

NOTES:

REFLECTORIZATION
 ALL SIGNS USED DURING THE HOURS OF DARKNESS SHALL BE REFLECTORIZED. CONES USED FOR TRAFFIC CONTROL AT NIGHT SHALL HAVE A MINIMUM 6" WIDE WHITE REFLECTORIZED BAND PLACED A MAXIMUM OF 3" FROM THE TOP.

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 THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS AND APPROVED BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION.

TEXT DESIGN
 LETTERS, DIGITS, SPACING, AND TEXT DIMENSIONS SHALL CONFORM WITH THE "STANDARD ALPHABETS FOR HIGHWAY SIGNS" AS REFERENCED IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".

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

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

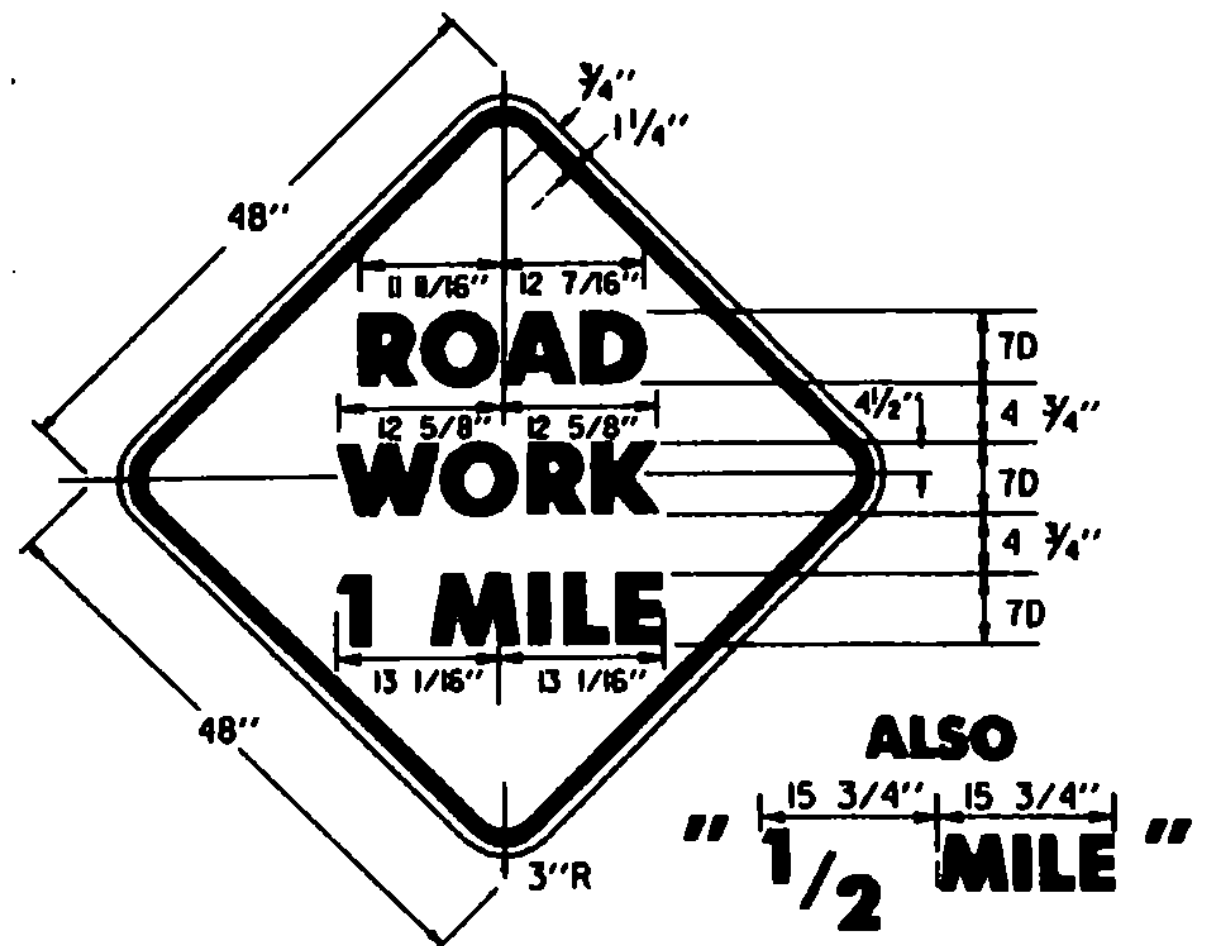
FLAT SHEET ALUMINUM	0.025 INCHES
HIGH DENSITY OVERLAYED PLYWOOD	3/4 INCHES
GALVANIZED SHEET STEEL	12 GAGE

- SIGNS WITH "ROAD CONSTRUCTION 1500 FT" AND "END CONSTRUCTION" TEXT SHALL BE USED WHEN THE WORK IS NOT COMPLETE AND A HAZARD REMAINS OVERNIGHT.
- FLAGPERSON SHALL USE THE SIGN PADDLE DETAIL ON STANDARD SHEET E-104.
- 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 WOOD OR METAL POSTS SET SECURELY IN THE GROUND, OR ON PORTABLE SUPPORTS FOR TEMPORARY USE, OR ON BARRICADES WHEN APPROPRIATE. AS A GENERAL RULE, ROADSIDE SIGNS SHALL BE 5 FEET ABOVE ROAD LEVEL WITH THE NEAREST EDGE AT LEAST 6 FEET OUTSIDE THE OUTER EDGE OF THE SHOULDER POINT. 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 CONDITION SHALL CONTROL THE ACTUAL PLACEMENT.
- SIGN DETAILS NOT SHOWN ON THIS SHEET CAN BE FOUND ON STANDARD SHEETS E-100, E-101, AND E-102.
- TAPER FORMULA

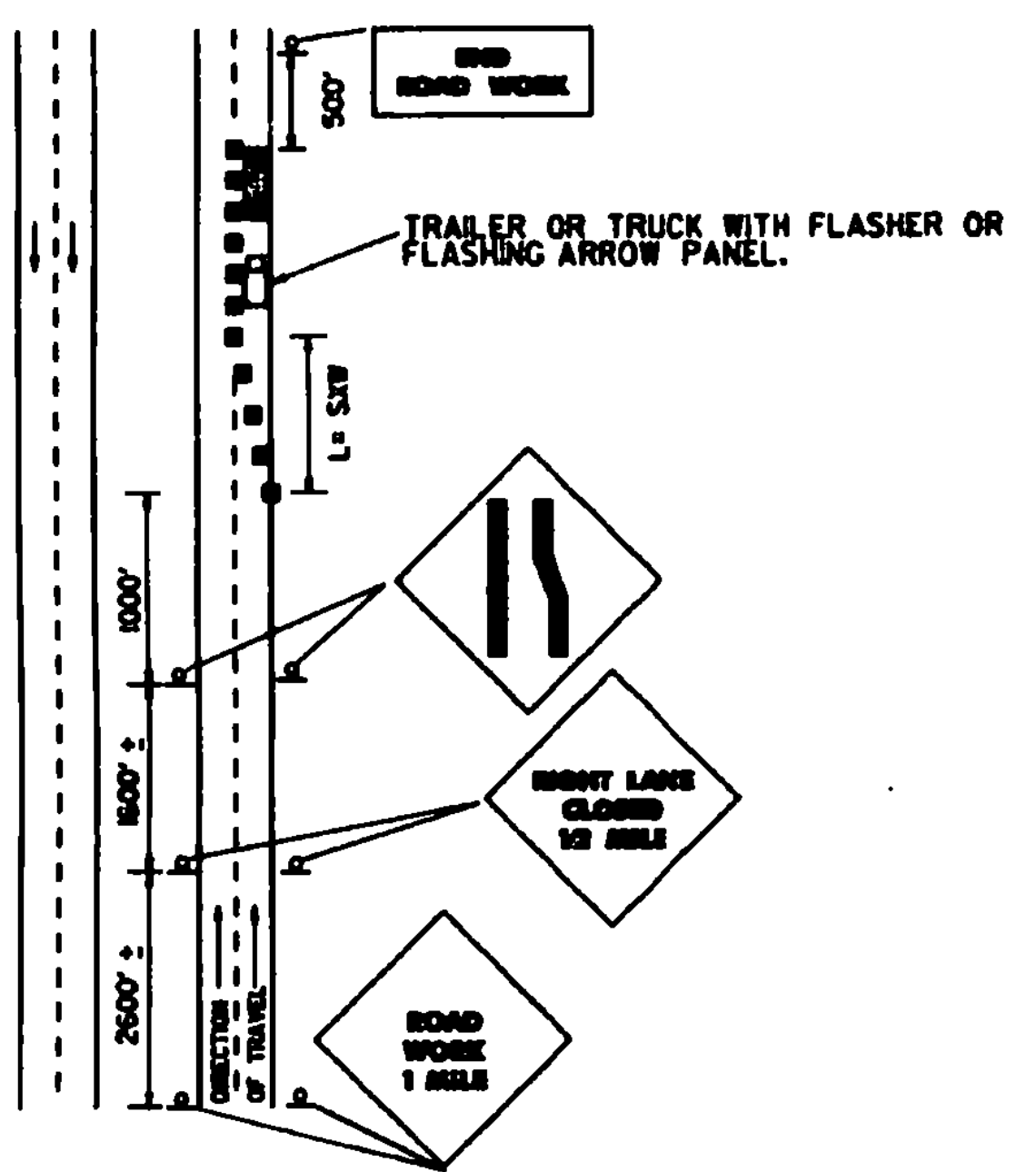
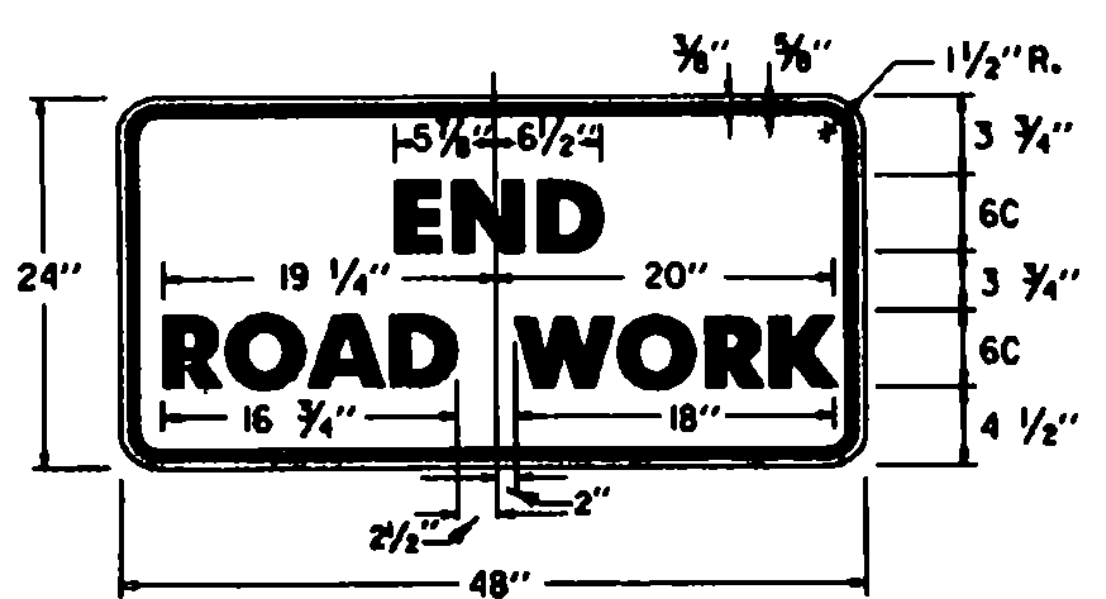
$$L = \frac{WS^2}{60}$$
 FOR SPEEDS OF 45 OR MORE.

$$L = \frac{WS^2}{60}$$
 FOR SPEEDS OF 40 OR LESS.
 WHERE:
 L = MINIMUM LENGTH OF TAPER.
 S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85 PERCENTILE SPEED.
 W = WIDTH OF OFFSET.
- THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT IN M.P.H.
- IF ENTIRE WORK AREA IS VISIBLE FROM ONE STATION, A SINGLE FLAGPERSON MAY BE USED.
- CHANNELIZING DEVICES ARE TO BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.

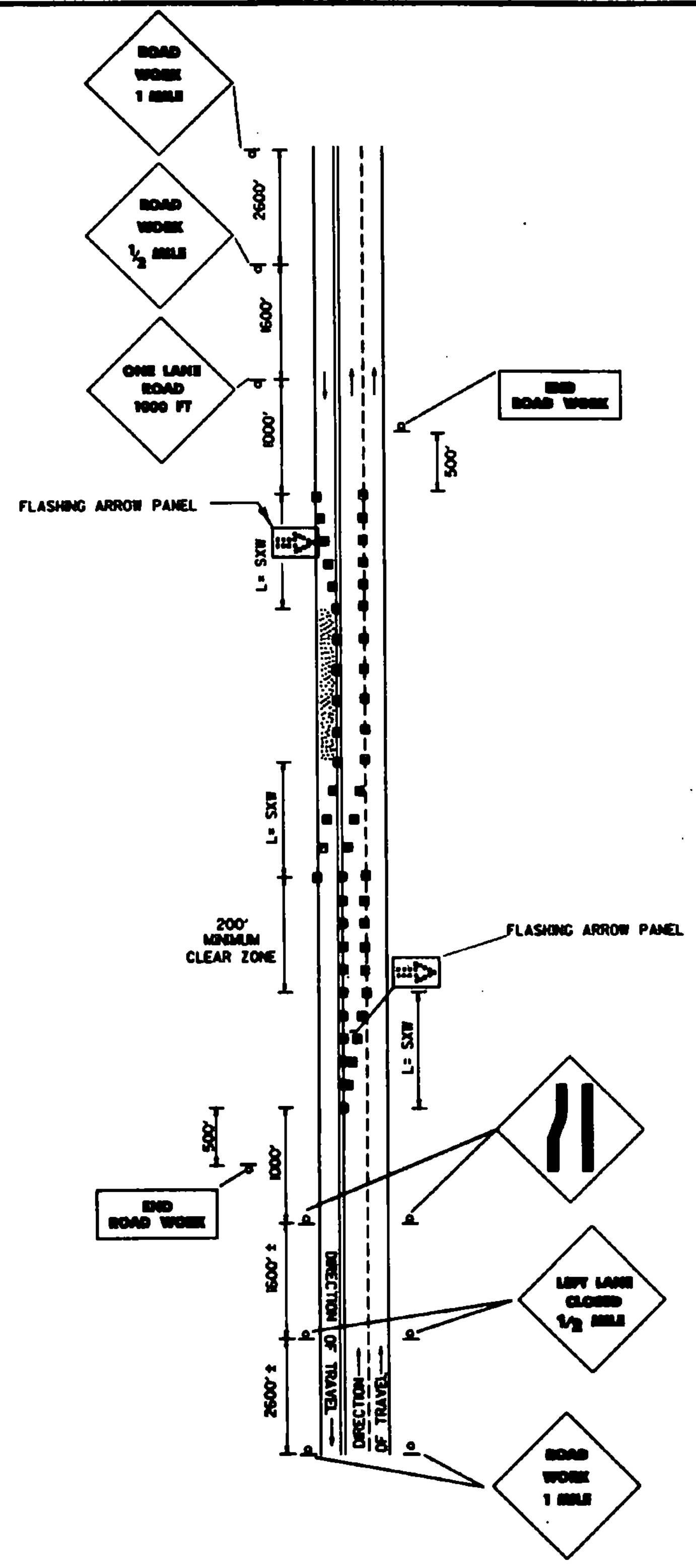
- KEY:**
- FLAGPERSON
 - CHANNELIZING DEVICES (CONES OR DRUMS)
 - FLASHING ARROW PANEL
 - WORK AREA



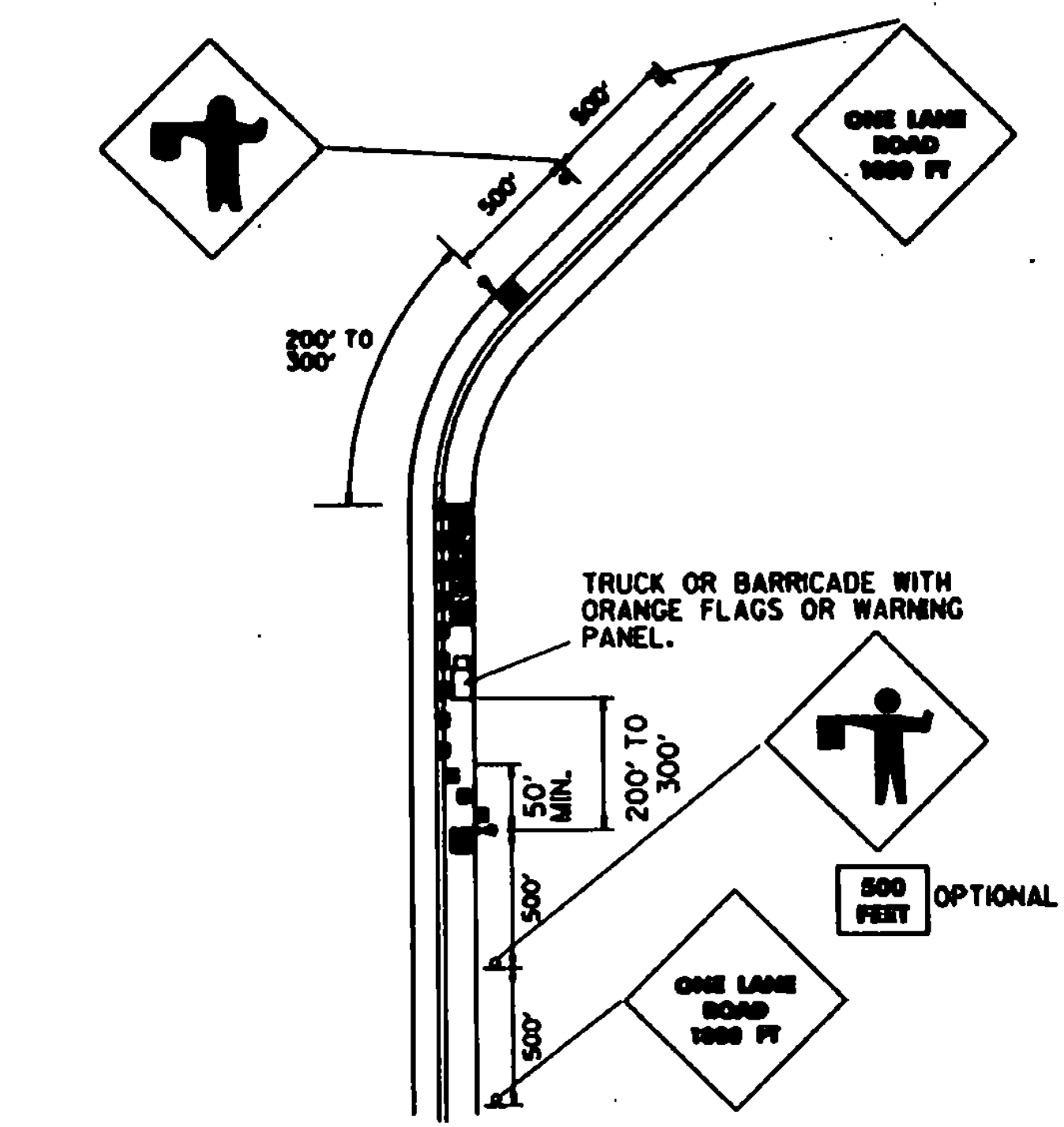
ALSO
 "1 1/2 MILE"
 15 3/4" x 15 3/4"



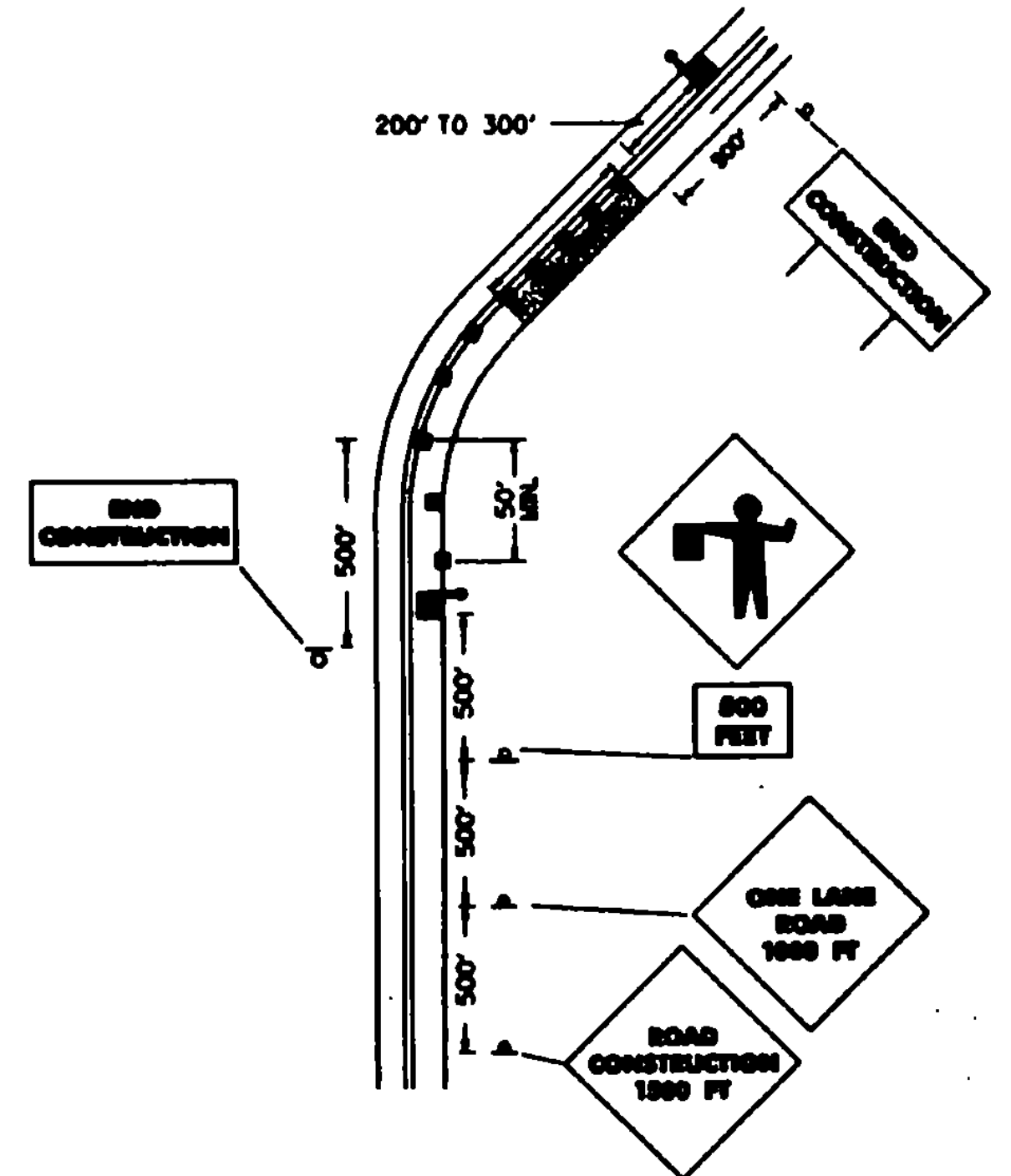
TYPICAL APPLICATION - DAYTIME MAINTENANCE OPERATIONS OF SHORT DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF ROADWAY IS CLOSED.



TYPICAL APPLICATION - DAYTIME MAINTENANCE OPERATION OF SHORT DURATION ON A 3 LANE ROADWAY WHERE CENTER LANE IS USED FOR OPPOSING TRAFFIC



TYPICAL APPLICATION - DAYTIME MAINTENANCE OPERATIONS OF SHORT DURATION ON A 2-LANE ROADWAY WHERE FLAGGING IS PROVIDED.

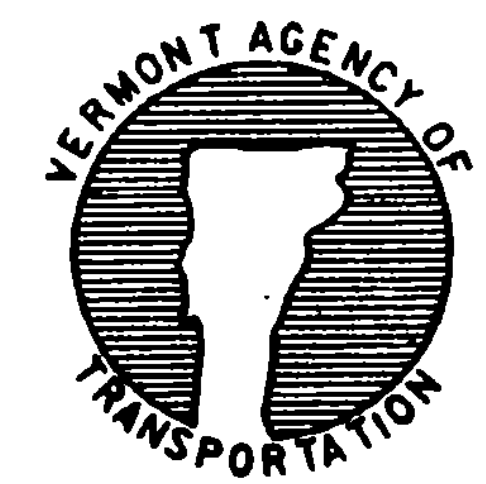


TYPICAL APPLICATIONS OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.

REVISIONS AND CORRECTIONS
 MARCH 1, 1988 - FHWA REVIEW COMMENTS

APPROVED
 SEPT. 10, 1987 DATE
 David W. Kelley CHIEF ENGINEER
 Arthur Glass DIRECTOR OF PLANNING AND PRE-CONSTRUCTION
 Gordon S. MacArthur TRAFFIC AND SAFETY ENGINEER

MAJOR MAINTENANCE OPERATION LANE CLOSURE



STANDARD
 E-110