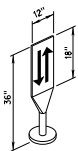


OPPOSING TRAFFIC LANE DIVIDERS



DESIGN

OPPOSING TRAFFIC LANE DIVIDERS SHALL BE A TWO SIDED UPRIGHT RETROREFLECTORIZED ORANGE PANEL, WITH A WIDTH OF 12 INCHES AND A HEIGHT OF 18 INCHES. THE TOP OF THE PANEL SHALL BE 36 INCHES ABOVE THE PAVEMENT. THE SYMBOL ON EACH SIDE SHALL BE TWO OPPOSING BLACK ARROWS. THE LANE DIVIDER SHALL BE MADE OF LIGHTWEIGHT MATERIAL THAT WILL YIELD UPON IMPACT BY A VEHICLE. THE LANE DIVIDER BASE SHALL NOT BE WIDER THAN 12 INCHES OR HIGHER THAN 4 INCHES. THE BASE SHALL BE ATTACHED TO THE EXISTING SURFACE BY EPXY OR OTHER SUITABLE ADHESIVE, TO ENSURE THAT THE PANEL REMAINS FACING TRAFFIC.

APPLICATION

OPPOSING TRAFFIC LANE DIVIDERS ARE DELINEATION DEVICES USED AS CENTER LANE DIVIDERS TO SEPARATE OPPOSING TRAFFIC ON A TWO-LANE, TWO-WAY OPERATION.

FLAGGERS

REQUIRED METHOD



TO STOP TRAFFIC

TRAFFIC PROCEED

TO ALERT AND SLOW TRAFFIC

EMERGENCY USE ONLY



FLAGGER PADDLE

THE STOP/SLOW PADDLE SHALL HAVE AN OCTAGONAL SHAPE ON A RIGID HANDLE. STOP/SLOW PADDLES SHALL BE AT LEAST 18 INCHES WIDE WITH LETTERS AT LEAST 6 INCHES HIGH. IF THE STOP/SLOW PADDLE IS PLACED ON A RIGID STAFF, THE MINIMUM LENGTH OF THE STAFF, MEASURED FROM THE BOTTOM OF THE SIGN TO THE END OF THIS STAFF THAT RESTS ON THE GROUND, SHOULD BE 5 FEET. THE STOP/SLOW PADDLE SHOULD BE THE PRIMARY AND PREFERRED HAND-SIGNALING DEVICE BECAUSE THE STOP/SLOW PADDLE GIVES ROAD USERS MORE POSITIVE GUIDANCE THAN RED FLAGS. USE OF FLAGS SHOULD BE LIMITED TO EMERGENCY SITUATIONS.

FLAGGERS

A FLAGGER MUST BE DRESSED FOR SAFETY. IN ADDITION TO THE REQUIREMENTS OF THE "WORKER VISIBILITY" SECTION LISTED BELOW, FLAGGERS SHALL WEAR:

- 1. AN ORANGE OR YELLOW/GREEN CAP OR HARD HAT.
2. A SHIRT WITH SLEEVES, PANTS AND SHOES (TANK TOPS, SHORTS OR SANDALS SHALL NOT BE WORN).

FLAGGERS SHALL BE INSTRUCTED IN THE PROPER LOCATION, DUTIES AND PROCEDURES FOR FLAGGING AS OUTLINED IN THE CURRENT MUTCD AND THE DEPARTMENT OF ROADS FLAGGER'S HANDBOOK. AS REQUIRED BY THE DEPARTMENT OF ROADS, THE FLAGGER SHALL BE CERTIFIED, AND HAVE IN THEIR POSSESSION, A VALID FLAGGER CERTIFICATION CARD.

WORKER VISIBILITY

ALL WORKERS WITHIN THE RIGHT-OF-WAY WHO ARE EXPOSED EITHER TO TRAFFIC (VEHICLES USING THE HIGHWAY FOR PURPOSES OF TRAVEL) OR TO CONSTRUCTION EQUIPMENT WITHIN THE WORK AREA SHALL WEAR HIGH-VISIBILITY SAFETY APPAREL. HIGH-VISIBILITY SAFETY APPAREL IS DEFINED TO MEAN PERSONAL PROTECTIVE SAFETY CLOTHING THAT:

- 1. IS INTENDED TO PROVIDE CONSPICUITY DURING BOTH DAYTIME AND NIGHTTIME USAGE, AND
2. MEETS THE PERFORMANCE CLASS 2 OR CLASS 3 REQUIREMENTS OF THE ANSI/ISEA 107-2004 PUBLICATION ENTITLED "AMERICAN NATIONAL STANDARDS FOR HIGH-VISIBILITY SAFETY APPAREL AND HEADWEAR"

LIGHTING DEVICES

FUNCTION

CONSTRUCTION AND MAINTENANCE ACTIVITIES OFTEN CREATE CONDITIONS ON OR NEAR THE TRAVELED WAY THAT ARE PARTICULARLY HAZARDOUS AT NIGHT. IT IS OFTEN DESIRABLE AND NECESSARY TO SUPPLEMENT THE REFLECTORIZED SIGNS, BARRIERS, AND CHANNELIZING DEVICES WITH LIGHTING DEVICES. STROBE TYPE LIGHTS ARE NOT PERMITTED.

BARRICADE WARNING LIGHTS DESIGN (BATTERY OPERATED)

TYPE "A" LOW INTENSITY FLASHING WARNING LIGHTS ARE MOST COMMONLY MOUNTED ON BARRICADES, OR WITH SIGNS AND ARE INTENDED TO WARN THE DRIVER THAT THEY ARE PROCEEDING IN A HAZARDOUS AREA. THESE LIGHTS SHALL NOT BE USED FOR DELINEATION, AS A SERIES OF FLASHING LIGHTS IN A ROW WOULD TEND TO OBSCURE THE DESIRED PATH.

TYPE "A" HIGH INTENSITY FLASHING WARNING LIGHTS ARE NORMALLY MOUNTED ON THE TYPE III BARRICADE THAT ACCOMPANIES THE ADVANCE WARNING SIGNS.

TYPE "C" STEADY BURN LIGHTS AS USED HEREIN, SHALL MEAN A SERIES OF LOW WATTAGE YELLOW ELECTRIC LIGHTS. WHERE LIGHTS ARE NEEDED TO DELINEATE OR MARK THE TRAVELED WAY THROUGH AND AROUND OBSTRUCTIONS IN A CONSTRUCTION MAINTENANCE AREA, THE DELINEATION SHALL BE ACCOMPLISHED BY USE OF STEADY BURNING LIGHTS. WHEN USED TO SUPPLEMENT CHANNELIZATION, THE MAXIMUM SPACING FOR WARNING LIGHTS SHOULD BE IDENTICAL TO THE CHANNELIZING DEVICE SPACING REQUIREMENTS. WHEN USED TO DELINEATE A CURVE, TYPE "C" WARNING LIGHTS SHOULD ONLY BE USED ON DEVICES ON THE OUTSIDE OF THE CURVE, AND NOT ON THE INSIDE OF THE CURVE.

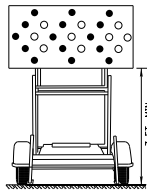
FLASHING ARROW PANEL (DISPLAY)

AN ARROW PANEL IS A SIGN WITH A MATRIX OF ELEMENTS, CAPABLE OF EITHER FLASHING OR SEQUENTIAL DISPLAYS. THIS SIGN SHALL PROVIDE ADDITIONAL WARNING AND DIRECTIONAL INFORMATION TO ASSIST IN MERGING AND CONTROLLING ROAD USERS THROUGH OR AROUND A TEMPORARY TRAFFIC CONTROL ZONE. AN ARROW PANEL SHOULD BE USED IN COMBINATION WITH APPROPRIATE SIGNS, CHANNELIZING DEVICES OR OTHER TRAFFIC CONTROL DEVICES.

DESIGN

ARROW PANELS SHALL MEET THE SIZE AND SPECIFICATIONS OF THE MUTCD FOR TYPE "C" ARROW DISPLAYS.

FLASHING ARROW PANEL SHALL BE RECTANGULAR, OF SOLID APPEARANCE AND FINISHED IN NON-REFLECTIVE BLACK. THE PANEL SHALL BE MOUNTED ON A VEHICLE, TRAILER OR OTHER SUITABLE SUPPORT. MINIMUM MOUNTING HEIGHT MEASURED VERTICALLY FROM THE BOTTOM OF THE PANEL TO THE ROADWAY BELOW IT OR TO THE ELEVATION OF THE NEAR EDGE OF THE ROADWAY, SHALL BE 7 FEET EXCEPT ON VEHICLE-MOUNTED PANELS, WHICH SHOULD BE AS HIGH AS PRACTICAL.



THE FOLLOWING SELECTIONS SHALL BE PROVIDED ON THE ARROW PANEL

Table with 2 columns: OPERATING MODE and PANEL DISPLAY. It lists various arrow panel configurations: FLASHING ARROW, SEQUENTIAL ARROW, SEQUENTIAL CHEVRON, FLASHING DOUBLE ARROW, and FLASHING OR ALTERNATING CAUTION.

THE ARROW PANEL SHALL HAVE A MINIMUM SIZE OF 96 INCHES WIDE AND 48 INCHES HIGH. THE MINIMUM LEGIBILITY DISTANCE SHALL BE 1 MILE. THE PANEL SHALL CONTAIN 25 LAMP ELEMENTS. ARROW PANEL ELEMENTS SHALL BE CAPABLE OF A MINIMUM 50 PERCENT DIMMING, AUTOMATICALLY WHEN AMBIENT LIGHT FALLS BELOW 50 LUX.

THE MINIMUM ELEMENT "ON TIME" SHALL BE 30 PERCENT FOR THE FLASHING MODE AND EQUAL INTERVALS OF 25 PERCENT FOR EACH SEQUENTIAL CHEVRON PHASE. THE FLASHING RATE SHALL BE NO FEWER THAN 25 NOR MORE THAN 40 FLASHES PER MINUTE.

APPLICATION

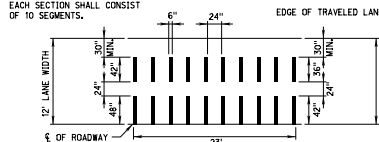
A FLASHING ARROW OR SEQUENTIAL CHEVRON MODE SHALL ONLY BE USED FOR STATIONARY OR MOVING LANE CLOSURES.

FOR SHOULDER WORK BLOCKING THE SHOULDER, FOR ROADSIDE WORK NEAR THE SHOULDER, OR FOR TEMPORARILY CLOSING ONE LANE ON A TWO-LANE, TWO-WAY ROADWAY, AN ARROW PANEL SHALL BE USED ONLY IN THE CAUTION MODE.

AN ARROW DISPLAY MODE SHALL NOT BE USED ON A TWO-LANE TWO-WAY ROADWAY FOR TEMPORARY ONE-LANE OPERATION OR LANE SHIFTS. AN ARROW DISPLAY SHALL NOT BE USED TO LATERALLY SHIFT TRAFFIC.

TEMPORARY RUMBLE STRIPS

EACH SECTION SHALL CONSIST OF 10 SEGMENTS.



DESIGN

TEMPORARY RUMBLE STRIPS MAY BE MADE OF ASPHALT PAVING MATERIAL, EPOXY AND AGGREGATE OR OTHER SUITABLE MATERIAL WHICH WILL MAINTAIN A DESIRABLE RUMBLE EFFECT. THE TEMPORARY RUMBLE STRIP SHOULD HAVE AN INSTALLED HEIGHT OF 3/4" PREFERRED RUMBLE STRIPS MAY BE USED PROVIDED THEY HAVE A MINIMUM 1/2" HEIGHT.

TRAFFIC SIGNALS

TRAFFIC SIGNALS MAY BE ALLOWED AT CERTAIN EQUIPMENT CROSSINGS WHERE THE VOLUME OF FILL MATERIAL AND THE NUMBER OF EQUIPMENT CROSSINGS PER HOUR IS HIGH. TRAFFIC SIGNALS MAY BE ALLOWED AT CERTAIN BRIDGE CONSTRUCTION SITES WHERE A COMBINATION OF ONE-WAY TRAFFIC AND HIGH TRAFFIC VOLUMES WOULD BE BEST SERVED WITH THIS TYPE OF TRAFFIC CONTROL.

ALL TRAFFIC SIGNAL REQUESTS AND METHOD OF INSTALLATION ON THE STATE HIGHWAY SYSTEM SHALL BE IN COMPLIANCE WITH THE MUTCD AND MUST BE APPROVED BY THE STATE TRAFFIC ENGINEER.

IF, AFTER THE SIGNAL ASSEMBLIES ARE ERRECTED AND THE ROAD IS OPEN TO PUBLIC TRAVEL, THE SIGNAL SYSTEM IS NOT PUT IMMEDIATELY INTO OPERATION, THE SIGNAL FACES SHALL BE COVERED WITH BURGLAR OR OTHER OPAQUE MATERIAL, SUBJECT TO THE APPROVAL OF THE ENGINEER. INOPERATIVE SIGNALS ON ROADS OPEN TO THE PUBLIC SHALL ALWAYS BE COVERED, TILTING THE SIGNALS UPWARD IS NOT AN ACCEPTABLE ALTERNATIVE TO COVERING THE HEADS.

FLOODLIGHTS

WHEN NIGHTTIME WORK IS REQUIRED, FLOODLIGHTS SHALL BE USED TO ILLUMINATE FLAGGER STATIONS. FLOODLIGHTS SHOULD BE USED TO ILLUMINATE EQUIPMENT CROSSINGS, AND OTHER AREAS WHERE EXISTING LIGHT IS NOT ADEQUATE FOR THE WORK TO BE PERFORMED SAFELY.

IN NO CASE SHALL FLOODLIGHTING BE PERMITTED TO CREATE A DISABLING GLARE FOR DRIVERS. THE ADEQUACY OF THE FLOODLIGHT PLACEMENT AND ELIMINATION OF POTENTIAL GLARE SHOULD BE CHECKED BY DRIVING THROUGH THE PROJECT.

PAVEMENT MARKING

IT IS INTENDED TO THE EXTENT POSSIBLE, THAT MOTORISTS BE PROVIDED MARKINGS WITHIN A WORK AREA COMPARABLE TO THE MARKINGS NORMALLY MAINTAINED ALONG ADJACENT ROADWAYS, PARTICULARLY AT EITHER END OF THE WORK AREA.

ALL MARKINGS AND DEVICES USED TO DELINEATE VEHICLE AND PEDESTRIAN PATHS SHALL BE CAREFULLY REVIEWED DURING DAYTIME AND NIGHTTIME PERIODS TO AVOID INADVERTENTLY LEADING DRIVERS OR PEDESTRIANS FROM THE INTENDED PATH.

PAVEMENT MARKINGS NO LONGER APPLICABLE SHALL BE REMOVED UNLESS OTHERWISE APPROVED BY THE ENGINEER.

TAPERS

TAPERS ARE CREATED USING A SERIES OF CHANNELIZING DEVICES OR PAVEMENT MARKINGS TO MOVE TRAFFIC OUT OR INTO ITS NORMAL PATH.

MERGING TAPER

A MERGING TAPER REQUIRES THE LONGEST DISTANCE BECAUSE DRIVERS ARE REQUIRED TO MERGE INTO COMMON ROAD SPACE. THE TAPER SHOULD BE LONG ENOUGH TO ENABLE MERGING DRIVERS TO HAVE ADEQUATE ADVANCE WARNING AND SUFFICIENT LENGTH TO ADJUST THEIR SPEEDS AND MERGE INTO A SINGLE LANE BEFORE THE DOWNSTREAM END OF THE TRANSITION.

SHIFTING TAPER

A SHIFTING TAPER IS USED WHEN MERGING IS NOT REQUIRED, BUT A LATERAL SHIFT IS NEEDED. APPROXIMATELY ONE-HALF "L" HAS BEEN FOUND TO BE ADEQUATE. WHERE MORE SPACE IS AVAILABLE, IT MAY BE BENEFICIAL TO USE LONGER TAPERS. GUIDANCE FOR CHANGES IN ALIGNMENT MAY ALSO BE ACCOMPLISHED BY USING HORIZONTAL CURVES DESIGNED FOR NORMAL HIGHWAY SPEEDS.

SHOULDER TAPERS

A SHOULDER TAPER MAY BE BENEFICIAL ON HIGH-SPEED ROADWAYS WHERE SHOULDERS ARE PART OF THE ACTIVITY AREA AND ARE CLOSED, OR WHEN IMPROVED SHOULDERS MIGHT BE MISTAKEN AS A DRIVING LANE IN THESE INSTANCES, THE SAME TYPE, BUT ABBREVIATED, CLOSURE PROCEDURES USED ON A NORMAL PORTION OF THE ROADWAY CAN BE USED. IF USED, SHOULDER TAPERS APPROACHING THE ACTIVITY AREA SHOULD HAVE A LENGTH OF ABOUT ONE-THIRD "L".

DOWNSTREAM TAPERS

THE DOWNSTREAM TAPER MAY BE USEFUL IN TERMINATION AREAS TO PROVIDE A VISUAL CUE TO THE DRIVER THAT ACCESS IS AVAILABLE TO THE ORIGINAL LANE OR PATH THAT WAS CLOSED. WHEN USED, IT SHOULD HAVE A MINIMUM LENGTH OF ABOUT 100 FEET PER LANE, WITH DEVICES SPACED ABOUT 20 FEET APART.

ONE LANE, TWO WAY TAPER

THE ONE-LANE, TWO-WAY TAPER IS USED IN ADVANCE OF AN ACTIVITY AREA THAT OCCUPIES PART OF A TWO-WAY ROADWAY IN SUCH A WAY THAT A PORTION OF THE ROAD IS USED ALTERNATELY BY TRAFFIC IN EACH DIRECTION. A SHORT TAPER HAVING A MINIMUM LENGTH OF 50 FEET AND A MAXIMUM LENGTH OF 100 FEET WITH CHANNELIZING DEVICES AT APPROXIMATELY 20 FOOT SPACINGS SHOULD BE USED TO GUIDE TRAFFIC INTO THE ONE-LANE-SECTION AND A DOWNSTREAM TAPER WITH A LENGTH OF APPROXIMATELY 100 FEET SHOULD BE USED TO GUIDE TRAFFIC BACK INTO THEIR ORIGINAL LANE.

Table: TAPER LENGTH CRITERIA FOR TEMPORARY TRAFFIC CONTROL ZONES. Columns: TYPE OF TAPER, TAPER LENGTH (FEET). Rows: MERGING TAPER, SHIFTING TAPER, SHOULDER TAPER, TWO-WAY TAPER.

Table: FORMULAS FOR L. Columns: SPEED (MPH), FORMULA. Rows: 40 MPH OR LESS, 45 MPH OR GREATER.

L = TAPER LENGTH IN FEET
W = WIDTH OF OFFSET IN FEET
S = POSTED SPEED LIMIT PRIOR TO WORK IN MPH

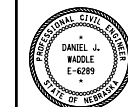
Table: TAPER LENGTH L (FEET). Columns: SPEED (MPH), LANE WIDTH. Rows: 10 FT., 11 FT., 12 FT.

Table with 4 columns: REV. NO., DATE, DESCRIPTION OF REVISION. Rows: R7, R6, R5.

NEBRASKA DEPARTMENT OF TRANSPORTATION STANDARD PLAN NO. 920-R7

TRAFFIC CONTROL, CONSTRUCTION AND MAINTENANCE

ACCEPTED BY FHWA FOR USE ON THE NATIONAL HIGHWAY SYSTEM:

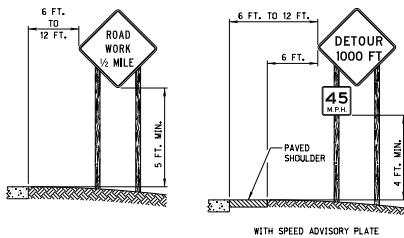


DATE: ORIGINAL: OCTOBER 1998

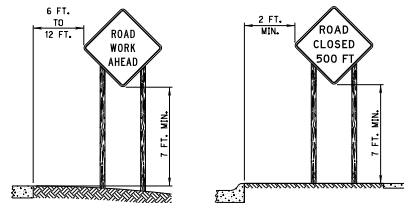
2, 3

ROADSIDE SIGNS

HEIGHT AND LATERAL LOCATION OF SIGNS
RURAL AREA



URBAN AREA



TYPICAL FIRST SIGN AT CONSTRUCTION SITE

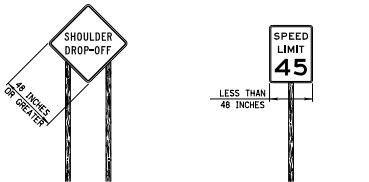


WITH TYPE "A" FLASHING WARNING LIGHT MOUNTED ABOVE TYPE III BARRICADE

PORTABLE AND TEMPORARY MOUNTING



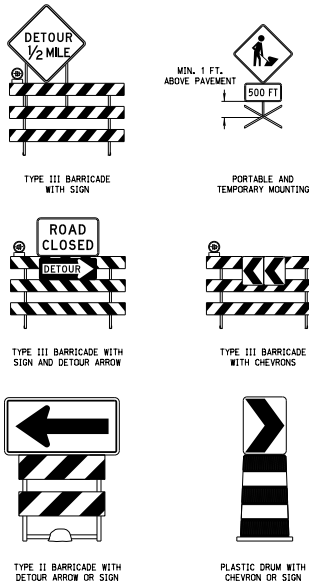
TYPICAL SIGN MOUNTINGS
POST MOUNTED



SIGNS 48 INCHES OR WIDER REQUIRE TWO POSTS

SIGN WIDTHS LESS THAN 48 INCHES MAY BE MOUNTED WITH ONE POST

TYPICAL SIGN MOUNTINGS
OTHER THAN POST MOUNTED



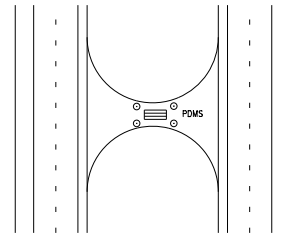
TEMPORARY SIGN SUPPORTS

ALL "TEMPORARY SIGN" SUPPORTS (BASES) SHALL BE NCHRP 350 OR MASH (TL-3) APPROVED.

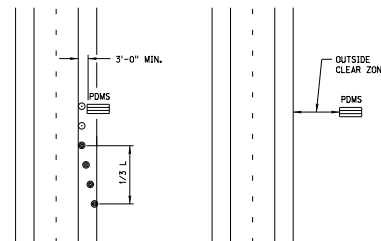
"TEMPORARY SIGNS" ARE ALL TEMPORARILY MOUNTED WORK ZONE SIGNS THAT ARE NOT POST MOUNTED IN THE GROUND AT THE TYPICAL 5 FOOT MOUNTING HEIGHT. TEMPORARY SIGNS ARE CONSIDERED NCHRP 350 OR MASH CATEGORY 2 DEVICES AND ARE MOUNTED ON TEMPORARY SIGN STANDS. TEMPORARY SIGNS SHALL BE MOUNTED A MINIMUM OF 1 FOOT ABOVE THE GROUND, UNLESS OTHERWISE REQUIRED TO BE MOUNTED AT A HIGHER HEIGHT.

TEMPORARY SIGNS AND THEIR SUPPORTS SHALL NOT BE IN PLACE LONGER THAN 3 DAYS. ANY SIGN THAT IS TO BE IN PLACE LONGER THAN 3 DAYS SHALL BE POST MOUNTED OR MOUNTED TO A DRUM, BARRICADE, OR BARRIER, AS REQUIRED BY THE PLANS OR SPECIFICATIONS.

PORTABLE DYNAMIC MESSAGE SIGN DELINEATION



IN MEDIAN



ON SHOULDER

OFF SHOULDER

PORTABLE DYNAMIC MESSAGE SIGNS (PDMS)

THE PLACEMENT OF PDMS SHOULD BE IN THE FOLLOWING ORDER:

WHENEVER POSSIBLE, PDMS SHOULD BE PLACED OFF OF ANY USABLE PORTION OF THE ROADWAY ON THE RIGHT SIDE OF THE ROADWAY. WHEN PLACED OUTSIDE THE CLEAR ZONE OR BEHIND GUARDRAIL OR CONCRETE PROTECTION BARRIERS, DELINEATION IS NOT REQUIRED.

- WHERE FIELD CONDITIONS DO NOT ALLOW FOR THIS PLACEMENT, THE SIGNS MAY BE LOCATED ON THE OUTSIDE SHOULDER OF THE ROADWAY OR WITHIN THE MEDIAN.
A. A MINIMUM CLEARANCE OF 3 FEET MEASURED HORIZONTALLY FROM THE EDGE OF THE SIGN TO THE EDGE OF THE TRAVELED WAY IS RECOMMENDED.
B. THE PDMS SHOULD HAVE A MINIMUM MOUNTED HEIGHT OF 7 FEET ON FREEWAYS, EXPRESSWAYS AND IN URBAN AREAS.
C. ALL OTHER RURAL APPLICATIONS SHOULD HAVE A MINIMUM HEIGHT OF 5 FEET. THESE HEIGHTS ARE MEASURED VERTICALLY FROM THE BOTTOM OF THE SIGN TO THE ELEVATION OF THE NEAR EDGE OF THE PAVEMENT.

REFLECTORIZED PLASTIC DRUMS SHOULD BE USED TO DELINEATE EACH SIGN USING A 1/3 L TAPER. THESE DRUMS SHOULD BE POSITIONED ON THE UPSTREAM END OF THE SIGN TO FORM A TAPER LEADING UP TO THE TRAFFIC SIDE OF THE SIGN. FOR A SIGN LOCATED IN THE MEDIAN, THE SIGN SHOULD BE DELINEATED WITH A 42 INCH CONE ON ALL FOUR CORNERS.

WHEN DEPLOYED, THE SIGN SHALL BE SIGHTED AND ALIGNED WITH APPROACHING TRAFFIC TO ENSURE VISIBILITY OF THE MESSAGE. IF MULTIPLE SIGNS ARE USED, THE SIGNS SHOULD BE LOCATED ON THE SAME SIDE OF THE ROAD AND SEPARATED ACCORDING TO PROPER SIGN SPACING.

WHEN PRACTICAL, PDMS SHOULD NOT BE USED TO REPLACE STATIC SIGNS FOR LONG TERM USAGE (OVER TO DAYS).

WHEN PDMS ARE TO BE DEPLOYED FOR LONG PERIODS, SUCH AS INCIDENT MANAGEMENT ROLES, CONCRETE PADS WITH APPROPRIATE TIE DOWNS SHOULD BE CONSTRUCTED FOR THEIR PLACEMENT.

PDMS NOT ACTIVELY BEING USED IN A CONSTRUCTION OR INCIDENT MANAGEMENT ROLE SHOULD BE REMOVED.

REFER TO NDOR "DMS GUIDELINES" FOR PROPER PDMS MESSAGE INFORMATION.

NOTES

- 1. ALL TRAFFIC CONTROL DEVICES SHALL MEET THE APPLICABLE STANDARDS AND SPECIFICATIONS PRESCRIBED IN PART 6 OF THE LATEST ADOPTED EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, MUTCD" AND THE STATE OF NEBRASKA SUPPLEMENT TO THE MUTCD. ALL TRAFFIC CONTROL DEVICES SHALL BE CRASHWORTHY AND QUALIFY AS SUCH ACCORDING TO THE TESTING AND ACCEPTANCE GUIDELINES OF THE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP) REPORT 350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
2. TRAFFIC CONTROL PLANS AND DEVICES SHOULD FOLLOW THE PRINCIPLES SET FORTH, BUT MAY DEVIATE FROM THE TYPICAL DRAWINGS TO ALLOW FOR CONDITIONS AND REQUIREMENTS OF THE PROJECT.
3. TRAFFIC CONTROL DEVICES SHALL BE INSTALLED SO AS NOT TO OBSTRUCT THE VIEW OF OTHER TRAFFIC CONTROL DEVICES.
4. THE ENGINEER SHALL HAVE THE AUTHORITY TO REQUIRE THE USE, AND APPROVE THE LOCATION OF ANY OF THE DEVICES SHOWN IN THESE PLANS.

WORK ZONE SPEED LIMIT NOTES

- A. WORK ZONE SPEED LIMITS SHALL NOT BE INSTALLED WITHOUT A SPEED ZONE AUTHORIZATION COMPLETED BY THE DEPARTMENT.
B. REDUCED SPEED LIMITS SHOULD BE USED ONLY IN THE SPECIFIC PORTION OF THE WORK ZONE WHERE CONDITIONS OR RESTRICTIVE FEATURES ARE PRESENT. HOWEVER, FREQUENT CHANGES IN THE SPEED LIMIT SHOULD BE AVOIDED. THE REDUCTION OF SPEED SHOULD BE DESIGNED SO VEHICLES CAN SAFELY TRAVEL THROUGH THE WORK ZONE WITH A SPEED LIMIT REDUCTION OF NO MORE THAN 10 MPH UNLESS OTHERWISE NOTED IN THE PLANS.
C. WORK ZONE SPEED LIMITS SHOWN ARE TYPICAL APPLICATIONS ONLY AND ARE NOT TO BE ASSUMED AS THE SPEED LIMITS REQUIRED FOR THE WORK.
D. EXISTING SPEED LIMIT SIGNS SHALL BE REMOVED OR COVERED WHEN A REDUCED WORK ZONE SPEED LIMIT IS IN EFFECT IN THE SAME AREA.
E. WORK ZONE SPEED LIMIT SIGNS SHALL BE INSTALLED EVERY MILE THROUGH THE WORK AREA WHEN SPEED ZONE IS REDUCED.
F. A SPEED LIMIT SIGN ENDING THE REDUCED SPEED ZONE SHALL BE INSTALLED AT THE END OF EACH ZONE.
G. DOUBLE FINES AND REDUCED SPEED ZONE SIGNING ARE NOT REQUIRED FOR SHORT-DURATION WORK LESS THAN 12 HOURS.

TAPER FORMULA

L = S x W FOR SPEEDS OF 45 MPH OR MORE
L = WS^2/60 FOR SPEEDS OF 40 MPH OR LESS.

WHERE:

L - MINIMUM LENGTH OF TAPER.

S - NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.

W - WIDTH OF OFFSET (LANE WIDTH).

LEGEND

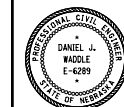
- TYPE III BARRICADE
REFLECTORIZED PLASTIC DRUM OR 42" CONE
PORTABLE DYNAMIC MESSAGE SIGN

Revision table with columns: REV. NO., DATE, DESCRIPTION OF REVISION. Includes revisions R7, R6, and R5.

NEBRASKA DEPARTMENT OF TRANSPORTATION
STANDARD PLAN NO. 920-R7

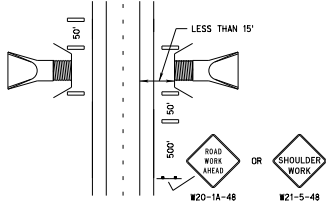
TRAFFIC CONTROL,
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ACCEPTED BY FHWA FOR USE ON THE NATIONAL HIGHWAY SYSTEM:

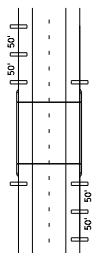


DATE
ORIGINAL: OCTOBER 1998
DATE

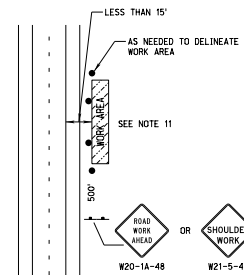
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3



CULVERT DELINEATION
WHEN GUARDRAIL IS REMOVED AND/OR EXCAVATION IS LESS THAN 15 FEET FROM EDGE OF TRAVELED WAY

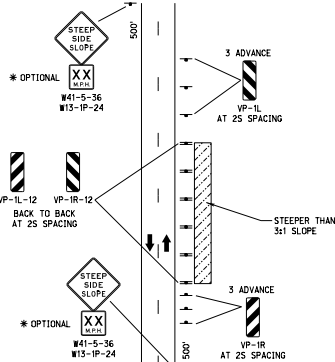


BRIDGE RAIL END DELINEATION
WHEN GUARDRAIL IS REMOVED

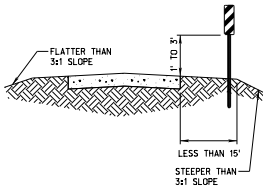


WORK BEYOND THE SHOULDER
TA-1

VERTICAL PANELS SHOULD BE USED FOR AREAS WHERE GUARDRAIL IS REMOVED OR PROJECT GRADING HAS CREATED A FORESLOPE STEEPER THAN 3:1, AND WITHIN 15 FEET OF THE TRAVELED WAY. NOT USED FOR CULVERT OR BRIDGE END DELINEATION. VERTICAL PANEL SPACING MAY BE REDUCED FOR HORIZONTAL CURVES. CONES/DRUMS MAY BE USED AS A SUBSTITUTE WHEN APPROVED BY THE ENGINEER.



STEEP SLOPE DELINEATION



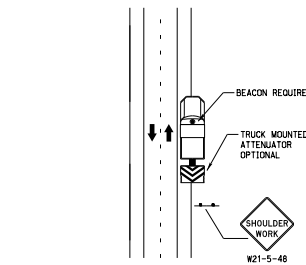
LEGEND

- FLAGGER
- REFLECTORIZED PLASTIC DRUM
- REFLECTORIZED PLASTIC DRUM OR 42" CONE
- TYPE III BARRICADE
- SINGLE POSTED SIGN
- DOUBLE POSTED SIGN
- ⬇️ TRAFFIC SIGNAL

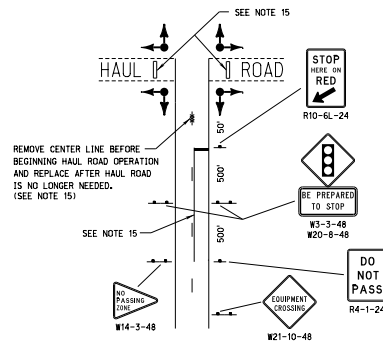
TAPER FORMULA

$L = S \times W$ FOR SPEEDS OF 45 MPH OR MORE.
 $L = \frac{WS^2}{60}$ FOR SPEEDS OF 40 MPH OR LESS.

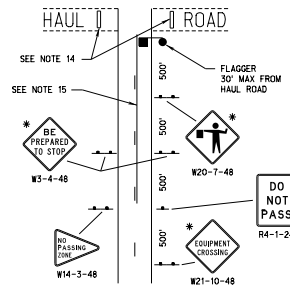
WHERE:
 L = MINIMUM LENGTH OF TAPER.
 S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.
 W = WIDTH OF OFFSET (LANE WIDTH).



MOBILE OPERATION ON SHOULDER
NO ENCRoACHMENT ON TRAVEL LANE
TA-4



HAUL ROAD CROSSING IN CONSTRUCTION AREA USING TEMPORARY TRAFFIC SIGNAL
TA-14



HAUL ROAD CROSSING IN CONSTRUCTION AREA USING FLAGGERS
TA-14

* SIGNS ARE SUBSIDIARY TO THE FLAGGING OPERATION.

NOTES

1. SIGNS SHOWN ARE USUALLY FOR ONE DIRECTION OF TRAVEL ONLY.
2. DESIGNATION OF SPEED SHOWN ON ADVISORY SPEED SIGNS (W13-1P) SHALL BE DETERMINED BY THE ENGINEER IN ACCORDANCE WITH MUTCD. THE SPEED DESIGNATION SHALL BE AS HIGH AS PRACTICAL AND FEASIBLE.
3. "FLAGGER AHEAD SYMBOL" SIGN (W20-7) SHALL BE USED WHEN A FLAGGER IS PRESENT, AND REMOVED WHEN NOT APPLICABLE.
4. THE CONTRACTOR SHALL INSTALL, MAINTAIN, AND REMOVE ALL SIGNS IN ACCORDANCE WITH THE DETAILS OF AND AT THE LOCATIONS SHOWN IN THE PLANS. SIGNS INSTALLED BY THE DEPARTMENT OF ROADS OR OTHER GOVERNMENT AGENCY SHALL BE MAINTAINED AND REMOVED BY THEIR FORCES.
5. G20-1 "ROAD WORK NEXT X MILES" SHALL BE USED ON ANY CONSTRUCTION OR MAINTENANCE PROJECT LONGER THAN 2 MILES.
6. WHEN MESSAGE IS NOT PERTINENT, SIGNS SHALL BE TAKEN DOWN, COVERED OR FOLDED. TAPE IS NOT PERMITTED ON THE FACE OF THE SIGN.
7. VEHICLES OR EQUIPMENT SHALL NOT BE PARKED SO AS TO OBSCURE OR DISTRACT FROM TRAFFIC CONTROL DEVICES.
8. ORANGE FLAGS MAY BE USED TO CALL ATTENTION TO WARNING SIGNS.
9. CULVERT, BRIDGE AND STEEP SLOPE DELINEATION. EXISTING GUARDRAIL SHOULD REMAIN IN PLACE AS LONG AS PRACTICAL FOR THE PROTECTION IT PROVIDES, AND REINSTALLED AS SOON AS PRACTICAL.
10. TA-1 AND TA-3 FOR SHORT-DURATION OPERATIONS 60 MINUTES OR LESS, ALL SIGNS AND CHANNELIZING DEVICES MAY BE ELIMINATED IF A VEHICLE WITH AN ACTIVATED HIGH-INTENSITY ROTATING, FLASHING, OSCILLATING OR AMBER STROBE LIGHTS ARE USED, AND THE WORK DOES NOT ENCRoACH INTO THE OPEN TRAVEL LANE.
11. TA-1 AND TA-3 WHEN PAVED SHOULDERS HAVING A WIDTH OF 8 FEET OR MORE ARE CLOSED, AT LEAST ONE ADVANCE WARNING SIGN SHALL BE USED. IN ADDITION, CHANNELIZING DEVICES SHALL BE USED TO CLOSE THE SHOULDER IN ADVANCE TO DELINEATE THE BEGINNING OF THE WORK SPACE AND DIRECT VEHICULAR TRAFFIC TO REMAIN WITHIN THE TRAVELED WAY.
12. TA-4 VEHICLE HAZARD WARNING SIGNALS SHALL NOT BE USED INSTEAD OF THE VEHICLE'S HIGH-INTENSITY ROTATING, FLASHING OR AMBER STROBE LIGHTS.
13. TA-10 IF THE QUEUING OF VEHICLES ACROSS ACTIVE RAILROAD TRACKS CANNOT BE AVOIDED, A FLAGGER SHALL BE PROVIDED AT THE RAILROAD CROSSING TO PREVENT VEHICLES FROM STOPPING WITHIN THE RAILROAD CROSSING EVEN IF AUTOMATIC WARNING DEVICES ARE IN PLACE.
14. TA-14 WHEN THE HAUL ROAD IS NOT IN USE, TYPE III BARRICADES SHALL BE IN PLACE, THE "FLAGGER," "SIGNAL AHEAD," AND "BE PREPARED TO STOP" SIGNS SHALL BE COVERED OR REMOVED, AND THE TRAFFIC SIGNAL SHALL BE PUT INTO FLASH YELLOW ON THE HIGHWAY, RED ON THE HAUL ROAD.
15. TA-14 THE "NO PASSING" SIGNS (R4-1-24 AND W14-3-48) AND PAVEMENT MARKINGS ARE NOT REQUIRED IF HAULING OPERATION IS IN EFFECT ONLY DURING DAYLIGHT HOURS.
16. APPLICATIONS SHOWN ARE FOR LOCAL SITUATIONS IN PROPERLY MARKED CONSTRUCTION ZONES AND DO NOT INCLUDE LEAD SIGNS WHICH ARE INSTALLED AT THE BEGINNING OF THE PROJECT.
17. THE LEAD SIGNS ARE NOT NEEDED IF TWO PROJECTS ARE LESS THAN 1 MILE APART. THE "END CONSTRUCTION" SIGN (G20-2B-48) SHOULD NOT BE INSTALLED BETWEEN THE PROJECTS.
18. REFER TO STANDARD PLAN 920 FOR GENERAL INFORMATION NOT SHOWN.
19. A MINIMUM OF 7-36" OR 42" CONES SHALL BE PLACED ON THE CENTERLINE IN ADVANCE OF THE FLAGGER. THE CONES SHOULD BE SPACED AT 250 FEET.
20. THE SPEED IN FLAGGING/PILOT CAR OPERATIONS IS GENERALLY CONTROLLED BY THE PILOT CAR. A SPEED REDUCTION MAY NOT BE NECESSARY IF THE WORK ZONE CONDITIONS WILL NOT EXIST UPON COMPLETION OF EACH DAYS WORK. W5-5 SIGN IS NOT NEEDED IF SPEED LIMIT IS NOT REDUCED.

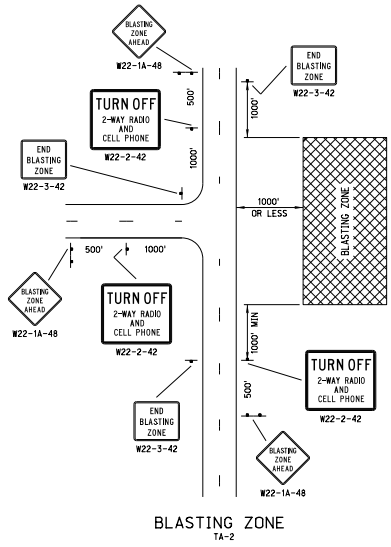
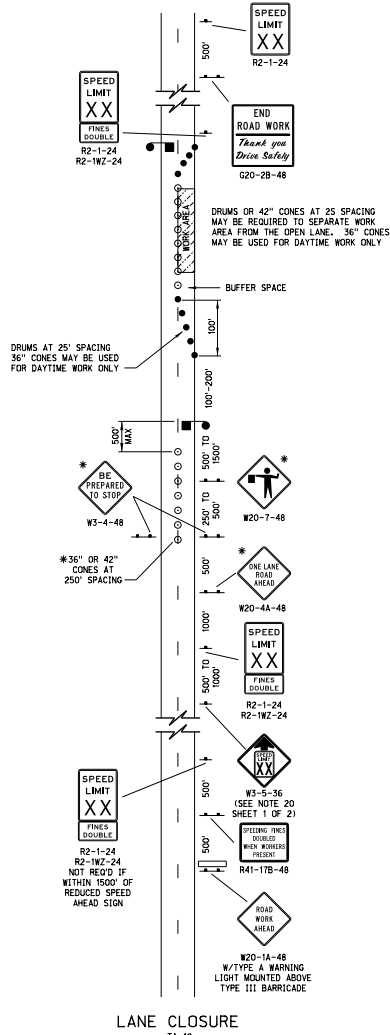
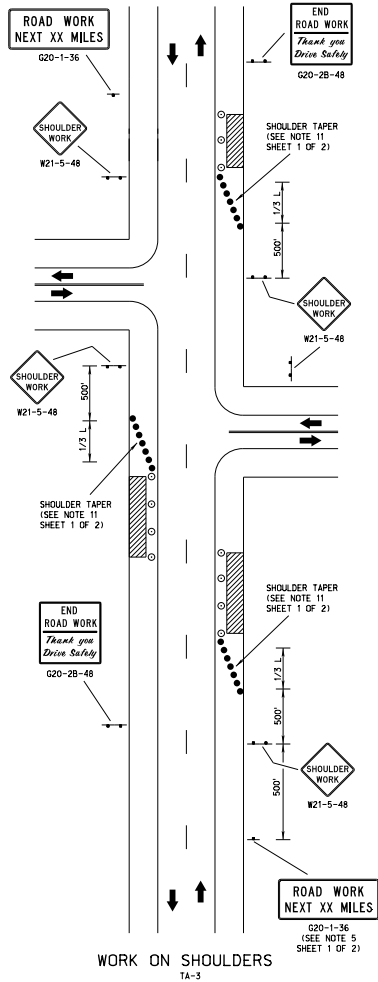
R8	JAN 18	INDOR BORDER TO NDOT BORDER
R7	JAN 17	ADD CONES ON CENTERLINE
R6	JUN 14	2009 MUTCD UPDATE
REV. NO.	DATE	DESCRIPTION OF REVISION

NEBRASKA DEPARTMENT OF TRANSPORTATION
STANDARD PLAN NO. 921-R8

**TRAFFIC CONTROL,
CONSTRUCTION AND MAINTENANCE**

ACCEPTED BY FHWA FOR USE ON THE NATIONAL HIGHWAY SYSTEM:

	DATE _____	<div style="border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;"> 1 </div> <div style="border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;"> 2 </div>
	ORIGINAL: JUNE 3, 1990 DATE _____	



- LEGEND**
- FLAGGER
 - REFLECTORIZED PLASTIC DRUM
 - REFLECTORIZED PLASTIC DRUM OR 42" CONE
 - TYPE III BARRICADE
 - SINGLE POSTED SIGN
 - DOUBLE POSTED SIGN
 - ▲ TRAFFIC SIGNAL

TAPER FORMULA

$L = S \times W$ FOR SPEEDS OF 45 MPH OR MORE.
 $L = \frac{WS^2}{60}$ FOR SPEEDS OF 40 MPH OR LESS.

WHERE:
 L = MINIMUM LENGTH OF TAPER.
 S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.
 W = WIDTH OF OFFSET (LANE WIDTH).

* SIGNS AND CONES ARE SUBSIDIARY TO THE FLAGGING OPERATION.

R8	JAN 18	INDOR BORDER TO NDOT BORDER
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R6	JUN 14	2009 MUTCD UPDATE
REV. NO.	DATE	DESCRIPTION OF REVISION

NEBRASKA DEPARTMENT OF TRANSPORTATION
 STANDARD PLAN NO. 921-R8

**TRAFFIC CONTROL,
 CONSTRUCTION AND MAINTENANCE**

ACCEPTED BY FHWA FOR USE ON THE NATIONAL HIGHWAY SYSTEM:

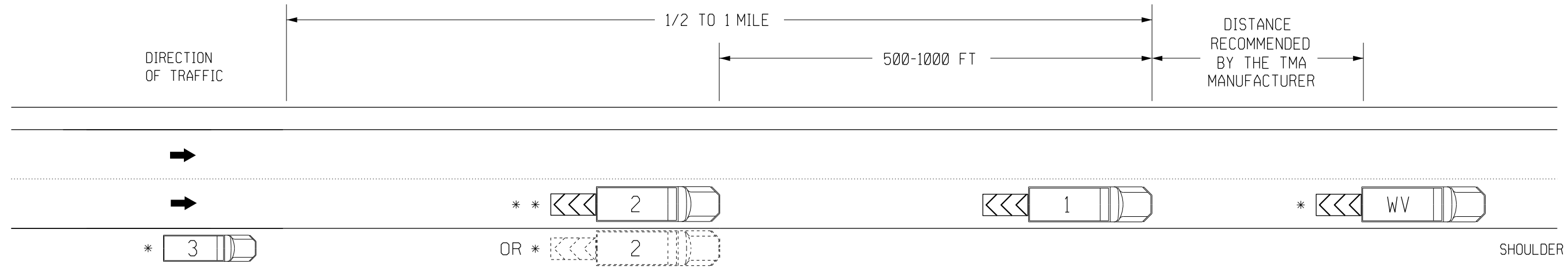
DANIEL J. WAGLE
E-6289

DATE _____

ORIGINAL: JUNE 3, 1980
DATE _____

2
2

MOBILE OPERATIONS ON RURAL MULTI-LANE ROADWAY



XX

Project Number
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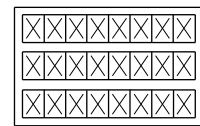
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TRAFFIC CONTROL PLAN
MOBILE OPERATIONS
TWO-LANE AND MULTI-LANE

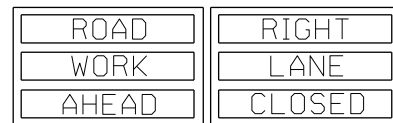
NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

DESIGNED BY NRL DATE 12/22

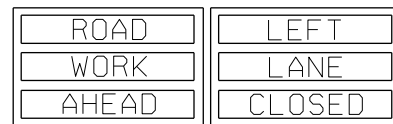
SHADOW VEHICLE 3
& PORTABLE DYNAMIC MESSAGE SIGN
WITH 2-360° BEACONS OR
APPROVED MINI-BAR LIGHT
* TMA OPTIONAL



PORTABLE DYNAMIC MESSAGE SIGN

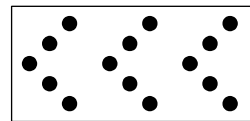


-OR-



TWO MESSAGES (1.6 - 2.0 SECONDS
PER MESSAGE)

OPTIONAL SHADOW VEHICLE 2
& FLASHING ARROW PANEL ON REAR
WITH 2-360° BEACONS OR
APPROVED MINI-BAR LIGHT
* TMA OPTIONAL IF COMPLETELY ON
SHOULDER AND NOT STRADDLING EDGE LINE.
* * TMA REQUIRED IF STRADDLING EDGE
LINE OR IN CLOSED LANE.

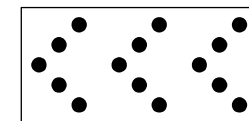


FLASHING ARROW PANEL ON REAR

TRUCK MOUNTED ATTENUATOR SYSTEM:

1. THE CONTACTOR SHALL FURNISH A FEDERALLY APPROVED TRUCK MOUNTED ATTENUATOR SYSTEM, MOUNTED ON A MINIMUM 16,000 POUND TRUCK. THE TRUCK SHALL BE EQUIPPED WITH 60" X 30" FLASHING ARROW PANEL, SECURELY MOUNTED ON THE TRUCK. THE TMA SYSTEM SHALL BE LOCATED IN THE FIELD AS REQUIRED BY THE MANUFACTURER. A COMPLETE SET OF REPLACEMENT MODULES SHALL BE AVAILABLE NEAR THE PROJECT SITE IN THE EVENT OF DAMAGE TO THE INSTALLED TMA. DAMAGED TMA'S SHALL BE REMOVED FROM THE ROADWAY AND PROJECT WORK STOPPED UNTIL REPAIRS TO THE UNIT HAVE BEEN COMPLETED.
2. THE TRUCK MOUNTED ATTENUATOR SHALL BE AN NCHRP 350 TEST LEVEL 3 (OR MASH EQUIVALENT) APPROVED TMA FOR 100 km PER HOUR (60 MPH).
3. THE TRUCK SHALL BE A 16,000 TO 35,000 POUND (GVW) VEHICLE AS REQUIRED BY THE TMA MANUFACTURER.
4. THE FLASHING ARROW PANEL SHALL BE SECURELY MOUNTED AS HIGH AS PRACTICABLE ON THE VEHICLE. THE ARROW PANEL SHALL NOT COME LOOSE UPON IMPACT TO THE TMA.

SHADOW VEHICLE 1 WITH TMA
& FLASHING ARROW PANEL ON REAR
WITH 2-360° BEACONS OR
APPROVED MINI-BAR LIGHT



FLASHING ARROW PANEL ON REAR

NOTES:

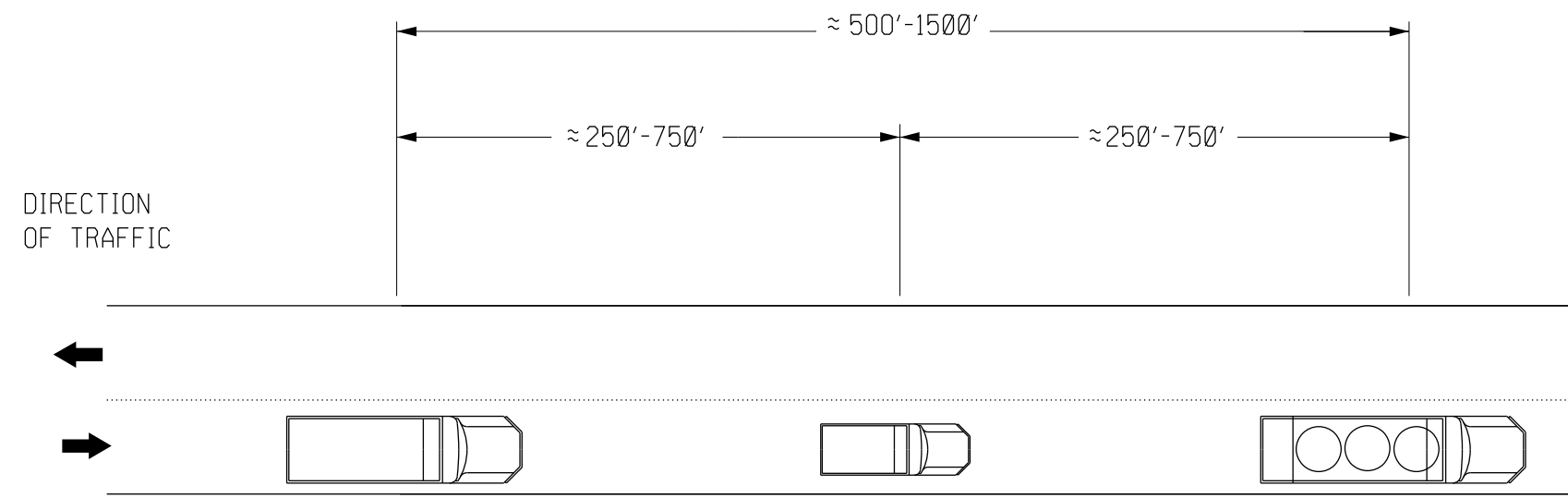
1. SHADOW VEHICLE 1 SHALL HAVE A TRUCK MOUNTED ATTENUATOR. SHADOW VEHICLE 2 IS OPTIONAL AND SHALL HAVE A TRUCK-MOUNTED ATTENUATOR IF IN THE CLOSED LANE OR STRADDLING THE EDGE LINE. SHADOW VEHICLE 3 MAY HAVE A TMA.
2. SHADOW VEHICLE 1 AND WHEN USED, SHADOW VEHICLE 2 SHALL HAVE A FLASHING ARROW PANEL.
3. SHADOW VEHICLE NUMBER 3 SHALL HAVE A PORTABLE DYNAMIC MESSAGE SIGN.
4. WHEN USED, SHADOW VEHICLE 2 SHALL BE PLACED IN ADVANCE OF HORIZONTAL OR VERTICAL CURVES TO PROVIDE ADVANCE WARNING FOR WORK OPERATIONS HIDDEN BY CURVES.
5. FOR LEFT LANE CLOSURES, SHADOW VEHICLE 3 WILL REMAIN ON RIGHT SHOULDER WHEN AN 8' OR WIDER PAVED INSIDE (LEFT) SHOULDER DOES NOT EXIST.
6. IN URBAN AREAS THE DISTANCE MAINTAINED BETWEEN VEHICLES MAY BE DECREASED AS NEEDED.
7. VEHICLE HAZARD LIGHT WARNING SIGNALS SHALL NOT BE USED INSTEAD OF THE VEHICLE'S HIGH-INTENSITY ROTATING, FLASHING OSCILLATING, OR STROBE LIGHTS.
8. DETAIL MAY BE USED FOR LEFT OR RIGHT LANE/SHOULDER WORK.

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DATE: 11-SEP-2023 13:00

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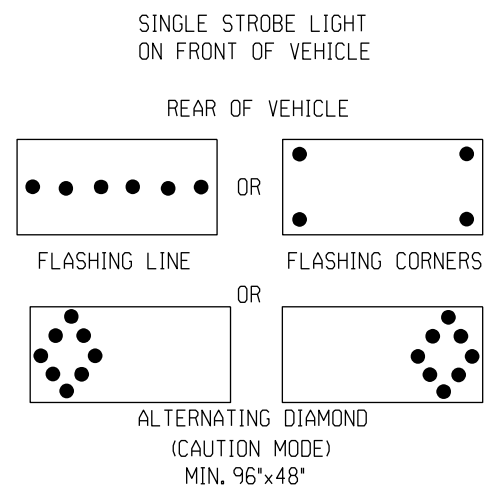
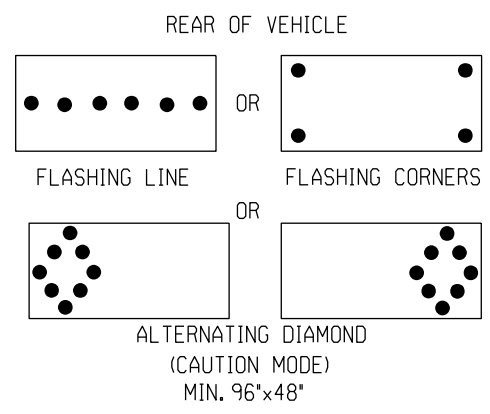
MOBILE OPERATIONS RURAL TWO-LANE TWO-WAY ROADS



REAR VEHICLE
WITH 2 HIGH INTENSITY
FLASHING LIGHTS
MOUNTED ON THE REAR
AND 2-360° BEACONS OR
APPROVED MINI-BAR LIGHT
(TMA OPTIONAL)

OPTIONAL VEHICLE
WITH 2-360° BEACONS OR
APPROVED MINI-BAR LIGHT

WORK VEHICLE
WITH 4 HIGH INTENSITY
FLASHING LIGHTS MOUNTED
ON REAR AND 2-360°
BEACONS OR APPROVED
MINI-BAR LIGHT



NOTES:

1. CAUTION MODE ON WORK VEHICLE AND REAR VEHICLE SHALL BE ALTERNATING DIAMOND OR THE FLASHING 4 CORNER LIGHTS IF THE DIAMOND MODE IS NOT AVAILABLE.
2. REAR VEHICLE SHALL BE PLACED IN ADVANCE OF HORIZONTAL OR VERTICAL CURVES TO PROVIDE ADVANCE WARNING FOR WORK OPERATIONS HIDDEN BY CURVES.

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Project Number
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TRAFFIC CONTROL PLAN
MOBILE OPERATIONS
TWO-LANE AND MULTI-LANE

DESIGNED BY NRL DATE 12/22

NEBRASKA DEPARTMENT OF TRANSPORTATION - TRAFFIC ENGINEERING DIVISION

PLAN SHEET NUMBER	2
	2

