FHWA REGION NO.	STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
7	KANSAS	87-N-0223-01	2002	38	56

1. MUTCD COMPLIANCE
ALL TRAFFIC CONTROL DEVICES AND THEIR INSTALLATION AND MAINTENANCE SHALL COMPLY WITH THE REQUIREMENTS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS. WHENEVER THE TRAFFIC CONTROL STANDARDS CONFLICT WITH THE MANUAL, THE STANDARDS SHALL GOVERN.

2. DESIGN SPEED
TRAFFIC CONTROL SHOULD BE DESIGNED AND INSTALLED USING THE POSTED SPEED OF THE ROADWAY PRIOR TO WORK STARTING.

3. CLEAR ZONE
WHENEVER PRACTICAL, ALL CONSTRUCTION EQUIPMENT (INCLUDING VEHICLES), MATERIALS, AND DEBRIS SHALL BE STORED OUT OF THE CLEAR ZONE. WHERE THIS CANNOT BE ACHIEVED, THE CONTRACTOR SHALL PLACE APPROPRIATE SIGNS, OBJECT IDENTIFIERS, AND/OR BARRICADES AS DESIGNATED BY THE ENGINEER. TRAFFIC CONTROL DEVICES NEEDED FOR THIS CONDITION SHALL BE CONSIDERED SUBSIDIARY TO OTHER BID ITEMS.

4. MINIMUM LANE WIDTHS
LANE WIDTHS SHALL BE A MINIMUM OF 3.4 m (MEASURED BETWEEN CENTERLINES OF PAVEMENT MARKINGS) OR AS SHOWN ON THE PLANS, OR AS DIRECTED BY THE ENGINEER. A LANE WIDTH LESS THAN 3.4 m MAY REQUIRE RESTRICTED ROADWAY WIDTH SIGNING.

5. FLAGGER
A MINIMUM OF ONE FLAGGER SHALL BE STATIONED WITHIN EACH MULTI-LANE ROADWAY WORK AREA WHERE WORK IS IN A CLOSED LANE ADJACENT TO TRAFFIC AND NOT SEPARATED BY CONCRETE SAFETY BARRIER.

6. PAVEMENT MARKING
(A) TYPE I TAPE IS TO BE APPLIED TO A FINAL SURFACE (NEW PAVEMENT OR ANY SURFACE THAT WILL REMAIN WHEN THE PROJECT IS COMPLETE) AS A TEMPORARY MARKING WHEN THE TEMPORARY MARKINGS WILL BE REMOVED. WHEN TYPE I TAPE IS SPECIFIED, ONLY TYPE I TAPE WILL BE ALLOWED.

TYPE II TAPE IS TO BE APPLIED TO A SURFACE THAT IS TO BE REMOVED OR COVERED BY FUTURE CONSTRUCTION.

TYPE II TAPE (REMOVAL REQUIRED) IS TO BE APPLIED TO A SURFACE THAT IS TO BE REMOVED OR COVERED BY FUTURE CONSTRUCTION, BUT ON WHICH THE MARKINGS MUST BE REMOVED TO ALLOW FOR A DIFFERENT TRAFFIC CONTROL PATTERN PRIOR TO THE REMOVAL OR COVERING OF THE SURFACE.

TYPE IIA TAPE MAY BE APPLIED AS TEMPORARY BROKEN LINES ON INTERMEDIATE BITUMINOUS SURFACES ONLY.

WHEN TYPE II, TYPE II (REMOVAL REQUIRED), OR TYPE IIA TAPE IS SPECIFIED, THE CONTRACTOR HAS THE OPTION TO USE EITHER TYPE I OR TYPE II TAPE.

IF RECOMMENDED BY THE MANUFACTURER, USE A PRIMER TO PRECONDITION THE PAVEMENT SURFACE.

(B) ALL CONFLICTING PAVEMENT MARKINGS SHALL BE REMOVED AND ALL TRANSITION TAPERS, CROSSOVERS, AND EDGE LINES ALONG CHANNELIZING DEVICES SHALL BE MARKED WITH SOLID 100mm WIDE PAVEMENT MARKING WHEN THE WORK WILL OCCUPY A LOCATION MORE THAN THREE DAYS.

WHEN LINE MASKING TAPE IS SPECIFIED TO TEMPORARILY COVER EXISTING PAVEMENT MARKINGS, ONLY LINE MASKING TAPE WILL BE ALLOWED. WHEN EXISTING PAVEMENT MARKING REMOVAL IS SPECIFIED, THE CONTRACTOR HAS THE OPTION TO EITHER REMOVE THE EXISTING PAVEMENT MARKING OR APPLY LINE MASKING TAPE.

7. FIRST MODULE OF IBS:
THE FIRST MODULE OF EACH INERTIAL BARRIER SYSTEM (IBS) SHALL HAVE A MINIMUM OF 0.175 SQ m OF FLUORESCENT ORANGE PRISMATIC GRADE RETROREFLECTIVE SHEETING FACING TRAFFIC. EITHER A VERTICAL RECTANGLE OR DIAMOND SHAPE MAY BE USED.

8. TRUCK-MOUNTED ATTENUATOR (TMA):
THE CONTRACTOR HAS THE OPTION TO USE A TMA ON A PROTECTION VEHICLE OR AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. THE HASH MARKINGS ON THE BACK OF THE TMA SHALL BE BLACK AND YELLOW STRIPES.

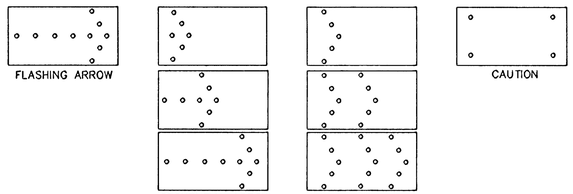
9. PEDESTRIAN AND WORKER SAFETY:
EVERY EFFORT SHOULD BE MADE TO SEPARATE PEDESTRIANS AND WORKERS FROM ADJACENT TRAFFIC. PEDESTRIANS SHOULD NOT BE LED INTO DIRECT CONFLICTS WITH WORK SITE VEHICLES, EQUIPMENT, OR MAINLINE TRAFFIC MOVING THROUGH OR AROUND THE WORK SITE. PEDESTRIANS SHOULD BE PROVIDED WITH A SAFE, CONVENIENT TRAVEL PATH. WORKERS SHOULD BE TRAINED IN HOW TO WORK NEXT TO TRAFFIC IN A WAY THAT MINIMIZES THEIR VULNERABILITY.

10. NCHRP REPORT 350 CRASHWORTHY REQUIREMENTS:
TRAFFIC CONTROL DEVICES SHALL MEET THE EVALUATION CRITERIA IN NCHRP REPORT 350 AS SUPPLEMENTED BY FHWA MEMORANDUM "IDENTIFYING ACCEPTABLE HIGHWAY SAFETY FEATURES, DATED JULY 25, 1997 (AVAILABLE ON THE INTERNET AT http://safety.fhwa.dot.gov/fourthlevel/pro_res_road_pol.htm).

THE CONTRACTOR SHALL:
1) CERTIFY THAT ALL CATEGORY 1 DEVICES (AS DEFINED IN THE FHWA MEMORANDUM) WERE PURCHASED PRIOR TO OCTOBER 1, 1998; OR IF THE DEVICES WERE PURCHASED AFTER OCTOBER 1, 1998, INCLUDE A COPY OF THE MANUFACTURER'S SELF-CERTIFICATION THAT THEY ARE NCHRP REPORT 350 COMPLIANT.
2) CERTIFY THAT ALL CATEGORY 2 DEVICES (AS DEFINED IN THE FHWA MEMORANDUM) WERE PURCHASED PRIOR TO OCTOBER 1, 2000; OR IF THE DEVICES WERE PURCHASED AFTER OCTOBER 1, 2000, INCLUDE A COPY OF THE ENTIRE FHWA ACCEPTANCE LETTER FOR EACH OF THE DEVICES THAT ARE NCHRP REPORT 350 COMPLIANT.
3) CERTIFY THAT THE TRUCK MOUNTED ATTENUATORS (TMA'S)(WHICH ARE DEFINED AS CATEGORY 3 DEVICES BY THE FHWA MEMORANDUM) WERE PURCHASED PRIOR TO OCTOBER 1, 1998, AND INCLUDE A COPY OF THE ENTIRE FHWA ACCEPTANCE LETTER STATING THAT THE TMA'S ARE NCHRP REPORT 230 COMPLIANT; OR IF THE DEVICES WERE PURCHASED AFTER OCTOBER 1, 1998, INCLUDE A COPY OF THE ENTIRE FHWA'S ACCEPTANCE LETTER STATING THAT THE TMA'S ARE NCHRP REPORT 350 COMPLIANT.

ALL CATEGORY 1 & 2 DEVICES PURCHASED PRIOR TO THE ABOVE DATES MAY BE USED UNTIL THE END OF THEIR SERVICEABLE LIVES OR JANUARY 1, 2002, WHICHEVER COMES FIRST. TMA'S PURCHASED PRIOR TO OCTOBER 1, 1998, MAY BE USED UNTIL THE END OF THEIR SERVICEABLE LIVES.

ARROW DISPLAYS



ARROW DISPLAY ELEMENTS SHALL BE CAPABLE OF A MINIMUM 50 PERCENT DIMMING FROM THEIR FULL-RATED LAMP VOLTAGE. FULL LAMP VOLTAGE SHOULD BE USED FOR DAY AND DIMMED MODE SHALL BE USED FOR NIGHT. AN ARROW DISPLAY IN THE CAUTION MODE SHALL BE USED ONLY FOR SHOULDER WORK OR ROADSIDE WORK NEAR THE SHOULDER.

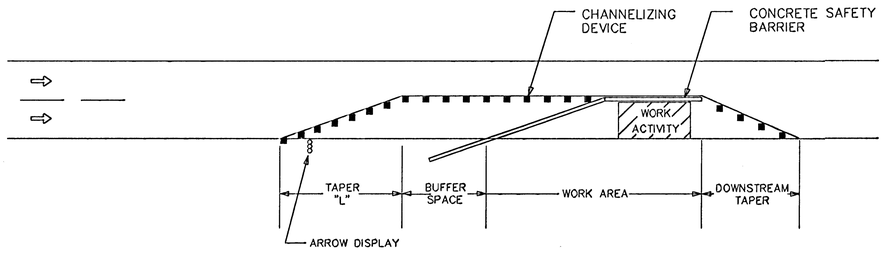
BUFFER SPACE:

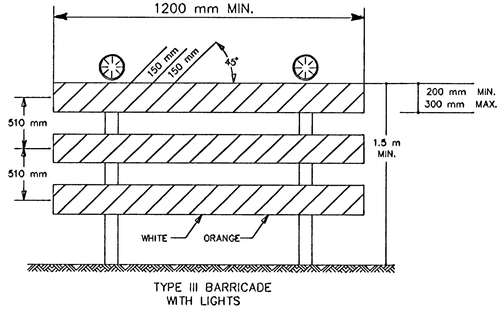
SPEED (MPH)*	20	25	30	35	40	45	50	55	60	65	70
LENGTH (m)	10	15	25	35	50	65	85	100	125	150	175

NEITHER WORK ACTIVITY NOR STORAGE OF EQUIPMENT, VEHICLES, OR MATERIAL SHOULD OCCUR IN THE BUFFER SPACE. WHEN A PROTECTION VEHICLE IS PLACED IN ADVANCE OF THE WORK SPACE, ONLY THE SPACE UPSTREAM OF THE VEHICLE CONSTITUTES THE BUFFER SPACE.

* POSTED SPEED PRIOR TO WORK STARTING

IF TEMPORARY CONCRETE SAFETY BARRIER IS USED TO SEPARATE APPROACHING TRAFFIC FROM THE WORK ACTIVITY, THE BARRIER SHALL BE CONSIDERED PART OF THE WORK AREA. A FULL LANE WIDTH SHOULD BE AVAILABLE THROUGHOUT THE LENGTH OF THE BUFFER SPACE. FOR EXAMPLE:





TYPE III BARRICADE WITH LIGHTS

BARRICADES:
WHEN CLOSING A ROAD, TYPE III BARRICADES SHALL BE PLACED END-TO-END TO SUFFICIENTLY COVER THE ROADWAY. WHEN AUTHORIZED ACCESS MUST BE ALLOWED, THE BARRICADES SHALL BE LONGITUDINALLY STAGGERED TO MAINTAIN THE APPEARANCE OF A CLOSED ROADWAY. IF THE ACCESS IS FOR CONSTRUCTION VEHICLES, THE BARRICADES SHALL BE REALIGNED TO DENY ANY ACCESS WHEN THE CONSTRUCTION ACTIVITY HAS CEASED FOR THE DAY. IF THE ACCESS IS FOR LOCAL TRAFFIC, THE BARRICADES SHALL REMAIN LONGITUDINALLY STAGGERED AND A SECOND LINE OF END-TO-END BARRICADES SHALL BE PLACED AT THE WORK AREA TO CLOSE THE ROAD.

FOR WOODEN BARRICADES, NOMINAL LUMBER DIMENSIONS WILL BE SATISFACTORY.

THE ENTIRE AREA OF BARRICADE RAILS, BOTH FRONT AND BACK, SHALL BE FULLY REFLECTORIZED WITH TYPE III HIGH PERFORMANCE RETROREFLECTIVE SHEETING.

THE STRIPES SHALL SLOPE DOWNWARD TO THE SIDE TRAFFIC IS TO PROCEED OR TOWARD THE CENTER OF THE ROADWAY AT ROAD CLOSURES.

SIGNS MOUNTED ON TYPE III BARRICADES SHOULD NOT COVER MORE THAN 50% OF THE TOP TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

A MINIMUM OF TWO TYPE A LIGHTS SHALL BE USED AT EACH LOCATION WHERE A TYPE III BARRICADE OR BARRICADES ARE USED. A LIGHT SHALL BE MOUNTED ON THE OUTSIDE CORNER OF THE END BARRICADES WHEN MORE THAN ONE BARRICADE IS USED.

WARNING LIGHTS SHALL COMPLY WITH THE CURRENT ITE PURCHASE SPECIFICATIONS FOR FLASHING AND STEADY BURN WARNING LIGHTS. THE LENS SHALL BE A MINIMUM OF 175 mm IN DIAMETER AND BE MOUNTED AT A MINIMUM HEIGHT OF 1.5 m.

TYPE A LOW INTENSITY FLASHING WARNING LIGHTS SHALL BE MAINTAINED SO AS TO BE CAPABLE OF BEING VISIBLE ON A CLEAR NIGHT FROM A DISTANCE OF 1000 m.

NO.	DATE	REVISION	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

GENERAL TRAFFIC CONTROL

9/1/00

TE700SI SHEET 38 OF 56

FHWA APPROVAL	9-1-00	APP'D Michael P. McKenna	
DESIGNED L.E.R.	DETAILED B.A.H.	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN. CK.	TRACE CK.