENERGY ABSORPTION ATTENUATOR (SUITABLE FOR TEMPORARY TRAFFIC BARRIER USED AND FOR THE DESIGN SPEED) SHALL BE INSTALLED PER CURRENT AASHTO ROADSIDE DESIGN GUIDE.
- THE DETOUR DESIGN SPEED SHOULD BE NO LESS THAN 15 km/h BELOW THE POSTED SPEED LIMIT, UNLESS PHYSICAL RESTRICTIONS PREVENT THIS.
- SEE STANDARD SHEETS E-100M, E-101M AND E-102M FOR SIGN DETAIL AND MATERIAL REQUIREMENTS.
- IF THE USE OF TEMPORARY TRAFFIC BARRIER IS NOT REQUIRED, THEN REFLECTORIZED PLASTIC DRUMS SHALL BE USED.

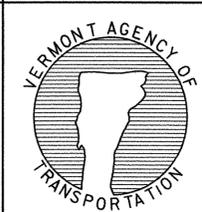
OTHER STDS. REQUIRED: E-100M E-102M E-107AM E-101M E-102AM E-198

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE
JUNE 30, 2003 - CHANGED REFLECTIVE SHEETING TO TYPE III

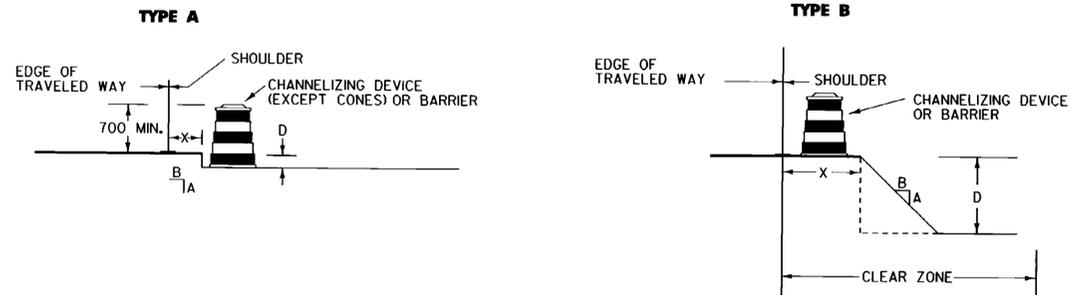
APPROVED
DIRECTOR OF PROGRAM DEVELOPMENT
TRAFFIC OPERATIONS ENGINEER
FEDERAL HIGHWAY ADMINISTRATION

DELINEATION, BARRICADES AND DETOURS FOR CONSTRUCTION AREAS



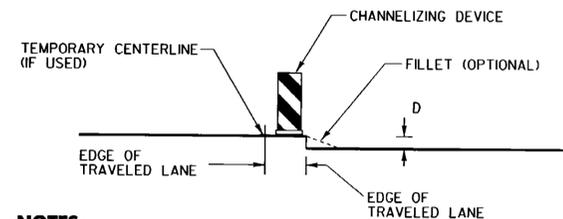
Metric STANDARD E-107M

**CONDITION 1
DROP-OFF ADJACENT TO TRAVELED WAY**



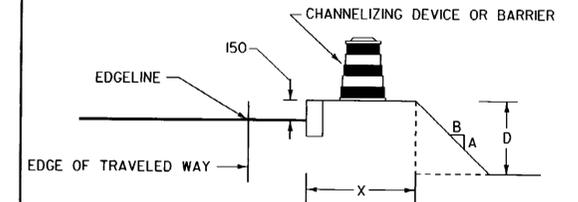
- NOTES:**
- CHANNELIZING DEVICES OR BARRIER SHOULD BE PLACED TO MAXIMIZE THE WIDTH OF THE TRAVELED WAY.
 - FOR SPECIFIC REQUIREMENTS USE CHART "A".
 - IF THE DROP-OFF REQUIRES CHANNELIZING DEVICES TO REMAIN INPLACE OVERNIGHT, THEN "LOW SHOULDER" OR "SHOULDER DROP OFF" SIGNS SHOULD BE INSTALLED.

**CONDITION 2
DROP-OFF BETWEEN ADJACENT TRAVELED LANES**



- NOTES:**
- WHEREVER A LONGITUDINAL DROP-OFF BETWEEN ADJACENT TRAVELED LANES IS TO BE LEFT OVERNIGHT THEN "UNEVEN LANES" SIGNS AND CHANNELIZING DEVICES SHOULD BE INSTALLED.
 - IF REQUIRED, THE CHANNELIZING DEVICES USED SHOULD BE THOSE WHICH MAXIMIZE THE TRAVELED LANE (I.E. CONES, VERTICAL PANELS OR TUBULAR MARKERS).
 - A BITUMINOUS CONCRETE FILLET WITH A 1:3 SLOPE MAY BE USED IN LIEU OF CHANNELIZING DEVICES, HOWEVER THE "UNEVEN LANES" SIGNS SHOULD BE INSTALLED REGARDLESS.

**CONDITION 3
DROP-OFF BEYOND SHOULDER OR CURB**



- NOTES:**
- CHANNELIZING DEVICES OR BARRIER SHOULD BE PLACED TO MAXIMIZE THE WIDTH OF THE TRAVELED WAY.
 - FOR SPECIFIC REQUIREMENTS USE CHART "A" OR "B" AS APPLICABLE.

**CHART A
ALL SPEEDS
NO CURB**

X (mm)	DROP (D) (mm)	A:B SLOPE	DEVICE REQUIRED
0 TO 1200	LESS THAN 50	ANY	NONE
	50 TO 125	1:3 OR FLATTER	NONE
		STEEPER THAN 1:3	CHANNELIZING DEVICE
1200 TO 3000	GREATER THAN 125	1:3 OR FLATTER	NONE
		STEEPER THAN 1:3	BARRIER
	LESS THAN 125	ANY	NONE
3000 TO CZ	GREATER THAN 300	1:3 OR FLATTER	NONE
		STEEPER THAN 1:3	BARRIER
	LESS THAN OR EQUAL TO 300	ANY	NONE

- CLEAR ZONE (CZ) IS TO BE DETERMINED PER THE CURRENT AASHTO ROADSIDE DESIGN GUIDE.
- CHANNELIZING DEVICES MAY BE USED INSTEAD OF BARRIER FOR SHORT TERM (ONE-DAY) OPERATIONS.
- ON BORDERLINE CONDITIONS, THE ENGINEER SHALL DETERMINE WHICH TREATMENT IS ADEQUATE FOR THE EXISTING CONDITIONS.

GENERAL NOTES

- THESE CONDITIONS AND TREATMENTS ARE ONLY PART OF THE TRAFFIC CONTROL SYSTEM AND SHALL BE USED IN ADDITION TO THE PROPER WORK ZONE SIGNING.
- THE FOLLOWING ARE ACCEPTABLE CHANNELIZING DEVICES: (SEE STANDARD SHEETS E-106M, E-107M AND E-107AM FOR FURTHER DETAILS)
 - A. VERTICAL PANEL
 - B. TYPE 1 OR TYPE II BARRICADE
 - C. PLASTIC DRUM
 - * D. CONE - WHERE APPLICABLE

* CONES SHALL NOT BE USED WHERE THE CHANNELIZING DEVICE IS REQUIRED TO BE PLACED BELOW THE GRADE OF THE TRAVELED WAY (SEE CONDITION 1, TYPE A).
- WHERE BARRIER IS CALLED FOR, EITHER CONCRETE BARRIER (JERSEY SHAPE), STEEL BEAM GUARDRAIL OR OTHER FHWA APPROVED BARRIER MAY BE USED.
 - BARRIER ENDS FACING ONCOMING TRAFFIC SHALL BE TAPERED BEYOND THE CLEAR ZONE OR PROTECTED WITH AN APPROVED END TREATMENT DESIGNED FOR THE 85TH PERCENTILE SPEED OR THE POSTED SPEED LIMIT OF THE ROADWAY.
- THE LOCATION OF CHANNELIZING DEVICES SHALL BE BASED ON THE CRITERIA SHOWN ON SHEET E-106M.
- "LOW SHOULDER" OR "UNEVEN LANES" SIGNS, WHERE USED, SHALL BEGIN PRIOR TO THE DROP-OFF CONDITION AND SHOULD BE REPEATED EVERY 450 m.

**CHART B
POSTED SPEED OF
40 MPH OR LESS
WITH CURB**

X (mm)	DROP (D) (mm)	DEVICE REQUIRED
0 - 3000	LESS THAN OR EQUAL TO 300	NONE
0 - 3000	GREATER THAN 300	CHANNELIZING DEVICE
GREATER THAN 3000	ANY	NONE

- NOTES:**
- USE THIS CHART ONLY FOR CONDITION 3.
 - USE THIS CHART FOR VERTICAL CURBS OF 150 mm OR GREATER. FOR LOWER OR MOUNTABLE CURBS USE CHART A.
 - FOR CURBED SECTIONS WITH POSTED SPEEDS ABOVE 40 MPH, USE CHART A.

OTHER STDS. E-101M E-107M
REQUIRED: E-106M E-107AM

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

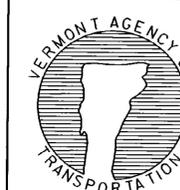
REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

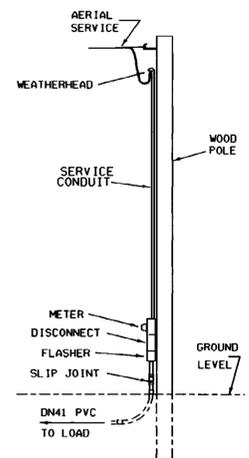
[Signature]
DIRECTOR OF ENGINEERING

[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

**CONSTRUCTION ZONE
LONGITUDINAL DROP OFFS**

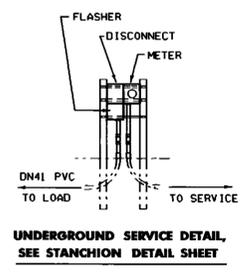


Metric
STANDARD
E-108 M



AERIAL SERVICE WITHOUT LUMINAIRE

SEE STANDARD
E-175M



**UNDERGROUND SERVICE DETAIL
SEE STANCHION DETAIL SHEET**

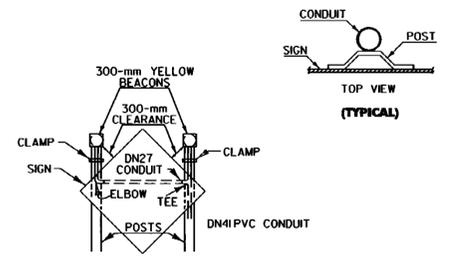
NOTE:

THE CONTRACTOR SHALL SUPPLY AND INSTALL THE INDICATED EQUIPMENT AND ALL NECESSARY HARDWARE SUCH AS BEACONS, 4.5 kg/m FLANGED CHANNEL POST(S), WIRE (3.31 mm² AWG MIN.) METER SOCKET, OTHER EQUIPMENT AS MENTIONED IN POWER SOURCE NOTE (SEE RIGHT), CONDUIT, POLE, RISER WITH WEATHERHEAD, POWER DROP STANCHION, JUNCTION BOX, AND OTHER MISC. MATERIALS AND HARDWARE TO MAKE THE BEACONS OPERATIONAL.

BOTTOM OF BEACON SHALL BE MIN. 2.4 m AND A MAX. OF 3.6 m ABOVE EDGE OF TRAVELED WAY.

A CLAMPING DEVICE AS APPROVED BY THE ENGINEER SHALL BE USED TO ATTACH THE CONDUIT TO THE SIGN POSTS.

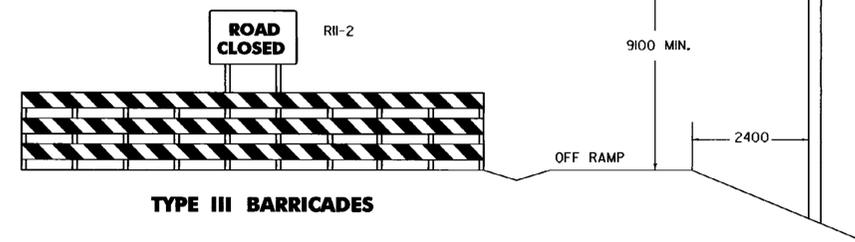
**HAZARD IDENTIFICATION BEACON INSTALLATION
FLANGED CHANNEL STEEL SIGN SUPPORT**



DOUBLE BEACON INSTALLATION

POWER SOURCE NOTE:

THE FLASHING ARROW PANEL MAY BE POWERED BY A PORTABLE DIESEL GENERATOR AT INSTALLATIONS WHICH WILL REMAIN IN SERVICE FOR LESS THAN SIX MONTHS. INSTALLATIONS WHICH WILL REMAIN IN PLACE FOR SIX MONTHS OR MORE SHALL HAVE A PERMANENT POWER SOURCE AND ALSO SHALL HAVE A LUMINAIRE ERRECTED AS INDICATED AT RIGHT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE UTILITY COMPANY TO PROVIDE A POWER SOURCE ETC. FOR THE LUMINAIRE AND FLASHING ARROW PANEL INSTALLATIONS.



TYPE III BARRICADES

BARRICADE MATERIALS -

TYPE III BARRICADES ON THIS SHEET SHALL COMPLY WITH STANDARD SHEET E-107AM. THE ROAD CLOSED SIGN SHALL BE MOUNTED ON A TYPE III MODIFIED BARRICADE AND SHALL COMPLY WITH STANDARD SHEET E-107AM.

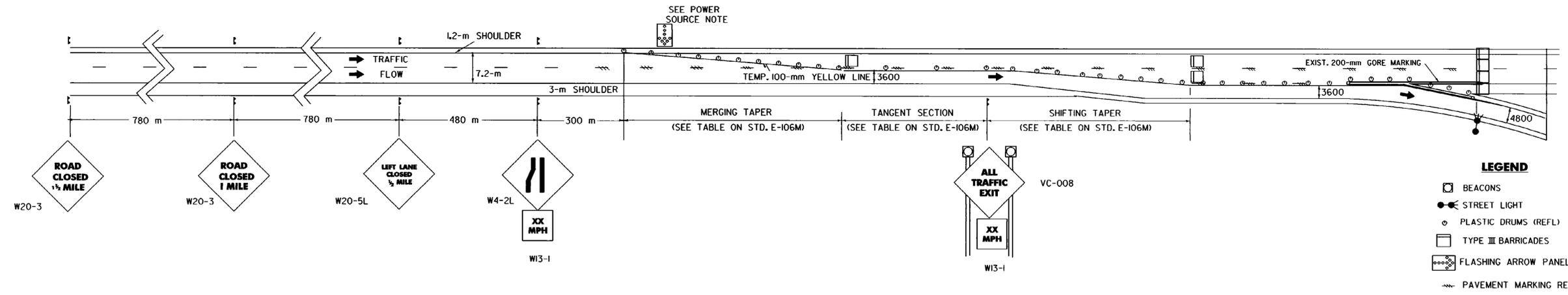
SIGNS, COLORS AND MATERIALS -

THE SIZES OF SIGNS SHALL BE AS INDICATED ON THE PLANS. THEY SHALL HAVE REFLECTORIZED WHITE BACKGROUND WITH BLACK TEXT AND BORDER.

* ALL SIGN BASE AND REFLECTIVE MATERIALS SHALL BE AS SHOWN ON STD. E-100M.

NOTES

- IF THE SIGNS WILL REMAIN IN PLACE FOR THREE DAYS OR MORE THEN ALL SIGNS SHALL BE PERMANENTLY INSTALLED ON APPROPRIATE SIZE YIELDING POSTS. IF THE SIGNS WILL BE IN PLACE FOR LESS THAN THREE DAYS THEN THE SIGNS MAY BE INSTALLED ON TEMPORARY SUPPORTS WITH THE BOTTOM EDGE OF THE SIGNS AT LEAST 300 mm ABOVE THE PAVEMENT.
- ALL DISTANCES ARE DESIRABLE SPECIFICATIONS. FIELD CONDITIONS SHALL CONTROL THE ACTUAL PLACEMENT.
- WHEN THE FREEWAY FACILITY IS CLOSED TO THRU TRAFFIC AND IS NOT TERMINATED, A SIGN PACKAGE USING ROAD CLOSED SIGNS SHOULD BE USED.
- THE NUMBER OF CHANNELIZING DEVICES, TYPE III BARRICADES AND OTHER TRAFFIC CONTROL DEVICES SHOWN ON THIS SHEET ARE FOR ILLUSTRATIVE PURPOSES ONLY. THE ACTUAL NUMBER REQUIRED SHALL BE DETERMINED BY DETOUR CONDITIONS (TAPERS, SPEED LIMITS, LENGTH OF DETOURS, ETC.).



LEGEND

- BEACONS
- STREET LIGHT
- PLASTIC DRUMS (REFL)
- TYPE III BARRICADES
- FLASHING ARROW PANEL
- PAVEMENT MARKING REMOVAL

NTS

OTHER STDS. REQUIRED: E-100M E-101M E-102M E-102AM E-106M E-107AM E-175M

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

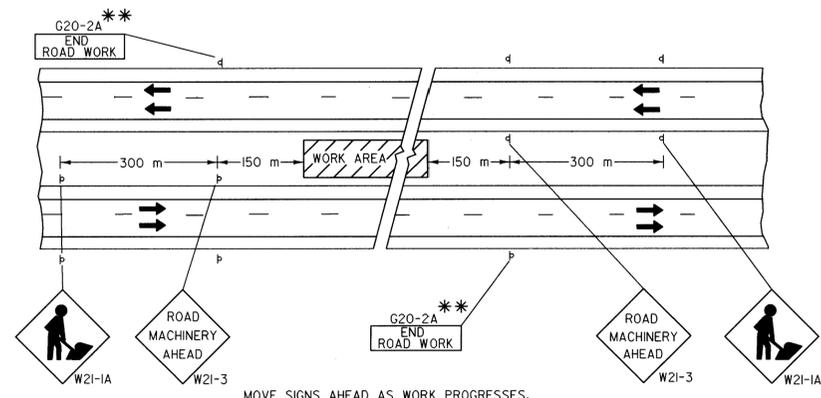
REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED
[Signature]
DIRECTOR OF ENGINEERING
[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

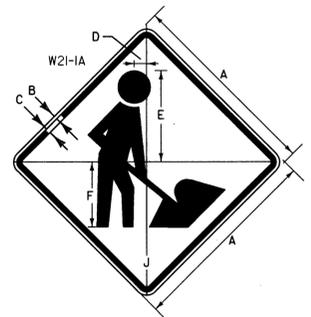
**TRAFFIC CONTROL DEVICES
FOR TEMPORARY TERMINATION
OF FREEWAY FACILITIES**



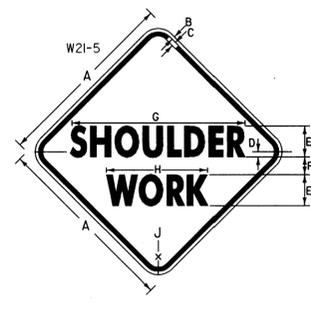
Metric
STANDARD
E-109M



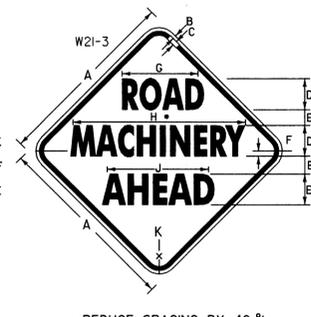
**4 - LANE HIGHWAY
MEDIAN MAINTENANCE**



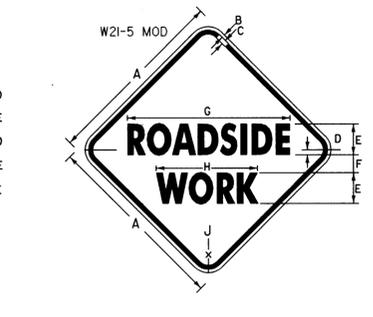
SIGN	DIMENSIONS (mm)						
	A	B	C	D	E	F	J
2 LANE	900	15	20	55	420	300	55
4 LANE	1200	20	30	75	560	400	75



SIGN	DIMENSIONS (mm)									
	A	B	C	D	E	F	G	H	J	K
2 LANE	900	15	20	25	1250	85	866	456	55	
4 LANE	1200	20	30	25	1750	100	1015	535	75	

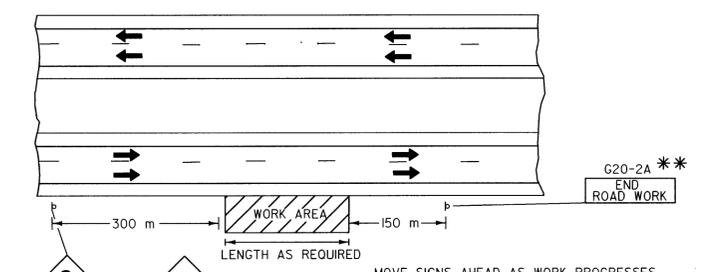


SIGN	DIMENSIONS (mm)										
	A	B	C	D	E	F	G	H	J	K	
2 LANE	900	15	20	1250	100	60	437	874	553	55	
4 LANE	1200	20	30	1750	125	85	613	1228	776	75	

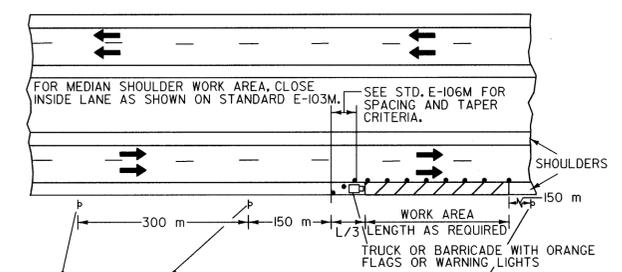


SIGN	DIMENSIONS (mm)									
	A	B	C	D	E	F	G	H	J	
2 LANE	900	15	20	10	1250	85	818	456	55	
4 LANE	1200	20	30	25	1750	100	948	535	75	

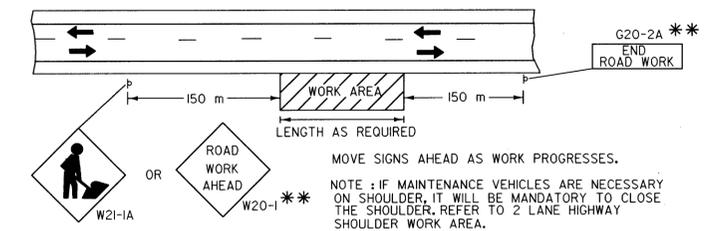
* REDUCE SPACING BY 40 %



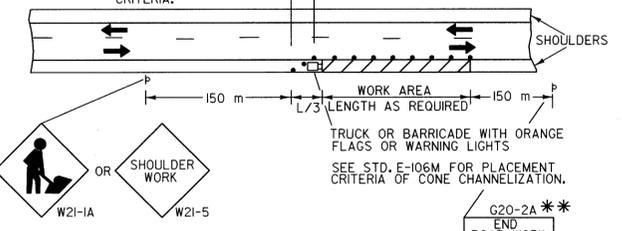
**4 - LANE HIGHWAY
MAINTENANCE OUTSIDE SHOULDER**



**4 - LANE DIVIDED HIGHWAY
SHOULDER WORK AREA**



**2 - LANE HIGHWAY
MAINTENANCE OUTSIDE SHOULDER**



**2 - LANE HIGHWAY
SHOULDER WORK AREA**

NOTES:

- REFLECTORIZATION:**
ALL REFLECTIVE MATERIAL SHALL CONSIST OF ENCAPSULATED LENS REFLECTIVE SHEETING. THE TEXT AND BORDERS MAY BE SCREENED, LETTERING FILM OR HAND PAINTED.
 - COLORS:**
THE WARNING SIGNS SHOWN ON THIS SHEET SHALL HAVE A BLACK TEXT AND BORDER ON A REFLECTORIZED ORANGE BACKGROUND. THE ORANGE SHALL CONFORM WITH THE STANDARD COLORS ADOPTED BY AASHTO AND APPROVED BY FHWA.
 - TEXT DESIGN:**
LETTERS, SPACING AND TEXT DIMENSIONS SHALL CONFORM TO THE LATEST VERSION OF FHWA'S 'STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS'.
 - SPECIFICATIONS:**
WARNING SIGNS SHALL MEET THE STANDARD STATE SPECIFICATIONS FOR SIGNS AS PRESCRIBED IN THE VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.
 - SIGN BASE MATERIAL:**
THE SIGN BASE MATERIAL USED FOR THE WARNING SIGNS SHOWN ON THIS SHEET MAY BE OF ANY OF THE FOLLOWING, WITH MINIMUM THICKNESS AS NOTED:
- | | | |
|------------------------------------|---------|-----------|
| | 900X300 | 1200X1200 |
| (1) FLAT SHEET ALUMINUM | 2.54 mm | 3.18 mm |
| (2) HIGH DENSITY OVERLAYED PLYWOOD | 16 mm | 19 mm |
| (3) GALVANIZED SHEET STEEL | 2.01 mm | 2.77 mm |

** SEE STD. E-100M FOR 'ROAD WORK' AND 'END ROAD WORK' SIGN DIMENSIONS.

REVISIONS AND CORRECTIONS
-ORIGINAL APPROVAL DATE

APPROVED

DIRECTOR OF ENGINEERING

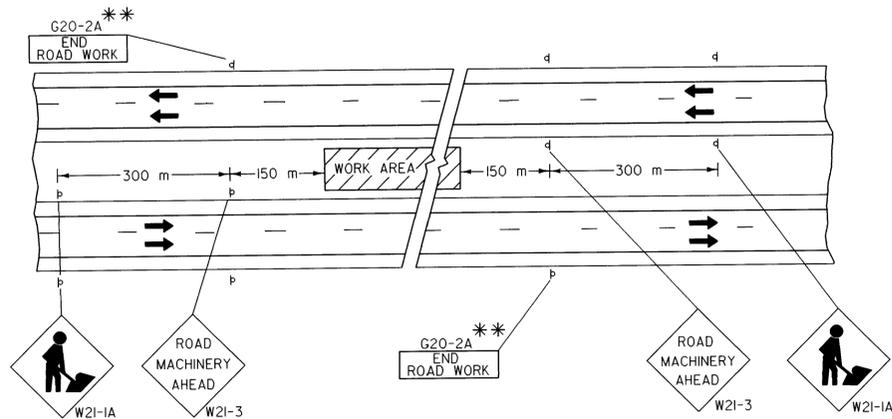
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

TRAFFIC SIGNS
TYPICAL MINOR
MAINTENANCE OPERATION
APPROACH SIGNS

**OTHER STDS. E-100M E-106M
REQUIRED: E-103M**

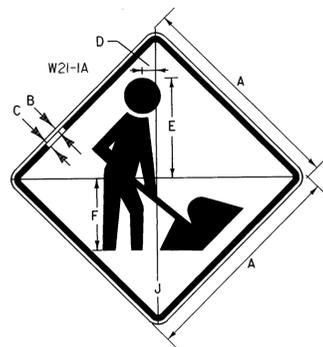
NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

**Metric
STANDARD
E-10M**

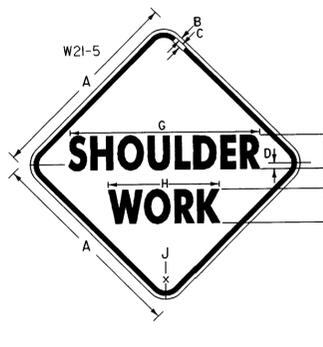


**4 - LANE HIGHWAY
MEDIAN MAINTENANCE**

MOVE SIGNS AHEAD AS WORK PROGRESSES.



SIGN	DIMENSIONS (mm)						
	A	B	C	D	E	F	J
2 LANE	900	15	20	55	420	300	55
4 LANE	1200	20	30	75	560	400	75

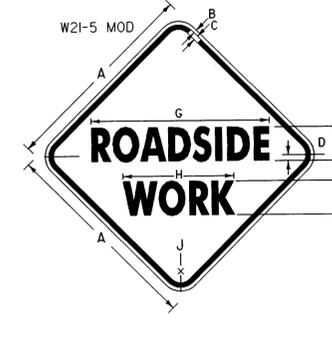


SIGN	DIMENSIONS (mm)						
	A	B	C	D	E	F	J
2 LANE	900	15	20	25	1250	85	866
4 LANE	1200	20	30	25	1750	100	1015

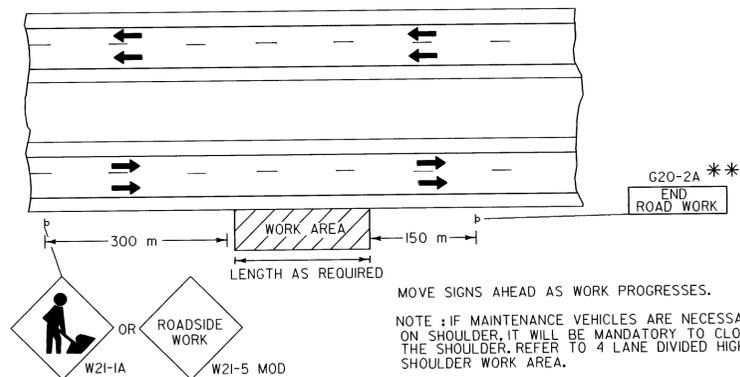


SIGN	DIMENSIONS (mm)									
	A	B	C	D	E	F	G	H	J	K
2 LANE	900	15	20	1250	100	60	437	874	553	55
4 LANE	1200	20	30	1750	125	85	613	1228	776	75

* REDUCE SPACING BY 40 %



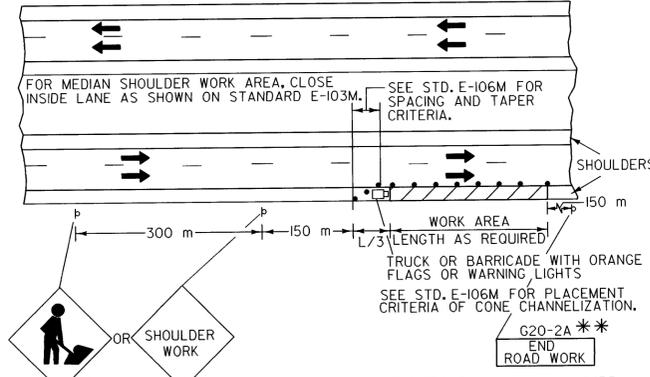
SIGN	DIMENSIONS (mm)						
	A	B	C	D	E	F	J
2 LANE	900	15	20	10	1250	85	818
4 LANE	1200	20	30	25	1750	100	948



**4 - LANE HIGHWAY
MAINTENANCE OUTSIDE SHOULDER**

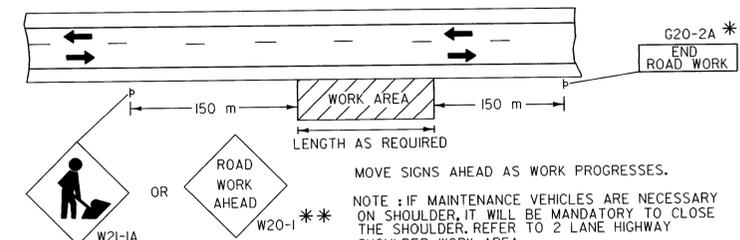
MOVE SIGNS AHEAD AS WORK PROGRESSES.

NOTE : IF MAINTENANCE VEHICLES ARE NECESSARY ON SHOULDER, IT WILL BE MANDATORY TO CLOSE THE SHOULDER. REFER TO 4 LANE DIVIDED HIGHWAY SHOULDER WORK AREA.



**4 - LANE DIVIDED HIGHWAY
SHOULDER WORK AREA**

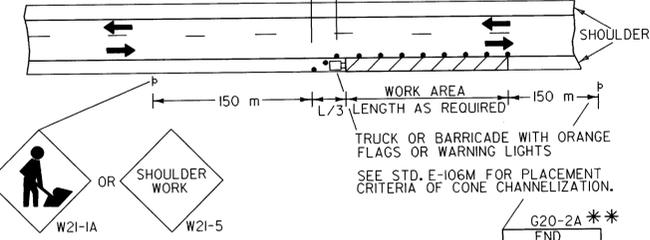
SEE STD. E-106M FOR SPACING AND TAPER CRITERIA.



**2 - LANE HIGHWAY
MAINTENANCE OUTSIDE SHOULDER**

MOVE SIGNS AHEAD AS WORK PROGRESSES.

NOTE : IF MAINTENANCE VEHICLES ARE NECESSARY ON SHOULDER, IT WILL BE MANDATORY TO CLOSE THE SHOULDER. REFER TO 2 LANE HIGHWAY SHOULDER WORK AREA.



**2 - LANE HIGHWAY
SHOULDER WORK AREA**

SEE STD. E-106M FOR SPACING AND TAPER CRITERIA.

NOTES:

REFLECTORIZATION:
ALL REFLECTIVE MATERIAL SHALL CONSIST OF ENCAPSULATED LENS REFLECTIVE SHEETING. THE TEXT AND BORDERS MAY BE SCREENED, LETTERING FILM OR HAND PAINTED.

COLORS:
THE WARNING SIGNS SHOWN ON THIS SHEET SHALL HAVE A BLACK TEXT AND BORDER ON A REFLECTORIZED ORANGE BACKGROUND. THE ORANGE SHALL CONFORM WITH THE STANDARD COLORS ADOPTED BY AASHTO AND APPROVED BY FHWA.

TEXT DESIGN:
LETTERS, SPACING AND TEXT DIMENSIONS SHALL CONFORM TO THE LATEST VERSION OF FHWA'S "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS".

SPECIFICATIONS:
WARNING SIGNS SHALL MEET THE STANDARD STATE SPECIFICATIONS FOR SIGNS AS PRESCRIBED IN THE VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

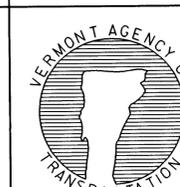
SIGN BASE MATERIAL:
THE SIGN BASE MATERIAL USED FOR THE WARNING SIGNS SHOWN ON THIS SHEET MAY BE OF ANY OF THE FOLLOWING, WITH MINIMUM THICKNESS AS NOTED:

	900X900	1200X1200
(1) FLAT SHEET ALUMINUM	2.54 mm	3.18 mm
(2) HIGH DENSITY OVERLAYED PLYWOOD	16 mm	19 mm
(3) GALVANIZED SHEET STEEL	2.01mm	2.77 mm

**
SEE STD. E-100M FOR 'ROAD WORK'
AND 'END ROAD WORK' SIGN DIMENSIONS.

**OTHER STDS. E-100M E-106M
REQUIRED: E-103M**

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.



**Metric
STANDARD
E-10M**

REVISIONS AND CORRECTIONS

JUNE 13, 1997 - ORIGINAL APPROVAL DATE

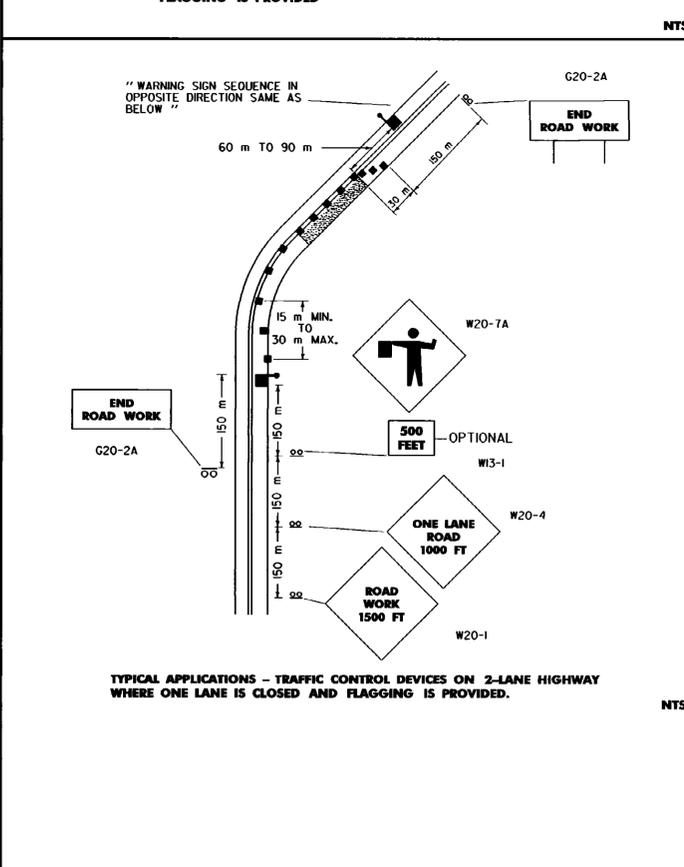
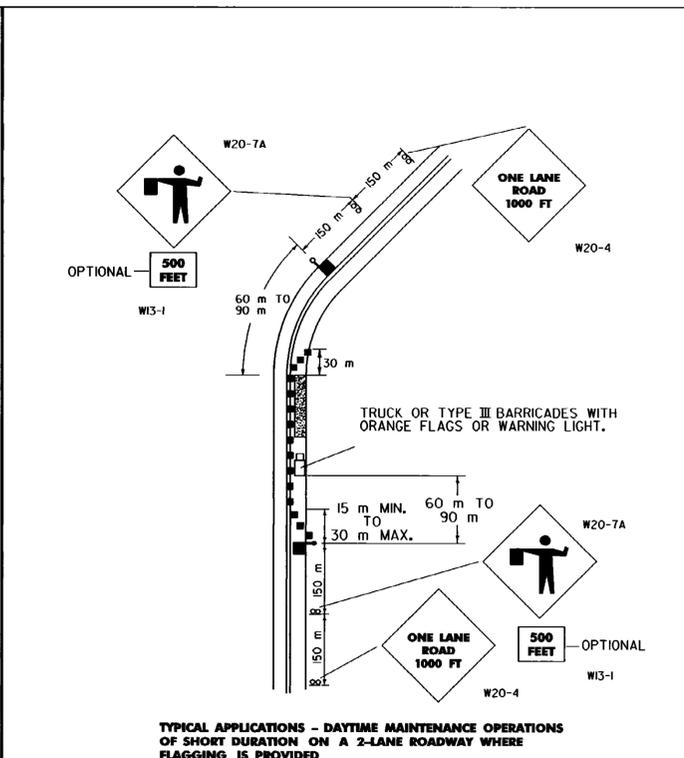
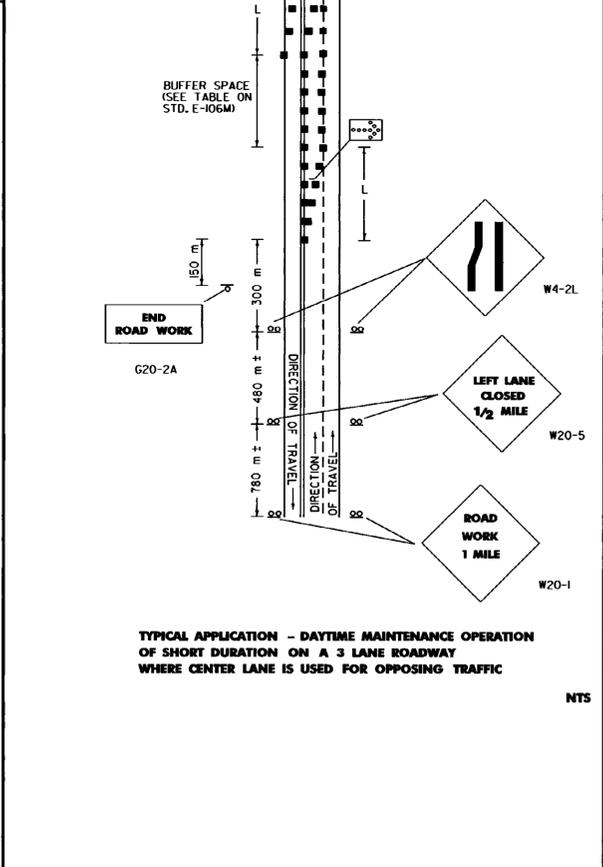
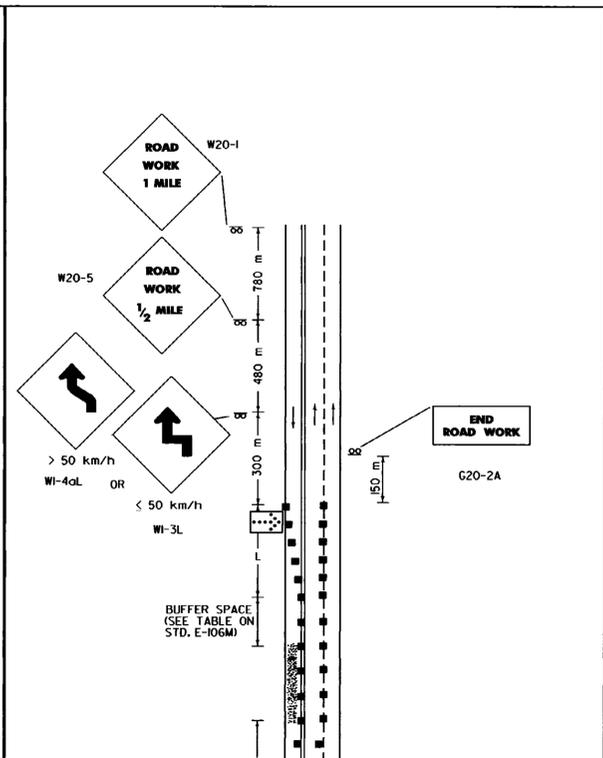
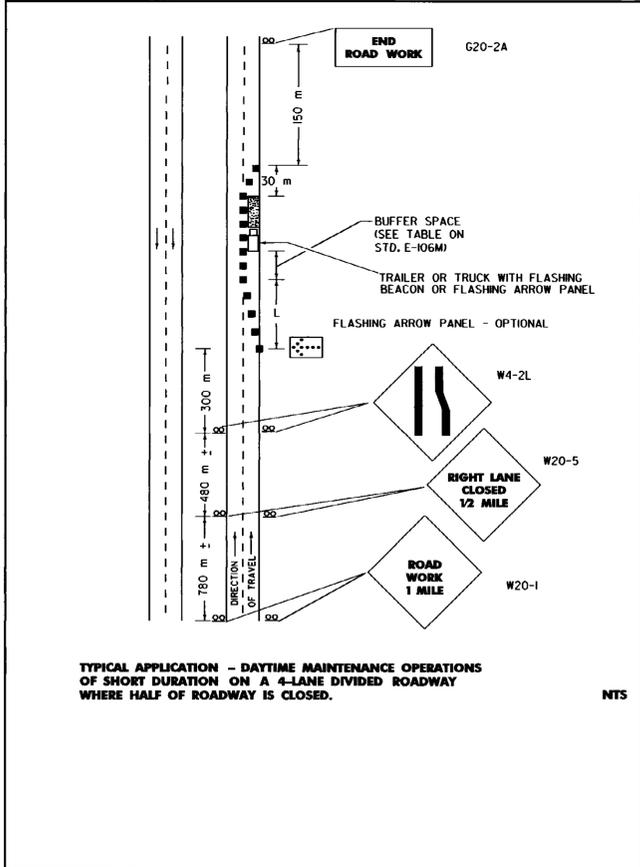
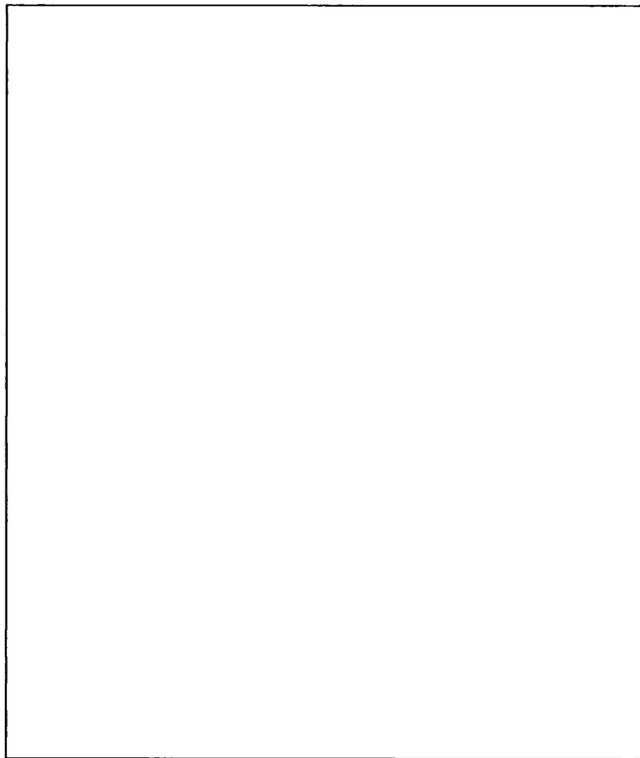
Notes 2-1-1997

APPROVED

[Signature]
DIRECTOR OF ENGINEERING

[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

**TRAFFIC SIGNS
TYPICAL MINOR
MAINTENANCE OPERATION
APPROACH SIGNS**



REFLECTORIZATION
ALL SIGNS USED DURING THE HOURS OF DARKNESS SHALL BE REFLECTORIZED (TYPE II OR III) CONES USED FOR TRAFFIC CONTROL AT NIGHT SHALL COMPLY WITH STANDARD E-106M.

COLORS
THE WARNING SIGNS SHOWN ON THIS SHEET SHALL HAVE BLACK TEXT, BORDER, AND SYMBOLS ON AN ORANGE BACKGROUND. THE TEXT AND BORDERS MAY BE SCREENED, LETTERING FILM, OR HAND PAINTED. THE ORANGE SHALL CONFORM WITH THE STANDARD COLORS ADOPTED BY AASHTO AND APPROVED BY FHWA.

TEXT DESIGN
LETTERS, DIGITS, ARROWS, SPACING AND TEXT DIMENSIONS SHALL CONFORM WITH THE FHWA'S "STANDARD ALPHABETS FOR HIGHWAY SIGNS" AS REFERENCED IN THE MUTCD.

SPECIFICATIONS
WARNING SIGNS SHALL MEET THE VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

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 STEEL, OR ALUMINUM	3.18 mm
HIGH DENSITY OVERLAPED PLYWOOD	13 mm, 15 mm, OR 19 mm
GALVANIZED SHEET STEEL	2.77 mm

- SIGNS WITH "ROAD WORK 1500 FT." AND "END ROAD WORK" TEXT SHALL BE USED WHEN THE WORK IS NOT COMPLETE AND A HAZARD REMAINS OVERNIGHT.
- THE FLAGPERSON SHALL USE THE SIGN PADDLE DETAILED ON STANDARD SHEET E-102M.
- 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.
- 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 YIELDING WOOD OR METAL POSTS SET SECURELY IN THE GROUND (IN ACCORDANCE WITH STD. E-121M), OR ON PORTABLE SUPPORTS WHEN APPROPRIATE. THE INSTALLATION OF SIGNS AND BARRICADES SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.
- ALTHOUGH LISTED AS A MAINTENANCE OPERATION STANDARD SIGN SHEET, THE APPROACH SIGNS SHOWN SHALL BE USED BY CONTRACTORS WHEN WORKING WITHIN OR OUTSIDE PROJECT LIMITS.
- ALL DISTANCES ARE DESIRABLE SPECIFICATIONS. FIELD CONDITIONS SHALL CONTROL THE ACTUAL PLACEMENT.
- SEE STD. E-106M FOR TAPER LENGTHS.
- THE LOCATION OF CHANNELIZING DEVICES SHALL BE BASED ON THE CRITERIA SHOWN ON SHEET E-106M.
- FLOOD LIGHTS SHOULD BE PROVIDED TO MARK THE FLAGPERSON STATIONS AT NIGHT AS NEEDED.
- AT SHORT WORK ZONES WHERE ADEQUATE SIGHT DISTANCE IS AVAILABLE FOR THE SAFE HANDLING OF TRAFFIC ONE FLAGGER MAY BE USED WITH THE APPROVAL OF THE ENGINEER.
- CHANNELIZING DEVICES SHALL BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
- THE NUMBER OF CHANNELIZING AND OTHER TRAFFIC CONTROL DEVICES SHOWN ON THIS SHEET ARE FOR ILLUSTRATIVE PURPOSES ONLY. THE ACTUAL NUMBER REQUIRED SHALL BE DETERMINED BASED ON INDIVIDUAL DETOUR CONDITIONS (TAPERS, SPEED LIMITS, LENGTH OF DETOUR CURVE, ETC.).

LEGEND:

FLAGPERSON	WORK AREA
CHANNELIZING DEVICES (CONES OR DRUMS)	SIGN & POSTS
FLASHING ARROW PANEL	TYPE III BARRICADES

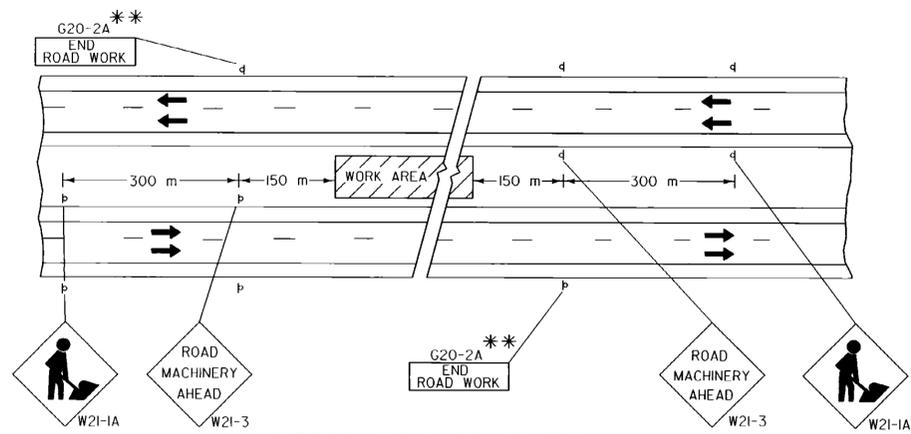
OTHER STDS. REQUIRED: E-100M E-102M E-101M E-106M
NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE

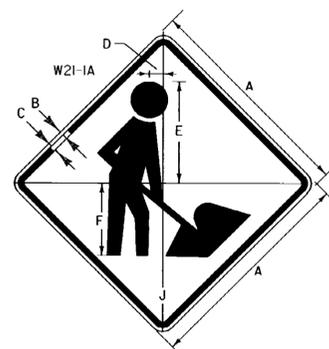
APPROVED
[Signature]
DIRECTOR OF ENGINEERING
[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

MAJOR MAINTENANCE OPERATION LANE CLOSURE

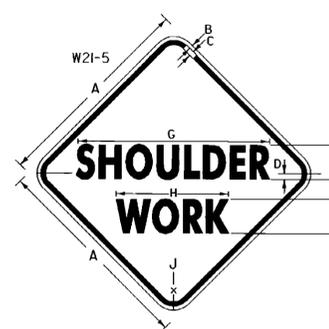




4 - LANE HIGHWAY
MEDIAN MAINTENANCE



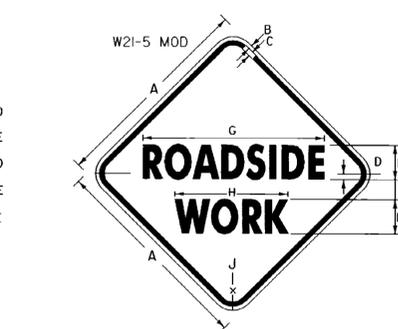
SIGN	DIMENSIONS (mm)						
	A	B	C	D	E	F	J
2 LANE	900	15	20	55	420	300	55
4 LANE	1200	20	30	75	560	400	75



SIGN	DIMENSIONS (mm)						
	A	B	C	D	E	F	J
2 LANE	900	15	20	25	125D	85	866 456 55
4 LANE	1200	20	30	25	175C	100	1015 535 75

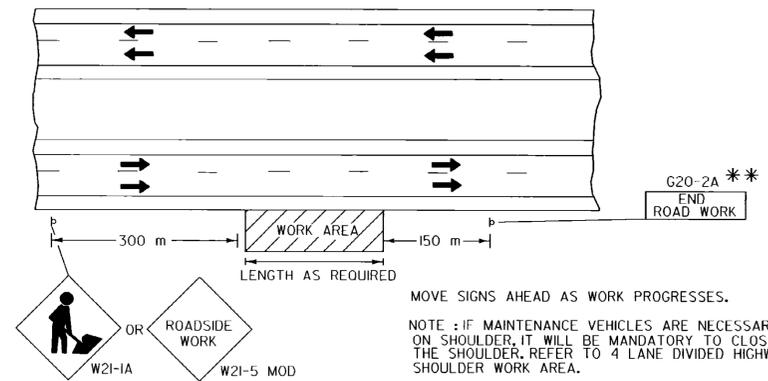


SIGN	DIMENSIONS (mm)								
	A	B	C	D	E	F	G	H	J
2 LANE	900	15	20	125D	100	60	437	874	553 55
4 LANE	1200	20	30	175D	125	85	613	1228	776 75

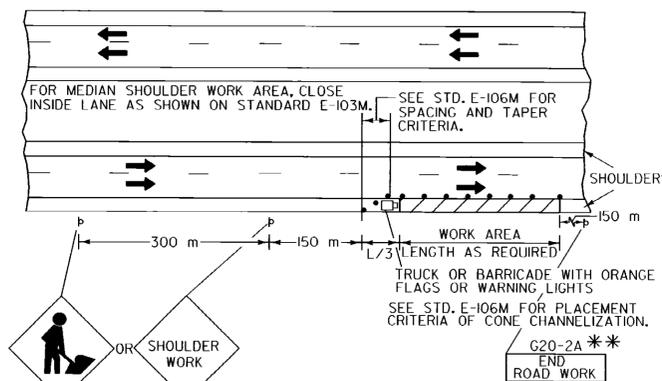


SIGN	DIMENSIONS (mm)						
	A	B	C	D	E	F	J
2 LANE	900	15	20	10	125D	85	818 456 55
4 LANE	1200	20	30	25	175C	100	948 535 75

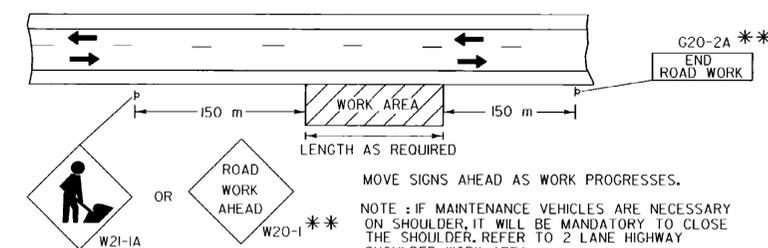
* REDUCE SPACING BY 40 %



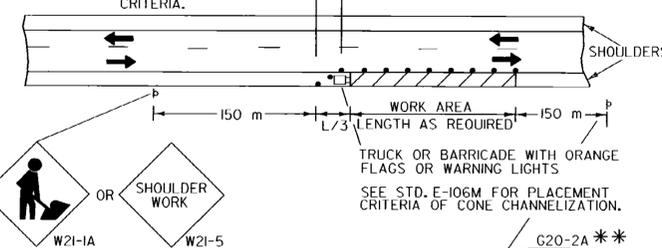
4 - LANE HIGHWAY
MAINTENANCE OUTSIDE SHOULDER



4 - LANE DIVIDED HIGHWAY
SHOULDER WORK AREA



2 - LANE HIGHWAY
MAINTENANCE OUTSIDE SHOULDER



2 - LANE HIGHWAY
SHOULDER WORK AREA

NOTES:

- REFLECTORIZATION: ALL REFLECTIVE MATERIAL SHALL CONSIST OF ENCAPSULATED LENS REFLECTIVE SHEETING, THE TEXT AND BORDERS MAY BE SCREENED, LETTERING FILM OR HAND PAINTED.
- COLORS: THE WARNING SIGNS SHOWN ON THIS SHEET SHALL HAVE A BLACK TEXT AND BORDER ON A REFLECTORIZED ORANGE BACKGROUND. THE ORANGE SHALL CONFORM WITH THE STANDARD COLORS ADOPTED BY AASHTO AND APPROVED BY FHWA.
- TEXT DESIGN: LETTERS, SPACING AND TEXT DIMENSIONS SHALL CONFORM TO THE LATEST VERSION OF FHWA'S "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS".
- SPECIFICATIONS: WARNING SIGNS SHALL MEET THE STANDARD STATE SPECIFICATIONS FOR SIGNS AS PRESCRIBED IN THE VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.
- SIGN BASE MATERIAL: THE SIGN BASE MATERIAL USED FOR THE WARNING SIGNS SHOWN ON THIS SHEET MAY BE OF ANY OF THE FOLLOWING, WITH MINIMUM THICKNESS AS NOTED:

	900X900	1200X1200
(1) FLAT SHEET ALUMINUM	2.54 mm	3.18 mm
(2) HIGH DENSITY OVERLAYED PLYWOOD	16 mm	19 mm
(3) GALVANIZED SHEET STEEL	2.01 mm	2.77 mm

** SEE STD. E-100M FOR "ROAD WORK" AND "END ROAD WORK" SIGN DIMENSIONS.

OTHER STDS. E-100M E-106M
REQUIRED: E-103M

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS

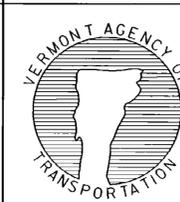
JUNE 13, 1997 - ORIGINAL APPROVAL DATE
FEBRUARY 17, 1998 - NUMBER CHANGE FROM E-10M TO E-111M

APPROVED

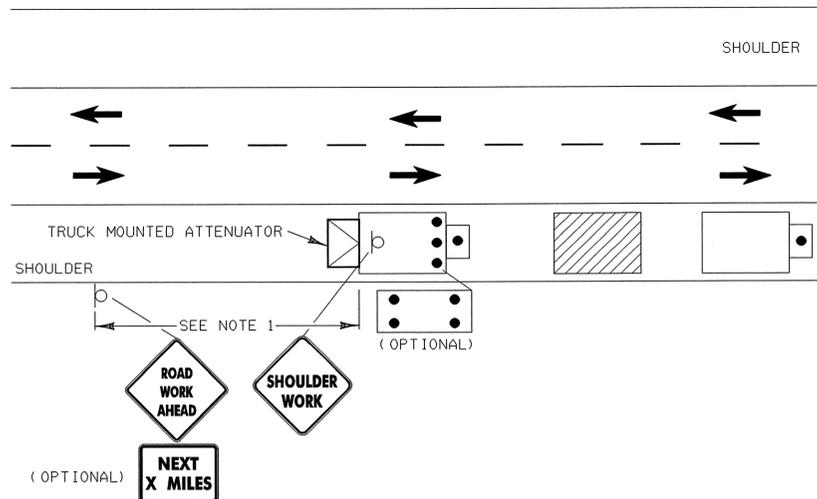
[Signature]
DIRECTOR OF PROJECT DEVELOPMENT

[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

TRAFFIC SIGNS
TYPICAL MINOR
MAINTENANCE OPERATION
APPROACH SIGNS



Metric
STANDARD
E-111M



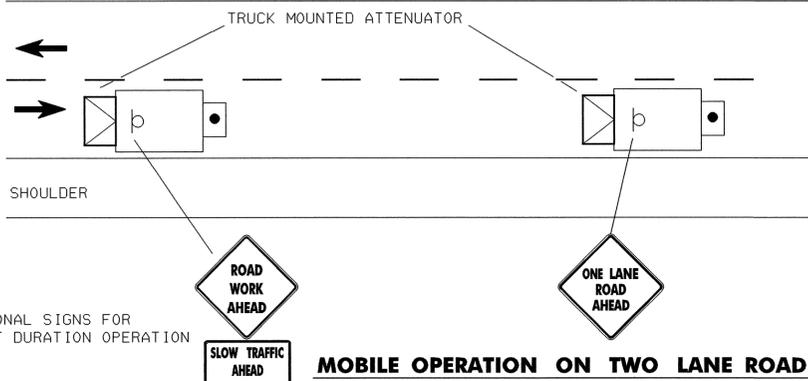
NOTES:

1. IN SITUATIONS WHERE MULTIPLE WORK LOCATIONS IN A LIMITED DISTANCE MAKE IT PRACTICABLE TO PLACE STATIONARY SIGNS, THE MAXIMUM SPACING FOR THE ADVANCE OF THE WORK.
2. THE LENGTH OF ACTIVITY AREA SIGN MAY BE USED AS THE STATIONARY ADVANCE WARNING SIGN IF THE WORK LOCATIONS OCCUR OVER A DISTANCE OF MORE THAN 3.2KM.
3. WARNING SIGNS ARE NOT REQUIRED IF THE WORK VEHICLE DISPLAYS A FLASHING OR REVOLVING YELLOW LIGHT, THE DISTANCE BETWEEN WORK LOCATIONS IS 1.6 KM OR MORE, AND THE WORK VEHICLE TRAVELS AT TRAFFIC SPEEDS BETWEEN LOCATIONS.

MOBILE OPERATION ON SHOULDER

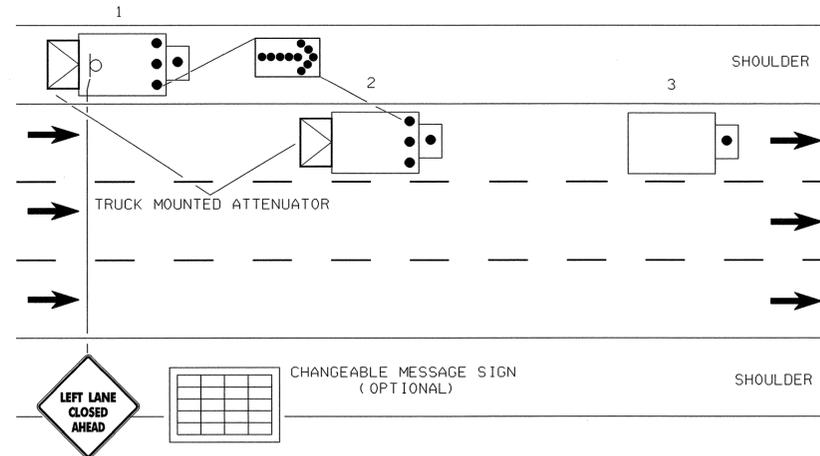
NOTES:

1. WHERE PRACTICABLE AND WHEN NEEDED, THE WORK AND PROTECTION VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS. IF THIS CANNOT BE DONE FREQUENTLY, AS AN ALTERNATIVE, A DO NOT PASS SIGN MAY BE PLACED ON THE REAR OF THE VEHICLE BLOCKING THE LANE.
2. THE DISTANCE BETWEEN THE WORK AND PROTECTION VEHICLES MAY VARY ACCORDING TO TERRAIN, PAINT DRYING TIME, AND OTHER FACTORS. PROTECTION VEHICLES ARE USED TO WARN TRAFFIC OF THE OPERATION AHEAD. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, THE PROTECTION VEHICLE SHOULD MAINTAIN THE MINIMUM DISTANCE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. THE PROTECTION VEHICLE SHOULD SLOW DOWN IN ADVANCE OF VERTICAL OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.
3. ADDITIONAL PROTECTION VEHICLES TO WARN AND REDUCE THE SPEED OF ONCOMING OR OPPOSING TRAFFIC MAY BE USED. POLICE PATROL CARS MAY BE USED FOR THIS PURPOSE.
4. A TRUCK MOUNTED ATTENUATOR (TMA) SHALL BE USED ON THE PROTECTION VEHICLE AND SHOULD BE CONSIDERED ON THE WORK VEHICLE.
5. THE WORK VEHICLE SHALL BE EQUIPPED WITH BEACONS, AND THE PROTECTION VEHICLES SHALL BE EQUIPPED WITH A TMA AND TWO HIGH - INTENSITY FLASHING LIGHTS MOUNTED ON THE REAR, ADJACENT TO THE SIGN. PROTECTION AND WORK VEHICLES SHOULD DISPLAY FLASHING OR ROTATING BEACONS BOTH FORWARD AND TO THE REAR.
6. VEHICLE - MOUNTED SIGNS SHALL BE MOUNTED WITH THE BOTTOM OF THE SIGN AT A MINIMUM HEIGHT OF 4 FEET ABOVE THE PAVEMENT. SIGN LEGENDS SHALL BE COVERED OR TURNED FROM VIEW WHEN WORK IS NOT IN PROGRESS.
7. ARROW DISPLAYS ARE OPTIONAL AND SHOULD BE TYPE B, 1500MM BY 750MM.



OPTIONAL SIGNS FOR SHORT DURATION OPERATION

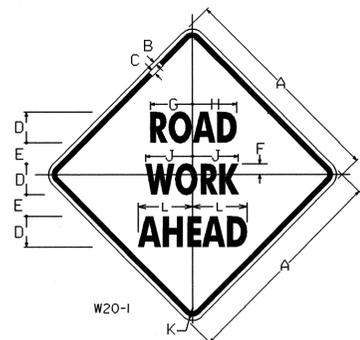
MOBILE OPERATION ON TWO LANE ROAD



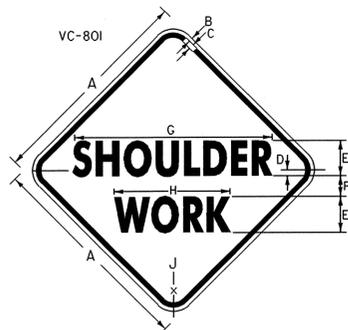
NOTES:

1. VEHICLES USED FOR THESE OPERATIONS SHOULD BE MADE HIGHLY VISIBLE WITH APPROPRIATE EQUIPMENT, SUCH AS FLASHING LIGHTS, ROTATING BEACONS, FLAGS, SIGNS, OR ARROW DISPLAYS.
2. PROTECTION VEHICLE #1 SHOULD BE EQUIPPED WITH AN ARROW DISPLAY. AN APPROPRIATE LANE CLOSURE SIGN SHOULD BE PLACED ON PROTECTION VEHICLE #1 SO AS NOT TO OBSCURE THE ARROW DISPLAY.
3. PROTECTION VEHICLE #2 SHOULD BE EQUIPPED WITH AN ARROW DISPLAY AND TRUCK - MOUNTED ATTENUATOR.
4. PROTECTION VEHICLE #1 SHOULD TRAVEL AT A VARYING DISTANCE FROM THE WORK OPERATION SO AS TO PROVIDE ADEQUATE SIGHT DISTANCE FOR TRAFFIC APPROACHING FROM THE REAR.
5. WHEN ADEQUATE SHOULDER WIDTH IS NOT AVAILABLE, PROTECTION VEHICLE #1 SHOULD BE ELIMINATED.
6. ON HIGH - SPEED ROADWAYS, A THIRD PROTECTION VEHICLE SHOULD BE USED - VEHICLE #1 ON THE SHOULDER (IF POSSIBLE), VEHICLE #2 IN THE CLOSED LANE, AND VEHICLE #3 IN THE CLOSED LANE.
7. ARROW DISPLAYS SHALL BE AS A MINIMUM TYPE B, 1500MM BY 750MM (FIGURE VI - 9, SECTION 6F - 3) OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
8. WORK SHOULD NORMALLY BE DONE DURING OFF - PEAK HOURS.

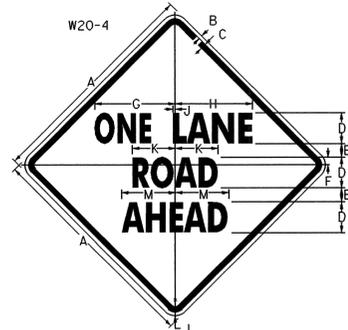
MOBILE OPERATION ON MULTILANE ROAD



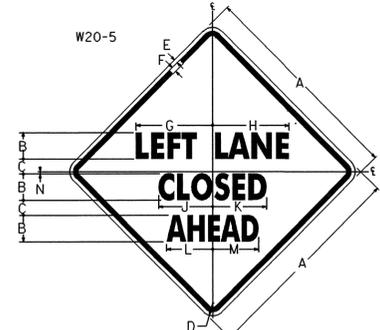
SIGN	DIMENSIONS (mm)										
	A	B	C	D	E	F	G	H	J	K	L
MIN.	750	12	19	1000	72	66	169	175	180	47R	217
STD.	900	16	22	1250	87	81	209	222	225	56R	272
SPECIAL	1200	19	31	1750	119	112	292	311	316	75R	387



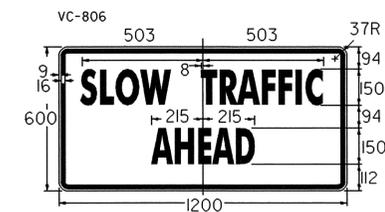
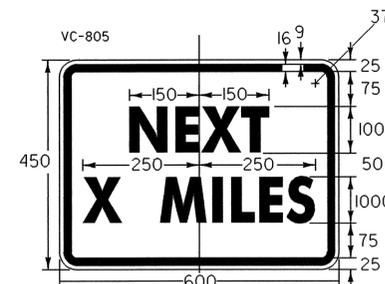
SIGN	DIMENSIONS (mm)									
	A	B	C	D	E	F	G	H	J	
2 LANE	900	16	22	25	1250	87	873	443	56R	
4 LANE	1200	19	31	25	1750	100	968	503	75R	



SIGN	DIMENSIONS (mm)												
	A	B	C	D	E	F	G	H	J	K	L	M	
MIN.	900	16	22	1250	56	31	328	316	9	7	56R	219	
STD.	1200	19	31	1750	78	44	462	444	12	242	75R	306	



SIGN	DIMENSIONS (mm)													
	A	B	C	D	E	F	G	H	J	K	L	M	N	
STD.	1200	150C	84	75R	19	31	436	436	308	308	262	262	12	
URBAN	900	125C	69	56R	16	22	362	362	256	256	219	219	9	



REVISIONS AND CORRECTIONS
FEB. 23, 1998 - DATE OF ORIGINAL ISSUE, NUMBER CHANGE
FROM E-10AM TO E-112M

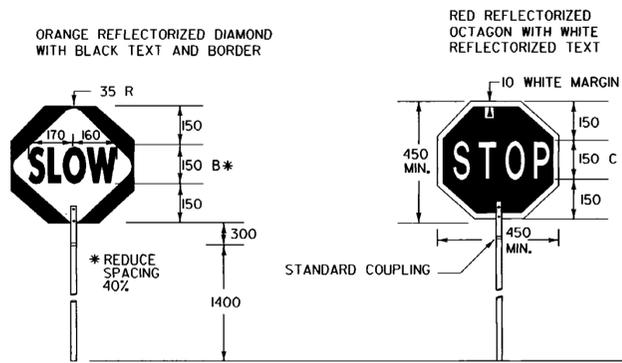
APPROVED
[Signature]
DIRECTOR OF PROJECT DEVELOPEMENT
[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

TRAFFIC CONTROL FOR
TYPICAL MOVING MAINTENANCE
OPERATIONS

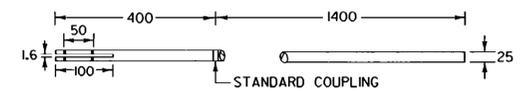
OTHER STDS.
REQUIRED:



STANDARD
E-112M



SIGN DETAIL

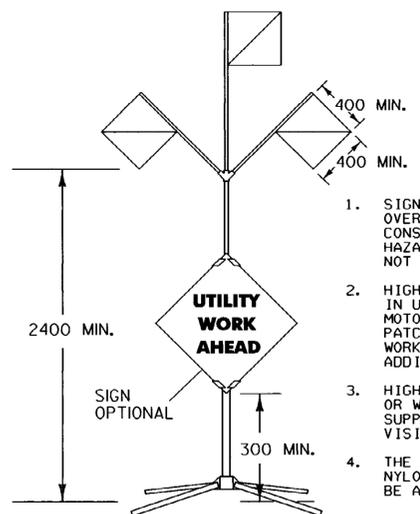


STAFF DETAIL

MATERIALS:
 THE SIGN MATERIALS SHALL BE 1.6-MM ALUMINUM WITH COLORS AS INDICATED ON DETAILS.
 THE STAFF SHALL BE DN27 x 3.2 RIGID ALUMINUM CONDUIT OR TUBING WITH A WALL THICKNESS OF 3.18 MM.

MOUNTING:
 THE STAFF SHALL BE MOUNTED WITH EITHER 2-M6 x 1 ALUMINUM BOLTS OR 2-M6 ALUMINUM RIVETS.

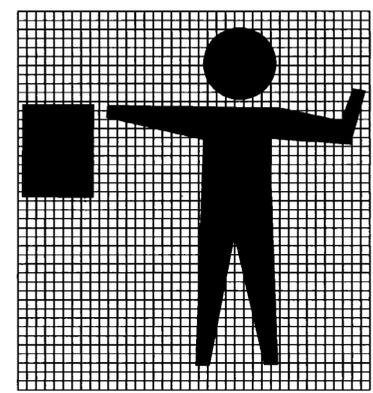
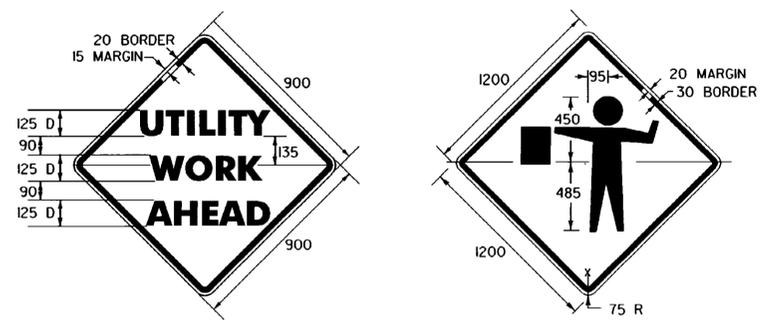
SIGN PADDLE FOR FLAGPERSON



GENERAL NOTES

- SIGN SUPPORTS MAY BE LOADED TO PREVENT OVERTURNING. APPROPRIATE BALLAST SHALL BE CONSIDERED THAT WHICH DOES NOT CREATE A HAZARD TO THE IMPACTING VEHICLE AND DOES NOT BECOME A PROJECTILE UPON IMPACT.
- HIGH LEVEL WARNING DEVICES ARE COMMONLY USED IN URBAN HIGH DENSITY SITUATIONS TO WARN MOTORISTS OF OPERATIONS SUCH AS PAVEMENT PATCHING, MANHOLE WORK, SURVEYING, UTILITY WORK, ETC., OR IN RURAL AREAS REQUIRING ADDITIONAL VISIBILITY.
- HIGH LEVEL WARNING DEVICES MAY BE USED WITH OR WITHOUT SIGNS. THEY SHOULD BE USED ONLY TO SUPPLEMENT OTHER DEVICES WHERE ADDITIONAL VISIBILITY IS NEEDED.
- THE THREE FLAGS SHALL BE FLUORESCENT ORANGE NYLON-VINYL WITH A DIAGONAL STAY. THEY SHALL BE A MINIMUM OF 400 X 400.

HIGH LEVEL WARNING DEVICE



INSTALLATION
 THE SIGNS SHALL BE IN-PLACE AT THE TIME THE PROJECT COMMENCES. EACH SIGN SHALL BE ERRECTED IN A NEAT AND PROFESSIONAL MANNER ON WOOD OR METAL POSTS SET SECURELY IN THE GROUND, UNLESS OTHERWISE NOTED ON THIS SHEET. THE BOTTOM OF A SIGN, UNLESS OTHERWISE NOTED SHALL BE AT LEAST 2.1 m ABOVE EDGE OF TRAVELED WAY, AND THE NEAREST EDGE OF A SIGN SHALL BE AT LEAST 1.8 m OUTSIDE THE SHOULDER POINT OR 600 mm OUTSIDE GUARD RAIL, CURBING OR SIDEWALK. SIGNS MOUNTED ON BARRICADES OR TEMPORARY SUPPORTS SHALL BE POSITIONED SUCH THAT THE BOTTOM OF THE SIGN IS NOT LESS THAN 300 mm ABOVE THE PAVEMENT ELEVATION.

REFLECTORIZATION
 ALL REFLECTORIZED MATERIAL SHALL CONSIST OF AASHTO TYPE IIA, TYPE III(A & B), OR TYPE III C REFLECTIVE SHEETING. THE TEXT AND BORDERS MAY BE SCREENED, LETTERING FILM OR HAND PAINTED.

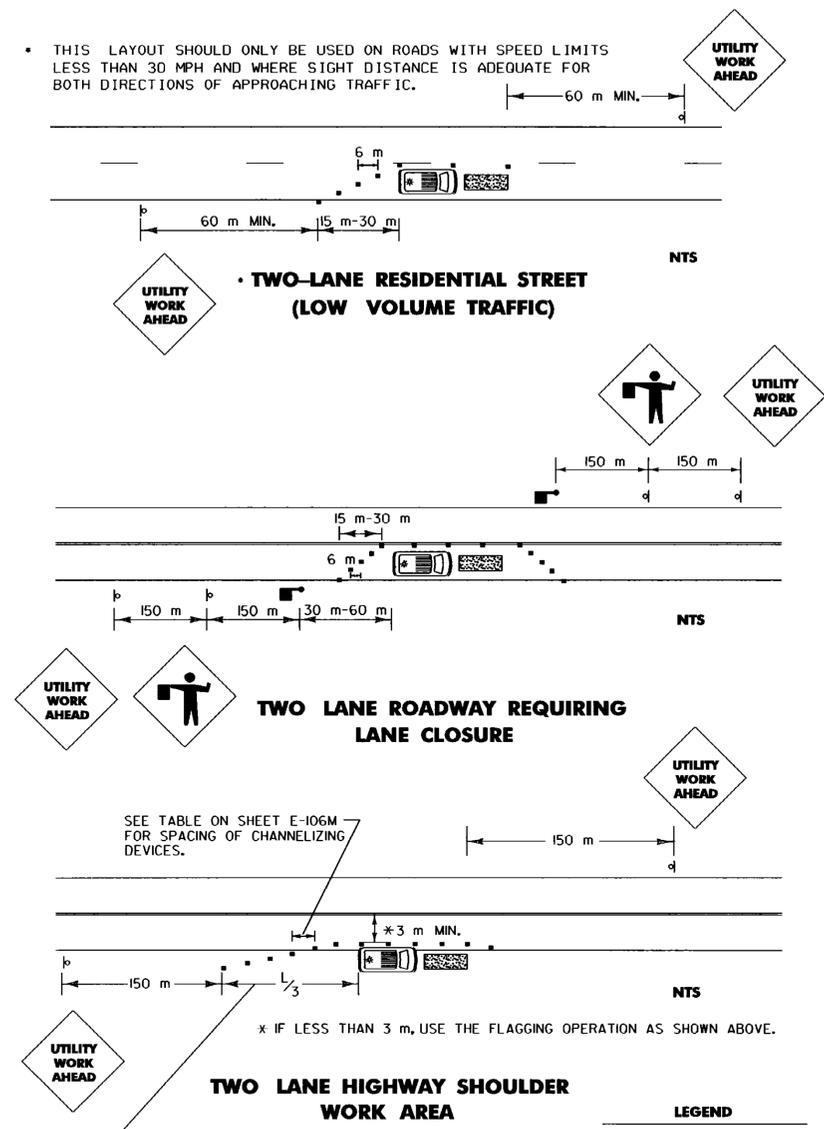
COLORS
 THE WARNING SIGNS SHOWN ON THIS SHEET SHALL HAVE BLACK TEXT BORDER AND SYMBOLS ON A REFLECTORIZED ORANGE BACKGROUND THE ORANGE SHALL CONFORM WITH THE STANDARD COLORS ADOPTED BY AASHTO AND APPROVED BY FHWA.

TEXT DESIGN
 LETTERS, DIGITS, SPACING AND TEXT DIMENSIONS SHALL CONFORM WITH THE STANDARD ALPHABETS AND DESIGN PRESCRIBED IN THE MUTCD.

SPECIFICATIONS
 AS PRESCRIBED IN THE VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION. 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 - 3.18 mm
 HIGH DENSITY OVERLAYED PLYWOOD - 16 mm
 GALVANIZED SHEET METAL - 2.77 mm



OTHER STDS. E-106M REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

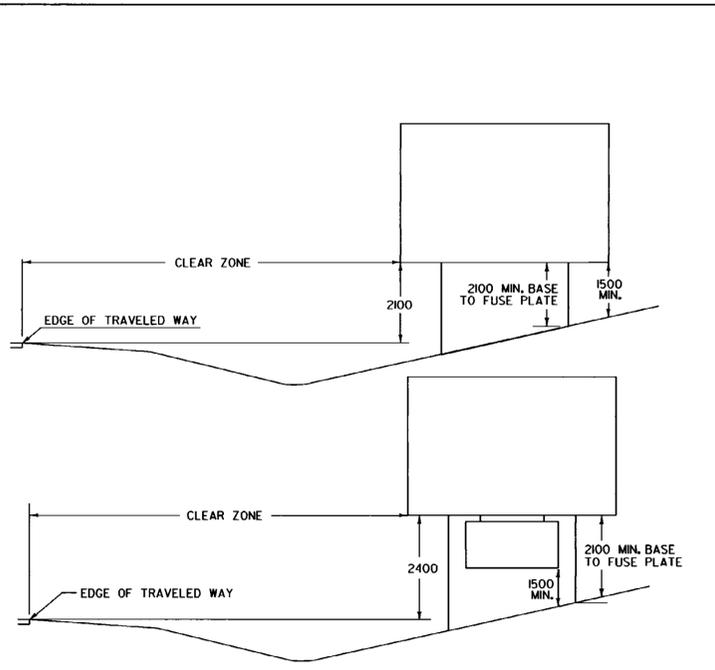
REVISIONS AND CORRECTIONS
 JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED
 [Signature]
 DIRECTOR OF ENGINEERING
 [Signature]
 DIRECTOR OF CONSTRUCTION AND MAINTENANCE

UTILITY WORK ZONE



Metric STANDARD E-119 M

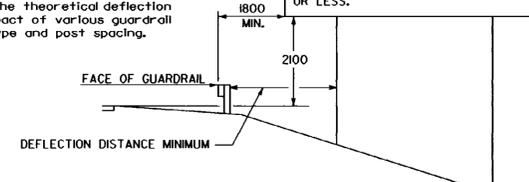


GUARDRAIL DEFLECTION CHART
(PER AASHTO - ROADSIDE DESIGN GUIDE)

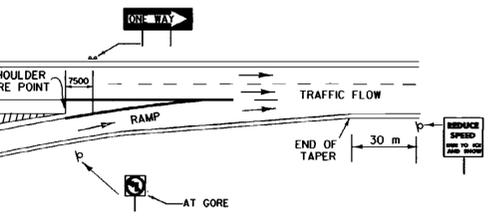
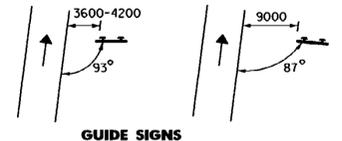
TYPE	SPACING	DEFLEC.
Three Cable w/Steel Posts	5.0 m	3.5 m
W-Beam w/WEAK Posts	3.8 m	2.0 m
w/Strong Posts	1.9 m	0.9 m
Box Beam	1.83 m	1.5 m
Thrie Beam w/Weak Posts	3.8 m	1.2 m
w/Strong Posts	1.9 m	0.6 m

WHERE PLACED BEHIND GUARDRAIL AND BEYOND THE DEFLECTION DISTANCE FOR THAT PARTICULAR RAIL, SIGN POSTS DO NOT HAVE TO BE PLACED ON YIELDING SUPPORTS. SIGN POSTS SHALL BE PLACED ON YIELDING SUPPORTS WHERE THEY CAN BE STRUCK BY AN ERRANT VEHICLE LEAVING THE ROADWAY AT AN ENCROACHMENT ANGLE OF APPROXIMATELY 15 DEGREES OR LESS.

This chart lists the theoretical deflection distance upon impact of various guardrail with different type and post spacing.

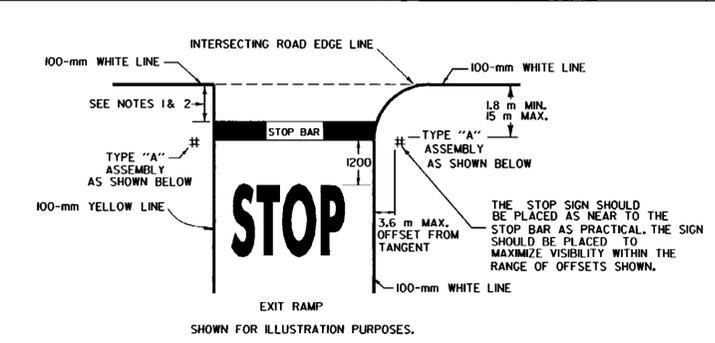
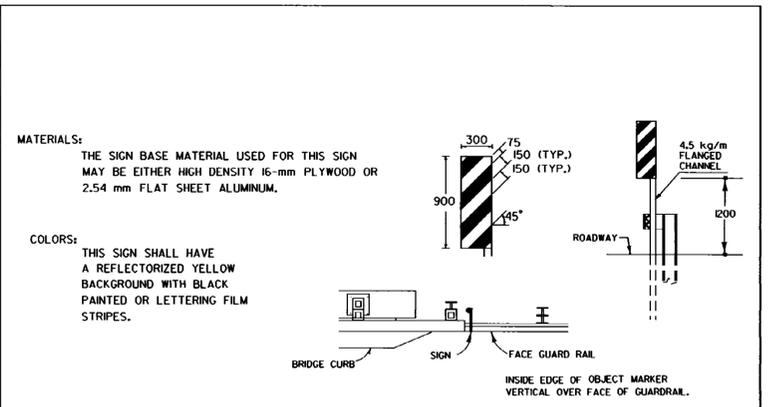
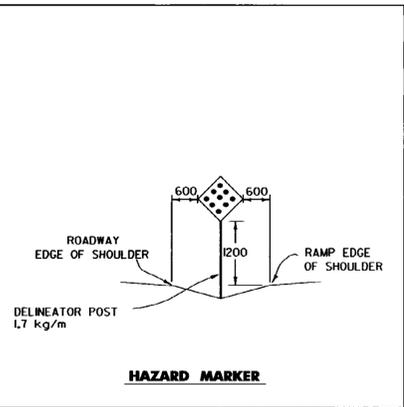
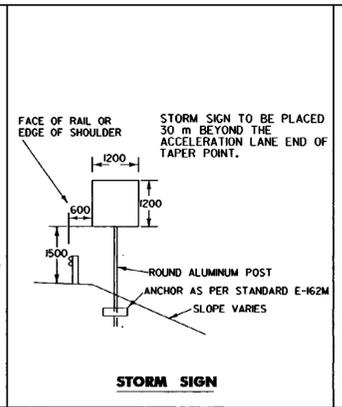
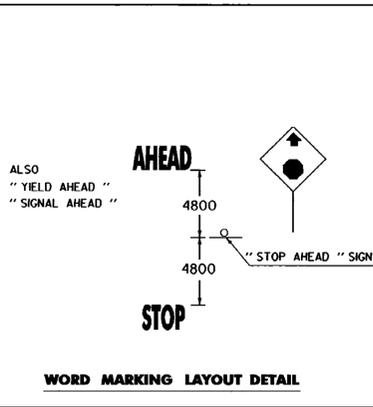


INSTALLATION DETAILS
NORMALLY (i.e., 3600 mm - 4200 mm LATERAL OFFSET) SIGNS SHOULD BE ANGLED AWAY FROM THE ROADWAY TO AVOID GLARE REFLECTION. WHERE SIGNS ARE PLACED FARTHER FROM THE ROADSIDE EDGE (i.e., 9000 mm), THEY SHOULD BE ANGLED TOWARD THE ROADWAY (SEE FIGURES BELOW). ON CURVED ALIGNMENT, THE ANGLE OF PLACEMENT SHOULD BE DETERMINED BY THE PATH OF APPROACHING TRAFFIC RATHER THAN BY THE ROADSIDE EDGE AT THE POINT WHERE THE SIGN IS LOCATED. WHEN INSTALLING OVERHEAD SIGNS, CANTILEVER THE SIGN FROM THE TOP TOWARD APPROACHING TRAFFIC AT A THREE DEGREE TILT ANGLE.

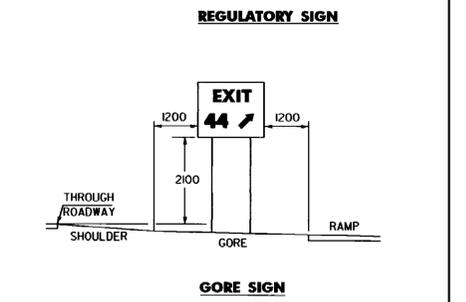
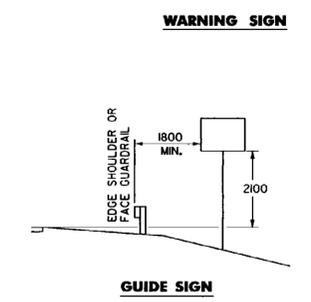
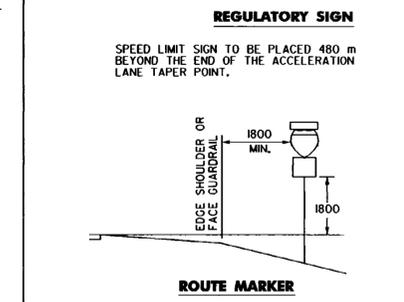
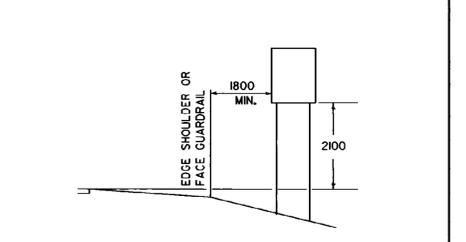
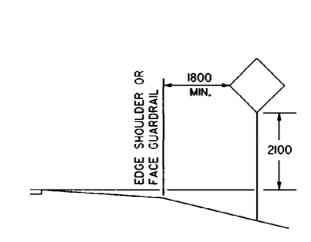
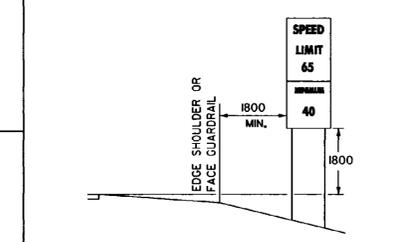
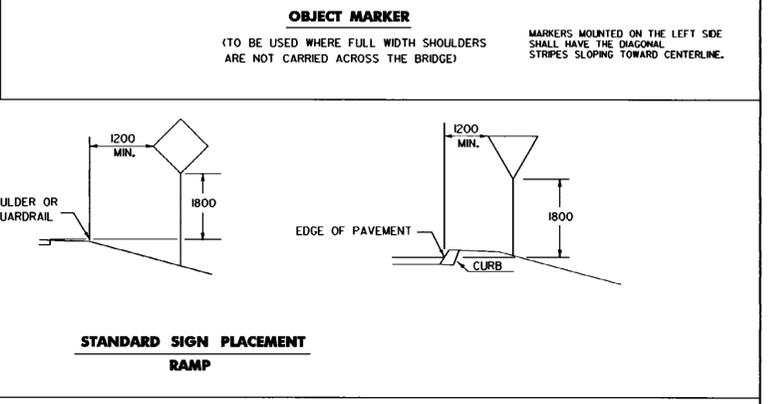
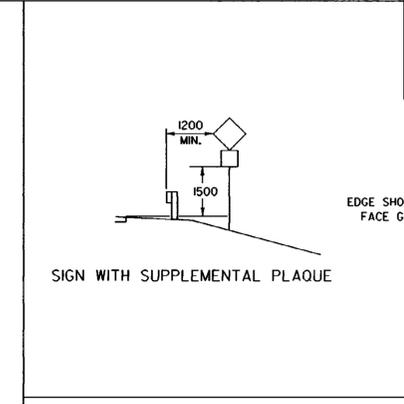
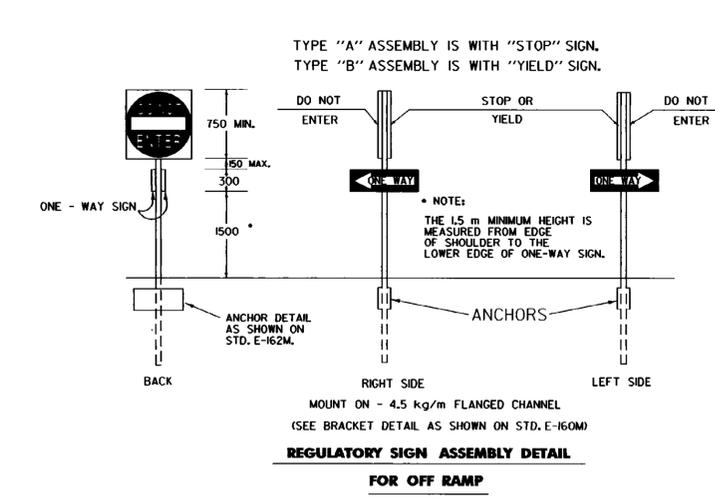
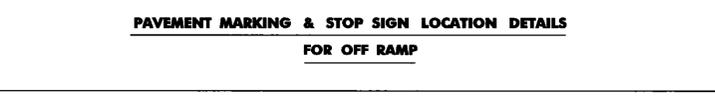


REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE

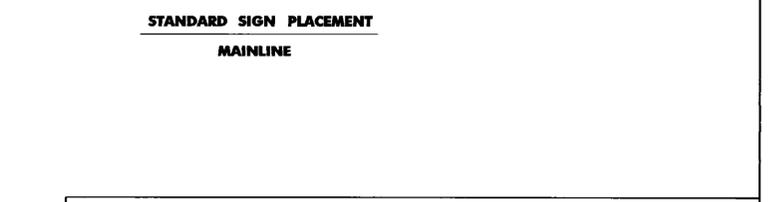
APPROVED
[Signature]
DIRECTOR OF ENGINEERING
[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE



NOTES:
1. THE STOP BAR SHOULD BE PLACED AT THE DESIRED STOPPING POINT. IN NO CASE MORE THAN 9 m OR LESS THAN 1.2 m FROM THE NEAREST EDGE OF THE INTERSECTING ROADWAY.
2. AT A SIGNALIZED INTERSECTION, DELETE WORDING "STOP" AND THE STOP SIGN AND PLACE STOP BAR A MINIMUM OF 12 m FROM THE NEAREST SIGNAL HEAD FOR THE APPROACH.
3. EXCLUDE THE STOP BAR FOR A YIELD CONDITION.



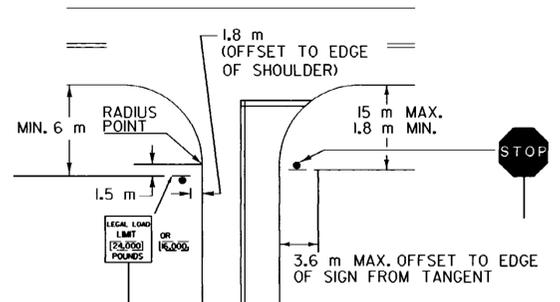
ROUTE REASSURANCE MARKER TO BE PLACED 180 m BEYOND THE END OF THE ACCELERATION LANE TAPER POINT.



OTHER STDS. E-160M E-162M
REQUIRED: E-161M E-163M
NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

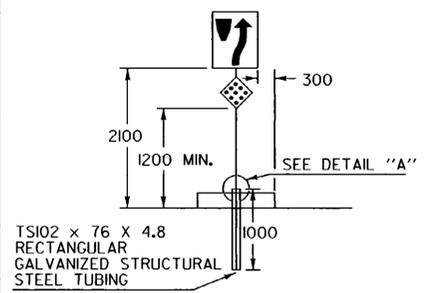
STANDARD SIGN PLACEMENT EXPRESSWAY AND FREEWAY





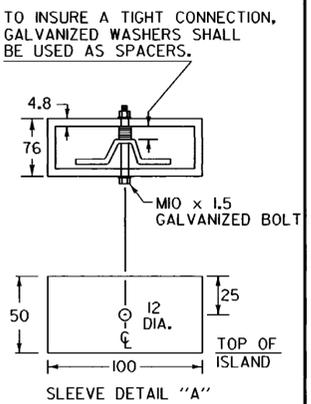
LEGAL LOAD LIMIT AND STOP SIGNS AT INTERSECTIONS WITH TOWN HIGHWAYS

STOP SIGN SHALL BE PLACED ON DRIVER'S RIGHT, MAINTAINING MAXIMUM VISIBILITY. CLEARANCE SHALL BE A MINIMUM OF 1.8 m AND A MAXIMUM OF 15 m FROM EDGE LINE OF INTERSECTING ROADWAY AND DOES NOT HAVE TO BE ADJACENT TO THE STOP BAR.

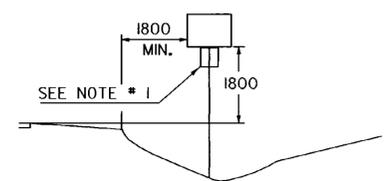
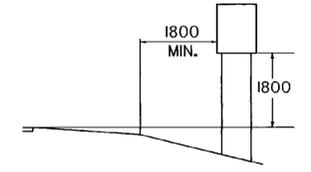


SIGNS ON MEDIAN ISLANDS IN THE LINE OF TRAFFIC

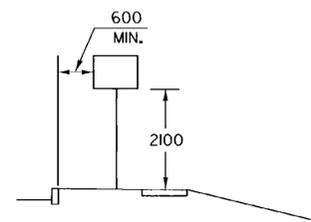
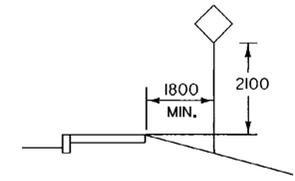
TO INSURE A TIGHT CONNECTION, GALVANIZED WASHERS SHALL BE USED AS SPACERS.



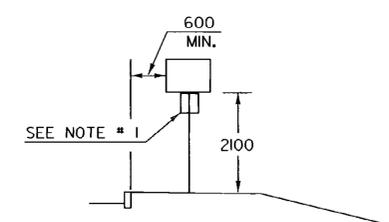
INCREASE VERTICAL CLEARANCE TO 2.1m IN AREAS OF FREQUENT ROADSIDE PARKING OR PEDESTRIAN ACTIVITY.



RURAL



IF SUFFICIENT CLEARANCE IS NOT AVAILABLE BETWEEN CURB AND SIDEWALK, MOUNT SIGN BEHIND SIDEWALK AS SHOWN AT TOP. CHECK FOR ADEQUATE RIGHT-OF-WAY.



URBAN

NOTES:

1. IN BOTH RURAL AND URBAN LOCATIONS, IF A SECONDARY SIGN IS MOUNTED BELOW ANOTHER SIGN, THE MINIMUM CLEARANCE MAY BE REDUCED BY 300 mm.
 2. IN RURAL AREAS WITH NO OR MINIMAL SHOULDER, THE LATERAL CLEARANCE TO THE EDGE OF A SIGN SHOULD BE A MINIMUM OF 3.6 m FROM THE EDGE OF THE TRAVELED WAY.
 3. ALSO SEE OTHER STANDARD SHEETS FOR MOUNTING CLEARANCE AND SPACING OF DESTINATION AND ROUTE MARKER ASSEMBLIES AND TOWN LINE SIGNS.
- POST REFERENCE:
REFER TO THE DETAILS ON THE APPROPRIATE STANDARD DRAWING FOR INFORMATION CONCERNING THE PROPER MOUNTING OF SIGNS ON APPROPRIATE POSTS.

OTHER STDS. E-160M E-162M E-164M REQUIRED: E-161M E-163M
NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED
[Signature]
DIRECTOR OF ENGINEERING
[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

**STANDARD SIGN PLACEMENT
CONVENTIONAL ROAD**



Metric STANDARD E-121M

STREET NAME SIGNS

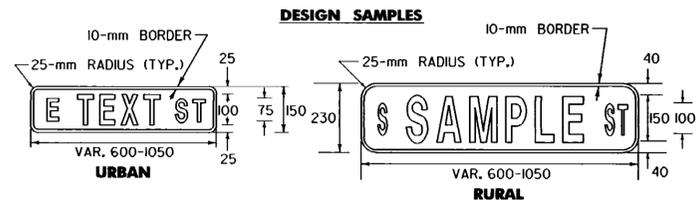
*** MATERIALS**
THE SIGN BASE MATERIALS USED FOR THE STREET NAME SIGNS MAY BE EITHER OF THE FOLLOWING:
A - EXTRUDED ALUMINUM BLADES WITH REFLECTIVE SHEETING
B - FLAT ALUMINUM BLADES WITH REFLECTIVE SHEETING

*** 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 FHWA.

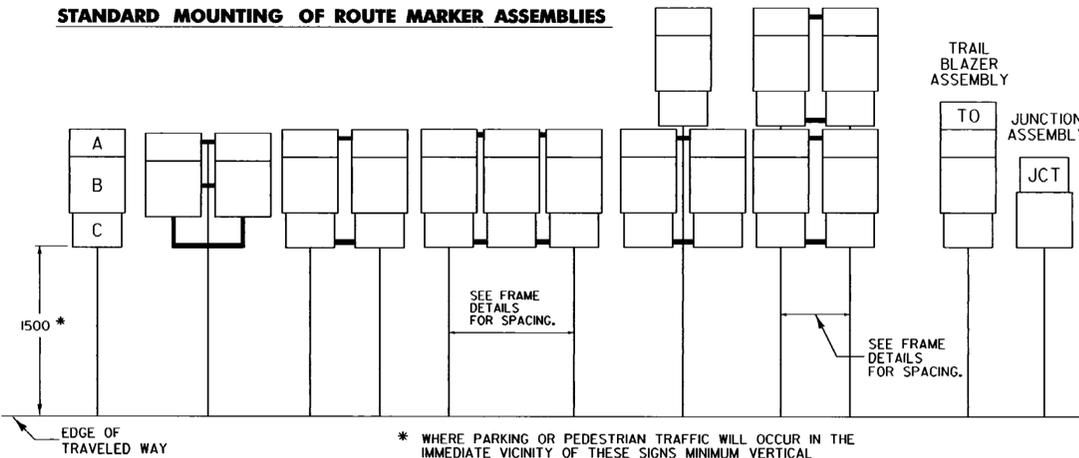
*** LETTERING**
LETTERS AND DIGITS SHALL CONFORM TO THE LATEST VERSION OF FHWA'S "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS".

*** SPECIFICATIONS**
THE SIGN SHALL MEET THE SPECIFICATIONS FOR "TRAFFIC SIGNS" AS PRESCRIBED IN THE VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION. THE MATERIAL FOR THE BLADES SHALL BE EITHER EXTRUDED ALUMINUM WITH A 6.4 mm FLANGE THICKNESS AND A 2.3 mm WEBB (MIN) OR 3.18-mm FLAT SHEET ALUMINUM. THE PREFERRED MOUNTING METHOD FOR STREET SIGNS IS POST TOP MOUNTING BRACKETS. HARDWARE FOR MOUNTING BRACKETS TO POST SHALL BE SUBSIDIARY TO OTHER ITEMS. MOUNTING METHOD WILL BE AS SHOWN ON THE PLANS. MINIMUM VERTICAL CLEARANCE IS 2.4 m TO THE BOTTOM OF THE SIGN. FOR POST TOP MOUNTINGS, SIGNS SHALL HAVE TEXT ON BOTH SIDES.

*** SIZES**
RURAL AREAS - USE A 230 mm HIGH BLADE IN LENGTHS OF 600, 750, 900 OR 1050 mm. USE SERIES "B" LETTERING (MINIMUM) WITH 150 mm HIGH LETTERS FOR THE STREET NAME, 100-mm LETTERS FOR OTHER TEXT.
URBAN AREAS - USE A 150 mm HIGH BLADE IN LENGTHS OF 600, 750, 900 OR 1050 mm. USE SERIES "B" LETTERING (MINIMUM) WITH 100 mm HIGH LETTERS FOR THE STREET NAME, 75-mm LETTERS FOR OTHER TEXT.



STANDARD MOUNTING OF ROUTE MARKER ASSEMBLIES



* WHERE PARKING OR PEDESTRIAN TRAFFIC WILL OCCUR IN THE IMMEDIATE VICINITY OF THESE SIGNS MINIMUM VERTICAL CLEARANCE SHALL BE INCREASED TO 2100 mm.

INSTALLATION SEQUENCE:
IN MULTIPLE HORIZONTAL MOUNTINGS PLACE A ROUTE MARKER ASSEMBLY INDICATING A LEFT TURN ON THE LEFT SIDE OF THE ASSEMBLY, RIGHT TURN ON THE RIGHT SIDE. FOR VERTICALLY STACKED MOUNTINGS PLACE THE STRAIGHT THROUGH MOVE INDICATION ON TOP, THE LEFT OR RIGHT TURNS AS APPROPRIATE BENEATH.
A - CARDINAL DIRECTION MARKER C - ADVANCE TURN ARROW OR DIRECTIONAL ARROW
B - ROUTE NUMBER

APPLICATION

THE MINIMUM SIZE SHALL BE USED IN AREAS WHERE THE SPEED LIMIT IS 35 MPH OR LESS, UNLESS TEXT SIZE REQUIREMENTS DICTATE THE USE OF THE STANDARD SIZE. MULTIPLE ASSEMBLIES SHALL USE THE SAME SIZE THROUGHOUT.

MATERIALS

THE SIGN BASE MATERIAL FOR STANDARD DESTINATION SIGNS SHALL BE HIGH DENSITY OVERLAID PLYWOOD 16 mm THICK OR FLAT SHEET ALUMINUM 3.18 mm THICK. THE REFLECTIVE SHEETING APPLIED TO THE ENTIRE BACKGROUND OF THE SIGN. THE TEXT AND BORDER SHALL BE CUT OUT OF REFLECTORIZED WHITE OR SILVER LETTERS.

COLORS

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

THE COLORS SHALL CONFORM WITH THOSE FOUND IN STANDARD COLOR TOLERANCE CHARTS AS APPROVED BY THE FHWA.

LETTERING

LETTERS AND DIGITS SHALL CONFORM TO THE LATEST VERSION OF FHWA'S "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS".

SPECIFICATIONS

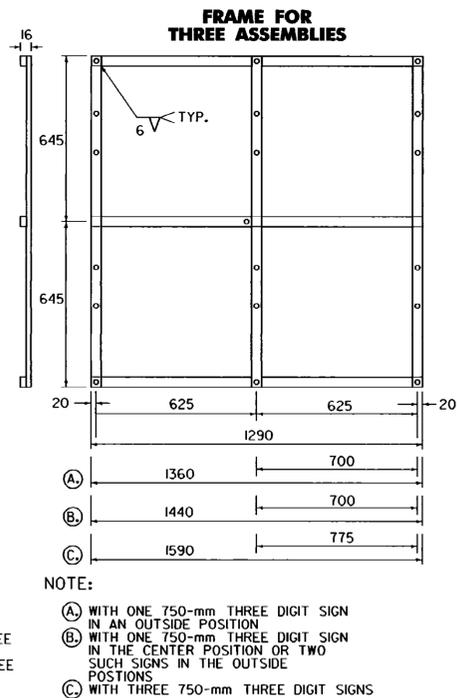
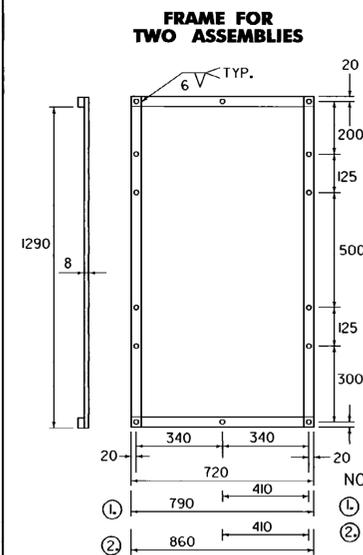
DESTINATION SIGNS SHALL MEET THE STATE SPECIFICATIONS FOR "TRAFFIC SIGNS" AS PRESCRIBED IN THE VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION. ALL BORDERS ARE 10 mm.

TEXT DESIGN

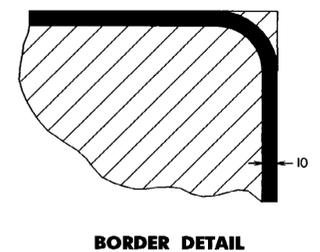
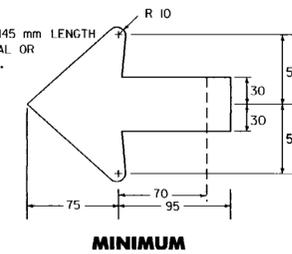
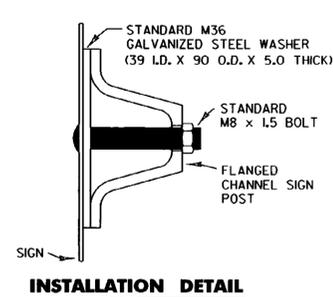
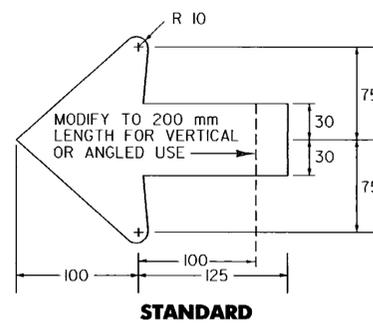
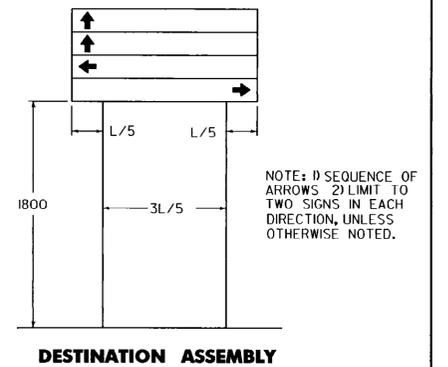
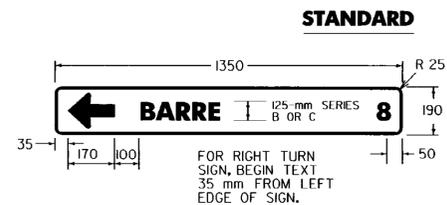
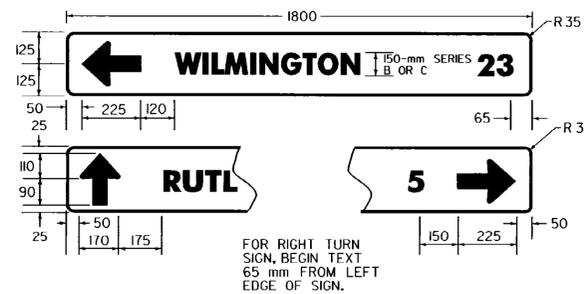
LETTERS, DIGITS, ARROW, SPACING AND TEXT DIMENSIONS SHALL CONFORM WITH THE STANDARD ALPHABETS AND DESIGNS PRESCRIBED IN THE MUTCD AND ADOPTED BY THE FHWA.

ROUTE MARKER ASSEMBLY FRAMES

STANDARD FRAMES SHALL BE 8 x 40 WELDED WROUGHT IRON. ALL HOLES SHALL BE 11 mm IN 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 BLACK PAINT. THE PAINT SHALL BE OF THE TYPE USED ON EXTERIOR METAL SURFACES TO PREVENT METAL CORROSION.



STANDARD MOUNTING OF DESTINATION ASSEMBLIES



REVISIONS AND CORRECTIONS

JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

Paul C. ...
DIRECTOR OF ENGINEERING

Stephen B. MacArthur
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

**GUIDE SIGN PLACEMENT
MISCELLANEOUS DETAILS**

OTHER STDS. REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.



Metric
STANDARD
E-123M

TEXT	SERIES	DIMENSIONS (*)
ADDISON	C	596
ALBANY	C	544
ALBURG	C	536
ANDOVER	C	632
ARLINGTON	B	626
ATHENS	C	517
AVERILL	C	559
BAKERSFIELD	B	700 (24)
BARNARD	C	641
BARNET	C	524
BARRE CITY	B	700 (8)
BARRE TOWN	B	700 (50)
BARTON	C	534
BELVIDERE	C	700 (20)
BENNINGTON	B	695
BENSON	C	536
BERKSHIRE	B	624
BERLIN	C	476
BETHEL	C	504
BLOOMFIELD	B	685
BOLTON	C	515
BRADFORD	C	700 (19)
BRAINTREE	C	700 (27)
BRANDON	C	641
BRATTLEBORO	B	700 (38)
BRIDGEWATER	B	700 (31)
BRIDPORT	C	677
BRIGHTON	C	677
BRISTOL	C	576
BROOKFIELD	B	680
BROWNINGTON	B	700 (45)
BRUNSWICK	B	652
BURKE	C	442
BUELS GORE	B	700 (16)
BURLINGTON	B	695
CABOT	C	431
CALAIS	C	468
CAMBRIDGE	C	635
CANAAN	C	528
CASTLETON	B	625
CAVENDISH	B	613
CHARLESTON	B	700 (11)
CHARLOTTE	B	624
CHELSEA	C	609
CHESTER	C	600
CHITTENDEN	B	651
CLARENDON	B	646
COLCHESTER	B	700
CONCORD	C	641
CORINTH	C	575
CORNWALL	C	700 (18)
COVENTRY	C	700 (7)
CRAFTSBURY	B	700 (20)
DANBY	C	455
DANVILLE	C	657
DERBY	C	446
DORSET	C	518
DOVER	C	436
DUMMERSTON	C	700 (23)
DUXBURY	C	648
EDEN	C	335
ENOSBURG	B	700 (13)
EAST HAVEN	C	700 (12)
E. MONTPELIER	B(100)	700 (50)
ELMORE	C	539
ESSEX	C	430
FAIRFAX	C	571
FAIRFIELD	C	688
FAIR HAVEN	B	687
FAIRLEE	C	553
FAYSTON	C	608
FERRISBURGH	B	622
FLETCHER	B	691
FRANKLIN	C	673
		660

TEXT	SERIES	DIMENSIONS (*)
GEORGIA	C	585
GLOVER	C	527
GOSHEN	C	520
GLASTENBURY	B	700 (51)
GRAFTON	C	618
GRAND ISLE	B	700 (10)
GRANVILLE	C	700 (29)
GREENSBORO	B	700 (16)
GROTON	C	534
GUILDHALL	C	700 (29)
GUILFORD	C	672
HALIFAX	C	572
HANCOCK	C	629
HARDWICK	C	696
HARTFORD	C	700 (9)
HARTLAND	C	700
HIGHGATE	C	658
HINESBURG	B	624
HOLLAND	C	617
HUBBARDTON	B	700 (24)
HYDE PARK	B	700
IRA	C	214
IRASBURG	C	682
ISLE LA MOTTE	B(100)	700 (40)
JAMAICA	C	595
JAY	C	250
JERICHO	C	576
JOHNSON	C	642
KIRBY	C	400
LANDGROVE	B	645
LEICESTER	C	700 (11)
LEMINGTON	B	614
LONDONDERRY	B(100)	654
LOWELL	C	529
LUDLOW	C	551
LUNENBERG	B	640
LYNDON	C	526
MAIDSTONE	B	629
MANCHESTER	B	700 (14)
MARLBORO	C	700 (23)
MARSHFIELD	B	692
MENDON	C	545
MIDDLEBURY	B	700 (6)
MIDDLESEX	C	619
MIDDLETOWN SPR	B(100)	700 (50)
MILTON	C	479
MONTGOMERY	B	700 (30)
MONTPELIER	B	681
MORE TOWN	C	700 (30)
MORGAN	C	558
MORRISTOWN	B	700 (17)
MOUNT HOLLY	B	700 (50)
MOUNT TABOR	B	700 (50)
NEWARK	C	541
NEWBURY	C	651
NEWFANE	C	628
NEW HAVEN	B	688
NEWPORT CITY	B(100)	700
NEWPORT TOWN	B(100)	700 (32)
NORTH HERO	B	700 (20)
NORTHFIELD	B	673
NORTON	C	540
NORWICH	C	606
ORANGE	C	546
ORWELL	C	540
PANTON	C	534
PAWLET	C	519
PEACHAM	C	636
PERU	C	346
PITTSFIELD	C	700 (29)
PITTSFORD	C	700 (21)
PLAINFIELD	B	632
PLYMOUTH	C	700 (13)
POMFRET	C	632
POULTNEY	C	695

TEXT	SERIES	DIMENSIONS (*)
POWNAAL	C	554
PROCTOR	C	617
PUTNEY	C	524
RANDOLPH	C	700 (16)
READING	C	580
READSBORO	B	663
RICHFORD	C	677
RICHMOND	C	700
RIPTON	C	485
ROCHESTER	B	629
ROCK INGHAM	B	700 (8)
ROXBURY	C	640
ROYALTON	C	695
RUPERT	C	527
RUTLAND CITY	B(100)	673
RUTLAND TOWN	B(100)	700 (20)
RYEGATE	C	600
ST. ALBANS CITY	B(100)	700 (50)
ST. ALBANS TOWN	B(100)	700 (50)
ST. GEORGE	B	672
ST. JOHNSBURY	B(100)	700 (37)
SALISBURY	B	642
SALISBURY	B	660
SHAFTSBURY	B	700 (22)
SHARON	C	545
SHEFFIELD	C	700 (16)
SHELBURNE	B	650
SHELDON	C	621
SHERBURNE	B	661
SHOREHAM	C	700 (26)
SHREWSBURY	B	700 (35)
SO. BURLINGTON	B(100)	700 (32)
SOUTH HERO	C	700 (17)
SPRINGFIELD	B	700 (11)
STAMFORD	C	700 (13)
STARKSBORO	C	700 (18)
STOCKBRIDGE	B	700 (28)
STOWE	C	449
STRAFFORD	B	648
STRATTON	C	676
SUDBURY	C	649
SUNDERLAND	B	700 (16)
SUTTON	C	511
SWANTON	C	636
THETFORD	C	694
TINMOUTH	C	679
TOPSHAM	C	643
TOWNSHEND	B	675
TROY	C	348
TUNBRIDGE	B	618
UNDERHILL	B	700 (29)
VERGENNES	B	639
VERNON	C	544
VERSHIRE	C	670
WAITSFIELD	B	647
WALDEN	C	537
WALLINGFORD	C	700 (41)
WALTHAM	C	630
WARDSBORO	B	687
WARREN	C	548
WARRENS GORE	B(100)	700 (30)
WASHINGTON	B	700 (12)
WATERBURY	B	668
WATERFORD	B	652
WATERVILLE	B	665
WEATHERSFIELD	B(100)	700 (5)
WELLS	C	440
WEST FAIRLEE	B(100)	683
WESTFIELD	C	700 (26)
WEST HAVEN	B	700 (26)
WESTFORD	C	700 (16)
WESTMINISTER	C	700 (34)
WESTMORE	C	700 (27)
WESTON	C	545

TEXT	SERIES	DIMENSIONS (*)
WEST RUTLAND	B(100)	700 (13)
WEST WINDSOR	B(100)	700 (17)
WEYBRIDGE	B	641
WHEELOCK	C	700 (13)
WHITING	C	546
WHITINGHAM	B	696
WILLIAMSTOWN	B(100)	676
WILLISTON	C	700 (11)
WILMINGTON	B	685
WINDHAM	C	625
WINDSOR	C	606
WINHALL	C	596
WINOOSKI	C	649
WOLCOTT	C	620
WOODBURY	B	632
WOODFORD	B	616
WOODSTOCK	B	676
WORCESTER	B	654
AVERY'S GORE	B(100)	667
BALTIMORE	B	615
BROOKLINE	B	618
GRANBY	B	551
HUNTINGTON	C	651 (20)
LEWIS	C	393
LINCOLN	C	570
MONKTON	C	642
SANDGATE	C	673 (20)
SOMERSET	C	680 (20)
STANNARD	C	676 (25)
VICTORY	C	580
WARNERS GRANT	B(100)	725 (50)

THESE TOWNS ARE NOT INCLUDED IN THE ABOVE LIST BECAUSE THEY HAVE NO STATE HIGHWAYS, HOWEVER THE DETAILS ARE PROVIDED FOR INFORMATION PURPOSES:

TEXT	SERIES	DIMENSIONS (*)
WINDSOR	C	606
WINHALL	C	596
WINOOSKI	C	649
WOLCOTT	C	620
WOODBURY	B	632
WOODFORD	B	616
WOODSTOCK	B	676
WORCESTER	B	654
AVERY'S GORE	B(100)	667
BALTIMORE	B	615
BROOKLINE	B	618
GRANBY	B	551
HUNTINGTON	C	651 (20)
LEWIS	C	393
LINCOLN	C	570
MONKTON	C	642
SANDGATE	C	673 (20)
SOMERSET	C	680 (20)
STANNARD	C	676 (25)
VICTORY	C	580
WARNERS GRANT	B(100)	725 (50)

NOTES:

- (*) REPRESENTS PERCENT OF REDUCTION IN LETTER TO LETTER SPACING.
- WORD TO WORD SPACING FOR MULTIPLE TEXT TOWN NAMES IS ADJUSTABLE TO ACCOMMODATE DIMENSION REQUIREMENTS.
- DIMENSIONS SHOWN ARE APPROXIMATE AND MAY BE ADJUSTED SLIGHTLY TO ACCOMMODATE VARIOUS MANUFACTURER'S LETTER WIDTHS.

MATERIALS

THE SIGN BASE MATERIAL SHALL BE HIGH DENSITY OVERLAID PLYWOOD 16 mm THICK. THE REFLECTIVE MATERIAL SHALL BE SHEETING APPLIED TO THE ENTIRE BACKGROUND OF THE SIGN. THE TEXT SHALL BE CUT-OUT REFLECTORIZED LETTERS. ALL REFLECTIVE MATERIAL SHALL MEET THE MINIMUM REQUIREMENTS OF AASHTO TYPE II.

COLORS

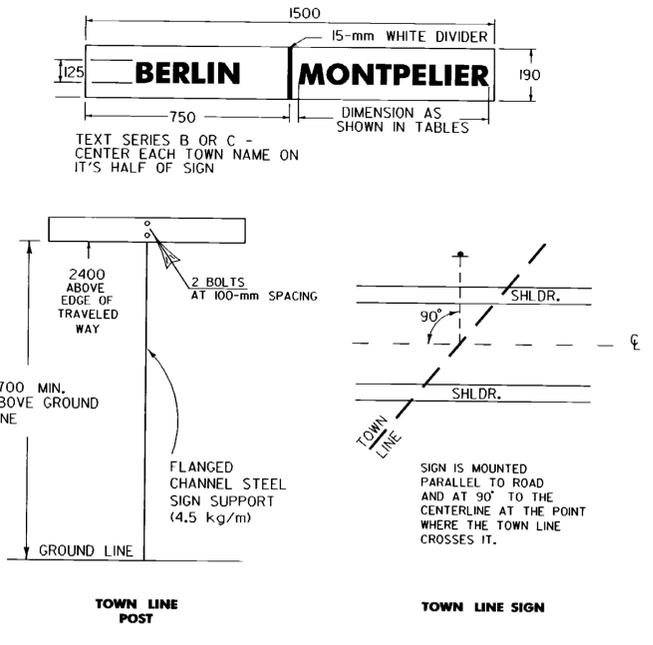
SIGNS SHALL HAVE A REFLECTORIZED WHITE OR SILVER TEXT ON A REFLECTORIZED GREEN BACKGROUND.

LETTERING

LETTERS AND DIGITS SHALL CONFORM TO THE LATEST VERSION OF FHWA'S 'STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS'.

SPECIFICATIONS

SIGNS SHALL MEET THE STANDARD VERMONT SPECIFICATIONS FOR 'TRAFFIC SIGNS' AS PRESCRIBED IN THE VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION. SEE THE APPROPRIATE STANDARD SHEETS FOR SIGN OFFSET PLACEMENT AND SIGN POST INFORMATION.



WHERE CROSSING COUNTY BOUNDARIES, AN ADDITIONAL COUNTY LINE SIGN SHALL BE MOUNTED BELOW THE TOWN LINE SIGN.

COUNTY NAMES

TEXT	SERIES	DIMENSIONS
ADDISON CO.	C(100)	700 (8)
BENNINGTON CO.	B(100)	700 (32)
CALEDONIA CO.	B(100)	700
CHITTENDEN CO.	B(100)	700
ESSEX CO.	C	700
FRANKLIN CO.	B(100)	633
GRAND ISLE CO.	B(100)	700 (50)
LAMOILLE CO.	B(100)	625
ORANGE CO.	B	700
ORLEANS CO.	B	700 (44)
RUTLAND CO.	B	700 (36)
WASHINGTON CO.	B(100)	700 (50)
WINDHAM CO.	B	700 (48)
WINDSOR CO.	B	700 (36)

OTHER STDS. REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

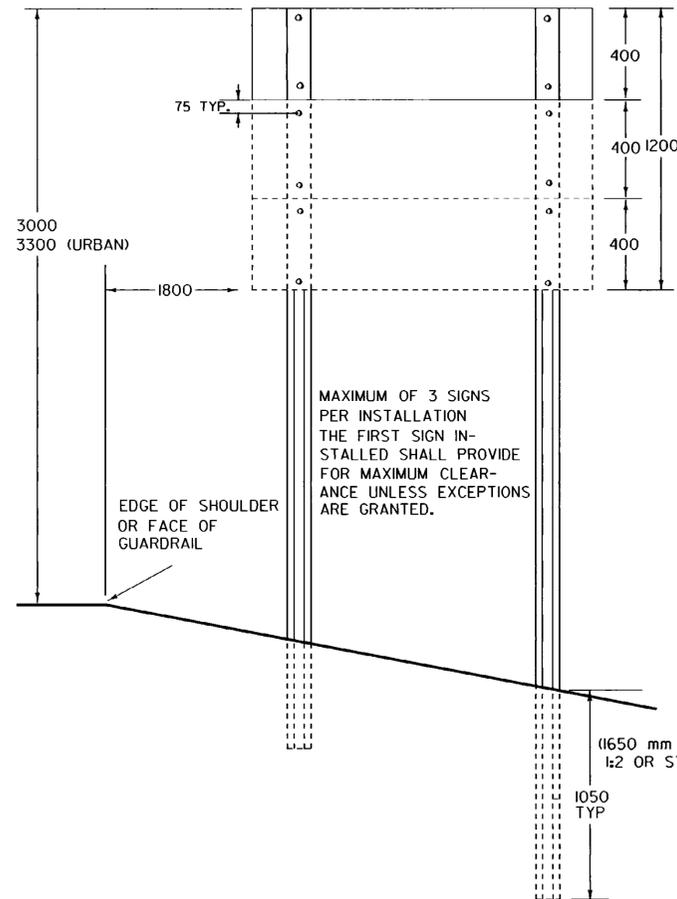
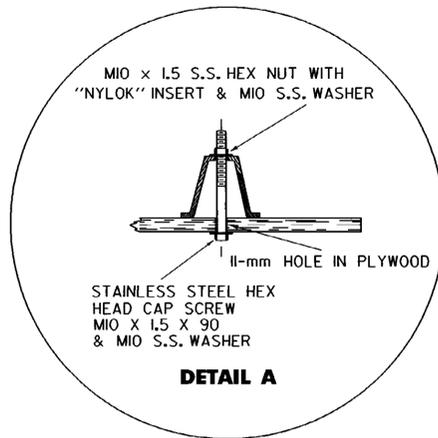
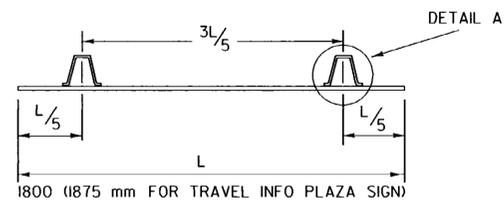


Metric
STANDARD
E-124M

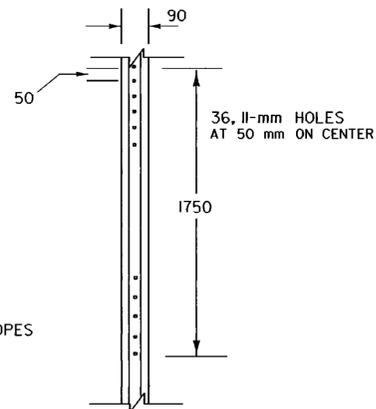
REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED
[Signature]
DIRECTOR OF PROJECT DEVELOPMENT
[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

TOWN LINE SIGNS

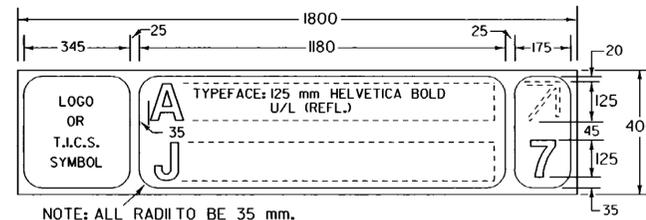


4.5 kg/m FLANGED CHANNEL STEEL SIGN POST DETAIL



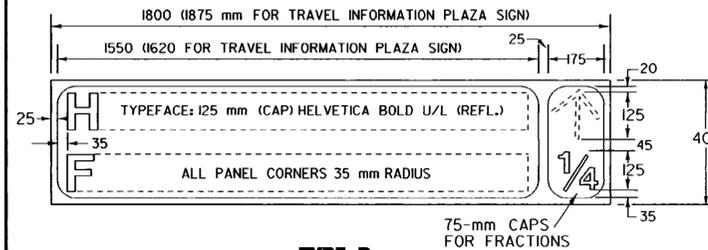
POST DRILLING DETAIL

TYPEFACE: 5" HELVETICA BOLD U/L (REFL.)

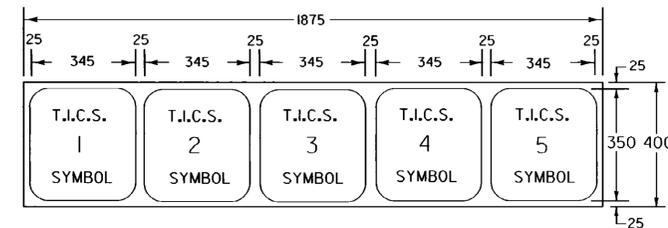


NOTE: ALL RADII TO BE 35 mm.

TYPE A



TYPE B



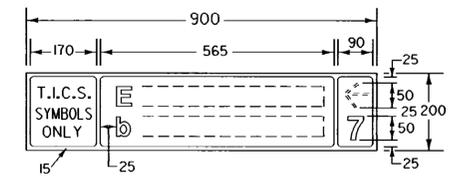
TYPE C

ONLY USED ON APPROACHES TO INFORMATION PLAZAS

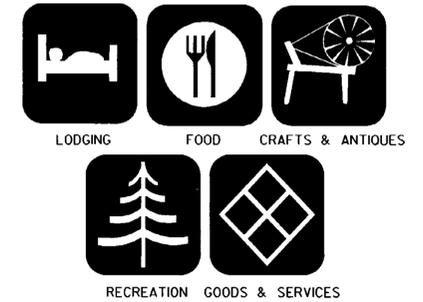


EXAMPLE OF PLAZA INFORMATION SIGN

FOR MORE DETAILS ON THE STATE'S INFORMATION SYSTEM, WRITE OR CALL: TRAVEL INFORMATION COUNCIL, C/O AGENCY OF TRANSPORTATION, MAINTENANCE DIVISION, NATIONAL LIFE BUILDING, MONTPELIER, VERMONT 05602 (802) 828-2651.



DIRECTIONAL SIGN DETAIL FOR USE ON HIGHWAYS WITH POSTED SPEEDS OF 30 MPH OR LESS



THE SYMBOLS ABOVE ARE FEATURED ON VERMONT'S TRAVEL INFORMATION PLAZAS, WHICH ARE FREE-STANDING OUTDOOR KIOSKS FOUND AT INTERSTATE REST AREAS, WELCOME CENTERS, AND NEAR KEY POINTS OF INTEREST. PLAZA LOCATIONS ARE INDICATED ON THE OFFICIAL STATE MAP BY THE SYMBOL ?.

MATERIALS:

SIGN BASE MATERIAL SHALL BE HIGH DENSITY OVERLAIN PLYWOOD, 16 mm THICK, WHICH HAS BEEN SEALED ON THE EDGES AND PAINTED BLACK. THE BACK OF THE SIGNBOARD SHALL ALSO BE PAINTED BLACK. EACH SIGNBOARD IS TO BE DRILLED WITH FOUR 12-mm HOLES. THE INTERIOR OF THE HOLES SHALL BE PAINTED OR OTHERWISE SEALED AGAINST THE WEATHER.

DIRECTIONAL ARROWS AND DISTANCE NUMBERS WILL BE MADE OF REFLECTORIZED MATERIAL. (ENGINEERING GRADE)

COLOR:

SIGNBOARD FACES WILL HAVE BLACK BACKGROUND WITH WHITE BORDER. T.I.C.S. SYMBOL BACKGROUNDS WILL BE COLORED AS FOLLOWS:

- LODGING - MAGENTA (PINK)
- FOOD - ORANGE
- CRAFTS & ANTIQUES - AQUA
- RECREATION - BROWN
- GOODS AND OTHER SERVICES - BLACK

ALL SYMBOLS WILL BE REFLECTORIZED.

TEXT LAYOUT:

NAME OF BUSINESS ENTERPRISE WILL BE IN UPPER AND LOWER CASE LETTERS STARTING FLUSH LEFT ON THE TOP LINE, AND MAY, ONLY WHEN NECESSARY, EXTEND TO THE SECOND LINE, (FLUSH LEFT ALSO). DIRECTIONAL INFORMATION WILL BE ALL IN LOWER CASE (NO CAPS), AND WILL ALWAYS BE ON THE SECOND LINE, EITHER FLUSH LEFT OR FOLLOWING THE END OF THE ESTABLISHMENT'S NAME.

OTHER STDS. E-160M REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS

JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

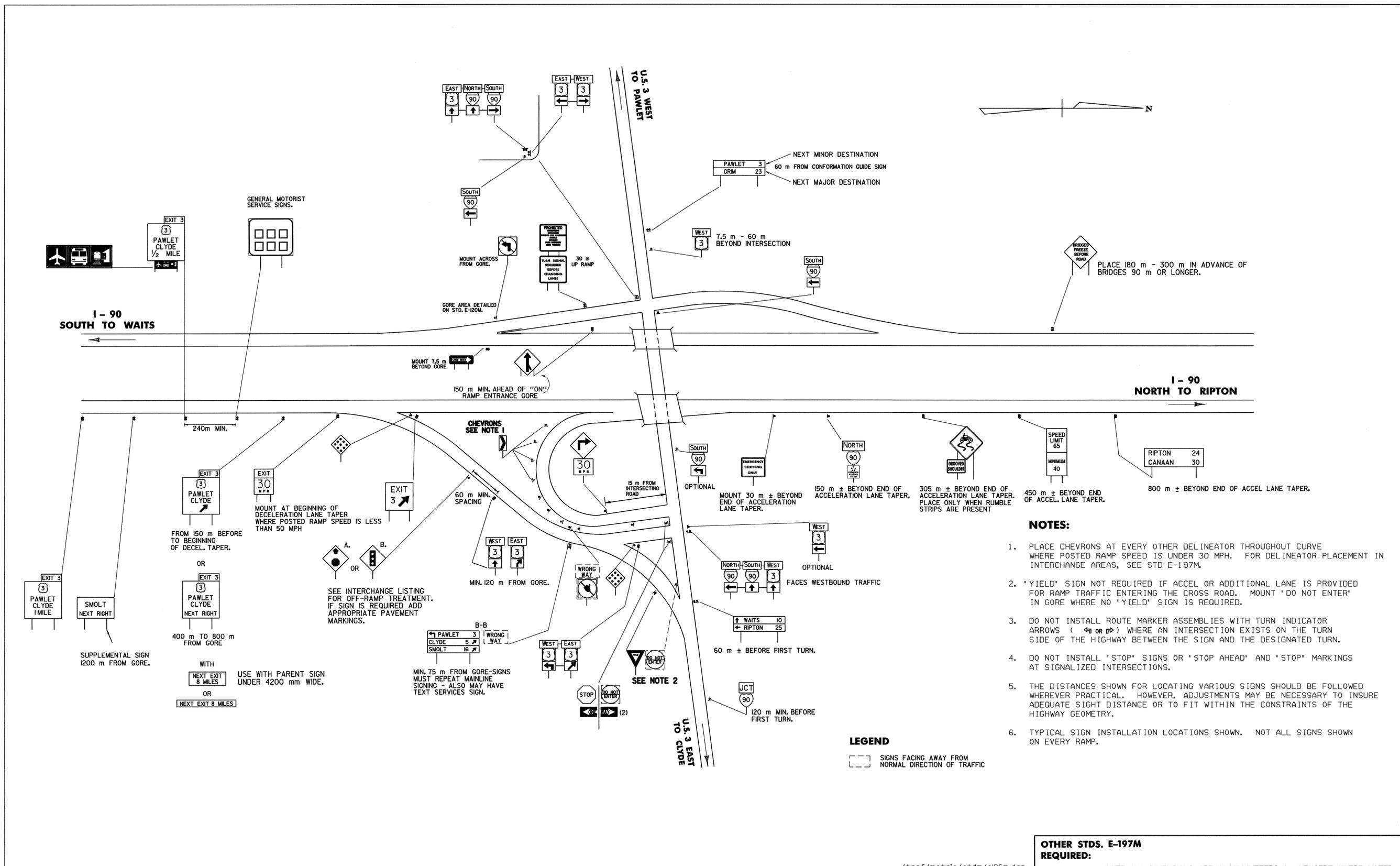
[Signature]
DIRECTOR OF ENGINEERING

[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

TRAVEL INFORMATION COUNCIL SIGNS



Metric STANDARD E-125 M



- NOTES:**
1. PLACE CHEVRONS AT EVERY OTHER DELINEATOR THROUGHOUT CURVE WHERE POSTED RAMP SPEED IS UNDER 30 MPH. FOR DELINEATOR PLACEMENT IN INTERCHANGE AREAS, SEE STD E-197M.
 2. "YIELD" SIGN NOT REQUIRED IF ACCEL OR ADDITIONAL LANE IS PROVIDED FOR RAMP TRAFFIC ENTERING THE CROSS ROAD. MOUNT "DO NOT ENTER" IN GORE WHERE NO "YIELD" SIGN IS REQUIRED.
 3. DO NOT INSTALL ROUTE MARKER ASSEMBLIES WITH TURN INDICATOR ARROWS (← or →) WHERE AN INTERSECTION EXISTS ON THE TURN SIDE OF THE HIGHWAY BETWEEN THE SIGN AND THE DESIGNATED TURN.
 4. DO NOT INSTALL "STOP" SIGNS OR "STOP AHEAD" AND "STOP" MARKINGS AT SIGNALIZED INTERSECTIONS.
 5. THE DISTANCES SHOWN FOR LOCATING VARIOUS SIGNS SHOULD BE FOLLOWED WHEREVER PRACTICAL. HOWEVER, ADJUSTMENTS MAY BE NECESSARY TO INSURE ADEQUATE SIGHT DISTANCE OR TO FIT WITHIN THE CONSTRAINTS OF THE HIGHWAY GEOMETRY.
 6. TYPICAL SIGN INSTALLATION LOCATIONS SHOWN. NOT ALL SIGNS SHOWN ON EVERY RAMP.

OTHER STDS. E-197M REQUIRED: NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS

JUNE 13, 1997 - ORIGINAL APPROVAL DATE
 FEB. 2, 1998 - ADDED GEN. MOTOR. SERVICE SIGN AND EMERGENCY STOPPING ONLY SIGN
 FEB. 1, 2000 - ADDED VW-397 MOTORCYCLE SYMBOL SIGN

APPROVED

David J. Smith
 DIRECTOR OF PROJECT DEVELOPMENT

TYPICAL FREEWAY INTERCHANGE SIGNING

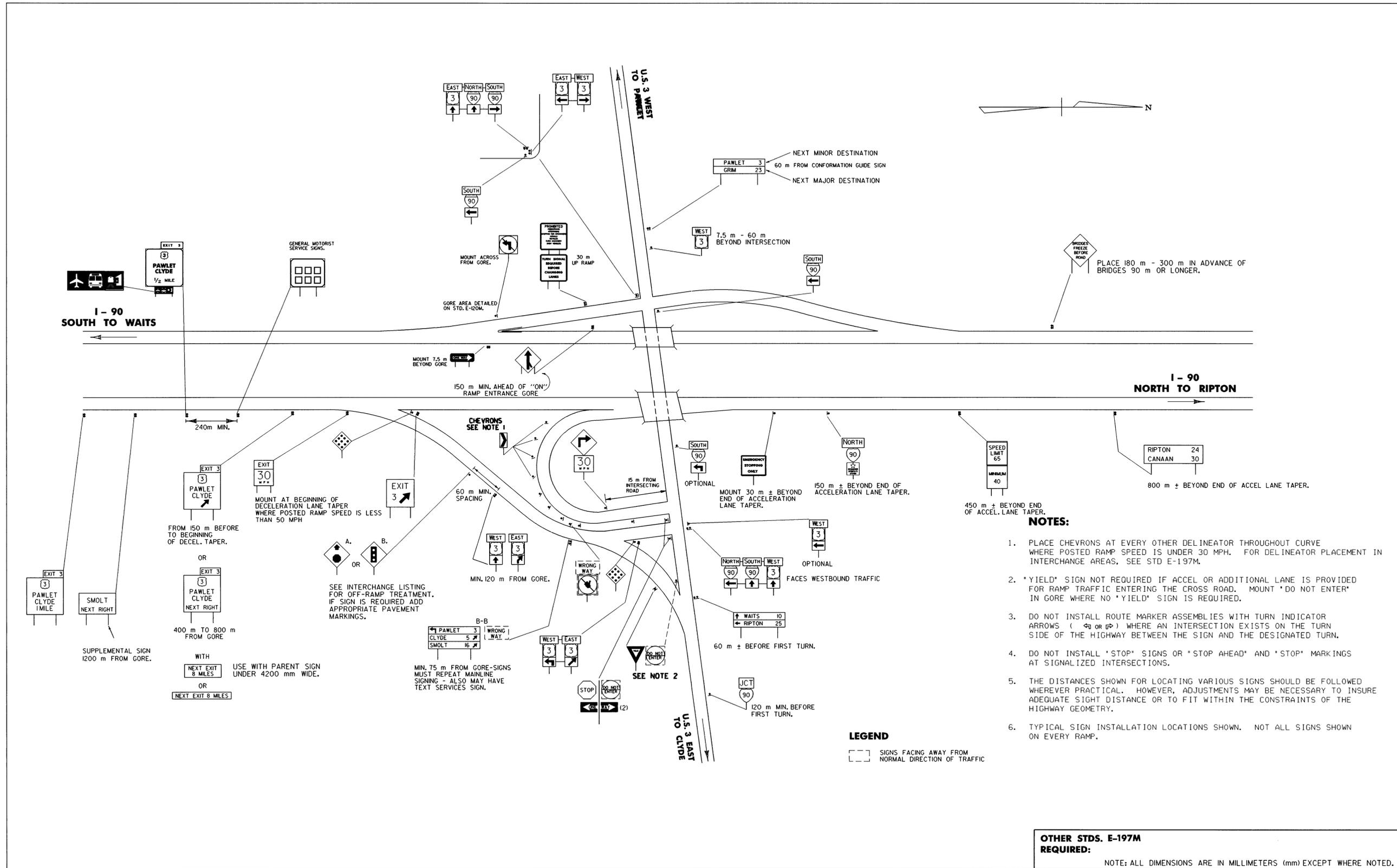


Metric

STANDARD

E-126 M

/traf/metric/stdm/el26m.dgn



NOTES:

1. PLACE CHEVRONS AT EVERY OTHER DELINEATOR THROUGHOUT CURVE WHERE POSTED RAMP SPEED IS UNDER 30 MPH. FOR DELINEATOR PLACEMENT IN INTERCHANGE AREAS, SEE STD E-197M.
2. *YIELD* SIGN NOT REQUIRED IF ACCEL OR ADDITIONAL LANE IS PROVIDED FOR RAMP TRAFFIC ENTERING THE CROSS ROAD. MOUNT *DO NOT ENTER* IN GORE WHERE NO *YIELD* SIGN IS REQUIRED.
3. DO NOT INSTALL ROUTE MARKER ASSEMBLIES WITH TURN INDICATOR ARROWS (← or →) WHERE AN INTERSECTION EXISTS ON THE TURN SIDE OF THE HIGHWAY BETWEEN THE SIGN AND THE DESIGNATED TURN.
4. DO NOT INSTALL *STOP* SIGNS OR *STOP AHEAD* AND *STOP* MARKINGS AT SIGNALIZED INTERSECTIONS.
5. THE DISTANCES SHOWN FOR LOCATING VARIOUS SIGNS SHOULD BE FOLLOWED WHEREVER PRACTICAL. HOWEVER, ADJUSTMENTS MAY BE NECESSARY TO INSURE ADEQUATE SIGHT DISTANCE OR TO FIT WITHIN THE CONSTRAINTS OF THE HIGHWAY GEOMETRY.
6. TYPICAL SIGN INSTALLATION LOCATIONS SHOWN. NOT ALL SIGNS SHOWN ON EVERY RAMP.

LEGEND

☐ SIGNS FACING AWAY FROM NORMAL DIRECTION OF TRAFFIC

OTHER STDS. E-197M REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS
 JUNE 13, 1997 - ORIGINAL APPROVAL DATE
 FEB. 2, 1998 - ADDED GEN. MOTOR. SERVICE SIGN AND EMERGENCY STOPPING ONLY SIGN

APPROVED

 DIRECTOR OF PROJECT DEVELOPMENT

 DIRECTOR OF CONSTRUCTION AND MAINTENANCE

TYPICAL FREEWAY INTERCHANGE SIGNING



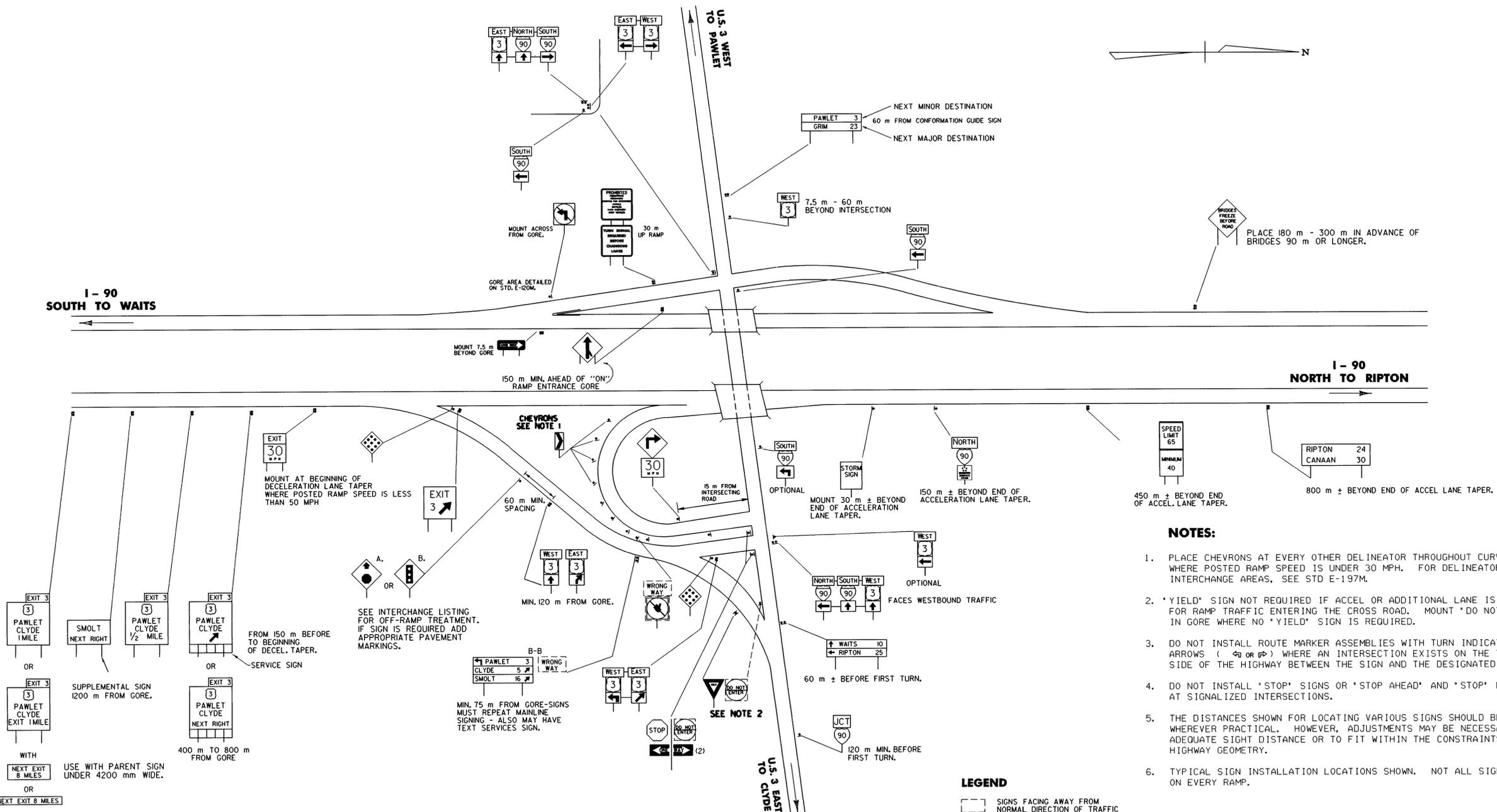
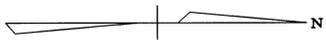
Metric STANDARD E-126 M

I - 90
SOUTH TO WAITS

I - 90
NORTH TO RIPTON

U.S. 3 WEST
TO PAWLET

U.S. 3 EAST
TO CLYDE



NOTES:

1. PLACE CHEVRONS AT EVERY OTHER DELINEATOR THROUGHOUT CURVE WHERE POSTED RAMP SPEED IS UNDER 30 MPH. FOR DELINEATOR PLACEMENT IN INTERCHANGE AREAS, SEE STD E-197M.
2. 'YIELD' SIGN NOT REQUIRED IF ACCEL OR ADDITIONAL LANE IS PROVIDED FOR RAMP TRAFFIC ENTERING THE CROSS ROAD. MOUNT 'DO NOT ENTER' IN GORE WHERE NO 'YIELD' SIGN IS REQUIRED.
3. DO NOT INSTALL ROUTE MARKER ASSEMBLIES WITH TURN INDICATOR ARROWS (↩ OR ↪) WHERE AN INTERSECTION EXISTS ON THE TURN SIDE OF THE HIGHWAY BETWEEN THE SIGN AND THE DESIGNATED TURN.
4. DO NOT INSTALL 'STOP' SIGNS OR 'STOP AHEAD' AND 'STOP' MARKINGS AT SIGNALIZED INTERSECTIONS.
5. THE DISTANCES SHOWN FOR LOCATING VARIOUS SIGNS SHOULD BE FOLLOWED WHEREVER PRACTICAL. HOWEVER, ADJUSTMENTS MAY BE NECESSARY TO INSURE ADEQUATE SIGHT DISTANCE OR TO FIT WITHIN THE CONSTRAINTS OF THE HIGHWAY GEOMETRY.
6. TYPICAL SIGN INSTALLATION LOCATIONS SHOWN. NOT ALL SIGNS SHOWN ON EVERY RAMP.

LEGEND

☐ SIGNS FACING AWAY FROM NORMAL DIRECTION OF TRAFFIC

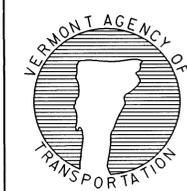
OTHER STDS. E-197M REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

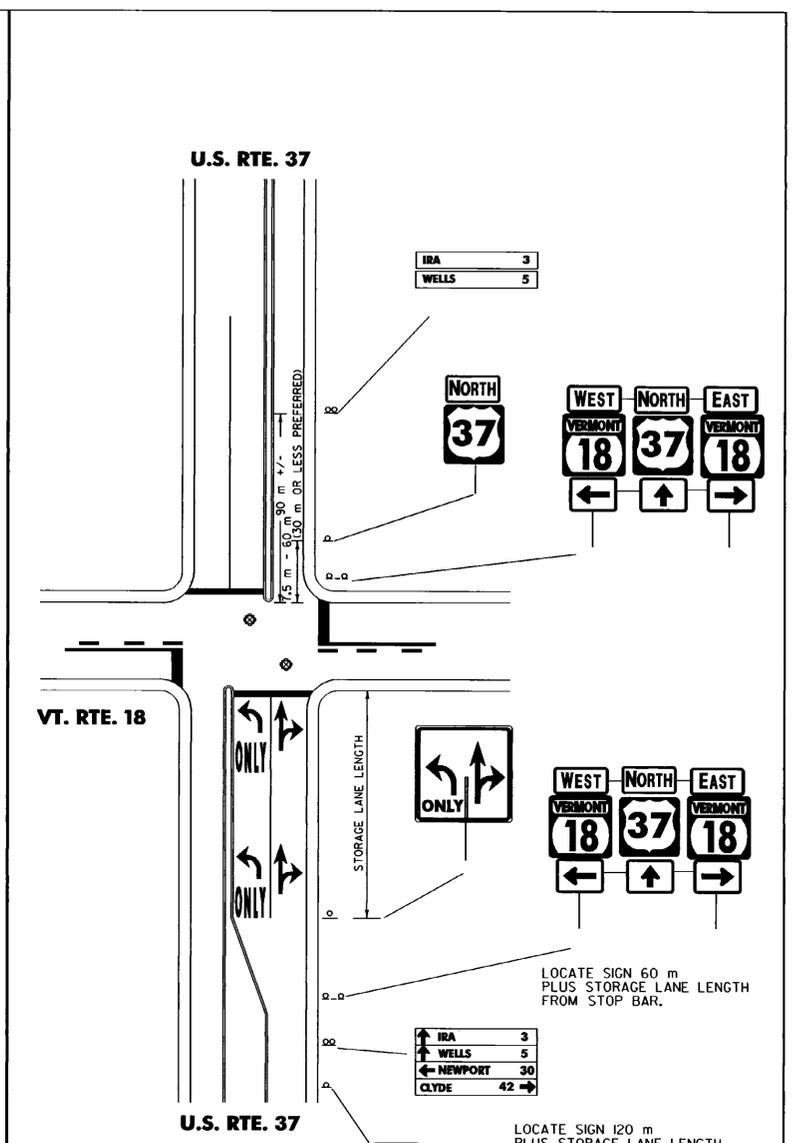
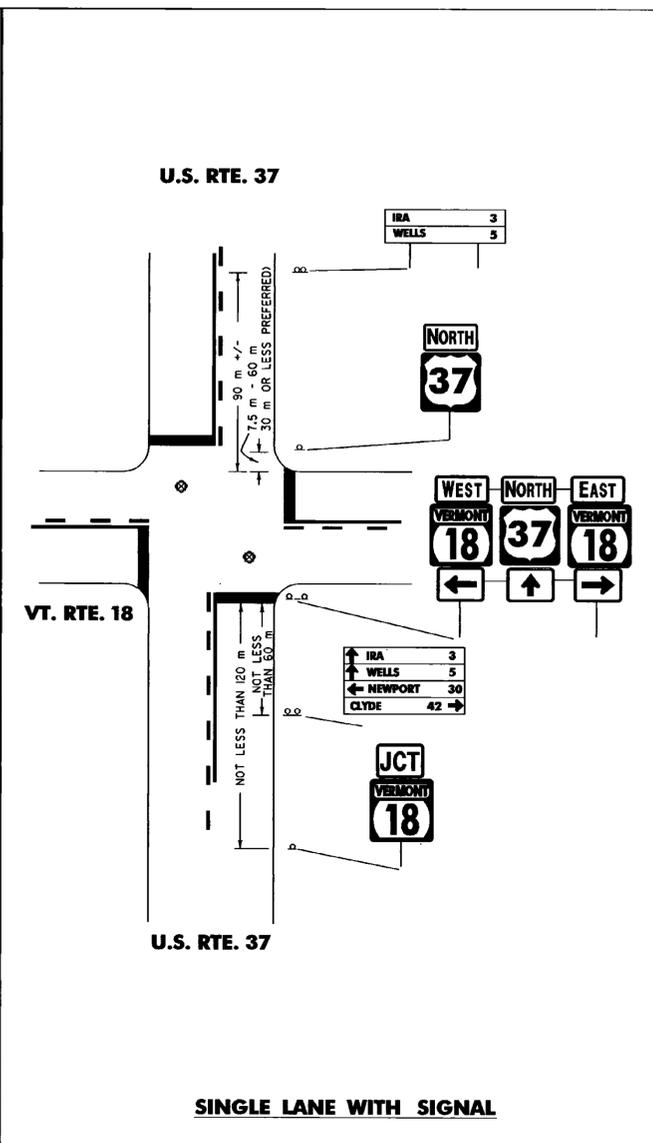
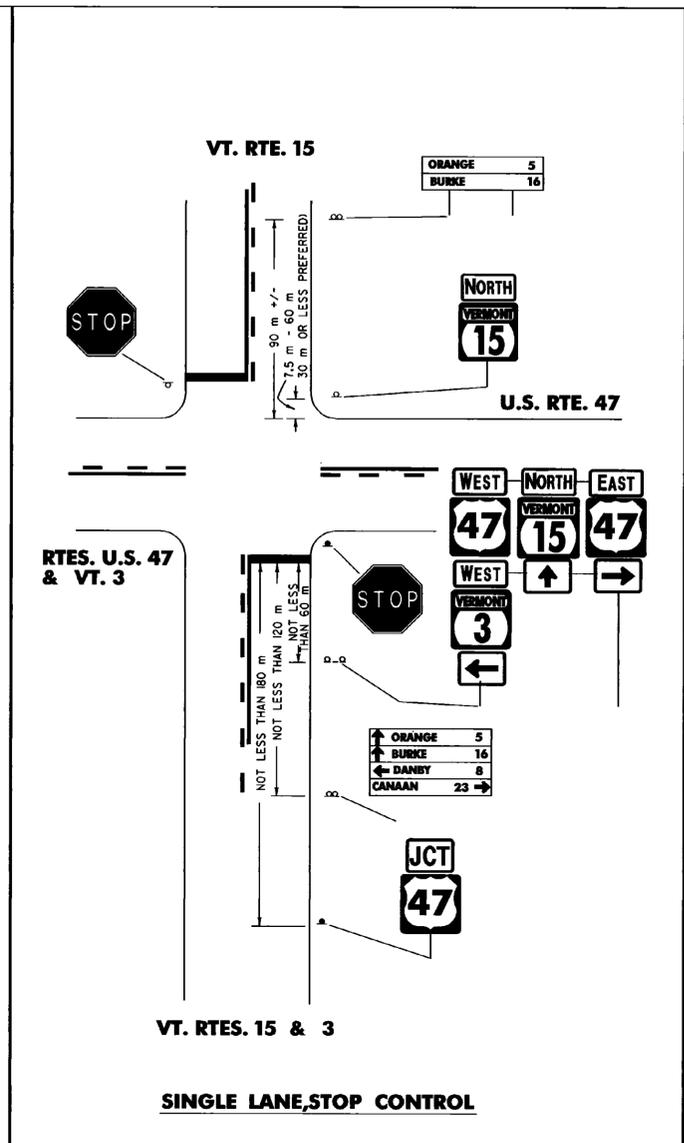
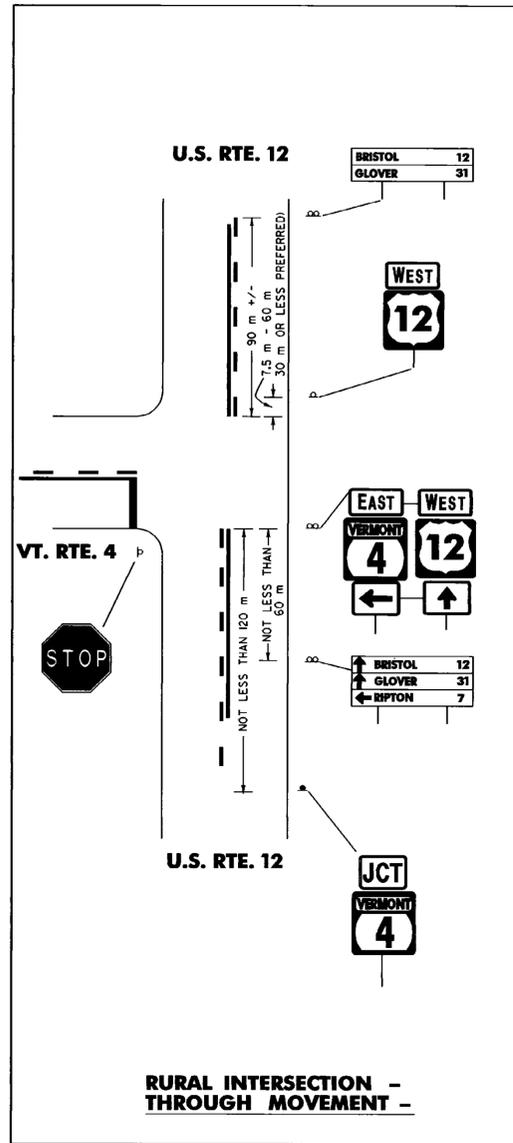
REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED
John C. Egan
DIRECTOR OF ENGINEERING
 Gordon D. MacArthur
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

TYPICAL FREEWAY INTERCHANGE SIGNING



Metric STANDARD E-126 M



GENERAL NOTES:

1. RECOMMENDED SIGN SPACING AS SHOWN IS SOMETIMES NOT OBTAINABLE DUE TO COMMERCIAL CONFLICTS, ETC. AT BUSY INTERSECTIONS, JUDGEMENT MUST BE USED IN THESE CASES TO PLACE SIGNS AS TO GIVE ADEQUATE NOTICE. IT IS ESPECIALLY IMPORTANT TO PLACE SIGNS CLEAR OF OBSTRUCTION BY OTHER SIGNS, POLES, POSTS, FENCES, ETC.
2. - BENT ARROWS ARE USED WHERE THE INTERSECTION CANNOT BE SEEN.
 - STRAIGHT ARROWS ARE USED WHERE THE INTERSECTION CAN BE SEEN.
3. SIGNING SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
4. TWO DESTINATION BOARDS FOR EACH DIRECTION ARE PERMISSIBLE.

OTHER STDS. REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

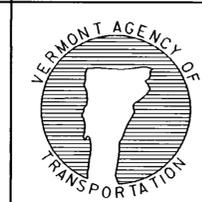
REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

DIRECTOR OF ENGINEERING

DIRECTOR OF CONSTRUCTION AND MAINTENANCE

ROUTE MARKINGS AT RURAL INTERSECTIONS



Metric STANDARD E-127 M

TOWN	SERIES/TEXT DIMENSIONS		
	75	100	150
ADDISON	C 360	C 479	B 550
ALBANY	C 331	C 440	B 543
ALBURG	C 325	C 432	B 521
ALBURG CTR.	B 450		
AMSDEN	C 336	C 446	B 537
ARLINGTON	C 450	C 550	
ASCUTNEY	C 429	C 550	
ATHENS	C 312	C 416	B 499
AVERILL	C 335	C 448	B 540
BAKERSFIELD	B 447	B 550	
BARNARD	C 390	C 518	B 550
BARNET	C 316	C 421	B 506
BARRE	C 270	C 359	C 536
BARTON	C 324	C 431	B 520
BAY		C 207	
BEANVILLE	C 445	C 550	
BEECHER		C 487	
BEECHER FALLS	B 550*		
BELLOWS		C 506	
BELLOWS FALLS	B 550*		
BELVIDERE		C 550	
BELVIDERE CTR.	B 450		
BELVIDERE COR.S.	B 550*		
BENNINGTON	C 450	B 550	
BERKSHIRE		C 550	
BERLIN		C 381	
BETHEL	C 302	C 403	C 550
BLOOMFIELD	C 450	B 543	
BOLTON	C 310	C 414	C 550
BOLTONVILLE	B 435	B 550	
BOMOSEEN	C 440	C 550	
BONDVILLE	C 450	C 550	
BOW		B 183	
BOWSVILLE	C 450	B 547	
BRADFORD	C 443	C 550	
BRADFORD CTR.	B 550*		
BRAINTREE		C 550	
BRANDON	C 389	C 517	B 550
BRATTLEBORO	B 450	B 550	
BREAD		C 353	
BREAD LOAF	B 450		
BRIDGEWATER	B 450	B 550	
BRIDGEWATER COR.S.	SEE NOTE A		
BRIDPORT	C 408	C 543	
BRIGHTON		C 543	
BRISTOL	C 346	C 461	B 550
BROOKFIELD	C 450	B 539	
BROWNVILLE	B 450	B 550	
BRUNSWICK		C 550	
BRUNSWICK SPRS	B 550*		
BURKE		C 355	
BURLINGTON	C 450	B 550	
CALAIS		C 377	
CAMBRIDGE	C 450	C 550	
CAMBRIDGE JCT.	B 550*		
CAMBRIDGEPORT	B 550*	B 650*	
CANAAN	C 321	C 428	B 527
CASTLETON	B 372	C 550	
CASTLETON COR.S.	B 550*		
CAVENDISH	C 450	C 550	
CENEETER		C 406	
CTR. RUTLAND	B 450		
CHARLESTON		B 550	
CHARLOTTE	C 450	C 550	
CHECKERBERRY		B 650*	
CHECKERBERRY VIL.	SEE NOTE A		
CHELSEA	C 367	C 489	B 550
CHESTER	C 363	C 483	B 550
CHESTER DEPOT	B 550*		
CHIMNEY		C 475	
CHIMNEY COR.	B 450		
CHIMNEY POINT	B 550		
CLARENDON		B 513	
COLBYVILLE	C 450	B 531	
COLCHESTER	B 418	B 550	
CONCORD	C 388	C 576	B 550
CORNER		C 431	
CORNERS		C 504	
CORNWALL	C 439	C 550	
COVENTRY	C 431	C 574	
CUTTINGSVILLE	B 450	B 650*	
DALE		C 273	
DANVILLE	C 396	C 528	

TOWN	SERIES/TEXT DIMENSIONS		
	75	100	150
DEPOT		C 345	
DERBY		C 359	
DERBY CENTER	B 450		
DERBY LINE	C 450		
DORSET	C 312	C 416	C 550
DOVER		C 352	
DOWNERS	C 388	C 516	
DUXBURY		C 521	
EAST (W/SERIES B VILLAGE NAME)	B 213		
(W/SERIES C VILLAGE NAME)	C 267		
EAST ALBURG	B 450		
EAST BARNET	B 450		
EAST BARRE	B 450		
E. BERKSHIRE	B 450		
E. BRAINTREE	B 450		
E. BRIGHTON	B 450		
E. BROOKFIELD	B 450		
EAST BURKE	B 446		
EAST CALAIS	B 450		
E. CHARLESTON	B 450		
E. CLARENDON	B 450		
EAST DORSET	B 450		
E. FAIRFIELD	B 450		
E. FRANKLIN	B 450		
E. GRANVILLE	B 450		
EAST HAVEN	B 442		
E. HIGHGATE	B 446		
E. JAMAICA	B 430		
E. JOHNSON	B 439		
E. MIDDLEBURY	B 450		
E. MONTEPELIER	B 450		
E. RANDOLPH	B 450		
E. RICHFORD	B 450		
EAST RUPERT	B 450		
E. RYEGATE	B 420		
E. ST. JOHNSBURY	B 550*		
E. THEFORD	B 450		
E. WALLINGFORD	B 550*		
EDEN	C 202	C 269	
EDEN MILLS	B 420		
ELMORE		C 431	
ELY	C 141	C 189	C 282
ENOSBURG		C 550	
ENOSBURG FALLS	B 550*		
ESSEX		C 345	
ESSEX CENTER	B 450		
ESSEX JCT.	B 395		
EVANSVILLE	C 450	B 527	
FAIR		C 234	
FAIR HAVEN	B 426	C 457	B 550
FAIRFAX	C 342	C 550	
FAIRFIELD	C 412	C 550	
FAIRLEE	C 331	C 442	B 534
FALLS		C 335	
FELCHVILLE	C 450	B 513	
FERNVILLE	C 440	C 550	
FERRISBURGH	B 450	B 550	
FLAT		C 246	
FLATS		C 319	
FONDA	C 272	C 362	C 541
FOREST		C 417	
FOREST DALE	B 450		
FOUR CORNERS		B 650*	
FRANKLIN	C 399	C 531	B 550
GASSETTS	C 410	C 547	B 650
GAYSVILLE	C 448	C 550	
GEORGIA		C 470	
GEORGIA CTR.	B 450		
GLOVER	C 318	C 424	B 502
GORDEN		C 439	
GORDEN LANDING	B 550*		
GOULDS		C 427	
GOULDS MILLS	B 450		
GRAFTON	C 373	C 497	B 550
GRAND		C 364	
GRAND ISLE	B 433	B 550	
GRAND ISLE STA.	B 550*		
GRANVILLE	C 450	C 550	
GROTON	C 323	C 430	B 514
GUILDHALL	C 450	C 607	
GUILFORD	C 404	C 538	B 550
HANCOCK	C 383	C 509	B 550
HARDWICK	C 422	C 550	

TOWN	SERIES/TEXT DIMENSIONS		
	75	100	150
HARMONYVILLE	B 450	B 650*	
HARTFORD	C 433	C 550	
HARTLAND	C 425	B 450	
HARTLAND FOUR COR.S.	SEE NOTE A		
HARTWELLVILLE	B 550*	B 650*	
HAVEN		C 346	
HEARTWELLVILLE	B 550*	B 650*	
HERO		C 277	
HIGHGATE		C 528	
HIGHGATE CTR.	B 450		
HIGHGATE FALLS	B 550		
HIGHGATE SPRS.	B 550		
HILL		C 231	
HINESBURG	C 450	C 550	
HORTONIA	C 413	C 550	
HUBBARDTON	B 444	B 550	
HYDEVILLE	C 445	C 550	
HYDE PARK		B 550	
IRA	C 129	C 172	C 257
IRASBURG	C 413	C 549	
IRASVILLE	C 422	C 550	
ISLAND		C 383	
ISLAND POND	B 450		
ISLE		C 231	
JACKSONVILLE	B 450	B 650	
JAMAICA	C 360	C 479	B 550
JAY	C 151	C 202	C 301
JEFFERSONVILLE	B 550*	B 650*	
JERICO	C 346	C 461	B 550
JOHNSON	C 387	C 515	B 550
JONESVILLE	C 450	B 539	
JUNCTION		C 532	
KEELER		C 401	
KEELER BAY	C 531		
KIRBY		C 322	
KIRBY COR.S.	B 450		
LAKE		C 262	
LAKE ELMORE	B 450	B 550	
LARABEES		C 550	
LARABEES PT.	B 450	C 550	
LEICESTER	C 433	C 550	
LEMINGTON	C 450	C 550	
LOAF		C 276	
LINE		C 231	
LONDBERRY	B 450	B 650*	
LOWER		C 361	
LOWER GRANVILLE	B 550*		
LOWER PLAIN	B 450		
LUDLOW	C 332	C 442	B 533
LUNENBURG	C 450	B 517	
LYNDON	C 318	C 424	B 511
LYNDON CTR.	B 450		
LYNDONVILLE	B 445	B 550	
MAIDSTONE	C 450	C 550	
MALLETTS		C 543	
MALLETTS BAY	B 450		
MANCHESTER	C 545		
MANCHESTER CTR.	B 550*	B 550	
MANCHESTER DEPOT	SEE NOTE A		
MANCHESTER VILL.	B 550		
MAQUAM	C 350	C 464	B 550
MARSHFIELD	C 450	B 549	
MCINDOE		C 476	
MCINDOE FALLS	B 550*		
MENDON	C 332	C 441	B 525
MIDDLEBURY	B 423	B 550	
MIDDLESEX	C 550	C 550	
MIDDLETOWN		B 550	
MIDDLETOWN SPRS.	B 550*		
MILL		C 241	
MILLS		C 314	
MILL VILLAGE	B 450		
MONTGOMERY	B 450	B 550	
MONTGOMERY CTR.	B 550*		
MONTPELIER	B 405	B 540	
MORETOWN	C 450	C 550	B 650
MORGAN	C 339	C 450	
MORGAN CTR.	B 450		
MORRISVILLE	B 438	B 550	
MORSES		C 441	
MORSES LINE	B 450		

* ADJUST BORDER TO CENTER TEXT AND DISTANCE.

NOTE A

THESE TEXTS MUST BE REDUCED TO 50-mm SERIES B:

BRIDGEWATER COR.S.	450
CHECKERBERRY VIL.	450
HARTLAND FOUR COR.S.	450
MANCHESTER DEPOT	450

TEXT LAYOUT DIMENSIONS ARE BASED ON THE "LETTER & NUMERAL WIDTHS AND SPACE" TABLES FOUND IN THE "STANDARD HIGHWAY SIGNS" BOOKLET. MINOR VARIATIONS IN TEXT DIMENSIONS ARE ACCEPTABLE BASED ON INDIVIDUAL MANUFACTURER'S LETTER FABRICATION. SIGNIFICANT CHANGES WHICH AFFECT SIGN APPEARANCE SHALL BE BROUGHT TO THE ATTENTION OF THE VAOT'S TRAFFIC AND SAFETY DIVISION, BEFORE FABRICATION.

MATERIALS

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

FLAT SHEET ALUMINUM	2.03 mm
HIGH DENSITY OVERLAID PLYWOOD	13 mm
GALVANIZED FLAT SHEET STEEL	1.63 mm

THE REFLECTIVE MATERIAL SHALL BE A SHEETING APPLIED TO THE ENTIRE BACKGROUND OF THE SIGN. THE TEXT AND BORDER SHALL BE CUT-OUT REFLECTORIZED LETTERS. ALL REFLECTIVE SHEETING SHALL MEET THE MINIMUM REQUIREMENTS OF AASHTO TYPE II.

COLORS

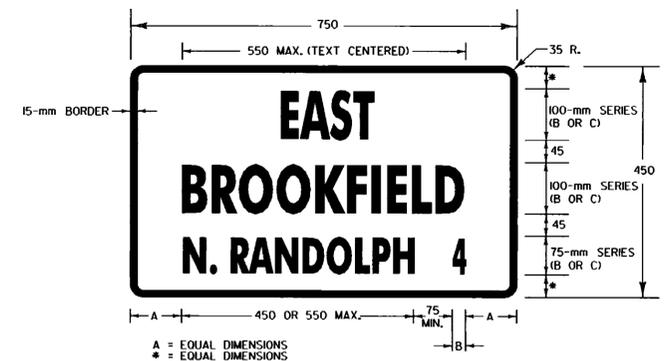
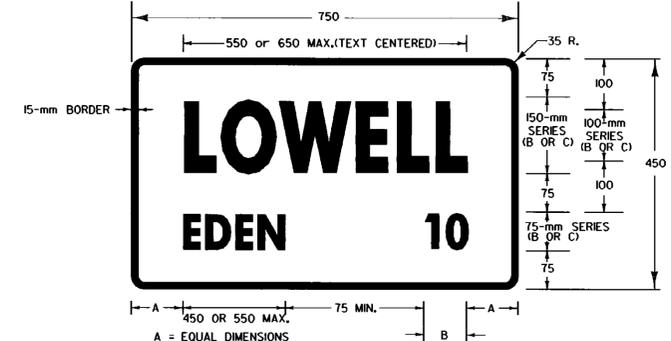
SIGNS SHALL HAVE A REFLECTORIZED WHITE OR SILVER TEXT AND BORDER ON A REFLECTORIZED GREEN BACKGROUND.

LETTERING

LETTERS AND DIGITS SHALL CONFORM TO THE LATEST VERSION OF FHWA'S STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS.

SPECIFICATIONS

SIGNS SHALL MEET THE STANDARD STATE SPECIFICATIONS FOR "TRAFFIC SIGNS" AS PRESCRIBED IN THE VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION. SEE THE APPROPRIATE STANDARD SHEETS FOR SIGN OFFSET PLACEMENT AND POST INFORMATION.



OTHER STDS. REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS

JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

[Signature]
DIRECTOR OF ENGINEERING

[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

VILLAGE SIGNS

A - M



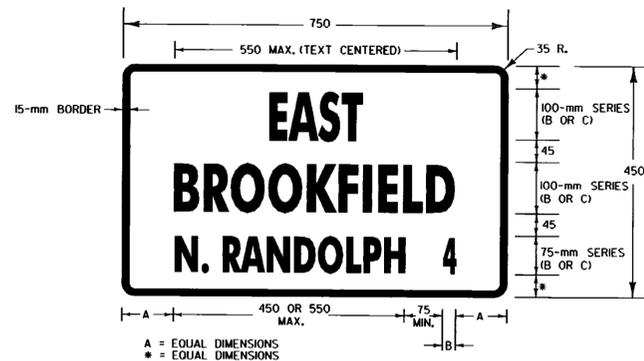
Metric
STANDARD
E-128AM

TOWN	SERIES/TEXT DIMENSIONS		
	75	100	150
NEW HAVEN	C 450	B 549	
N. HAVEN JCT.	B 450		
NEWBURY	C 393	C 523	
NEWFANE	C 377	C 503	B 550
NEWPORT	C 392	C 509	
NEWPORT CTR.	B 450		
NORTH (W/SERIES B (VILLAGE NAME))	B 281		
(W/SERIES C (VILLAGE NAME))	C 354		
N. BENNINGTON	B 450		
N. CLARENDON	C 450		
N. CONCORD	C 450		
N. DORSET	C 450		
N. ENOSBURG	B 450		
N. FAIRFAX	C 450		
NORTHFIELD	C 450	B 534	
NORTHFIELD CTR.	B 550*		
NORTHFIELD FALLS SEE NOTE A			
N. HARTLAND	B 450		
NORTH HERO	B 450		
N. HYDE PARK	B 450		
N. MONTPELIER	B 450		
N. PAWLET	B 450		
N. POWNAL	C 450		
N. RANDOLPH	B 450		
NORTH RUPERT	B 450		
N. SHELDON	C 450		
N. THETFORD	B 450		
NORTH TROY	B 450		
N. TUNBRIDGE	B 450		
N. WESTMINSTER	B 550*		
N. WINDHAM	B 441		
NORTH	C 326	C 434	B 520
NORWICH	C 366	C 487	B 550
OLD		B 161	
OLD BENNINGTON	B 550*		
ORANGE	C 330	C 439	B 532
ORLEANS	C 376	C 501	B 550
ORWELL	C 325	C 433	B 520
PASSUMPSIC	C 429	C 550	
PAWLET	C 312	C 417	B 503
PERKINSVILLE	B 450	B 550	
PIERCES	C 450	C 450	
PIERCES COR.	B 450		
PITTSFIELD	C 450	C 550	
PITTSFORD	C 443	C 550	
PITTSFORD MILLS	B 550*		
PLAIN	B 450	C 306	
PLAINFIELD	C 450	C 550	
PLYMOUTH	C 435	C 550	
PLYMOUTH UNION	B 550*		
POINT	B 450	C 312	
POMPANOOSUC	B 450	B 650*	
POND		C 286	
POST		C 273	
POST MILLS	C 450		
POULTNEY	C 418	C 550	
POWAL	C 336	C 447	B 545
PROCTOR	C 373	C 497	B 550
PROCTORSVILLE	B 450	B 650*	
PUTNAMVILLE	B 450	B 550	
PUTNEY	C 316	C 421	B 506
RANDOLPH	C 440	C 550	
RANDOLPH CTR.	B 450		
RAWSONVILLE	B 450	B 550	
READSBORO	C 450	B 526	
READSBORO FALLS SEE NOTE A			
RICHFORD	C 408	C 543	
RICHMOND	C 423	C 550	
RICKER	C 423	C 382	
RICKER MILLS	B 450		
RIPTON	C 292	C 389	C 550
RIVER	C 550	C 311	
ROBINSON	C 414	C 550	
ROCHESTER	C 450	C 550	
ROCKINGHAM	B 428	B 550	
ROCKY	C 450	C 353	
ROCKY DALE	B 450		
ROXBURY	C 388	C 516	B 550
ROXBURY FLAT	C 450		
ROYALTON	C 420	C 550	
RUPERT	C 318	C 423	B 503
RUTLAND	C 367	C 489	
RYEGATE	C 367	C 484	

TOWN	SERIES/TEXT DIMENSIONS		
	75	100	150
ST. ALBANS	C 450	B 550	
ST. ALBANS BAY	B 550*		
ST. GEORGE	C 450		
ST. JOHNSBURY	B 550*	B 650*	
ST. JOHNSBURY CTR.	SEE NOTE A		
SAXTONS	C 505		
SAXTONS RIVER	B 550*		
SEARSBURG	B 392	B 524	
SHAFTSBURY	C 550	B 550	
SHAFTSBURY CTR.	B 550*		
SHARON	C 331	C 440	B 533
SHAWVILLE	C 450	C 550	
SHEFFIELD	C 439	C 550	
SHELBURNE	C 450	B 516	
SHELDON	C 450	C 499	
SHELDON JCT.	B 450		
SHERBURNE	C 450	B 525	
SHERBURNE CTR.	B 550		
SHOREHAM	C 450	C 550	
SIMONSVILLE	B 438	B 550	
SIMPSONVILLE	B 450	B 550	
SOUTH (W/SERIES B VILLAGE NAME)	B 450	B 277	
(W/SERIES C VILLAGE NAME)	C 350		
SOUTH ALBURG	B 550		
SOUTH BARRE	B 450		
S. BURLINGTON	B 450		
S. DORSET	B 450		
S. DUXBURY	B 447		
SOUTH HERO	B 447		
S. HINESBURG	B 450		
S. LONDONDERRY	B 550		
S. NEWBURY	B 450		
S. NORTHFIELD	B 450		
S. RANDOLPH	B 450		
S. ROYALTON	B 450		
S. SHAFTSBURY	B 550*		
S. STARKSBORO	B 550*		
S. STRAFFORD	B 450		
S. TUNBRIDGE	B 450		
SOUTH VERNON	B 450		
SOUTH WALDEN	B 545		
S. WALLINGFORD	B 550*		
S. WOODBURY	B 450		
S. WOODSTOCK	B 450		
SPRINGFIELD	B 430	B 550	
SPRINGS	C 472	C 550	
STAMFORD	C 435	C 550	
STARKSBORO	B 435	B 550	
STATION	C 439	C 483	
STEVENS			
STEVENS MILLS	B 547		
STOCKBRIDGE	B 450	B 550	
STOWE	C 271	C 361	C 541
STRAFFORD	B 514	B 550	
SUDBURY	C 393	C 513	B 550
SWANTON	C 385	C 324	B 550
TAFTS			
TAFTS CORNER	B 450		
TAFTSVILLE	C 450	C 509	
TALCVILLE	C 429	C 550	
TARBELLVILLE	B 450	B 550	
THETFORD		C 550	
THETFORD CTR.	B 450		
THETFORD HILL	B 450		
TINMOUTH	C 409	C 544	
TOPSHAM	C 518		
TOWNSHEND	C 450	B 937	
TROY	C 211	C 281	C 420
TUNBRIDGE	C 450	C 550	
TYSON	C 260	C 347	C 518
UNDERHILL	C 450	C 550	
UNDERHILL FLATS	B 550*		
UNION		C 325	
VERGENNES	C 450	B 508	
VERNON	C 328	C 437	B 521
VERSHIRE	C 403	C 537	
VILLAGE		C 448	
WAITSFIELD	C 450	C 550	
WAITS		C 318	
WAITS RIVER	B 450		
WALDEN	C 324	C 432	B 524
WALDEN STA.	B 450		

* ADJUST BORDER TO CENTER TEXT AND DISTANCE.

TOWN	SERIES/TEXT DIMENSIONS		
	75	100	150
WALLACE		C 493	
WALLACE POND	B 550*		
WALLINGFORD	B 450	B 550	
WALTHAM	C 381	C 508	
WARDSBORO	C 450	B 550	
WARDSBORO CTR.	B 550*		
WASHINGTON	B 430	B 550	
WATERBURY	C 450	B 532	
WATERVILLE	C 450	B 530	
WEATHERSFIELD		B 650*	
WEATHERSFIELD BOW SEE NOTE A			
WELLS	C 265	C 353	C 529
WELLS RIVER	B 450		
WEST (W/SERIES B VILLAGE NAME)	B 228		
(W/SERIES C VILLAGE NAME)	C 285		
W. ADDISON	C 450		
W. ARLINGTON	B 450		
W. BERKSHIRE	B 450		
WEST BERLIN	B 450		
W. BRAINTREE	B 450		
W. BRATTLEBORO	B 550*		
W. BRIDGEWATER	B 550*		
WEST BURKE	B 450		
W. CHARLESTON	B 550*		
W. CORNWALL	B 450		
W. DANVILLE	B 442		
WEST DOVER	B 450		
W. ENOSBURG	B 450		
WEST FAIRLEE	B 450		
WESTFIELD	C 448	C 550	
WESTFORD	C 438	C 550	
WEST GROTON	B 450		
W. HARTFORD	B 450		
WESTMINSTER	B 450	B 550	
WESTMORE	C 449	C 550	
WESTON	C 325	C 438	
WEST PAWLET	B 450		
W. RUPERT	B 450		
W. RUTLAND	B 440		
W. SWANTON	B 450		
W. TOPSHAM	B 450		
W. TOWNSHEND	B 450		
W. WARDSBORO	B 550*		
W. WOODSTOCK	B 450		
WEYBRIDGE		C 550	
WEYBRIDGE HILL	B 550*		
WHEELOCK	C 435	C 550	
WHITE RIVER	B 550	B 550	
WH. RIVER JCT.	B 450		
WHITING	C 328	C 437	B 538
WHITINGHAM	C 450	B 550	
WILDER	C 298	C 397	C 550
WILLIAMSTOWN	B 450	B 650*	
WILLISTON	C 432	C 550	
WILMINGTON	C 450	B 545	
WINDHAM		C 502	
WINDSOR	C 366	C 487	B 550
WINDOSKI	C 394	C 521	B 550
WOLCOTT	C 373	C 498	B 550
WOODBURY	C 450	C 550	
WOODFORD	C 450	C 550	
WOODSTOCK	C 450	B 537	
WORCESTER	C 450	B 520	



NOTE A

THESE TEXTS MUST BE REDUCED TO 50-mm SERIES B:

NORTHFIELD FALLS	450
READSBORO FALLS	450
ST. JOHNSBURY CTR.	450
WEATHERSFIELD BOW	450

TEXT LAYOUT DIMENSIONS ARE BASED ON THE "LETTER & NUMERAL WIDTHS AND SPACE" TABLES FOUND IN THE "STANDARD HIGHWAY SIGNS" BOOKLET. MINOR VARIATIONS IN TEXT DIMENSIONS ARE ACCEPTABLE BASED ON INDIVIDUAL MANUFACTURER'S LETTER FABRICATION. SIGNIFICANT CHANGES WHICH AFFECT SIGN APPEARANCE SHALL BE BROUGHT TO THE ATTENTION OF THE VAOT'S TRAFFIC AND SAFETY DIVISION, BEFORE FABRICATION.

MATERIALS

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

FLAT SHEET ALUMINUM	2.03 mm
HIGH DENSITY OVERLAP PLYWOOD	13 mm
GALVANIZED FLAT SHEET STEEL	1.63 mm

THE REFLECTIVE MATERIAL SHALL BE A SHEETING APPLIED TO THE ENTIRE BACKGROUND OF THE SIGN. THE TEXT AND BORDER SHALL BE CUT-OUT REFLECTORIZED LETTERS. ALL REFLECTIVE SHEETING SHALL MEET THE MINIMUM REQUIREMENTS OF AASHTO TYPE II.

COLORS

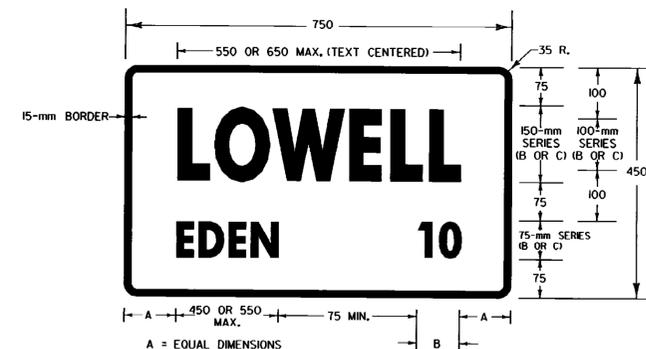
SIGNS SHALL HAVE A REFLECTORIZED WHITE OR SILVER TEXT AND BORDER ON A REFLECTORIZED GREEN BACKGROUND.

LETTERING

LETTERS AND DIGITS SHALL CONFORM TO THE LATEST VERSION OF FHWA'S "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS".

SPECIFICATIONS

SIGNS SHALL MEET THE STANDARD STATE SPECIFICATIONS FOR "TRAFFIC SIGNS" AS PRESCRIBED IN THE VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION. SEE THE APPROPRIATE STANDARD SHEETS FOR SIGN OFFSET PLACEMENT AND POST INFORMATION.



REVISIONS AND CORRECTIONS

JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

[Signature]
DIRECTOR OF ENGINEERING

[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

VILLAGE SIGNS

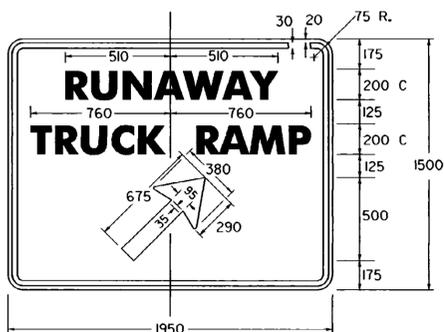
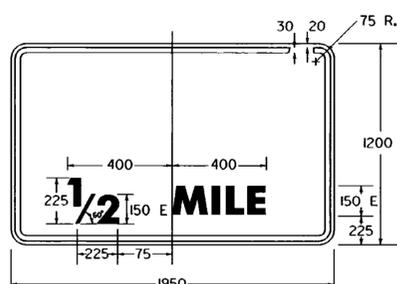
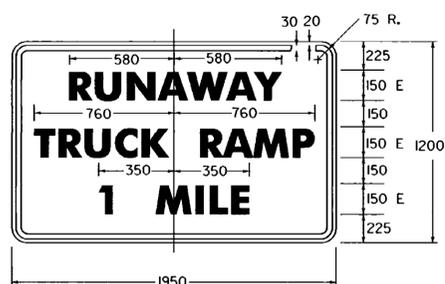
N - W

OTHER STDS. REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.



Metric
STANDARD
E-128BM



COLORS
ALL THE WARNING SIGNS SHOWN ON THIS SHEET SHALL HAVE BLACK TEXT AND SYMBOLS ON REFLECTORIZED YELLOW BACKGROUND EXCEPT AS OTHERWISE NOTED. THE COLORS SHALL CONFORM WITH THE COLORS ADOPTED BY AASHTO AND APPROVED BY FHWA.

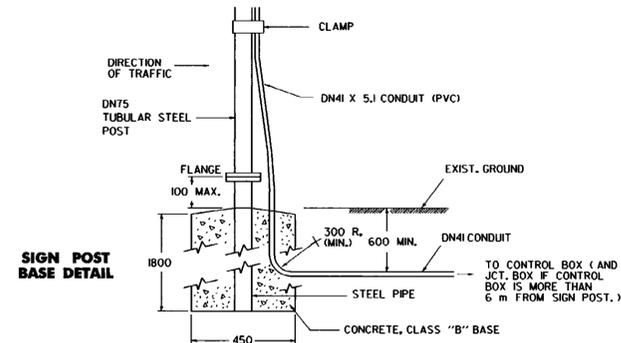
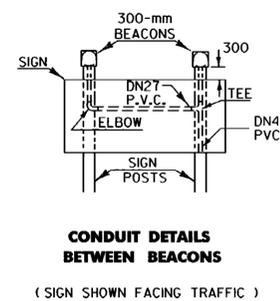
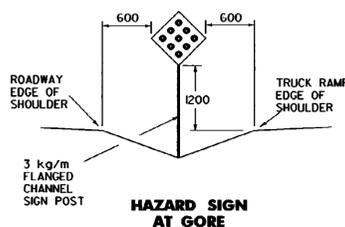
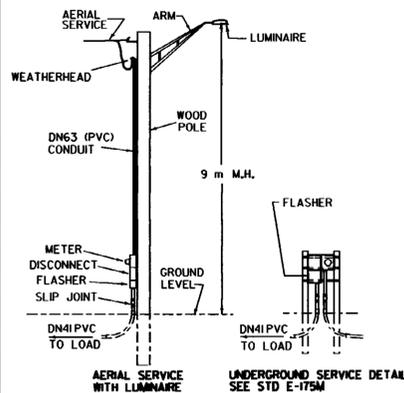
MATERIALS
THE SIGN BASE MATERIALS USED FOR THE WARNING SIGNS SHOWN ON THIS SHEET MAY BE ANY OF THE FOLLOWING:

- A) EXTRUDED ALUMINUM PANELS, WITH REFLECTIVE SHEETING.
- B) FORMED GALVANIZED STEEL PANELS, WITH REFLECTIVE SHEETING.

THE TEXT, BORDER AND SYMBOLS SHALL BE LETTERING FILM, SILK SCREENED OR HAND PAINTED. WHEN HAND PAINTED, POOR WORKMANSHIP SHALL BE CAUSE FOR REJECTION. THE REFLECTIVE MATERIAL SHALL BE REFLECTIVE SHEETING APPLIED TO THE ENTIRE BACKGROUND OF THE SIGN. ENCAPSULATED LENS REFLECTIVE SHEETING SHALL BE USED FOR THE SIGN BACKGROUND.

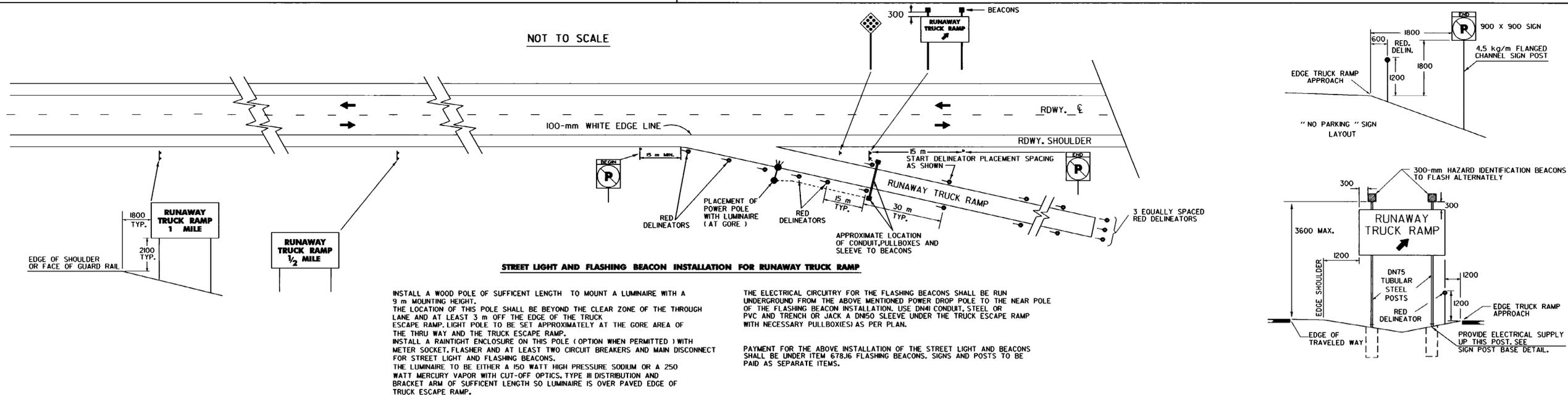
TEXT DESIGN
LETTERS, DIGITS, SYMBOLS, SPACINGS, AND TEXT DIMENSIONS SHALL CONFORM WITH THE STANDARD ALPHABETS AND DESIGNS PRESCRIBED IN THE MUTCD.

SPECIFICATIONS
WARNING SIGNS SHALL MEET THE STANDARD STATE SPECIFICATIONS FOR "TRAFFIC SIGNS" AS PRESCRIBED IN THE VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.



FLASHING BEACON NOTES:

1. POWER MAY COME FROM THE SAME SOURCE AS A TRAFFIC SIGNAL AND/OR STREET LIGHT.
2. THE FLASHER UNIT SHALL BE A ONE CIRCUIT FOR A SINGLE BEACON INSTALLATION AND A TWO CIRCUIT FOR A TWO BEACON INSTALLATION, AND SHALL INCLUDE A RADIO INTERFERENCE FILTER.
3. BATTERY OPERATED FLASHERS WILL NOT BE ALLOWED.
4. BOTTOM OF BEACONS SHALL BE A MINIMUM OF 2.4 m AND A MAXIMUM OF 3.6 m ABOVE EDGE OF PAVEMENT.
5. FOR URBAN AREA PLACEMENT SEE APPROPRIATE STANDARD SHEETS.
6. THE CONTRACTOR SHALL SUPPLY AND INSTALL THE INDICATED EQUIPMENT AND HARDWARE: BEACONS, DN75 TUBULAR STEEL POSTS AND FOUNDATIONS, WIRE (3.31-mm² AWG. COPPER MINIMUM), METER SOCKET, DISCONNECT CABINET WITH APPROPRIATE CIRCUIT BREAKERS, CONDUIT, POLE RISER WITH WEATHER HEAD, POWER DROP STANCHION, JUNCTION BOXES) AND ALL OTHER MISC. MATERIALS AND HARDWARE TO MAKE THE BEACONS OPERATIONAL.
7. A CLAMPING DEVICE AS APPROVED BY THE ENGINEER SHALL BE USED TO ATTACH THE CONDUIT TO THE SIGN POST(S).
8. PAYMENT FOR THE ABOVE INSTALLATION(S) SHALL BE AS FOLLOWS: BEACONS(S) SHALL BE PAID UNDER ITEM 678J6. SIGN(S) AND POST(S) SHALL BE PAID UNDER THEIR APPROPRIATE ITEM NUMBER(S).



REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

[Signature]
DIRECTOR OF ENGINEERING

[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

RUNAWAY TRUCK RAMP SIGN DETAIL SHEET

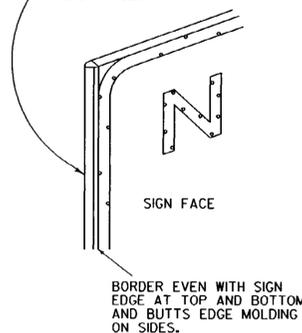
OTHER STDS. E-160M E-173M
REQUIRED: E-163M E-175M

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.



Metric STANDARD E-129M

EDGE MOLDING ASTM B 221M, ALLOY T6 B.E. FINISH COLOR TO MATCH SIGN FACE.

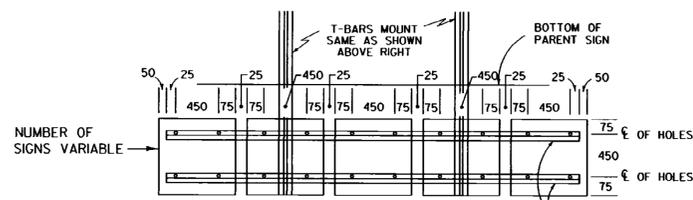


INDIVIDUAL LETTERS, DIGITS, SYMBOLS, AND BORDERS FOR THE SIGN SHALL BE SHAPED FROM 0.81-mm SHEET ALUMINUM CONFORMING TO THE REQUIREMENTS OF ASTM B 209M, ALLOY 3003-H12. LEGEND AND BORDER TO BE ATTACHED TO THE SIGN FACE WITH M3 RIVETS.

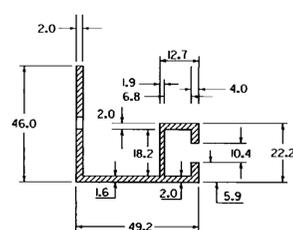


SERVICE SIGN MOUNTING DETAILS

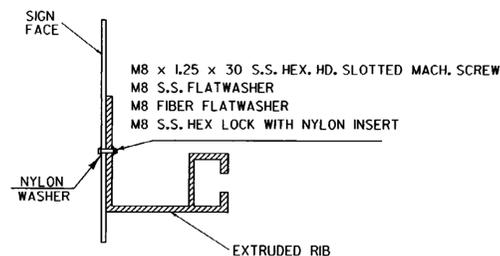
WHERE USED, THE SERVICE SIGNS SHALL APPEAR IN THE SAME SEQUENCE AS SHOWN ABOVE. THE PARENT SIGN SHOWN IS ONLY AN EXAMPLE. THE SIGNS SHALL BE INSTALLED ON THE SIGN SHOWN ON THE PLANS. THE SERVICE SIGNS SHALL BE MOUNTED TO THE PARENT SIGN WITH TEE BARS AND EXTRUDED ALUMINUM RIBS. OTHER METHODS OF INSTALLATION MAY BE SUBMITTED TO THE TRAFFIC DESIGN SECTION FOR APPROVAL. IN NO CASE SHALL ANY SUPPORT BE ATTACHED TO THE W-SHAPED STEEL SIGN SUPPORT BELOW THE FUSE PLATE.



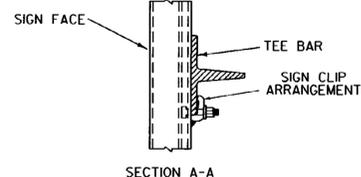
TYPICAL T-BAR ASSEMBLY FOR MOUNTING SERVICES SYMBOLS (600 x 600 UNITS SHOWN)



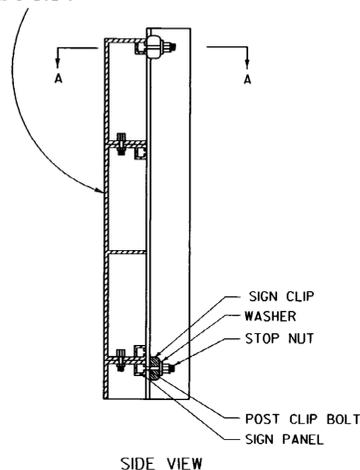
DETAIL EXTRUDED ALUMINUM RIB ALUM. ALLOY 6063-T6



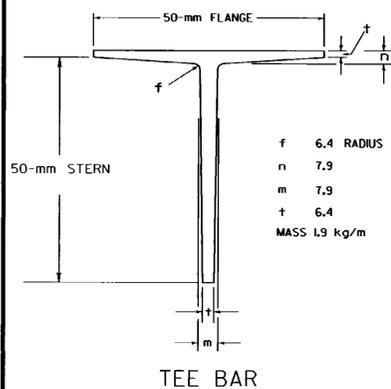
EXTRUDED ALUMINUM PANEL SIGN CLIP



300 x 150 EXTRUDED ALUMINUM SIGN PANELS 6063-T6. 150 x 150 PANEL PLACED ON TOP WHEN REQUIRED. PANELS BOLTED TOGETHER ON 600-mm CENTERS WITH M10 x 1.5 x 25 STAINLESS STEEL HEX HEAD BOLT.



SIGN MOUNTING DETAIL

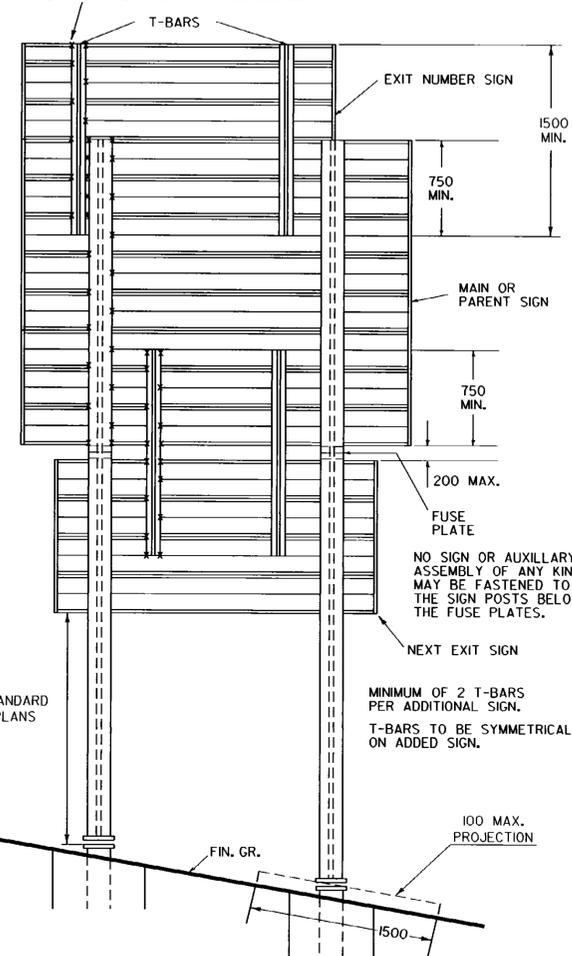


TEE BAR

NOTES

1. THE ALUMINUM TEE BAR SHALL BE OF 6063-T6 ALLOY.
2. EXTRUDED ALUMINUM PANEL SIGN CLIP SHALL BE 356-T6 ALLOY FABRICATED TO GIVE PROPER CLAMPING ON ALL FLANGES (TAPERED OR PARALLEL) FROM 3 mm TO 15 mm IN THICKNESS. A FLAT WASHER SHALL BE USED UNDER THE NUT.
3. BOLTS, NUTS AND WASHERS SHALL BE STAINLESS STEEL. BOLTS SHALL BE M10 x 1.5 x 50 WITH A HEAD CAPABLE OF BEING INSERTED INTO EXTRUDED ALUMINUM SIGN PANEL SLOTS. NUTS SHALL BE OF A LOCK NUT DESIGN, THREADS MATCHING BOLT. THE WASHER SHALL BE AN M10 WASHER (I.I.D. x 20 O.D. x 2.3 THICK).

X - DENOTES SIGN CLIP LOCATION (ONE POST AND T-BAR TYPICAL SHOWN)



SEE APPROPRIATE STANDARD SHEET OR PROJECT PLANS FOR HORIZONTAL AND VERTICAL OFFSETS.

NO SIGN OR AUXILIARY ASSEMBLY OF ANY KIND MAY BE FASTENED TO THE SIGN POSTS BELOW THE FUSE PLATES.

MINIMUM OF 2 T-BARS PER ADDITIONAL SIGN. T-BARS TO BE SYMMETRICAL ON ADDED SIGN.

TYPICAL SIGN INSTALLATION ON W-SHAPED STEEL POSTS WITH T-BAR EXTENSIONS

REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

[Signature]
DIRECTOR OF ENGINEERING

[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

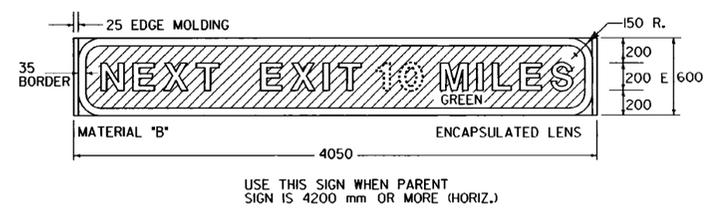
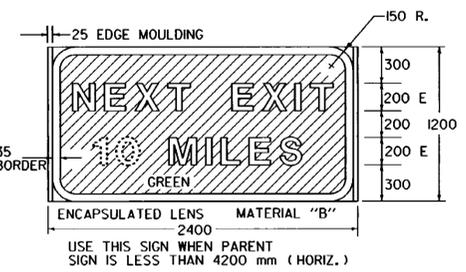
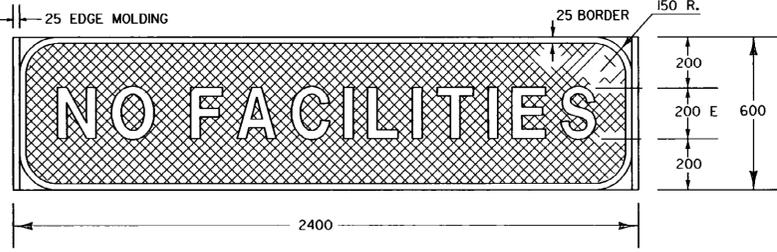
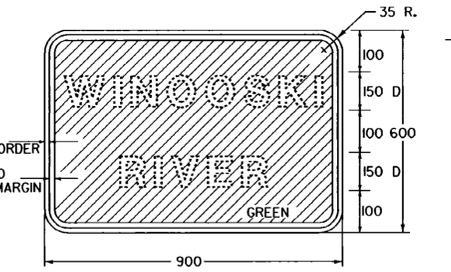
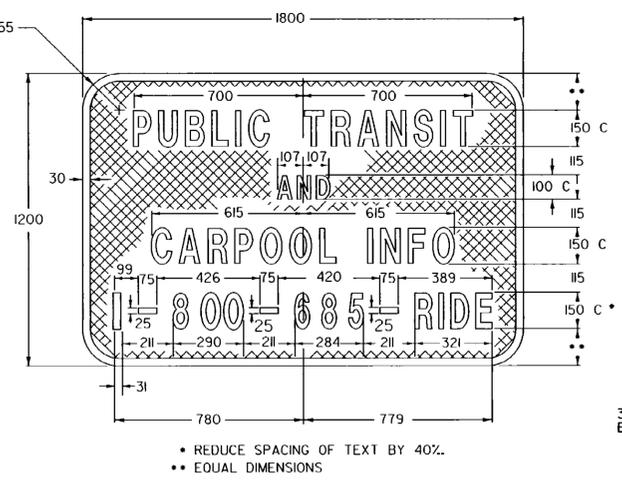
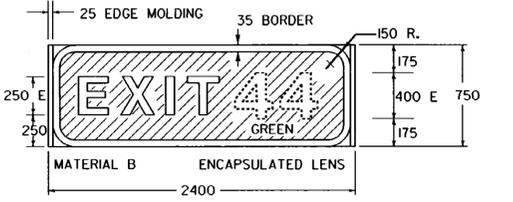
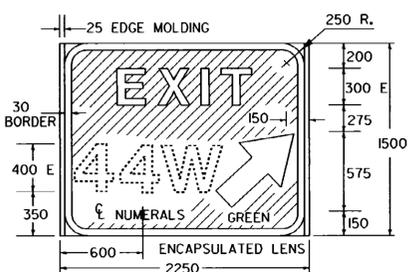
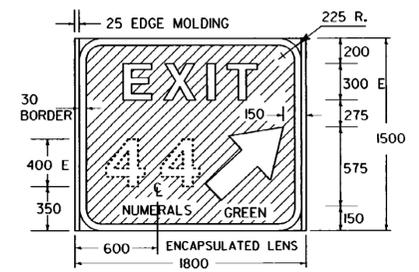
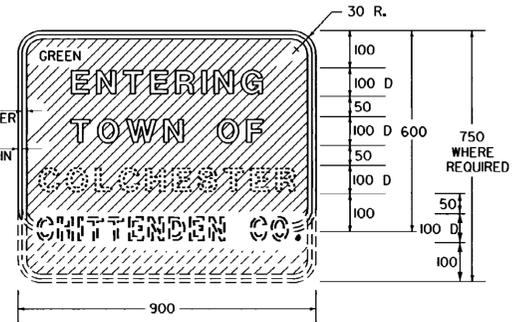
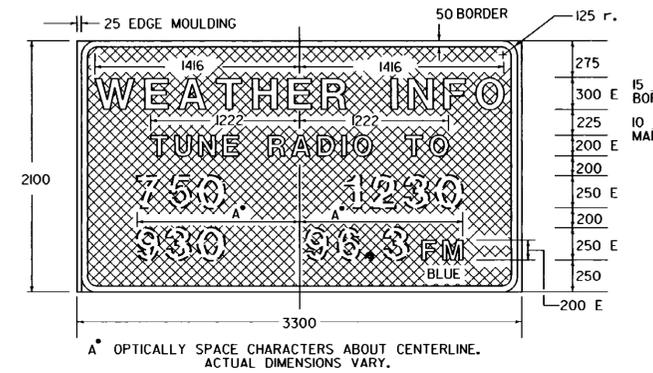
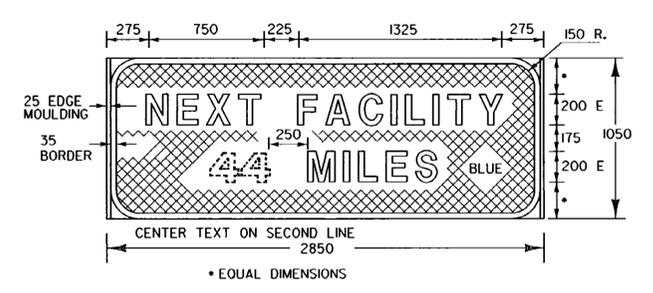
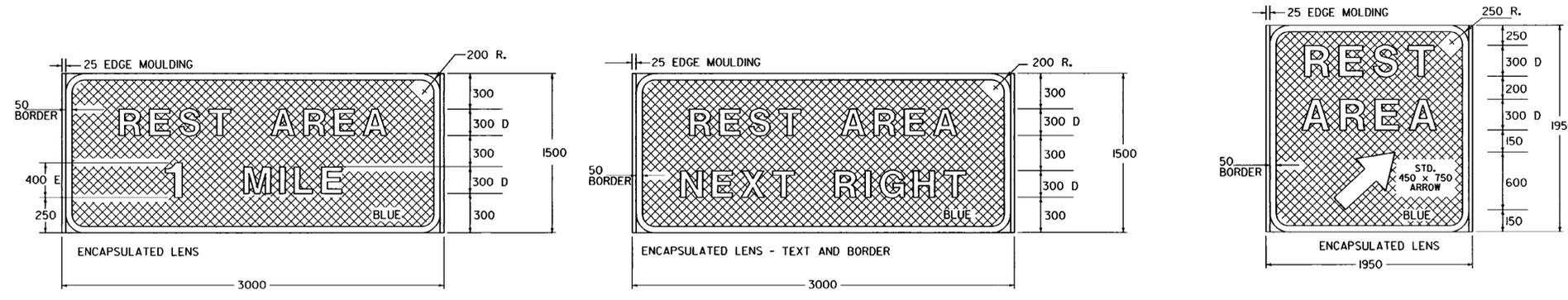
TYPE "B" GUIDE SIGN ATTACHMENT DETAILS

OTHER STDS. REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.



Metric
STANDARD
E-130M



GENERAL:
 DOTTED LINES AND NUMERALS INDICATE TEXT THAT VARIES. GREEN SIGNS HAVE SINGLE LINE CROSSHATCHING AND BLUE SIGNS ARE SHOWN WITH DOUBLE LINE CROSSHATCHING.

MATERIALS:
 THE SIGN BASE MATERIAL USED FOR THE GUIDE SIGNS ON THIS SHEET MAY BE ANY OF THE FOLLOWING EXCEPT AS NOTED:
 A - HIGH DENSITY OVERLAID PLYWOOD, 19 mm MINIMUM THICKNESS WITH REFLECTIVE SHEETING. (MAY BE USED FOR TYPE A SIGNS ONLY).
 B - EXTRUDED ALUMINUM PANELS, WITH REFLECTIVE SHEETING.
 C - FORMED GALVANIZED STEEL PANELS, WITH REFLECTIVE SHEETING.

TEXT AND BORDER:
 THE MATERIAL FOR THE TEXT AND BORDER OF THESE SIGNS SHALL BE OF FLAT SHEET ALUMINUM 1.02 mm THICKNESS WITH WHITE OR SILVER ENCAPSULATED SHEETING, AS NOTED FOR EACH SIGN.
 THE "EXIT NUMBER" PANELS AND "NEXT EXIT _____ MILES" SIGNS SHALL BE ENCAPSULATED LENS SHEETING ONLY IN THE FOLLOWING INSTANCES:
 1.) WHEN MOUNTED OVERHEAD
 2.) WHEN MOUNTED ABOVE THE ADVANCED "1 MILE" SIGNS
 3.) WHEN MOUNTED ON THE "RIGHT LANE" OR "NEXT RIGHT" SIGNS - (TEXT ONLY)
 THE EXIT GORE SIGN SHALL BE CONSTRUCTED ENTIRELY WITH ENCAPSULATED LENS SHEETING.

COLORS:
 THE SIGNS SHALL HAVE A REFLECTORIZED WHITE TEXT ON A REFLECTORIZED GREEN OR BLUE BACKGROUND AS INDICATED FOR EACH SIGN UNLESS OTHERWISE NOTED. THE GREEN AND BLUE SHALL CONFORM WITH THOSE FOUND IN STANDARD COLOR TOLERANCE CHARTS AS APPROVED BY THE FHWA.

LETTERING:
 LETTERS AND DIGITS SHALL CONFORM TO THE LATEST VERSION OF FHWA'S "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS".

DESIGNS:
 THE DESIGN OF THESE SIGNS SHALL CONFORM WITH THE DETAILS SET FORTH IN THE MANUAL "STANDARD HIGHWAY SIGNS" AS SPECIFIED IN THE MUTCD.

SPECIFICATIONS:
 THE SIGNS SHALL MEET THE REQUIREMENTS FOR TRAFFIC SIGNS AS PRESCRIBED IN THE VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

REVISIONS AND CORRECTIONS
 JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

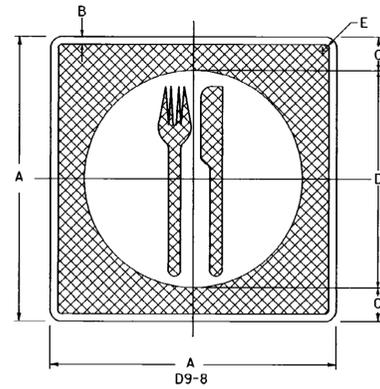
 DIRECTOR OF ENGINEERING

 DIRECTOR OF CONSTRUCTION AND MAINTENANCE

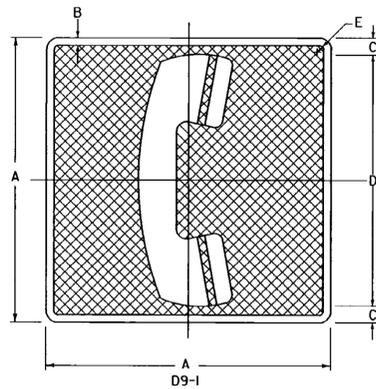
GUIDE SIGN DETAILS

OTHER STDS. REQUIRED:
 NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

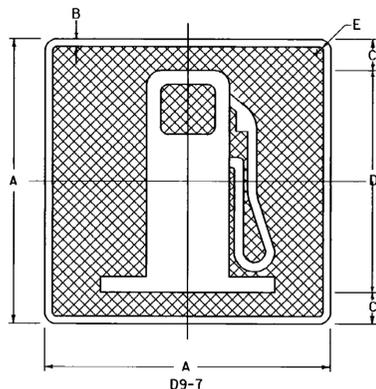




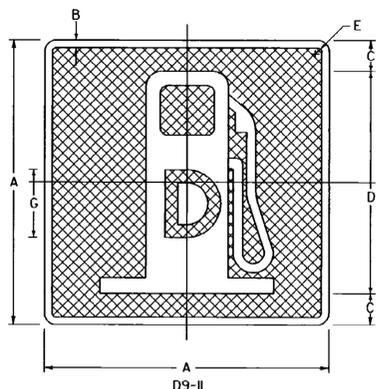
SIGN	DIMENSIONS (mm)				
	A	B	C	D	E
MIN	450	10	35	380	35
STD	600	10	50	500	35
SPECIAL	750	20	65	620	45



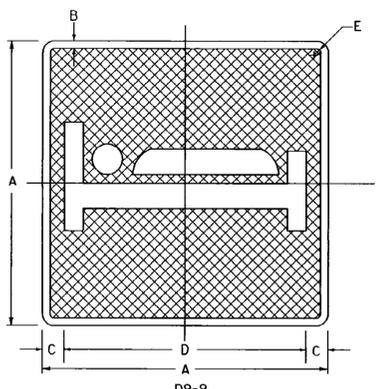
SIGN	DIMENSIONS (mm)				
	A	B	C	D	E
MIN	450	10	35	380	35
STD	600	10	50	500	35
SPECIAL	750	20	65	620	45



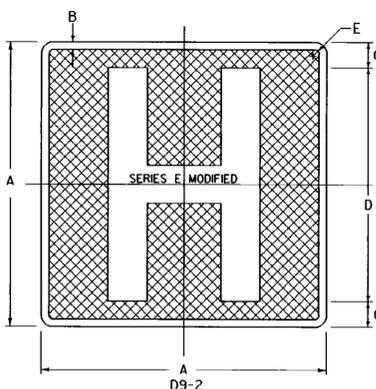
SIGN	DIMENSIONS (mm)				
	A	B	C	D	E
MIN	450	10	35	380	35
STD	600	10	50	500	35
SPECIAL	750	20	65	620	45



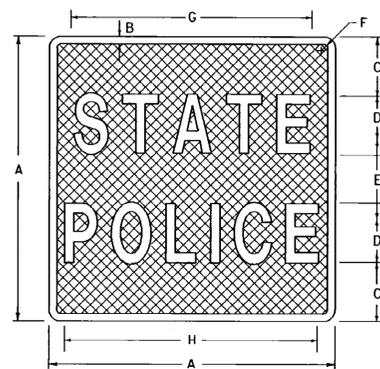
SIGN	DIMENSIONS (mm)					
	A	B	C	D	E	G
MIN	450	10	35	380	35	100E(M)
STD	600	10	50	500	35	150E(M)
SPECIAL	750	20	65	620	45	200E(M)



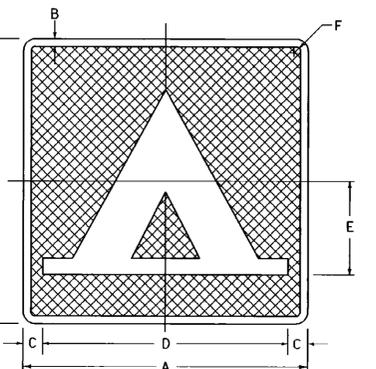
SIGN	DIMENSIONS (mm)				
	A	B	C	D	E
MIN	450	10	35	380	35
STD	600	10	50	500	35
SPECIAL	750	20	65	620	45



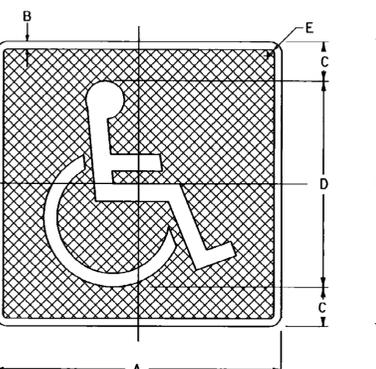
SIGN	DIMENSIONS (mm)				
	A	B	C	D	E
MIN	450	10	35	380	35
STD	600	10	50	500	35
SPECIAL	750	20	65	620	45



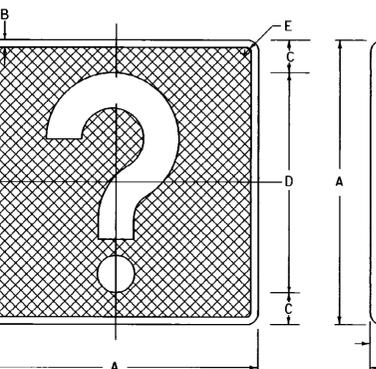
SIGN	DIMENSIONS (mm)							
	A	B	C	D	E	F	G	H
MIN AND STD	600	10	125	125C	100	35	396	474
SPECIAL	750	10	150	150C	150	35	476	569



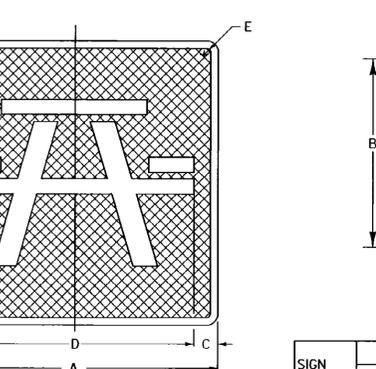
SIGN	DIMENSIONS (mm)					
	A	B	C	D	E	F
MIN	450	10	35	380	150	35
STD	600	10	50	500	200	35
SPECIAL	750	20	65	620	250	45



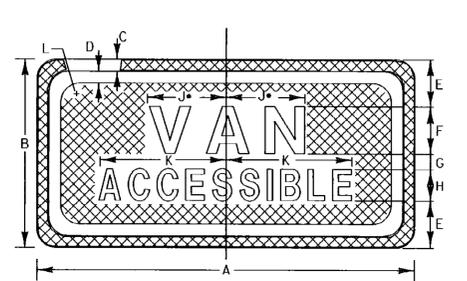
SIGN	DIMENSIONS (mm)				
	A	B	C	D	E
MIN	450	10	35	380	35
STD	600	10	50	500	35
SPECIAL	750	20	65	620	45



SIGN	DIMENSIONS (mm)				
	A	B	C	D	E
MIN	450	10	35	380	35
STD	600	10	50	500	35
SPECIAL	750	20	65	620	45

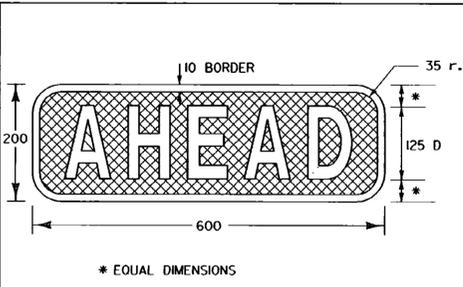
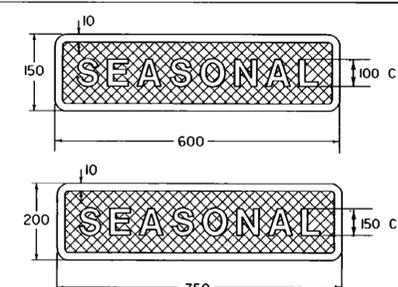
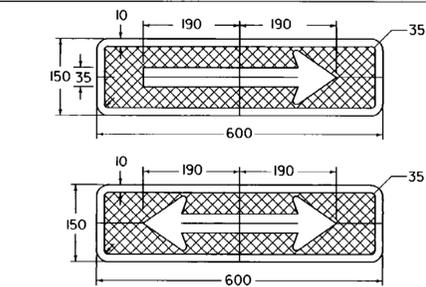


SIGN	DIMENSIONS (mm)				
	A	B	C	D	E
MIN	450	10	35	380	35
STD	600	10	50	500	35
SPECIAL	750	20	65	620	45



• INCREASE SPACING 50%

SIGN	DIMENSIONS (mm)										
	A	B	C	D	E	F	G	H	J	K	L
STD	300	150	10	10	35	35D	20	25D	57	102	35
SPECIAL	450	225	10	15	55	50D	30	35D	70	178	35



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 - 1.52 mm
- B - HIGH DENSITY OVERLAID PLYWOOD - 13 mm
- C - GALVANIZED FLAT SHEET STEEL - 1.63 mm

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 AASHTO AND APPROVED BY THE FHWA.

NOTES

LETTERING

LETTERS SHALL CONFORM WITH THE REQUIREMENTS FOUND IN THE PUBLICATION "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS" PRINTED BY THE FHWA.

DESIGN

THE DESIGN OF THESE SIGNS SHALL CONFORM WITH THE DETAILS SET FORTH IN THE MANUAL "STANDARD HIGHWAY SIGNS" AS SPECIFIED IN THE MUTCD. LETTER/NUMERAL DESIGNATION UNDER EACH SYMBOL IS IDENTIFIED IN THE MANUAL.

SPECIFICATIONS

THESE SIGNS SHALL MEET THE STANDARD STATE SPECIFICATIONS FOR TRAFFIC SIGNS AS PRESCRIBED IN THE VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

OTHER STDS. REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS

JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

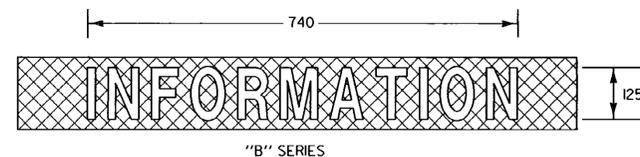
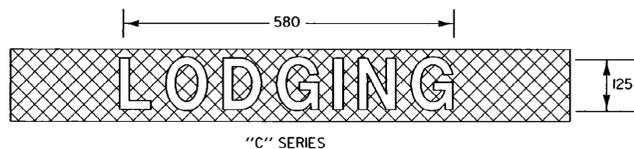
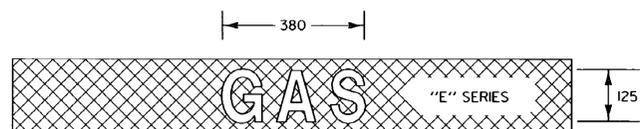
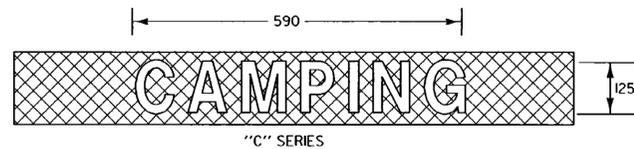
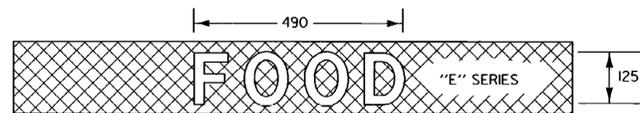
[Signature]
DIRECTOR OF ENGINEERING

[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

GENERAL MOTORIST SERVICES SIGN DETAILS

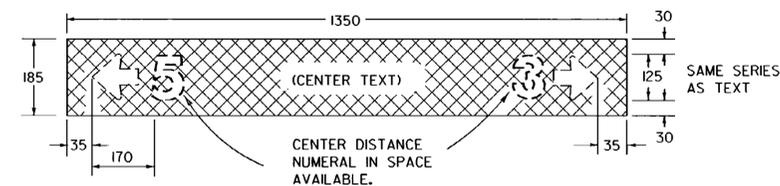
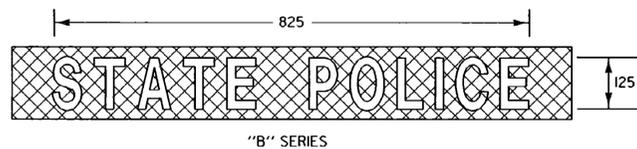


Metric
STANDARD
E-132M

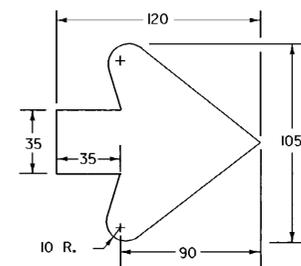


TEXT

- HORIZONTAL SPACING OF LETTERS MAY BE REDUCED SLIGHTLY IF NECESSARY.



SIGN & LEGEND LAYOUT DIMENSIONS



ARROW DIMENSIONS

GENERAL:

DOTTED LINES DENOTE VARIABLE TEXT. CROSSHATCHING DENOTES BLUE BACKGROUND.

MATERIALS:

THE SIGN BASE MATERIAL FOR SERVICES SIGNS SHALL BE HIGH DENSITY OVERLAP PLYWOOD 16 mm THICK OR FLAT SHEET ALUMINUM 3.18 mm THICK. THE REFLECTIVE MATERIAL SHALL BE BLUE REFLECTIVE SHEETING APPLIED TO THE ENTIRE BACKGROUND.

COLORS:

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

LETTERING:

LETTERS AND DIGITS SHALL CONFORM TO THE LATEST VERSION OF FHWA'S "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS".

SPECIFICATIONS:

SIGNS SHALL MEET THE STATE SPECIFICATIONS FOR "TRAFFIC SIGNS" AS PRESCRIBED IN THE VDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

OTHER STDS. REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

John E. ...
DIRECTOR OF ENGINEERING
Ernest ...
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

SERVICE SIGN
DETAILS

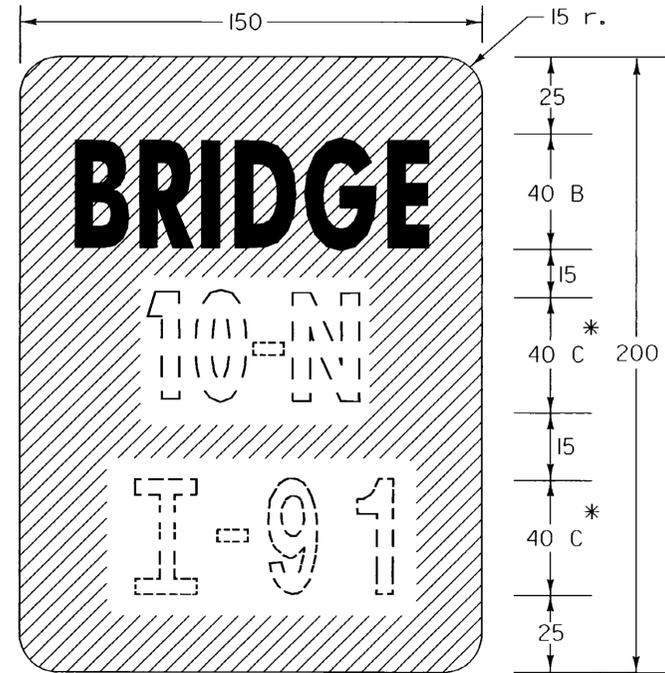
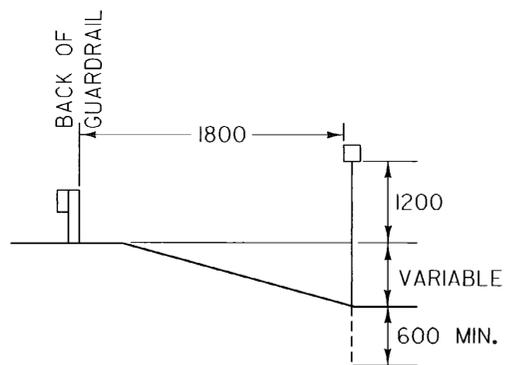
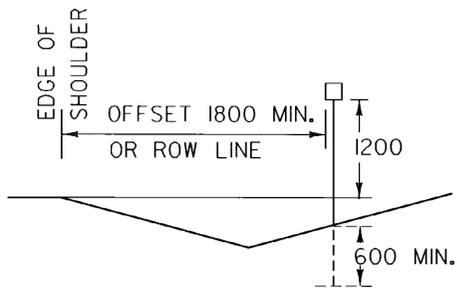


Metric
STANDARD
E-133M

I-91
 ←50→

HYPHENATED WORD DETAIL

FOR EXAMPLE, ROUTE NUMBERS
 SHALL APPEAR AS: I-91, US5, VT22.



VD-701

15
 MIN. *

* OPTICALLY SPACE BRIDGE
 AND ROUTE NUMBERS.
 SERIES B LETTERS MAY
 BE USED TO MAINTAIN
 VISUAL INTEGRITY.

NOTES:

GENERAL:
 DOTTED LINES AND NUMERALS INDICATE TEXT THAT VARIES.

PAYMENT:
 BRIDGE PLAQUES SHALL BE PAID AS TRAFFIC SIGNS, TYPE "A",
 AND POSTS PAID AS FLANGED CHANNEL STEEL SIGN POSTS.

MATERIAL:
 THE SIGN BASE MATERIAL SHALL BE 1.02 mm FLAT SHEET ALUMINUM.

COLORS:
 THE SIGN SHALL HAVE A REFLECTORIZED WHITE TEXT ON REFLECTORIZED
 GREEN BACKGROUND. THE COLORS SHALL CONFORM WITH THOSE FOUND
 IN STANDARD COLOR TOLERANCE CHARTS AS APPROVED BY THE FHWA.

LETTERING:
 LETTERS AND DIGITS SHALL CONFORM TO THE LATEST VERSION OF FHWA'S
 "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS".

POSTS:
 FLANGED CHANNEL STEEL 3.0 kg/m POSTS SHALL BE USED WHEN THE POST LENGTH
 EXCEEDS 2100 mm. FOR LENGTHS OF 2100 mm OR LESS, A 1.7 kg/m STEEL SIGN POST
 SHALL BE USED.

**OTHER STDS.
 REQUIRED:**

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS
 JUNE 13, 1997 - ORIGINAL APPROVAL DATE

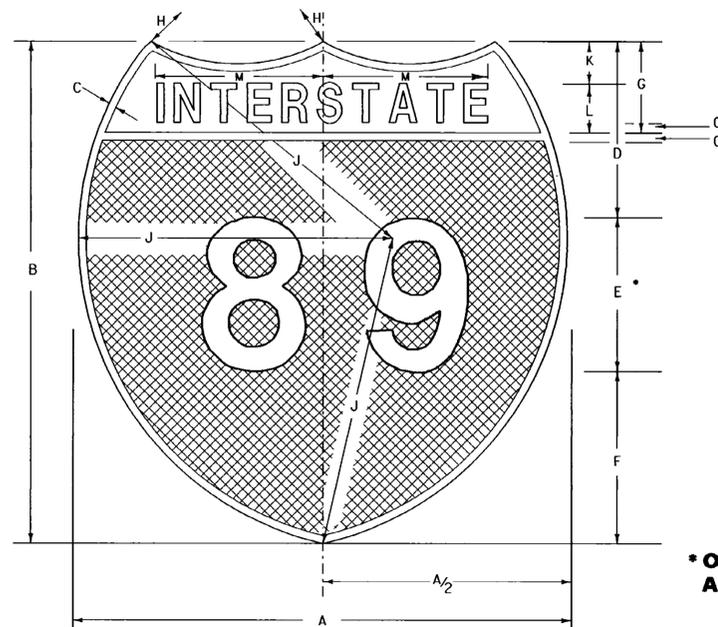
APPROVED

[Signature]
 DIRECTOR OF ENGINEERING
[Signature]
 DIRECTOR OF CONSTRUCTION AND MAINTENANCE

BRIDGE NUMBER PLAQUE



Metric
 STANDARD
 E-134M



M1-1

INTERSTATE SHIELD FOR INDEPENDENT AND GUIDE SIGN USE

SIGN	DIMENSIONS (mm)												
	A	B	C	D	E	F	G	H	J	K	L	M	
L2-DIGITS	600	600	10	160	300D	140	125	375	375	55	60C	198	
L2-DIGITS	900	900	20	245	450D	205	190	560	560	75	95C	296	
3-DIGITS	750	600	10	160	300D	140	125	600	425	55	60C	198	
3-DIGITS	125	900	10	245	450D	205	190	900	635	75	95C	296	

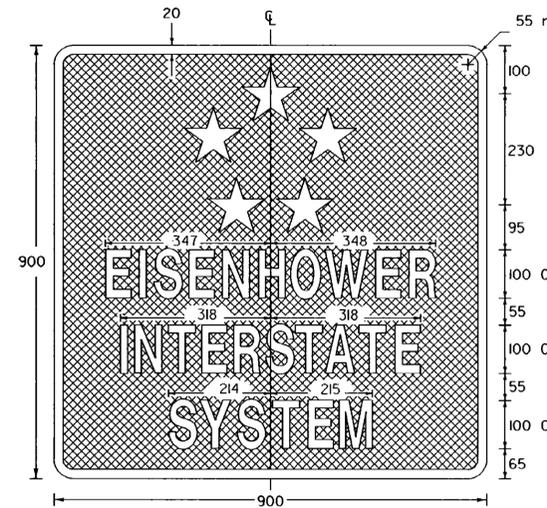
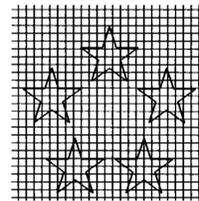
COLORS

LEGEND AND BORDERS - WHITE (REFL)
 TOP - RED (REFL)
 BOTTOM (CROSS-HATCHED) - BLUE (REFL)



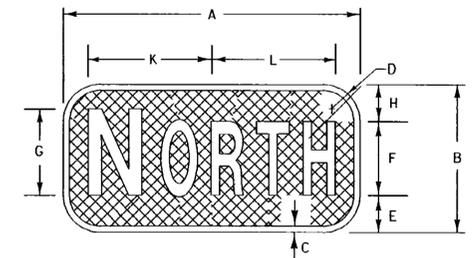
TYPICAL SIGN TEXTS

* OPTICALLY SPACE NUMERALS ABOUT VERTICAL CENTERLINE



M1-10

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



CARDINAL DIRECTION MARKER

M3-1 M3-3 M3-2 M3-4

SIGN	DIMENSIONS (mm)								NORTH		SOUTH		EAST		WEST	
	A	B	C	D	E	F	G	H	K	L	K	L	K	L	K	L
MIN. & STD.	600	300	10	35	70	150C	175C	80	260	260	260	249	200	213	222	224
SPECIAL	750	375	10	35	80	200C	225C	95	322	322	322	318	264	283	295	295

MATERIALS

THE SIGN BASE MATERIAL MAY BE ANY OF THE FOLLOWING MINIMUM THICKNESSES NOTED:

FLAT SHEET ALUMINUM

LESS THAN 600 X 600	1.52 mm
WHERE USED ON GUIDE SIGNS	1.52 mm
600 X 600, 750 X 600	2.03 mm
900 X 900, 1125 X 900	2.54 mm

GALVANIZED FLAT SHEET STEEL

LESS THAN 600 X 600	1.32 mm
WHERE USED ON GUIDE SIGNS	1.32 mm
600 X 600, 750 X 600	1.63 mm
900 X 900, 1125 X 900	2.01 mm

THE REFLECTIVE MATERIAL SHALL BE ENCAPSULATED LENS, WHITE OR SILVER REFLECTIVE SHEETING THAT IS APPLIED TO THE ENTIRE BACKGROUND OF THE MARKER. THE TEXT OF THE INTERSTATE ROUTE MARKERS AND THE AUXILIARY, EXCEPT TRAILBLAZER AUXILIARIES, SHALL BE REVERSE SCREENED.

COLORS

THE INTERSTATE ROUTE MARKER SHALL HAVE A REFLECTORIZED WHITE OR SILVER TEXT AND BORDER ON A REFLECTORIZED RED AND BLUE BACKGROUND. AUXILIARY MARKERS USED WITH INTERSTATE SHIELDS SHALL HAVE A REFLECTORIZED WHITE OR SILVER TEXT AND BORDER ON A REFLECTORIZED BLUE BACKGROUND.

THE RED AND BLUE SHALL CONFORM WITH THE STANDARD COLORS ADOPTED BY AASHTO AND APPROVED BY THE FHWA.

LETTERING

LETTERS AND DIGITS SHALL CONFORM WITH THE "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS" ADOPTED BY THE FHWA.

SPECIFICATIONS

INTERSTATE ROUTE MARKERS AND AUXILIARY ROUTE MARKERS SHALL MEET THE STANDARD STATE SPECIFICATIONS FOR TRAFFIC SIGNS AS PRESCRIBED IN THE VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

DESIGNS

THE DESIGNS OF INTERSTATE ROUTE MARKERS AND AUXILIARY MARKERS SHALL CONFORM WITH THE REQUIREMENTS SET FORTH IN THE MUTCD AND ADOPTED BY THE FHWA.

OTHER STDS. REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS
 JUNE 13, 1997 - ORIGINAL APPROVAL DATE

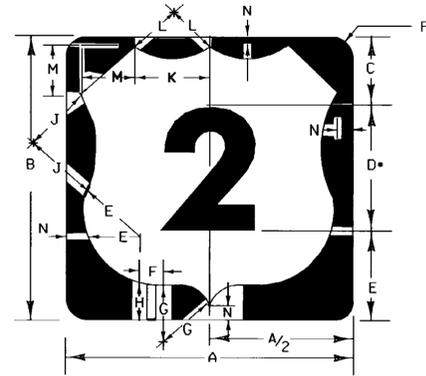
APPROVED

[Signature]
 DIRECTOR OF ENGINEERING
[Signature]
 DIRECTOR OF CONSTRUCTION AND MAINTENANCE

**INTERSTATE ROUTE MARKER
 SIGN DETAILS**



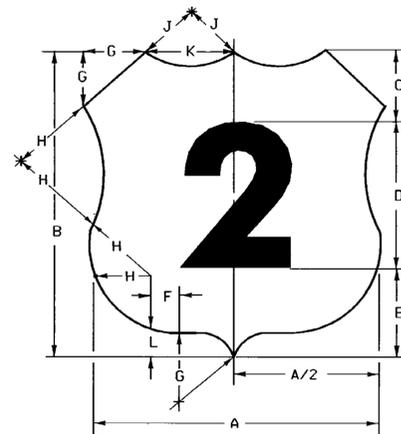
Metric
 STANDARD
 E-135 M



**U.S. ROUTE MARKER
M1-4**

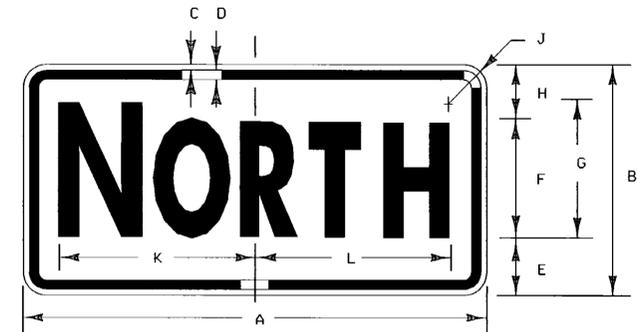
SIGN	DIMENSIONS (mm)													
	A	B	C	D	E	F	G	H	J	K	L	M	N	P
1, 2-DIGITS	600	600	135	300D	165	25	135	60	185	175	135	110	10	35
1, 2-DIGITS	900	900	205	450D	245	35	205	95	280	260	205	160	20	55
3,-digits	750	600	135	300D	165	100	135	60	185	250	235	110	10	35
3,-digits	1125	900	205	450D	245	135	205	95	280	375	355	160	20	55

* OPTICALLY SPACE NUMERALS ABOUT VERTICAL CENTERLINE



**U.S. ROUTE MARKER
FOR GUIDE SIGN USE**

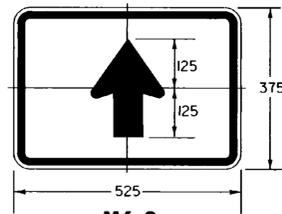
SIGN	DIMENSIONS (mm)											
	A	B	C	D	E	F	G	H	J	K	L	
1, 2-digits	600	600	135	300D	165	25	125	175	125	175	50	
1, 2-digits	900	900	205	450D	245	35	185	260	185	260	75	
3,-digits	750	600	135	300D	165	100	125	175	225	250	50	
3,-digits	1125	900	205	450D	245	135	185	260	335	375	75	



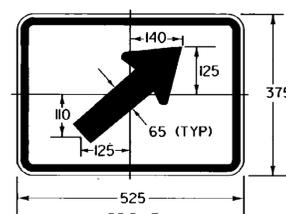
M3-1 M3-3 M3-2 M3-4

SIGN	DIMENSIONS (mm)										NORTH		SOUTH		EAST		WEST	
	A	B	C	D	E	F	G	H	J	K	L	K	L	K	L	K	L	
MIN. & STD.	600	300	10	15	70	150C	175C	80	35	260	260	260	249	200	213	222	224	
SPECIAL	750	375	10	15	80	200C	225C	95	35	322	322	322	318	264	283	295	295	

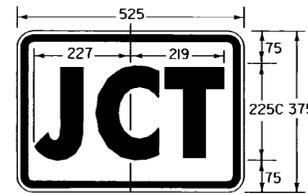
CARDINAL DIRECTION MARKER



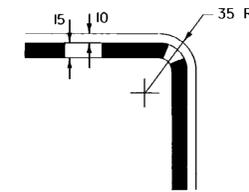
M6-3



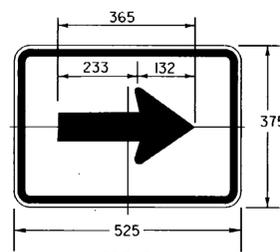
M6-2



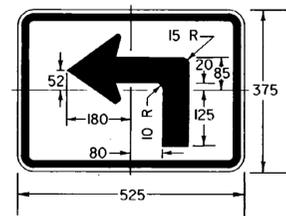
M2-1



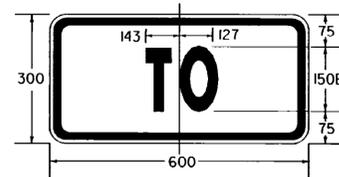
**TYPICAL RADIUS AND
BORDER DETAIL**



M6-1

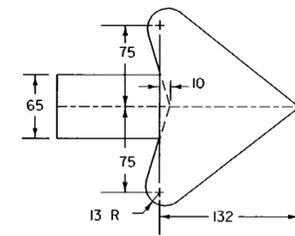


M5-1



M4-5

TRAILBLAZER



ARROW DETAILS

MATERIALS

THE SIGN BASE MATERIAL MAY BE ANY OF THE FOLLOWING MINIMUM THICKNESSES NOTED:

FLAT SHEET ALUMINUM	
LESS THAN 600 X 600	1.52 mm
WHERE USED ON GUIDE SIGNS	1.52 mm
600 X 600, 750 X 600	2.03 mm
900 X 900, 1125 X 900	2.54 mm

GALVANIZED FLAT SHEET STEEL	
LESS THAN 600 X 600	1.32 mm
WHERE USED ON GUIDE SIGNS	1.32 mm
600 X 600, 750 X 600	1.63 mm
900 X 900, 1125 X 900	2.01 mm

THE REFLECTIVE MATERIAL SHALL BE WHITE REFLECTIVE SHEETING APPLIED TO THE ENTIRE BACKGROUND. THE TEXT MAY BE LETTERING FILM, SILK SCREENED OR HAND PAINTED.

COLORS

U.S. ROUTE MARKERS SHALL HAVE BLACK TEXT AND BORDER ON REFLECTORIZED WHITE BACKGROUNDS.

LETTERING

LETTERS AND DIGITS SHALL CONFORM WITH THE "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS" ADOPTED BY THE FHWA.

SPECIFICATIONS

U.S. ROUTE MARKERS AND AUXILIARY ROUTE MARKERS SHALL MEET THE STANDARD STATE SPECIFICATIONS FOR TRAFFIC SIGNS AS PRESCRIBED IN THE VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

DESIGNS

THE DESIGNS OF U.S. ROUTE MARKERS AND AUXILIARY MARKERS SHALL CONFORM WITH THE REQUIREMENTS SET FORTH IN THE MUTCD AND ADOPTED BY THE FHWA.

OTHER STDS. REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS

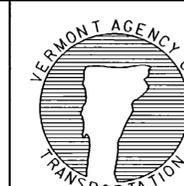
JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

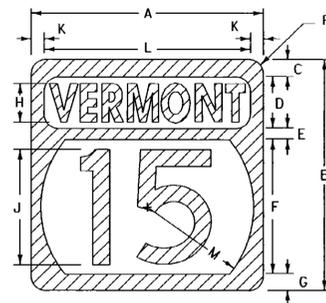
[Signature]
DIRECTOR OF ENGINEERING

[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

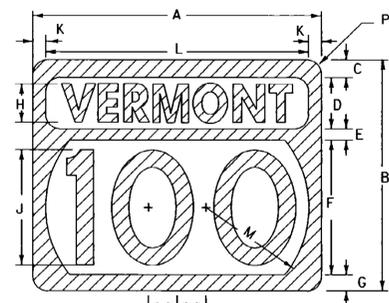
**U.S. ROUTE MARKER
SIGN DETAILS**



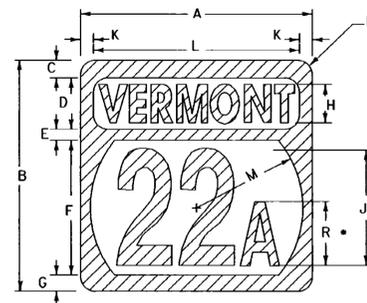
Metric
STANDARD
E-136A M



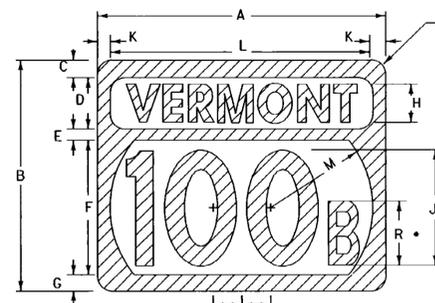
1 OR 2 DIGIT STATE ROUTE MARKER



3 DIGIT STATE ROUTE MARKER



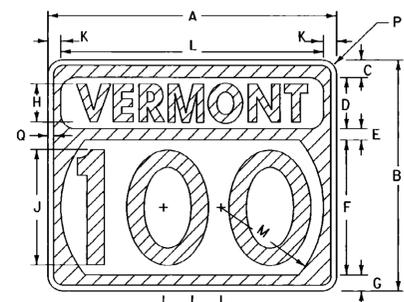
1 OR 2 DIGIT ALTERNATE STATE ROUTE MARKER



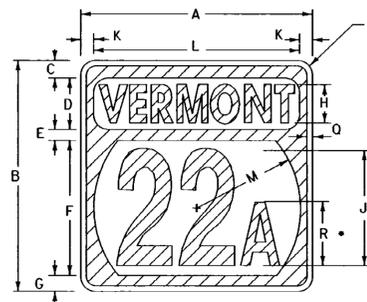
3 DIGIT ALTERNATE STATE ROUTE MARKER



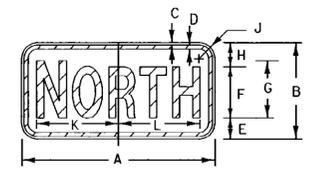
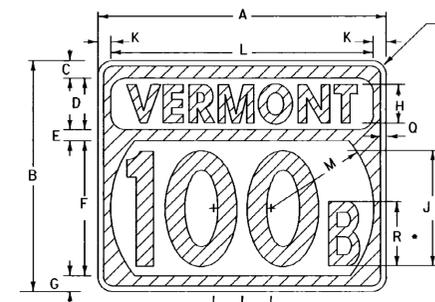
STATE ROUTE MARKER FOR GUIDE SIGN USE. (INTERSTATE TYPICAL)



ALTERNATE ROUTE SIGNS: OPTICALLY SPACE NUMERALS ABOUT VERTICAL CENTER-LINE AND REDUCE SPACING AS NECESSARY FOR EACH ROUTE.



ALTERNATE STATE ROUTE MARKER FOR GUIDE SIGN USE. (INTERSTATE TYPICAL)

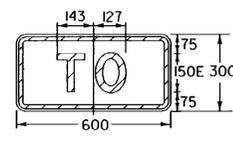
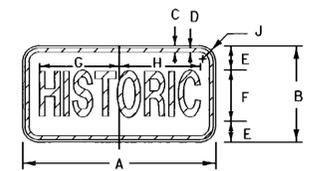
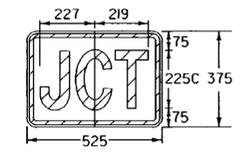


M3-1 M3-3 M3-2 M3-4

SIGN	DIMENSIONS (mm)										NORTH		SOUTH		EAST		WEST	
	A	B	C	D	E	F	G	H	J	K	L	K	L	K	L	K	L	
MIN. & STD.	600	300	10	15	70	150C	175C	80	35	260	260	260	249	200	213	222	224	
SPECIAL	750	375	10	15	80	200C	225C	95	35	322	322	322	318	264	283	295	295	

M2-1

CARDINAL DIRECTION MARKER



M4-5 TRAILBLAZER

SIGN	DIMENSIONS (mm)									
	A	B	C	D	E	F	G	H	J	
MIN. & STD.	600	300	10	15	88	125B	259	253	35	
SPECIAL	750	375	10	15	100	175B*	314	320	35	

* REDUCE SPACING 35%

MATERIALS

THE SIGN BASE MATERIAL MAY BE ANY OF THE FOLLOWING
 MINIMUM THICKNESSES NOTED:
 FLAT SHEET ALUMINUM
 LESS THAN 600 X 600 1.52 mm
 WHERE USED ON GUIDE SIGNS 1.52 mm
 600 X 600, 750 X 600 2.03 mm
 900 X 900, 125 X 900 2.54 mm
 GALVANIZED FLAT SHEET STEEL
 LESS THAN 600 X 600 1.32 mm
 WHERE USED ON GUIDE SIGNS 1.32 mm
 600 X 600, 750 X 600 1.63 mm
 900 X 900, 125 X 900 2.01 mm

THE REFLECTIVE MATERIAL SHALL BE WHITE REFLECTIVE SHEETING APPLIED TO THE ENTIRE BACKGROUND, THE TEXT MAY BE LETTERING FILM, SILK SCREENED OR HAND PAINTED.

COLORS

COLORS FOR GUIDE USE: TEXT AND SHIELD - GREEN (REFL.) BACKGROUND AND BORDER - WHITE (REFL.). STATE ROUTE MARKERS SHALL HAVE REFLECTIVE GREEN TEXT AND BORDERS ON REFLECTORIZED WHITE BACKGROUNDS. GREEN AREAS ARE INDICATED BY SINGLE LINE CROSSHATCHING.

LETTERING

LETTERS AND DIGITS SHALL CONFORM WITH THE "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS" ADOPTED BY THE FHWA.

SPECIFICATIONS

STATE ROUTE MARKERS AND AUXILIARY ROUTE MARKERS SHALL MEET THE STANDARD STATE SPECIFICATIONS FOR TRAFFIC SIGNS AS PRESCRIBED IN THE VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

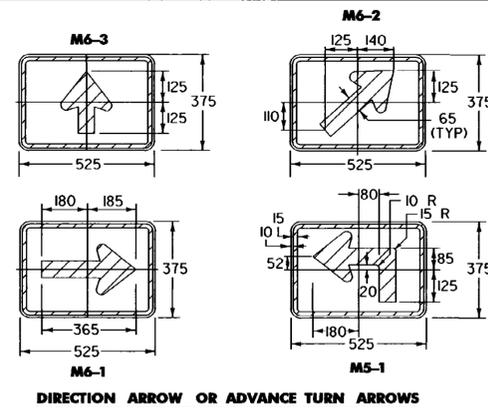
DESIGNS

THE DESIGNS OF STATE ROUTE MARKERS AND AUXILIARY MARKERS SHALL CONFORM WITH THE REQUIREMENTS SET FORTH IN THE MUTCD AND ADOPTED BY THE FHWA.

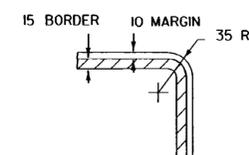
OTHER STDS. REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

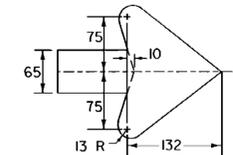
SIGN	DIMENSIONS (mm)															
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
1-2-digits	600	600	40	150	20	350	40	100C	300D	25	550	275	-	35	10	175B
1-2-digits	900	900	70	200	35	525	70	150C	450D	50	800	410	-	55	20	250B
3-digits	750	600	40	150	20	350	40	100D	300D	25	700	275	75	35	10	175B
3-digits	1125	900	70	200	35	525	70	150D	450D	50	1025	410	110	55	20	250B



DIRECTION ARROW OR ADVANCE TURN ARROWS



TYPICAL RADIUS DETAIL



TYPICAL ARROW DETAIL

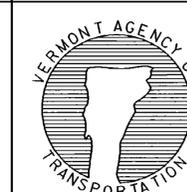
REVISIONS AND CORRECTIONS

JUNE 13, 1997 - ORIGINAL APPROVAL DATE

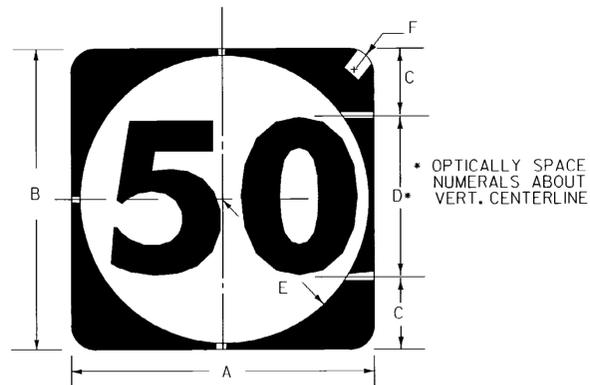
APPROVED

[Signature]
 DIRECTOR OF ENGINEERING
[Signature]
 DIRECTOR OF CONSTRUCTION AND MAINTENANCE

STATE ROUTE MARKER SIGN DETAILS

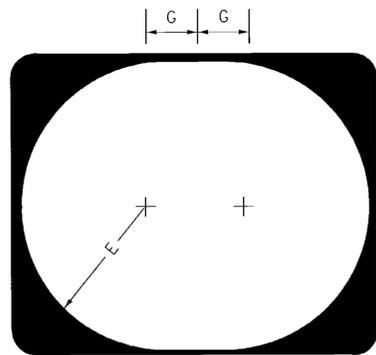


Metric
 STANDARD
 E-136BM



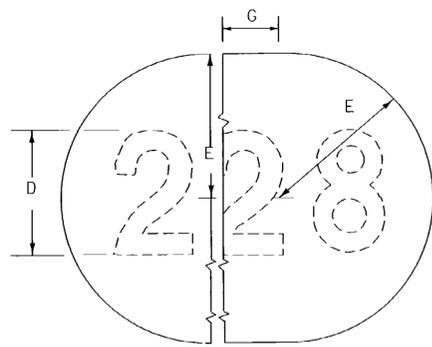
**1 OR 2 DIGIT
STATE NUMBERED TOWN HIGHWAY
ROUTE MARKINGS**

SIGN	DIMENSIONS (mm)						
	A	B	C	D	E	F	G
1,2-digits	600	600	152	300D	279	38	-
1,2-digits	900	900	229	450D	419	57	-
3-digits	750	600	152	300D	279	38	76
3-digits	1125	900	229	450D	419	57	114



**3 DIGIT
STATE NUMBERED TOWN HIGHWAY
ROUTE MARKINGS**

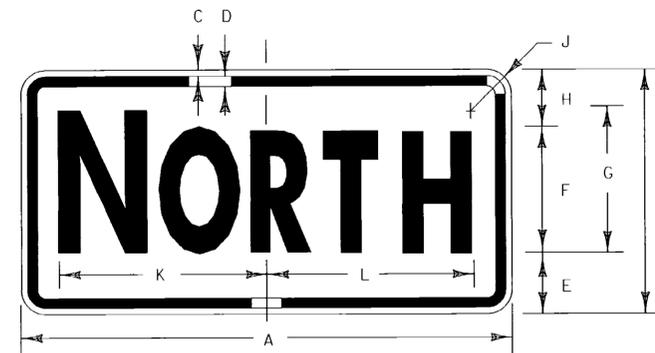
(SEE DIMENSION CHART FOR 1 OR 2 DIGIT SIGNS)



**STATE NUMBERED TOWN HIGHWAY
ROUTE MARKINGS**

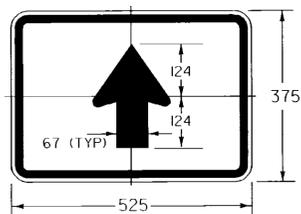
FOR GUIDE SIGN USE

SIGN	DIMENSIONS (mm)		
	D	E	G
1,2-digits	3000	305	-
1,2-digits	4500	457	-
3-digits	3000	305	76
3-digits	4500	457	114

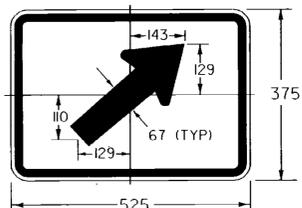


SIGN	DIMENSIONS (mm)										NORTH		SOUTH		EAST		WEST	
	A	B	C	D	E	F	G	H	J	K	L	K	L	K	L	K	L	
MIN. & STD.	600	300	10	16	70	150C	175C	83	38	260	260	260	249	200	213	222	224	
SPECIAL	750	375	10	16	83	200C	225C	95	38	322	322	322	318	264	283	270	270	

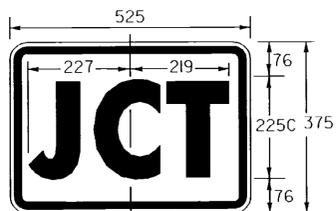
CARDINAL DIRECTION MARKER



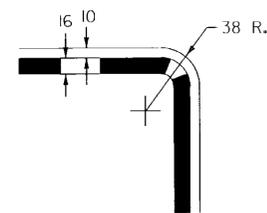
M6-3



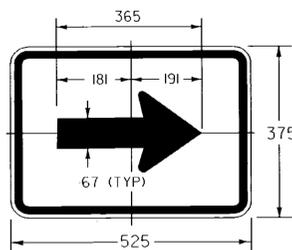
M6-2



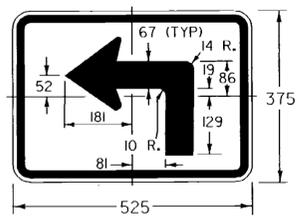
M2-1



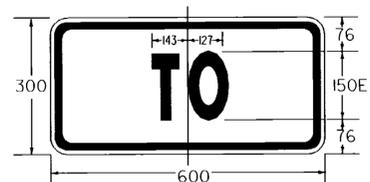
**TYPICAL RADIUS AND
BORDER DETAIL**



M6-1

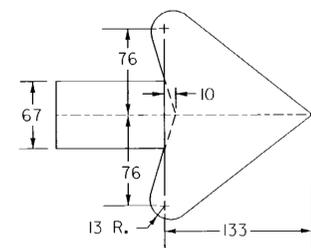


M5-1



M4-5

TRAILBLAZER



ARROW DETAILS

DIRECTION ARROW OR ADVANCE TURN ARROWS

MATERIALS

THE SIGN BASE MATERIAL MAY BE EITHER OF THE FOLLOWING
MINIMUM THICKNESSES NOTED:

FLAT SHEET ALUMINUM	
LESS THAN 600 X 600	1.52 mm
WHERE USED ON GUIDE SIGNS	1.52 mm
600 X 600, 750 X 600	2.03 mm
900 X 900, 1125 X 900	2.54 mm
GALVANIZED FLAT SHEET STEEL	
LESS THAN 600 X 600	1.32 mm
WHERE USED ON GUIDE SIGNS	1.32 mm
600 X 600, 750 X 600	1.63 mm
900 X 900, 1125 X 900	2.01 mm

THE REFLECTIVE MATERIAL SHALL BE WHITE REFLECTIVE SHEETING
APPLIED TO THE ENTIRE BACKGROUND, THE TEXT MAY BE LETTERING
FILM, SILK SCREENED OR HAND PAINTED, ETC.

COLORS

STATE NUMBERED TOWN HIGHWAY ROUTE MARKERS SHALL HAVE BLACK TEXT AND
BORDERS ON REFLECTORIZED WHITE BACKGROUND.

LETTERING

LETTERS AND DIGITS SHALL CONFORM WITH THE "STANDARD ALPHABETS
FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS" ADOPTED BY THE FHWA.

SPECIFICATIONS

STATE NUMBERED TOWN HIGHWAY ROUTE MARKERS AND AUXILIARY ROUTE
ROUTE MARKERS SHALL MEET THE STANDARD STATE SPECIFICATIONS FOR TRAFFIC
SIGNS AS PRESCRIBED IN THE VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

DESIGNS

THE DESIGNS OF STATE NUMBERED TOWN HIGHWAY ROUTE MARKERS AND
AUXILIARY MARKERS SHALL CONFORM WITH THE REQUIREMENTS SET FORTH
IN THE MUTCD AND ADOPTED BY THE FHWA.

**OTHER STDS.
REQUIRED:**

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS

JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

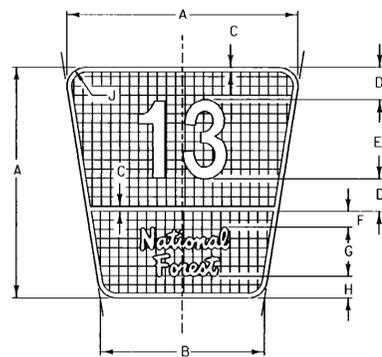
[Signature]
DIRECTOR OF PROJECT DEVELOPMENT

[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

**STATE NUMBERED TOWN
HIGHWAY SIGN DETAILS**



Metric
STANDARD
E-136CM

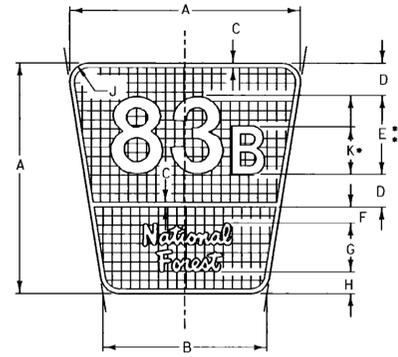


SIGN	DIMENSIONS (mm)									
	A	B	C	D	E	F	G	H	J	
MIN.	450	320	10	65	150D	30	100	40	50	
STD.	600	425	10	85	200D	40	125	60	60	
SPECIAL	900	635	10	130	300D	65	190	85	95	

• OPTICALLY SPACE NUMERALS ABOUT VERTICAL CENTERLINE

1 OR 2 DIGIT ROUTE MARKERS

M1-7

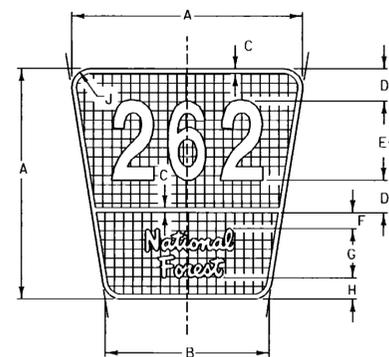


SIGN	DIMENSIONS (mm)										
	A	B	C	D	E	F	G	H	J	K	
MIN.	450	320	10	65	150D	30	100	40	50	100B	
STD.	600	425	10	85	200D	40	125	60	60	125B	
SPECIAL	900	635	10	130	300D	65	190	85	95	150B	

** Reduce spacing by 40%

1 OR 2 DIGIT ROUTE MARKERS

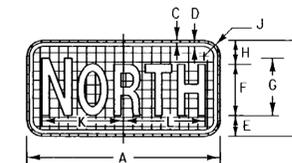
M1-7



SIGN	DIMENSIONS (mm)									
	A	B	C	D	E	F	G	H	J	
MIN.	450	320	10	65	150B	30	100	40	50	
STD.	600	425	10	85	200B	40	125	60	60	
SPECIAL	900	635	10	120	300B	65	190	85	95	

3 DIGIT ROUTE MARKERS

M1-7



SIGN	DIMENSIONS (mm)										NORTH	SOUTH	EAST	WEST			
	A	B	C	D	E	F	G	H	J	K	L	K	L	K	L		
MIN. & STD.	600	300	10	15	70	150C	175C	80	35	260	260	260	249	200	213	222	224
SPECIAL	750	375	10	15	80	200C	225C	95	35	322	322	322	318	264	283	295	295

CARDINAL DIRECTION MARKER

MATERIALS

THE SIGN BASE MATERIAL MAY BE ANY OF THE FOLLOWING MINIMUM THICKNESSES AS NOTED:

FLAT SHEET ALUMINUM

LESS THAN 600 X 600	1.52 mm
WHERE USED ON GUIDE SIGNS	1.52 mm
600 X 600	2.03 mm
900 X 900	2.54 mm

GALVANIZED FLAT SHEET STEEL

LESS THAN 600 X 600	1.32 mm
WHERE USED ON GUIDE SIGNS	1.32 mm
600 X 600	1.63 mm
900 X 900	2.01 mm

THE REFLECTORIZED MATERIAL SHALL BE BROWN REFLECTIVE SHEETING APPLIED TO THE ENTIRE BACKGROUND. THE TEXT MAY BE LETTERING FILM, SILK SCREEN OR HAND PAINTED.

COLORS

NATIONAL FOREST ROUTE MARKERS SHALL HAVE REFLECTIVE WHITE TEXT AND BORDERS ON REFLECTORIZED BROWN BACKGROUNDS. BROWN AREAS ARE INDICATED BY DOUBLE LINE CROSSHATCHING.

THE COLORS SHALL CONFORM WITH THOSE FOUND IN STANDARD COLOR TOLERANCE CHARTS AS APPROVED BY THE FHWA.

LETTERING

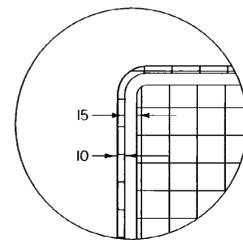
LETTERS AND DIGITS SHALL CONFORM WITH THE "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS" ADOPTED BY THE FHWA.

SPECIFICATIONS

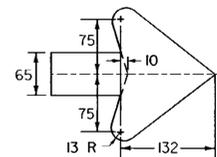
NATIONAL FOREST ROUTE MARKERS AND AUXILIARY ROUTE MARKERS SHALL MEET THE STANDARD STATE SPECIFICATIONS FOR TRAFFIC SIGNS AS PRESCRIBED IN THE VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

DESIGNS

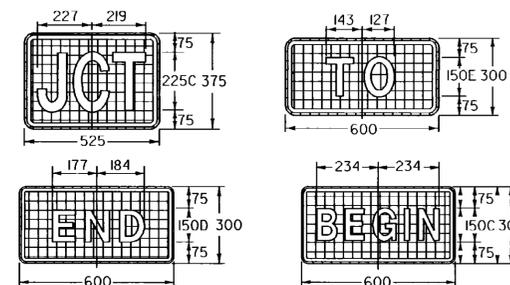
THE DESIGNS OF NATIONAL FOREST ROUTE MARKERS AND AUXILIARY ROUTE MARKERS SHALL CONFORM WITH THE REQUIREMENTS SET FORTH IN THE MUTCD AND ADOPTED BY THE FHWA.



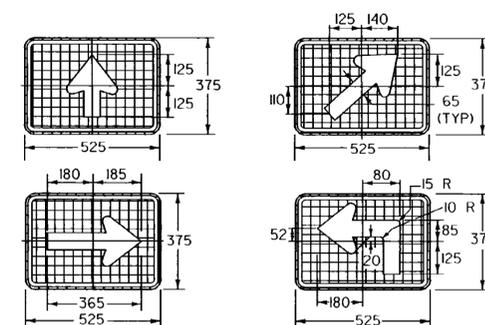
TYPICAL DETAIL FOR AUXILIARY SIGNS, CARDINAL DIRECTION MARKERS AND DIRECTION ARROWS



TYPICAL ARROW DETAIL



AUXILIARY SIGNS



DIRECTION ARROW OR ADVANCE TURN ARROWS

REVISIONS AND CORRECTIONS

JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

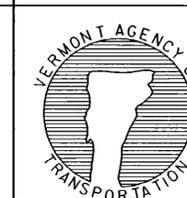
[Signature]
DIRECTOR OF ENGINEERING

[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

NATIONAL FOREST ROUTE MARKER SIGN DETAILS

OTHER STDS. REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.



Metric STANDARD E-136DM

REFERENCE PLAQUE INFORMATION

TO PROVIDE FOR AN ACCURATE SYSTEM OF LOCATION, REFERENCE PLAQUES ARE INSTALLED ALONG NON-INTERSTATE ARTERIALS AND COLLECTORS.

THE FOLLOWING INFORMATION IS PROVIDED FOR INSTALLATION GUIDANCE:

REFERENCE PLAQUES WILL NORMALLY BE INSTALLED AT 250-m INTERVALS AND ALTERNATE FROM ONE SIDE OF THE ROAD TO THE OTHER. A SIGN WILL FACE TRAFFIC AT EACH 500-m INTERVAL. A REFERENCE PLAQUE WILL ALSO BE INSTALLED AT EACH INTERSECTION AND ON THE POST WITH THE STOP SIGN. (REFERENCE PLAQUE TO BE PLACED PARALLEL TO MAINLINE VISIBLE TO TRAFFIC.) ANY REFERENCE PLAQUE LOCATION FALLING WITHIN 80 m OF AN INTERSECTION WILL BE OMITTED. IF A NORMAL REFERENCE PLAQUE LOCATION FALLS WITHIN 15 m OF AN EXISTING HIGHWAY SIGN, THE REFERENCE PLAQUE WILL BE INSTALLED ON THE EXISTING POST. WHERE THE LOCATION OF A REFERENCE PLAQUE IS UNDESIRABLE (I.E., ON A LAWN, DRIVEWAY, LEDGE) AN ATTEMPT WILL BE MADE TO LOCATE IT ACROSS THE ROAD. IF A SUITABLE LOCATION CANNOT BE FOUND WITHIN 15 m OF THE DESIRED LOCATION ON EITHER SIDE OF THE ROAD, IT MAY BE OMITTED. IF A NORMAL REFERENCE PLAQUE LOCATION FALLS WITHIN 15 m OF A POWER POLE, MAIL BOX OR OTHER OBJECT WHICH PROVIDES PARTIAL PROTECTION, LOCATE THE PLAQUE NEAR OR AT SUCH A PROTECTIVE FEATURE.

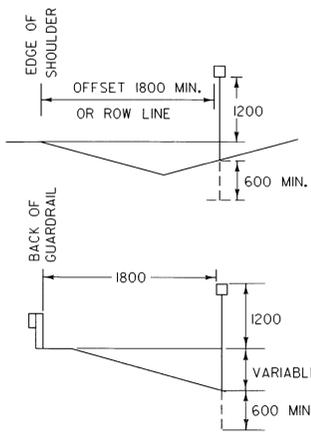
ON CLASS I TOWN HIGHWAYS (E.G., CITIES, VILLAGES) OR OTHER CONGESTED AREAS, REFERENCE PLAQUES WILL ONLY BE INSTALLED ON EXISTING SIGN POSTS AND WILL CARRY THE ACTUAL DISTANCE TO THAT LOCATION. DESIRABLY, A REFERENCE PLAQUE WILL BE INSTALLED AT 200-m INTERVALS THROUGH SUCH AREAS.

THE TOP ROW OF NUMERALS INDICATE THE ROUTE NUMBER. THESE INCLUDE:

- 1) THE STATE ROUTE NUMBER. THE FOURTH NUMERAL IS THE LETTER DESIGNATION. THUS, U.S. 2 WOULD BE 0020, ROUTE 100B WOULD BE 1002, ETC.;
- 2) A 9000 SERIES NUMBER FOR NAMED STATE HIGHWAYS, CLASS I AND II TOWN HIGHWAYS AS LISTED ON THIS SHEET; AND
- 3) FEDERAL-AID STP ROUTES ON TOWN HIGHWAYS. USE FEDERAL-AID ROUTE DESIGNATION NUMBERS, AS SHOWN ON THE PLANNING DIVISION'S MAP TITLED "FEDERAL-AID SYSTEMS ON VERMONT HIGHWAYS".

THE SECOND ROW OF NUMERALS INDICATE THE COUNTY AND TOWN. THE COUNTY IS INDICATED IN THE FIRST TWO NUMBERS, CODED ALPHABETICALLY. THE TOWN WITHIN THE COUNTY IS INDICATED IN THE LAST TWO NUMBERS, CODED ALPHABETICALLY. THUS WATERBURY, THE EIGHTEENTH TOWN ALPHABETICALLY IN WASHINGTON COUNTY WHICH IS THE TWELFTH COUNTY ALPHABETICALLY WITHIN THE STATE, WOULD BE INDICATED AS 1218 ON THE MARKER.

THE BOTTOM ROW OF NUMERALS INDICATES THE DISTANCE, ROUNDED TO THE NEAREST 10 m, FROM THE TOWN LINE OR BEGINNING OF A ROUTE (I.E., TRAVELING SOUTH TO NORTH OR WEST TO EAST). THE ROUTE DIRECTION IS ESTABLISHED USING THE AGENCY'S "ROUTE LOG AND PROGRESS CHARTS" AS A GUIDE.



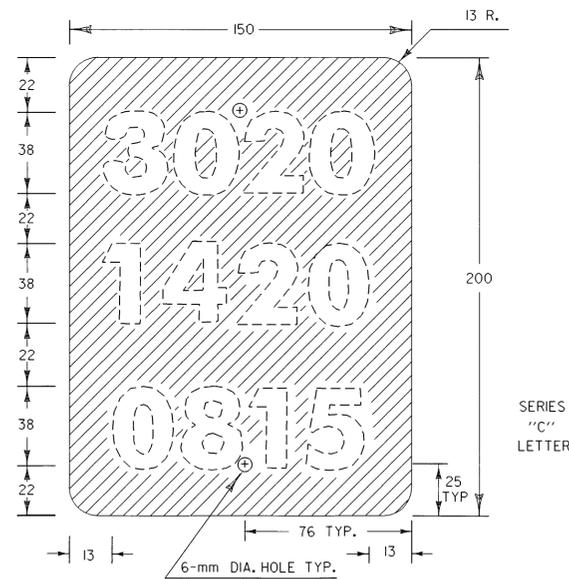
COUNTY/TOWN DESIGNATIONS

1 - ADDISON	2 - BENNINGTON	3 - CALEDONIA	4 - CHITTENDEN	5 - ESSEX	6 - FRANKLIN	7 - GRAND ISLE
0101 ADDISON 0102 BRIDPORT 0103 BRISTOL 0104 CORNWALL 0105 FERRISBURGH 0106 GOSHEN 0107 GRANVILLE 0108 HANCOCK 0109 LEICESTER 0110 LINCOLN 0111 MIDDLEBURY 0112 MONKTON 0113 NEW HAVEN 0114 ORWELL 0115 PANTON 0116 RIPTON 0117 SALISBURY 0118 SHOREHAM 0119 STARKSBORO 0120 VERGENNES 0121 WALTHAM 0122 WEYBRIDGE 0123 WHITING	0201 ARLINGTON 0202 BENNINGTON 0203 DORSET 0204 GLASTENBURY 0205 LANGROVE 0206 MANCHESTER 0207 PERU 0208 POWNAL 0209 READSBORO 0210 RUPERT 0211 SANDGATE 0212 SEARSBURG 0213 SHAFTSBURY 0214 STAMFORD 0215 SUNDERLAND 0216 WINHALL 0217 WOODFORD	0301 BARNET 0302 BURKE 0303 DANVILLE 0304 GROTON 0305 HARDWICK 0306 KIRBY 0307 LYNDON 0308 NEWARK 0309 PEACHAM 0310 RYEGATE 0311 ST. JOHNSBURY 0312 SHEFFIELD 0313 STANNARD 0314 SUTTON 0315 WALDEN 0316 WATERFORD 0317 WHEELLOCK	0401 BOLTON 0402 BUEL'S GORE 0403 BURLINGTON 0404 CHARLOTTE 0405 COLCHESTER 0406 ESSEX 0407 HINESBURG 0408 HUNTINGTON 0409 JERICHO 0410 MILTON 0411 RICHMOND 0412 ST. GEORGE 0413 SHELBURNE 0414 SO. BURLINGTON 0415 UNDERHILL 0416 WESTFORD 0417 WILLISTON 0418 WINOOSKI	0501 AVERILL 0502 AVERY'S GORE 0503 BLOOMFIELD 0504 BRIGHTON 0505 BURLAND POND 0506 CANAAN 0507 CONCORD 0508 EAST HAVEN 0509 FERDINAND 0510 GRANBY 0511 GUILDHALL 0512 LEMINGTON 0513 LEWIS 0514 LUNENBURG 0515 MAIDSTONE 0516 NORTON 0517 VICTORY 0518 WARNER'S GRANT 0519 WARREN'S GORE	0601 BAKERSFIELD 0602 BERKSHIRE 0603 ENOSBURG 0604 FAIRFAX 0605 FAIRFIELD 0606 FLETCHER 0607 FRANKLIN 0608 GEORGIA 0609 HIGHGATE 0610 MONTGOMERY 0611 RICHFORD 0612 ST. ALBANS CITY 0613 ST. ALBANS TOWN 0614 SHELDON 0615 SWANTON	0701 ALBURG 0702 GRAND ISLE 0703 ISLE LA MOTTE 0704 NORTH HERO 0705 SOUTH HERO

8 - LAMOILLE	9 - ORANGE	10 - ORLEANS	11 - RUTLAND	12 - WASHINGTON	13 - WINDHAM	14 - WINDSOR
0801 BELVIDERE 0802 CAMBRIDGE 0803 EDEN 0804 ELMORE 0805 HYDE PARK 0806 JOHNSON 0807 MORRISTOWN 0808 STOWE 0809 WATERVILLE 0810 WOLCOTT	0901 BRADFORD 0902 BRAINTREE 0903 BROOKFIELD 0904 CHELSEA 0905 CORINTH 0906 FAIRLEE 0907 NEWBURY 0908 ORANGE 0909 RANDOLPH 0910 STRAFFORD 0911 THETFORD 0912 TOPSHAM 0913 TUNBRIDGE 0914 VERSHIRE 0915 WASHINGTON 0916 WEST FAIRLEE 0917 WILLIAMSTOWN	1001 ALBANY 1002 BARTON (ORLEANS VILLAGE) 1003 BROWNINGTON 1004 CHARLESTON 1005 COVENTRY 1006 CRAFTSBURY 1007 DERBY 1008 GLOVER 1009 GREENSBORO 1010 HOLLAND 1011 IRASBURG 1012 JAY 1013 LOWELL 1014 MORGAN 1015 NEWPORT CITY 1016 NEWPORT TOWN 1017 TROY 1018 WESTFIELD 1019 WESTMORE	1101 BENSON 1102 BRANDON 1103 CASTLETON 1104 CHITTENDEN 1105 CLARENDON 1106 DANBY 1107 FAIR HAVEN 1108 HUBBARDTON 1109 IRA 1110 MENDON 1111 MIDDLETOWN SPRINGS 1112 MT. HOLLY 1113 MT. TABOR 1114 PAWLET 1115 PITTSFIELD 1116 PITTSFORD 1117 POULNEY 1118 PROCTOR 1119 RUTLAND CITY 1120 RUTLAND TOWN 1121 SHERBURNE 1122 SHREWSBURY 1123 SUDBURY 1124 TINMOUTH 1125 WALLINGFORD 1126 WELLS 1127 WEST HAVEN 1128 WEST RUTLAND	1201 BARRE CITY 1202 BARRE TOWN 1203 BERLIN 1204 CABOT 1205 CALAIS 1206 DUXBURY 1207 E. MONTPELIER 1208 FAYSTON 1209 MARSHFIELD 1210 MIDDLESEX 1211 MONTPELIER 1212 MORETOWN 1213 NORTHFIELD 1214 PLAINFIELD 1215 ROXBURY 1216 WAITSFIELD 1217 WARREN 1218 WATERBURY 1219 WOODBURY 1220 WORCESTER	1301 ATHENS 1302 BRATTLEBORO 1303 BROOKLINE 1304 DOVER 1305 DUMMERSTON 1306 GRAFTON 1307 GUILFORD 1308 HALIFAX 1309 JAMAICA 1310 LONDONDERRY 1311 MARLBORO 1312 NEWFANE 1313 PUTNEY 1314 ROCKINGHAM (SAXTONS RIVER) (BELLOWS FALLS) 1315 SOMERSET 1316 STRATTON 1317 TOWNSHEND 1318 VERNON 1319 WARDSBORO 1320 WESTMINSTER 1321 WHITINGHAM 1322 WILMINGTON 1323 WINDHAM	1401 ANDOVER 1402 BALTIMORE 1403 BARNARD 1404 BETHEL 1405 BRIDGEWATER 1406 CAVENDISH 1407 CHESTER 1408 HARTFORD (WHITE RIVER JUNCTION) 1409 HARTLAND 1410 LUDLOW 1411 NORWICH 1412 PLYMOUTH 1413 POMFRET 1414 READING 1415 ROCHESTER 1416 ROYALTON 1417 SHARON 1418 SPRINGFIELD 1419 STOCKBRIDGE 1420 WEATHERSFIELD 1421 WESTON 1422 WEST WINDSOR 1423 WINDSOR 1424 WOODSTOCK

CLASS I AND II TOWN HIGHWAYS

ROUTE CODE NUMBER	AND NAMED STATE HIGHWAY
9020	BARNET STATE HIGHWAY
9025	BENNINGTON NORTH STATE HIGHWAY
9030	BERLIN STATE HIGHWAY
9090	BRATTLEBORO STATE HIGHWAY
9150	CASTLETON STATE HIGHWAY
9180	COVENTRY STATE HIGHWAY
9210	FAIR HAVEN STATE HIGHWAY
9240	FAIRLEE STATE HIGHWAY
9270	FERRISBURG STATE HIGHWAY
9330	MAIDSTONE STATE HIGHWAY
9360	MIDDLESEX STATE HIGHWAY
9390	MONTPELIER STATE HIGHWAY
9420	MONTPELIER JUNCTION STATE HIGHWAY
9430	NEWBURY STATE HIGHWAY
9480	NORTON STATE HIGHWAY
9540	NORWICH STATE HIGHWAY
9600	PUTNEY STATE HIGHWAY
9630	QUECHEE STATE HIGHWAY
9720	ST. ALBANS ST. HWY. SOUTH
9730	ST. JOHNSBURY ST. HWY.
9750	SOUTH ALBURG STATE HIGHWAY
9840	WESTMINSTER STATE HIGHWAY
9870	WILDER STATE HIGHWAY
9900	WINHALL STATE HIGHWAY
9990	WEST RUTLAND-RUTLAND (BUS. US-4)
9991	BELLOWS FALLS S0117 (ROCK-WEST ST.)
9992	BELLOWS FALLS S1117 (BRIDGE ST.)
9993	BURLINGTON (ALTERNATE US-7)
9995	MONTPELIER (BUS. US-2)
9996	NEWPORT (ALTERNATE US-5)
9997	ST. JOHNSBURY (ALTERNATE US-5)
9998	SO. BURLINGTON-KENNEDY DRIVE



PAYMENT:

REFERENCE PLAQUES SHALL BE PAID AS TRAFFIC SIGNS, TYPE "A", AND POSTS SHALL BE PAID AS FLANGED CHANNEL STEEL SIGN POSTS.

MATERIAL:

THE SIGN BASE MATERIAL SHALL BE 1.02-mm FLAT SHEET ALUMINUM. FLANGED CHANNEL STEEL 3 kg/m POST SHALL BE USED IF THE POST EXCEEDS 2100 mm. FLANGED CHANNEL STEEL 1.7 kg/m POST SHALL BE USED FOR LENGTHS OF 2100 mm OR LESS.

COLORS:

THE SIGN SHALL HAVE A REFLECTORIZED WHITE TEXT ON A REFLECTORIZED GREEN BACKGROUND. THE COLORS SHALL CONFORM WITH THOSE FOUND IN THE STANDARD COLOR TOLERANCE CHARTS AS APPROVED BY THE FHWA.

TEXT:

LETTERS AND DIGITS SPACING AND TEXT DIMENSIONS SHALL CONFORM TO THE LATEST VERSION OF FHWA'S "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS".

OTHER STDS. E-160M REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS

JUNE 13, 1997 - ORIGINAL APPROVAL DATE
May 30, 2003 - Superseded

APPROVED

[Signature]
DIRECTOR OF PROJECT DEVELOPMENT
[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

**REFERENCE PLAQUE DETAILS
STATE AND TOWN
HIGHWAYS**



**Metric
STANDARD
E-138 M**

REFERENCE PLAQUE INFORMATION

TO PROVIDE FOR AN ACCURATE SYSTEM OF LOCATION, REFERENCE PLAQUES ARE INSTALLED U.S. AND STATE HIGHWAYS, CLASS I TOWN HIGHWAYS, FEDERAL AID PRIMARY AND FEDERAL AID SECONDARY HIGHWAYS.

THE FOLLOWING INFORMATION IS PROVIDED FOR INSTALLATION GUIDANCE:

REFERENCE PLAQUES WILL NORMALLY BE INSTALLED AT 250-m INTERVALS AND ALTERNATE FROM ONE SIDE OF THE ROAD TO THE OTHER. A SIGN WILL FACE TRAFFIC AT EACH 500-m INTERVAL. A REFERENCE PLAQUE WILL ALSO BE INSTALLED AT EACH INTERSECTION AND ON THE POST WITH THE STOP SIGN. (REFERENCE PLAQUE TO BE PLACED PARALLEL TO MAINLINE VISIBLE TO TRAFFIC.) ANY REFERENCE PLAQUE FALLING WITHIN 80 m OF AN INTERSECTION WILL BE OMITTED. IF A NORMAL REFERENCE PLAQUE LOCATION FALLS WITHIN 15 m OF AN EXISTING HIGHWAY SIGN, THE REFERENCE PLAQUE WILL BE INSTALLED ON THE EXISTING POST. WHERE THE LOCATION OF A REFERENCE PLAQUE IS UNDESIRABLE (I.E., ON A LAWN, DRIVEWAY, LEDGE) AN ATTEMPT WILL BE MADE TO LOCATE IT ACROSS THE ROAD. IF A SUITABLE LOCATION CANNOT BE FOUND WITHIN 15 m OF THE DESIRED LOCATION ON EITHER SIDE OF THE ROAD, IT MAY BE OMITTED. IF A NORMAL REFERENCE PLAQUE LOCATION FALLS WITHIN 15 m OF A POWER POLE, MAIL BOX OR OTHER OBJECT WHICH PROVIDES PARTIAL PROTECTION, LOCATE IT NEAR OR AT SUCH A PROTECTIVE FEATURE.

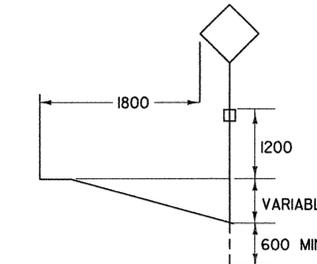
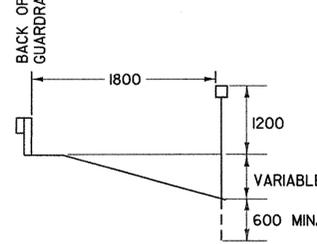
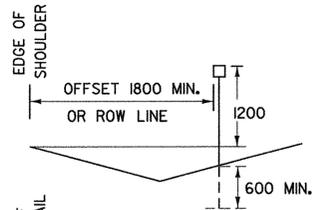
ON CLASS I TOWN HIGHWAYS (E.G., CITIES, VILLAGES) OR OTHER CONGESTED AREAS, REFERENCE PLAQUES WILL ONLY BE INSTALLED ON EXISTING SIGN POSTS AND WILL CARRY THE ACTUAL DISTANCE TO THAT LOCATION. DESIRABLY, A REFERENCE PLAQUE WILL BE INSTALLED AT 200-m INTERVALS THROUGH SUCH AREAS.

THE TOP ROW OF NUMERALS INDICATE THE ROUTE NUMBER. THESE INCLUDE:

- 1) THE STATE ROUTE NUMBER. THE FOURTH NUMERAL IS THE LETTER DESIGNATION. THUS, U.S. 2 WOULD BE 0020, ROUTE 100B WOULD BE 1002, ETC.;
- 2) A 9000 SERIES NUMBER FOR NAMED STATE HIGHWAYS, CLASS I AND II TOWN HIGHWAYS AS LISTED ON THIS SHEET; AND
- 3) FEDERAL-AID STP ROUTES ON TOWN HIGHWAYS. USE FEDERAL-AID ROUTE DESIGNATION NUMBERS, AS SHOWN ON THE PLANNING DIVISION'S MAP TITLED "FEDERAL-AID SYSTEMS ON VERMONT HIGHWAYS".

THE SECOND ROW OF NUMERALS INDICATE THE COUNTY AND TOWN. THE COUNTY IS INDICATED IN THE FIRST TWO NUMBERS, CODED ALPHABETICALLY. THE TOWN WITHIN THE COUNTY IS INDICATED IN THE LAST TWO NUMBERS, CODED ALPHABETICALLY. THUS WATERBURY, THE EIGHTEENTH TOWN ALPHABETICALLY IN WASHINGTON COUNTY WHICH IS THE TWELFTH COUNTY ALPHABETICALLY WITHIN THE STATE, WOULD BE INDICATED AS 1218 ON THE MARKER.

THE BOTTOM ROW OF NUMERALS INDICATES THE DISTANCE, ROUNDED TO THE NEAREST 10 m, FROM THE TOWN LINE OR BEGINNING OF A ROUTE (I.E., TRAVELING SOUTH TO NORTH OR WEST TO EAST). THE ROUTE DIRECTION IS ESTABLISHED USING THE AGENCY'S "ROUTE LOG AND PROGRESS CHARTS" AS A GUIDE.



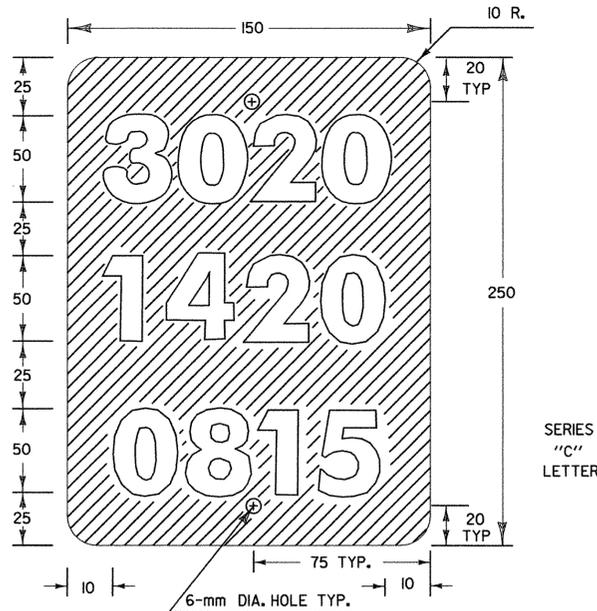
COUNTY/TOWN DESIGNATIONS

1 - ADDISON	2 - BENNINGTON	3 - CALEDONIA	4 - CHITTENDEN	5 - ESSEX	6 - FRANKLIN	7 - GRAND ISLE
0101 ADDISON 0102 BRIDPORT 0103 BRISTOL 0104 CORNWALL 0105 FERRISBURGH 0106 GOSHEN 0107 GRANVILLE 0108 HANCOCK 0109 LEICESTER 0110 LINCOLN 0111 MIDDLEBURY 0112 MONKTON 0113 NEW HAVEN 0114 ORWELL 0115 PANTON 0116 RIPTON 0117 SALISBURY 0118 SHOREHAM 0119 STARKSBORO 0120 VERGENNES 0121 WALTHAM 0122 WEYBRIDGE 0123 WHITING	0201 ARLINGTON 0202 BENNINGTON 0203 DORSET 0204 GLASTENBURY 0205 LANDGROVE 0206 MANCHESTER 0207 PERU 0208 POWAN 0209 READSBORO 0210 RUPERT 0211 SANDGATE 0212 SEARSBURG 0213 SHAFTSBURY 0214 STAMFORD 0215 SUNDERLAND 0216 WINHALL 0217 WOODFORD	0301 BARNET 0302 BURKE 0303 DANVILLE 0304 GROTON 0305 HARDWICK 0306 KIRBY 0307 LYNDON 0308 NEWARK 0309 PEACHAM 0310 RYEGATE 0311 ST. JOHNSBURY 0312 SHEFFIELD 0313 STANNARD 0314 SUTTON 0315 WALDEN 0316 WATERFORD 0317 WHEELLOCK	0401 BOLTON 0402 BUEL'S GORE 0403 BURLINGTON 0404 CHARLOTTE 0405 COLCHESTER 0406 ESSEX 0407 HINESBURG 0408 HUNTINGTON 0409 JERICHO 0410 MILTON 0411 RICHMOND 0412 ST. GEORGE 0413 SHELburne 0414 SO. BURLINGTON 0415 UNDERHILL 0416 WESTFORD 0417 WILLISTON 0418 WINOOSKI	0501 AVERILL 0502 AVERY'S GORE 0503 BLOOMFIELD 0504 BRIGHTON (ISLAND POND) 0505 BRUNSWICK 0506 CANAAN 0507 CONCORD 0508 EAST HAVEN 0509 FERDINAND 0510 GRANBY 0511 GUILDHALL 0512 LEMINGTON 0513 LEWIS 0514 LUNEBURG 0515 MADSTONE 0516 NORTON 0517 VICTORY 0518 WARNER'S GRANT 0519 WARREN'S GORE	0601 BAKERSFIELD 0602 BERKSHIRE 0603 ENOSBURG 0604 FAIRFAX 0605 FAIRFIELD 0606 FLETCHER 0607 FRANKLIN 0608 GEORGIA 0609 HIGHTGATE 0610 MONTGOMERY 0611 RICHFORD 0612 ST. ALBANS CITY 0613 ST. ALBANS TOWN 0614 SHELDON 0615 SWANTON	0701 ALBURG 0702 GRAND ISLE 0703 ISLE LA MOTTE 0704 NORTH HERO 0705 SOUTH HERO

8 - LAMOILLE	9 - ORANGE	10 - ORLEANS	11 - RUTLAND	12 - WASHINGTON	13 - WINDHAM	14 - WINDSOR
0801 BELVIDERE 0802 CAMBRIDGE 0803 EDEN 0804 ELMORE 0805 HYDE PARK 0806 JOHNSON 0807 MORRISTOWN (MORRISVILLE) 0808 STOWE 0809 WATERVILLE 0810 WOLCOTT	0901 BRADFORD 0902 BRAintree 0903 BROOKFIELD 0904 CHESEA 0905 CORINTH 0906 FAIRLEE 0907 NEWBURY 0908 ORANGE 0909 RANDOLPH 0910 STRAFFORD 0911 THETFORD 0912 TOPSHAM 0913 TUNBRIDGE 0914 VERSHIRE 0915 WASHINGTON 0916 WEST FAIRLEE 0917 WILLIAMSTOWN	1001 ALBANY 1002 BARTON (ORLEANS VILLAGE) 1003 BROWNINGTON 1004 CHARLESTON 1005 COVENTRY 1006 CRAFTSBURY 1007 DERBY 1008 GLOVER 1009 GREENSBORO 1010 HOLLAND 1011 IRASBURG 1012 JAY 1013 LOWELL 1014 MORGAN 1015 NEWPORT CITY 1016 NEWPORT TOWN 1017 TROY 1018 WESTFIELD 1019 WESTMORE	1101 BENSON 1102 BRANDON 1103 CASTLETON 1104 CHITTENDEN 1105 CLARENDON 1106 DANBY 1107 FAIR HAVEN 1108 HUBBARDTON 1109 IRA 1110 MENDON 1111 MIDDLETOWN SPRINGS 1112 MT. HOLLY 1113 MT. TABOR 1114 PAWLET 1115 PITTSFIELD 1116 PITTSFORD 1117 POUTNEY 1118 PROCTOR 1119 RUTLAND CITY 1120 RUTLAND TOWN 1121 KILLINGTON 1122 SHREWSBURY 1123 SUDBURY 1124 TINMOUTH 1125 WALLINGFORD 1126 WELLS 1127 WEST HAVEN 1128 WEST RUTLAND	1201 BARRE CITY 1202 BARRE TOWN 1203 BERLIN 1204 CABOT 1205 CALAIS 1206 DUXBURY 1207 E. MONTPELIER 1208 FAYSTON 1209 MARSHFIELD 1210 MIDDLESEX 1211 MONTPELIER 1212 MORETOWN 1213 NORTFIELD 1214 PLAINFIELD 1215 PAWLET 1216 WAITSFIELD 1217 WARREN 1218 WATERBURY 1219 WOODBURY 1220 WORCESTER	1301 ATHENS 1302 BRATTLEBORO 1303 BROOKLINE 1304 DOVER 1305 DUMMERSTON 1306 GRAFTON 1307 GUILFORD 1308 HALIFAX 1309 JAMAICA 1310 LONDONDERRY 1311 MARLBORO 1312 NEWFANE 1313 PUTNEY 1314 ROCKINGHAM (SAXTONS RIVER) (BELLOWS FALLS) 1315 SOMERSET 1316 STRATTON 1317 TOWNSEND 1318 VERNON 1319 WARDSBORO 1320 WESTMINSTER 1321 WHITINGHAM 1322 WILMINGTON 1323 WINDHAM	1401 ANDOVER 1402 BALTIMORE 1403 BARNARD 1404 BETHEL 1405 BRIDGEWATER 1406 CAVENTISH 1407 CHESTER 1408 HARTFORD (WHITE RIVER JUNCTION) 1409 HARTLAND 1410 LUDLOW 1411 NORWICH 1412 PLYMOUTH 1413 POMFRET 1414 READING 1415 ROCHESTER 1416 ROYALTON 1417 SHARON 1418 SPRINGFIELD 1419 STOCKBRIDGE 1420 WEATHERSFIELD 1421 WESTON 1422 WEST WINDSOR 1423 WINDSOR 1424 WOODSTOCK

CLASS I AND II TOWN HIGHWAYS

ROUTE CODE NUMBER	AND NAMED STATE HIGHWAY
9020	BARNET STATE HIGHWAY
9025	BENNINGTON NORTH STATE HIGHWAY
9030	BERLIN STATE HIGHWAY
9090	BRATTLEBORO STATE HIGHWAY
9150	CASTLETON STATE HIGHWAY
9180	COVENTRY STATE HIGHWAY
9210	FAIR HAVEN STATE HIGHWAY
9240	FAIRLEE STATE HIGHWAY
9270	FERRISBURG STATE HIGHWAY
9330	MADSTONE STATE HIGHWAY
9360	MIDDLESEX STATE HIGHWAY
9390	MONTPELIER STATE HIGHWAY
9420	MONTPELIER JUNCTION STATE HIGHWAY
9430	NEWBURY STATE HIGHWAY
9480	NORTON STATE HIGHWAY
9540	NORWICH STATE HIGHWAY
9600	PUTNEY STATE HIGHWAY
9630	QHECHEE STATE HIGHWAY
9720	ST. ALBANS ST. HWY. SOUTH
9730	ST. JOHNSBURY ST. HWY.
9750	SOUTH ALBURG STATE HIGHWAY
9840	WESTMINSTER STATE HIGHWAY
9870	WILDER STATE HIGHWAY
9900	WINHALL STATE HIGHWAY
9990	WEST RUTLAND-RUTLAND (BUS. US-4)
9991	BELLOWS FALLS S0117 (ROCK-WEST ST.)
9992	BELLOWS FALLS S1117 (BRIDGE ST.)
9993	BURLINGTON (ALTERNATE US-7)
9995	MONTPELIER (BUS. US-2)
9996	NEWPORT (ALTERNATE US-5)
9997	ST. JOHNSBURY (ALTERNATE US-5)
9998	SO. BURLINGTON-KENNEDY DRIVE



PAYMENT:
REFERENCE PLAQUES SHALL BE PAID AS TRAFFIC SIGNS, TYPE "A", AND POSTS SHALL BE PAID AS FLANGED CHANNEL STEEL SIGN POSTS.

MATERIAL:
THE SIGN BASE MATERIAL SHALL BE 1.02-MM FLAT SHEET ALUMINUM.

COLORS:
THE SIGN SHALL HAVE AN ASTM TYPE III RETROREFLECTORIZED WHITE TEXT ON AN ASTM TYPE III RETROREFLECTORIZED GREEN BACKGROUND. THE COLORS SHALL CONFORM WITH THOSE FOUND IN THE STANDARD COLOR TOLERANCE CHARTS AS APPROVED BY THE US DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION.

TEXT:
LETTERS AND DIGITS SHALL CONFORM TO THE LATEST VERSION OF FHWA'S "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS".

POSTS:
POSTS SHALL BE EITHER 45mm SQUARE POST IN A 50mm SQUARE STEEL ANCHOR OR 1.7 kg/m FLANGED CHANNEL STEEL POST FOR LENGTHS OF 2100mm OR LESS. IF POST EXCEEDS 2100mm USE EITHER A 50mm SQUARE STEEL POST IN A 55mm SQUARE STEEL ANCHOR OR 3 kg/m FLANGED CHANNEL STEEL POST.

OTHER STDS. E-160M, E-164M REQUIRED:
NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

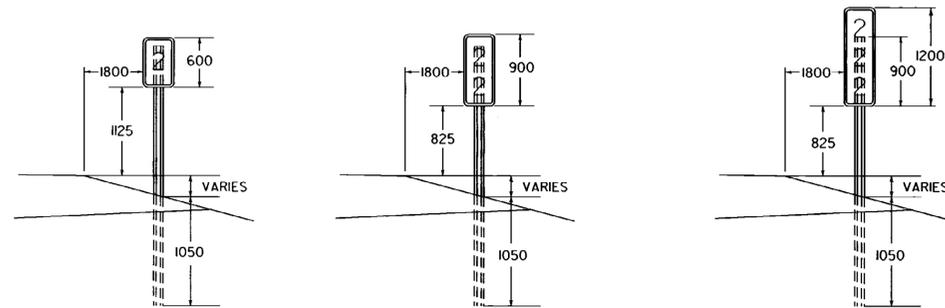
REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE
MAY 30, 2003 - CHANGED SIZE OF MILEMARKER

APPROVED
[Signature]
DIRECTOR OF PROGRAM DEVELOPMENT
[Signature]
TRAFFIC OPERATIONS ENGINEER
[Signature]
FEDERAL HIGHWAY ADMINISTRATION

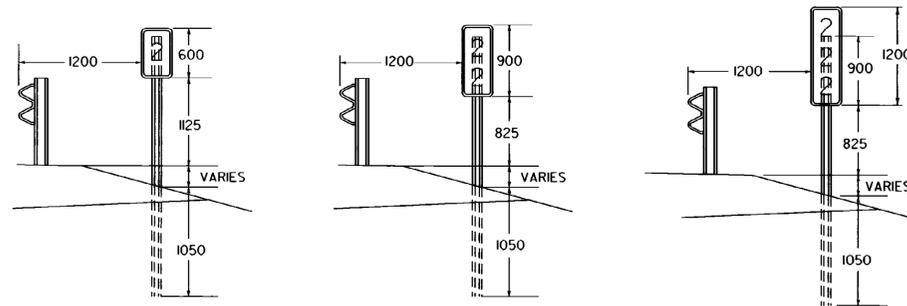
**REFERENCE PLAQUE DETAILS
STATE AND TOWN
HIGHWAYS**



**Metric
STANDARD
E-138 M**

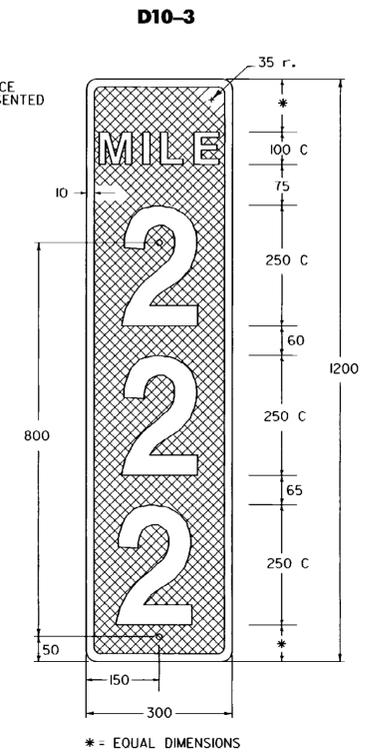
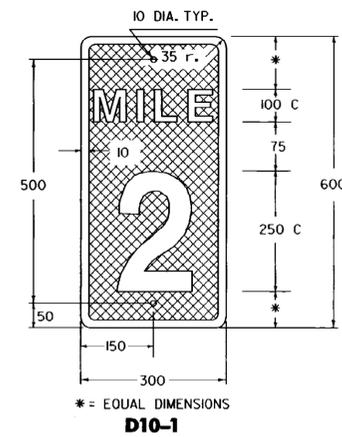
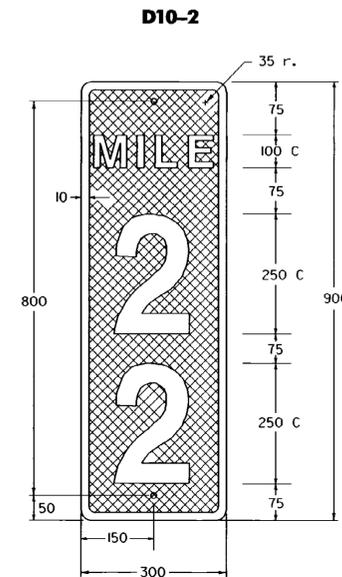


MOUNTING HEIGHTS WITHOUT GUARD RAIL



MOUNTING HEIGHTS WITH GUARD RAIL

NOTE:
 REFERENCE MARKERS SHALL BE ELIMINATED IF THEY OCCUR ON A BRIDGE. A PART "A"/PART "B" COMBINATION REFERENCE PLAQUE WILL BE SUBSTITUTED FOR THE REFERENCE MARKER ON THE BRIDGE. THE LEGEND OF THE PART "B" REFERENCE PLAQUE SHOULD BE "00". REFERENCE PLAQUE DETAILS ARE PRESENTED ON STD. E-198M.



COLORS:

THE SIGNS SHALL HAVE WHITE REFLECTIVE NUMERALS, BORDER AND LEGEND ON A GREEN REFLECTORIZED BACKGROUND. THE GREEN REFLECTIVE MATERIAL SHALL BE REFLECTIVE SHEETING APPLIED TO THE ENTIRE BACKGROUND OF THE SIGN. THE COLORS SHALL CONFORM WITH THE STANDARD COLOR TOLERANCE CHARTS APPROVED BY THE FHWA.

TEXT:

LETTERS AND NUMBERS SHALL CONFORM WITH THE STANDARD ALPHABETS AND DESIGNS AS PRESCRIBED IN THE FHWA PUBLICATION "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS".

MATERIALS:

REFERENCE MARKER SIGNS SHALL BE 2.03-mm FLAT SHEET ALUMINUM. SIGNS SHALL BE MOUNTED ON FLANGED CHANNEL STEEL SIGN SUPPORTS HAVING A MASS PER UNIT LENGTH OF 4.5 kg/m.

PAYMENT:

THE REFERENCE MARKER SIGNS SHALL BE PAID AS TRAFFIC SIGNS TYPE A. THE POSTS SHALL BE PAID AS FLANGED CHANNEL SIGN POSTS.

**OTHER STDS. E-160M
 REQUIRED: E-198M**

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS

JUNE 13, 1997 - ORIGINAL APPROVAL DATE
 APRIL 01, 1998 - CHANGED NUMBERS ON SIGN DETAILS
 DUE TO A DISCRIMINATION COMPLAINT

APPROVED

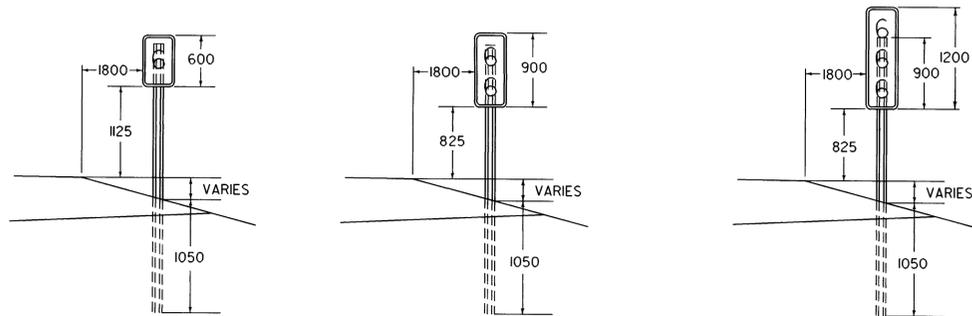
[Signature]
 DIRECTOR OF PROJECT DEVELOPMENT

[Signature]
 DIRECTOR OF CONSTRUCTION AND MAINTENANCE

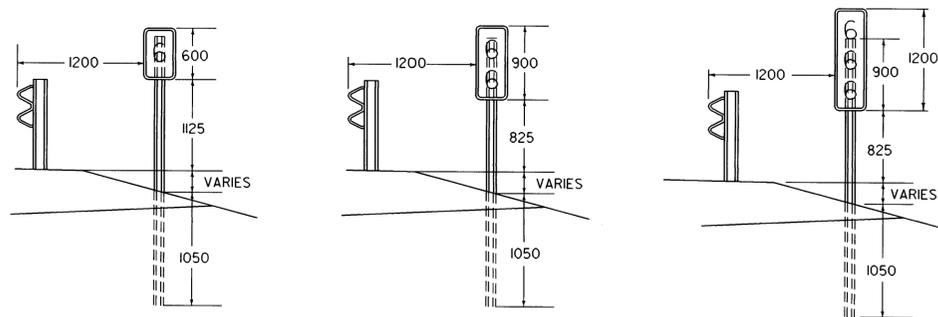
**REFERENCE MARKER DETAILS
 INTERSTATE**



**Metric
 STANDARD
 E-139 M**

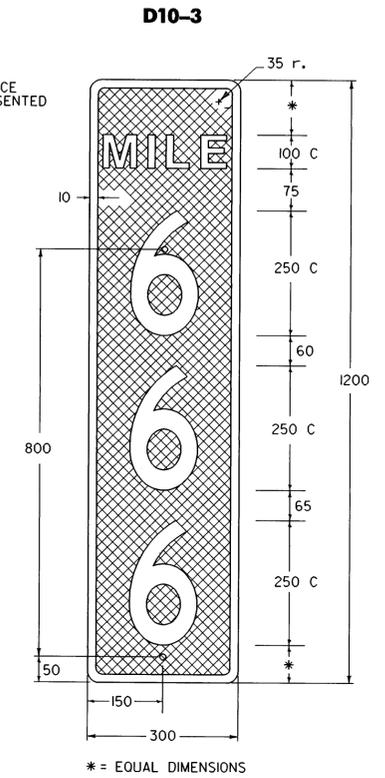
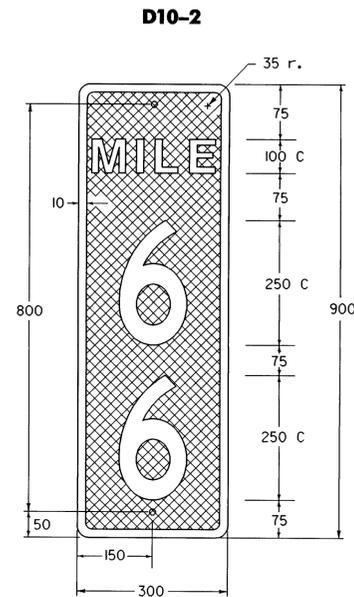


MOUNTING HEIGHTS WITHOUT GUARD RAIL

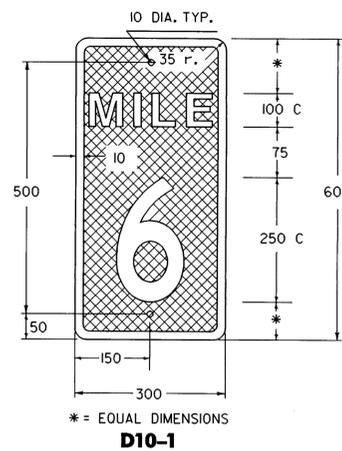


MOUNTING HEIGHTS WITH GUARD RAIL

NOTE:
 REFERENCE MARKERS SHALL BE ELIMINATED IF THEY OCCUR ON A BRIDGE. A PART "A"/PART "B" COMBINATION REFERENCE PLAQUE WILL BE SUBSTITUTED FOR THE REFERENCE MARKER ON THE BRIDGE. THE LEGEND OF THE PART "B" REFERENCE PLAQUE SHOULD BE "00". REFERENCE PLAQUE DETAILS ARE PRESENTED ON STD. E-198M.



* = EQUAL DIMENSIONS



* = EQUAL DIMENSIONS
D10-1

COLORS:

THE SIGNS SHALL HAVE WHITE REFLECTIVE NUMERALS, BORDER AND LEGEND ON A GREEN REFLECTORIZED BACKGROUND. THE GREEN REFLECTIVE MATERIAL SHALL BE REFLECTIVE SHEETING APPLIED TO THE ENTIRE BACKGROUND OF THE SIGN. THE COLORS SHALL CONFORM WITH THE STANDARD COLOR TOLERANCE CHARTS APPROVED BY THE FHWA.

TEXT:

LETTERS AND NUMBERS SHALL CONFORM WITH THE STANDARD ALPHABETS AND DESIGNS AS PRESCRIBED IN THE FHWA PUBLICATION "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS".

MATERIALS:

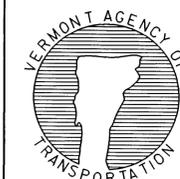
REFERENCE MARKER SIGNS SHALL BE 2.03-mm FLAT SHEET ALUMINUM. SIGNS SHALL BE MOUNTED ON FLANGED CHANNEL STEEL SIGN SUPPORTS HAVING A MASS PER UNIT LENGTH OF 4.5 kg/m.

PAYMENT:

THE REFERENCE MARKER SIGNS SHALL BE PAID AS TRAFFIC SIGNS TYPE A. THE POSTS SHALL BE PAID AS FLANGED CHANNEL SIGN POSTS.

**OTHER STDS. E-160M
 REQUIRED: E-198M**

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.



Metric
 STANDARD
 E-139 M

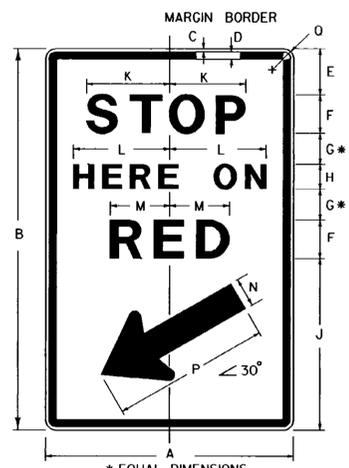
REVISIONS AND CORRECTIONS

JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

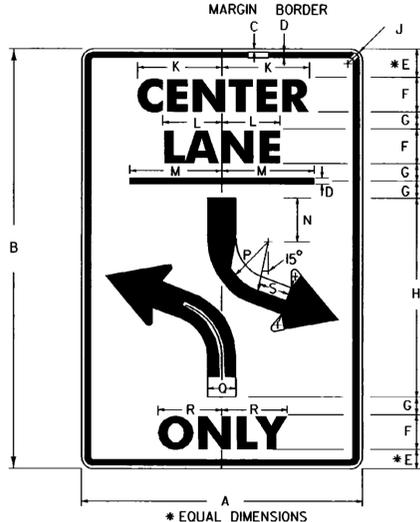
[Signature]
 DIRECTOR OF ENGINEERING
[Signature]
 DIRECTOR OF CONSTRUCTION AND MAINTENANCE

REFERENCE MARKER DETAILS
 INTERSTATE



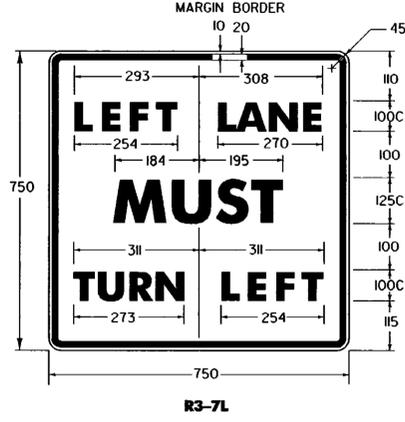
* EQUAL DIMENSIONS
R10-6

SIGN	A	B	C	D	E	F	G	H
STD.	600	900	10	15	100	125D	-	75D
SPECIAL	900	1200	15	20	150	150D	-	100D
	J	K	L	M	N	P	Q	
STD.	350	207	229	150	65	370	35	
SPECIAL	450	248	305	180	70	400	55	

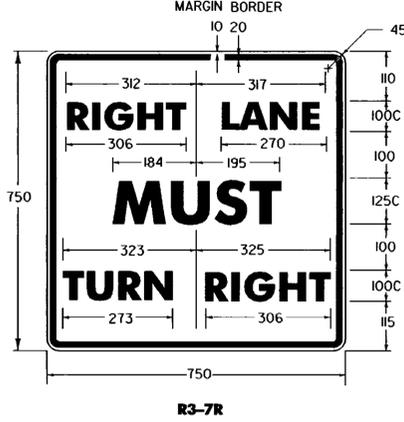


* EQUAL DIMENSIONS
R3-9B

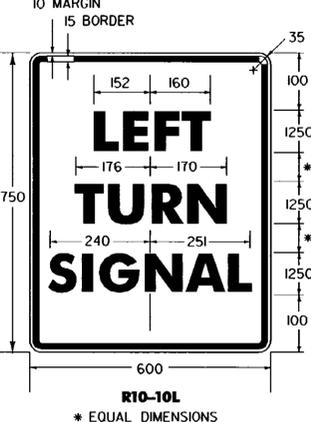
SIGN	DIMENSIONS (mm)										
	A	B	C	D	E	F	G	H	J	K	
STD.	600	900	10	15	-	75E	35	400	35	214	
SPECIAL	900	1200	15	20	-	125E	35	500	35	356	
	L	M	N	P	Q	R	S				
STD.	145	200	60	150	50	150	35				
SPECIAL	241	300	75	200	75	250	55				



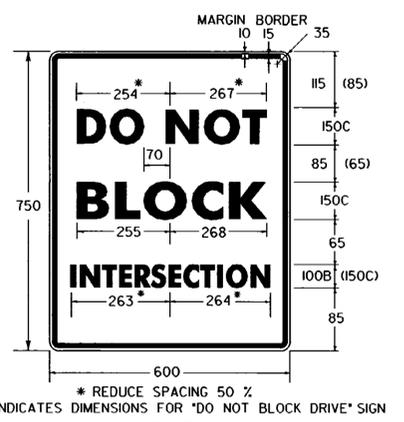
* EQUAL DIMENSIONS
R3-7L



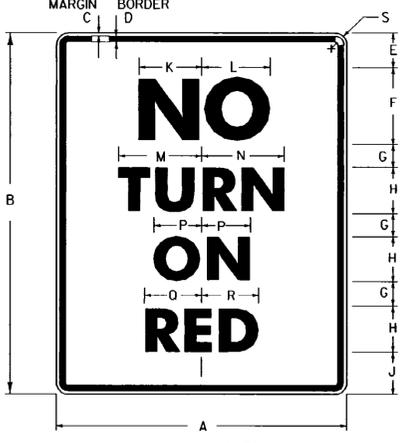
* EQUAL DIMENSIONS
R3-7R



* EQUAL DIMENSIONS
R10-10L

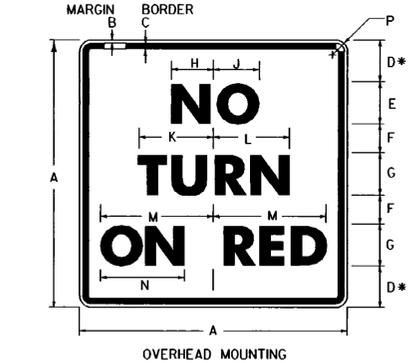


* REDUCE SPACING 50 %
() INDICATES DIMENSIONS FOR 'DO NOT BLOCK DRIVE' SIGN
R10-7



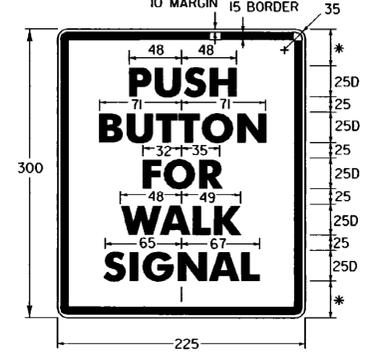
POST MOUNTING
R10-11A

SIGN	DIMENSIONS (mm)										
	A	B	C	D	E	F	G	H	J	K	
STD.	600	750	10	15	80	125E	55	100D	80	122	
SPECIAL	900	1200	15	20	150	200E	85	150D	145	196	
	L	M	N	P	Q	R	S				
STD.	132	168	165	89	117	124	35				
SPECIAL	210	252	247	133	174	187	55				

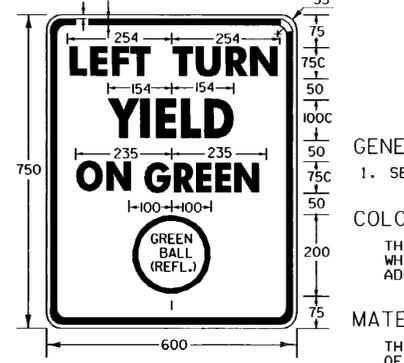


OVERHEAD MOUNTING
R10-11B

SIGN	DIMENSIONS (mm)													
	A	B	C	D	E	F	G	H	J	K	L	M	N	P
MIN.	450	10	15	-	75E	45	75D	74	78	126	123	181	133	35
STD.	600	10	15	-	100E	60	100D	98	105	168	165	241	165	35
SPECIAL	750	10	20	-	125E	75	125D	122	132	209	207	302	197	45



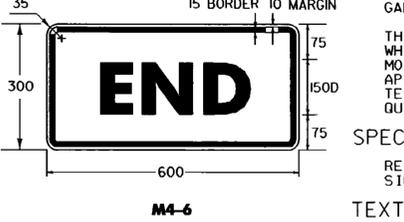
R10-4



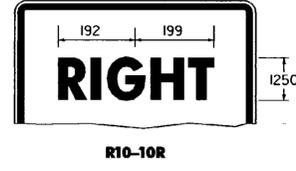
R10-12



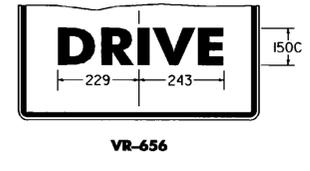
M4-11



M4-6



R10-10R



VR-656

GENERAL:

1. SEE STANDARD E-144M FOR ARROWHEAD DETAILS.

COLORS:

THE REGULATORY SIGNS SHOWN ON THIS SHEET SHALL HAVE BLACK TEXT ON REFLECTORIZED WHITE BACKGROUND, UNLESS OTHERWISE NOTED. THE COLORS SHALL CONFORM WITH THE COLORS ADOPTED BY AASHTO AND APPROVED BY THE FHWA.

MATERIALS:

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

Sign Size	Aluminum	Plywood	Steel
600 X 300	1.52 mm	2.03 mm	2.54 mm
600 X 600	13 mm	13 mm	16 mm
600 X 750	13 mm	13 mm	16 mm
600 X 900	13.2 mm	16.3 mm	2.01 mm
750 X 750			
900 X 1200			

FLAT SHEET ALUMINUM
HIGH DENSITY OVERLAID PLYWOOD
GALVANIZED FLAT SHEET STEEL

THE REFLECTIVE MATERIAL FOR GROUND MOUNTED SIGNS SHALL BE AASHTO TYPE II OR III WHITE REFLECTIVE SHEETING APPLIED TO THE ENTIRE BACKGROUND OF THE SIGN. IF MOUNTED OVERHEAD, ALL SIGNS SHALL HAVE ENCAPSULATED LENS REFLECTIVE SHEETING APPLIED TO THE ENTIRE BACKGROUND OF THE SIGN. THE TEXT OF THE SIGNS MAY BE LETTERING FILM, SILK SCREENED OR HAND PAINTED. HAND PAINTING MUST BE COMPARABLE IN QUALITY TO THE RESULTS OBTAINED BY SILK SCREENING.

SPECIFICATIONS

REGULATORY SIGNS SHALL MEET THE VERMONT STANDARD SPECIFICATIONS FOR TRAFFIC SIGNS AS PRESCRIBED IN THE VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

TEXT DESIGN:

LETTERS, DIGITS, ARROWS, SPACING AND TEXT DIMENSIONS SHALL CONFORM TO THE LATEST VERSION OF FHWA'S 'STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS'. DESIGNS SHALL CONFORM WITH THOSE PRESCRIBED IN THE PUBLICATION 'STANDARD HIGHWAY SIGNS' AS SPECIFIED IN THE MUTCD.

OTHER STDS. E-144M REQUIRED:
NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

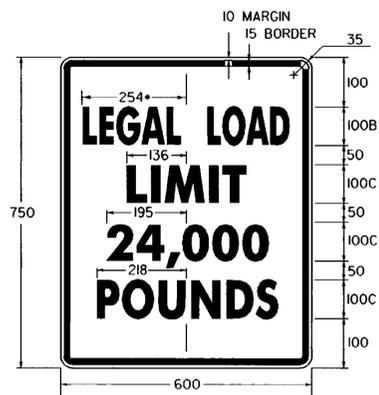
REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED
[Signature]
DIRECTOR OF ENGINEERING
[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

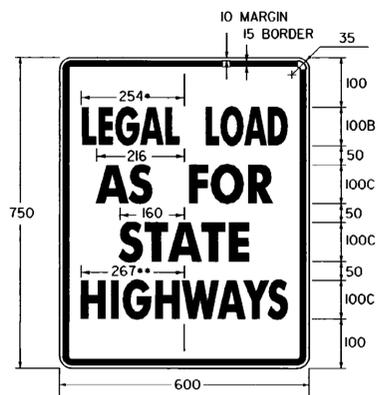
REGULATORY SIGN
DETAILS



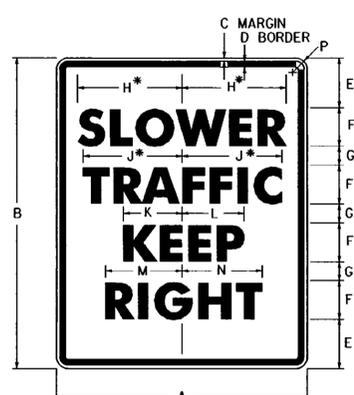
Metric
STANDARD
E-140M



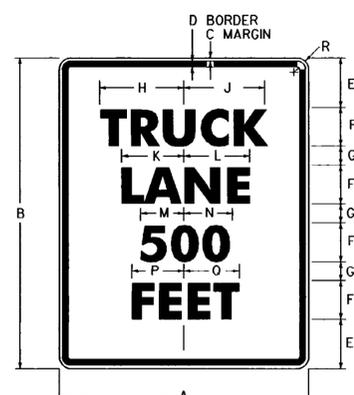
* REDUCE SPACING 50 %
LINE 3 ALTERNATE - 16,000
VR-017



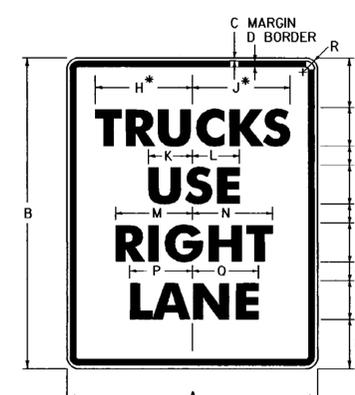
* REDUCE SPACING 50 %
** REDUCE SPACING 16 %
VR-079



* REDUCE SPACING 25 %
R4-3



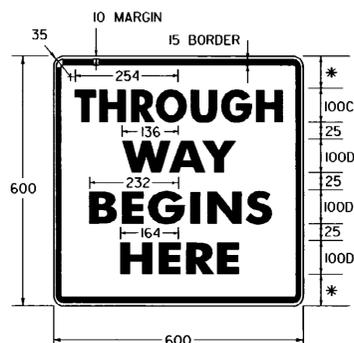
R4-6



* REDUCE SPACING 32 %
R4-5



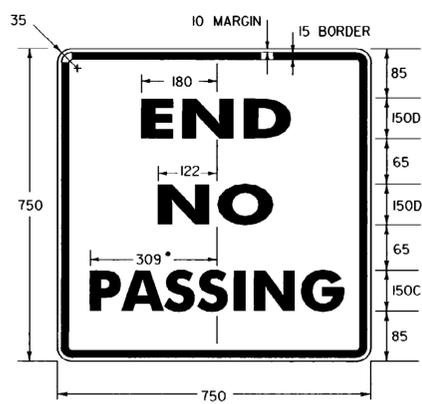
VR-039



* EQUAL DIMENSIONS
VR-041



VR-038

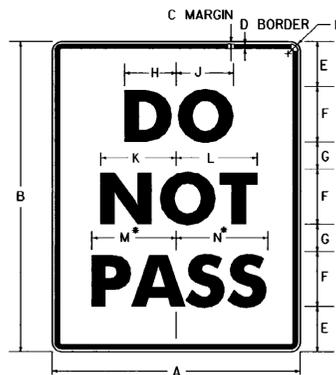


* REDUCE SPACING 50 %
VR-417

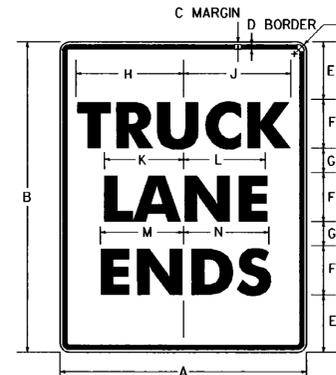
SIGN	DIMENSIONS (mm)													
	A	B	C	D	E	F	G	H	J	K	L	M	N	P
STD.	600	750	10	15	85	100D	60	248	254	152	167	180	193	35
EXPWY.	900	1200	15	20	150	150D	100	371	381	228	249	270	289	55
FWY.	1200	1500	20	30	185	200D	110	495	508	305	334	361	388	75

SIGN	DIMENSIONS (mm)															
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
STD.	600	750	10	15	85	100E	60	249	246	191	196	143	148	175	181	35
EXPWY.	900	1200	15	20	150	150E	100	373	368	286	292	215	222	262	271	55
FWY.	1200	1500	20	30	185	200E	110	497	491	382	389	287	295	349	359	75

SIGN	DIMENSIONS (mm)																	
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R		
STD.	600	750	10	15	85	100D	60	242	233	119	127	180	193	158	168	35		
EXPWY.	900	1200	15	20	150	150D	100	362	350	179	190	270	289	237	253	55		
FWY.	1200	1500	20	30	185	200D	110	486	469	240	254	361	388	317	337	75		



* REDUCE SPACING 40 %
R4-1



VR-186

SIGN	DIMENSIONS (mm)													
	A	B	C	D	E	F	G	H	J	K	L	M	N	P
STD.	600	750	10	15	85	150D	65	114	123	179	187	237	247	35
EXPWY.	900	1200	15	20	175	200D	125	154	164	241	249	318	331	55
FWY.	1200	1500	20	30	200	250D	175	192	206	301	311	397	414	75

SIGN	DIMENSIONS (mm)															
	A	B	C	D	E	F	G	H	J	K	L	M	N	P		
STD.	600	750	10	15	85	150C	65	262	262	198	199	203	206	35		
EXPWY.	900	1200	15	20	175	200C	125	350	350	265	265	273	273	55		
FWY.	1200	1500	20	30	200	250D	175	528	529	407	409	411	412	75		

COLORS:

THE REGULATORY SIGNS SHOWN ON THIS SHEET SHALL HAVE BLACK TEXT ON REFLECTORIZED WHITE BACKGROUND, UNLESS OTHERWISE NOTED. THE COLORS SHALL CONFORM WITH THE COLORS ADOPTED BY AASHTO AND APPROVED BY THE FHWA.

MATERIALS:

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

600 X 450	
600 X 600	
600 X 750	900 X 1200
750 X 750	1200 X 1500

FLAT SHEET ALUMINUM
HIGH DENSITY OVERLAID PLYWOOD
GALVANIZED FLAT SHEET STEEL

2.03 mm	2.54 mm
13 mm	16 mm
1.63 mm	2.01 mm

THE REFLECTIVE MATERIAL FOR GROUND MOUNTED SIGNS SHALL BE AASHTO TYPE II OR III 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. HAND PAINTING MUST BE COMPARABLE IN QUALITY TO THE RESULTS OBTAINED BY SILK SCREENING.

SPECIFICATIONS:

REGULATORY SIGNS SHALL MEET THE VERMONT STANDARD SPECIFICATIONS FOR TRAFFIC SIGNS AS PRESCRIBED IN THE VDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

TEXT DESIGN:

LETTERS, DIGITS, ARROWS, SPACING AND TEXT DIMENSIONS SHALL CONFORM TO THE LATEST VERSION OF FHWA'S "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS". DESIGNS SHALL CONFORM WITH THOSE PRESCRIBED IN THE PUBLICATION "STANDARD HIGHWAY SIGNS" AS SPECIFIED IN THE MUTCD.

OTHER STDS. NONE
REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS

JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

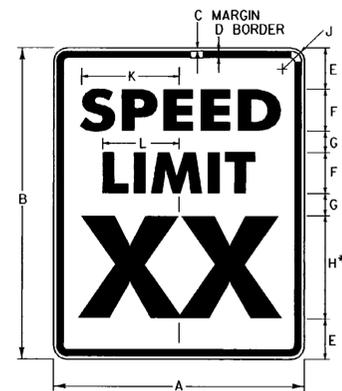
[Signature]
DIRECTOR OF ENGINEERING

[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

REGULATORY SIGN
DETAILS

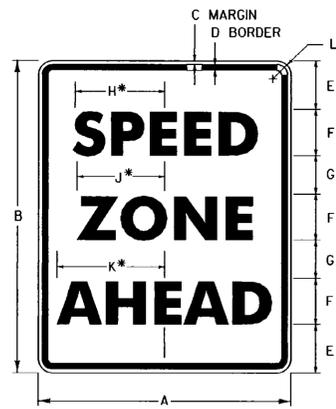


Metric
STANDARD
E-141M



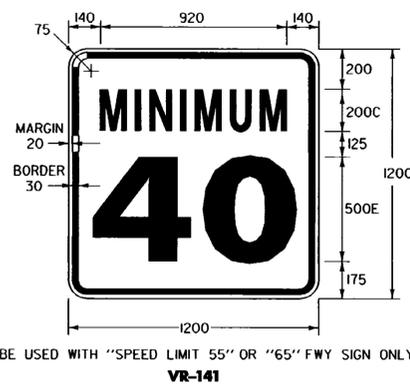
* OPTICALLY SPACE NUMERALS ABOUT VERTICAL CENTERLINE.
R2-1

SIGN	DIMENSIONS (mm)										
	A	B	C	D	E	F	G	H	J	K	L
MIN.	450	600	10	15	75	50	200E	35	182	140	
STD.	600	750	10	15	100	100E	50	250E	35	244	187
EXPWY.	900	1200	15	20	150	150E	125	350E	55	365	279
FWY.	1200	1500	20	30	200	200E	100	500E	75	486	372

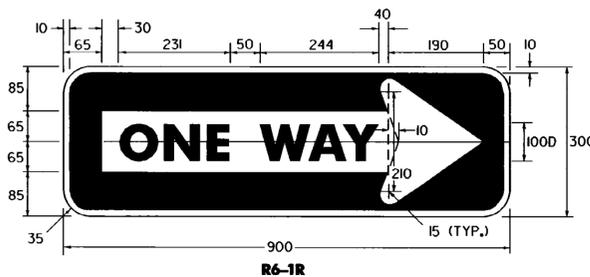


* FOR STD SIZE, REDUCE SPACING 40%
R2-5C

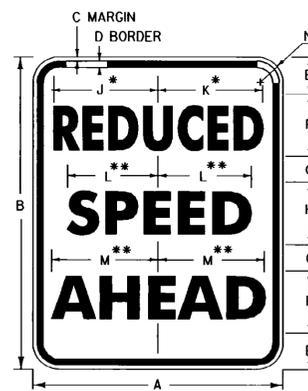
SIGN	DIMENSIONS (mm)										
	A	B	C	D	E	F	G	H	J	K	L
MIN.	450	600	10	15	85	100C	65	173	141	178	35
STD.	600	750	10	15	85	150C	65	233	192	247	35
EXPWY.	900	1200	15	20	175	200C	125	346	280	356	55
FWY.	1200	1500	20	30	225	250C	150	432	352	445	75



TO BE USED WITH "SPEED LIMIT 55" OR "65" FWY SIGN ONLY
VR-141



R6-1R

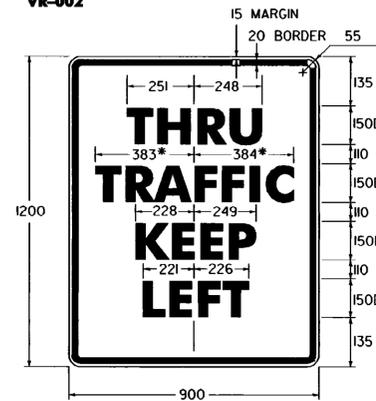


R2-5A

SIGN	DIMENSIONS (mm)													
	A	B	C	D	E	F	G	H	J	K	L	M	N	
MIN.	450	600	10	15	85	100B	65	100C	182	186	173	178	35	
STD.	600	750	10	15	85	150B	65	150C	246	266	235	247	35	
EXPWY.	900	1200	15	20	175	200B	125	200C	361	374	346	356	55	
FWY.	1200	1500	20	30	225	250B	150	250C	450	468	432	445	75	



TEXT 100C; SPACING 50
VR-002

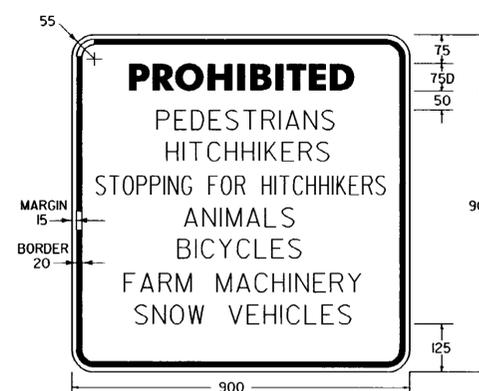


* REDUCE SPACING 25%
VR-118L



* FOR FWY SIZE, REDUCE SPACING 50%
R8-7

SIGN	DIMENSIONS (mm)													
	A	B	C	D	E	F	G	H	J	K	L	M	N	P
EXPWY.	750	600	10	15	85	100C	65	100D	318	331	324	163	178	35
FWY.	1200	900	15	20	125	150D	100	150D	517	536	485	249	263	55



TEXT 50C, WITH EQUAL LINE SPACING, EXCEPT WHERE NOTED.
VR-046



* OPTICALLY SPACE NUMERALS ABOUT VERTICAL CENTERLINE.
R2-4

SIGN	DIMENSIONS (mm)										
	A	B	C	D	E	F	G	H	J	K	L
STD.	600	750	10	15	100	100C	50	250D	35	232	173
EXPWY.	900	1200	15	20	150	150C	125	350D	35	349	259
FWY.	1200	1500	20	30	200	200C	100	500D	75	466	346

COLORS:

THE REGULATORY SIGNS SHOWN ON THIS SHEET SHALL HAVE BLACK TEXT ON REFLECTORIZED WHITE BACKGROUND, UNLESS OTHERWISE NOTED. THE COLORS SHALL CONFORM WITH THE COLORS ADOPTED BY AASHTO AND APPROVED BY THE FHWA.

MATERIALS:

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

Material	450 X 600	600 X 750 750 X 600	900 X 300 900 X 900 900 X 1200 1200 X 900 1200 X 1200 1200 X 1500
FLAT SHEET ALUMINUM	1.52 mm	2.03 mm	2.54 mm
HIGH DENSITY OVERLAIN PLYWOOD	13 mm	13 mm	16 mm
GALVANIZED FLAT SHEET STEEL	1.32 mm	1.63 mm	2.01 mm

THE REFLECTIVE MATERIAL FOR GROUND MOUNTED SIGNS SHALL BE AASHTO TYPE II OR III 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. HAND PAINTING MUST BE COMPARABLE IN QUALITY TO THE RESULTS OBTAINED BY SILK SCREENING.

SPECIFICATIONS:

REGULATORY SIGNS SHALL MEET THE VERMONT STANDARD SPECIFICATIONS FOR TRAFFIC SIGNS AS PRESCRIBED IN THE VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

TEXT DESIGN:

LETTERS, DIGITS, ARROWS, SPACING AND TEXT DIMENSIONS SHALL CONFORM TO THE LATEST VERSION OF FHWA'S "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS". DESIGNS SHALL CONFORM WITH THOSE PRESCRIBED IN THE PUBLICATION "STANDARD HIGHWAY SIGNS" AS SPECIFIED IN THE MUTCD.

REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE

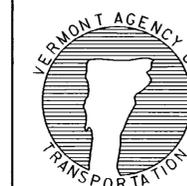
APPROVED

[Signature]
DIRECTOR OF ENGINEERING
[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

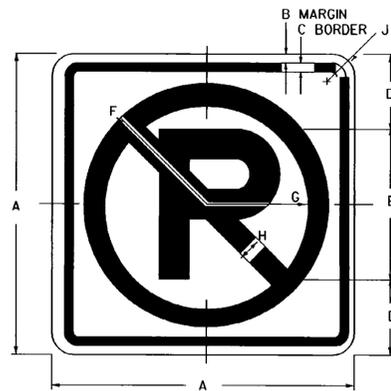
REGULATORY SIGN
DETAILS

OTHER STDS. NONE
REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.



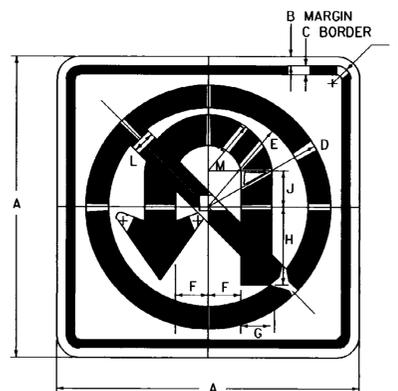
Metric
STANDARD
E-142M



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

R8-3A

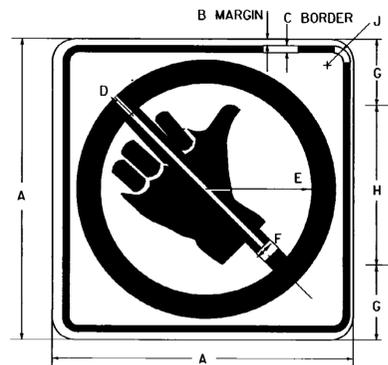
SIGN	DIMENSIONS (mm)									
	A	B	C	D	E	F	G	H	J	
URBAN MIN. AND STD.	300	10	10	75	150E(M)	120	95	25	35	
RURAL MIN. AND STD.	600	10	15	150	300E(M)	260	210	50	35	
EXPWY.	900	15	20	225	450E(M)	395	320	75	55	
FWY.	1200	20	35	300	600E(M)	525	425	100	75	



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

R3-4

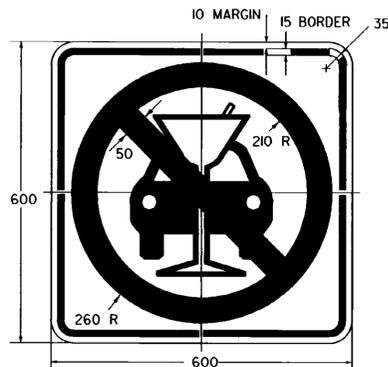
SIGN	DIMENSIONS (mm)												
	A	B	C	D	E	F	G	H	J	K	L	M	
MIN. AND STD.	600	10	15	265	215	60	60	150	55	35	50	120	
SPECIAL	750	10	20	330	270	80	80	190	70	45	60	160	
EXPWY.	900	15	20	395	320	95	95	225	85	55	75	190	
SPECIAL	1200	20	30	525	425	125	125	300	110	75	100	250	



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

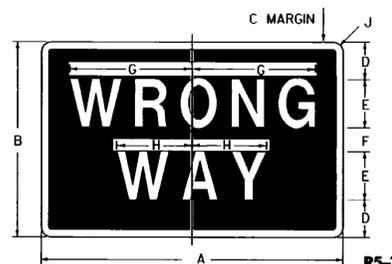
R9-4A

SIGN	DIMENSIONS (mm)									
	A	B	C	D	E	F	G	H	J	
MIN.	450	10	15	195	160	35	95	260	35	
STD.	600	10	15	260	210	50	125	350	35	



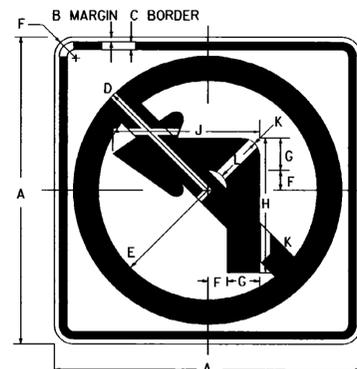
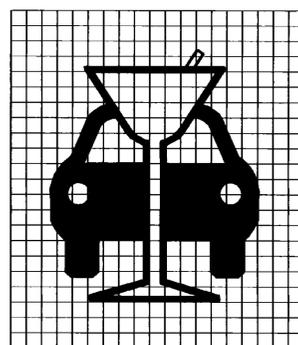
COLORS
 CIRCLE AND DIAGONAL - RED (REFL)
 SYMBOL AND BORDER - BLACK (NON - REFL)
 BACKGROUND - WHITE (REFL)

VR-654

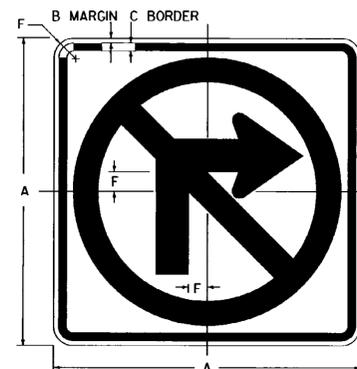


"WRONG WAY"
COLORS
 LEGEND - WHITE (REFL)
 BACKGROUND - RED (REFL)
 ENCAPSULATED LENS

SIGN	DIMENSIONS (mm)									
	A	B	C	D	E	F	G	H	J	
MIN.	750	450	15	75	1250	50	282	170	35	
STD.	900	600	20	110	1500	80	337	205	35	
SPECIAL	1050	750	20	125	2000	100	452	273	45	



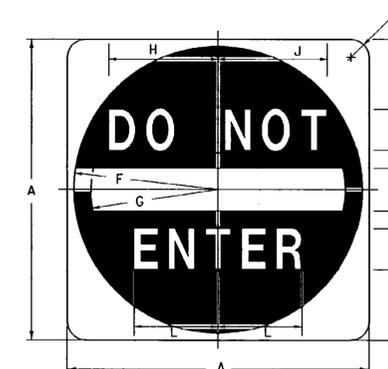
R3-2



R3-1

NOTE:
 USE SAME ARROW DETAIL FOR R3-1 AND R3-2
COLORS
 CIRCLE AND DIAGONAL - RED (REFL)
 ARROW AND BORDER - BLACK (NON - REFL)
 BACKGROUND - WHITE (REFL)

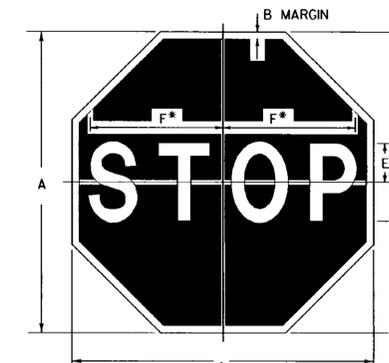
SIGN	DIMENSIONS (mm)											
	A	B	C	D	E	F	G	H	J	K	L	
MIN. AND STD.	600	10	15	265	215	35	60	265	285	50	10	
SPECIAL	750	10	20	330	270	45	80	330	360	60	15	
EXPWY.	900	15	20	395	320	55	95	395	430	75	20	
SPECIAL	1200	20	35	525	425	75	125	525	575	100	25	



COLORS
 SYMBOL - RED (REFL)
 LEGEND AND BACKGROUND - WHITE (REFL)
 ENCAPSULATED LENS

R5-1

SIGN	DIMENSIONS (mm)											
	A	B	C	D	E	F	G	H	J	K	L	
MIN. AND STD.	750	165	1000	50	120	360	30	248	254	45	199	
EXPWY.	900	190	1250	60	150	435	375	309	319	55	249	
SPECIAL	1200	275	1500	75	200	585	500	370	383	75	298	



* REDUCE SPACING 40 %
COLORS
 LEGEND - WHITE (REFL)
 BACKGROUND - RED (REFL)
 ENCAPSULATED LENS

R1-1

SIGN	DIMENSIONS (mm)					
	A	B	C	D	E	F
BIKE	450	10	150	150C	75	196
MIN.	600	15	200	200C	100	254
STD.	750	20	250	250C	125	318
EXPWY.	900	20	300	300C	150	382
SPECIAL	1200	30	400	400C	200	508

GENERAL:

- SEE STANDARD E-144M FOR ARROWHEAD DETAILS.

COLORS:

THE REGULATORY SIGNS SHOWN ON THIS SHEET SHALL BE AS DETAILED FOR EACH SIGN. THE COLORS SHALL CONFORM WITH THE COLORS ADOPTED BY AASHTO AND APPROVED BY THE FHWA.

MATERIALS:

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

	300 X 300 450 X 450	600 X 600 750 X 450 750 X 750	900 X 300 900 X 900 1050 X 750 1200 X 1200
FLAT SHEET ALUMINUM	1.52 mm	2.03 mm	2.54 mm
HIGH DENSITY OVERLAID PLYWOOD	13 mm	13 mm	16 mm
GALVANIZED FLAT SHEET STEEL	1.32 mm	1.63 mm	2.01 mm

THE REFLECTIVE MATERIAL SHALL BE AASHTO TYPE II OR III WHITE 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. HAND PAINTING MUST BE COMPARABLE IN QUALITY TO THE RESULTS OBTAINED BY SILK SCREENING. ENCAPSULATED LENS REFLECTIVE SHEETING SHALL BE USED FOR THE SIGN BACKGROUND WHERE NOTED.

SPECIFICATIONS:

REGULATORY SIGNS SHALL MEET THE VERMONT STANDARD SPECIFICATIONS FOR TRAFFIC SIGNS AS PRESCRIBED IN THE VDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

TEXT DESIGN:

LETTERS, DIGITS, ARROWS, SPACING AND TEXT DIMENSIONS SHALL CONFORM TO THE LATEST VERSION OF FHWA'S "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS". DETAILS SHALL CONFORM WITH THOSE PRESCRIBED IN THE PUBLICATION "STANDARD HIGHWAY SIGNS" AS SPECIFIED IN THE MUTCD.

REVISIONS AND CORRECTIONS

JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

[Signature]
 DIRECTOR OF ENGINEERING
[Signature]
 DIRECTOR OF CONSTRUCTION AND MAINTENANCE

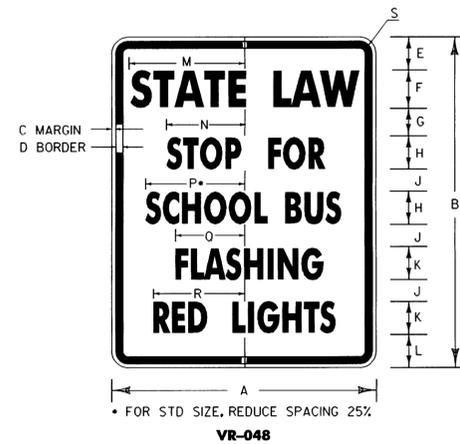
**REGULATORY SIGN
 DETAILS**

**OTHER STDS. E-144M
 REQUIRED:**

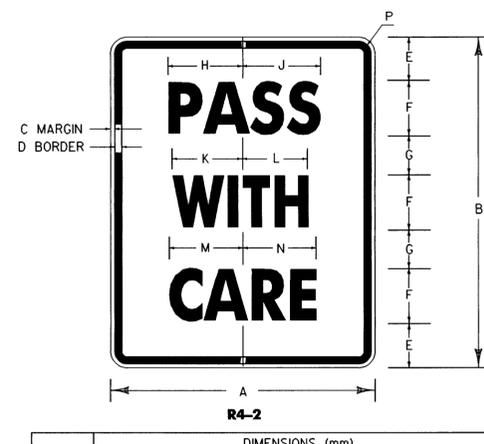
NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.



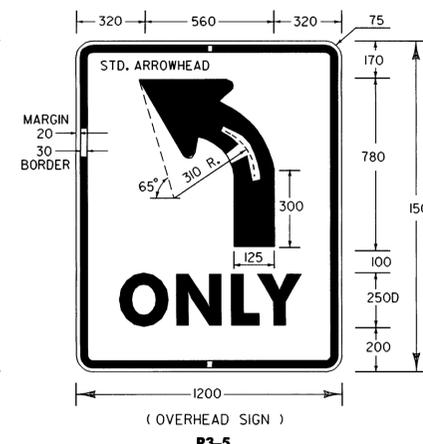
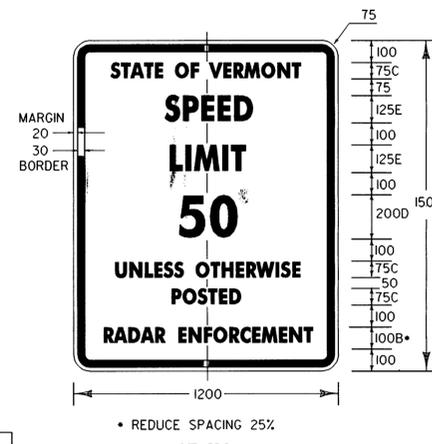
**Metric
 STANDARD
 E-143M**



SIGN	DIMENSIONS (mm)																
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S
STD.	600	750	10	15	85	100B	75	75B	35	75B	85	241	180	216	159	210	35
EXPWY. & FWY.	1200	1500	20	30	150	175C	125	150B	100	150B	150	533	360	457	320	420	75

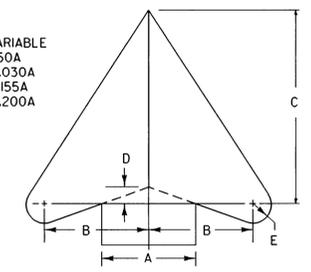


SIGN	DIMENSIONS (mm)														
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	
MIN.	450	600	10	15	85	100C	65	139	144	127	121	136	140	35	
STD.	600	750	10	15	85	150C	65	207	215	189	183	202	210	35	
EXPWY.	900	1200	15	20	175	200C	125	276	286	253	242	271	280	55	
FWY.	1200	1500	20	30	200	250C	175	347	358	317	304	339	350	75	



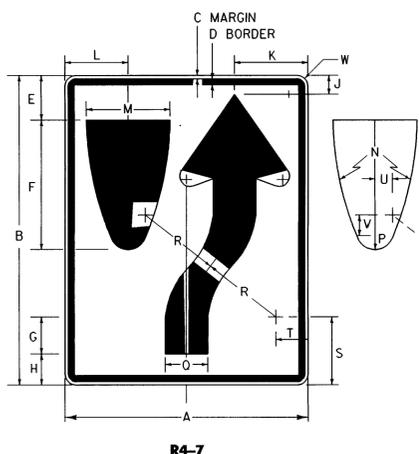
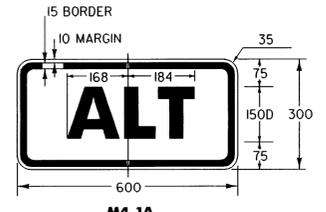
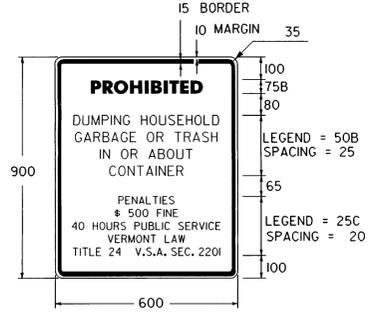
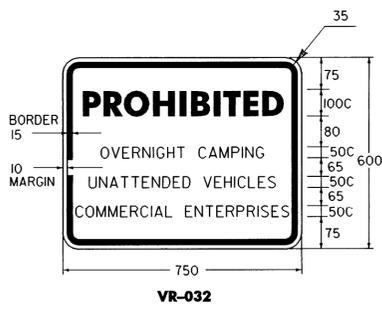
ARROW HEAD DETAIL

A=VARIABLE
B=1.50A
C=2.030A
D=0.155A
E=0.200A



DIMENSIONS (mm)				
A	B	C	D	E
50	58	102	8	10
55	63	112	9	11
60	69	122	9	12
65	75	132	10	13
70	81	142	11	14
75	86	152	12	15
80	92	162	12	16
85	98	173	13	17
90	104	183	14	18
95	109	193	15	19
100	115	203	16	20
105	121	213	16	21
110	127	223	17	22

DIMENSIONS (mm)				
A	B	C	D	E
115	132	233	18	23
120	138	244	19	24
125	144	254	19	25
130	150	264	20	26
140	161	284	22	28
145	167	294	22	29
150	173	305	23	30
155	178	315	24	31
160	184	325	25	32
165	190	335	26	33
170	196	345	26	34
175	201	355	27	35
180	207	365	28	36
185	213	376	29	37
190	219	386	29	38
195	224	396	30	39
200	230	406	31	40



NOTES:

COLORS:

THE REGULATORY SIGNS SHOWN ON THIS SHEET SHALL HAVE BLACK TEXT ON REFLECTORIZED WHITE BACKGROUND, UNLESS OTHERWISE NOTED. THE COLORS SHALL CONFORM WITH THE COLORS ADOPTED BY AASHTO AND APPROVED BY THE FHWA.

MATERIALS:

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

600 X 300	1.52 mm	2.03 mm	2.54 mm
600 X 600	1.52 mm	1.63 mm	2.01 mm
600 X 750	1.52 mm	1.63 mm	2.01 mm
600 X 900	1.52 mm	1.63 mm	2.01 mm
450 X 600	1.52 mm	1.63 mm	2.01 mm
900 X 1200	1.52 mm	1.63 mm	2.01 mm
1200 X 1500	1.52 mm	1.63 mm	2.01 mm

FLAT SHEET ALUMINUM
HIGH DENSITY OVERLAID PLYWOOD
GALVANIZED FLAT SHEET STEEL

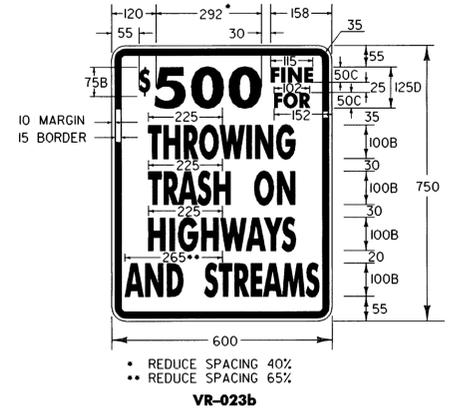
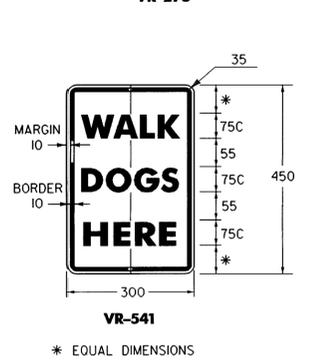
THE REFLECTIVE MATERIAL FOR GROUND MOUNTED SIGNS SHALL BE AASHTO TYPE II OR III WHITE REFLECTIVE SHEETING APPLIED TO THE ENTIRE BACKGROUND OF THE SIGN. IF MOUNTED OVERHEAD, ALL SIGNS SHALL HAVE ENCAPSULATED LENS REFLECTIVE SHEETING APPLIED TO THE ENTIRE BACKGROUND OF THE SIGN. THE TEXT OF THE SIGNS MAY BE LET-TERING FILM, SILK SCREENED OR HAND PAINTED. HAND PAINTING MUST BE COMPARABLE IN QUALITY TO THE RESULTS OBTAINED BY SILK SCREENING.

SPECIFICATIONS:

REGULATORY SIGNS SHALL MEET THE VERMONT STANDARD SPECIFICATIONS FOR TRAFFIC SIGNS AS PRESCRIBED IN THE VDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

TEXT DESIGN:

LETTERS, DIGITS, ARROWS, SPACING AND TEXT DIMENSIONS SHALL CONFORM TO THE LATEST VERSION OF FHWA'S 'STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS'. DESIGNS SHALL CONFORM WITH THOSE PRESCRIBED IN THE PUBLICATION 'STANDARD HIGHWAY SIGNS' AS SPECIFIED IN THE MUTCD.



SIGN	DIMENSIONS (mm)										
	A	B	C	D	E	F	G	H	J	K	
MIN	450	600	10	15	95	235	45	55	35	135	
STD	600	750	10	15	110	310	65	75	45	185	
EXPWY	900	1200	15	20	170	470	95	110	70	280	
FWY	1200	1500	20	30	225	625	125	150	95	370	
MIN	115	150	560	35	75	170	100	55	30	10	35
STD	155	200	750	50	100	225	140	75	35	70	35
EXPWY	235	300	1125	75	150	335	205	115	50	70	55
FWY	310	400	1500	100	200	450	275	150	70	125	75

REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE
FEB. 2, 1998 - REMOVED VR-023, REPLACED WITH VR-278

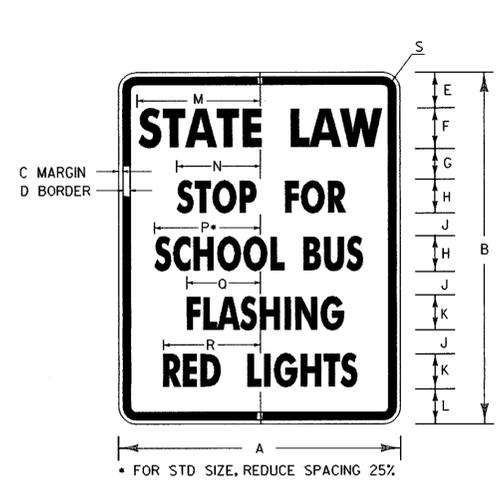
APPROVED
[Signature]
DIRECTOR OF PROJECT DEVELOPMENT
[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

REGULATORY SIGN
DETAILS

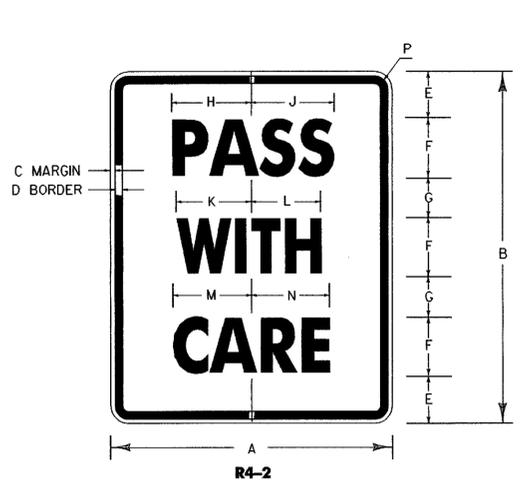
OTHER STDS. NONE REQUIRED:
NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

VERMONT AGENCY OF TRANSPORTATION

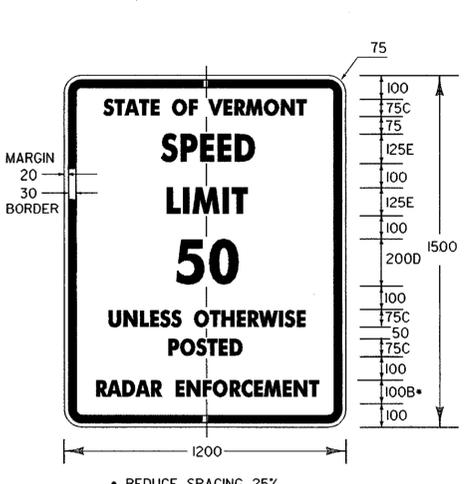
Metric
STANDARD
E-144M



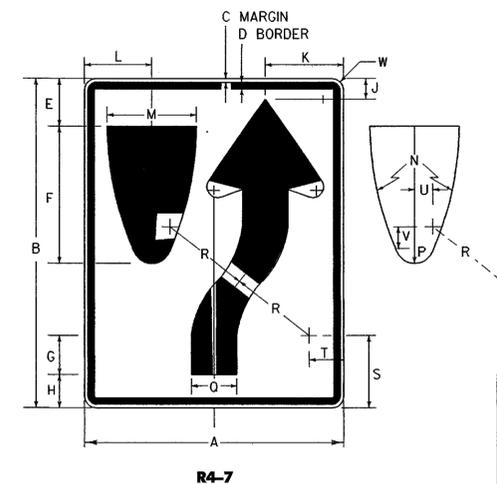
VR-048
• FOR STD SIZE, REDUCE SPACING 25%



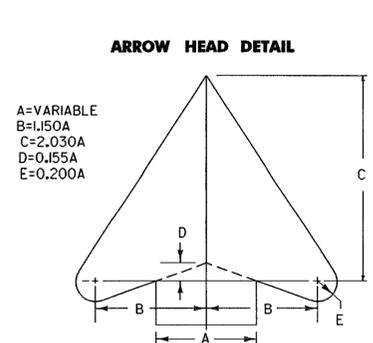
R4-2



VR-114
• REDUCE SPACING 25%



R4-7



A=VARIABLE
B=1.150A
C=2.030A
D=0.155A
E=0.200A

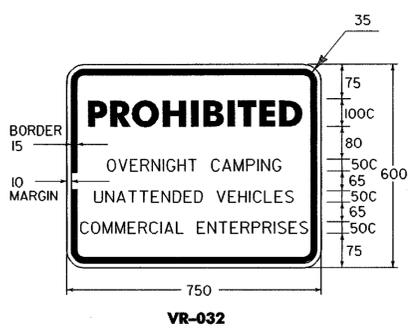
SIGN	DIMENSIONS (mm)																
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S
STD.	600	750	10	15	85	100B	75	75B	35	75B	85	241	180	216	159	210	35
EXPWY. & FWY.	1200	1500	20	30	150	175C	125	150B	100	150B	150	533	360	457	320	420	75

SIGN	DIMENSIONS (mm)													
	A	B	C	D	E	F	G	H	J	K	L	M	N	P
MIN.	450	600	10	15	85	100C	65	139	144	127	121	136	140	35
STD.	600	750	10	15	85	150C	65	207	215	189	183	202	210	35
EXPWY.	900	1200	15	20	175	200C	125	276	286	253	242	271	280	55
FWY.	1200	1500	20	30	200	250C	175	347	358	317	304	339	350	75

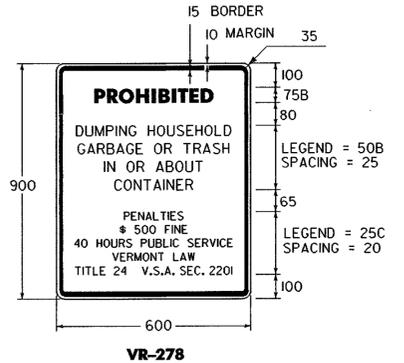
SIGN	DIMENSIONS (mm)										
	A	B	C	D	E	F	G	H	J	K	
MIN	450	600	10	15	95	235	45	55	35	135	
STD	600	750	10	15	110	310	65	75	45	185	
EXPWY	900	1200	15	20	170	470	95	110	70	280	
FWY	1200	1500	20	30	225	625	125	150	95	370	
MIN	115	150	560	35	75	170	100	55	30	10	35
STD	155	200	750	50	100	225	140	75	35	70	35
EXPWY	235	300	1125	75	150	335	205	115	50	70	55
FWY	310	400	1500	100	200	450	275	150	70	125	75

DIMENSIONS (mm)				
A	B	C	D	E
50	58	102	8	10
55	63	112	9	11
60	69	122	9	12
65	75	132	10	13
70	81	142	11	14
75	86	152	12	15
80	92	162	12	16
85	98	173	13	17
90	104	183	14	18
95	109	193	15	19
100	115	203	16	20
105	121	213	16	21
110	127	223	17	22

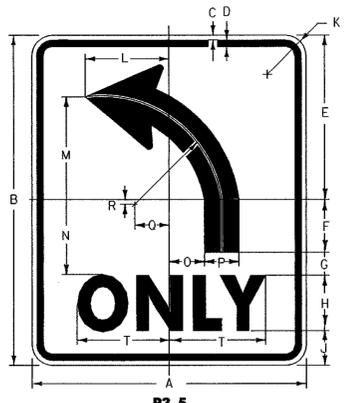
DIMENSIONS (mm)				
A	B	C	D	E
115	132	233	18	23
120	138	244	19	24
125	144	254	19	25
130	150	264	20	26
135	155	274	21	27
140	161	284	22	28
145	167	294	22	29
150	173	305	23	30
155	178	315	24	31
160	184	325	25	32
165	190	335	25	33
170	196	345	26	34
175	201	355	27	35
180	207	365	28	36
185	213	376	29	37
190	219	386	29	38
195	224	396	30	39
200	230	406	31	40



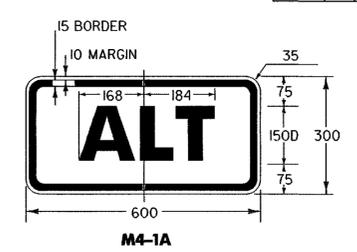
VR-032



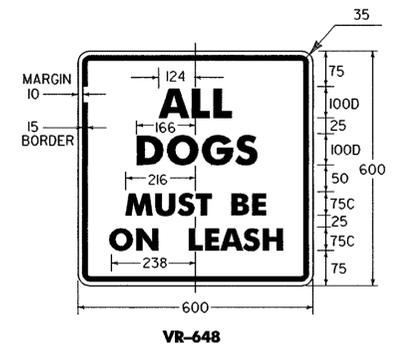
VR-278



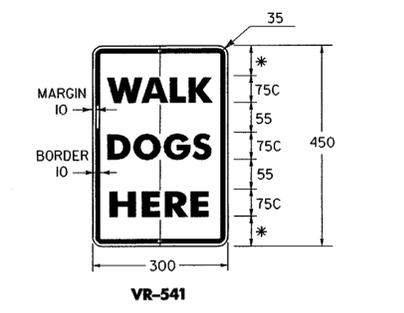
R3-5



M4-1A



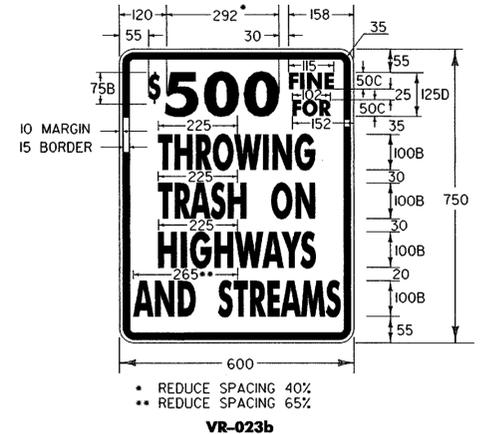
VR-648



VR-541

* EQUAL DIMENSIONS

SIGN	DIMENSIONS (INCHES)									
	A	B	C	D	E	F	G	H	J	
STD	750	900	10	20	450	144	63	1500	94	
EXPWY	900	1200	15	20	600	173	65	2000	278	
FWY	1200	1500	20	30	169	781	100	2500	200	
STD	47	231	281	206	97	94	94	10	237	252
EXPWY	56	231	458	245	116	113	113	15	288	336
FWY	75	366	578	325	155	125	150	20	385	420



VR-023b

• REDUCE SPACING 40%
•• REDUCE SPACING 65%

NOTES:

COLORS:

THE REGULATORY SIGNS SHOWN ON THIS SHEET SHALL HAVE BLACK TEXT ON REFLECTORIZED WHITE BACKGROUND, UNLESS OTHERWISE NOTED. THE COLORS SHALL CONFORM WITH THE COLORS ADOPTED BY AASHTO AND APPROVED BY THE FHWA.

MATERIALS:

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

600 X 300	1.52 mm	2.03 mm	2.54 mm
600 X 600	1.52 mm	2.03 mm	2.54 mm
600 X 750	1.52 mm	2.03 mm	2.54 mm
600 X 900	1.52 mm	2.03 mm	2.54 mm
750 X 600	1.52 mm	2.03 mm	2.54 mm
900 X 1200	1.52 mm	2.03 mm	2.54 mm
1200 X 1500	1.52 mm	2.03 mm	2.54 mm

FLAT SHEET ALUMINUM 1.52 mm
HIGH DENSITY OVERLAP PLYWOOD 13 mm
GALVANIZED FLAT SHEET STEEL 1.52 mm

THE REFLECTIVE MATERIAL FOR GROUND MOUNTED SIGNS SHALL BE AASHTO TYPE II OR III WHITE REFLECTIVE SHEETING APPLIED TO THE ENTIRE BACKGROUND OF THE SIGN. IF MOUNTED OVERHEAD, ALL SIGNS SHALL HAVE ENCAPSULATED LENS REFLECTIVE SHEETING APPLIED TO THE ENTIRE BACKGROUND OF THE SIGN. THE TEXT OF THE SIGNS MAY BE LETTERING FILM, SILK SCREENED OR HAND PAINTED. HAND PAINTING MUST BE COMPARABLE IN QUALITY TO THE RESULTS OBTAINED BY SILK SCREENING.

SPECIFICATIONS:

REGULATORY SIGNS SHALL MEET THE VERMONT STANDARD SPECIFICATIONS FOR TRAFFIC SIGNS AS PRESCRIBED IN THE VDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

TEXT DESIGN:

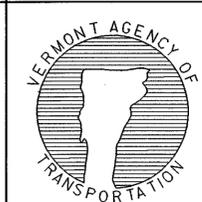
LETTERS, DIGITS, ARROWS, SPACING AND TEXT DIMENSIONS SHALL CONFORM TO THE LATEST VERSION OF FHWA'S 'STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS'. DESIGNS SHALL CONFORM WITH THOSE PRESCRIBED IN THE PUBLICATION 'STANDARD HIGHWAY SIGNS' AS SPECIFIED IN THE MUTCD.

REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE
FEB. 2, 1998 - REMOVED VR-023, REPLACED WITH VR-278
MARCH 29, 1999 - ADDED SIZE CHART TO R3-5

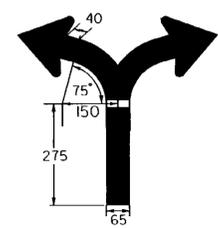
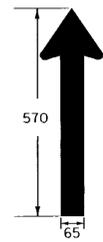
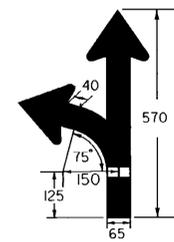
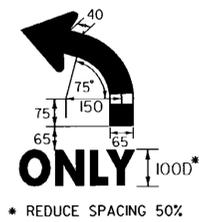
APPROVED
[Signature]
DIRECTOR OF PROJECT DEVELOPMENT

REGULATORY SIGN DETAILS

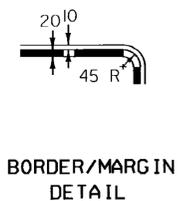
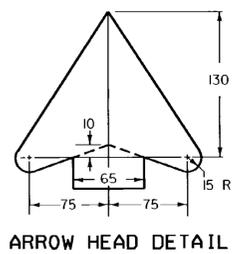
OTHER STDS. NONE REQUIRED:
NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.



Metric
STANDARD
E-144M



SYMBOL DETAILS

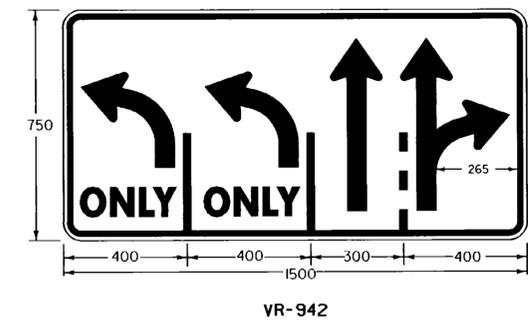
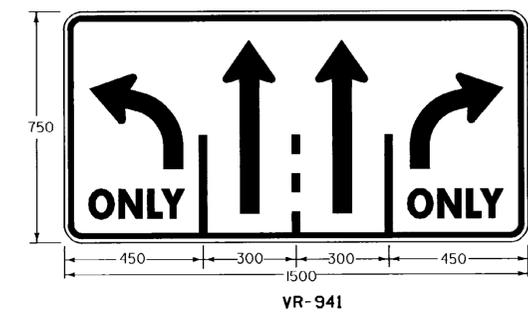
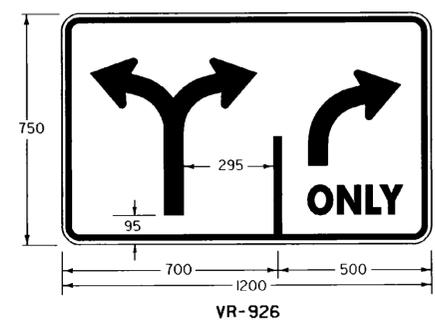
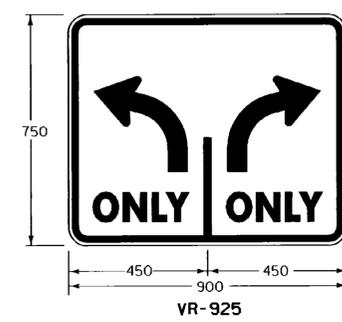
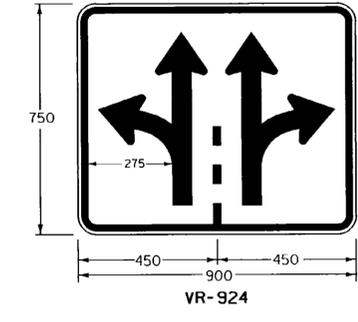
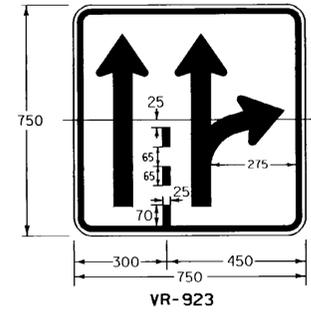
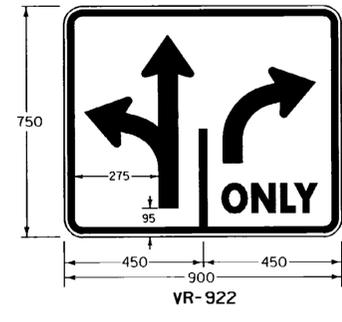
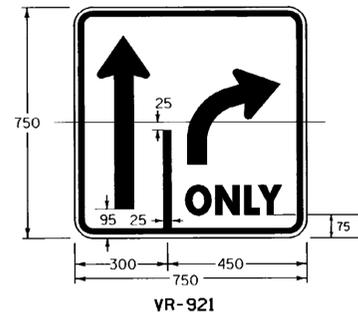


NOTES:

1. OPTICALLY CENTER SYMBOLS WITHIN SECTIONS UNLESS OTHERWISE NOTED.
2. "VR-9XX" IS THE SIGN CODE NUMBER.
3. MIRROR IMAGES ARE NOT SHOWN BUT CARRY THE SAME CODE NUMBER.
4. THESE SIGNS ARE INTENDED FOR GROUND MOUNTING ONLY.
5. OTHER VARIATIONS OF THESE STANDARD DESIGNS ARE DEPICTED IN THE VAOT SIGN IDENTIFICATION MANUAL. WHEN THEY ARE USED, THEY SHOULD BE DESIGNED USING THE DIMENSIONS AND DETAILS SHOWN HERE.

REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED
Paul C. Lewis
DIRECTOR OF ENGINEERING
Stephen D. MacArthur
DIRECTOR OF CONSTRUCTION AND MAINTENANCE



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 AASHTO AND APPROVED BY THE FHWA.

MATERIALS:

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

	750 X 750	900 X 750	1200 X 750 1500 X 750
FLAT SHEET ALUMINUM	2.03 mm	2.54 mm	3.18 mm
HIGH DENSITY OVERLAD PLYWOOD	13 mm	16 mm	16 mm
GALVANIZED FLAT SHEET STEEL	1.63 mm	2.01 mm	2.77 mm

THE REFLECTIVE MATERIAL SHALL BE AASHTO TYPE II OR III WHITE REFLECTIVE SHEETING APPLIED TO THE ENTIRE BACKGROUND OF THE SIGN. THE TEXT OF THE SIGNS MAY BE LET-TERING FILM, SILK SCREENED OR HAND PAINTED. HAND PAINTING MUST BE COMPARABLE IN QUALITY TO THE RESULTS OBTAINED BY SILK SCREENING.

SPECIFICATIONS:

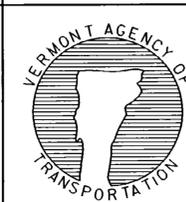
REGULATORY SIGNS SHALL MEET THE REQUIREMENTS FOR TRAFFIC SIGNS AS PRESCRIBED IN THE "VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION".

TEXT DESIGN:

LETTERS, DIGITS, ARROWS, SPACING AND TEXT DIMENSIONS SHALL CONFORM TO THE LATEST VERSION OF FHWA'S "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING'S" AND DESIGNS PRESCRIBED IN THE "STANDARD HIGHWAY SIGNS" AS SPECIFIED IN THE MUTCD.

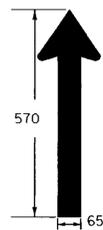
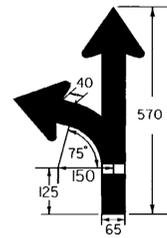
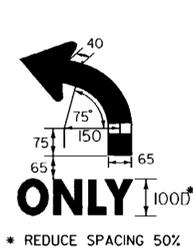
OTHER STDS. REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

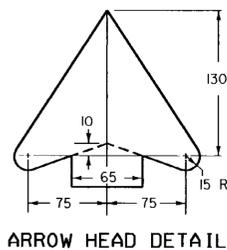


Metric
STANDARD
E-145AM

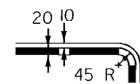
REGULATORY SIGN DETAILS
LANE USE CONTROL SIGNS
TWO AND FOUR LANE APPROACHES



SYMBOL DETAILS



ARROW HEAD DETAIL



BORDER/MARGIN DETAIL

NOTES:

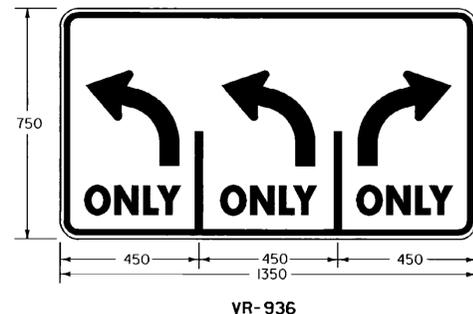
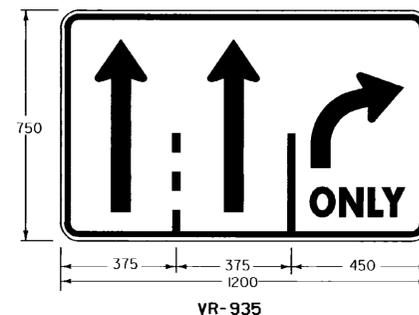
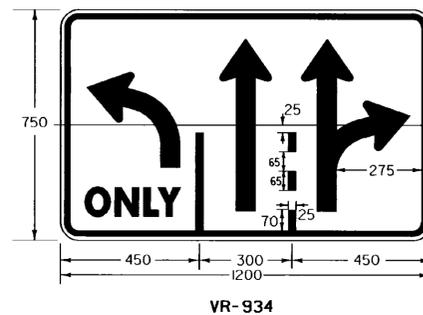
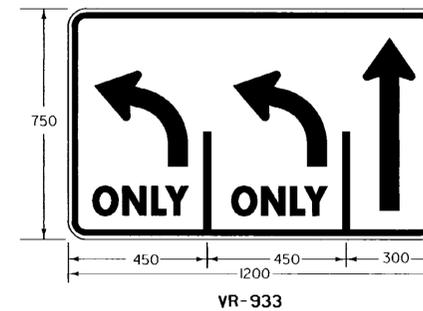
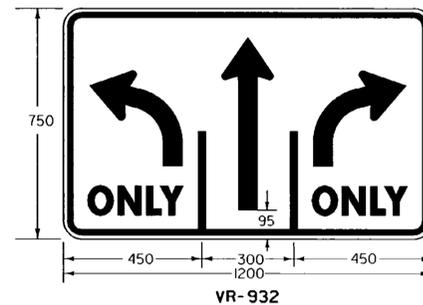
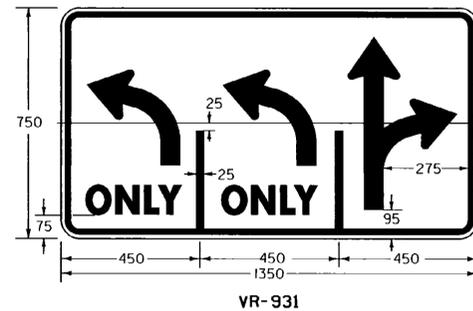
1. OPTICALLY CENTER SYMBOLS WITHIN SECTIONS UNLESS OTHERWISE NOTED.
2. "VR-9XX" IS THE SIGN CODE NUMBER.
3. MIRROR IMAGES ARE NOT SHOWN BUT CARRY THE SAME CODE NUMBER.
4. THESE SIGNS ARE INTENDED FOR GROUND MOUNTING ONLY.
5. OTHER VARIATIONS OF THESE STANDARD DESIGNS ARE DEPICTED IN THE VT SIGN IDENTIFICATION MANUAL. WHEN THEY ARE USED THEY SHOULD BE DESIGNED USING THE DIMENSIONS AND DETAILS SHOWN HERE.

REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

[Signature]
DIRECTOR OF ENGINEERING
[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

REGULATORY SIGN DETAILS
LANE USE CONTROL SIGNS
THREE LANE APPROACHES



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 AASHTO AND APPROVED BY THE FHWA.

MATERIALS:

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

FLAT SHEET ALUMINUM	3.18 mm
HIGH DENSITY OVERLAID PLYWOOD	16 mm
GALVANIZED FLAT SHEET STEEL	2.77 mm
1200 X 750	
1350 X 750	

THE REFLECTIVE MATERIAL SHALL BE AASHTO TYPE II OR III 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. HAND PAINTING MUST BE COMPARABLE IN QUALITY TO THE RESULTS OBTAINED BY SILK SCREENING.

SPECIFICATIONS:

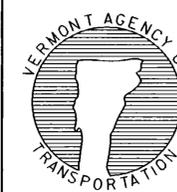
REGULATORY SIGNS SHALL MEET THE REQUIREMENTS FOR TRAFFIC SIGNS AS PRESCRIBED IN THE "VAOT VERMONT STANDARD SPECIFICATIONS FOR TRAFFIC CONSTRUCTION".

TEXT DESIGN:

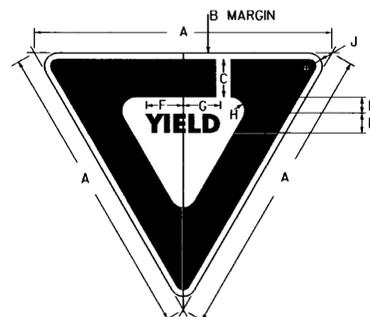
LETTERS, DIGITS, ARROWS, SPACING AND TEXT DIMENSIONS SHALL CONFORM WITH THE "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS" AND DESIGNS PRESCRIBED IN THE "STANDARD HIGHWAY SIGNS" AS SPECIFIED IN THE MUTCD.

OTHER STDS. REQUIRED

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.



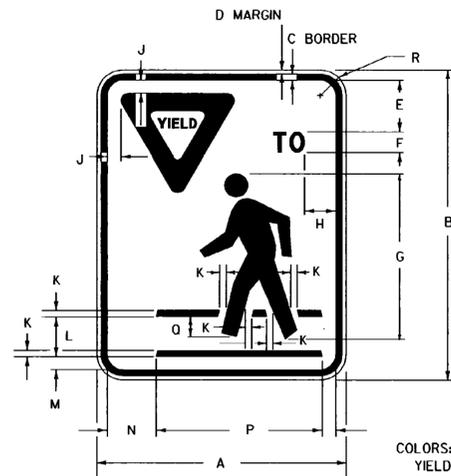
Metric
STANDARD
E-145BM



COLORS
LEGEND AND BORDER - RED (REFL.)
BACKGROUND - WHITE (REFL.)
ENCAPSULATED LENS

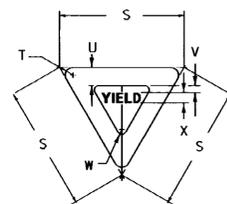
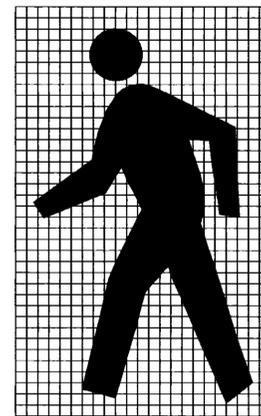
R1-2

SIGN	DIMENSIONS (mm)										
	A	B	C	D	E	F	G	H	J		
BIKE	600	101	75	25	50C	83	76	20	35		
MIN.	750	15	100	45	60C	100	92	20	35		
STD.	900	20	125	50	75C	120	111	30	50		
EXPWY.	1200	25	150	70	100C	158	150	50	75		
SPECIAL	1500	35	200	90	125C	199	185	65	100		



VR-004A

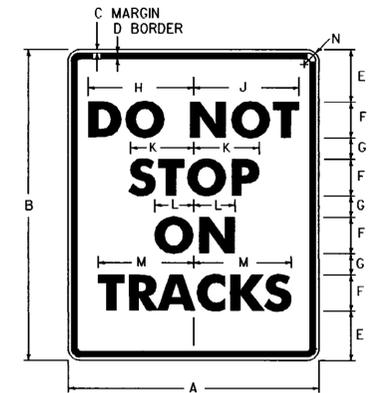
COLORS:
YIELD TO PEDESTRIAN SIGNS HAVE A BLACK PEDESTRIAN SYMBOL, BLACK TEXT, A BLACK BORDER AND A REFLECTORIZED RED YIELD SYMBOL ON A REFLECTORIZED WHITE BACKGROUND



SIGN	DIMENSIONS (mm)										
	A	B	C	D	E	F	G	H	J	K	L
STD.	600	750	15	10	125	50D	300	55	23	15	80
SIGN	M	N	P	Q	R	S	T	U	V	W	X
STD.	30	120	400	50	35	300	20	45	17	11	250

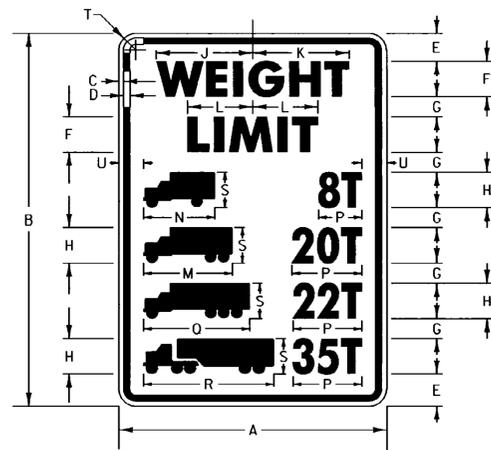


COLORS
LEGEND - RED (REFL.)
BACKGROUND - WHITE (REFL.)
VR - 020



R8-8

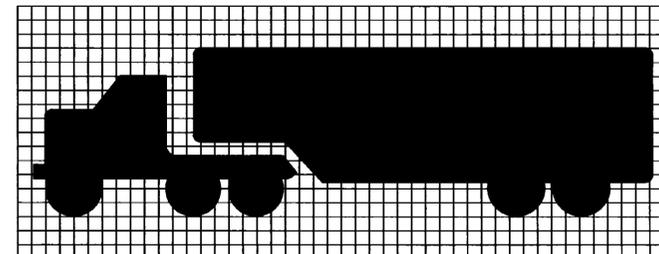
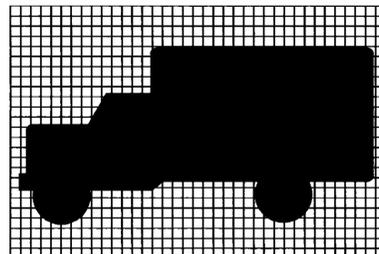
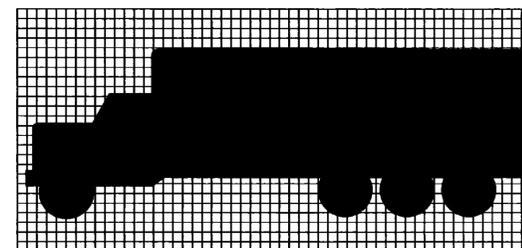
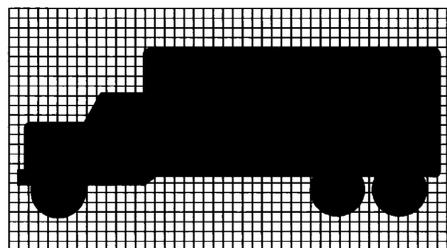
SIGN	DIMENSIONS (mm)												
	A	B	C	D	E	F	G	H	J	K	L	M	N
STD.	600	750	10	15	85	100D	60	233	244	165	88	254	35
SPECIAL	900	1200	15	20	150	150D	100	353	366	248	134	381	55
SPECIAL	1200	1500	20	30	185	200D	110	469	489	332	178	508	75



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

VR-015

SIGN	DIMENSIONS (mm)																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U
MIN.	600	900	10	15	70	75E	62	75C	200	213	140	180	150	var	240	275	75	35	68
STD.	750	1050	10	20	85	100E	56	100C	267	284	187	250	200	var	300	365	100	35	70
EXPWY.	900	1350	15	20	100	125E	80	125C	332	355	232	310	250	var	375	460	125	55	75
FWY.	1200	1650	20	30	95	150E	112	150C	400	426	279	400	300	var	450	550	150	75	125



COLORS:

THE REGULATORY SIGNS SHOWN ON THIS SHEET SHALL BE AS DETAILED FOR EACH SIGN. THE COLORS SHALL CONFORM WITH THE COLORS ADOPTED BY AASHTO AND APPROVED BY THE FHWA.

MATERIALS:

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

600 ∇	900 ∇	
750 ∇	900 X 1200	
600 X 750	900 X 1350	
600 X 900	1200 X 1500	1200 ∇
750 X 1050	1200 X 1650	1500 ∇

FLAT SHEET ALUMINUM	2.03 mm	2.54 mm	3.18 mm
HIGH DENSITY OVERLAID PLYWOOD	13 mm	16 mm	16 mm
GALVANIZED FLAT SHEET STEEL	1.63 mm	2.01mm	2.77 mm

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

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

SPECIFICATIONS:

REGULATORY SIGNS SHALL MEET THE VERMONT STANDARD SPECIFICATIONS FOR 'TRAFFIC SIGNS' AS PRESCRIBED IN THE VAOI STANDARD SPECIFICATIONS FOR CONSTRUCTION.

TEXT DESIGN:

LETTERS, DIGITS, ARROWS, SPACING AND TEXT DIMENSIONS SHALL CONFORM TO THE LATEST VERSION OF FHWA'S 'STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS'. DESIGNS PRESCRIBED IN THE PUBLICATION 'STANDARD HIGHWAY SIGNS' AS SPECIFIED IN THE MUTCD.

REVISIONS AND CORRECTIONS

JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

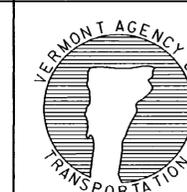
[Signature]
DIRECTOR OF ENGINEERING

[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

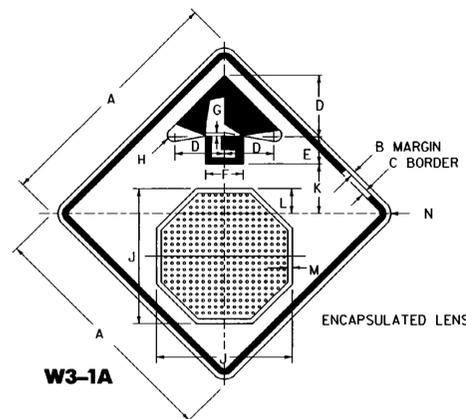
REGULATORY SIGN DETAILS

OTHER STDS.
REQUIRED:

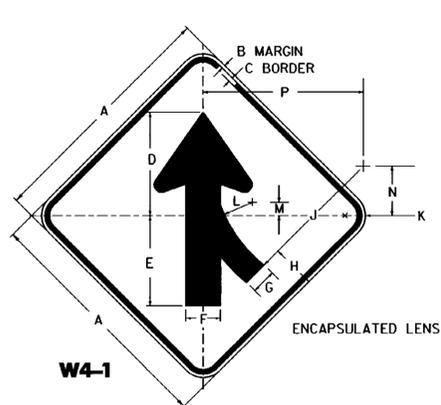
NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.



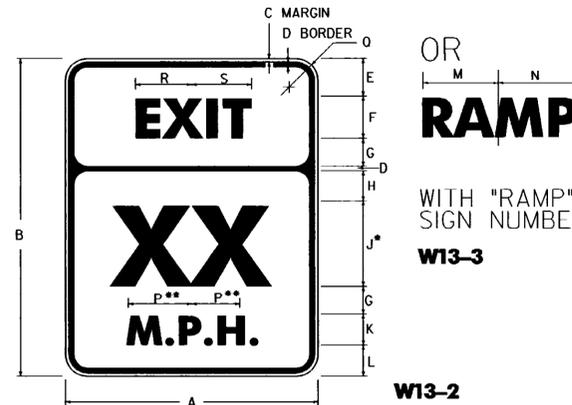
Metric
STANDARD
E-146 M



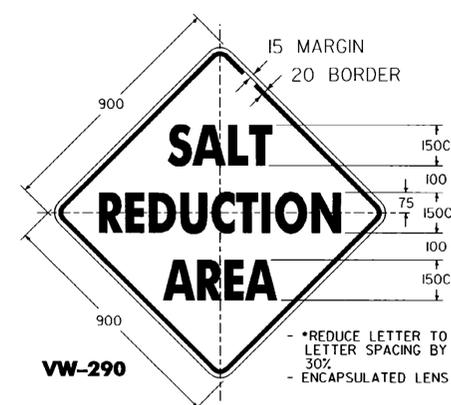
W3-1A



W4-1



W13-2



VW-290

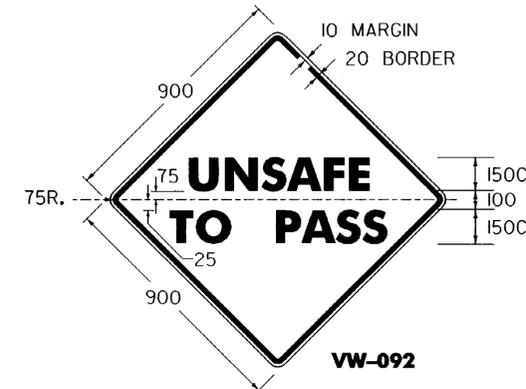
COLORS
BORDER AND ARROW - BLACK (NON-REFL)
SYMBOL - WHITE BORDER ON RED BACKGROUND (REFL)

SIGN	DIMENSIONS (mm)													
	A	B	C	D	E	F	G	H	J	K	L	M	N	P
MIN.	750	10	20	188	95	125	15	8	395	155	75	10	45	
STD.	900	15	20	225	110	150	20	10	475	185	85	15	55	
SPECIAL	1200	20	30	300	150	200	25	12	630	250	110	20	75	

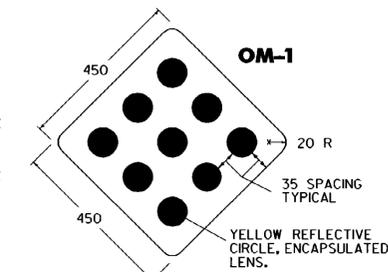
SIGN	DIMENSIONS (mm)														
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	
MIN.	600	10	15	255	220	85	60	105	555	35	160	65	260	555	
STD.	750	10	20	325	275	110	75	130	700	45	200	75	325	695	
EXPWY.	900	15	20	395	330	130	90	160	840	55	240	100	390	835	
FWY.	1200	20	30	510	440	175	120	210	1125	75	320	130	520	1110	

* OPTICALLY SPACE NUMBERS ABOUT VERTICAL CENTERLINE.
** INCREASE SPACING 100%.
- THE "RAMP" SPEED SIGN IS USED ON RAMP'S LEADING FROM ONE FREEWAY TO ANOTHER AND THE "EXIT" SPEED SIGN IS USED ON NORMAL EXITS.

SIGN	DIMENSIONS (mm)																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	O	R	S		
MIN. & STD.	600	750	10	15	85	100E	65	70	200E	75E	75	209	217	135	35	155	163		
EXPWY.	900	1200	15	20	150	150E	100	130	300E	100E	150	313	324	180	55	235	242		
FWY.	1200	1500	20	30	175	200E	125	145	400E	150E	150	418	432	269	75	310	324		

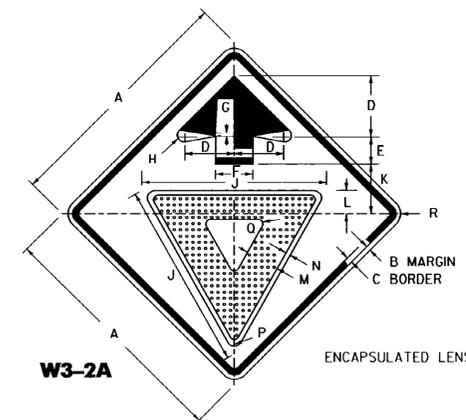


VW-092

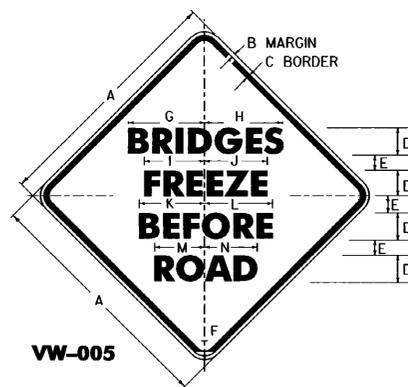


OM-1

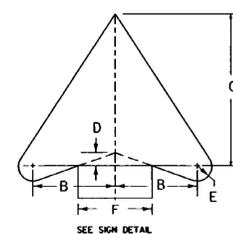
HAZARD MARKERS SHALL BE OF 1.52-mm FLAT SHEET ALUMINUM OR 1.32-mm GALVANIZED FLAT SHEET STEEL, WITH A NON-REFLECTIVE YELLOW BACKGROUND AND NINE 100-mm DIA. CIRCLES EVENLY SPACED WITH MATERIALS AS NOTED ABOVE.



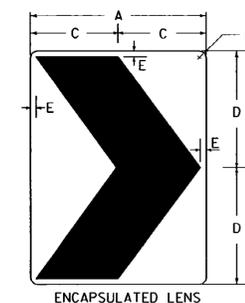
W3-2A



VW-005



SEE SIGN DETAIL



ENCAPSULATED LENS

W1-8

COLORS

ALL THE WARNING SIGNS SHOWN ON THIS SHEET SHALL HAVE BLACK TEXT AND SYMBOLS ON REFLECTORIZED YELLOW BACKGROUND EXCEPT AS OTHERWISE NOTED. THE COLORS SHALL CONFORM WITH THE COLORS ADOPTED BY AASHTO AND APPROVED BY THE FHWA.

MATERIALS

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

	600 x 600	600 x 750	900 x 900	1200 x 1200
300 x 450	600 x 750	750 x 750	900 x 1200	1200 x 1500
450 x 600	750 x 900	900 x 900	1200 x 1200	1200 x 1500
FLAT SHEET ALUMINUM	1.52 mm	2.03 mm	2.54 mm	3.18 mm
HIGH DENSITY OVERLAID PLYWOOD	13 mm	16 mm	16 mm	16 mm
GALVANIZED FLAT SHEET STEEL	1.32 mm	1.63 mm	2.01 mm	2.77 mm

THE TEXT, BORDER AND SYMBOL SHALL BE LETTERING FILM, SILK SCREENED OR HAND PAINTED. IF HAND PAINTED, POOR WORKMANSHIP SHALL BE CAUSE FOR REJECTION. ENCAPSULATED LENS REFLECTIVE SHEETING SHALL BE USED FOR THE SIGN BACKGROUND WHERE NOTED.

TEXT DESIGN

LETTERS, DIGITS, SYMBOLS, SPACINGS AND TEXT DIMENSIONS SHALL CONFORM TO THE LATEST VERSION OF FHWA'S "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS". DESIGNS SHALL CONFORM WITH THOSE PRESCRIBED IN THE MUTCD.

SPECIFICATIONS

WARNING SIGNS SHALL MEET THE VERMONT STANDARD SPECIFICATIONS FOR "TRAFFIC SIGNS" AS PRESCRIBED IN THE VDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

REVISIONS AND CORRECTIONS

JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

[Signature]
DIRECTOR OF ENGINEERING

[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

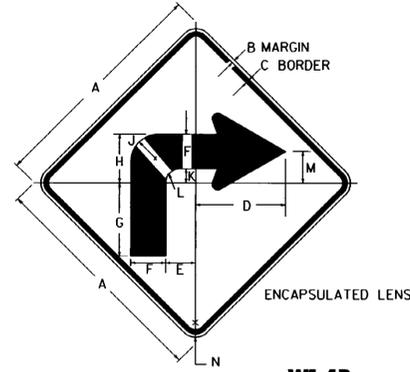
WARNING SIGN
DETAILS

OTHER STDS.
REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

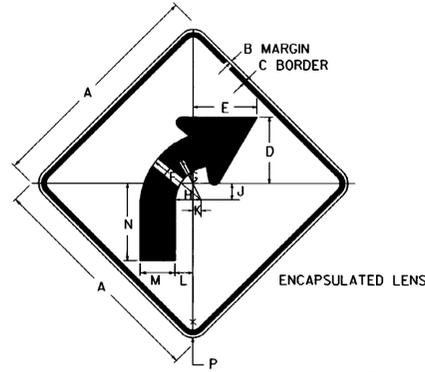


Metric
STANDARD
E-150M



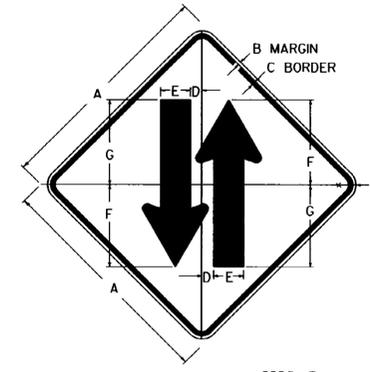
W1-1R

SIGN	DIMENSIONS (mm)												
	A	B	C	D	E	F	G	H	J	K	L	M	N
BIKE	450	10	15	180	55	65	145	95	45	27.5	15	60	35
MIN.	600	10	15	240	75	85	195	125	60	37.5	20	80	35
STD.	750	10	20	300	95	110	240	155	75	45	25	100	45
EXPWY.	900	15	20	360	110	130	290	185	90	55	30	120	55
SPECIAL	1200	20	30	480	150	175	385	250	120	72.5	40	160	75



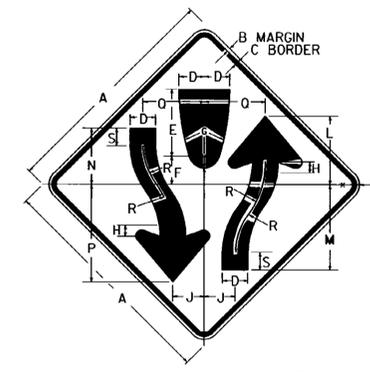
W1-2R

SIGN	DIMENSIONS (mm)													
	A	B	C	D	E	F	G	H	J	K	L	M	N	P
BIKE	450	10	15	135	135	150	117.5	85	45	35	50	65	155	35
MIN.	600	10	15	180	180	200	152.5	110	60	40	70	85	205	35
STD.	750	10	20	220	225	250	195	140	75	55	85	110	260	45
EXPWY.	900	15	20	265	270	300	235	170	85	65	105	130	310	55
FWY.	1200	20	30	355	360	400	312.5	225	115	90	135	175	410	75



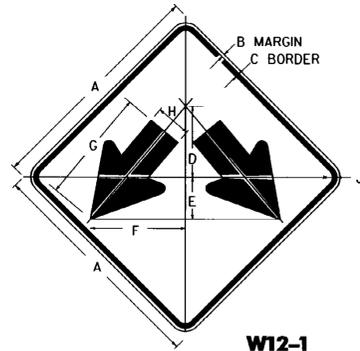
W6-3

SIGN	DIMENSIONS (mm)						
	A	B	C	D	E	F	H
MIN.	600	10	15	50	75	225	210
STD.	750	10	20	60	95	280	265
EXPWY.	900	15	20	75	110	335	320
SPECIAL	1200	20	30	95	150	450	425



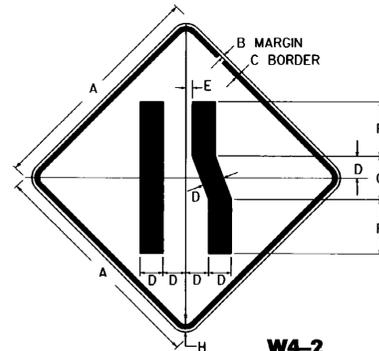
W6-1

SIGN	DIMENSIONS (mm)																
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	O	R	S
MIN.	750	10	20	85	210	105	625	40	105	45	250	290	200	340	195	210	50
STD. & EXPWY.	900	15	20	100	250	125	750	50	125	55	300	350	240	410	235	250	60
SPECIAL	1200	20	30	130	330	165	985	65	165	75	400	405	315	550	310	330	85



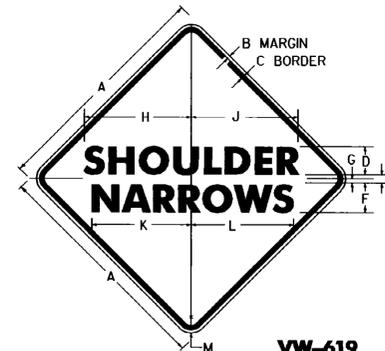
W12-1

SIGN	DIMENSIONS (mm)								
	A	B	C	D	E	F	G	H	J
STD. & MIN.	600	10	15	200	105	245	290	80	35
SPECIAL	750	10	20	250	130	310	365	100	45
SPECIAL	900	15	20	300	155	365	435	120	55



W4-2

SIGN	DIMENSIONS (mm)						
	A	B	C	D	E	F	H
MIN.	750	10	20	85	20	210	170
STD. & EXPWY.	900	15	20	100	25	250	200
FWY.	1200	20	30	135	35	335	265

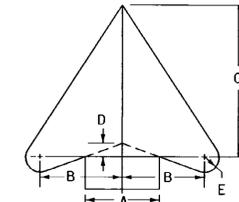


VW-619

SIGN	DIMENSIONS (mm)											
	A	B	C	D	E	F	G	H	J	K	L	M
MIN & STD.	900	15	20	125D	75	125D	25	433	433	398	398	55
EXPWY.	1200	20	30	175C	85	175C	25	507	508	461	461	75

DIMENSIONS (mm)				
A	B	C	D	E
50	58	102	8	10
55	63	112	9	11
60	69	122	9	12
65	75	132	10	13
70	81	142	11	14
75	86	152	12	15
80	92	162	12	16
85	98	173	13	17
90	104	183	14	18
95	109	193	15	19
100	115	203	16	20
105	121	213	16	21
110	127	223	17	22
115	132	233	18	23
120	138	244	19	24
125	144	254	19	25
130	150	264	20	26
135	155	274	21	27
140	161	284	22	28
145	167	294	22	29
150	173	305	23	30
155	178	315	24	31
160	184	325	25	32
165	190	335	26	33
170	196	345	26	34
175	201	355	27	35
180	207	365	28	36
185	213	376	29	37
190	219	386	29	38
195	224	396	30	39
200	230	406	31	40

A = VARIABLE
B = 1.50A
C = 2.030A
D = 0.155A
E = 0.200A



SEE SIGN DETAIL
FOR APPROPRIATE WIDTH

COLORS

ALL THE WARNING SIGNS SHOWN ON THIS SHEET SHALL HAVE BLACK TEXT AND SYMBOLS ON REFLECTORIZED YELLOW BACKGROUND EXCEPT AS OTHERWISE NOTED. THE COLORS SHALL CONFORM WITH THE COLORS ADOPTED BY AASHTO AND APPROVED BY THE FHWA.

MATERIALS

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

	600 x 300	1200 x 600
FLAT SHEET ALUMINUM	1.52 mm	2.03 mm
HIGH DENSITY OVERLAP PLYWOOD	13 mm	13 mm
GALVANIZED FLAT SHEET STEEL	1.32 mm	1.63 mm
	600 x 600	900 x 450
	750 x 750	900 x 900
	1500 x 750	1500 x 1500
	2.54 mm	3.18 mm
	16 mm	16 mm
	2.01 mm	2.77 mm

THE TEXT, BORDER AND SYMBOLS SHALL BE LETTERING FILM, SILK SCREENED OR HAND PAINTED, IF HAND PAINTED, POOR WORKMANSHIP SHALL BE CAUSE FOR REJECTION. THE REFLECTIVE MATERIAL SHALL BE REFLECTIVE SHEETING APPLIED TO THE ENTIRE BACKGROUND OF THE SIGN. ENCAPSULATED LENS REFLECTIVE SHEETING SHALL BE USED FOR THE SIGN BACKGROUND WHERE NOTED.

TEXT DESIGN

LETTERS, DIGITS, SYMBOLS, SPACING AND TEXT DIMENSIONS SHALL CONFORM TO THE LATEST VERSION OF FHWA'S "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS". DESIGNS SHALL CONFORM WITH THOSE PRESCRIBED IN THE MUTCD.

SPECIFICATIONS

WARNING SIGNS SHALL MEET THE VERMONT STANDARD SPECIFICATIONS FOR "TRAFFIC SIGNS" AS PRESCRIBED IN THE VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

OTHER STDS. REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS

JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

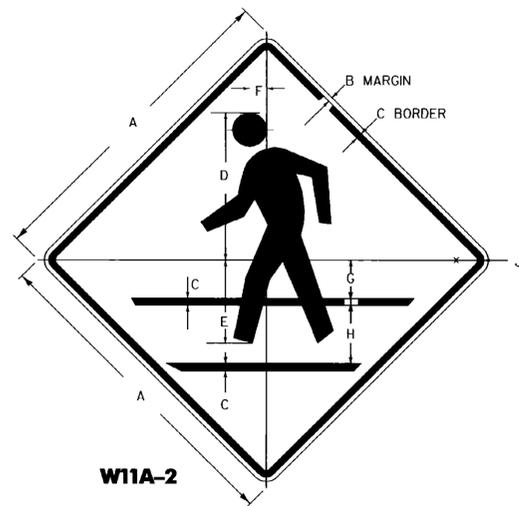
Paul K...
DIRECTOR OF ENGINEERING

Sandra M. Mac...
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

**WARNING SIGNS
DETAIL**

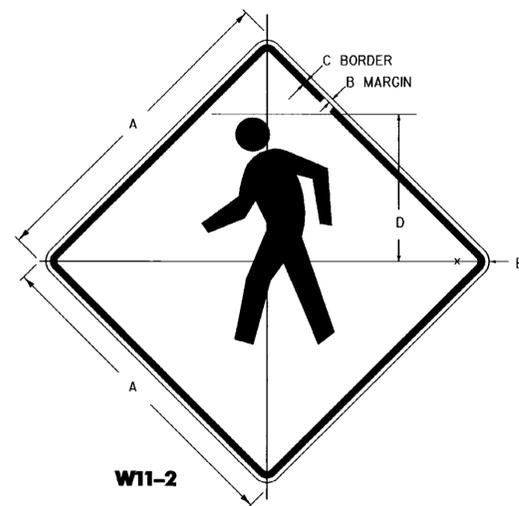


**Metric
STANDARD
E-151M**



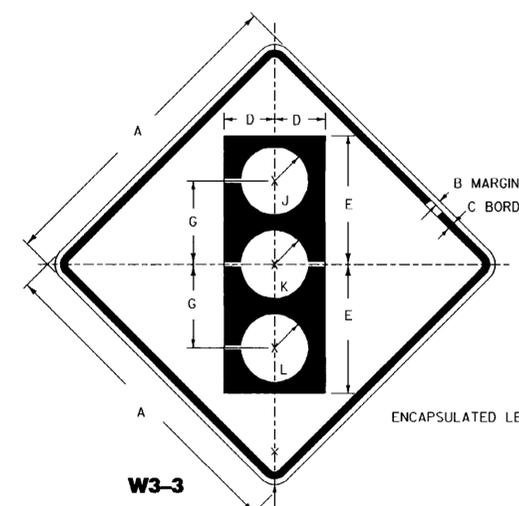
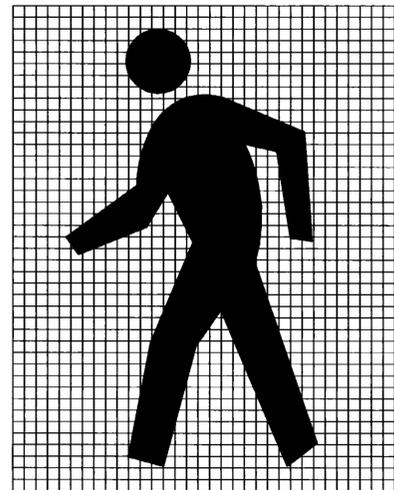
W11A-2

SIGN	DIMENSIONS (mm)									
	A	B	C	D	E	F	G	H	J	
BIKE	450	10	15	210	120	20	60	90	35	
MIN.	600	10	15	275	160	30	80	120	35	
STD.	750	10	20	350	200	35	100	150	45	
EXPWY.	900	15	20	420	240	45	120	180	55	
SPECIAL	1200	20	30	550	320	60	155	235	75	



W11-2

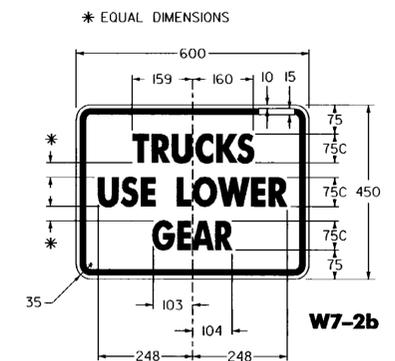
SIGN	DIMENSIONS (mm)				
	A	B	C	D	E
MIN.	600	10	15	275	35
STD.	750	10	20	335	45
EXPWY.	900	15	20	400	55
SPECIAL	1200	20	30	550	75



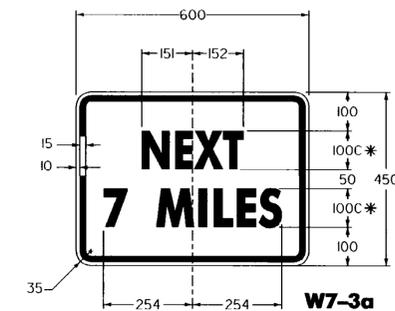
W3-3

SIGN	DIMENSIONS (mm)							
	A	B	C	D	E	F	G	H
BIKE	450	10	15	75	200	55	125	35
MIN.	750	10	20	125	345	95	220	45
STD. & MIN.	900	15	20	145	395	105	250	55
SPECIAL	1200	20	30	190	500	125	315	75

ADDITIONAL COLORS : J - REFL. RED
 K - REFL. YELLOW
 L - REFL. GREEN
 CIRCLE RADIUS = F

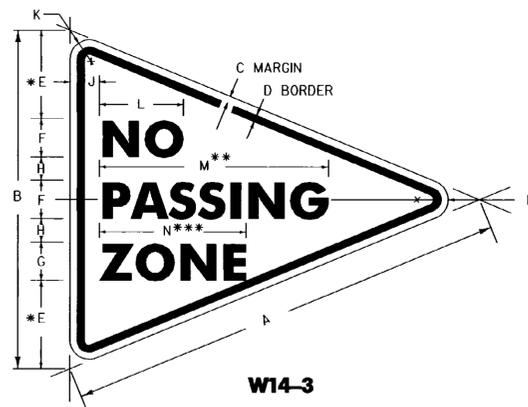


W7-2b



W7-3a

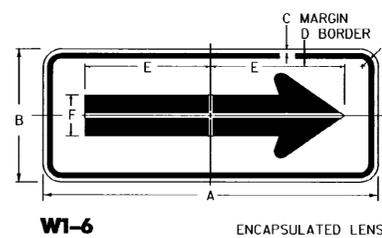
* INCREASE SPACING 75%



W14-3

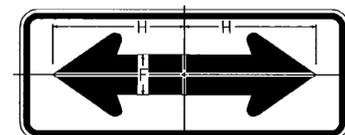
SIGN	DIMENSIONS (mm)													
	A	B	C	D	E	F	G	H	J	K	L	M	N	
MIN.	1000	750	10	20	-	1000	100C	45	60	45	163	570	281	
STD.	1200	900	15	20	-	1250	125C	50	75	55	204	681	324	
SPECIAL	1600	1200	20	30	-	1500	150C	75	100	75	273	854	420	

*EQUAL DIMENSIONS
 **FOR STD. SIZE REDUCE SPACING 20 %
 ***FOR STD. SIZE REDUCE SPACING 35 %



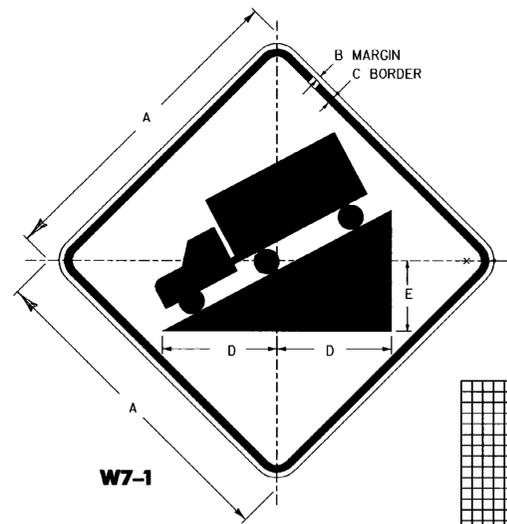
W1-6

SIGN	DIMENSIONS (mm)							
	A	B	C	D	E	F	G	H
BIKE	600	300	10	15	240	85	35	260
MIN.	900	450	10	15	365	125	35	390
STD.	1200	600	10	20	485	160	45	510
SPECIAL	1500	750	15	20	610	200	55	635



W1-7

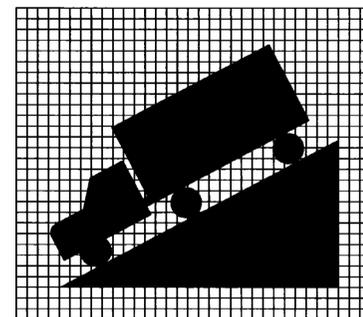
ENCAPSULATED LENS



W7-1

SIGN	DIMENSIONS (mm)					
	A	B	C	D	E	F
MIN.	600	10	15	220	150	35
STD.	750	10	20	275	195	45
EXPWY.	900	15	20	330	225	55
FWY.	1200	20	30	435	300	75

ENCAPSULATED LENS



COLORS

ALL THE WARNING SIGNS SHOWN ON THIS SHEET SHALL HAVE BLACK TEXT AND SYMBOLS ON REFLECTORIZED YELLOW BACKGROUND EXCEPT AS OTHERWISE NOTED. THE COLORS SHALL CONFORM WITH THE COLORS ADOPTED BY AASHTO AND APPROVED BY THE FHWA.

MATERIALS

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

SIGN	MINIMUM THICKNESSES (mm)			
	450 x 450	600 x 600	900 x 450	1200 x 900
FLAT SHEET ALUMINUM	1.52 mm	2.03 mm	2.54 mm	3.18 mm
HIGH DENSITY OVERLAID PLYWOOD	13 mm	13 mm	16 mm	16 mm
GALVANIZED FLAT SHEET STEEL	1.32 mm	1.63 mm	2.01 mm	2.77 mm

THE TEXT, BORDER AND SYMBOLS SHALL BE LETTERING FILM, SILK SCREENED OR HAND PAINTED. WHEN HAND PAINTED, POOR WORKMANSHIP SHALL BE CAUSE FOR REJECTION.

THE REFLECTIVE MATERIAL SHALL BE REFLECTIVE SHEETING APPLIED TO THE ENTIRE BACKGROUND OF THE SIGN. ENCAPSULATED LENS REFLECTIVE SHEETING SHALL BE USED FOR THE SIGN BACKGROUND WHERE NOTED.

TEXT DESIGN

LETTERS, DIGITS, SYMBOLS, SPACINGS AND TEXT DIMENSIONS SHALL CONFORM TO THE LATEST VERSION OF FHWA'S "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS". DESIGNS SHALL CONFORM WITH THOSE PRESCRIBED IN THE MUTCD. SEE STANDARD SHEET E-150M FOR ARROWHEAD DETAILS.

SPECIFICATIONS

WARNING SIGNS SHALL MEET THE VERMONT STANDARD SPECIFICATIONS FOR "TRAFFIC SIGNS" AS PRESCRIBED IN THE VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

OTHER STDS. E-150M REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS
 JUNE 13, 1997 - ORIGINAL APPROVAL DATE

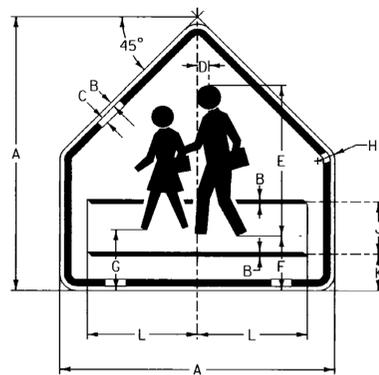
APPROVED

[Signature]
 DIRECTOR OF ENGINEERING
[Signature]
 DIRECTOR OF CONSTRUCTION AND MAINTENANCE

WARNING SIGN
 DETAILS

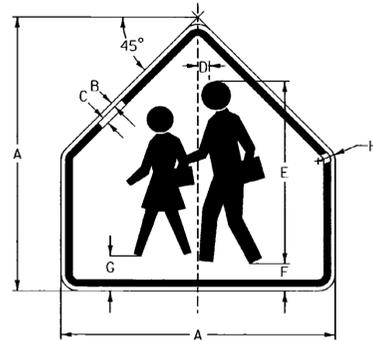


Metric
 STANDARD
 E-152M



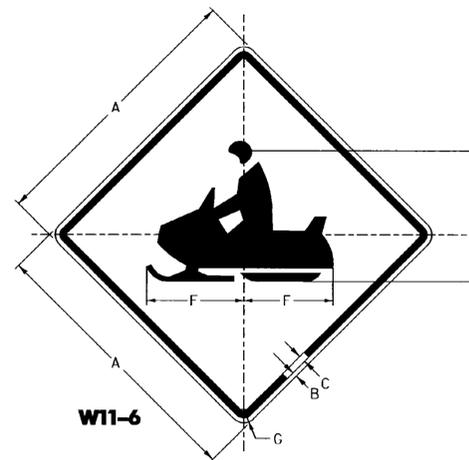
S2-1

SIGN	DIMENSIONS (mm)										
	A	B	C	D	E	F	G	H	J	K	L
MIN./STD.	750	10	20	30	410	150	160	45	145	100	300
EXPWY.	900	15	20	35	495	180	195	55	170	120	360
SPECIAL	1200	20	30	50	660	235	260	75	230	160	480



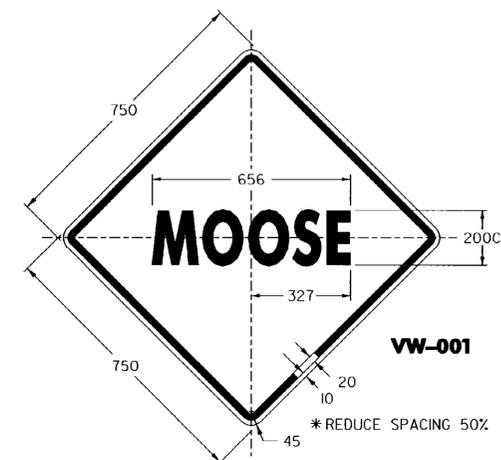
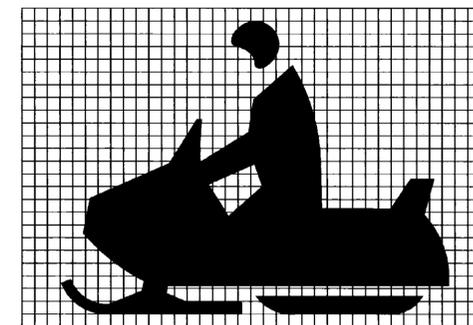
S1-1

SIGN	DIMENSIONS (mm)							
	A	B	C	D	E	F	G	H
MIN./STD.	750	10	20	50	500	75	95	45
EXPWY.	900	15	20	60	600	85	110	55
SPECIAL	1200	20	30	80	800	125	150	75



W11-6

SIGN	DIMENSIONS (mm)						
	A	B	C	D	E	F	G
MIN.	600	10	15	235	110	255	35
STD.	750	10	20	285	140	315	45
SPECIAL	900	15	20	355	170	380	55



VW-001

COLORS

ALL THE WARNING SIGNS SHOWN ON THIS SHEET SHALL HAVE BLACK TEXT AND SYMBOLS ON REFLECTORIZED YELLOW BACKGROUND EXCEPT AS OTHERWISE NOTED. THE COLORS SHALL CONFORM WITH THE COLORS ADOPTED BY AASHTO AND APPROVED BY THE FHWA.

MATERIALS

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

600 X 200			
600 X 250			
600 X 450	900 X 300		
600 X 600	900 X 375	1200 X 400	
750 X 750	900 X 900	1200 X 500	

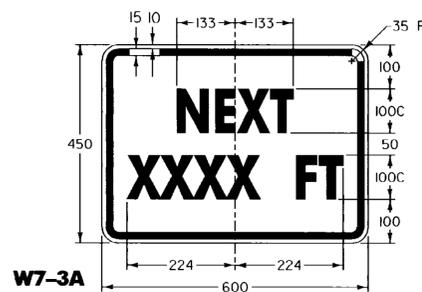
FLAT SHEET ALUMINUM 2.03 mm 2.54 mm 3.8 mm
 HIGH DENSITY OVERLAID PLYWOOD 13 mm 16 mm 16 mm
 GALVANIZED FLAT SHEET STEEL 1.63 mm 2.01mm 2.77 mm
 THE TEXT, BORDER AND SYMBOL SHALL BE LETTERING FILM, SILK SCREENED OR HAND PAINTED. IF HAND PAINTED, POOR WORKMANSHIP SHALL BE CAUSE FOR REJECTION. THE REFLECTIVE MATERIAL SHALL BE REFLECTIVE SHEETING APPLIED TO THE ENTIRE BACKGROUND OF THE SIGN. ENCAPSULATED LENS REFLECTIVE SHEETING SHALL BE USED FOR THE SIGN BACKGROUND WHERE NOTED.

TEXT DESIGN

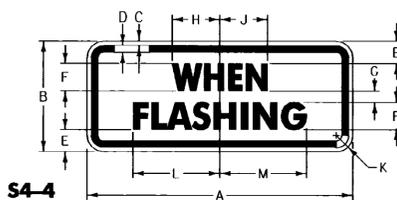
LETTERS, DIGITS, SYMBOLS, SPACINGS AND TEXT DIMENSIONS SHALL CONFORM TO THE LATEST VERSION OF FHWA'S "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS". DESIGNS SHALL CONFORM WITH THOSE PRESCRIBED IN THE MUTCD.

SPECIFICATIONS

WARNING SIGNS SHALL MEET THE VERMONT STANDARD SPECIFICATIONS FOR "TRAFFIC SIGNS" AS PRESCRIBED IN THE VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

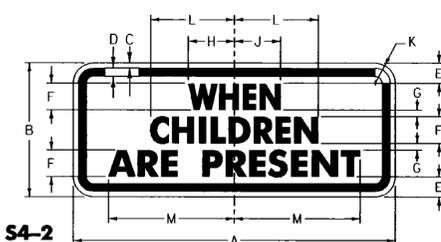


W7-3A



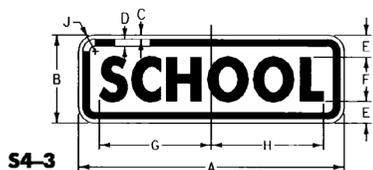
S4-4

SIGN	DIMENSIONS (mm)											
	A	B	C	D	E	F	G	H	J	K	L	M
MIN./STD.	600	250	10	15	50	600	30	111	108	35	194	205
EXPWY.	900	375	15	20	70	1000	35	176	173	55	308	329
SPECIAL	1200	500	20	30	100	1250	50	221	215	75	386	410



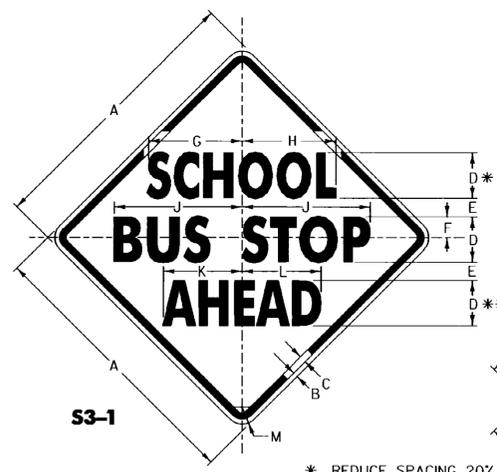
S4-2

SIGN	DIMENSIONS (mm)												
	A	B	C	D	E	F	G	H	J	K	L	M	
MIN./STD.	600	250	10	15	35	500	15	89	116	35	159	237	
EXPWY.	900	375	15	20	55	750	20	131	129	35	237	356	
SPECIAL	1200	500	20	30	75	1000	25	179	170	75	317	473	



S4-3

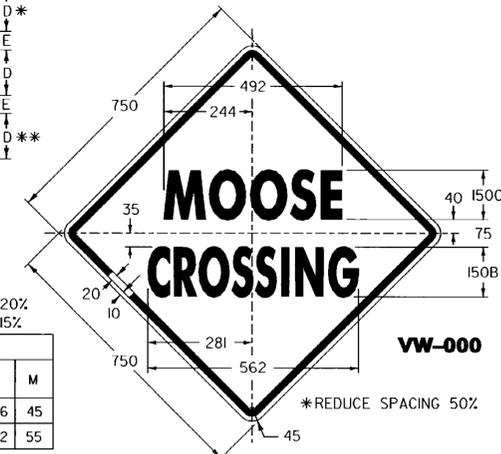
SIGN	DIMENSIONS (mm)									
	A	B	C	D	E	F	G	H	J	
MIN./STD.	600	200	10	15	50	1000	253	260	35	
EXPWY.	900	300	15	20	75	1500	379	390	55	
SPECIAL	1200	400	20	30	100	2000	509	522	75	



S3-1

* REDUCE SPACING 20%
 ** REDUCE SPACING 15%

SIGN	DIMENSIONS (mm)												
	A	B	C	D	E	F	G	H	J	K	L	M	
MIN./STD.	750	10	20	125C	50	60	249	262	355	205	226	45	
SPECIAL	900	15	20	150C	75	75	294	321	431	246	272	55	



VW-000

*REDUCE SPACING 50%

REVISIONS AND CORRECTIONS

JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

Art Cunn
 DIRECTOR OF ENGINEERING
 Gordon S. MacCutler
 DIRECTOR OF CONSTRUCTION AND MAINTENANCE

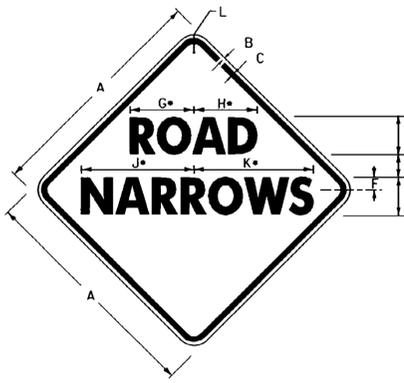
WARNING SIGN
 DETAILS

OTHER STDS.
 REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.



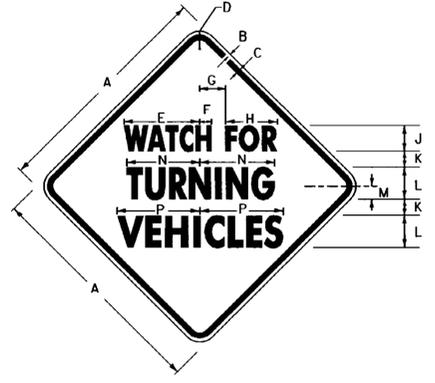
Metric
 STANDARD
 E-153M



W5-1

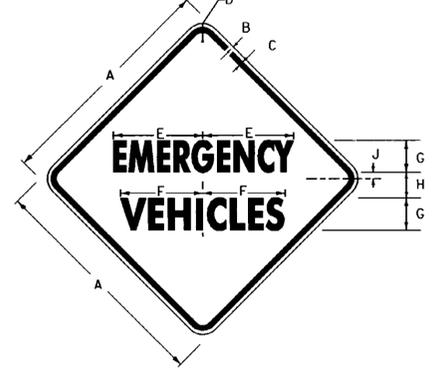
• REDUCE SPACING BY 25%

SIGN	DIMENSIONS (mm)										
	A	B	C	D	E	F	G	H	J	K	L
MIN	750	10	20	125D	75	45	199	220	374	384	45
STD	900	15	20	150D	95	50	240	262	446	462	55
SPECIAL	1200	20	30	200D	100	75	322	350	597	620	75



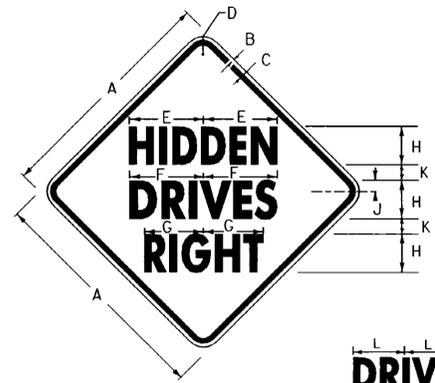
VW-205

SIGN	DIMENSIONS (mm)													
	A	B	C	D	E	F	G	H	J	K	L	M	N	P
MIN	750	10	20	45	242	40	85	161	100B	50	125B	50	236	261
STD	900	15	20	55	299	50	100	204	100C	60	125C	50	291	326
SPECIAL	1200	20	30	75	372	60	135	254	125C	85	200B	65	375	415



VW-544

SIGN	DIMENSIONS (mm)									
	A	B	C	D	E	F	G	H	J	
MIN	750	10	20	45	324	262	100C	85	20	
STD	900	15	20	55	404	326	125C	100	25	
SPECIAL	1200	20	30	75	485	392	150C	135	35	



VW-054



VW-133

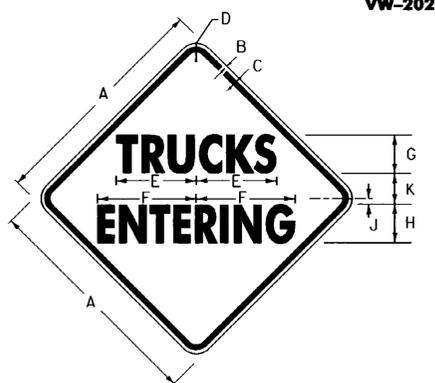
SIGN	DIMENSIONS (mm)											
	A	B	C	D	E	F	G	H	J	K	L	M
MIN	600	10	15	35	195	194	156	100C	30	50	157	124
STD	750	10	20	45	243	241	195	125C	35	50	196	156
EXPWY.	900	15	20	55	291	290	234	150C	45	60	236	186
SPECIAL	1200	20	30	75	390	387	313	200C	60	80	315	249



W5-2

• REDUCE SPACING BY 20%

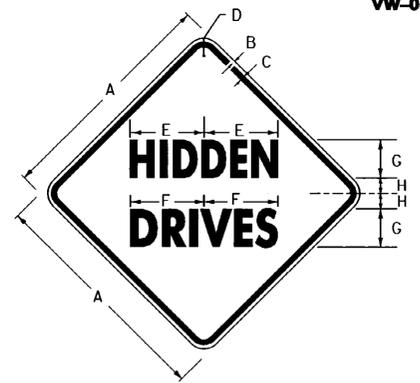
SIGN	DIMENSIONS (mm)									
	A	B	C	D	E	F	G	H	J	
MIN	600	10	15	100D	5	50	264	221	35	
STD	750	10	20	125D	10	60	331	276	45	
SPECIAL	900	15	20	150D	20	75	396	331	55	



VW-202

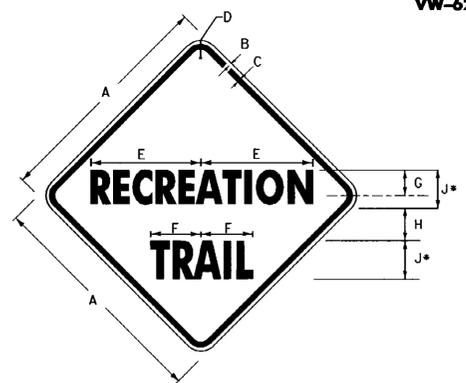
• REDUCE SPACING BY 20%

SIGN	DIMENSIONS (mm)										
	A	B	C	D	E	F	G	H	J	K	
MIN	750	10	20	45	263	309	125C	125C	20	100	
STD	900	15	20	55	316	390	150C	150C	20	105	
SPECIAL	1200	20	30	75	422	521	200C	200C	30	160	



VW-060

SIGN	DIMENSIONS (mm)							
	A	B	C	D	E	F	G	H
MIN	600	10	15	35	195	194	100C	50
STD	750	10	20	45	243	241	125C	50
EXPWY.	900	15	20	55	291	290	150C	60
SPECIAL	1200	20	20	75	390	387	200C	80



VW-622

• REDUCE SPACING BY 50%

SIGN	DIMENSIONS (mm)									
	A	B	C	D	E	F	G	H	J	
MIN	600	10	15	35	295	136	65	85	100C	
STD	750	10	20	45	367	169	85	105	125C	
SPECIAL	900	15	20	55	440	203	100	125	150C	

COLORS
ALL OF THE WARNING SIGNS SHOWN ON THIS SHEET SHALL HAVE BLACK TEXT AND SYMBOLS ON REFLECTORIZED YELLOW BACKGROUND, EXCEPT AS OTHERWISE NOTED. THE COLORS SHALL CONFORM WITH THE COLORS ADOPTED BY AASHTO AND APPROVED BY THE FHWA.

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

	600 x 600	750 x 750	900 x 900	1200 x 1200
FLAT SHEET ALUMINUM	2.03 mm	2.54 mm	3.18 mm	
HIGH DENSITY OVERLAID PLYWOOD	13 mm	16 mm	16 mm	
GALVANIZED FLAT SHEET STEEL	1.63 mm	2.01 mm	2.77 mm	

THE TEXT, BORDER AND SYMBOLS SHALL BE LETTERING FILM, SILK SCREENED OR HAND PAINTED. WHEN HAND PAINTED, POOR WORKMANSHIP SHALL BE CAUSE FOR REJECTION. THE REFLECTIVE MATERIAL SHALL BE REFLECTIVE SHEETING APPLIED TO THE ENTIRE BACKGROUND OF THE SIGN. ENCAPSULATED LENS REFLECTIVE SHEETING SHALL BE USED FOR THE SIGN BACKGROUND WHERE NOTED.

TEXT DESIGN
LETTERS, DIGITS, SYMBOLS, SPACINGS AND TEXT SHALL CONFORM TO THE LATEST VERSION OF FHWA'S "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS". DESIGNS SHALL CONFORM WITH THOSE PRESCRIBED IN THE MUTCD.

SPECIFICATIONS
WARNING SIGNS SHALL MEET THE VERMONT STANDARD SPECIFICATIONS FOR "TRAFFIC SIGNS" AS PRESCRIBED IN THE VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

OTHER STDS. REQUIRED:
NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

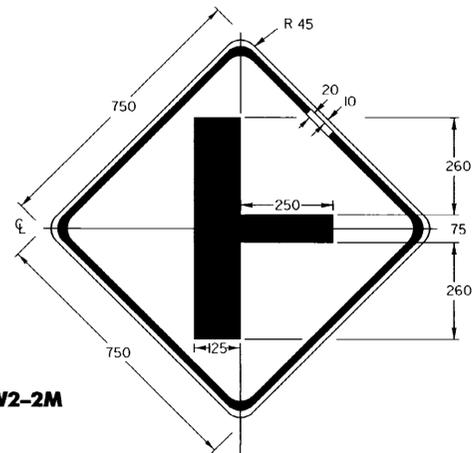
REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED
Paul C. ...
DIRECTOR OF ENGINEERING
Stephen B. MacArthur
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

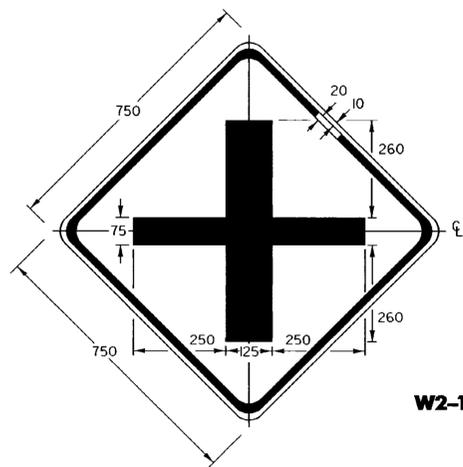
WARNING SIGN
DETAILS



Metric
STANDARD
E-154M

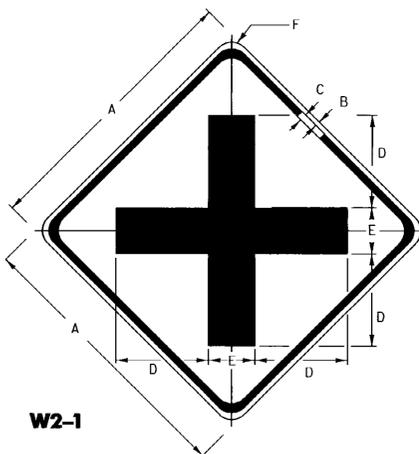


W2-2M



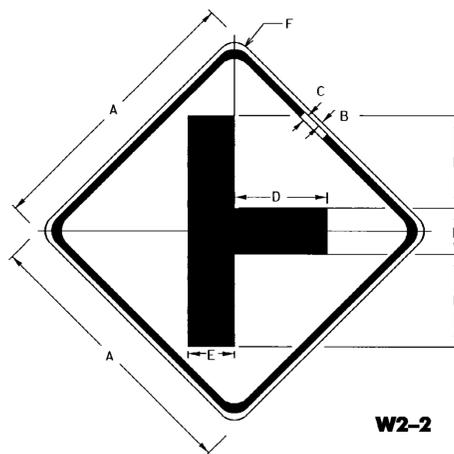
W2-1M

STATE ROUTE /TOWN HIGHWAY INTERSECTION SIGNS (TYP.)



W2-1

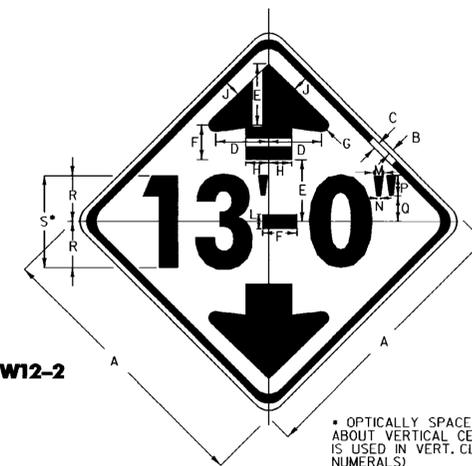
SIGN	DIMENSIONS (mm)					
	A	B	C	D	E	F
BIKE	450	10	15	150	75	35
MIN.	600	10	15	200	100	35
STD.	750	10	20	250	125	45
EXPWY.	900	15	20	300	150	55
SPECIAL	1200	20	30	400	200	75



W2-2

SIGN	DIMENSIONS (mm)					
	A	B	C	D	E	F
BIKE	450	10	15	150	75	35
MIN.	600	10	15	200	100	35
STD.	750	10	20	250	125	45
EXPWY.	900	15	20	300	150	55
SPECIAL	1200	20	30	400	200	75

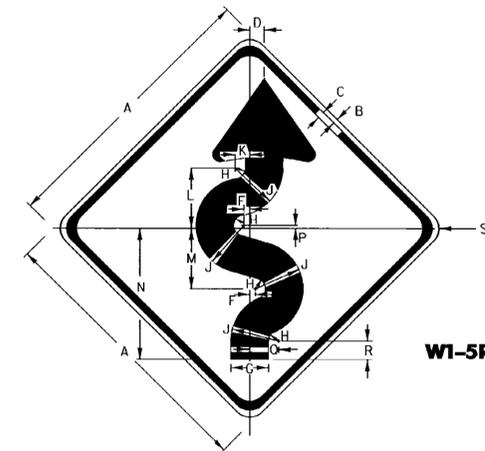
STATE ROUTE /STATE ROUTE INTERSECTION SIGNS (TYP.)



W12-2

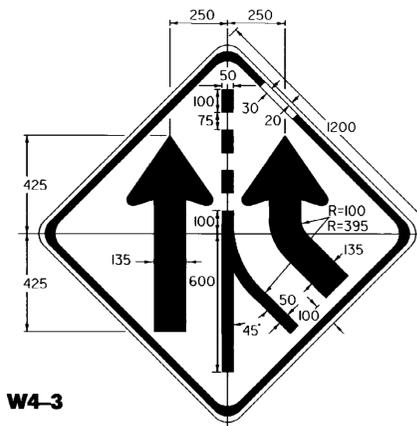
* OPTICALLY SPACE VERTICAL CLEARANCE ABOUT VERTICAL CENTERLINE (WHERE 250 mm IS USED IN VERT. CLEARANCE, USE SERIES C NUMERALS)

SIGN	DIMENSIONS (mm)																
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S
MIN.	750	10	20	145	165	95	20	60	40	45	40	25	10	55	85	125	250D
STD. & EXPWY.	900	15	20	170	200	110	25	75	50	55	45	30	10	70	100	150	300D
FWY.	1200	20	30	230	265	145	35	100	65	75	60	40	15	90	135	200	400D

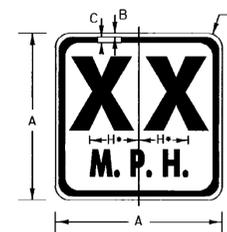


W1-5R

SIGN	DIMENSIONS (mm)																
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S
BIKE	450	10	10	25	240	10	60	15	75	20	96	100	215	6	45	34	35
MIN.	600	10	10	30	320	10	80	25	105	35	135	130	285	6	65	41	35
STD.	750	10	20	40	400	15	100	30	130	40	167	165	355	8	80	47	45
EXPWY.	900	15	20	45	480	20	120	35	135	50	198	195	425	9	95	59	55
SPECIAL	1200	20	25	60	635	25	160	45	205	65	262	260	570	13	125	86	75



W4-3



W13-1

SIGN	DIMENSIONS (mm)									
	A	B	C	D	E	F	G	H	J	
STD.	450	10	15	60	200E	55	75E	135	35	
SPECIAL	600	10	15	90	250E	70	100E	180	35	

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

COLORS:

ALL THE WARNING SIGNS SHOWN ON THIS SHEET SHALL HAVE BLACK TEXT AND SYMBOLS ON REFLECTORIZED YELLOW BACKGROUND EXCEPT AS OTHERWISE NOTED. THE COLORS SHALL CONFORM WITH THE COLORS ADOPTED BY AASHTO AND APPROVED BY THE FHWA.

MATERIALS:

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

	FLAT SHEET ALUMINUM		HIGH DENSITY OVERLAID PLYWOOD		GALVANIZED FLAT SHEET STEEL	
	MIN.	STD.	MIN.	STD.	MIN.	STD.
450 X 450	1.52 mm		13 mm		1.32 mm	
600 X 600, 750 X 750	2.03 mm		13 mm		1.63 mm	
900 X 900	2.54 mm		16 mm		2.01 mm	
1200 X 1200	3.18 mm		16 mm		2.77 mm	

THE TEXT, BORDER AND SYMBOLS SHALL BE LETTERING FILM, SILK SCREENED OR HAND PAINTED. IF HAND PAINTED, POOR WORKMANSHIP SHALL BE CAUSE FOR REJECTION. THE REFLECTIVE MATERIAL SHALL BE REFLECTIVE SHEETING APPLIED TO THE ENTIRE BACKGROUND OF THE SIGN. ENCAPSULATED LENS REFLECTIVE SHEETING SHALL BE USED FOR THE SIGN BACKGROUND WHERE NOTED.

TEXT:

LETTERS, DIGITS, SYMBOLS, SPACINGS AND TEXT DIMENSIONS SHALL CONFORM TO THE LATEST VERSION OF FHWA'S "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS". DESIGNS SHALL CONFORM WITH THOSE PRESCRIBED IN THE MUTCD. SEE STANDARD SHEET E-150M FOR ARROWHEAD DETAILS.

SPECIFICATIONS:

WARNING SIGNS SHALL MEET THE VERMONT STANDARD SPECIFICATIONS FOR "TRAFFIC SIGNS" AS PRESCRIBED IN THE VA01 STANDARD SPECIFICATIONS FOR CONSTRUCTION.

OTHER STDS. E-150M REQUIRED:

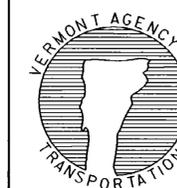
NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS
 JUNE 13, 1997 - ORIGINAL APPROVAL DATE

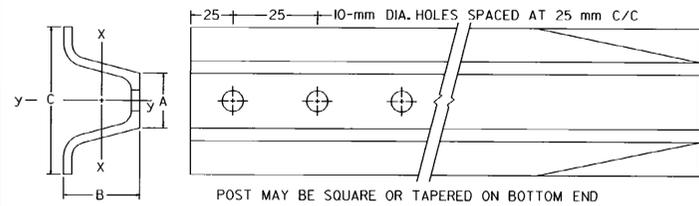
APPROVED

[Signature]
 DIRECTOR OF ENGINEERING
[Signature]
 DIRECTOR OF CONSTRUCTION AND MAINTENANCE

WARNING SIGN
 DETAILS

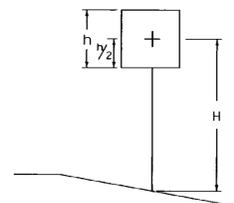


Metric
 STANDARD
 E-155 M



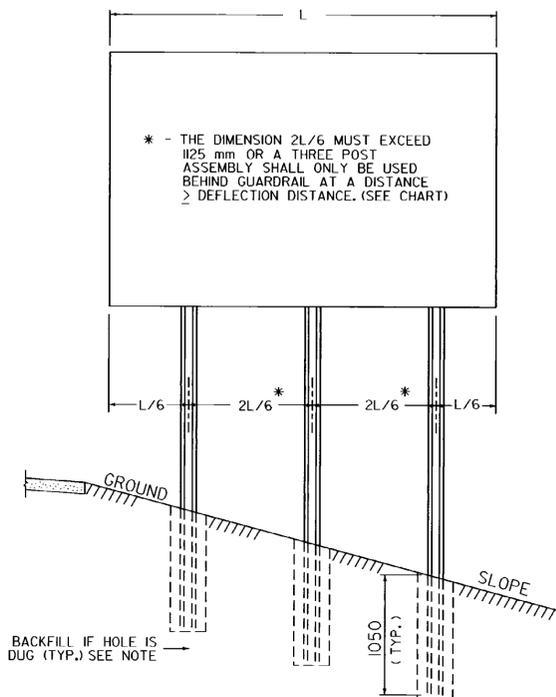
POST (kg/m)	DIMENSIONS (mm)			SECTION MODULUS, X-X
	A	B	C	
3	33	37	78	3867 mm ³
4.5	34	48	89	8030 mm ³

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



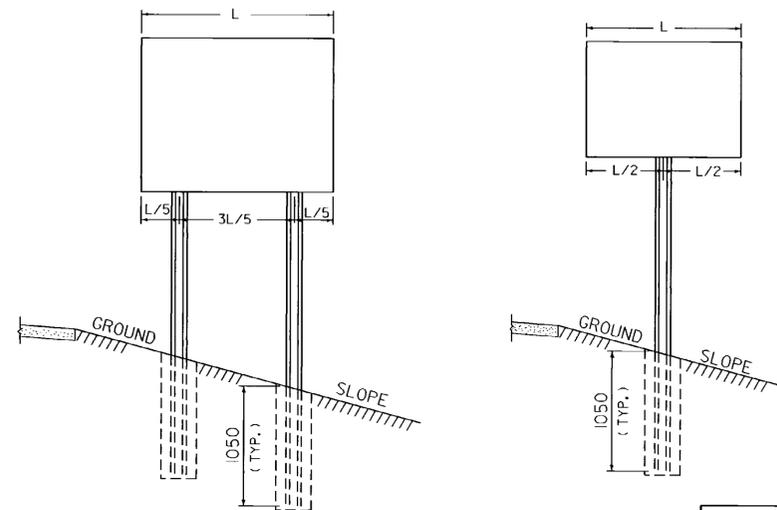
POST SELECTION CHART		
SIGN AREA (m ²) x H (m) ≤ SV (SELECTION VALUE)		
POST	Sv	DESIGN CRITERIA
3 kg/m (ONE POST INSTALLATION)	0.75 (est.)	WIND SPEED = 100 km/h (10-YEAR MEAN RECURRENCE INTERVAL)
3 kg/m (TWO POST INSTALLATION)	1.51	WIND PRESSURE = 740 Pa
4.5 kg/m	3.14	STEEL MIN YIELD F _y = 345 MPa ALLOWABLE STRESS = (1.4) 0.60 F _y

SINGULAR 3 kg/m POSTS SHALL ONLY BE USED IN URBAN AREAS.

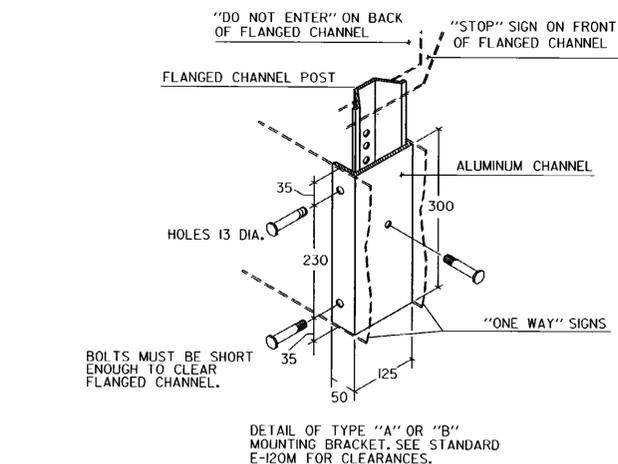


MULTI-POST INSTALLATIONS

WHEN SIGN POSTS ARE INSTALLED WITH A POST SPACING OF LESS THAN 2400 mm, POST SIZES MUST BE SELECTED TO INSURE THAT, WHEN ACTING TOGETHER, THE POSTS DO NOT CREATE A HAZARD. REFER TO VAOT SIGN POST DESIGN GUIDELINE FOR ADDITIONAL DETAILS.



POST SPACING DETAILS



DETAIL OF TYPE "A" OR "B" MOUNTING BRACKET, SEE STANDARD E-120M FOR CLEARANCES.

GUARDRAIL DEFLECTION CHART (PER AASHTO - ROADSIDE DESIGN GUIDE)		
TYPE	GR POST SPACING	DEFLECTION
THREE CABLE W/STEEL POSTS	5.0 m	3.5 m
W-BEAM W/WEAK POST	3.8 m	2.0 m
W/STRONG POST	1.9 m	0.9 m
BOX BEAM	1.83 m	1.5 m
THREE BEAM W/WEAK POST	3.8 m	1.2 m
W/STRONG POST	1.9 m	0.6 m

THIS CHART LISTS THE THEORETICAL DEFLECTION DISTANCE UPON IMPACT OF VARIOUS GUARDRAIL WITH DIFFERENT TYPES AND SPACING OF POSTS.

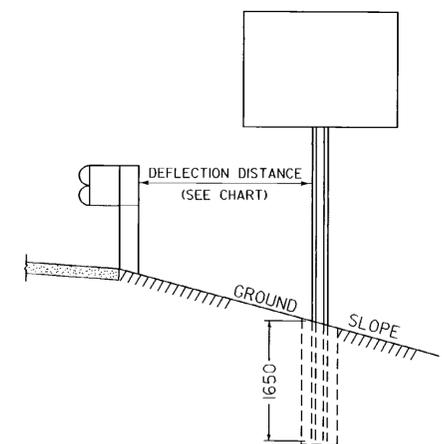
GENERAL NOTES

CONSTRUCTION METHODS - POSTS MAY BE DRIVEN OR SET IN A DUG HOLE AND BACKFILLED. IF DRIVEN, A DRIVING CAP SHALL BE USED. THE DUG-HOLE INSTALLATION SHALL BE USED IN AREAS OF POOR SOIL CONDITIONS OR AS DIRECTED BY THE RESIDENT ENGINEER. BACKFILL SHALL BE COMPACTED AS DIRECTED BY THE RESIDENT ENGINEER.

IN AREAS WHERE LEDGE ROCK IS ENCOUNTERED, POSTS WILL BE SET IN A HOLE WITH 50-mm CLEARANCE AND GROUTED WITH TYPE 4 MORTAR 600 mm BELOW THE SURFACE OF THE SOLID ROCK, UNLESS THE POSTS PENETRATE THE GROUND A MINIMUM OF 1050 mm. THE PORTION OF THE POST IN CONTACT WITH THE MORTAR SHALL BE COATED WITH AN APPROVED COATING.

SIGN CLEARANCES - HORIZONTAL AND VERTICAL SIGN CLEARANCES SHALL BE SHOWN ON THE PLANS OR THE APPROPRIATE STD. SHEETS.

SINGLE POST INSTALLATIONS SHALL BE LIMITED TO A SIGN AREA OF 1.125 m² OR LESS.



WHERE FLANGED CHANNEL POSTS ARE USED ON STEEP SLOPES (1:2 OR STEEPER) OR STEEPER FILL SLOPES BEHIND GUARDRAIL, ADD 600 mm EMBEDMENT TO THE POST LENGTH TO GIVE THE ASSEMBLY MORE STABILITY. HOWEVER, IF SIGN POST IS LOCATED INSIDE THE DEFLECTION DISTANCE, THE SIGN POST SHALL BE SET AT A DEPTH OF 1050 mm.

OTHER STDS. E-120M REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE

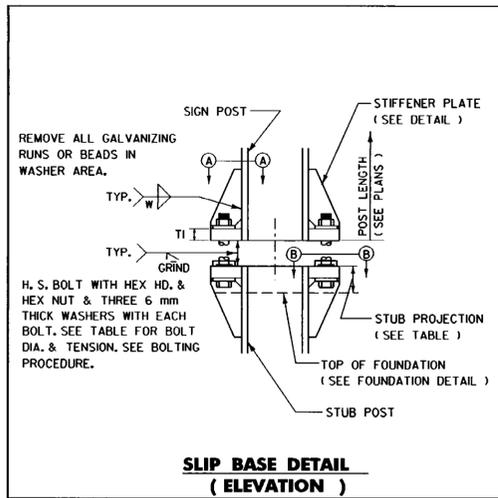
APPROVED

[Signature]
DIRECTOR OF ENGINEERING
[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

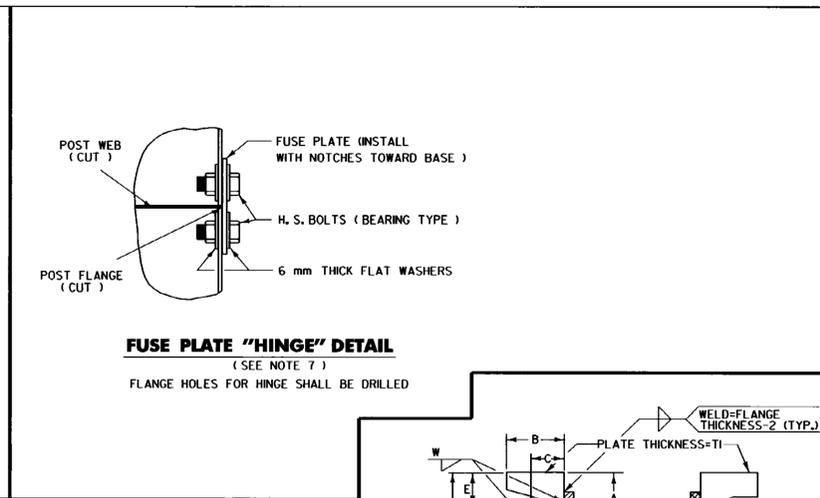
FLANGED CHANNEL STEEL SIGN POST



Metric
STANDARD
E-160M



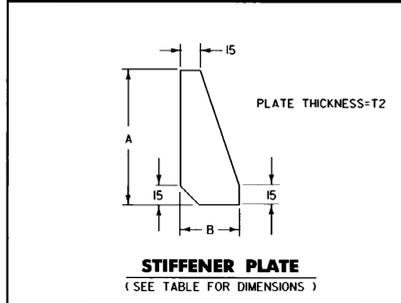
SLIP BASE DETAIL (ELEVATION)



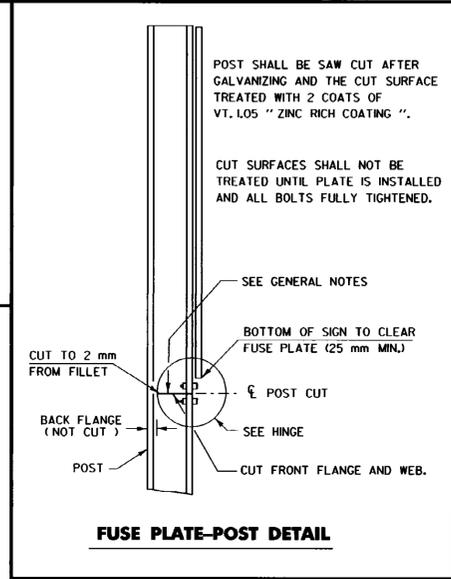
FUSE PLATE "HINGE" DETAIL (SEE NOTE 7)
FLANGE HOLES FOR HINGE SHALL BE DRILLED

POST SIZE	BASE CONNECTION DATA TABLE										FUSE PLATE DATA TABLE										FOUNDATION DATA				
	BOLT SIZE	A	B	C	D	E	T1	T2	W	R	F	G	H	J	K	L	N	DI	T3	BOLT DIA.	BASE DIA.	BASE DEPTH	MIN. STUB LENGTH	STUB PROJ.	VOLUME OF SINGLE BASE
W150 X 13.5	M16 X 2 X 90	130	50	30	70	30	20	12	6	9	95	50	30	100	60	20	15	14	6	M12 X 1.75	600	1800	900	65	0.51 m ³
W150 X 18.0											110	65	30	150	90	30	15	18	10						
W150 X 22.5											110	65	30	130	70	30	15	18	10						
W200 X 26.6	M20 X 2.5 X 120	160	55	35	90	35	25	20	8	11	125	65	40	130	70	30	20	22	12	M20 X 2.5	750	1950	900	65	0.86 m ³
W200 X 31.3											135	75	40	145	65	40	20	22	12						
W250 X 38.5											135	75	40	165	85	40	20	22	12						
W310 X 44.5	180				100	40					135	75	40	165	85	40	20	22	12	M20 X 2.5	750	1950	900	65	0.86 m ³

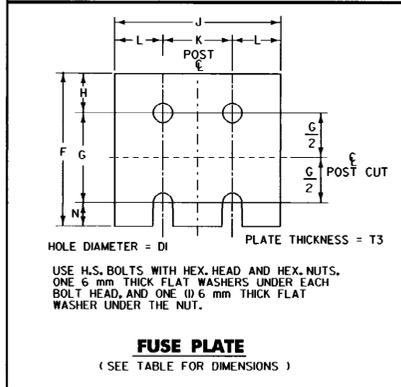
*M16 X 2 BOLTS SHALL HAVE A MINIMUM THREAD LENGTH OF 50 mm.
**M20 X 2.5 BOLTS SHALL HAVE A MINIMUM THREAD LENGTH OF 55 mm. THESE BOLTS SHALL BE FURNISHED WITH TWO NUTS FOR EACH BOLT.



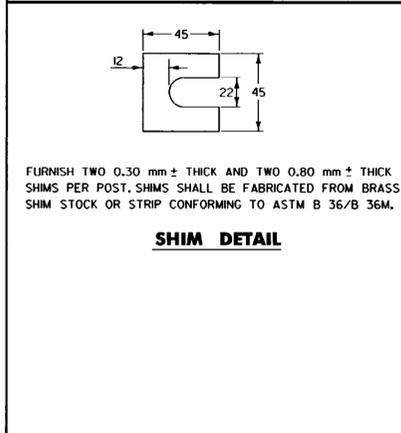
STIFFENER PLATE (SEE TABLE FOR DIMENSIONS)



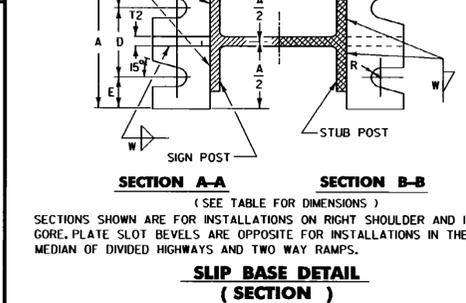
FUSE PLATE-POST DETAIL



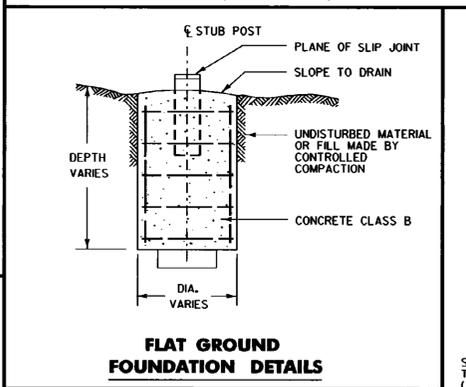
FUSE PLATE (SEE TABLE FOR DIMENSIONS)



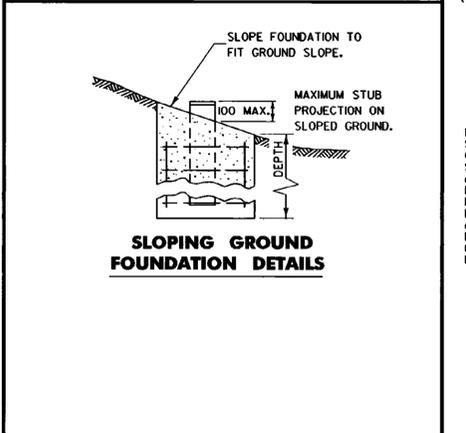
SHIM DETAIL



SLIP BASE DETAIL (SECTION)



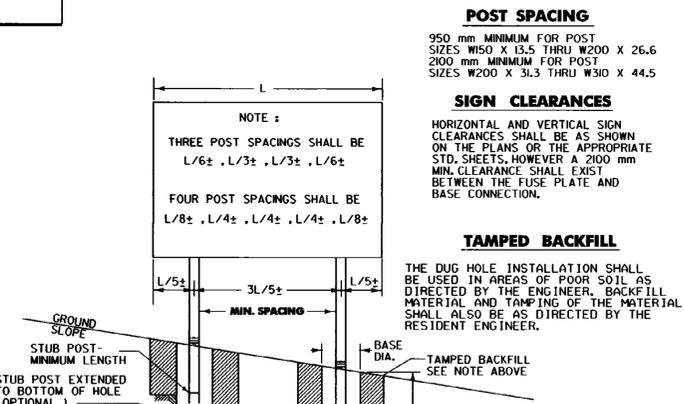
FLAT GROUND FOUNDATION DETAILS



SLOPING GROUND FOUNDATION DETAILS

1. MAKE SURE ALL BOLTS ARE FROM THE SAME STOCK.
2. TRY NUTS ON BOLT THREADS MAKING SURE THEY TURN EASILY.
3. PLACE (3) BOLTS IN "SKIDMORE - WILHELM" DEVICE. TORQUE TO PROPER TENSION IN DEVICE, CALIBRATE TORQUE WRENCH BY CHECKING ON THESE THREE BOLTS WHEN UNDER PROPER TENSION IN DEVICE.
4. USE THE AVERAGE OF THE THREE TORQUES ON SIMILAR BOLTS IN THE REAL SUPPORT.
5. ASSEMBLE POSTS TO STUB WITH BOLTS AND WITH THREE 6 mm FLAT WASHERS. (ONE EACH UNDER HEAD OF BOLT, BETWEEN PLATES, AND UNDER NUT.)
6. SHIM AS REQUIRED TO PLUMB POST.
7. TIGHTEN ALL BOLTS THE MAXIMUM POSSIBLE WITH A 300 mm TO 400 mm WRENCH TO BED WASHERS AND SHIMS AND TO CLEAN BOLT THREADS, THEN LOOSEN EACH BOLT IN TURN AND RETIGHTEN IN A SYSTEMATIC ORDER TO THE PRESCRIBED TENSION.
8. THE BASE PLATE BOLTS WILL BE TORQUED TO PRESCRIBED BOLT TENSION SHOWN BELOW. AFTER THE INITIAL TORQUING USE A SECOND NUT TO INSURE THAT THE FIRST NUT WILL NOT BACK OFF. THE CONTRACTOR WITH THE AGENCY INSPECTOR WILL RETURN TO THE SIGN TWO MORE TIMES AT INTERVALS OF 30 DAYS FOR THE PURPOSE OF CHECKING AND RE-ESTABLISHING THE PRESCRIBED TORQUE. THE SECOND NUT SHALL REMAIN AS A LOCK NUT.
9. THE "SKIDMORE - WILHELM" DEVICE IS AVAILABLE THROUGH THE V.A.O.T. CONSTRUCTION DIVISION.

PROCEDURE FOR ASSEMBLY OF BASE CONNECTION



POST SPACING

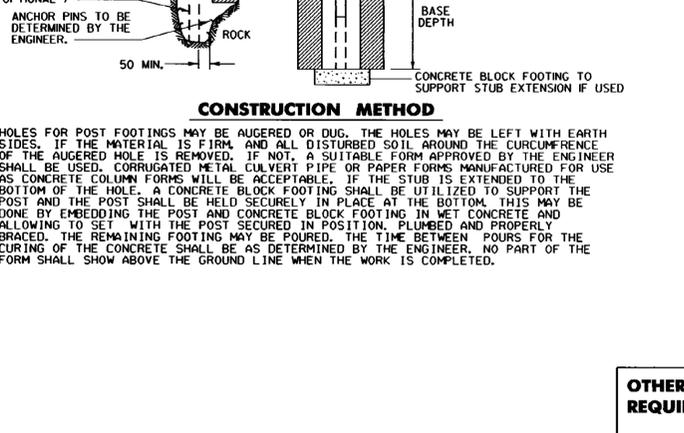
950 mm MINIMUM FOR POST SIZES W150 X 13.5 THRU W200 X 26.6
2000 mm MINIMUM FOR POST SIZES W200 X 31.3 THRU W310 X 44.5

SIGN CLEARANCES

HORIZONTAL AND VERTICAL SIGN CLEARANCES SHALL BE AS SHOWN ON THE PLANS OR THE APPROPRIATE STD. SHEETS, HOWEVER A 200 mm MIN. CLEARANCE SHALL EXIST BETWEEN THE FUSE PLATE AND BASE CONNECTION.

TAMPED BACKFILL

THE DUG HOLE INSTALLATION SHALL BE USED IN AREAS OF POOR SOIL AS DIRECTED BY THE ENGINEER. BACKFILL MATERIAL AND TAMPING OF THE MATERIAL SHALL ALSO BE AS DIRECTED BY THE RESIDENT ENGINEER.



CONSTRUCTION METHOD

HOLES FOR POST FOOTINGS MAY BE AUGERED OR DUG. THE HOLES MAY BE LEFT WITH EARTH SIDES. IF THE MATERIAL IS FIRM AND ALL DISTURBED SOIL AROUND THE CIRCUMFERENCE OF THE AUGERED HOLE IS REMOVED, IF NOT, A SUITABLE FORM APPROVED BY THE ENGINEER SHALL BE USED. CORRUGATED METAL CULVERT PIPE OR PAPER FORMS MANUFACTURED FOR USE AS CONCRETE COLUMN FORMS WILL BE ACCEPTABLE. IF THE STUB IS EXTENDED TO THE BOTTOM OF THE HOLE, A CONCRETE BLOCK FOOTING SHALL BE UTILIZED TO SUPPORT THE POST AND THE POST SHALL BE HELD SECURELY IN PLACE AT THE BOTTOM. THIS MAY BE DONE BY EMBEDDING THE POST AND CONCRETE BLOCK FOOTING IN WET CONCRETE AND ALLOWING TO SET WITH THE POST SECURED IN POSITION, PLUMBED AND PROPERLY BRACED. THE REMAINING FOOTING MAY BE POURED. THE TIME BETWEEN POURS FOR THE CURING OF THE CONCRETE SHALL BE AS DETERMINED BY THE ENGINEER. NO PART OF THE FORM SHALL SHOW ABOVE THE GROUND LINE WHEN THE WORK IS COMPLETED.

- GENERAL NOTES**
1. DESIGN CONFORMS WITH THE AASHTO PUBLICATION "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS".
 2. MATERIAL AND FABRICATION SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD DRAWINGS AND THE VDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.
 3. THE POST CUT SHALL BE A SAW CUT ONLY. ALL OTHER CUTS, EXCLUDING POST CUTS, MAY BE FLAME CUT PROVIDED ALL EDGES ARE GROUND SMOOTH, METAL PROJECTING BEYOND THE PLATE FACE WILL NOT BE PERMITTED, ALL POST HOLES SHALL BE DRILLED.
 4. ALL SAW CUTS SHALL BE PAINTED WITH AN APPROVED COATING.
 5. EXTREME CARE SHOULD BE TAKEN TO KEEP THE SLIP JOINT FREE OF ANY FOREIGN MATERIAL, EITHER BY WRAPPING THE JOINT OR THOROUGH CLEANING IMMEDIATELY AFTER POURING OF CONCRETE.
 6. ALL FUSE PLATE BOLTS SHALL BE TIGHTENED BY THE FABRICATOR TO THE PRESCRIBED BOLT TENSION. THE CONTRACTOR WILL BE HELD RESPONSIBLE TO CHECK AND CERTIFY THAT THE REQUIRED RESIDUAL TENSIONS ARE OBTAINED.
 7. THE TOTAL MASS OF TWO (2) POSTS WITH 950-mm SPACING OR A SINGLE POST OF A TWO (2) POSTS INSTALLATION WITH 2100-mm SPACING SHALL NOT EXCEED 270 kg BELOW THE FUSE PLATE.
 8. THE AMOUNT OF TORQUE NECESSARY TO ACHIEVE THE PROPER BOLT TENSION FOR BOTH THE "FUSE PLATE" AND THE "SLIP BASE" SHALL BE DETERMINED BY USE OF A SUITABLE TORQUE WRENCH CALIBRATED IN A "SKIDMORE-WILHELM" DEVICE. THE PROCEDURE FOR CALIBRATING THE WRENCH IS OUTLINED IN THE "PROCEDURE FOR ASSEMBLY OF BASE CONNECTION" ON THIS SHEET.
 9. DUE TO THE VARIABILITY OF THE GALVANIZATION ON THE BOLTS, NUTS, AND WASHERS, ETC., NO FORMULA OR TABLES SHALL BE USED TO CALCULATE THE REQUIRED CONVERSION FROM BOLT TENSION TO APPLIED TORQUE, UNLESS APPROVED BY TRAFFIC AND SAFETY DIVISION.
 10. THE INSPECTION OF THE "FUSE PLATE BOLTS" SHALL BE AS OUTLINED IN THE MOST RECENT EDITION OF AASHTO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES", UNDER SECTION TITLE "CONNECTIONS USING HIGH STRENGTH BOLTS".
 11. INSPECTION OF THE "SLIP BASE BOLTS" SHALL BE AS FOLLOWS: USING A TORQUE WRENCH THAT HAS BEEN CALIBRATED IN THE "SKIDMORE-WILHELM" DEVICE WITH THREE BOLTS OF THE SAME GRADE, SIZE AND CONDITION AS THOSE UNDER INSPECTION, THE INSPECTOR SHALL SET THE WRENCH FOR MAXIMUM SETTING SHOWN BELOW FOR "SLIP BASE BOLTS" AND TEST ALL "SLIP BASE BOLTS" IN EACH ASSEMBLY.
 - A) IF THE BOLT BEING TESTED TURNS MORE THAN 5 UPON APPLICATION OF THE WRENCH SET TO THE MAXIMUM, THE INSPECTOR SHALL SET THE WRENCH TO THE MINIMUM AND RETEST THE BOLT. IF THE BOLT TURNS LESS THAN 5 UPON APPLICATION OF THE WRENCH SET TO MINIMUM, IT SHALL BE CONSIDERED ACCEPTABLE. IF THE BOLT TURNS MORE THAN 5 UPON APPLICATION OF THE WRENCH SET TO MINIMUM, IT SHALL BE RETIGHTENED AT LEAST TO THE MINIMUM.
 - B) IF THE BOLT BEING TESTED TURNS LESS THAN 5 UPON APPLICATION OF THE WRENCH SET TO MAXIMUM, IT SHALL BE LOOSENED AND RETIGHTENED SO THAT IT FALLS WITHIN THE RANGE SPECIFIED AND REINSPECTED AS OUTLINED ABOVE.
 12. SLIP BASE BOLT INSTALLATION:

BOLT SIZE	BOLT TENSION (kN)		* BOLT TORQUE (N • m)
	MIN.	MAX.	
M16 x 2	7.6	10.6	30 ± 5
M20 x 2.5	10.2	14.2	50 ± 8

* NOTE: TORQUE VALUES ARE FOR REFERENCE PURPOSES ONLY.
 13. ALL DIMENSIONS REFERRING TO STUB HEIGHT IN THE VARIOUS TABLES AND FOUNDATION DETAILS SHALL BE ADJUSTED AS REQUIRED TO RESULT IN A TOTAL STUB HEIGHT WHICH IS NOT MORE THAN 100 mm ABOVE A 1500-mm CHORD ALIGNED RADIALLY TO THE CENTERLINE OF THE HIGHWAY AND CONNECTING ANY POINT WITHIN THE LENGTH OF THE CHORD, ON THE GROUND SURFACE ON ONE SIDE OF THE SUPPORT TO A POINT ON THE GROUND SURFACE ON THE OTHER SIDE.

OTHER STDS. REQUIRED:

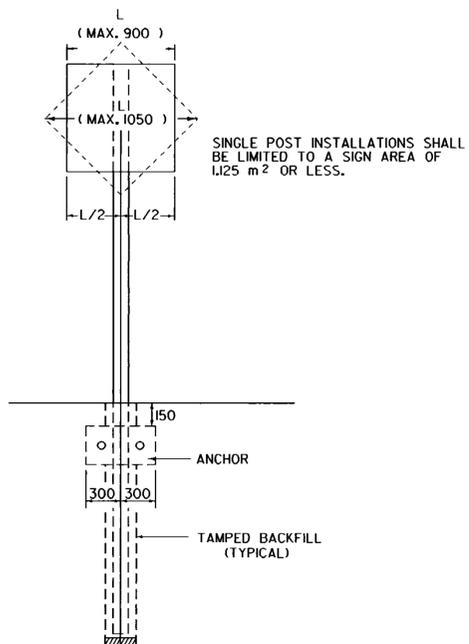
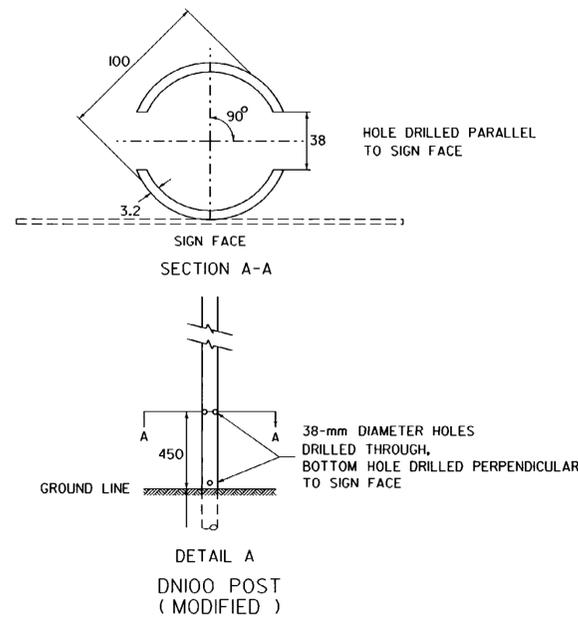
NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE

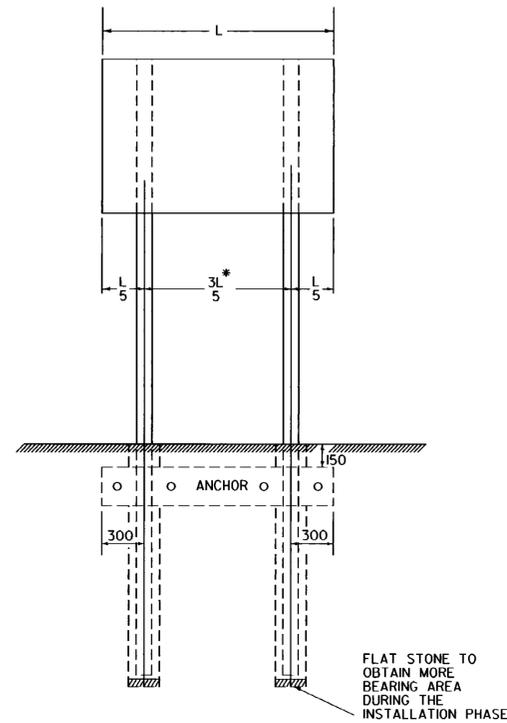
APPROVED
[Signature]
DIRECTOR OF ENGINEERING
[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

W-SHAPED STEEL SIGN POST

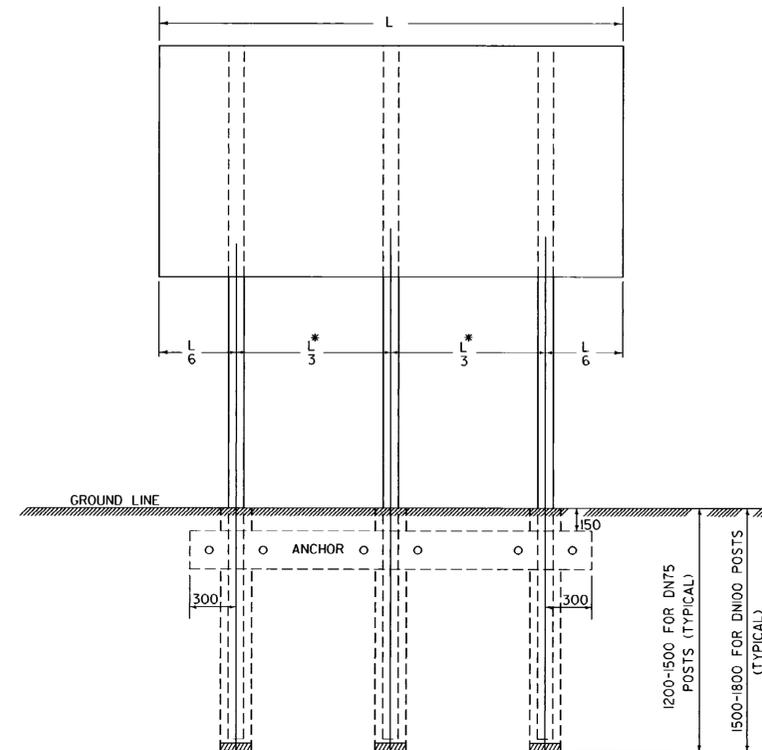




* WHEN CONSTRUCTING MULTIPLE POST INSTALLATIONS, THE POST SPACING SHALL BE A MINIMUM OF 2200 mm CENTER TO CENTER OF THE POSTS UNLESS USED BEHIND GUARDRAIL A DISTANCE > THE DEFLECTION DISTANCE (SEE STD. E-160M).



IN AREAS WHERE LEDGE ROCK IS ENCOUNTERED POSTS WILL BE SET AND GROUTED WITH TYPE 4 MORTAR, 600 mm BELOW THE TOP SURFACE OF THE SOLID ROCK UNLESS THE POSTS PENETRATE THE GROUND A MIN. 1200 mm.

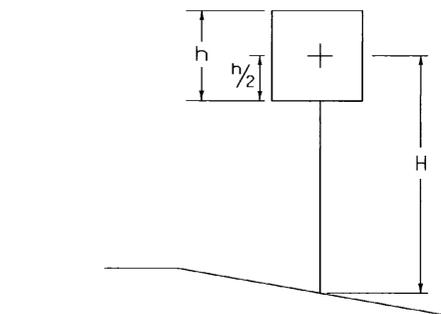


NOTES

ANCHORS USE TWO (2) PIECES OF 50 x 300 ROUGH PLANK. PLANKS, UNLESS OTHERWISE NOTED, SHALL CONFORM TO "VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION" SECTION 728.02

ERECTION LOCKNUTS ON M10 X 1.5 ALUMINUM POST BOLT CLIPS SHALL BE TORQUED TO 30 N·m USING DRY, CLEAN, UNLUBRICATED THREADS. WHERE ALUMINUM SURFACES ARE TO BE PLACED IN CONTACT WITH WOOD, THEY SHALL BE GIVEN A THICK COAT OF AN ALKALI-RESISTANT BITUMINOUS PAINT MEETING THE REQUIREMENTS OF MILITARY SPECIFICATION MIL-P-6883, WHICH SHALL BE DRY BEFORE INSTALLATION.

THE HOLE SHALL BE CAREFULLY DUG AND THE POST SET TO THE DEPTH SPECIFIED ABOVE. POSTS SHALL NOT BE DRIVEN. THE BACKFILL MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF APPROVED GRAVEL OR SHALL BE A MATERIAL APPROVED BY THE ENGINEER. COMPACTION OF THE BACKFILL WILL BE PERFORMED AS DIRECTED BY THE ENGINEER.



POST SELECTION CHART		
SIGN AREA (m ²) x H (m) ≤ SV (SELECTION VALUE)		
POST SIZE	Sv (m ³)	DESIGN CRITERIA
DN75	3.99	WIND VELOCITY = 100 km/h (10 YEAR MEAN RECURRENCE INTERVAL)
DN100 *	7.31	WIND PRESSURE = 740 Pa
DN100 (MOD) *	7.21	ALUMINUM F _y = 165 MPa ALLOWABLE STRESS = (1/4)F _y

* TWO POST INSTALLATIONS - USE ONLY BEHIND GUARDRAIL AT A DISTANCE > THE GUARDRAIL DEFLECTION DISTANCE. (SEE STD. E-160M)

POST WEIGHTS		
POST DIAMETER	WALL THICKNESS (mm)	MASS PER LENGTH
DN75	3.2	1.9 kg/m
DN100	3.2	2.5 kg/m
DN100 (MOD.)	3.2	2.5 kg/m

OTHER STDS. E-160M REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

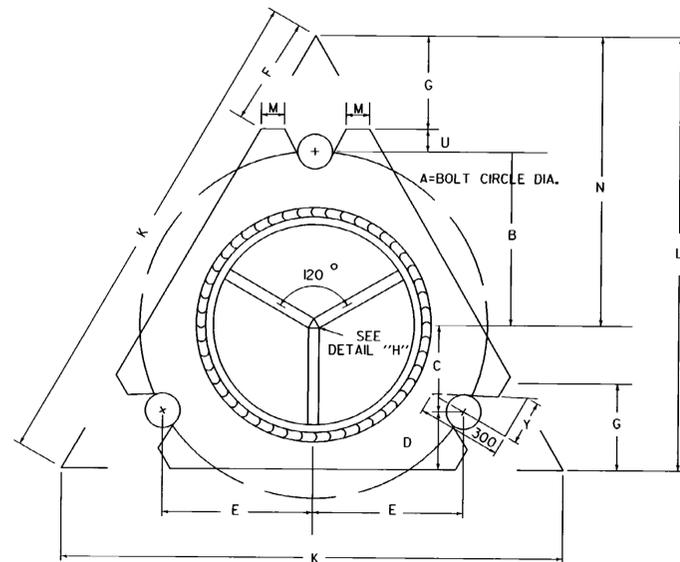
[Signature]
DIRECTOR OF ENGINEERING

[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

TUBULAR ALUMINUM
SIGN POST



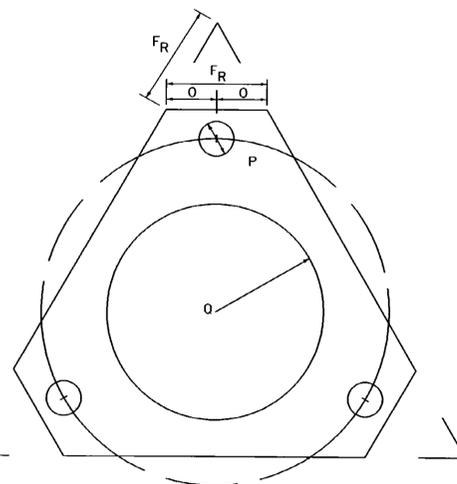
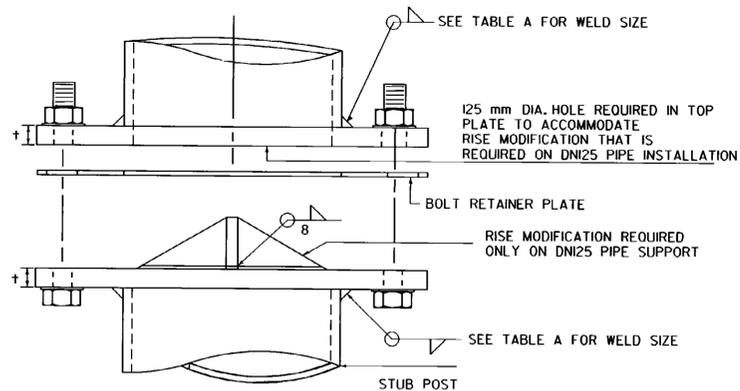
Metric
STANDARD
E-162M



DETAILS OF MULTI-DIRECTIONAL SLIP BASE

TABLE A

PIPE SIZE	BOLT SIZE & TORQUE	WELD SIZE	t	Y	A	B	C	D	E	F	G	K	L	M	U	N
DN75	M16 X 2 X 85 T = 55 N • m	10	16	175	180	90	45	30	78	57	50	260	225	11	10	150
DN90	M20 X 2.5 X 95 T = 100 N • m	12	20	215	230	115	55	40	101	73	65	330	285	13	10	190

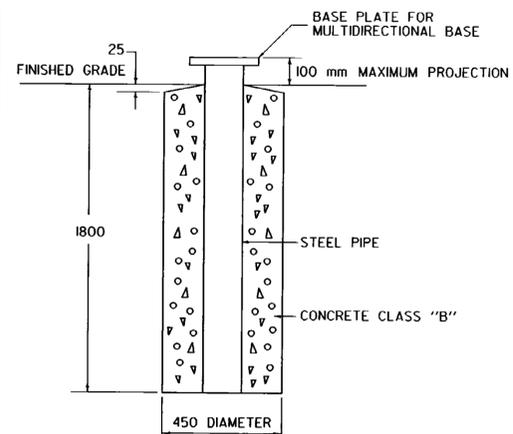


BOLT RETAINER PLATE

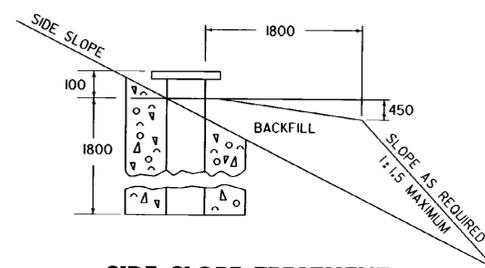
0.48-mm GALVANIZED STEEL

BOLT RETAINER PLATE SIMILAR IN DETAIL TO THE BASE PLATES WITH THE FOLLOWING EXCEPTIONS:

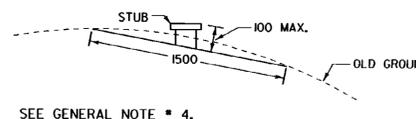
PIPE SIZE	FR	O	P	Q
DN75	52	26	18	65
DN90	68	34	22	75



FOUNDATION DETAIL



SIDE SLOPE TREATMENT



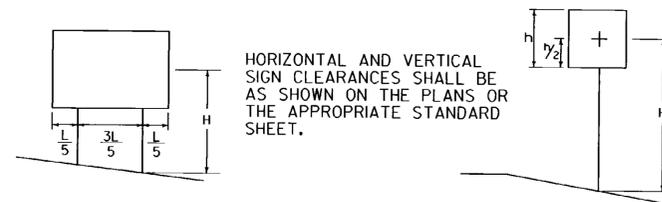
SEE GENERAL NOTE # 4.

GENERAL NOTES

1. THE STEEL PIPE SHALL BE MANUFACTURED TO ASTM A 501 OR ASTM A 53, TYPES E OR S, GRADE B AND SHALL BE GALVANIZED AS PER ASTM A 153.
2. THE MATERIAL FOR THE MULTIDIRECTIONAL SLIP BASE ASSEMBLY SHALL CONFORM TO AASHTO M 270/M 270M, GRADE 250 STEEL, AND BE GALVANIZED AS PER ASTM A 153.
3. THE BOLTS, NUTS AND CIRCULAR WASHERS SHALL CONFORM TO ASTM A 325M. ALL BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AS PER ASTM A 123.
4. ALL DIMENSIONS REFERRING TO STUB HEIGHT IN THE VARIOUS TABLES AND FOUNDATION DETAILS SHALL BE ADJUSTED AS REQUIRED TO RESULT IN A TOTAL STUB HEIGHT WHICH IS NOT MORE THAN 100 mm ABOVE A 1500-mm CHORD ALIGNED RADially TO THE CENTERLINE OF THE HIGHWAY AND CONNECTING ANY POINT, WITHIN THE LENGTH OF THE CHORD, ON THE GROUND SURFACE ON ONE SIDE OF THE SUPPORT TO A POINT ON THE GROUND SURFACE ON THE OTHER SIDE.

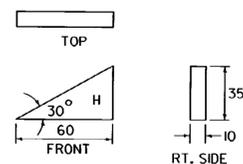
CONSTRUCTION METHOD

HOLES FOR POST FOOTINGS MAY BE AUGERED OR DUG, IF THE MATERIAL IS FIRM AND IF ALL DISTURBED SOIL AROUND THE CIRCUMFERENCE OF THE AUGERED HOLE IS REMOVED, THE HOLES MAY BE LEFT WITH EARTH SIDES. IF NOT, A SUITABLE FORM APPROVED BY THE ENGINEER SHALL BE USED. CORRUGATED METAL CULVERT PIPE OR PAPER FORMS, MANUFACTURED FOR USE AS CONCRETE COLUMN FORMS, WILL BE ACCEPTABLE. THE STUB SHALL BE EXTENDED TO THE BOTTOM OF THE HOLE AND SET ON A CONCRETE PAD FOOTING TO SUPPORT THE POST SO THE POST SHALL BE HELD SECURELY IN PLACE AT THE BOTTOM. THIS MAY BE DONE BY EMBEDDING THE POST AND CONCRETE BLOCK FOOTING IN WET CONCRETE, AND ALLOWING THE CONCRETE TO SET WITH THE POST SECURED IN POSITION; PLUMBED AND PROPERLY BRACED. THE REMAINDER OF THE FOOTING MAY THEN BE POURED. THE TIME BETWEEN POURS FOR THE CURING OF THE CONCRETE SHALL BE AS DETERMINED BY THE ENGINEER. THE FORM SHALL BE LEFT IN PLACE AND THE HOLE BACKFILLED AND COMPACTED AS DIRECTED BY THE ENGINEER. NO PART OF THE FORM SHALL SHOW ABOVE THE GROUND LINE WHEN THE WORK IS COMPLETED.



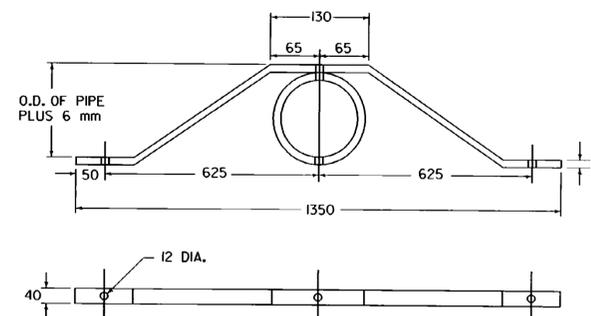
POST SELECTION CHART DETAIL

POST SELECTION CHART			
SIGN AREA (m ²) x H (m) ≤ S _v (SELECTION VALUE)			
POST SIZE	MASS kg/m	S _v	DESIGN CRITERIA
DN75	11.3	8.57	WIND SPEED = 100 km/h (10-YEAR MEAN RECURRENCE INTERVAL) WIND PRESSURE = 760 Pa STEEL MIN YIELD F _y = 250 MPa ALLOWABLE STRESS = (1.4) 0.66 F _y
DN90	13.6	11.90	
DN100	16.1	15.99	
DN125	21.8	27.15	



DETAIL "H"

3 REQUIRED MOUNTED 120° APART
RISE MODIFICATION REQUIRED ONLY FOR DN125 PIPE SUPPORT



SIGN SUPPORT BRACE

(REQUIRED WHEN INSTALLING 3 ASSEMBLY FRAME AS SHOWN ON STANDARD E-123M)

REVISIONS AND CORRECTIONS

JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

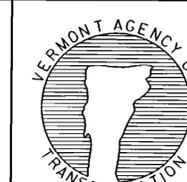
[Signature]
DIRECTOR OF ENGINEERING

[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

TUBULAR STEEL SIGN POST

OTHER STDS. REQUIRED:

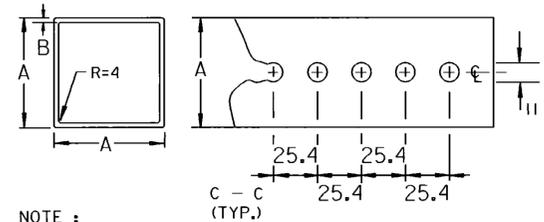
NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.



Metric STANDARD E-163M

GUARDRAIL DEFLECTION CHART (PER AASHTO - ROADSIDE DESIGN GUIDE)		
TYPE	GR POST SPACING	DEFLECTION
THREE CABLE W/STEEL POSTS	5.0 m	3.5 m
W-BEAM	W/WEAK POST	3.8 m
	W/STRONG POST	1.9 m
BOX BEAM	1.83 m	1.5 m
THRE BEAM	W/WEAK POST	3.8 m
	W/STRONG POST	1.9 m

THIS CHART LISTS THE THEORETICAL DEFLECTION DISTANCE UPON IMPACT OF VARIOUS GUARDRAIL WITH DIFFERENT TYPES AND SPACING OF POSTS.



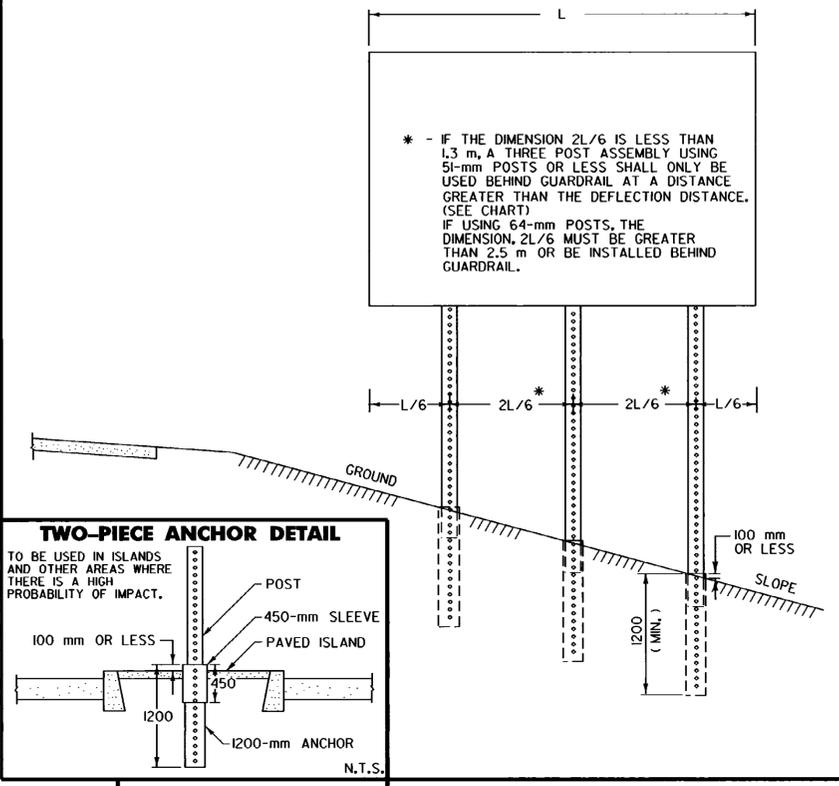
NOTE :
THE POSTS SHALL BE CAREFULLY FORMED OF STEEL, WITH A MINIMUM YIELD OF 380 MPa, INTO A SIZE AND SHAPE WITH CORNERS INDUCTION WELDED IN SUCH A MANNER THAT NEITHER FLASH NOR WELD SHALL INTERFERE WITH THE TELESCOPING PROPERTIES NOR DAMAGE THE GALVANIZATION.

- THE 2.7-mm WALL THICKNESS TOLERANCES SHALL BE +0.125 mm AND -0.250 mm.
- THE 2.0-mm WALL THICKNESS TOLERANCES SHALL BE +0.050 mm AND -0.200 mm.

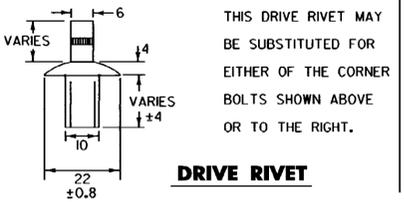
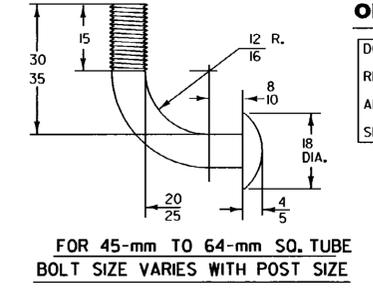
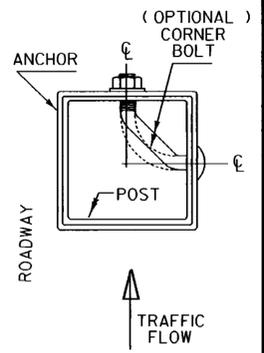
DIMENSION DETAILS AND POST SELECTION CHART

POST SELECTION CHART							
SIGN AREA (m ²) X H (m) ≤ Sv (SELECTION VALUE)							
POST SIZE	DIMENSIONS		SECTION MODULUS	ONE POST	TWO POST	THREE POST	NUMBER PERMITTED
kg/m	A	*B	mm ³	Sv	Sv	Sv	IN 2.4-m PATH
2.8	45	2.0	3770	1.63	3.26	4.89	TWO
3.2	51	2.0	4850	2.09	4.18	6.27	TWO
5.0	64	2.7	10 520	4.54	9.08	13.62	ONE

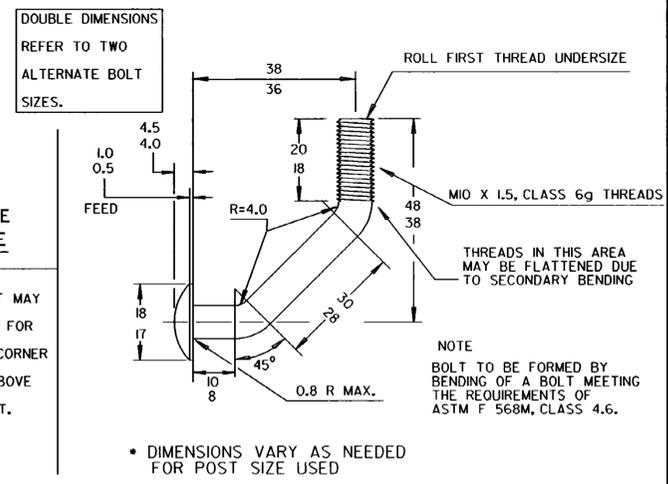
DESIGN CRITERIA:
WIND SPEED = 100 km/h (10 -YEAR MEAN RECURRENCE INTERVAL)
WIND PRESSURE = 740 Pa
STEEL MINIMUM YIELD = 380 MPa
ALLOWABLE STRESS = (1.4) 0.60 Fy



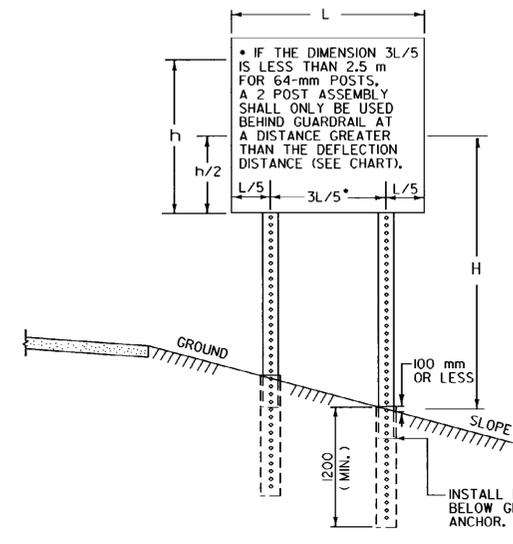
TOP VIEW OF ANCHOR, POST AND BOLT



OPTIONAL CORNER BOLT DETAILS



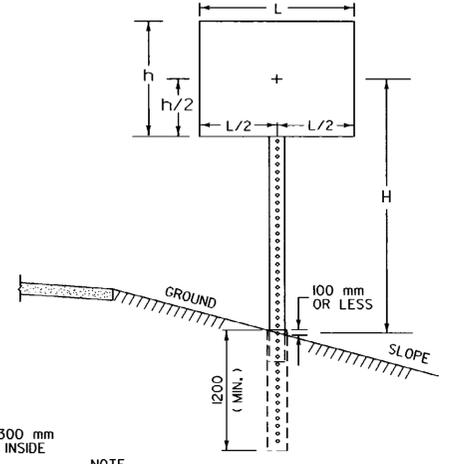
MULTI-POST INSTALLATIONS



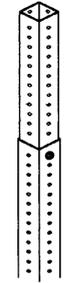
POST SPACING DETAILS

GENERAL NOTES

CONSTRUCTION METHODS - POSTS MAY BE DRIVEN OR SET IN A DUG HOLE AND BACKFILLED. IF DRIVEN, A DRIVING CAP SHALL BE USED. THE DUG HOLE INSTALLATION SHALL BE USED IN AREAS OF POOR SOIL CONDITIONS OR AS DIRECTED BY THE RESIDENT ENGINEER. BACKFILL SHALL BE COMPACTED AS DIRECTED BY THE RESIDENT ENGINEER.
SIGN CLEARANCES - HORIZONTAL AND VERTICAL SIGN CLEARANCES SHALL BE SHOWN ON THE PLANS OR THE APPROPRIATE STD. SHEETS.
SINGLE POST INSTALLATIONS SHALL BE LIMITED TO A SIGN AREA OF 1.8 m² OR LESS.



CONNECTION DETAIL



POST IS TO BE INSERTED INTO ANCHOR 300 mm BELOW GROUND LEVEL. ANCHOR IS TO BE 1200 mm MINIMUM LENGTH WITH NO MORE THAN 100 mm ABOVE GROUND. ANCHOR IS ONE SIZE (6 mm) GREATER THAN THE POST AND ALL ANCHORS ARE TO BE 2.7 mm THICK EXCEPT ANCHORS FOR 64-mm POSTS ARE TO BE 76 mm AND 4.7 mm THICK. CONNECTION IS TO BE MADE USING THE BOLT PROVIDED WITH THE SIGN SYSTEM (SEE DETAILS LEFT), AT THE TOP HOLE IN THE ANCHOR (APPROXIMATELY 90 mm ABOVE GROUND). 75-mm ANCHORS WHICH DO NOT HAVE HOLES ON 25.4-mm CENTERS WILL REQUIRE DRILLING OF 11-mm HOLES FOR CONNECTIONS.

OTHER STDS. E-120M
REQUIRED: E-160M
NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

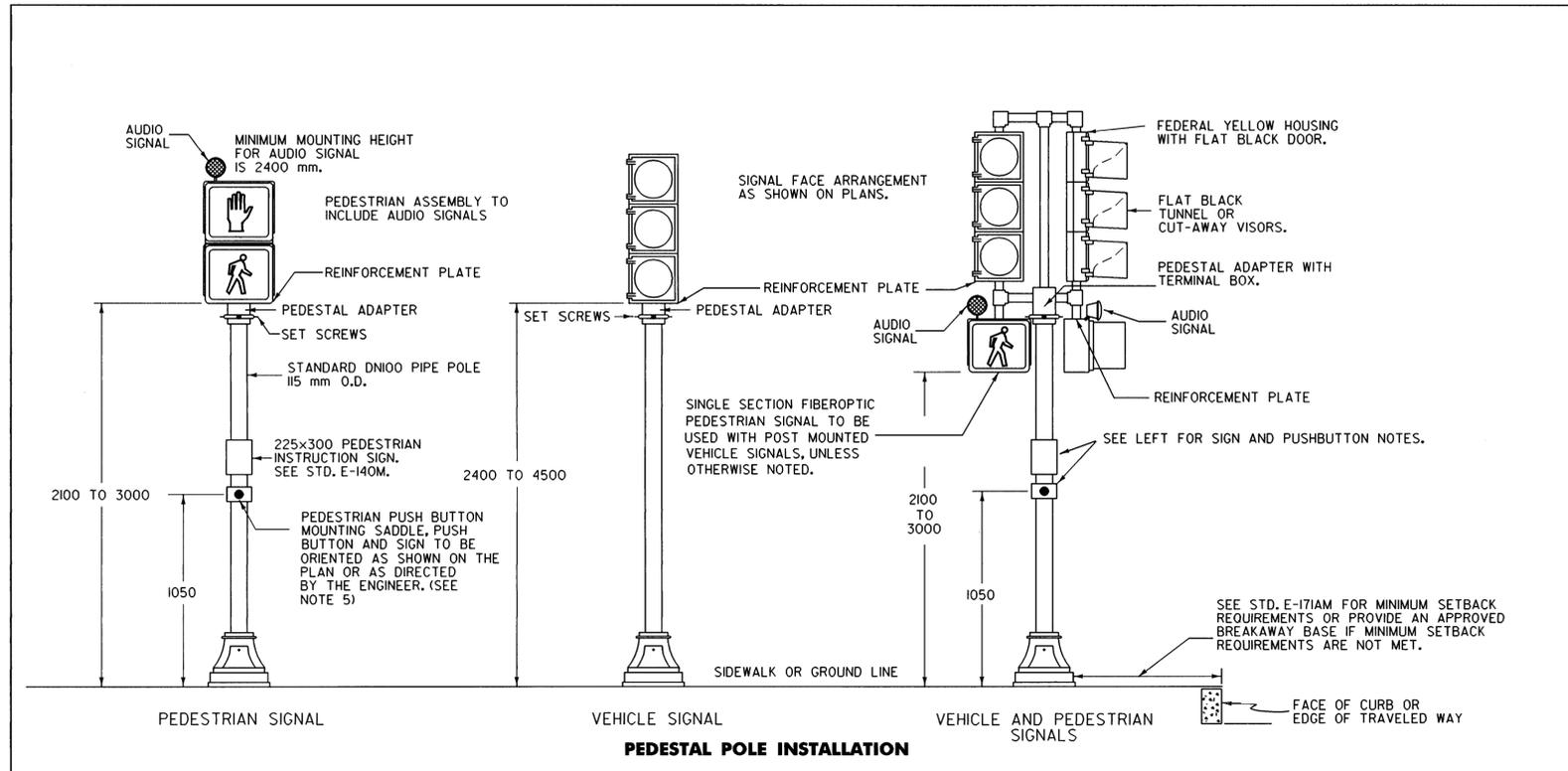
REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED
[Signature]
DIRECTOR OF ENGINEERING
[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

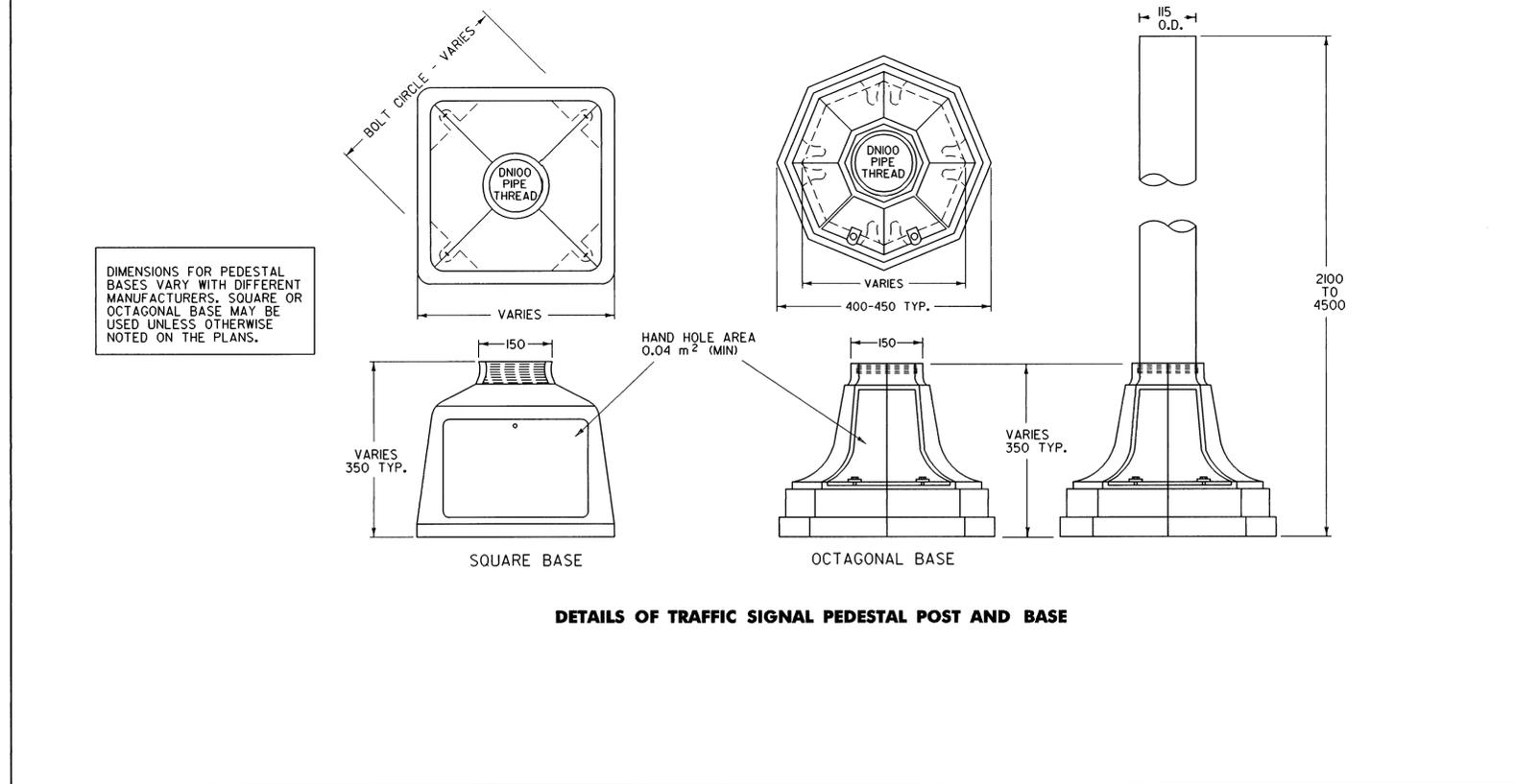
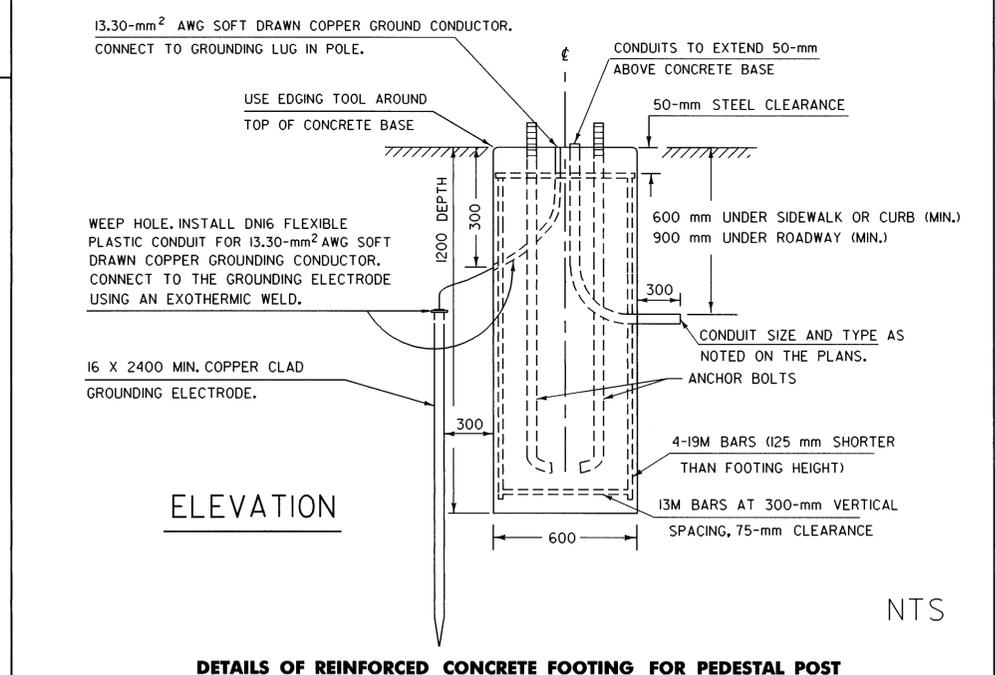
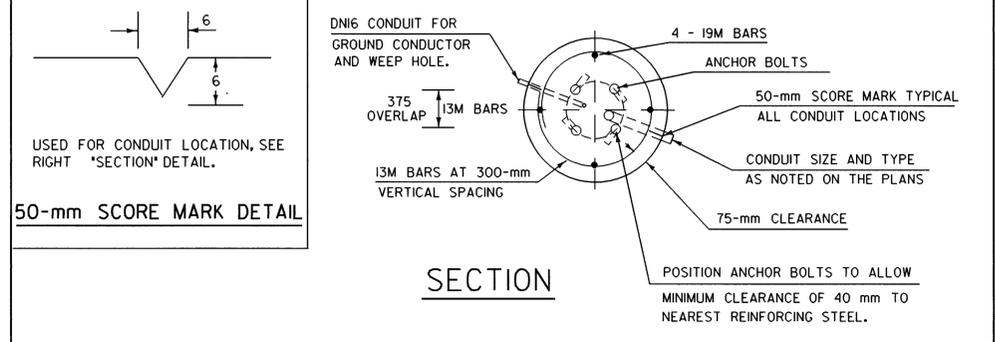
SQUARE STEEL SIGN POST



Metric STANDARD E-164M



- NOTES**
- REFER TO STANDARD E-171AM FOR TRAFFIC SIGNAL GENERAL NOTES.
 - STEEL PEDESTAL POSTS AND BASES SHALL BE PAINTED FEDERAL YELLOW, AFTER GALVANIZATION, UNLESS OTHERWISE NOTED IN THE PLANS. ALUMINUM POSTS AND BASES SHALL HAVE A NATURAL ALUMINUM FINISH.
 - ALL PEDESTAL POLES WHICH ARE PROVIDED WITH A BREAKAWAY FEATURE SHALL CONFORM TO THE REQUIREMENTS OF THE AASHTO PUBLICATION "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS", LATEST EDITION.
 - REFER TO STD E-171CM FOR PEDESTRIAN PUSH BUTTON ACCESSIBILITY DETAILS.
 - PUSH BUTTON CONTROLS SHALL BE RAISED FROM OR FLUSH WITH THEIR HOUSINGS AND SHALL BE A MINIMUM OF 51mm IN THE SMALLEST DIMENSION. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO GREATER THAN 22.2 N.



REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED
[Signature]
DIRECTOR OF ENGINEERING
[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

TRAFFIC CONTROL SIGNALS PEDESTAL POST MOUNTED

OTHER STDS. E-140M E-171BM
REQUIRED: E-171AM E-171CM
NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

Metric STANDARD E-170M



TRAFFIC CONTROL SIGNALS PEDESTAL POST MOUNTED

DIRECTOR OF PROJECT DEVELOPMENT

JUNE 13, 1997 - ORIGINAL APPROVAL DATE
NOV. 4, 1999 - CHANGED PED. POLE INSTALLATION NOTE.
PER AASHTO SPECIFICATIONS

REVISIONS AND CORRECTIONS

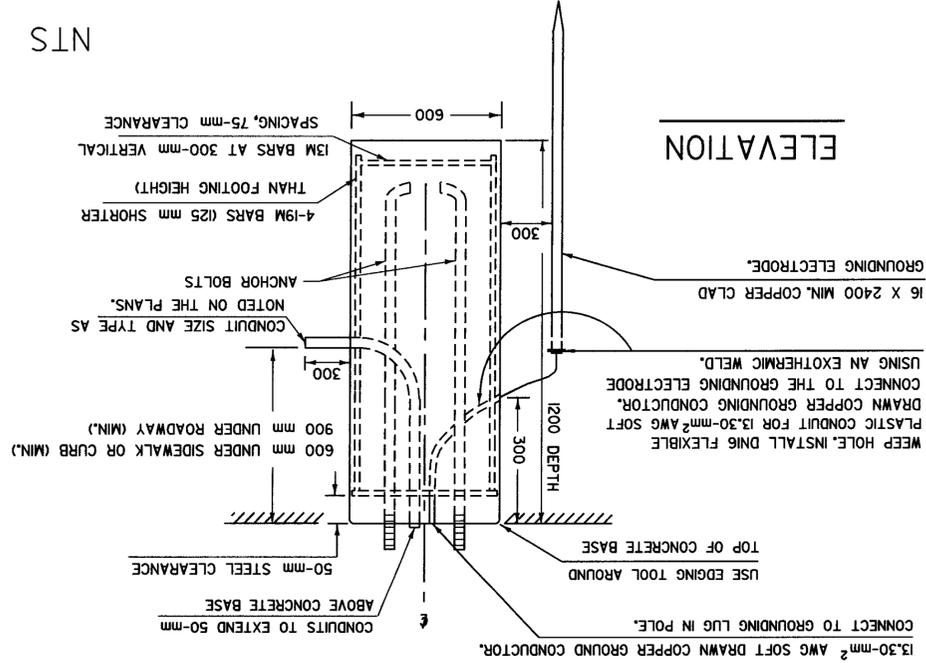
APPROVED

OTHER STDS. E-140M E-171AM E-171CM
REQUIRED:
NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

/trf/metric/stdm/et70m.dgn

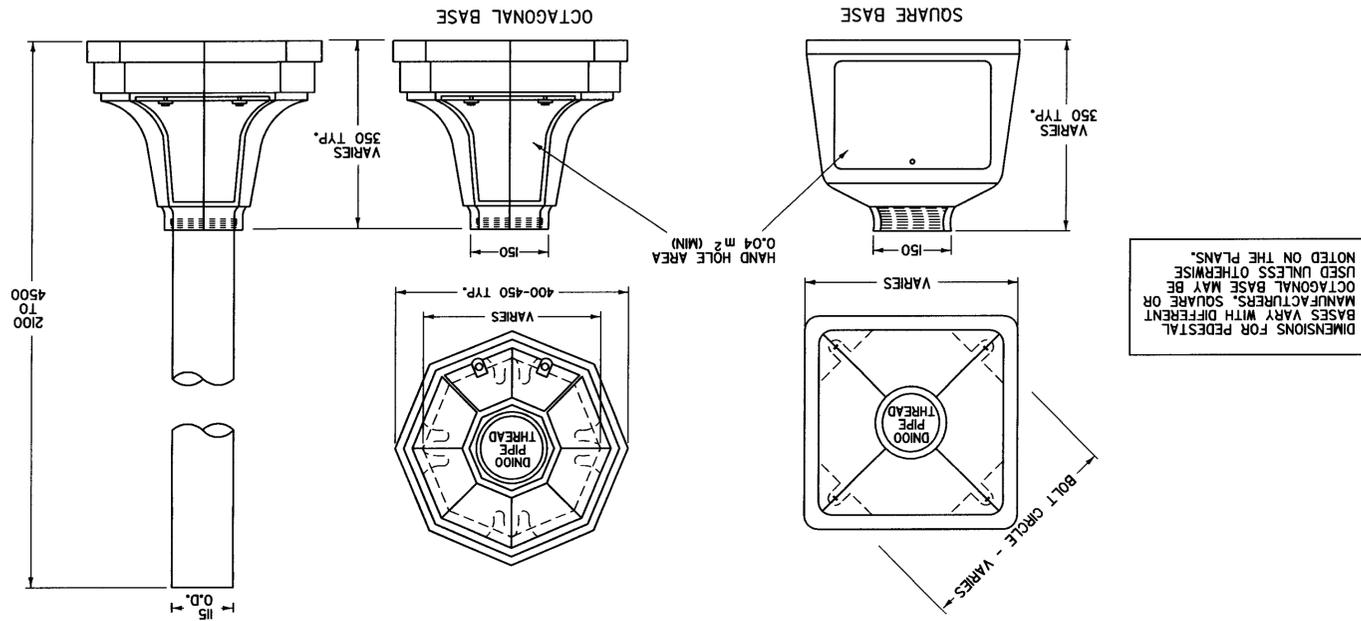
DELETED

DETAILS OF REINFORCED CONCRETE FOOTING FOR PEDESTAL POST

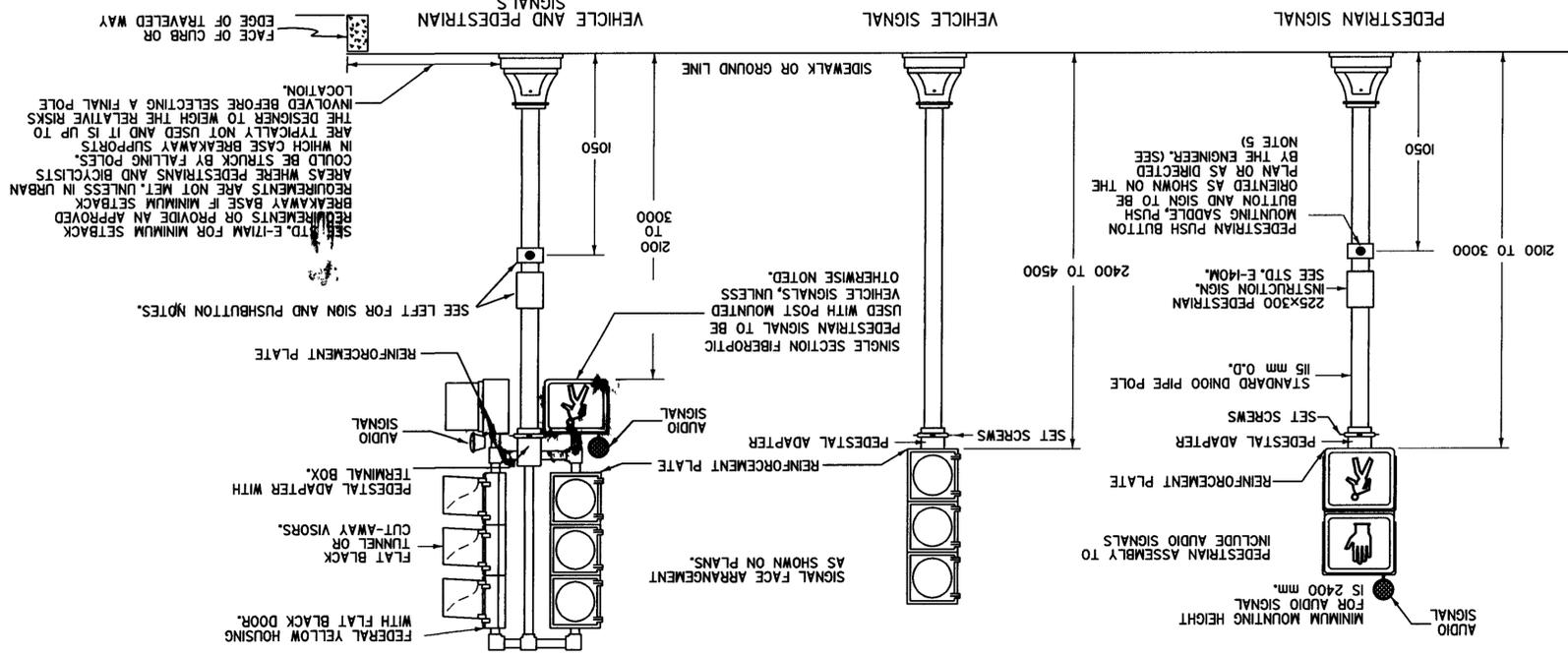


NTS

DETAILS OF TRAFFIC SIGNAL PEDESTAL POST AND BASE

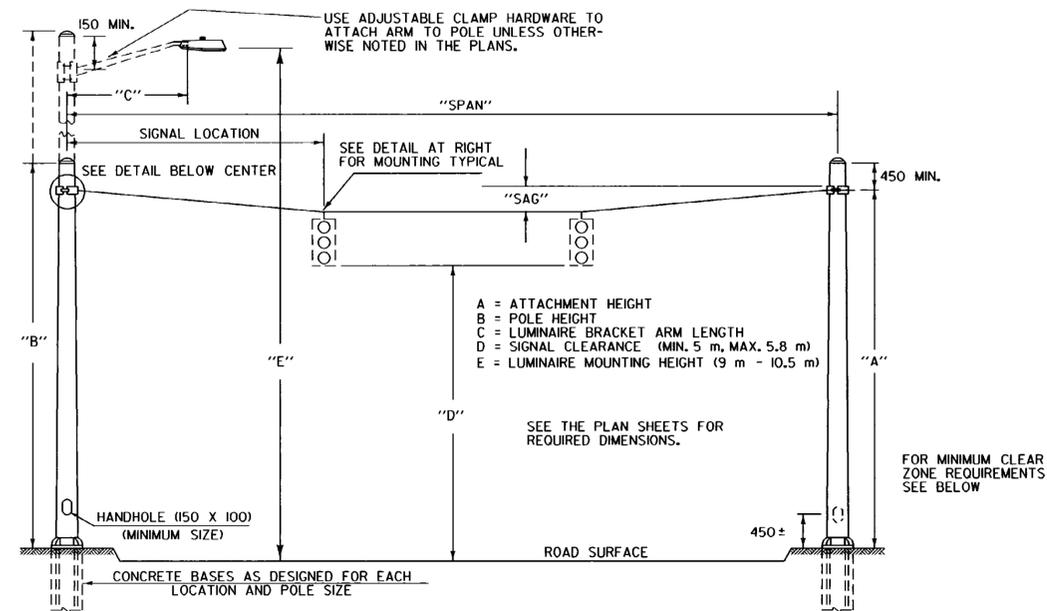


PEDESTAL POLE INSTALLATION



NOTES

- REFER TO STANDARD E-171AM FOR TRAFFIC SIGNAL GENERAL NOTES.
- STEEL PEDESTAL POSTS AND BASES SHALL BE PAINTED FEDERAL YELLOW, AFTER GALVANIZATION, UNLESS OTHERWISE NOTED IN THE PLANS. ALUMINUM POSTS AND BASES SHALL HAVE A NATURAL ALUMINUM FINISH.
- ALL PEDESTAL POLES WHICH ARE PROVIDED WITH A BREAKAWAY FEATURE SHALL CONFORM TO THE REQUIREMENTS OF THE AASHTO 1985 STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, SECTION 7 AND SUBSEQUENT REVISIONS.
- REFER TO STD E-171CM FOR PEDESTRIAN PUSH BUTTON ACCESSIBILITY DETAILS.
- PUSH BUTTON CONTROLS SHALL BE RAISED FROM OR FLUSH WITH THEIR HOUSINGS AND SHALL BE A MINIMUM OF 51mm IN THE SMALLEST DIMENSION. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO GREATER THAN 22.2 N.

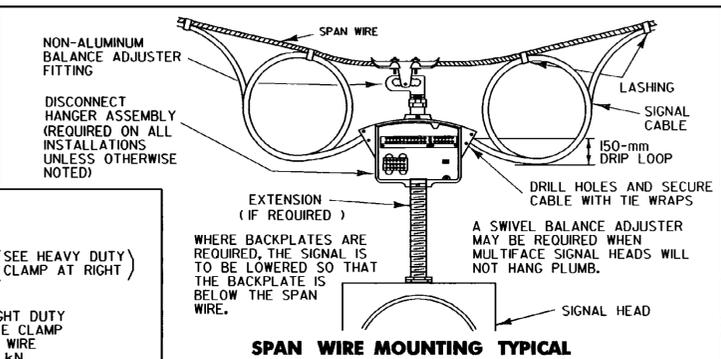


SPAN WIRE MOUNTED TRAFFIC SIGNALS WITH LUMINAIRES

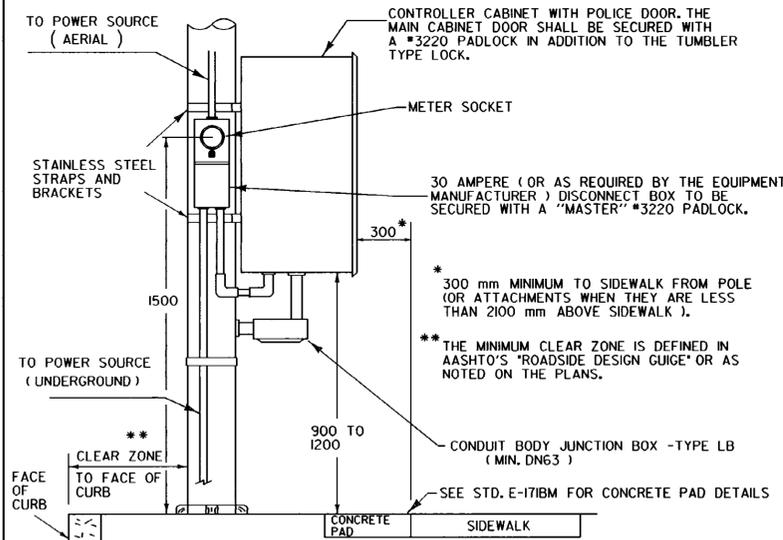
NOTES

- 1) ALL TRAFFIC SIGNAL EQUIPMENT SHALL MEET OR EXCEED ALL REQUIREMENTS OF THE LATEST REVISION OF THE NATIONAL ELECTRICAL MANUFACTURERS ASSOC. (NEMA) AND THE INTERNATIONAL MUNICIPAL SIGNAL ASSOC. (IMSA) STANDARDS FOR TRAFFIC CONTROL SYSTEMS.
- 2) ALL ELECTRICAL WIRE AND CABLE SHALL BE COPPER ELECTRICAL SIGNAL CABLE FROM TRAFFIC SIGNAL CONTROLLER TO SIGNAL HEADS SHALL BE COMPOSED OF AWG 3.31-mm² (MIN) STRANDED CONDUCTORS, AND SHALL MEET IMSA WIRE AND CABLE SPECIFICATIONS.
- 3) ALL SIGNAL HEAD CABLES SHALL BE CONTINUOUS FROM THE CONTROLLER TO THE NEAREST SIGNAL HEAD TO WHICH THEY APPLY. THE CABLE SHALL ALSO BE CONTINUOUS FROM THE FIRST SIGNAL HEAD TO ANY ADDITIONAL HEADS WITH TERMINATION IN THE DISCONNECT HANGER.
- 4) THE PEDESTRIAN SIGNAL HEADS SHALL HAVE AUDIO SIGNALS TO INDICATE ALLOWABLE PEDESTRIAN MOVEMENT FOR THE VISUALLY IMPAIRED DURING THE PEDESTRIAN PHASE. THEY SHALL BE OF THE TYPE NORMALLY USED FOR SUCH AN INSTALLATION AND BE WIRED IN SUCH A WAY AS TO BE EASILY DEACTIVATED. AFTER THE AUDIO SIGNAL HAS BEEN INSTALLED AND FIELD TESTED IT SHALL BE DEACTIVATED, UNLESS AN EXCLUSIVE PEDESTRIAN PHASE IS OPERATING AT THE INTERSECTION. PEDESTRIAN PUSH BUTTONS SHALL BE INSTALLED AT EACH END OF EACH CROSSWALK WHERE ACTUATED PEDESTRIAN SIGNALS ARE INSTALLED OR AS SHOWN ON THE PLANS.
- 5) THE PEDESTRIAN HEADS SHALL UTILIZE INTERNATIONAL SYMBOLS FOR WALK AND DON'T WALK PHASES, UNLESS OTHERWISE NOTED. THEY SHALL MEET THE LATEST REQUIREMENTS OF THE MUTCD.
- 6) WHEN STREET LIGHTS ARE INSTALLED ON A TRAFFIC SIGNAL STRAIN POLE, AND THE STREET LIGHTING ITEM IS NOT PART OF THE CONTRACT, THE LUMINAIRES AND BRACKET ARMS ARE INCLUDED UNDER THE TRAFFIC CONTROL SIGNAL ITEM. THEY SHALL MEET ALL OF THE REQUIREMENTS OF THE CURRENT VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

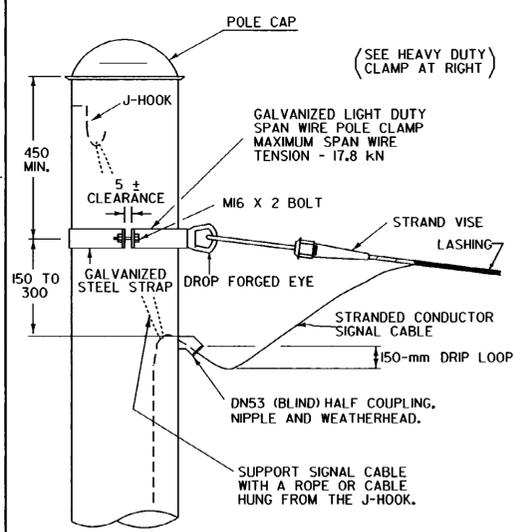
- 7) SIGNAL TIMING IS APPROXIMATE AND IS NOT TO BE CONSIDERED FINAL. ALL NECESSARY HARDWARE TO CHANGE THE TIMING SHALL BE ON HAND WHEN THE SIGNALS ARE ACTIVATED. THE RESIDENT ENGINEER SHALL PERFORM CHECKS DURING THE AM AND PM PEAK PERIODS TO INSURE OPTIMUM SETTINGS. IF REQUIRED, APPROPRIATE TIMING CHANGES SHALL BE MADE TO "FINE-TUNE" THE CONTROLLER TO ITS BEST EFFICIENCY PRIOR TO COMPLETION OF THE PROJECT. TIMING CHANGES WILL BE APPROVED BY A REPRESENTATIVE OF THE VAOT TRAFFIC AND SAFETY DIVISION. TIMING ADJUSTMENTS SHALL BE SUBSIDIARY TO THE TRAFFIC CONTROL SIGNAL ITEM. MINOR TIMING CHANGES MADE TO "FINE-TUNE" THE CONTROLLER WILL NOT AFFECT THE RUNNING OF THE 30-DAY TEST PERIOD.
- 8) THE TRAFFIC SIGNAL STRAIN POLES SHALL BE BACK RAKED BEFORE THE WIRES AND SIGNALS ARE INSTALLED SO THAT THE POLES WILL BE PLUMB WHEN DEAD LOAD DEFLECTION DUE TO SPAN WIRE AND SIGNAL HEADS OCCURS. THE AMOUNT OF BACK RAKE SHALL BE AS SHOWN ON THE PLANS.
- 9) THE SIGNAL SYSTEM SHALL NOT OPERATE WITHOUT THE APPROPRIATE PAVEMENT MARKINGS AND RELATED SIGNING IN PLACE.
- 10) THE SIGNAL HEADS SHALL BE COVERED WITH AN OPAQUE COVERING UNTIL SUCH TIME AS THE SIGNAL SYSTEM IS FUNCTIONAL. AT NO TIME SHOULD THE HEADS BE VIEWED WITHOUT HAVING SOME FORM OF SIGNAL INDICATION, (I.E. FLASHING OPERATION OR SEQUENCING AS PER PLAN).
- 11) THE CONFLICT MONITOR SHALL BE CAPABLE OF DETECTING A LACK OF RED, GREEN, YELLOW OR WALK SIGNAL AND SHALL BE CAPABLE OF STORING AT LEAST NINE PREVIOUS FAULTS FOR RECALL VIA A DISPLAY SCREEN.
- 12) THE VEHICLE DETECTOR AMPLIFIERS AND PHASE MODULES (WHERE APPROPRIATE) INSIDE THE CONTROLLER CABINET SHALL HAVE LABELS TO INDICATE WHICH PHASE AND MOVEMENT GOES WITH EACH. THE LABELS SHALL BE 15 mm WIDE. THE LOOP DETECTOR LEAD-INS SHALL ALSO BE LABELED AT THE TERMINAL BOARD AS TO WHICH MOVEMENT AND LANE THEY ARE FROM. VEHICLE DETECTOR AMPLIFIERS SHALL BE OF A TYPE THAT FAIL IN THE "ON" POSITION.
- 13) TEST SWITCHES FOR EACH PHASE SHALL BE PLACED EITHER ON THE CABINET DOOR OR IN A CONVENIENT LOCATION ON THE SIDE WALL.
- 14) ALL DOOR MOUNTED SWITCHES AND BUTTONS SHALL BE PROTECTED FROM ACCIDENTAL BUMPING OR FROM COMING INTO CONTACT WITH OTHER EQUIPMENT WHEN THE DOOR IS CLOSED.
- 15) ALL SIGNALS SHALL BE WIRED SUCH THAT NO MORE THAN TWO THROUGH FACES (NORTH-SOUTH AND/OR EAST-WEST) ARE WIRED INTO ONE LOAD SWITCH EVEN THOUGH TWO APPROACHES ARE GREEN DURING THE SAME PHASE.
- 16) THE CONTRACTOR SHALL PROVIDE A MINIMUM OF TWO COPIES OF THE INSTRUCTION MANUALS FOR THE CONTROLLER, LOOP DETECTORS, CONFLICT MONITORS AND ANY OTHER EQUIPMENT INCLUDED IN THE CABINET. ONE COPY IS TO BE KEPT IN THE CABINET AND THE OTHER GIVEN TO THE PARTY RESPONSIBLE FOR MAINTENANCE OF THE SIGNAL SYSTEM. ADDITIONAL COPIES TO BE PROVIDED AS CALLED FOR ON THE PLANS.
- 17) FOR PROGRAMMABLE SOLID STATE CONTROLLERS AND MASTERS, COPIES OF THE FINAL PROGRAM LISTINGS SHALL BE PROVIDED AND DISTRIBUTED AS DETAILED IN NOTE 16.
- 18) PHASING CHANGES, IF REQUESTED AND FEASIBLE, SHALL BE CONSIDERED AS PART OF THE CONTRACT. EXTRA COMPENSATION FOR THE CHANGES MAY BE AUTHORIZED FOLLOWING APPROVAL OF THE ESTIMATE.
- 19) TRAFFIC SIGNALS INSTALLED AT NEW LOCATIONS SHALL BE ACTIVATED ONLY UPON THE APPROVAL OF THE ENGINEER AND AFTER FLASHING FOR A MINIMUM OF 48 HRS.
- 20) IF THE PROJECT INVOLVES REPLACING OR IMPROVING AN EXISTING TRAFFIC SIGNAL TRAFFIC SHALL BE CONTROLLED BY A UNIFORMED TRAFFIC OFFICER AT ANY TIME THE SIGNAL IS NOT SEQUENCING PER PLAN OR OPERATING ON FLASH. THE SWITCH FROM THE OLD TO THE NEW SIGNAL SHALL BE DONE DURING OFF-PEAK TRAFFIC AND IN SUCH A WAY AS TO MINIMIZE DOWN TIME.
- 21) TRAFFIC & PEDESTRIAN SIGNALS MOUNTED ON THE SIDE OF THE SIGNAL POLES MAY BE ATTACHED BY METHODS OTHER THAN THOSE SHOWN. SHOP DRAWINGS FOR THE ALTERNATE MOUNTING HARDWARE MUST BE SUBMITTED TO THE TRAFFIC DESIGN SECTION OF THE VAOT VIA THE RESIDENT ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.
- 22) ALL RIGIDLY MOUNTED TRAFFIC AND PEDESTRIAN SIGNAL HEADS (POST TOP, SIDE OR ARM MOUNTED) SHALL BE HEAVY DUTY ALUMINUM, UNLESS OTHERWISE NOTED ON THE PLANS.
- 23) WHEN (FREE SWINGING) OPTICALLY PROGRAMMABLE SIGNAL HEADS ARE REQUIRED, THEY SHALL NOT BE INSTALLED ON THE SAME HANGER ASSEMBLY AS LIGHTER HEADS, UNLESS OTHERWISE NOTED ON THE PLANS. WHEN TWO HANGER ASSEMBLIES ARE INSTALLED CLOSE TOGETHER, THE BOTTOM OF THE SIGNALS SHALL BE CONNECTED BY A FLAT ARM ASSEMBLY TO PREVENT THE HEADS FROM HITTING EACH OTHER.
- 24) WHEN MASKING OF OPTICALLY PROGRAMMABLE SIGNAL HEADS IS REQUIRED, THE HEADS SHALL BE RIGIDLY MOUNTED OR TETHERED, AS SHOWN ON STD E-171BM.
- 25) WHEN STREET LIGHTING AND SIGNALS ARE INSTALLED AT THE SAME LOCATION, THE POWER FOR EACH SHALL BE SEPARATED AT THE STANCHION OR SERVICE.
- 26) WHEN MORE THAN ONE SIGNAL IS POWERED FROM THE SAME SERVICE, EACH SHALL HAVE ITS OWN DISCONNECT AT THE STANCHION.



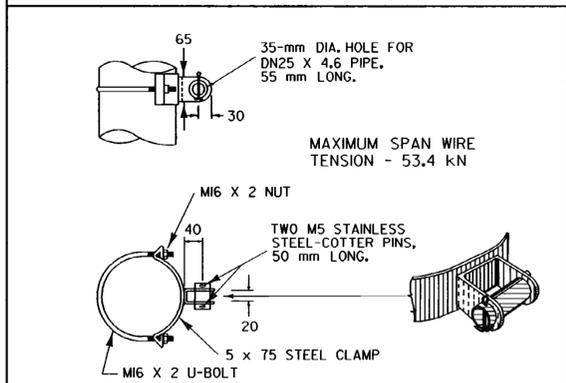
SPAN WIRE MOUNTING TYPICAL



POLE MOUNTED CONTROLLER CABINET INSTALLATION TYPICAL



CABLE INSTALLATION TYPICAL WITH SPAN WIRE POLE CLAMP (LIGHT DUTY GALVANIZED)



SPAN WIRE CLAMP (HEAVY DUTY GALVANIZED)

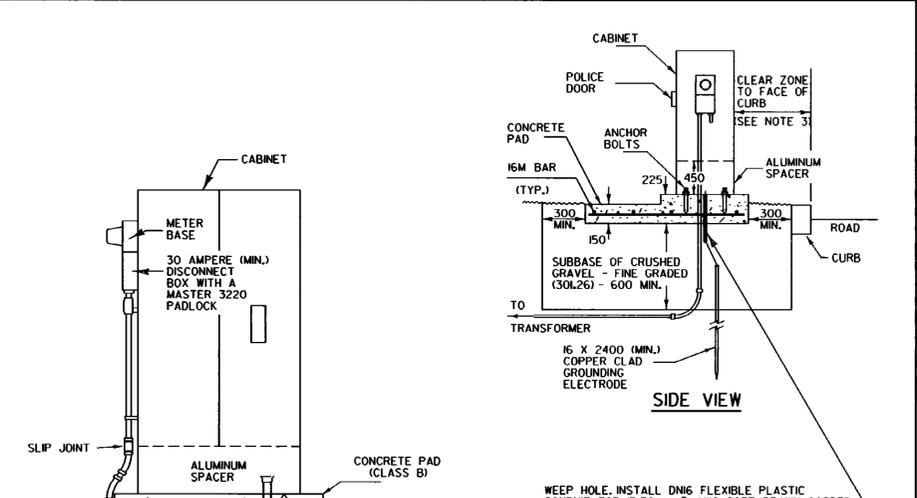
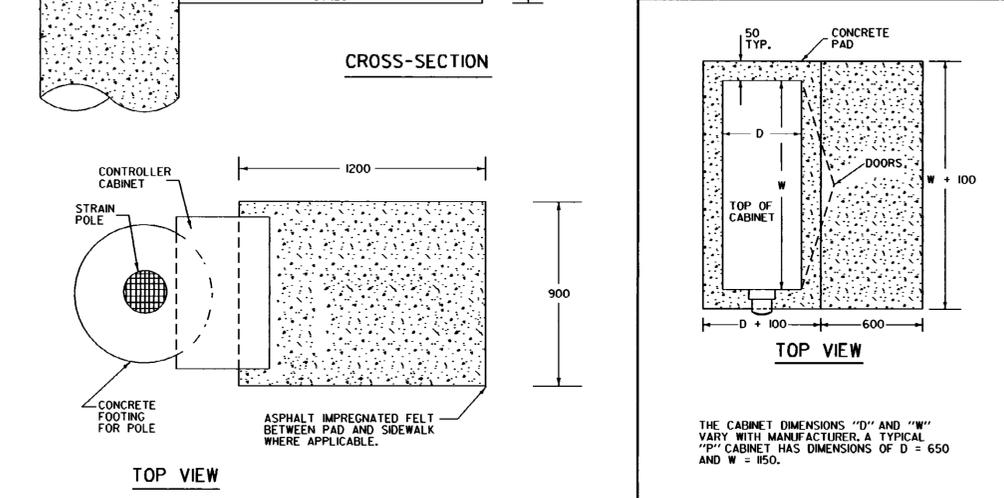
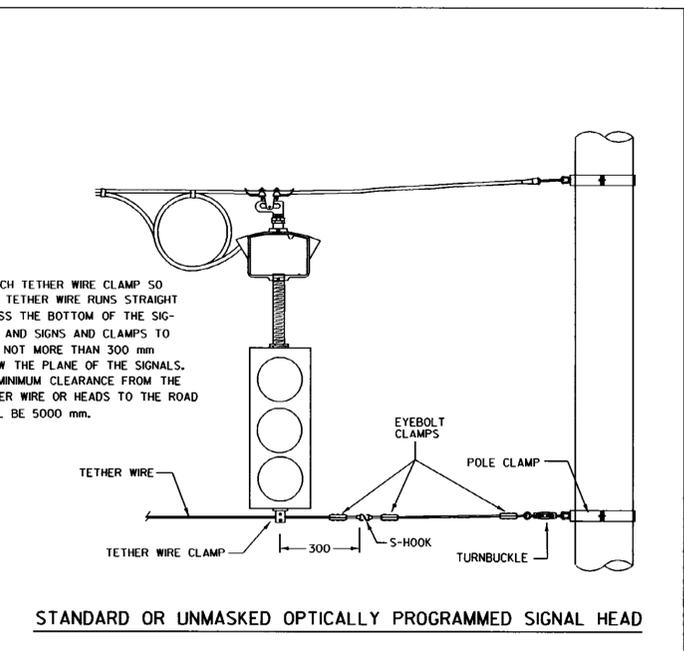
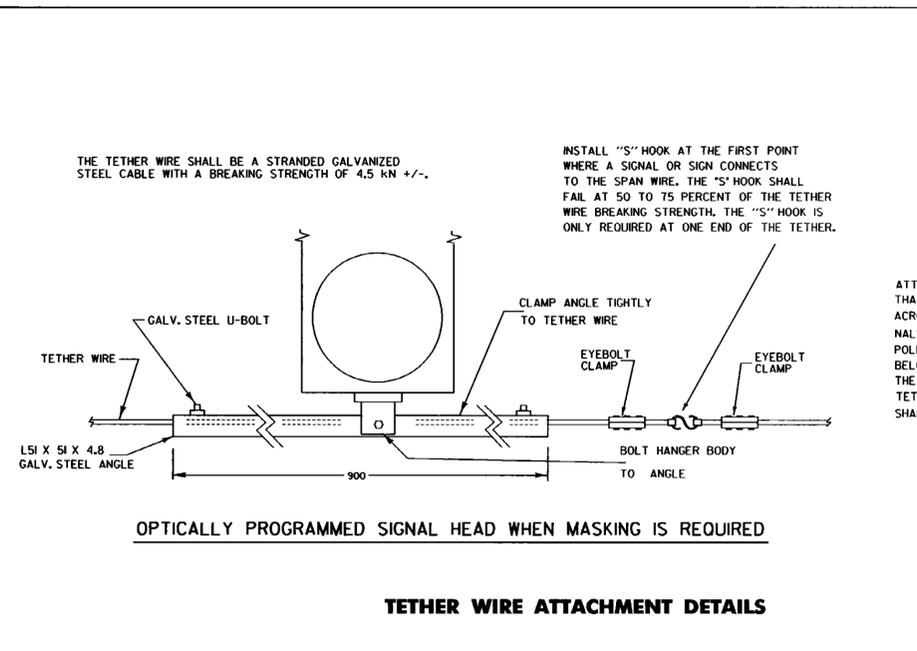
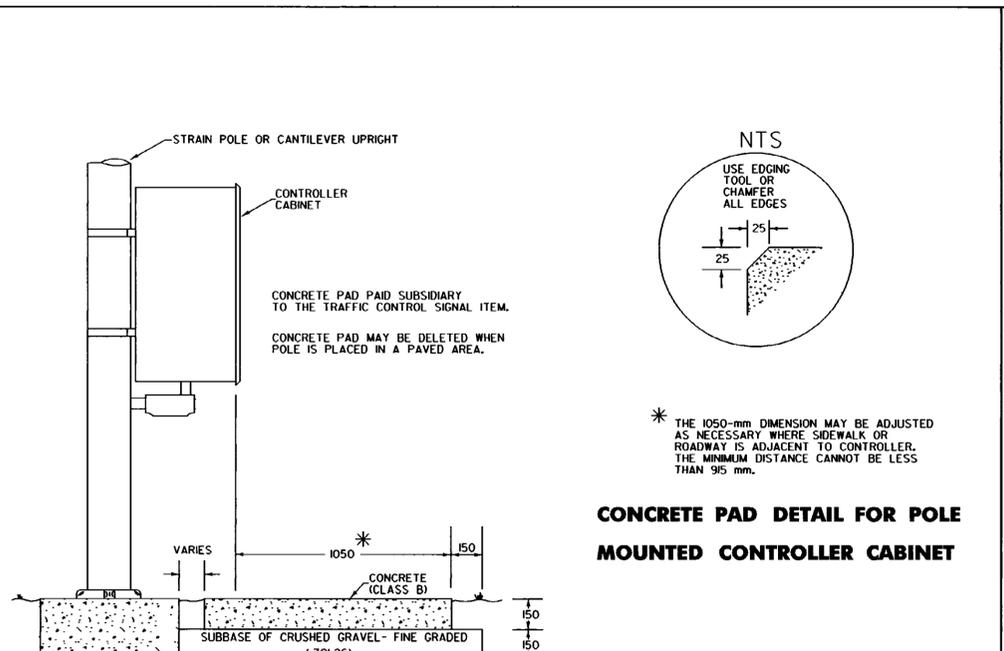
OTHER STDS. E-171BM REQUIRED: E-175M
NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED
[Signature]
DIRECTOR OF ENGINEERING
[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

TRAFFIC CONTROL SIGNALS GENERAL NOTES & DETAILS





NOTES:

1. THE CONCRETE PAD SURFACE SHALL HAVE A BRUSHED FINISH.
2. AN ASPHALT IMPREGNATED FELT PAD SHALL BE USED BETWEEN THE CONTROLLER PAD AND ADJACENT SIDEWALK, WHERE APPLICABLE.
3. THE MINIMUM CLEAR ZONE IS DEFINED IN AASHTO'S "ROADSIDE DESIGN GUIDE" OR AS NOTED ON THE PLANS.
4. THE CONCRETE AND SUBBASE OF CRUSHED GRAVEL SHALL BE SUBSIDIARY TO THE TRAFFIC SIGNAL ITEM.
5. FOR GROUND MOUNTED CABINET INSTALLATIONS:
 - A. THE METER SHOULD BE INSTALLED AS SHOWN ON THE PLANS. THE PREFERRED METER LOCATION IS ON A SEPARATE POLE OR STANCHION. HOWEVER, IF LIMITING CONDITIONS EXIST, THE METER MAY BE INSTALLED ON THE CONTROLLER CABINET ON THE SIDE AWAY FROM APPROACHING TRAFFIC.
 - B. THE 16M BARS SHALL BE SPACED 400 mm CENTER TO CENTER WITH A MINIMUM OF 75-mm COVER TO THE GROUND. THEY SHALL RUN BOTH NORMAL AND TRANSVERSE IN THE CONCRETE PAD.
 - C. ANCHOR BOLT DIMENSIONS SHALL BE SUPPLIED BY THE CABINET MANUFACTURER. THESE BOLTS SHALL BE GALVANIZED OR STAINLESS STEEL.
 - D. THE ALUMINUM SPACER MAY BE DELETED IN URBAN AREAS, IF SO NOTED ON THE PLANS.

OTHER STDS. E-171AM
REQUIRED: E-175M
NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS

JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

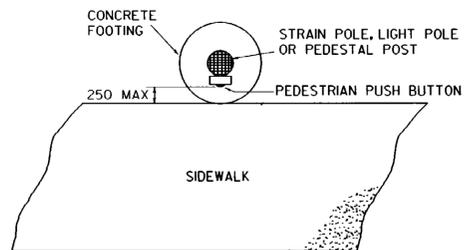
[Signature]
DIRECTOR OF ENGINEERING

[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

TRAFFIC CONTROL SIGNALS
MISC. DETAILS

VERMONT AGENCY OF TRANSPORTATION

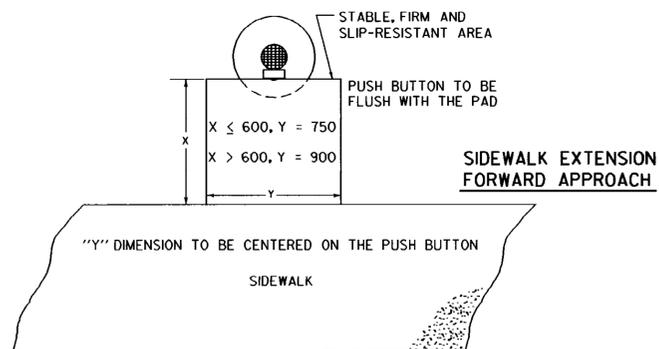
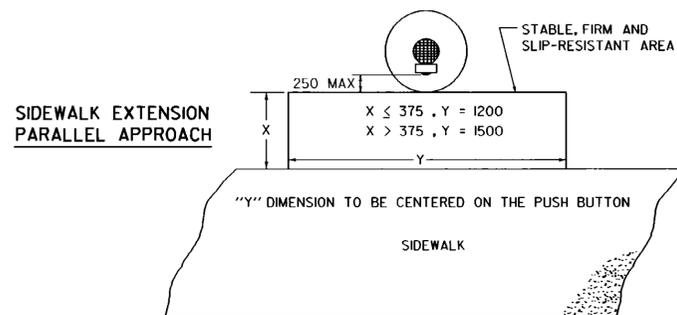
Metric
STANDARD
E-171BM



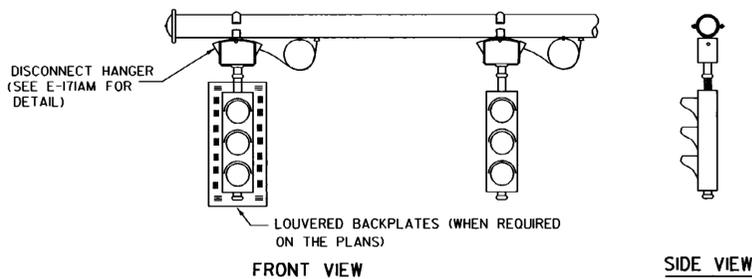
PEDESTRIAN PUSH BUTTON CONTROLS SHALL BE RAISED FROM OR FLUSH WITH THEIR HOUSINGS AND SHALL BE A MINIMUM OF 51mm IN THE SMALLEST DIMENSION, THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO GREATER THAN 22.2 N.

IF THE PEDESTRIAN PUSH BUTTON IS NOT LOCATED WITHIN 250 mm OF THE SIDEWALK, AN EXTENSION TO THE SIDEWALK MUST BE PROVIDED AS SHOWN BELOW. BUTTONS LOCATED ON THE SIDE OF CONTROLLER CABINETS MAY REQUIRE EXTENSION OF THE CONCRETE PAD, SHOWN ON STD E-171BM, TO MEET THIS REQUIREMENT.

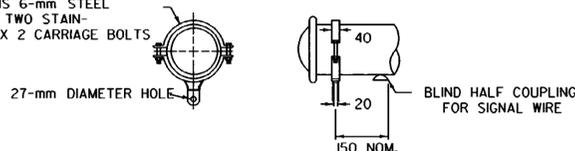
WHEN SIDEWALK EXTENSIONS ARE PROVIDED, A SUBBASE OF FINE GRADED CRUSHED GRAVEL SHALL BE PLACED AND ASPHALT IMPREGNATED FELT SHALL BE USED BETWEEN THE EXTENSION AND THE SIDEWALK AS SHOWN ON STD E-171BM.



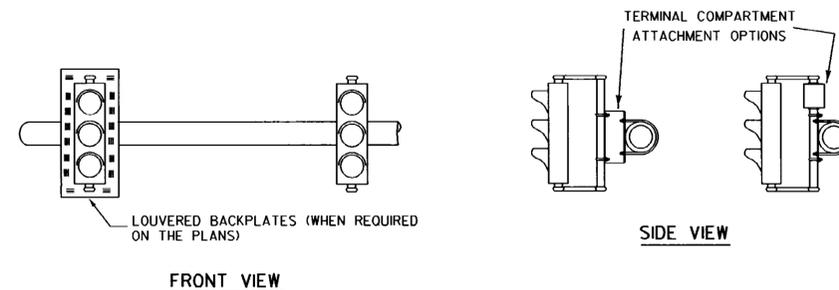
PEDESTRIAN PUSH BUTTON ACCESSIBILITY DETAIL



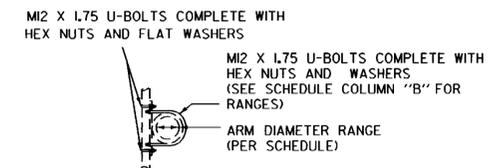
CLAMP AND CLEVIS 6-mm STEEL GALVANIZED, WITH TWO STAINLESS STEEL M16 X 2 CARRIAGE BOLTS AND HEX NUTS.



MAST ARM MOUNTING DETAILS FOR FREE SWINGING TRAFFIC SIGNALS



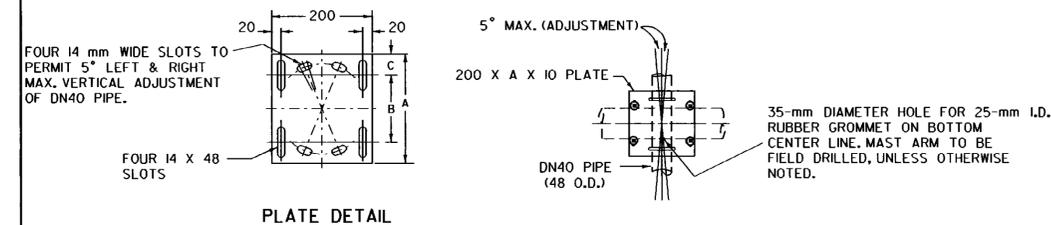
SIGNAL MOUNTING PLATE SCHEDULE			
ARM DIAMETER	A	B	C
80 - 130	220	136	42
130 - 200	270	190	40
200 - 280	350	270	40



CANTILEVER MOUNTED TRAFFIC SIGNALS (AND LUMINAIRES)

MINIMUM SIGNAL CLEARANCE SHALL BE:
5000 mm FOR FREE SWINGING HEADS, OR
5200 mm FOR FIXED MOUNTED HEADS

SEE THE CANTILEVER / FOOTING DETAIL SHEET(S) FOR ADDITIONAL INFORMATION.



1. ALTERNATE METHODS FOR RIGID MOUNTING OF SIGNALS TO MAST ARMS MAY BE USED, SHOP DRAWINGS FOR THE ALTERNATE METHOD HARDWARE SHALL BE SUBMITTED TO THE TRAFFIC DESIGN SECTION VIA THE RESIDENT ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.
2. ALL RIGIDLY MOUNTED TRAFFIC AND PEDESTRIAN SIGNALS SHALL BE PROVIDED WITH REINFORCEMENT PLATES AT THE ATTACHMENT POINTS.
3. ALL NUTS, BOLTS AND WASHERS SHALL BE STAINLESS STEEL.
4. ALL OTHER MOUNTING BRACKET MATERIALS SHALL BE GALVANIZED STEEL.

MAST ARM MOUNTING DETAILS FOR FIXED MOUNT TRAFFIC SIGNALS (PREFERRED METHOD)

OTHER STDS. E-170M E-171BM
REQUIRED: E-171AM

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

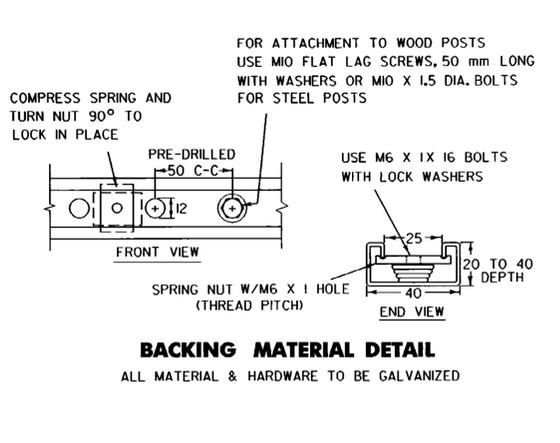
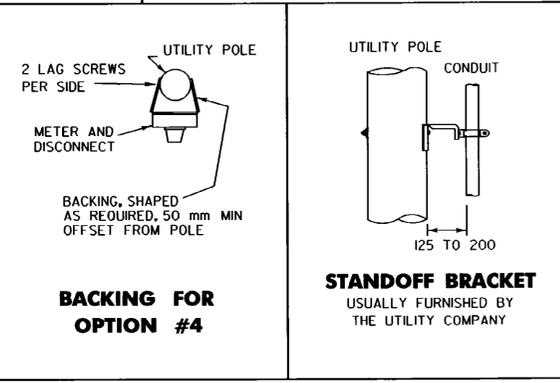
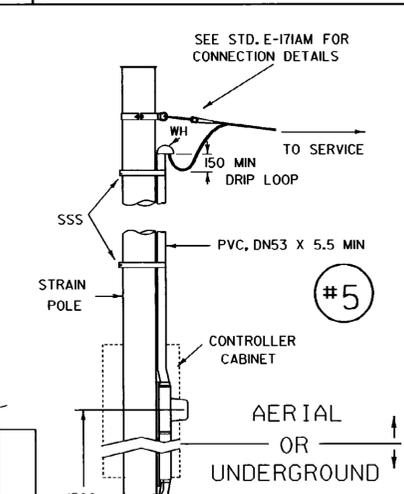
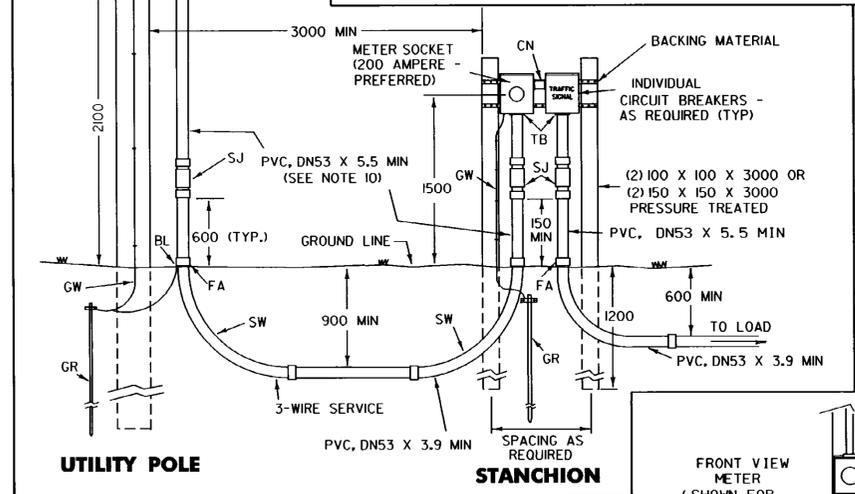
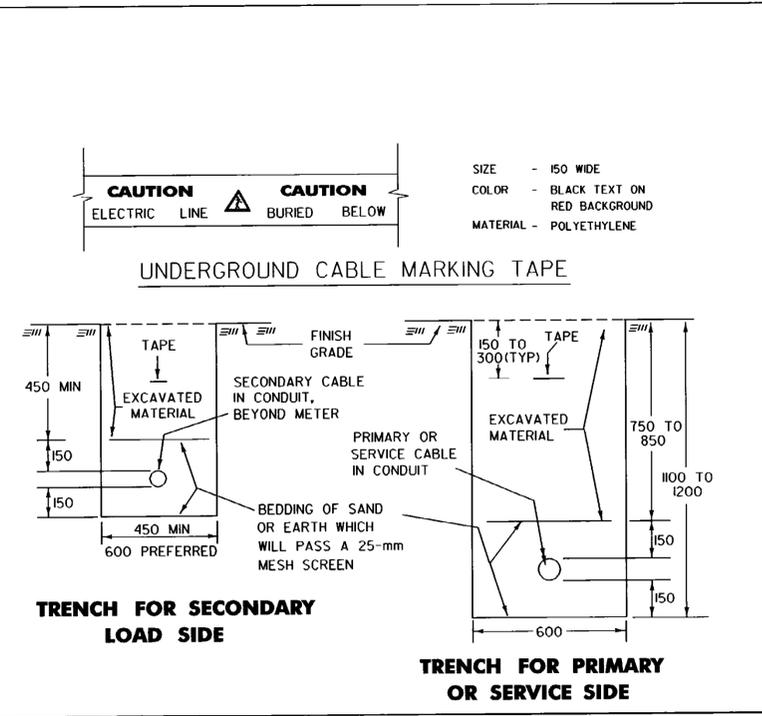
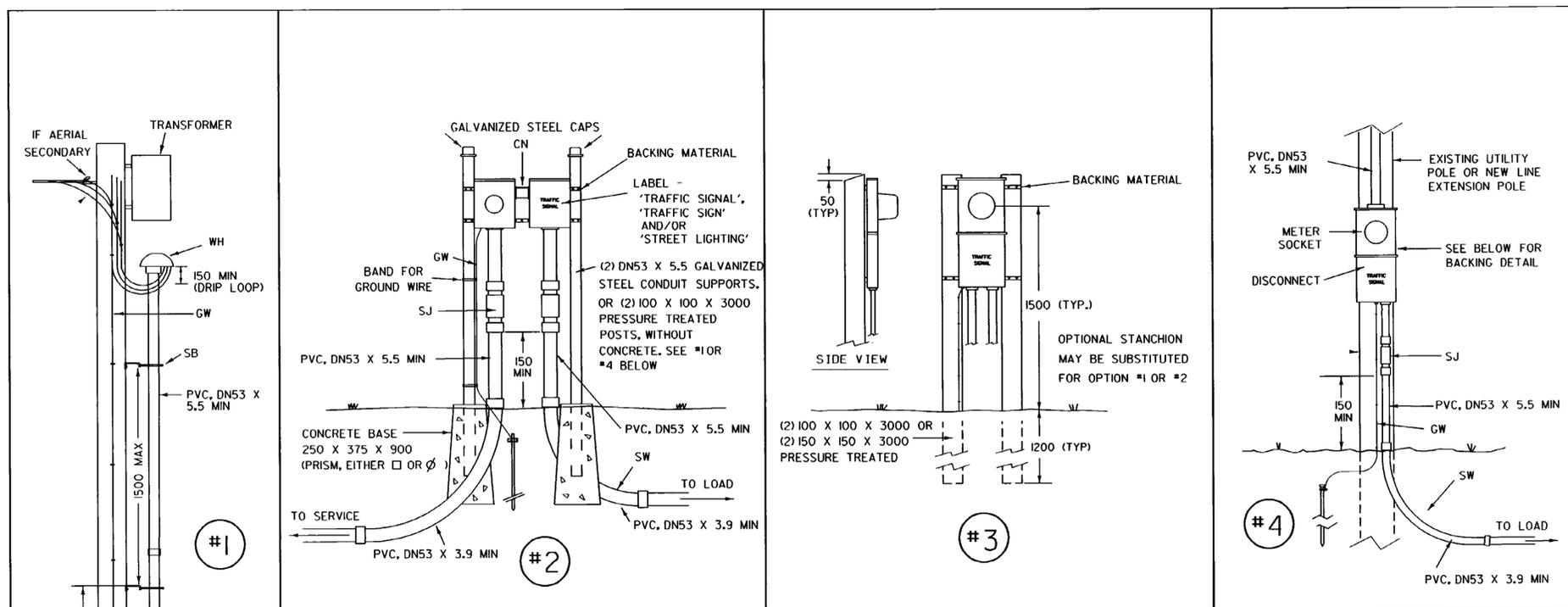
[Signature]
DIRECTOR OF ENGINEERING

[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

**TRAFFIC CONTROL SIGNALS
CANTILEVER MOUNTING DETAILS
PED. PUSH BUTTON ACCESSIBILITY DETAIL**



Metric
STANDARD
E-171CM



LEGEND	
ITEM	MATERIAL
BL	BONDING LUG (IF STEEL CONDUIT)
CN	CONDUIT NIPPLE
FA	FEMALE ADAPTER OR COUPLINGS AS REQUIRED
GR	GROUND ELECTRODE, 16 X 2400 (MIN) COPPER CLAD (2 REQ.)
GW	GROUND CONDUCTOR, 13.30-mm ² AWG CU (MIN)
SB	STANDOFF BRACKET (SEE DETAIL)
SJ	SLIP JOINT, INSTALL TWO-THIRDS OPEN
SSS	STAINLESS STEEL STRAP (25 MIN)
SW	90° SWEEPS, (PVC) 900 R. - SERVICE, 600 R. - LOAD
TB	THREADED BUSHING
WH	WEATHERHEAD OR CONDULATOR

THE POWER SERVICE METER AND DISCONNECT SHALL HAVE A CONTINUOUS GROUND CONDUCTOR FROM THE METER TO THE GROUND ELECTRODE. OTHER GROUND CONDUCTORS MAY BE CONNECTED TO THIS CONTINUOUS GROUND CONDUCTOR WITH SPLIT NUTS. SEE THE STRAIN POLE/FOOTING DETAIL SHEET.

- NOTES**
- ALL CONSTRUCTION MUST COMPLY WITH THE NATIONAL ELECTRICAL CODE AND UTILITY COMPANY REQUIREMENTS.
 - STANCHIONS MUST BE PLACED OUTSIDE THE CLEAR ZONE OR THEY MUST BE PROTECTED BY GUARDRAIL. THE LOCATION OF STANCHIONS MUST BE APPROVED BY THE UTILITY COMPANY PRIOR TO CONSTRUCTION.
 - THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL MATERIALS, EXCEPT FOR STANDOFF BRACKETS WHICH ARE USUALLY FURNISHED AND INSTALLED BY THE UTILITY COMPANY. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL MATERIALS, EXCEPT THOSE ATTACHED TO THE UTILITY POLE. ALL MATERIAL AND INSTALLATION COSTS FOR THE POWER SERVICE, EXCEPT FOR THE WIRED CONDUIT, SHALL BE CONSIDERED PART OF THE TRAFFIC SIGNAL, STREET LIGHTING OR SIGN ITEM, WHICHEVER IS APPLICABLE.
 - ALL EXPOSED METAL EQUIPMENT MUST BE GROUNDED.
 - ATTACH CONDUIT ON THE SIDE OF THE POLE OR STANCHION AWAY FROM TRAFFIC. CONTACT THE LOCAL UTILITY COMPANY FOR FINAL PLACEMENT.
 - MATERIALS AND DIMENSIONS APPLY TO ALL STANCHIONS.
 - IN RURAL AREAS, WITH THE PERMISSION OF THE UTILITY COMPANY, THE METER AND THE DISCONNECT MAY BE INSTALLED ON AN EXISTING UTILITY POLE. SEE OPTION #4.
 - OPTION #1, #2, #3 OR #5 MAY BE USED IN URBAN AREAS, EITHER RESIDENTIAL OR COMMERCIAL, OR AS DETERMINED BY THE UTILITY AND APPROVED BY THE ENGINEER.
 - THE METER AND DISCONNECT SHALL BE ATTACHED THE STANCHION/POLE WITH TWO LENGTHS OF GALVANIZED BACKING MATERIAL.
 - SERVICE CONDUIT SHALL BE DN53 OR LARGER. SMALLER CONDUIT MAY BE ALLOWED WITH PRIOR APPROVAL FROM THE UTILITY AND THE ENGINEER AND AFTER CONSULTATION WITH THE TRAFFIC & SAFETY DIVISION.
 - WHERE MORE THAN ONE GROUND ELECTRODE IS REQUIRED, THEY SHALL BE A MINIMUM OF 1800 MM APART.
 - METERS MAY NOT BE REQUIRED BY ALL UTILITY COMPANIES.
 - ALL EXPOSED CONDUIT SHALL HAVE A MINIMUM 5.54-mm WALL THICKNESS.

OTHER STDS. E-171AM REQUIRED (WHEN OPTION #5 IS USED) SEE PLANS FOR OPTION #
NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

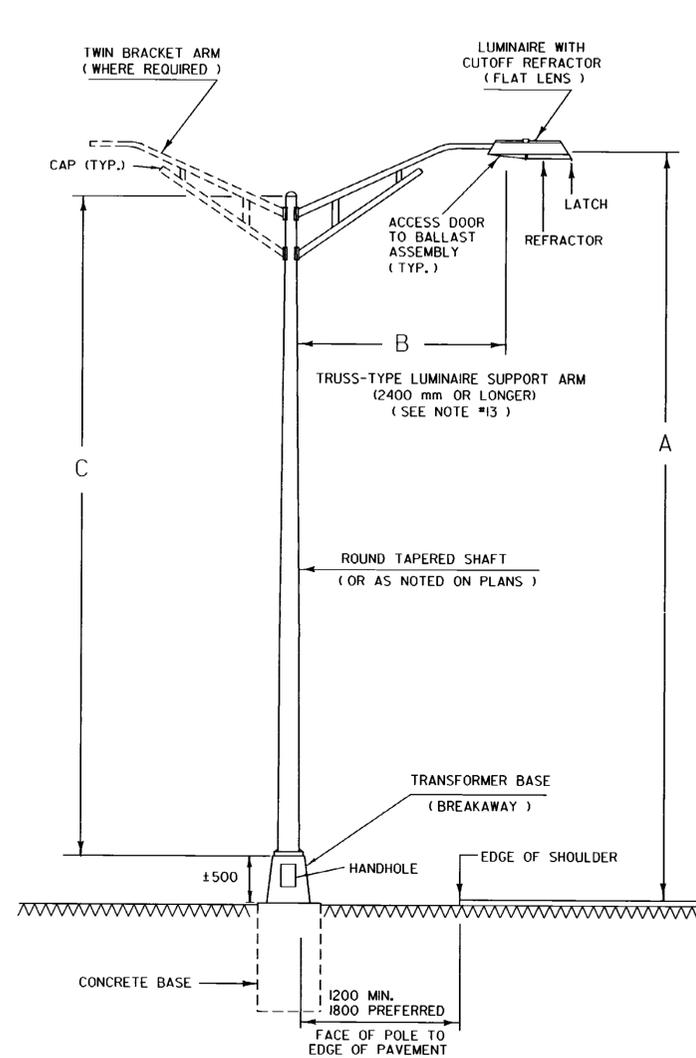
REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED
[Signature]
DIRECTOR OF ENGINEERING
[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

POWER DROP STANCHIONS

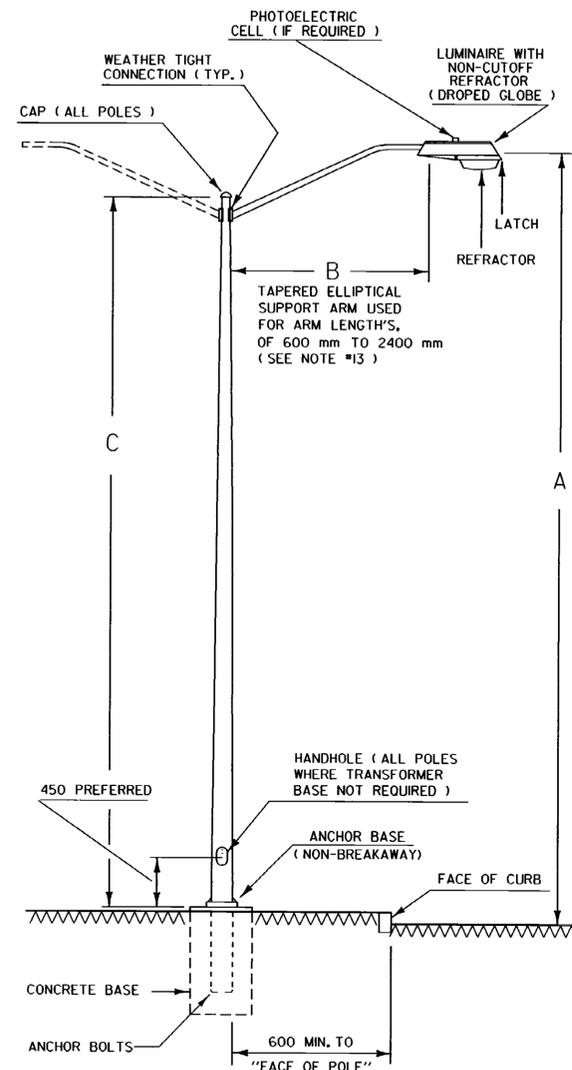


ROUND - TAPERED, ALUMINUM OR STEEL POLES



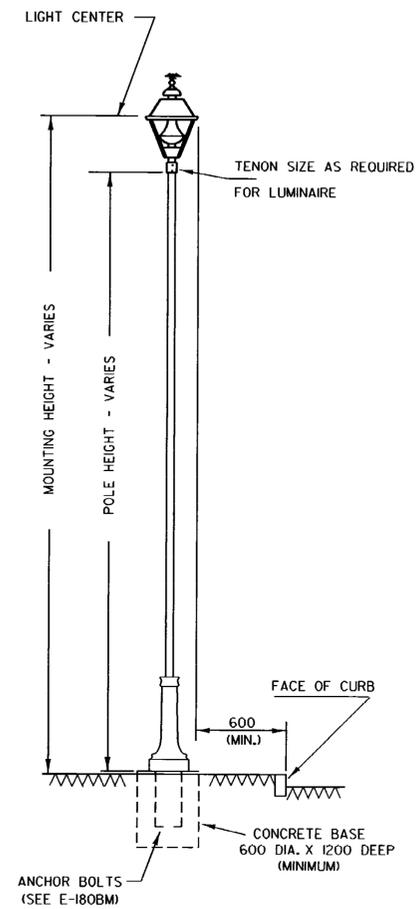
DIMENSIONS:
 A = MOUNTING HEIGHT
 B = LUMINAIRE SUPPORT ARM LENGTH
 C = POLE HEIGHT

FOR OTHER BREAKAWAY SUPPORTS SEE STANDARD SHEET E-180BM



NOTES:
 ALL SUPPORT ARMS TO BE EQUIPPED WITH 50-mm SLIPFITTER FOR MOUNTING LUMINAIRE UNLESS OTHERWISE INDICATED.

NON-BREAKAWAY SUPPORTS ARE APPROPRIATE IN SOME URBAN AREAS, AS OUTLINED IN THE AASHTO PUBLICATION "ROADSIDE DESIGN GUIDE".



ORNAMENTAL LIGHTING

THIS SHEET
NOT TO SCALE

POLES, ANCHOR BASES, ARMS, AND LUMINAIRES. GENERAL NOTES

1. NO POLE SHALL BE INSTALLED WITHOUT A LUMINAIRE ALREADY ATTACHED.
2. ANCHOR BASE AND ANCHOR BOLT DIMENSIONS ARE SHOWN ON STANDARD SHEET E-180BM.
3. ALL LIGHT POLES WHICH ARE PROVIDED WITH A BREAKAWAY FEATURE SHALL CONFORM TO THE REQUIREMENTS OF THE AASHTO PUBLICATION "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS", AND SUBSEQUENT REVISIONS.
4. A 3600 mm OR LONGER ARM REQUIRES A 150 mm OUTSIDE DIAMETER POLE TOP.
5. LUMINAIRES SHALL MEET SPECIFICATIONS AS SHOWN ON THE PLANS.
6. ALL ELECTRICAL MATERIAL AND ELECTRICAL WORK SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE AREA ELECTRICAL INSPECTOR AND/OR THE POWER COMPANY WITH JURISDICTION IN THE PROJECT AREA.
7. ALL WORK MUST MEET THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE, AS WELL AS LOCAL AND STATE CODES.
8. ALL STREET LIGHT POLES (EXCEPT ORNAMENTAL POLES) SHALL HAVE A METAL TAG ATTACHED TO THE POLE, SEE PLAN DETAIL SHEET. PAYMENT FOR TAGS WILL BE SUBSIDIARY TO OTHER STREET LIGHTING ITEMS.
9. POLES, BASE PLATES, AND ARMS SHALL MEET THE SPECIFICATION OF THE LATEST EDITION OF AASHTO-AGC-ARTBA'S "GUIDE TO STANDARDIZED HIGHWAY LIGHTING POLE HARDWARE" OR AS OTHERWISE NOTED ON THE PLANS.
10. ANCHOR BOLTS WILL BE ACCEPTABLE WITH EITHER ROLLED OR CUT-IN THREADS WITH MINOR VARIATIONS FROM THE SPECIFIED DIAMETER.
11. ALL LIGHT POLES SHALL HAVE A BREAKAWAY DESIGN FEATURE UNLESS OTHERWISE NOTED ON THE PLANS.
12. ALL WELDS SHALL BE AT LEAST AS STRONG AS THE MATERIAL BEING WELDED.
13. LUMINAIRE SUPPORT ARMS IN A LENGTH OF 2400 mm ARE AVAILABLE IN EITHER SINGLE MEMBER OR TRUSS TYPE. PLAN SHEET SHALL SPECIFY WHICH IS TO BE USED, IF NOT SPECIFIED, OPTIONAL, OR IF REPLACEMENT, MATCH EXISTING OR SURROUNDING TYPE.
14. POLE OFFSET (FACE OF POLE TO BACK OF GUARDRAIL) SHALL BE EQUAL TO OR GREATER THAN THE DEFLECTION DISTANCE SHOWN IN THE CHART. (SEE E-180BM)
15. POLES FOR ORNAMENTAL LIGHTING ARE AVAILABLE IN MANY MATERIALS, SHAPES, STYLES AND LENGTHS. PLANS SHALL SPECIFY.

REVISIONS AND CORRECTIONS
 JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

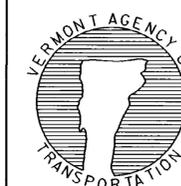
Paul C. ...
 DIRECTOR OF ENGINEERING

Stephen A. MacArthur
 DIRECTOR OF CONSTRUCTION AND MAINTENANCE

STREET LIGHTING DETAILS

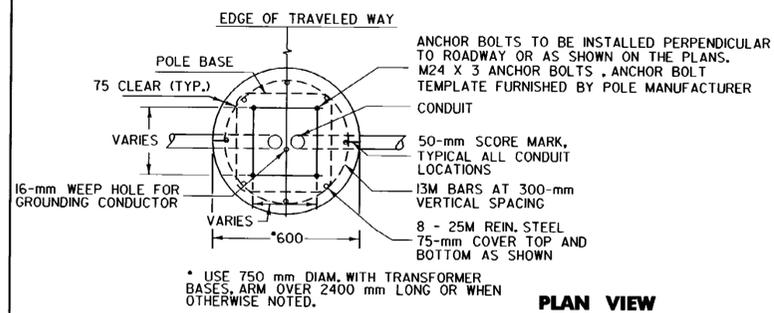
OTHER STDS. E-180BM
 REQUIRED: E-181M

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

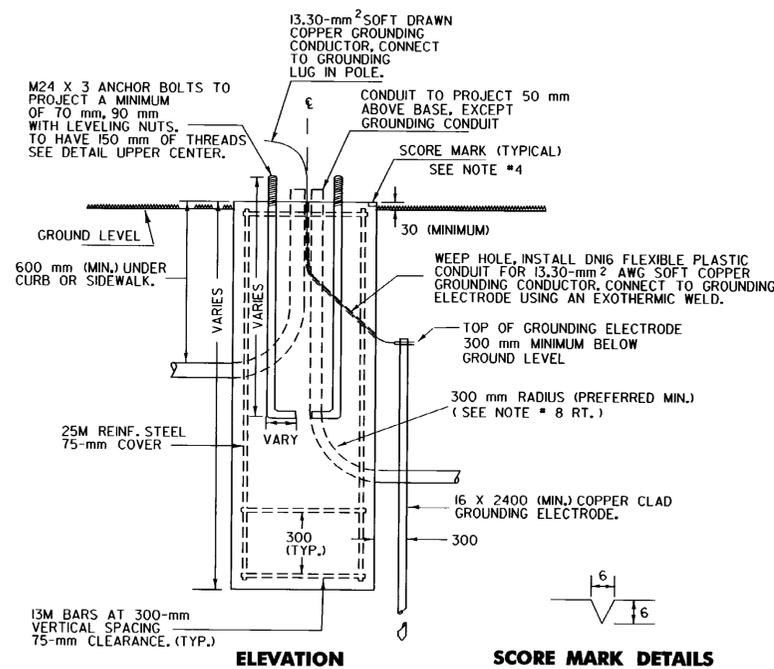


Metric
 STANDARD
 E-180AM

CONCRETE BASE

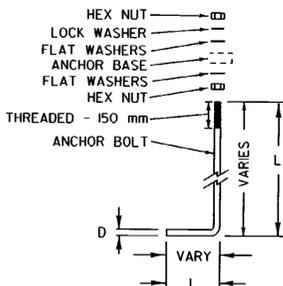


NOTE: SEE CHART AT RIGHT AND NOTE BELOW CHART FOR OTHER ANCHOR BOLT DIMENSIONS.



NOTES:

THERE ARE FOUR BASIC SIZES FOR CONCRETE BASES. 600 X 1200 TO BE USED WITH POLE TOP MOUNTED LUMINAIRES WITH A MOUNTING HEIGHT OF LESS THAN 6 m. A CONCRETE BASE SIZE OF 600 X 1800 FOR POLES WITH LESS THAN 12-m MOUNTING HEIGHT AND ARMS UP TO 2.4 m IN LENGTH. THIRD, A BASE SIZE OF 750 X 1800 FOR POLES WITH LESS THAN 12-m MOUNTING HEIGHT AND ARMS LESS THAN 3 m IN LENGTH WHICH WILL BE INSTALLED ON A TRANSFORMER BASE. FOURTH, A BASE SIZE 750 X 2400 FOR A 12-m OR GREATER MOUNTING HEIGHT, A 3-m OR GREATER ARM LENGTH WITH OR WITHOUT TRANSFORMER BASE.

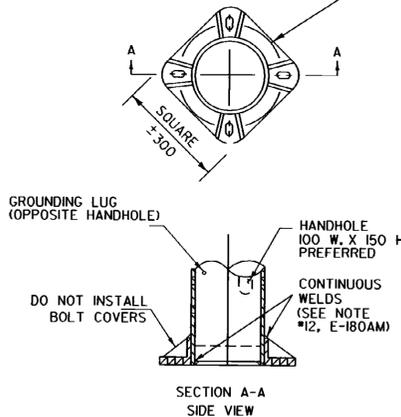


ALL ANCHOR BOLTS TO BE STAINLESS STEEL

MOUNTING HEIGHT	NO. OF ARMS	ANCHOR BASE			SLIP BASE		
		BOLT	L	I	BOLT	L	I
9.0 m	1	M24 X 3	900	100	M30 X 3.5	1050	150
	2	M24 X 3	900	100	M30 X 3.5	1050	150
10.5 m	1	M24 X 3	900	100	M30 X 3.5	1050	150
	2	M24 X 3	900	100	M30 X 3.5	1050	150
12.0 m	1	M24 X 3	900	100	M30 X 3.5	1050	150
	2	M24 X 3	900	100	M30 X 3.5	1050	150

NOTE: FOR MOUNTING HEIGHTS LESS THAN 9 m, USE THE ANCHOR BOLT DIMENSIONS AS RECOMMENDED BY THE POLE MANUFACTURER, LENGTH, HOOK, DIAMETER AND BOLT PROJECTION.

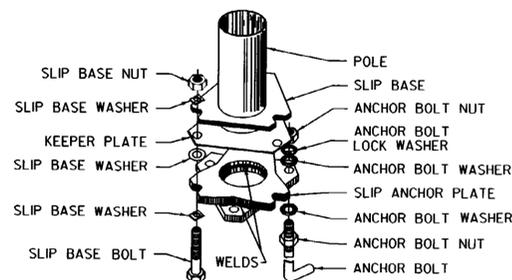
TOP VIEW OF ANCHOR BASE (NON-BREAKAWAY)



NOTES:
1) DIMENSIONS SHOWN FOR ANCHOR BASE AND TRANSFORMER BASE MAY VARY SLIGHTLY WITH DIFFERENT MANUFACTURERS.
2) ANCHOR BOLT TEMPLATE FURNISHED BY POLE MANUFACTURER.

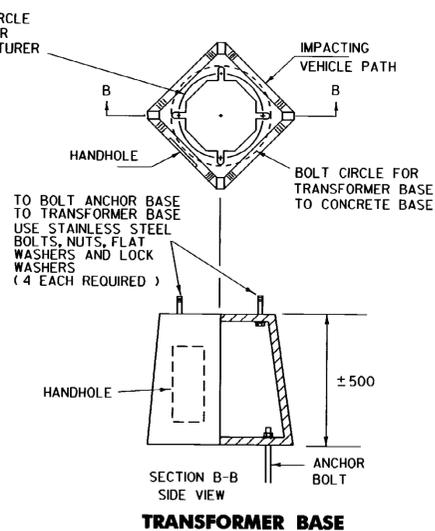
VARIOUS BREAKAWAY OPTIONS

TYPE SHALL BE SPECIFIED ON PROJECT PLANS



SLIP BASE ASSEMBLY (BREAKAWAY)

TOP VIEW OF TRANSFORMER BASE (RECOMMENDED BREAKAWAY FEATURE)



3) FOR BREAKAWAY DESIGN A TRANSFORMER BASE, BREAKAWAY COUPLINGS, SLIP BASE OR OTHER APPROVED METHOD SHALL BE INSTALLED BETWEEN THE ANCHOR BASE AND THE CONCRETE BASE.

CONCRETE BASE AND GENERAL NOTES

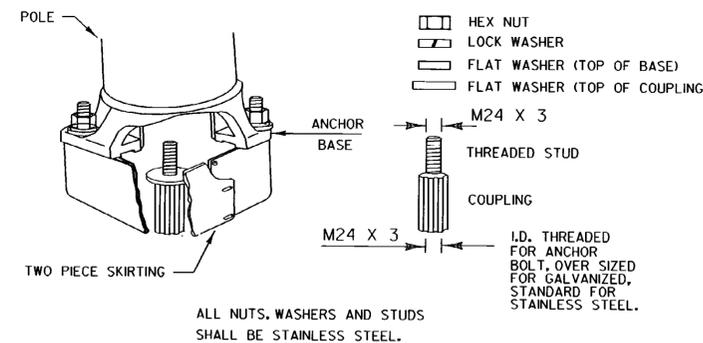
1. ALL CONCRETE BASES TO BE CONCRETE, CLASS B, AND SHALL HAVE A SMOOTH LEVEL TOP SURFACE FINISHED WITH A 15-mm RADIUS EDGING TOOL.
2. ALL REINFORCING STEEL TO CONFORM TO THE REQUIREMENTS FOR "REINFORCING STEEL."
3. TEMPLATE FOR ANCHOR BOLTS, STAINLESS STEEL ANCHOR BOLTS, NUTS AND WASHERS TO BE OBTAINED BY CONTRACTOR PRIOR TO CONSTRUCTION OF BASES.
4. SCORE TOP OF CONCRETE BASE TO SHOW LOCATION OF CONDUIT(S).
5. CONDUIT SIZE - AS SHOWN ON THE PLANS.
6. ALL EXPOSED METAL HARDWARE SHALL BE GALVANIZED OR STAINLESS STEEL.
7. IF THE ELECTRICAL CONDUIT IN THE CONCRETE BASE IS GALVANIZED STEEL, GROUNDING BUSHINGS SHALL BE USED.
8. THE MINIMUM RADIUS FOR RIGID METALLIC OR NON-METALLIC ELECTRICAL CONDUIT SHALL BE SIX TIMES THE INSIDE DIAMETER OF THE CONDUIT.
9. SEE STANDARD SHEET E-173M FOR PULL BOX DETAIL.
10. ANY BREAKAWAY FEATURE WHICH HAS BEEN APPROVED FOR USE ON FEDERAL AID HIGHWAY PROJECTS AND MEET THE AASHTO REQUIREMENTS FOR BREAKAWAY FEATURES MAY BE USED UNLESS A SPECIFIC TYPE IS STATED ON THE PLANS.

GUARDRAIL DEFLECTION CHART PER AASHTO - ROADSIDE DESIGN GUIDE 1988

TYPE	GR POST SPACING	DEFLECTION
THREE CABLE W/STEEL POSTS	5.0 m	3.5 m
W-BEAM	W/WEAK POST	3.8 m
	W/STRONG POST	1.9 m
BOX BEAM	1.83 m	1.5 m
THREE BEAM	W/WEAK POST	3.8 m
	W/STRONG POST	1.9 m

THIS CHART LISTS THE THEORETICAL DEFLECTION DISTANCE UPON IMPACT OF VARIOUS GUARDRAIL WITH DIFFERENT TYPES AND SPACINGS OF POSTS.

STAINLESS STEEL BREAKAWAY SUPPORT COUPLINGS



OTHER STDS. E-173M E-181M
REQUIRED: E-180AM

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS

JUNE 13, 1997 - ORIGINAL APPROVAL DATE

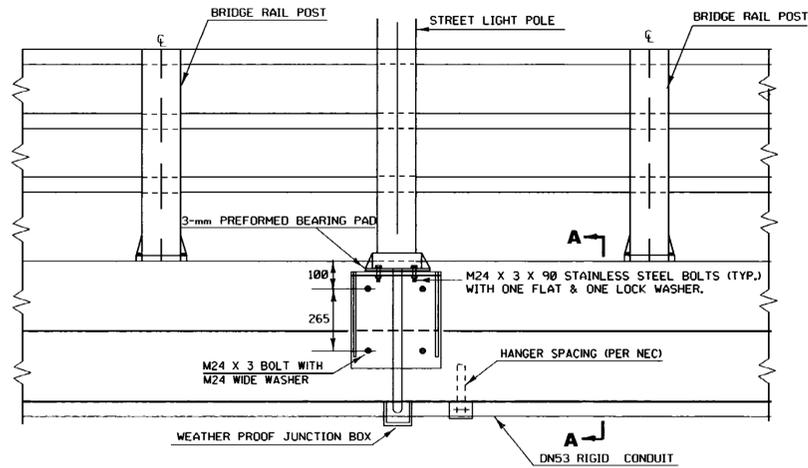
APPROVED

[Signature]
DIRECTOR OF ENGINEERING
[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

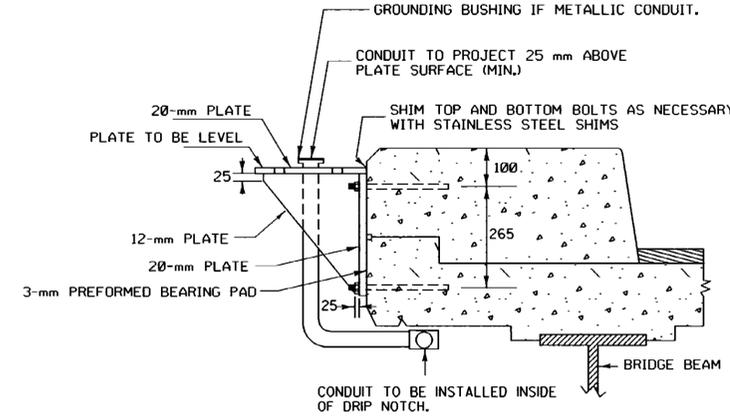
STREET LIGHTING DETAILS



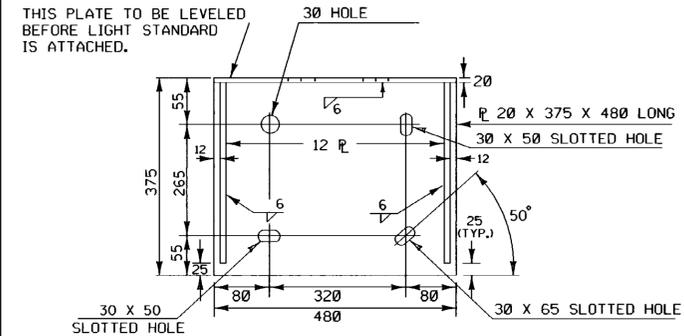
Metric STANDARD E-180BM



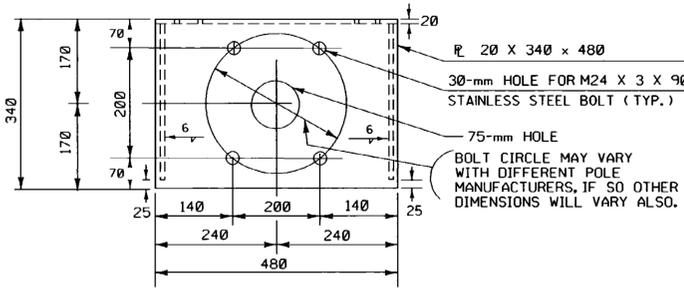
FASCIA ELEVATION



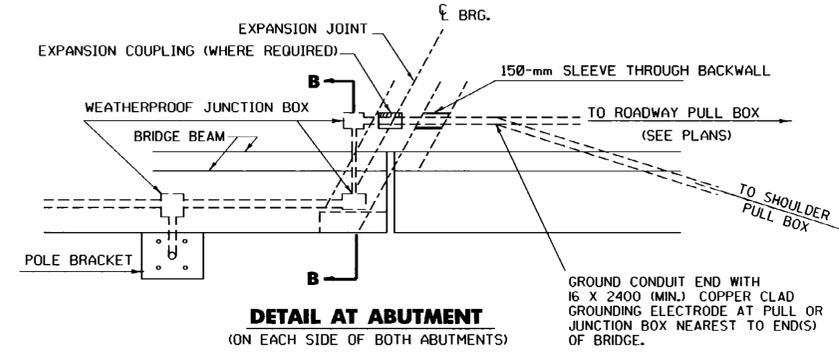
SECTION A-A



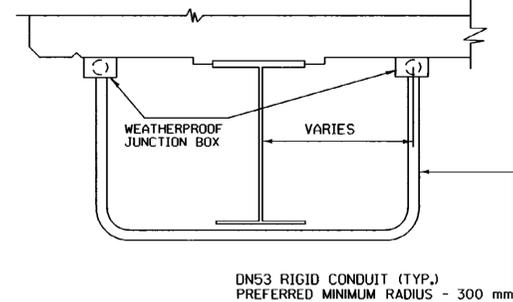
BRACKET ELEVATION



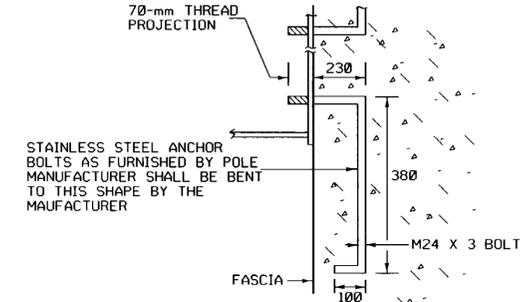
BRACKET PLAN FOR 280-mm BOLT CIRCLE



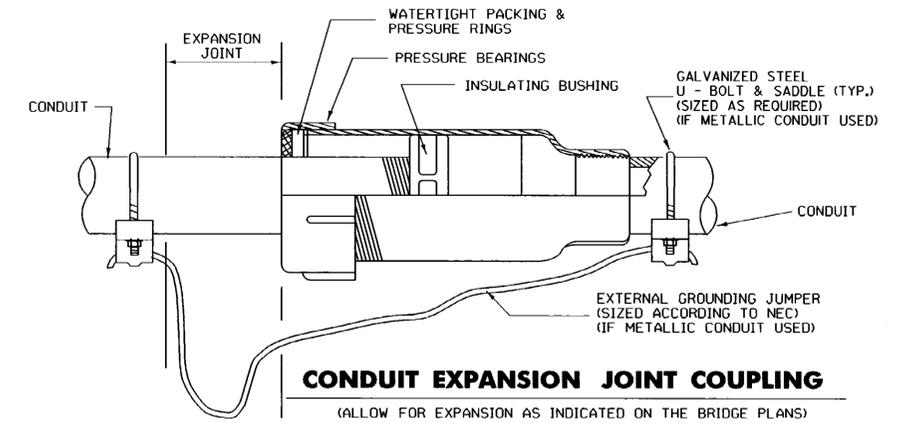
DETAIL AT ABUTMENT (ON EACH SIDE OF BOTH ABUTMENTS)



SECTION B-B



BOLT ORIENTATION PLAN



CONDUIT EXPANSION JOINT COUPLING (ALLOW FOR EXPANSION AS INDICATED ON THE BRIDGE PLANS)

NOTES

JUNCTION BOXES AND EXPANSION COUPLINGS SHALL BE OF THE SAME MATERIAL AND FINISH AS THE CONDUIT. HANGERS AND HARDWARE SHALL BE GALVANIZED.

SIZE OF JUNCTION BOXES TO CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC).

CONTRACTOR SHALL SUBMIT DETAILED DRAWINGS OF HANGERS, JUNCTION BOXES, AND CONDUIT EXPANSION COUPLINGS TO ENGINEER FOR APPROVAL.

ANCHOR BOLTS, NUTS AND WASHERS AND TEMPLATE FOR ANCHOR BOLTS TO BE OBTAINED BY CONTRACTOR FROM POLE MANUFACTURER.

BRACKET ASSEMBLY SHALL BE GALVANIZED AFTER FABRICATION PER AASHTO M-232. STEEL IN BRACKET SHALL MEET THE REQUIREMENTS OF THE VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

SEE STANDARDS E-180AM AND E-180BM FOR POLE & LUMINAIRE DETAILS.

SEE STANDARD SHEET E-173M FOR PULL BOX DETAIL.

THIS SHEET IS NOT TO SCALE

OTHER STDS. E-173M E-180BM REQUIRED: E-180AM

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS

JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

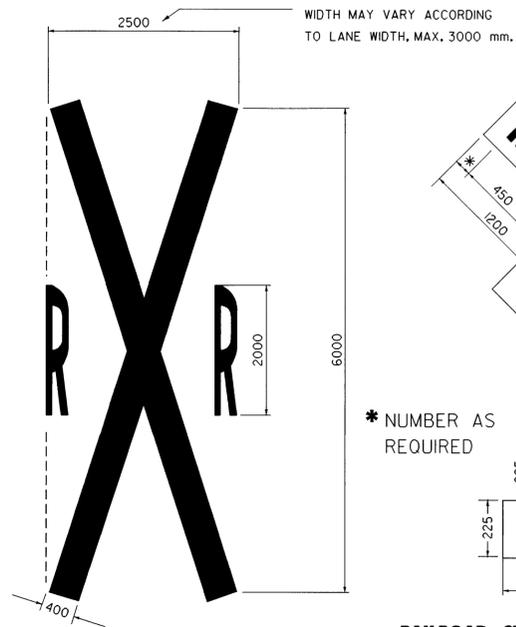
[Signature]
DIRECTOR OF ENGINEERING

[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

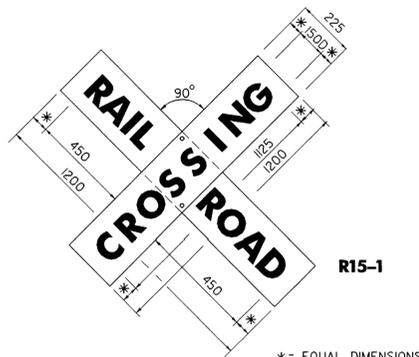
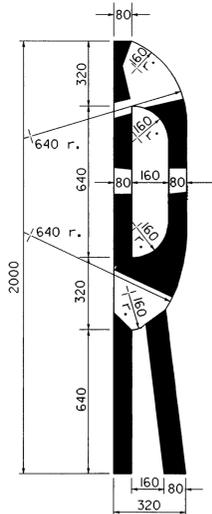
TYPICAL BRIDGE MOUNTING DETAILS FOR STREET LIGHT POLE

(FOR LUMINAIRE MOUNTING HEIGHTS ≤ 10.5 m)





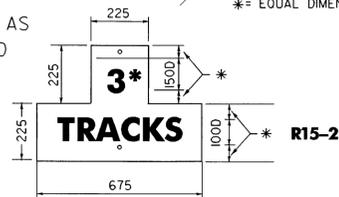
PAVEMENT MARKINGS



R15-1

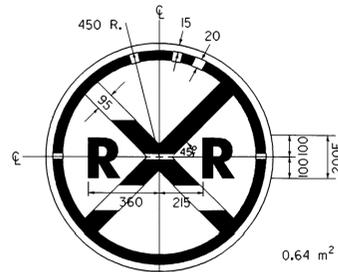
* = EQUAL DIMENSIONS

* NUMBER AS REQUIRED



R15-2

RAILROAD CROSSING SIGN (CROSSBUCK)



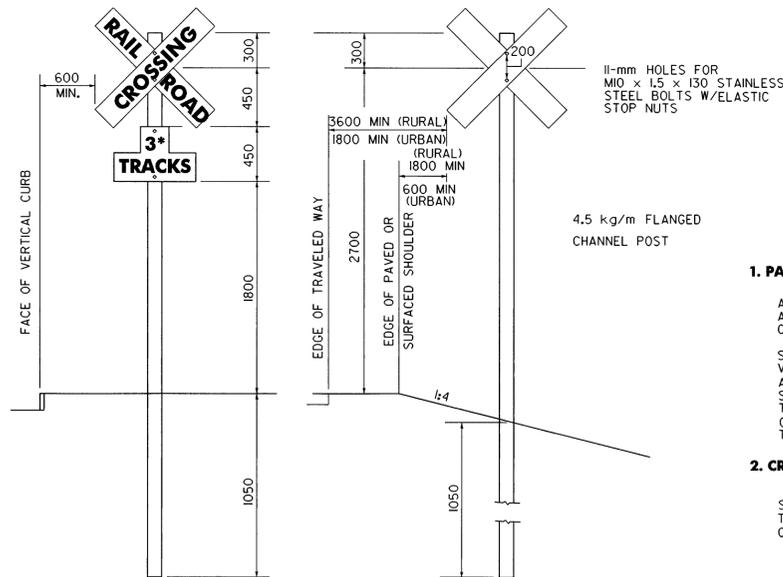
W10-1

ADVANCE SIGN

SIGN MATERIALS AND COLORS

CROSSBUCKS SHALL BE EITHER 16-mm HIGH DENSITY OVERLAY PLYWOOD OR 2.54-mm ALUMINUM W/SILVER OR WHITE ENCAPSULATED LENS SHEETING, APPLIED TO BOTH SIDES OF SIGN PANELS.

ADVANCE SIGN SHALL BE 3.18-mm ALUMINUM W/YELLOW REFLECTIVE SHEETING. MULTI-TRACK SIGN SHALL BE 1.52-mm ALUMINUM W/SILVER OR WHITE REFLECTIVE SHEETING. TEXT, STRIPES AND BORDERS SHALL BE EITHER BLACK PAINTED OR LETTERING FILM.



GENERAL NOTES

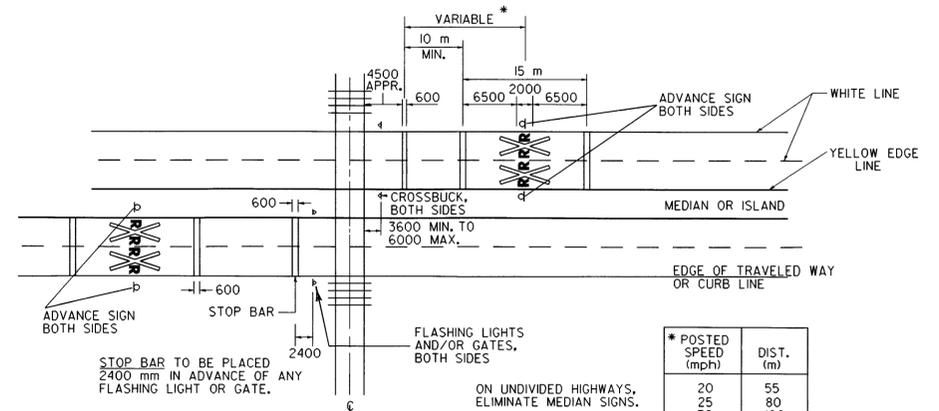
1. PAVEMENT MARKINGS

THESE MARKINGS SHALL BE PLACED, IF PHYSICALLY FEASIBLE, ON ALL PAVED APPROACHES TO RAILROAD CROSSINGS, WHERE THERE ARE SIGNALS AND/OR AUTOMATIC GATE AND AT ALL OTHER CROSSINGS WHERE THE PREVAILING SPEED OF HIGHWAY TRAFFIC IS 60 km/h OR GREATER. THE MARKINGS SHALL ALSO BE PLACED AT CROSSINGS WHERE ENGINEERING STUDIES INDICATE THERE IS A SIGNIFICANT POTENTIAL CONFLICT BETWEEN VEHICLES AND TRAINS. ALL MARKINGS SHALL BE WHITE EXCEPT FOR MEDIAN EDGELINES AND CENTERLINE ON 2 LANE ROADS WHICH SHALL BE YELLOW. THE RAILROAD CROSSING SYMBOL SHALL CONSIST OF THE "X" FLANKED BY TWO "R"'S AND THREE 600-mm STOP BARS; TWO BRACKETING THE "X", ONE AT THE CROSSING. AT MINOR CROSSINGS OR IN URBAN AREAS, THESE MARKINGS MAY BE OMITTED IF AN ENGINEERING STUDY INDICATES THAT OTHER DEVICES INSTALLED PROVIDE SUITABLE PROTECTION.

2. CROSSBUCKS

WHERE PHYSICALLY FEASIBLE AND VISIBLE TO APPROACHING TRAFFIC, THESE SIGNS SHALL BE INSTALLED ON THE RIGHT-HAND SIDE OF THE ROADWAY FOR EACH APPROACH TO THE CROSSING. MULTI-LANE DIVIDED HIGHWAYS SHALL HAVE SIGNS MOUNTED ON BOTH SIDES OF THE ROADWAY APPROACHES.

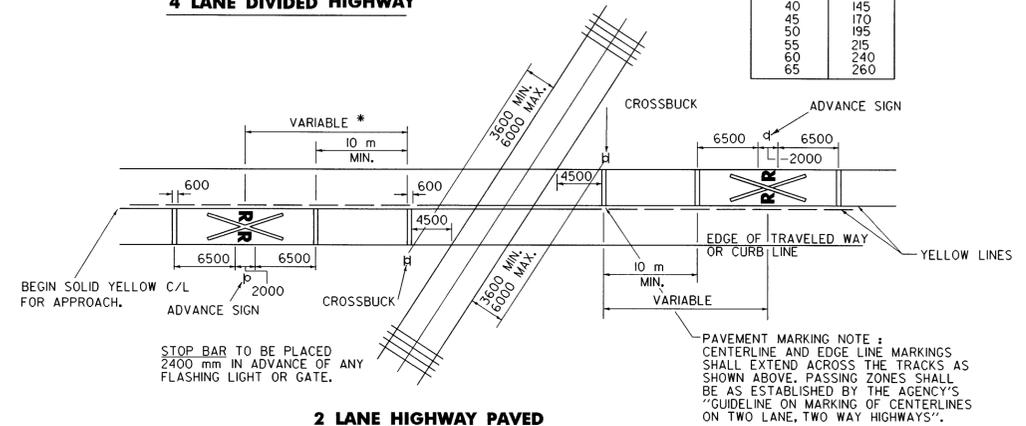
THIS SHEET IS NOT TO SCALE



4 LANE DIVIDED HIGHWAY

* POSTED SPEED (mph)	DIST. (m)
20	55
25	80
30	100
35	125
40	145
45	170
50	195
55	215
60	240
65	260

ON UNDIVIDED HIGHWAYS, ELIMINATE MEDIAN SIGNS.



2 LANE HIGHWAY PAVED

ALSO APPLICABLE TO UNPAVED ROADS FOR PLACEMENT OF CROSSBUCKS AND ADVANCE SIGNS

3. AUXILIARY SIGNS

A "NUMBER OF TRACKS" SIGN SHALL BE USED WHERE THERE ARE TWO OR MORE TRACKS AT THE CROSSING.

4. ADVANCE WARNING SIGNS

RAILROAD ADVANCE WARNING SIGNS WILL BE PROVIDED AND LOCATED IN ACCORDANCE WITH THE MUTCD.

OTHER STDS. E-160M REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS

JUNE 13, 1997 - ORIGINAL APPROVAL DATE
June 30, 2003 - Superseded

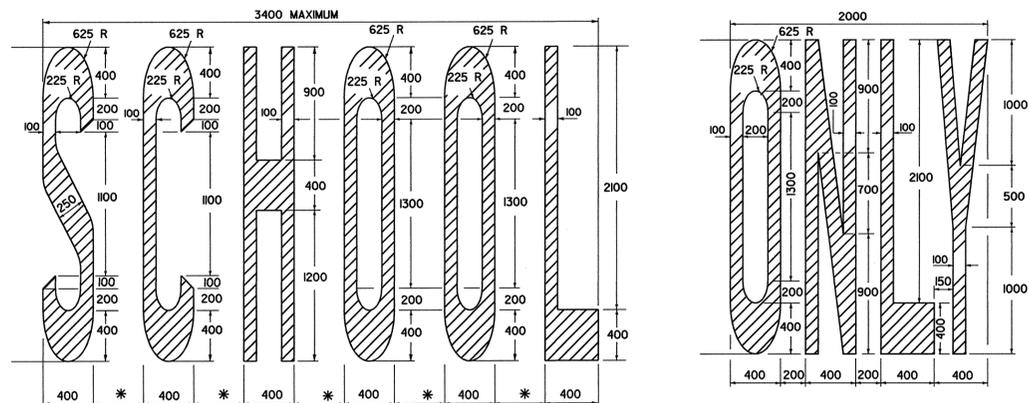
APPROVED

[Signature]
DIRECTOR OF ENGINEERING
[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

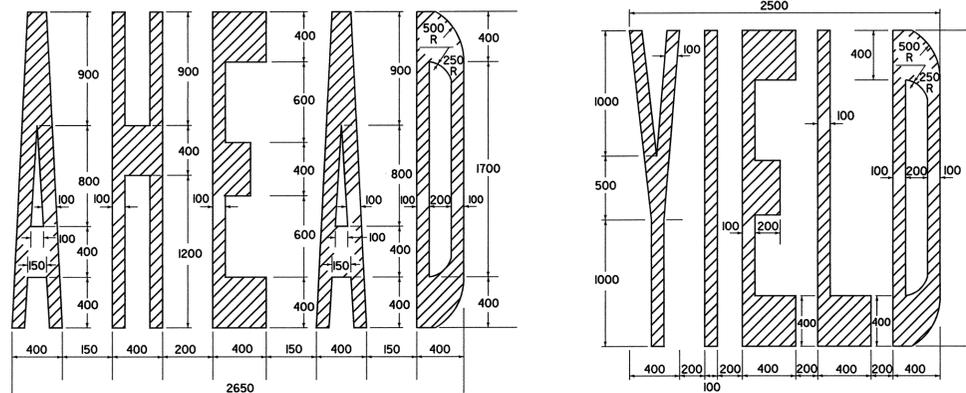
RAILROAD CROSSING SIGNS AND PAVEMENT MARKINGS



Metric STANDARD E-190M

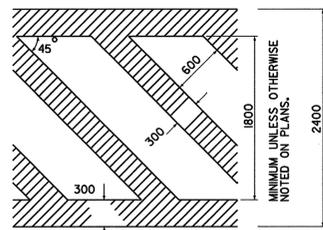


* (100 mm TO 200 mm) - ADJUST TO AVAILABLE PAVEMENT WIDTH



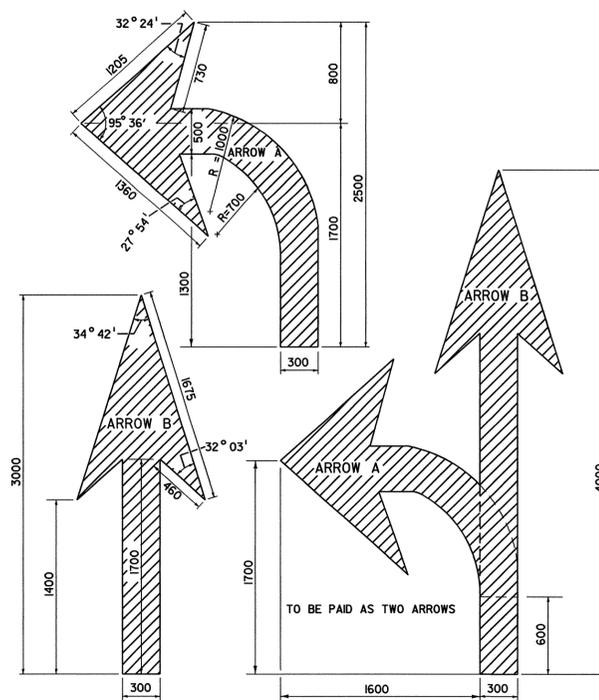
LETTER HEIGHT

DIMENSIONS ARE FOR 2500-mm LETTER HEIGHTS. A LESSER HEIGHT OF 2400 mm IS ACCEPTABLE AS LONG AS THE DIMENSIONS ARE PROPORTIONAL TO THE DETAILS SHOWN. SEE NOTE BELOW.

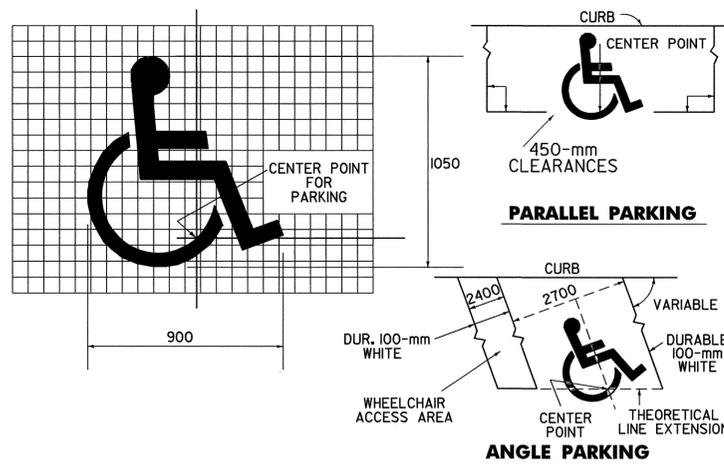


ARROWS AND WORD MARKINGS THAT CONFORM TO THE DIMENSIONS SHOWN ON THIS SHEET OR AS DETAILED IN THE BOOKLET ENTITLED "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS" AND THE MUTCD (CURRENT EDITION) PREPARED BY THE FHWA WILL BE ACCEPTABLE.

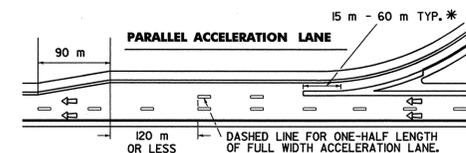
LETTER IN WORD MARKING AND CROSSWALK DETAILS



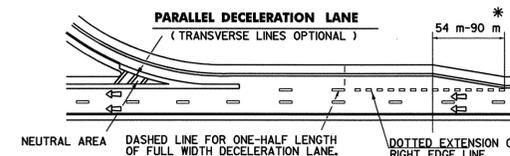
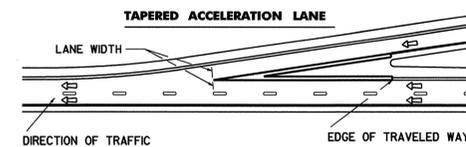
ARROW DETAILS



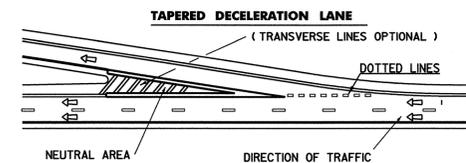
HANDICAPPED PAVEMENT MARKING DETAILS



* USE LONGER LENGTH TO EMPHASIZE SITUATIONS WHERE THE CROSSING REQUIRES UNUSUAL CARE SUCH AS HIGH VOLUME MERGE AREAS.



* SHORTER TAPERS GIVE A BETTER TARGET VALUE, HOWEVER ALIGNMENT MAY DICTATE A LONGER TAPER. RESIDENT ENGINEER SHALL ESTIMATE LENGTH.



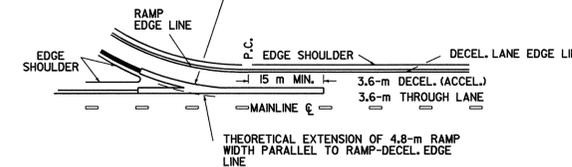
TRANSVERSE LINES SHALL CONSIST OF WHITE LINES 2 TIMES WIDER THAN THE MAIN LINE MARKING WIDTH SPACED 1500 mm C-C AND SET AT 45° TO MAIN LINE EDGE LINES. THESE MARKINGS SHALL BE USED TO INCREASE VISIBILITY DUE TO DIFFICULT VERTICAL OR HORIZONTAL ALIGNMENT, AS DIRECTED BY THE RESIDENT ENGINEER.

LEGEND

- WHITE LINES
- YELLOW LINES
- CHANNELIZATION WHITE LINES
- ... WHITE DOTTED LINES
- ← DIRECTION OF TRAFFIC FLOW

RAMP MARKINGS

IMPORTANT NOTE: ACTUAL LOCATION OF CORE MARKING TRANSITION CURVE MUST BE OFFSET FROM THE THEORETICAL RAMP EXTENSION LINE TO PROVIDE A VISUALLY SMOOTH RAMP ENTRANCE.



DETAIL - GORE MARKING TRANSITION CURVE

THIS SHEET IS NOT TO SCALE

OTHER STDS. REQUIRED: NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS

JUNE 13, 1997 - ORIGINAL APPROVAL DATE
FEB. 1, 1999 - CHANGED NOTES FOR ACCELERATION & DECELERATION LANES

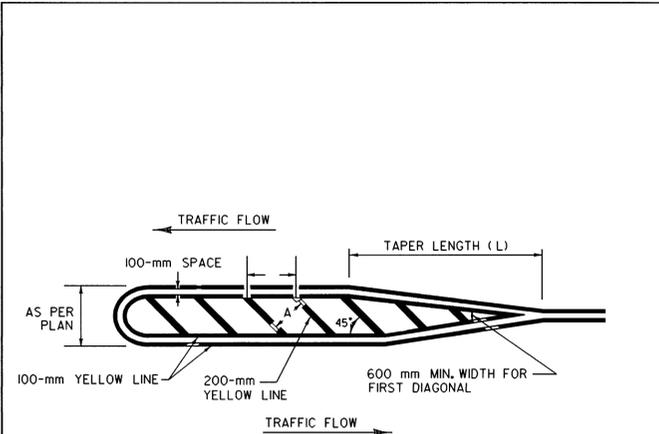
APPROVED

David J. Smith
DIRECTOR OF PROJECT DEVELOPMENT

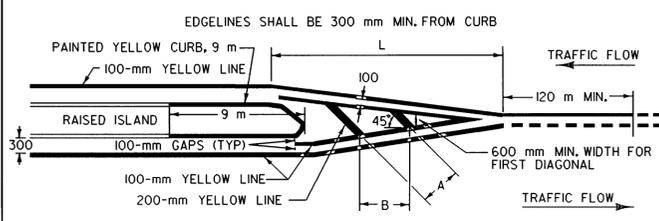
PAVEMENT MARKING DETAILS



Metric STANDARD E-191M



PAINTED ISLAND DETAIL



ISLAND APPROACH MARKINGS

DIMENSIONS		CONDITIONS FOR USE	
A	B		
1500	2100	LOW SPEED OR HIGH SPEED POOR SIGHT DISTANCE, <60 m	WHERE LENGTH OF DIAGONAL AREA IS 22.5 m MAX.
3000	4200	HIGH SPEED AND GOOD SIGHT DISTANCE, >60 m	WHERE LENGTH OF DIAGONAL AREA EXCEEDS 22.5 m

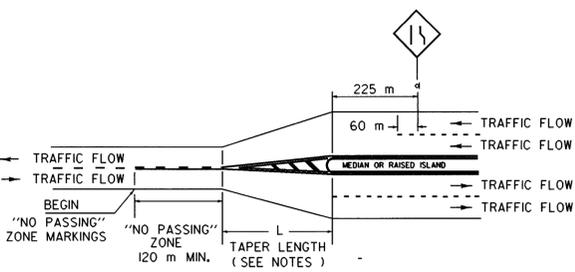
TAPER LENGTH NOTES

- SEE TABLE ON STD. E-106M FOR TAPER CRITERIA.
- LENGTH "L" CAN BE EXTENDED AS REQUIRED TO IMPROVE VISIBILITY OR TO PROVIDE A SMOOTHER TRANSITION.

NOTE:

A SOLID LINE IN THE DIRECTION OF TRAVEL IS BEGUN AT A LOCATION 120 m MIN. IN ADVANCE OF THE BEGIN TAPER FOR THE PAVEMENT WIDTH TRANSITION.

PASSING ZONE SHOWN FOR REFERENCE ONLY, ACTUAL MARKINGS BASED ON FIELD CONDITIONS.



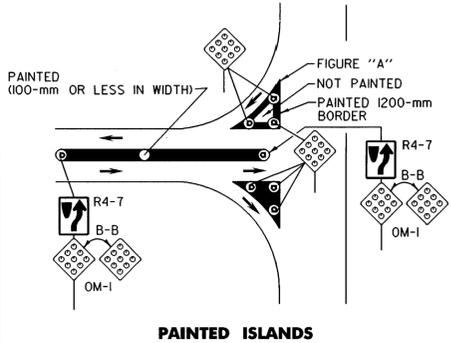
"NO PASSING" ZONE LAYOUT IN PAVEMENT WIDTH TRANSITIONS, TWO LANE HIGHWAY TO DIVIDED HIGHWAY

THE FOLLOWING GUIDELINES WILL BE USED WHEN PAINTING ISLANDS ON STATE HIGHWAYS AND ARE RECOMMENDED FOR ISLANDS ON OTHER SYSTEMS WITHIN THE STATE.

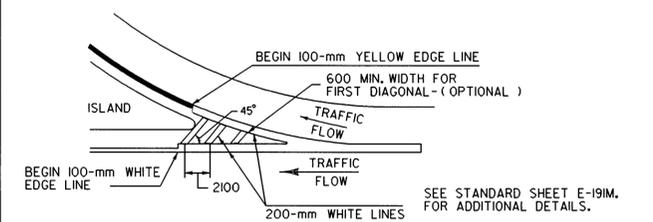
I. PAINTING: ISLANDS WHICH ARE 1.2 m IN WIDTH AND TRIANGLE ISLANDS WHICH ARE LESS THAN 40 m² SHALL BE PAINTED ENTIRELY. TRIANGLES WHICH ARE 40 m² AND LARGER SHALL BE PAINTED WITH A 1.2-m BORDER AS SHOWN ON FIGURE "A" OF THE PAINTED ISLAND DETAIL.

II. SIGNS: ALL APPROACH NOSES TO THE ISLANDS IN THE LINE OF TRAFFIC WILL BE SIGNED WITH A KEEP RIGHT (R4-7) SIGN AS WELL AS OBJECT MARKERS PLACED BACK TO BACK TO INDICATE THE BEGINNING (END) OF THE ISLAND.

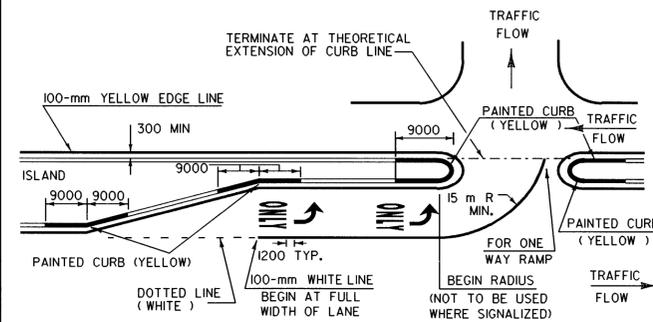
III. EXCEPTIONS: THERE WILL BE SPECIAL CASES WHICH REQUIRE AN EXCEPTION TO, OR MODIFICATION OF THIS GUIDELINE. THESE QUESTIONS SHOULD BE REFERRED TO THE TRAFFIC DESIGN ENGINEER OR HIS DELEGATED REPRESENTATIVE.



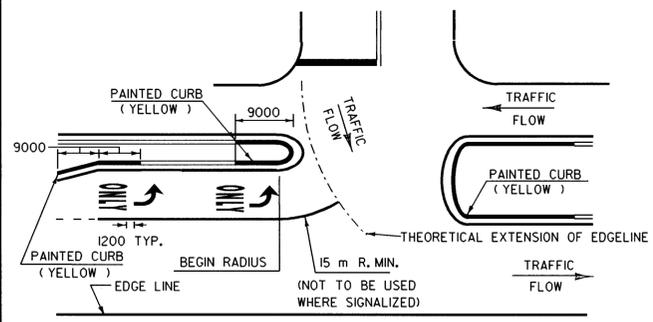
PAINTED ISLANDS



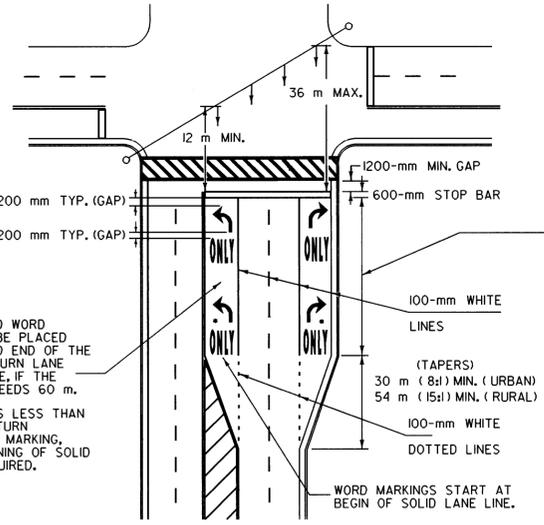
GORE MARKING DETAIL - EXIT TRANSVERSE LINES



TURN LANE AND PAINTED CURB DETAIL



CURB PAINTING: CURB SHALL BE PAINTED ON THE ISLAND NOSE AND TO A POINT 9 m FROM THE END OF THE ISLAND. IN ADDITION, CURB SHALL BE PAINTED 9 m FROM ANY CHANGE IN CURB DIRECTION.



TYPICAL MARKINGS FOR SIGNALIZED INTERSECTION

TURN ARROWS AND WORD MARKINGS SHALL BE PLACED AT THE BEGIN AND END OF THE LEFT (OR RIGHT) TURN LANE AND IN THE MIDDLE, IF THE LANE LENGTH EXCEEDS 60 m.

* IF LANE LENGTH IS LESS THAN 30 m, ONLY ONE TURN ARROW AND WORD MARKING, PLACED AT BEGINNING OF SOLID LANE LINE, IS REQUIRED.

EXCLUSIVE TURN LANES (LEFT OR RIGHT) LANE LINES SHALL BE SOLID AND EXTEND BACK FROM THE STOP LINE TO THE POINT OF FULL LANE WIDTH OF THE TURN LANE.

THE MINIMUM STORAGE LENGTH IS 15 m.

A. STORAGE LENGTH PROVIDED FOR QUEUING:

- SIGNALIZED
 - PREFERRED METHOD: HIGHWAY CAPACITY MANUAL.
 - ESTIMATION METHOD. (HOURLY VOLUME OF LT) / (2)(7.5 m/VEHICLE)(CYCLES)/HOUR
- UNSIGNALIZED

ASSUME A 60 SECOND CYCLE LENGTH AND APPLY THE EQUATION FOR SIGNALIZED ESTIMATION METHOD.

B. ADDITIONAL STORAGE LENGTH FOR DECELERATION: (TAPER/DECEL. FROM CHART) - (MIN. TAPER) - 0.5 (STORAGE - 15 m)

AVERAGE RUNNING SPEED (km/h)	TAPER/DECEL BASED ON A 15 km/h REDUCTION (m)
30	30
40	40
50	50
60	65
70	80
80	95
90	115
100	145

THIS SHEET NOT TO SCALE

OTHER STDS. E-106M E-193M REQUIRED: E-191M

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

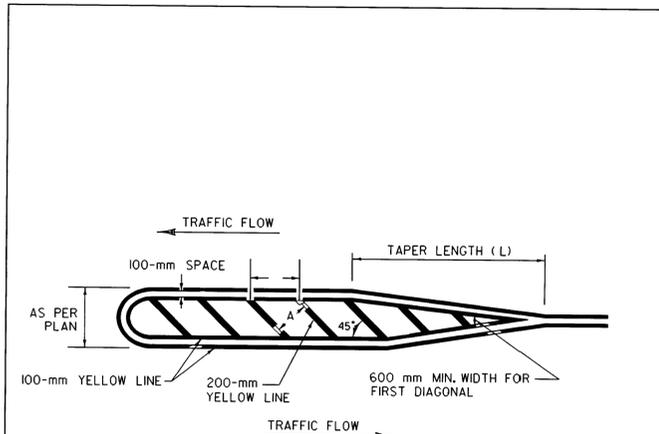
[Signature]
DIRECTOR OF ENGINEERING

[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

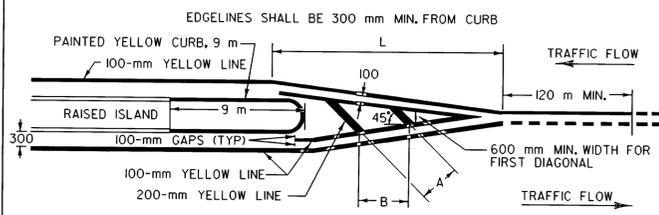
PAVEMENT MARKING DETAILS



Metric STANDARD E-192M



PAINTED ISLAND DETAIL



ISLAND APPROACH MARKINGS

DIMENSIONS		CONDITIONS FOR USE	
A	B		
1500	2100	LOW SPEED OR HIGH SPEED POOR SIGHT DISTANCE, <60 m	WHERE LENGTH OF DIAGONAL AREA IS 22.5 m MAX.
3000	4200	HIGH SPEED AND GOOD SIGHT DISTANCE, >60 m	WHERE LENGTH OF DIAGONAL AREA EXCEEDS 22.5 m

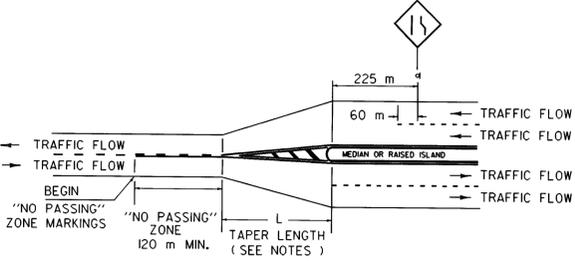
TAPER LENGTH NOTES

- SEE TABLE ON STD. E-106M FOR TAPER CRITERIA.
- LENGTH "L" CAN BE EXTENDED AS REQUIRED TO IMPROVE VISIBILITY OR TO PROVIDE A SMOOTHER TRANSITION.

NOTE:

A SOLID LINE IN THE DIRECTION OF TRAVEL IS BEGUN AT A LOCATION 120 m MIN. IN ADVANCE OF THE BEGIN TAPER FOR THE PAVEMENT WIDTH TRANSITION.

PASSING ZONE SHOWN FOR REFERENCE ONLY, ACTUAL MARKINGS BASED ON FIELD CONDITIONS.



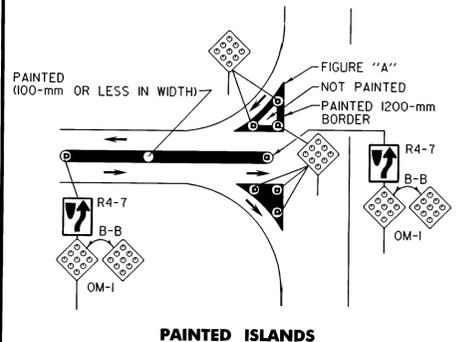
"NO PASSING" ZONE LAYOUT IN PAVEMENT WIDTH TRANSITIONS, TWO LANE HIGHWAY TO DIVIDED HIGHWAY

THE FOLLOWING GUIDELINES WILL BE USED WHEN PAINTING ISLANDS ON STATE HIGHWAYS AND ARE RECOMMENDED FOR ISLANDS ON OTHER SYSTEMS WITHIN THE STATE.

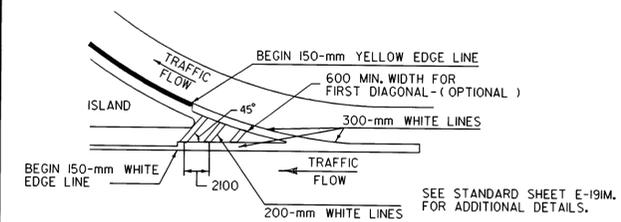
I. PAINTING: ISLANDS WHICH ARE 1.2 m IN WIDTH AND TRIANGLE ISLANDS WHICH ARE LESS THAN 40 m² SHALL BE PAINTED ENTIRELY. TRIANGLES WHICH ARE 40 m² AND LARGER SHALL BE PAINTED WITH A 1.2-m BORDER AS SHOWN ON FIGURE "A" OF THE PAINTED ISLAND DETAIL.

II. SIGNS: ALL APPROACH NOSES TO THE ISLANDS IN THE LINE OF TRAFFIC WILL BE SIGNED WITH A KEEP RIGHT (R4-7) SIGN AS WELL AS OBJECT MARKERS PLACED BACK TO BACK TO INDICATE THE BEGINNING (END) OF THE ISLAND.

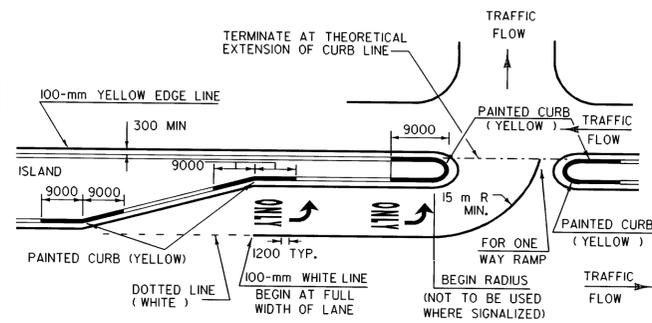
III. EXCEPTIONS: THERE WILL BE SPECIAL CASES WHICH REQUIRE AN EXCEPTION TO, OR MODIFICATION OF THIS GUIDELINE. THESE QUESTIONS SHOULD BE REFERRED TO THE TRAFFIC DESIGN ENGINEER OR HIS DELEGATED REPRESENTATIVE.



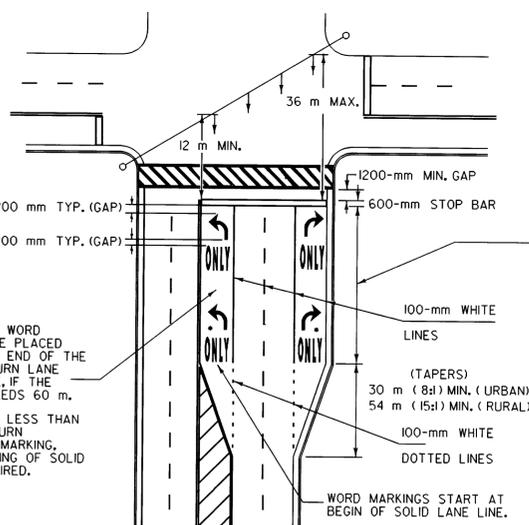
PAINTED ISLANDS



GORE MARKING DETAIL - EXIT TRANSVERSE LINES



TURN LANE AND PAINTED CURB DETAIL



TYPICAL MARKINGS FOR SIGNALIZED INTERSECTION

EXCLUSIVE TURN LANES (LEFT OR RIGHT) LANE LINES SHALL BE SOLID AND EXTEND BACK FROM THE STOP LINE TO THE POINT OF FULL LANE WIDTH OF THE TURN LANE.

THE MINIMUM STORAGE LENGTH IS 15 m.

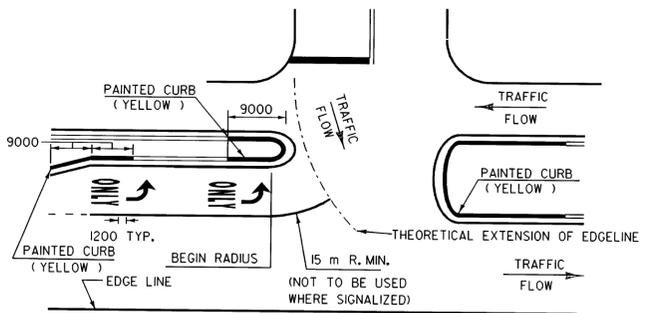
A. STORAGE LENGTH PROVIDED FOR QUEUING:

- SIGNALIZED
 - PREFERRED METHOD: HIGHWAY CAPACITY MANUAL.
 - ESTIMATION METHOD. (HOURLY VOLUME OF LT) (2)(7.5 m/VEHICLE)(CYCLES) HOUR
- UNSIGNALIZED

ASSUME A 60 SECOND CYCLE LENGTH AND APPLY THE EQUATION FOR SIGNALIZED ESTIMATION METHOD.

B. ADDITIONAL STORAGE LENGTH FOR DECELERATION: (TAPER/DECEL. FROM CHART) - (MIN. TAPER) - 0.5 (STORAGE - 15 m)

AVERAGE RUNNING SPEED (km/h)	TAPER/DECEL. BASED ON A 15 km/h REDUCTION (m)
30	30
40	40
50	50
60	65
70	80
80	95
90	115
100	145



CURB PAINTING: CURB SHALL BE PAINTED ON THE ISLAND NOSE AND TO A POINT 9 m FROM THE END OF THE ISLAND. IN ADDITION, CURB SHALL BE PAINTED 9 m FROM ANY CHANGE IN CURB DIRECTION.

REVISIONS AND CORRECTIONS

JUNE 13, 1997 - ORIGINAL APPROVAL DATE
OCT 13, 1998 - CHANGED GORE MARKING DETAIL

APPROVED

[Signature]
DIRECTOR OF PROJECT DEVELOPMENT

PAVEMENT MARKING DETAILS

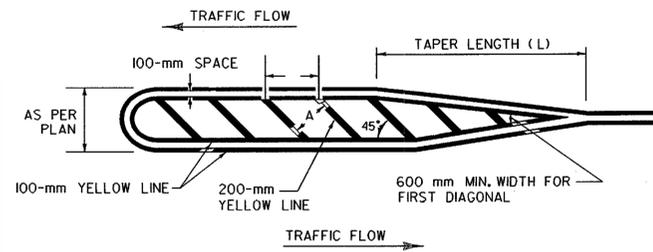
THIS SHEET NOT TO SCALE

OTHER STDS. E-106M E-193M REQUIRED: E-191M

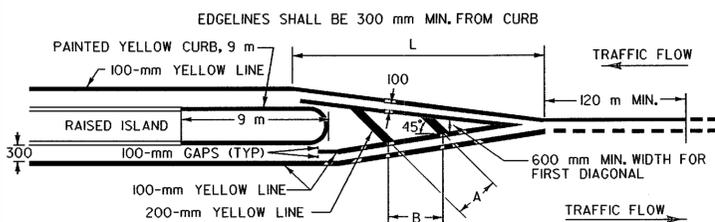
NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.



Metric STANDARD E-192M



PAINTED ISLAND DETAIL



ISLAND APPROACH MARKINGS

DIMENSIONS		CONDITIONS FOR USE	
A	B		
1500	2100	LOW SPEED OR HIGH SPEED POOR SIGHT DISTANCE, <60 m	WHERE LENGTH OF DIAGONAL AREA IS 22.5 m MAX.
3000	4200	HIGH SPEED AND GOOD SIGHT DISTANCE, ≥60 m	WHERE LENGTH OF DIAGONAL AREA EXCEEDS 22.5 m

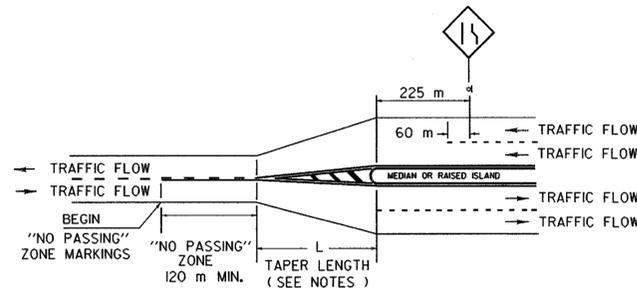
TAPER LENGTH NOTES

- SEE TABLE ON STD. E-106M FOR TAPER CRITERIA.
- LENGTH "L" CAN BE EXTENDED AS REQUIRED TO IMPROVE VISIBILITY OR TO PROVIDE A SMOOTHER TRANSITION.

NOTE:

A SOLID LINE IN THE DIRECTION OF TRAVEL IS BEGUN AT A LOCATION 120 m MIN. IN ADVANCE OF THE BEGIN TAPER FOR THE PAVEMENT WIDTH TRANSITION.

PASSING ZONE SHOWN FOR REFERENCE ONLY, ACTUAL MARKINGS BASED ON FIELD CONDITIONS.



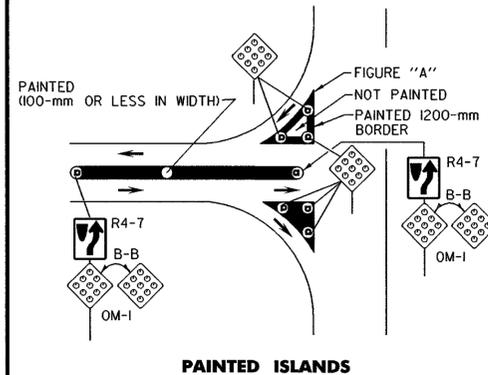
"NO PASSING" ZONE LAYOUT IN PAVEMENT WIDTH TRANSITIONS, TWO LANE HIGHWAY TO DIVIDED HIGHWAY

THE FOLLOWING GUIDELINES WILL BE USED WHEN PAINTING ISLANDS ON STATE HIGHWAYS AND ARE RECOMMENDED FOR ISLANDS ON OTHER SYSTEMS WITHIN THE STATE.

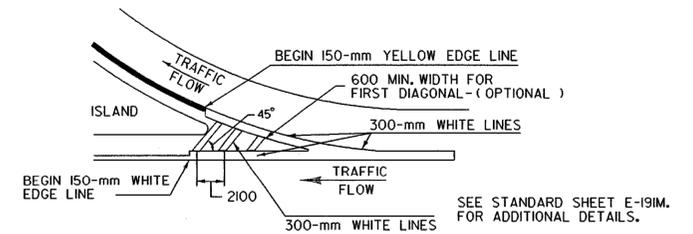
I. PAINTING: ISLANDS WHICH ARE 1.2 m IN WIDTH AND TRIANGLE ISLANDS WHICH ARE LESS THAN 40 m² SHALL BE PAINTED ENTIRELY. TRIANGLES WHICH ARE 40 m² AND LARGER SHALL BE PAINTED WITH A 1.2-m BORDER AS SHOWN ON FIGURE "A" OF THE PAINTED ISLAND DETAIL.

II. SIGNS: ALL APPROACH NOSES TO THE ISLANDS IN THE LINE OF TRAFFIC WILL BE SIGNED WITH A KEEP RIGHT (R4-7) SIGN AS WELL AS OBJECT MARKERS PLACED BACK TO BACK TO INDICATE THE BEGINNING (END) OF THE ISLAND.

III. EXCEPTIONS: THERE WILL BE SPECIAL CASES WHICH REQUIRE AN EXCEPTION TO, OR MODIFICATION OF THIS GUIDELINE. THESE QUESTIONS SHOULD BE REFERRED TO THE TRAFFIC DESIGN ENGINEER OR HIS DELEGATED REPRESENTATIVE.

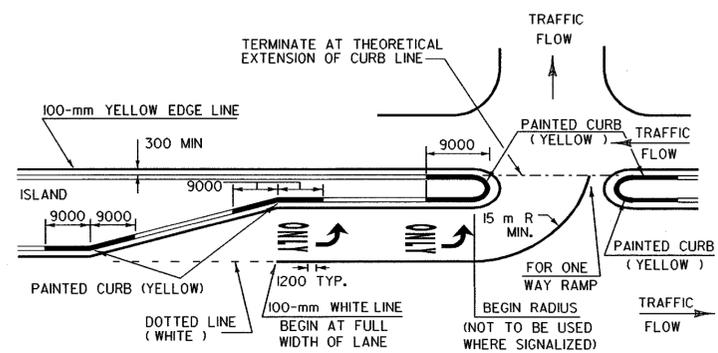


PAINTED ISLANDS

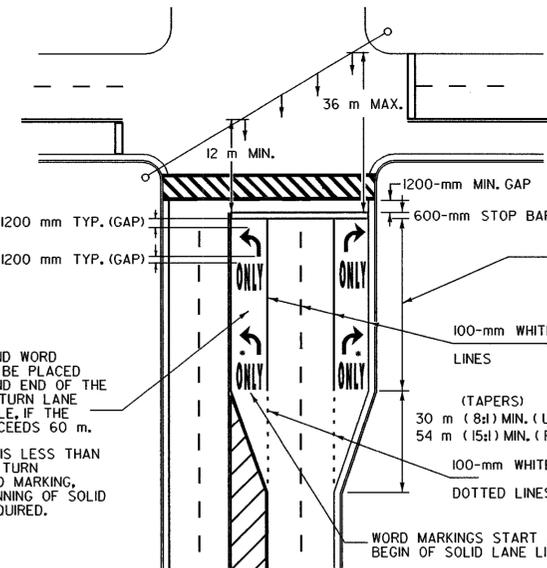


GORE MARKING DETAIL - EXIT

TRANSVERSE LINES



TURN LANE AND PAINTED CURB DETAIL



TYPICAL MARKINGS FOR SIGNALIZED INTERSECTION

EXCLUSIVE TURN LANES (LEFT OR RIGHT) LANE LINES SHALL BE SOLID AND EXTEND BACK FROM THE STOP LINE TO THE POINT OF FULL LANE WIDTH OF THE TURN LANE.

THE MINIMUM STORAGE LENGTH IS 15 m.

A. STORAGE LENGTH PROVIDED FOR QUEUING:

1. SIGNALIZED

a. PREFERRED METHOD: HIGHWAY CAPACITY MANUAL.

b. ESTIMATION METHOD. (HOURLY VOLUME OF LT) (2)(7.5 m/VEHICLE)(CYCLES) HOUR

2. UNSIGNALIZED

ASSUME A 60 SECOND CYCLE LENGTH AND APPLY THE EQUATION FOR SIGNALIZED ESTIMATION METHOD.

B. ADDITIONAL STORAGE LENGTH FOR DECELERATION: (TAPER/DECEL. FROM CHART) - (MIN. TAPER) - 0.5 (STORAGE - 15 m)

1. SIGNALIZED

a. PREFERRED METHOD: HIGHWAY CAPACITY MANUAL.

b. ESTIMATION METHOD. (HOURLY VOLUME OF LT) (2)(7.5 m/VEHICLE)(CYCLES) HOUR

2. UNSIGNALIZED

ASSUME A 60 SECOND CYCLE LENGTH AND APPLY THE EQUATION FOR SIGNALIZED ESTIMATION METHOD.

B. ADDITIONAL STORAGE LENGTH FOR DECELERATION: (TAPER/DECEL. FROM CHART) - (MIN. TAPER) - 0.5 (STORAGE - 15 m)

1. SIGNALIZED

a. PREFERRED METHOD: HIGHWAY CAPACITY MANUAL.

b. ESTIMATION METHOD. (HOURLY VOLUME OF LT) (2)(7.5 m/VEHICLE)(CYCLES) HOUR

2. UNSIGNALIZED

ASSUME A 60 SECOND CYCLE LENGTH AND APPLY THE EQUATION FOR SIGNALIZED ESTIMATION METHOD.

B. ADDITIONAL STORAGE LENGTH FOR DECELERATION: (TAPER/DECEL. FROM CHART) - (MIN. TAPER) - 0.5 (STORAGE - 15 m)

1. SIGNALIZED

a. PREFERRED METHOD: HIGHWAY CAPACITY MANUAL.

b. ESTIMATION METHOD. (HOURLY VOLUME OF LT) (2)(7.5 m/VEHICLE)(CYCLES) HOUR

2. UNSIGNALIZED

ASSUME A 60 SECOND CYCLE LENGTH AND APPLY THE EQUATION FOR SIGNALIZED ESTIMATION METHOD.

B. ADDITIONAL STORAGE LENGTH FOR DECELERATION: (TAPER/DECEL. FROM CHART) - (MIN. TAPER) - 0.5 (STORAGE - 15 m)

1. SIGNALIZED

a. PREFERRED METHOD: HIGHWAY CAPACITY MANUAL.

b. ESTIMATION METHOD. (HOURLY VOLUME OF LT) (2)(7.5 m/VEHICLE)(CYCLES) HOUR

2. UNSIGNALIZED

ASSUME A 60 SECOND CYCLE LENGTH AND APPLY THE EQUATION FOR SIGNALIZED ESTIMATION METHOD.

B. ADDITIONAL STORAGE LENGTH FOR DECELERATION: (TAPER/DECEL. FROM CHART) - (MIN. TAPER) - 0.5 (STORAGE - 15 m)

1. SIGNALIZED

a. PREFERRED METHOD: HIGHWAY CAPACITY MANUAL.

b. ESTIMATION METHOD. (HOURLY VOLUME OF LT) (2)(7.5 m/VEHICLE)(CYCLES) HOUR

2. UNSIGNALIZED

ASSUME A 60 SECOND CYCLE LENGTH AND APPLY THE EQUATION FOR SIGNALIZED ESTIMATION METHOD.

B. ADDITIONAL STORAGE LENGTH FOR DECELERATION: (TAPER/DECEL. FROM CHART) - (MIN. TAPER) - 0.5 (STORAGE - 15 m)

1. SIGNALIZED

a. PREFERRED METHOD: HIGHWAY CAPACITY MANUAL.

b. ESTIMATION METHOD. (HOURLY VOLUME OF LT) (2)(7.5 m/VEHICLE)(CYCLES) HOUR

THIS SHEET NOT TO SCALE

OTHER STDS. E-106M E-193M REQUIRED: E-191M

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS

JUNE 13, 1997 - ORIGINAL APPROVAL DATE
OCT 13, 1998 - CHANGED GORE MARKING DETAIL
DEC 28, 1998 - CHANGED GORE MARKING HATCHING TO 300MM PER FHWA

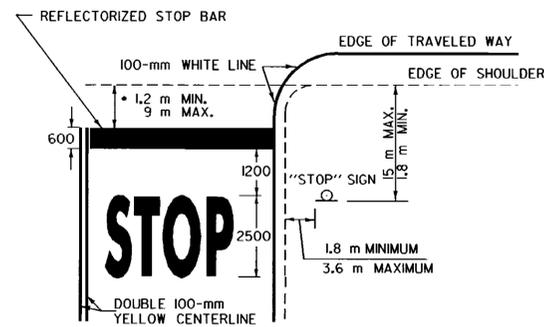
APPROVED

[Signature]
DIRECTOR OF PROJECT DEVELOPMENT

PAVEMENT MARKING DETAILS

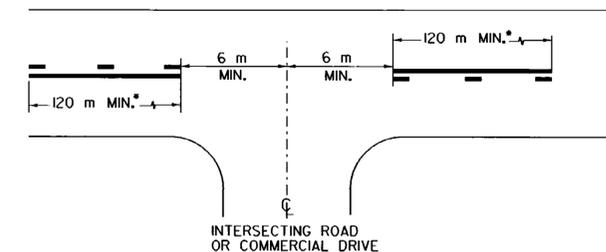


Metric STANDARD E-192M



• THE "DESIRED STOPPING POINT" IS THE LOCATION BASED ON SITE CONDITIONS THAT BEST ALLOWS THE STOPPED VEHICLE TO VIEW THE APPROACHING TRAFFIC.

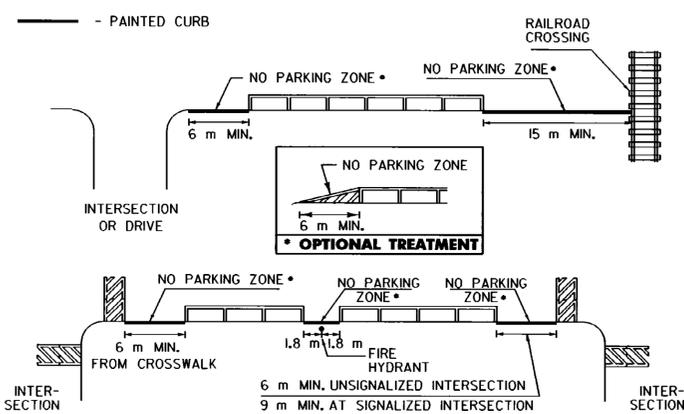
STOP BAR LAYOUT



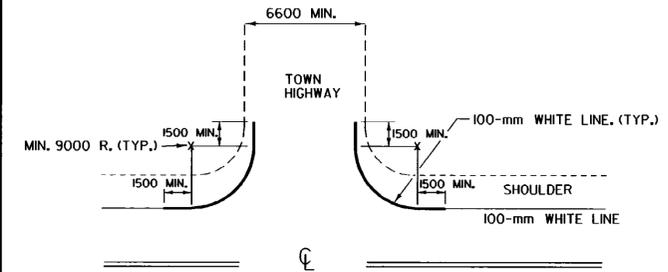
INTERSECTING ROAD OR COMMERCIAL DRIVE
• THE SOLID LINE SHALL BE PAIRED WITH EITHER A SOLID OR DASHED LINE DEPENDING ON SIGHT DISTANCE AVAILABILITY IN THE OPPOSING DIRECTION. ADJUSTMENTS TO THE 12-m CENTERLINE OPENING MAY BE MADE TO ACCOMMODATE SKEWED INTERSECTIONS.

- CENTERLINE BREAKS:
- AT ALL STATE HIGHWAYS AND TOWN HIGHWAYS, INCLUDING CLASS 4 TH'S, THAT HAVE STOP AND LEGAL LOAD LIMIT SIGNS INSTALLED
 - COMMERCIAL DRIVES:
 - WHERE A SEPERATE TURN LANE EXISTS ON THE MAIN LINE (LT. OR RT.)
 - SIGNIFICANT TRAFFIC VOLUMES EXISTS.
 - IF MOTORISTS NEED ASSISTANCE TO DEFINE ENTRANCE POINTS.

CENTERLINE LAYOUT



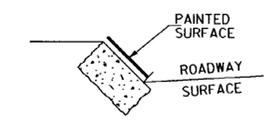
NO PARKING LAYOUT DETAILS



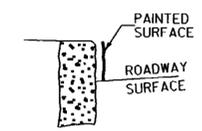
EDGELINES SHALL BE APPLIED TO ALL STATE HIGHWAYS AND SHOULD BE MAINTAINED AT A CONSTANT DISTANCE FROM THE CENTERLINE UNLESS PAVEMENT WIDTH INCREASES TO ALLOW WIDER LANES.

APPLY EDGELINE AS DETAILED ON ALL PAVED CLASS 1 & CLASS 2 TOWN HIGHWAYS AND ANY CLASS 3 TOWN HIGHWAY 6600 mm OR MORE IN WIDTH.
IF MIN. 9-m RADIUS CANNOT BE OBTAINED, OR THE TOWN HIGHWAY IS NOT PAVED, BREAK THE EDGELINE USING A 24-m GAP AT INTERSECTION.

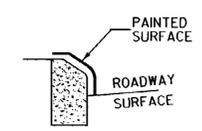
EDGELINE LAYOUTS



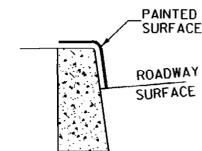
GRANITE SLOPE EDGING



VERTICAL GRANITE CURB

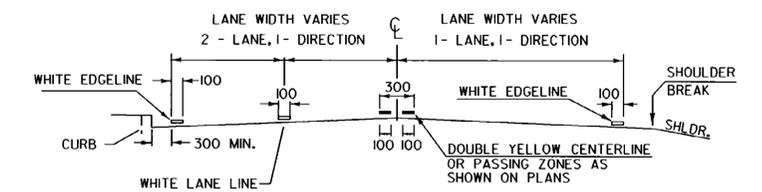


TYPE A (CONCRETE)

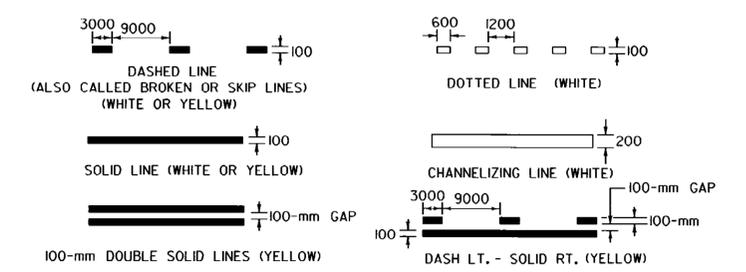


TYPE B (CONCRETE)

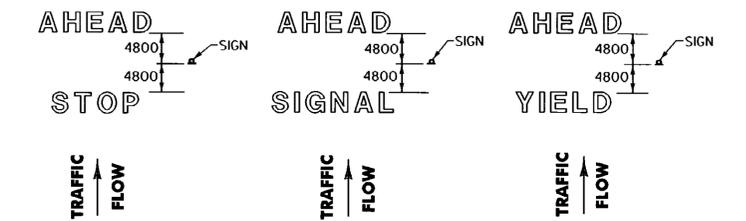
PAINTED CURB



PAVEMENT MARKING PLACEMENT DETAIL

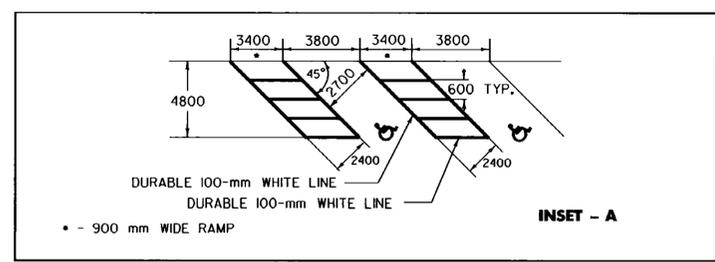


PAVEMENT MARKING LINE DETAILS

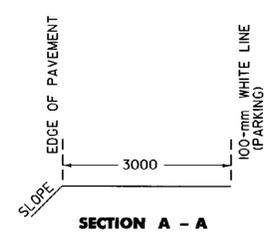


LETTER IN WORD MARKING SPACING DETAIL

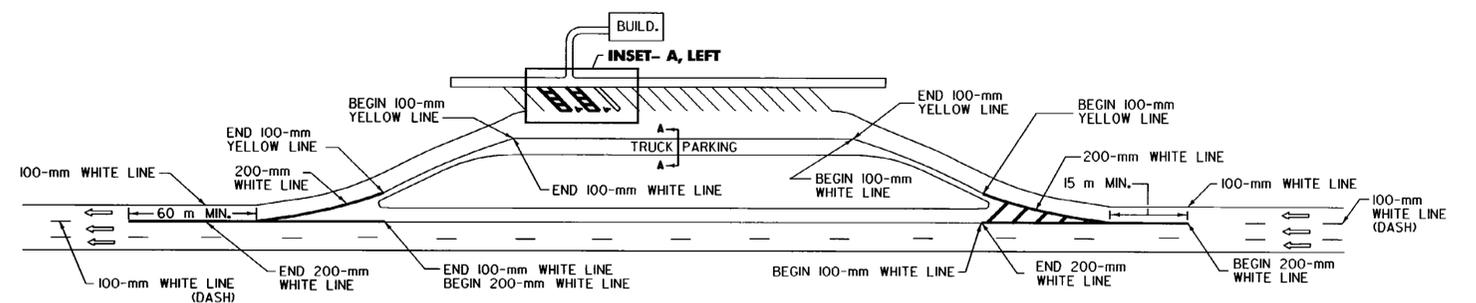
NOTE: SINGLE WORDS CENTERED ON SIGN ie: SCHOOL OR YIELD



NOTE:
SEE STANDARD SHEET E-191M FOR HANDICAP SYMBOL POSITIONING AND DETAIL.



**SECTION A - A
TRUCK PARKING DETAIL**



REST AREA PARKING DETAILS

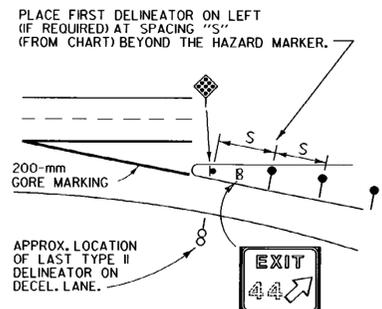
THIS SHEET IS NOT TO SCALE
OTHER STDS. E-191M REQUIRED: E-192M
NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED
Paul Kane
DIRECTOR OF ENGINEERING
Stephen D. McArthur
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

PAVEMENT MARKING DETAILS

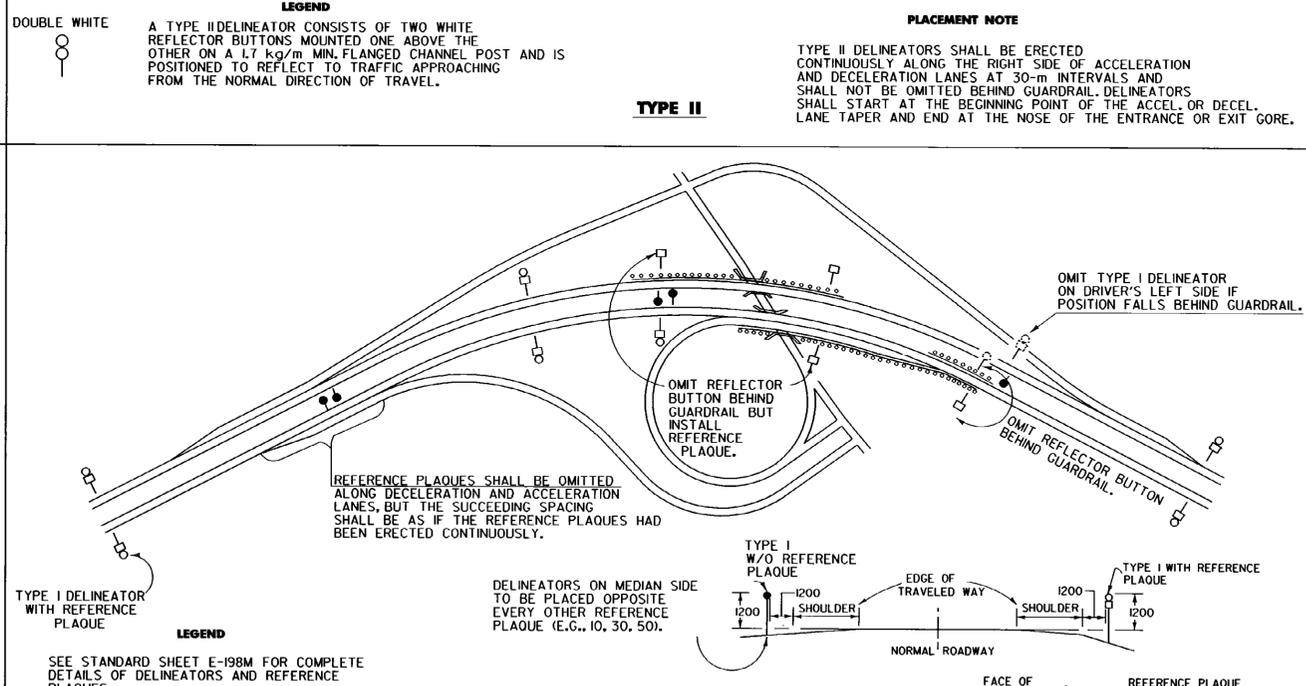
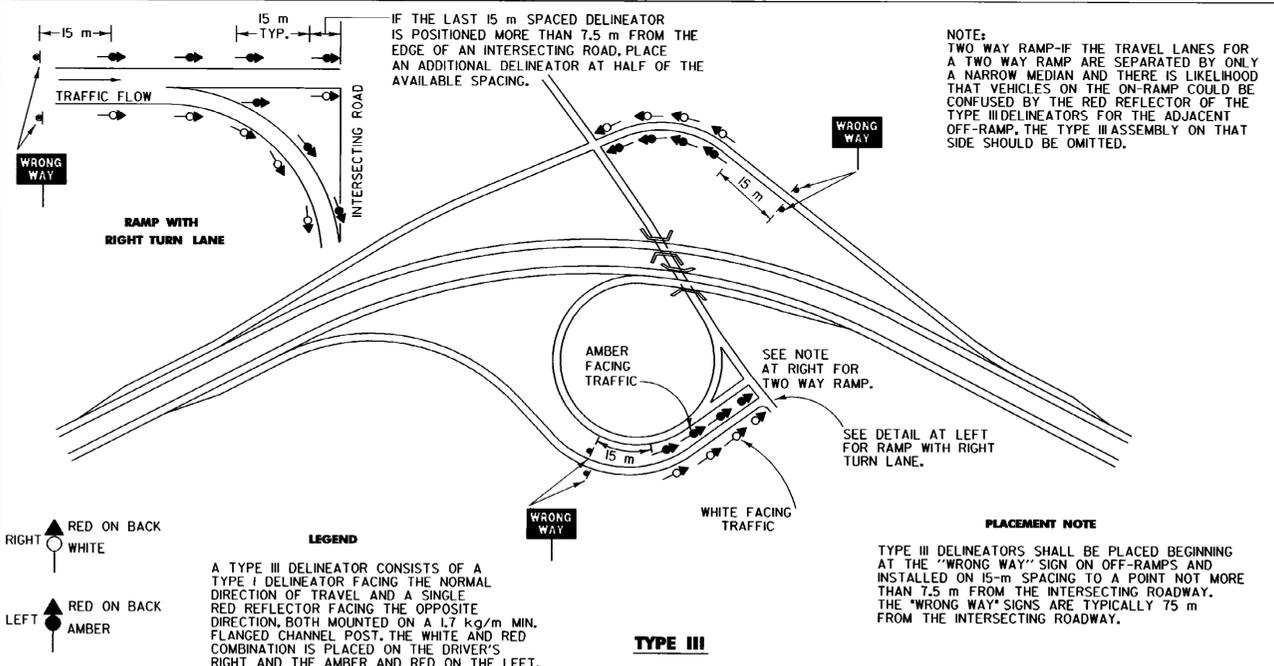
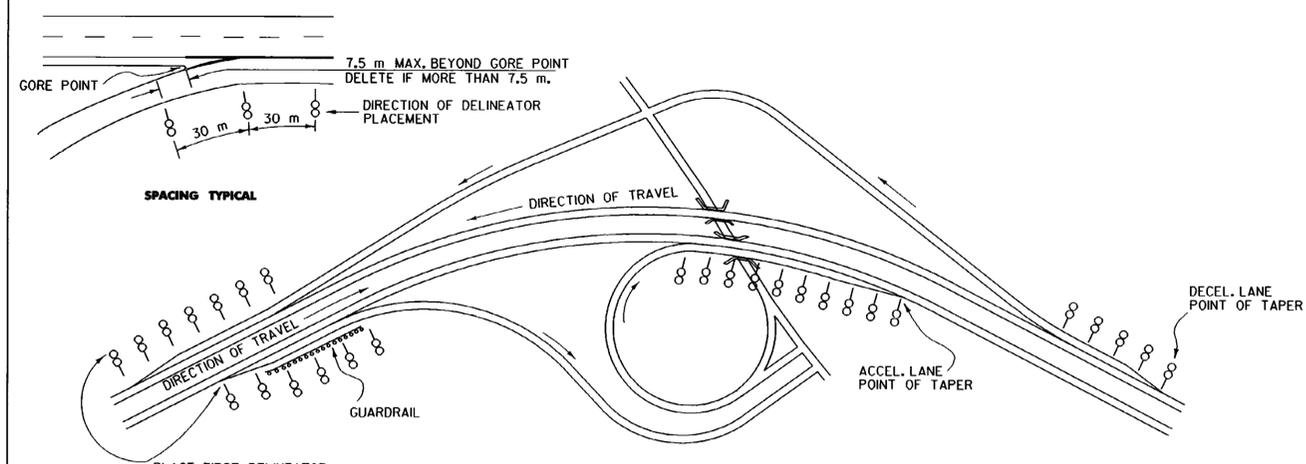
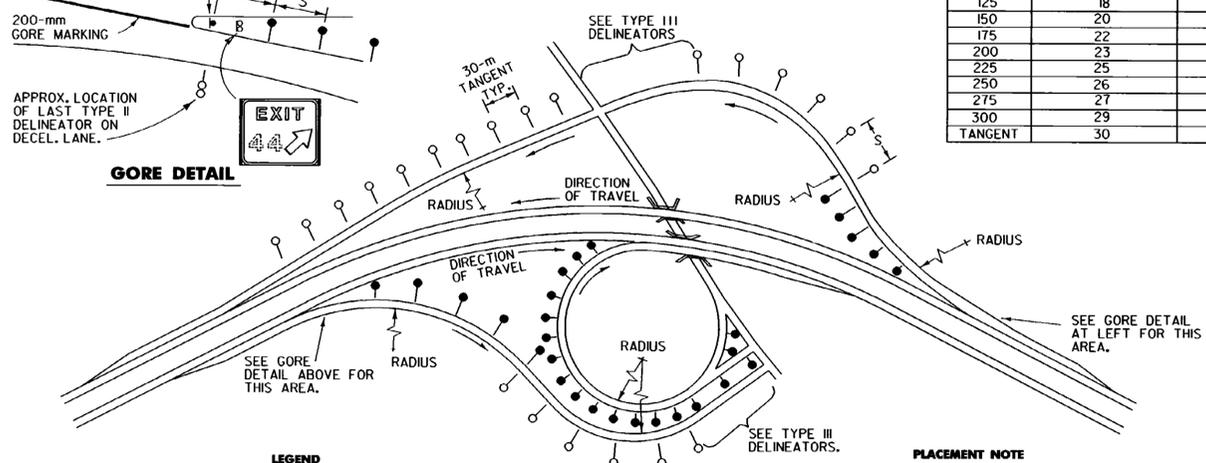
VERMONT AGENCY OF TRANSPORTATION
Metric STANDARD E-193M



NOTE: SPACING FOR SPECIFIC RADIUS NOT SHOWN MAY BE INTERPOLATED FROM THE TABLE AND ROUNDED TO THE NEAREST METER. THE MINIMUM SPACING SHOULD NOT BE LESS THAN 6 m NOR GREATER THAN 90 m. THE SPACING OF THE FIRST DELINEATOR APPROACHING A CURVE SHOULD BE PLACED AT 2S, THE SECOND 3S, AND THE THIRD 6S, BUT THE DISTANCE SHOULD NOT EXCEED 90 m. S REFERS TO THE DELINEATOR SPACING FOR SPECIFIC RADIUS COMPUTED FROM THE FORMULA:

$$S = 1.7\sqrt{R - 15}$$

RADIUS OF CURVE (m)	(S) SPACING ON OUTSIDE OF CURVE (m)	POSTED RAMP SPEED (mph)
25	6	
50	10	25
75	13	30
100	16	35
125	18	40
150	20	
175	22	
200	23	50
225	25	
250	26	
275	27	
300	29	
TANGENT	30	



THIS SHEET IS NOT TO SCALE

OTHER STDS. REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS

JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

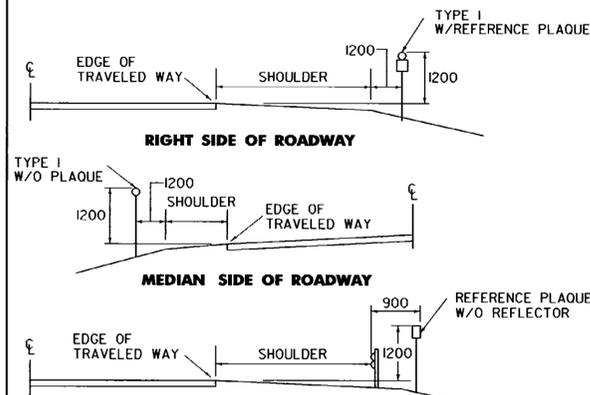
[Signature]
DIRECTOR OF ENGINEERING

[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

DELINEATOR PLACEMENT TYPICAL

VERMONT AGENCY OF TRANSPORTATION

Metric STANDARD E-197 M



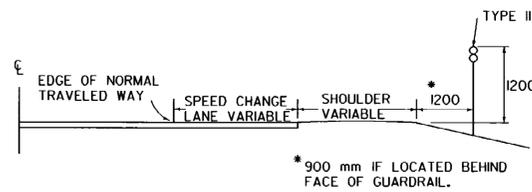
TYPICAL PLACEMENT OF TYPE I DELINEATORS AND REFERENCE PLAQUES ON DIVIDED HIGHWAY

TYPE I DELINEATORS WITH WHITE REFLECTOR UNITS AND THE APPROPRIATE REFERENCE PLAQUES SHALL BE ERECTED CONTINUOUSLY ALONG THE RIGHT SIDE OF THE DIVIDED HIGHWAYS BETWEEN REFERENCE MARKERS, EXCEPT THAT BEHIND GUARDRAIL THE REFERENCE PLAQUES WITHOUT REFLECTORS SHALL BE ERECTED.

THE TYPE I DELINEATORS WITH OR WITHOUT REFERENCE PLAQUES SHALL BE OMITTED ALONG DECELERATION AND ACCELERATION LANES, BUT THE SUCCEEDING SPACING SHALL BE AS IF THE DELINEATORS HAD BEEN ERECTED CONTINUOUSLY AND SHALL BE SO INDICATED.

THE LOCATION OF TYPE I DELINEATORS AND REFERENCE PLAQUES ARE TO BE COMPUTED AND MARKED IN THE FIELD BY THE ENGINEER IN ACCORDANCE WITH THE LATEST REVISION OF THE AGENCY'S "POLICY ON LOCATION MARKING FOR VERMONT DIVIDED HIGHWAYS."

TYPE I AMBER DELINEATORS WITHOUT REFERENCE PLAQUES SHALL BE ERECTED CONTINUOUSLY ALONG THE LEFT OR MEDIAN SIDE ON THE DIVIDED HIGHWAYS EXCEPT BEHIND GUARDRAIL. THEY SHALL BE CONTINUED AT APPROXIMATELY THE SAME SPACING THROUGH INTERCHANGES AND REST AREAS WHERE THERE MAY NOT BE ANY TYPE I DELINEATORS ON THE RIGHT SIDE. THE SAME LATERAL PLACEMENT SHALL BE FOLLOWED ON THE LEFT AS ON THE RIGHT. TYPE I DELINEATORS WITHOUT REFERENCE PLAQUES SHALL BE INSTALLED ON INTERSTATE RAMP AS SHOWN ON THE PLANS.



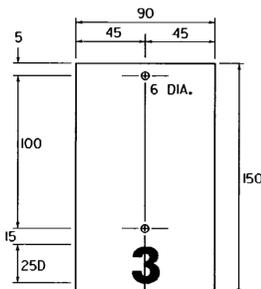
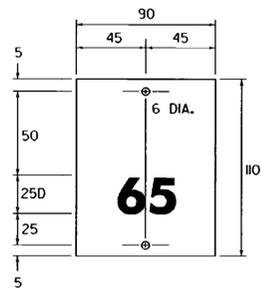
TYPICAL PLACEMENT OF TYPE II DELINEATORS ON SPEED CHANGE LANES

TYPE II DELINEATORS SHALL BE ERECTED CONTINUOUSLY ALONG THE RIGHT SIDE OF THE DECELERATION AND ACCELERATION LANES AT 30-m INTERVALS INCLUDING GUARDRAIL SECTIONS. THE DELINEATORS SHALL START AT THE BEGINNING OF THE TAPER AND END AT THE NOSE OF THE EXIT OR ENTRANCE GORE. THEY SHALL HAVE WHITE REFLECTOR UNITS.

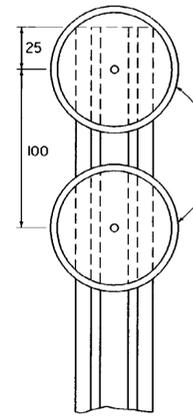
TYPE III DELINEATORS - SEE NOTE # 1

TYPE III DELINEATORS SHALL BEGIN 15 m FROM WRONG WAY SIGNS AND EXTEND EVERY 15 m TO A POINT NOT LESS THAN 7.5 m FROM THE DIVIDED HIGHWAY AND BE MOUNTED ON BOTH SIDES OF THE ROAD AS SHOWN ON THE PLANS.

REFERENCE PLAQUE PART "A" (THE NUMERALS ON PART "A" INDICATE THE KILOMETER.)

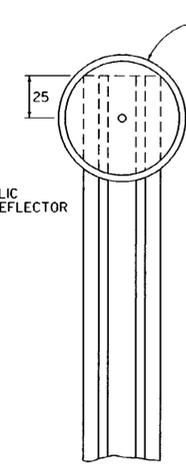


REFERENCE PLAQUE PART "B" (THE LEGEND ON PART "B" REPRESENTS TENTHS OF A KILOMETER BETWEEN REFERENCE MARKERS.)

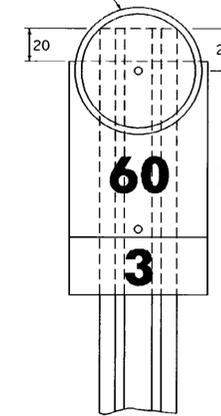


TYPE II

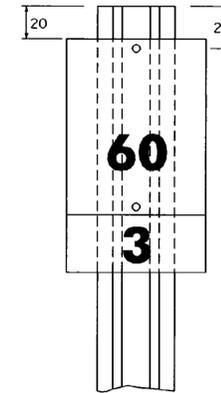
DELINEATORS WITH ACRYLIC PLASTIC REFLECTORS



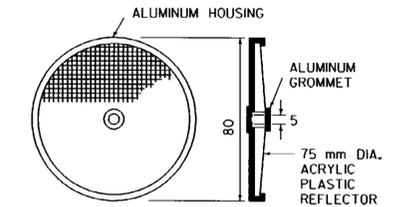
TYPE I WITHOUT REFERENCE PLAQUE



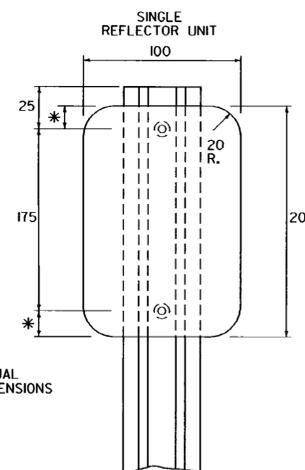
TYPE I WITH REFERENCE PLAQUE



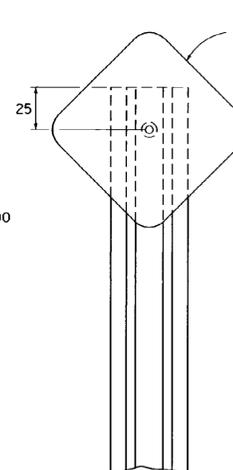
REFERENCE PLAQUE WITHOUT REFLECTOR



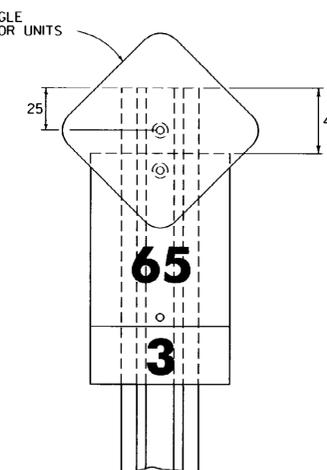
DELINEATOR PLASTIC REFLECTOR UNIT



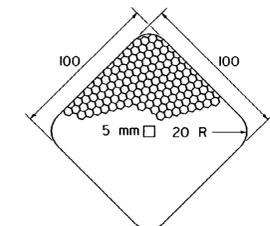
TYPE II



TYPE I WITHOUT REFERENCE PLAQUE



TYPE I WITH REFERENCE PLAQUE



DELINEATOR REFLECTIVE SHEETING UNIT

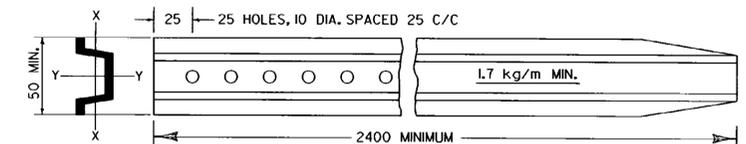
MATERIAL FOR REFLECTIVE SHEETING DELINEATORS SHALL BE A 1.60-mm ALUMINUM BACKING WITH A SILVER, AMBER OR RED HIGH INTENSITY REFLECTIVE SHEETING.

NOTES

- TYPE III DELINEATORS WILL BE TYPE I DELINEATORS WITH AN ADDITIONAL RED REFLECTIVE UNIT MOUNTED ON THE REVERSE SIDE. THEY SHALL BE ERECTED ON THE RIGHT AND LEFT SIDE OF THE RAMP AS INDICATED ON THE PLANS.
- EACH UNIT COMPLETE IN PLACE OF DELINEATOR TYPE I WITH OR WITHOUT REFERENCE PLAQUE, DELINEATOR TYPE II, DELINEATOR TYPE III OR REFERENCE PLAQUE WITHOUT REFLECTOR SHALL BE PAID FOR AS "DELINEATOR".
- FOR MOUNTING DELINEATORS AND REFERENCE PLAQUES ON BRIDGES, SEE STANDARD E-199M.
- DELINEATOR POSTS SHALL HAVE A MINIMUM EMBEDMENT OF 600 mm IN THE GROUND.

DELINEATORS WITH REFLECTIVE SHEETING

REFERENCE PLAQUES WITH OR A WITHOUT REFLECTOR UNIT SHALL BE MOUNTED ON THE POST WITH TWO OR THREE M5 X 0.8 X 40 ALUMINUM BOLTS WITH M5 X 0.8 ALUMINUM VANDAL RESISTANT NUTS OR WITH 5 mm DIA. BY 40 mm LONG VANDAL RESISTANT FASTENERS.



REVISIONS AND CORRECTIONS
JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

[Signature]
DIRECTOR OF ENGINEERING
[Signature]
DIRECTOR OF CONSTRUCTION AND MAINTENANCE

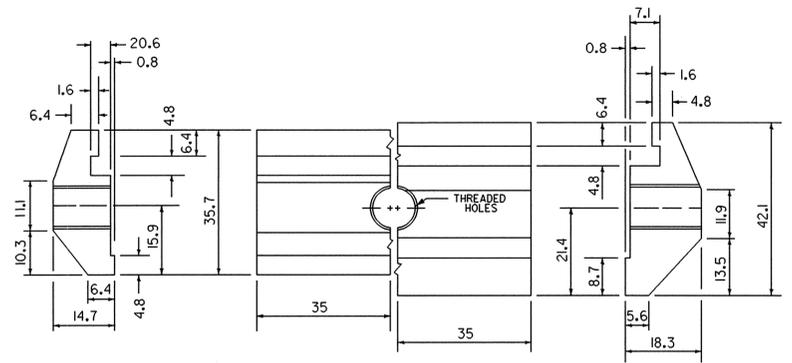
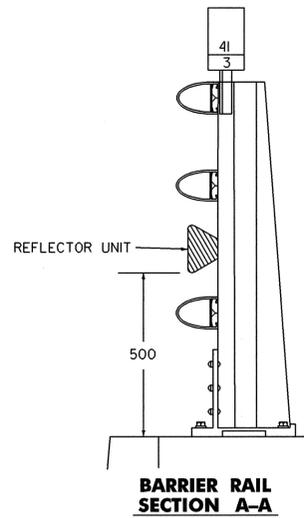
**FREEWAY - EXPRESSWAY
DELINEATORS AND
REFERENCE PLAQUES**

NOT TO SCALE
OTHER STDS. REQUIRED:

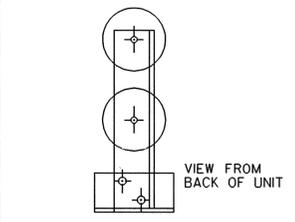
NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.



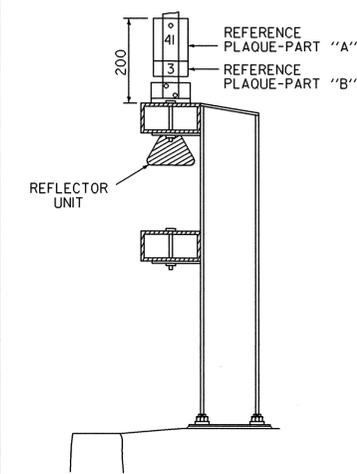
Metric
STANDARD
E-198 M



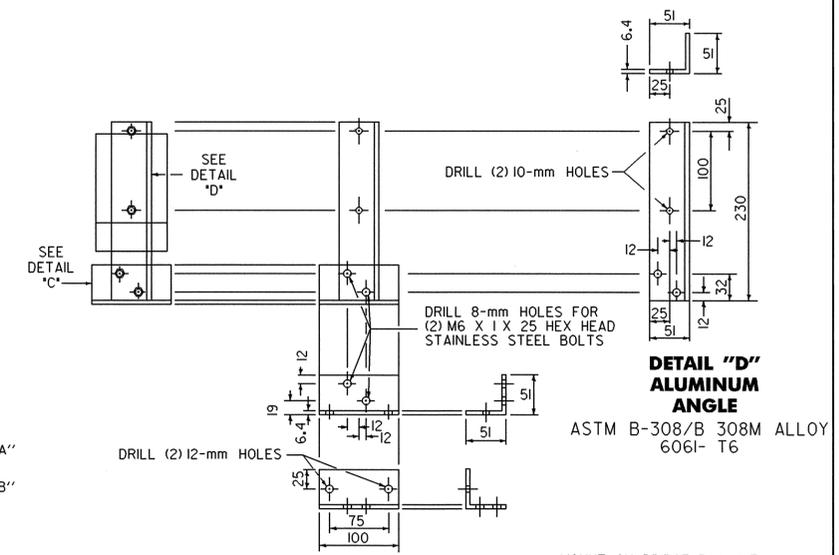
REFLECTOR UNIT
 500



TYPE II DELINEATOR
 TYPE II DELINEATORS WILL BE RAIL MOUNTED AT 30-m SPACING WHERE ACCELERATION OR DECELERATION LANES ARE CARRIED ACROSS STRUCTURES. ALSO SEE STANDARD E-198M.

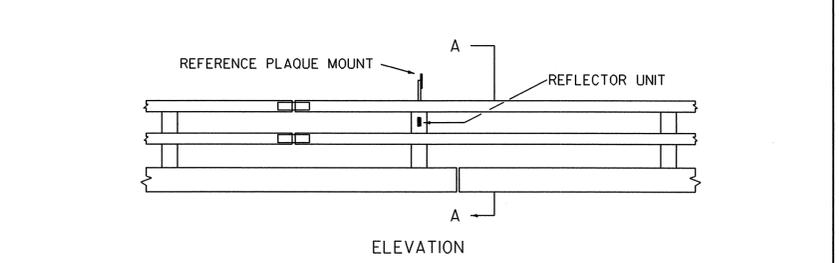


REFLECTOR UNIT



DRILL (2) 10-mm HOLES
 DRILL 8-mm HOLES FOR (2) M6 X 1 X 25 HEX HEAD STAINLESS STEEL BOLTS

DETAIL "C" ALUMINUM ANGLE
 ASTM B-308/B 308M ALLOY 6061- T6



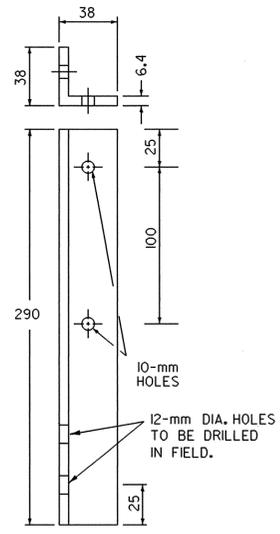
DRILL (2) 12-mm HOLES

MOUNT ON BRIDGE RAIL WITH (2) MIO X 1.5 X 30 STAINLESS STEEL SELF TAPPING SCREWS AND MIO (20 O.D. x 11 I.D. x 1.6 THICK) WASHER, ALUMINUM ASTM B-209M ALLOY ALCLAD 2024-T4.

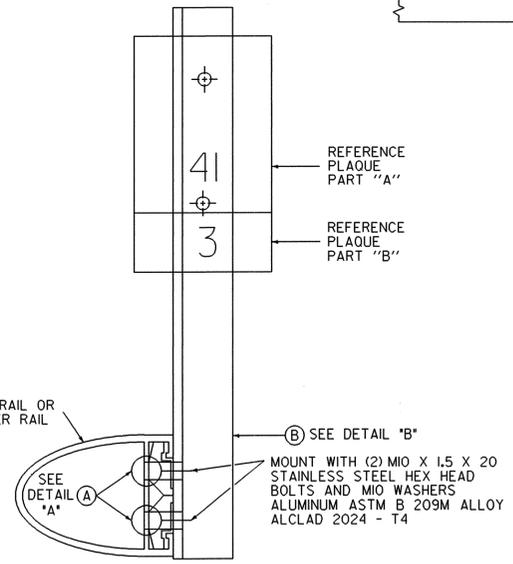
DETAIL FOR MOUNTING ON BOX BEAM BRIDGE RAIL

ELEVATION

THE REFLECTOR UNIT IS TO BE INSTALLED EVERY 9 m OR ON CLOSEST POST.

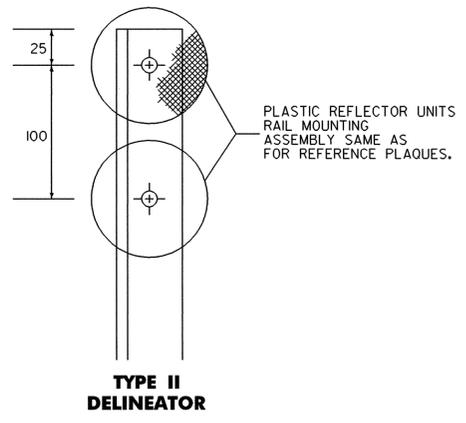


10-mm HOLES
 12-mm DIA. HOLES TO BE DRILLED IN FIELD.



REFERENCE PLAQUE PART "A"
 REFLECTOR UNIT
 REFERENCE PLAQUE PART "B"

SEE DETAIL "A"
 MOUNT WITH (2) MIO X 1.5 X 20 STAINLESS STEEL HEX HEAD BOLTS AND MIO WASHERS ALUMINUM ASTM B 209M ALLOY ALCLAD 2024 - T4



PLASTIC REFLECTOR UNITS RAIL MOUNTING ASSEMBLY SAME AS FOR REFERENCE PLAQUES.

TYPE II DELINEATORS WILL BE RAIL MOUNTED AT 30-m SPACING WHERE ACCELERATION OR DECELERATION LANES ARE CARRIED ACROSS STRUCTURES. ALSO SEE STANDARD E-198M.

NOT TO SCALE

OTHER STDS. E-198M REQUIRED:

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS
 JUNE 13, 1997 - ORIGINAL APPROVAL DATE

APPROVED

Paul C. ...
 DIRECTOR OF ENGINEERING

Stephen A. ...
 DIRECTOR OF CONSTRUCTION AND MAINTENANCE

**FREEWAY - EXPRESSWAY
 DELINEATOR AND REFERENCE PLAQUE
 MOUNTING ON BRIDGE RAIL**

VERMONT AGENCY OF TRANSPORTATION

Metric STANDARD E-199 M