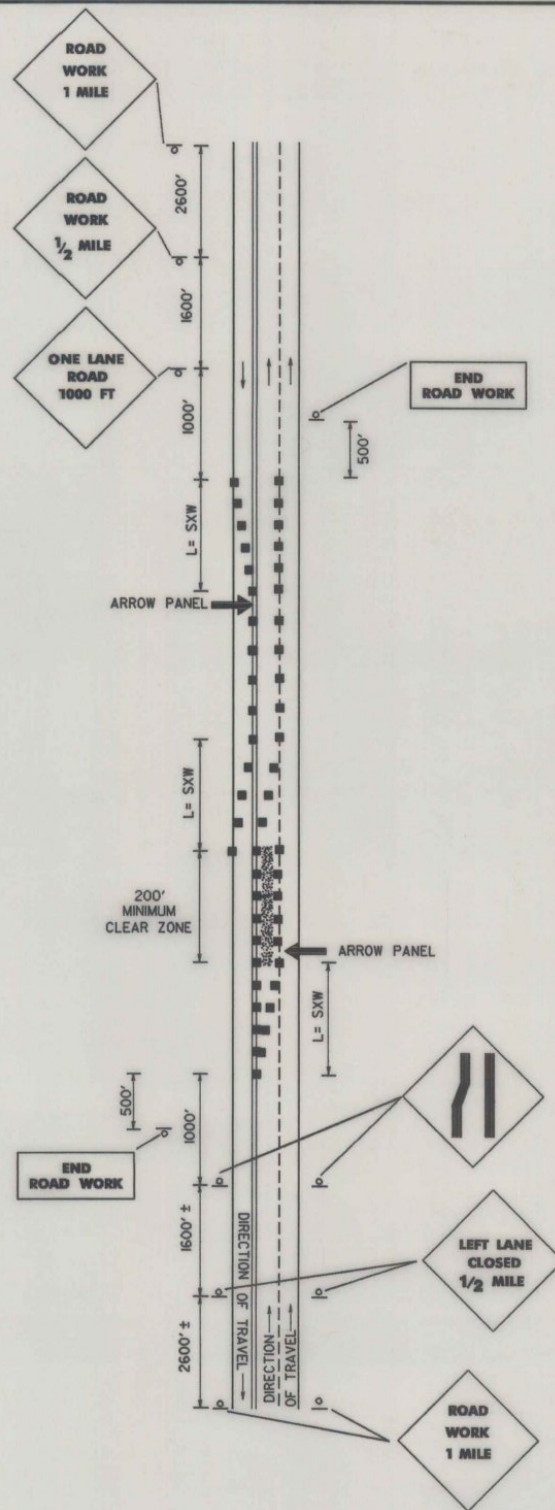
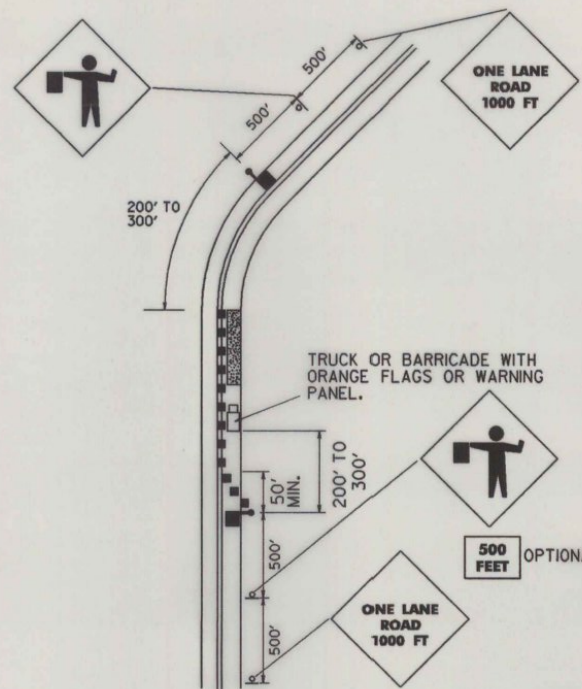


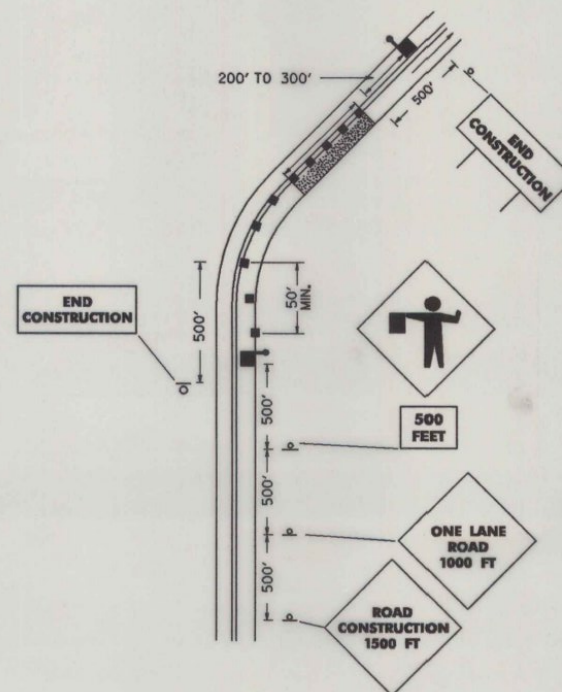
TYPICAL APPLICATION - DAYTIME MAINTENANCE OPERATIONS OF SHORT DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF ROADWAY IS CLOSED.



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.

NOTES:

REFLECTORIZATION

ALL SIGNS INTENDED TO BE USED DURING THE HOURS OF DARKNESS SHALL BE EITHER REFLECTORIZED OR ILLUMINATED TO SHOW APPROXIMATELY THE SAME SHAPE AND COLOR DAY AND NIGHT. CONES USED FOR TRAFFIC CONTROL AT NIGHT SHALL HAVE A MINIMUM 6" WIDE WHITE REFLECTORIZED BAND PLACED A MAXIMUM OF 2" 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".

SPECIFICATIONS

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

SIGN BASE MATERIAL

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

FLAT SHEET ALUMINUM	0.125 INCHES
HIGH DENSITY 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-102.
- 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 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.
- FLOOD LIGHTS SHOULD BE PROVIDED TO MARK FLAGPERSON STATIONS AT NIGHT AS NEEDED.
- 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

REVISIONS AND CORRECTIONS

APPROVED

SEPT. 10, 1987
DATE
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Stephen S. M. Arthur
TRAFFIC AND SAFETY ENGINEER

MAJOR MAINTENANCE OPERATION
LANE CLOSURE



STANDARD
E-110