

SCDOT

SHOULDER CLOSURES
PRIMARY ROUTES

SCDOT
South Carolina Department of Transportation
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

SECTION
610-200

REFERENCES

GENERAL NOTES

1. ALL SIGN LOCATIONS ARE TO BE MEASURED FROM THE WORK AREA. WORK LIMITS FOR THE PROJECT WILL BE DETERMINED BY THE ENGINEER AND AS INDICATED IN THE CONTRACT.
2. INSTALL ADVANCE WARNING SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS NO LESS THAN 4 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH EARTH SHOULDER AND NO LESS THAN 8 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH PAVED SHOULDER. WHEN CURB & GUTTER IS PRESENT, INSTALL THE SIGN NO LESS THAN 2 FEET FROM THE NEAR EDGE OF THE SIGN TO THE FACE OF THE CURB.
3. SPACINGS INDICATED ARE FOR NORMAL CONDITIONS. ADJUSTMENTS MAY BE REQUIRED DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENTS OR OTHER SIGHT DISTANCE RESTRICTIONS.
4. ALL SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 5 FEET FROM THE GROUND TO THE BOTTOM OF THE SIGN. ALL SIGNS MOUNTED ON GROUND MOUNTED U-CURVED POSTS OR SQUARE STEEL TUBE POSTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 7 FEET FROM THE GRADE ELEVATION OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE TO THE BOTTOM OF THE SIGN UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. MOUNT ALL SIGNS STRAIGHT AND LEVEL AND WITH THE FACE OF THE SIGNS PERPENDICULAR TO THE SURFACE OF THE ROADWAY.
5. REFLECTORIZED ORANGE ADVANCE WARNING SIGNS AND ANY ORANGE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A FLUORESCENT ORANGE COLORED PRISMATIC RETROREFLECTIVE SHEETING, REFLECTORIZED WHITE REGULATORY SIGNS AND ANY WHITE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A WHITE COLORED PRISMATIC RETROREFLECTIVE SHEETING.
6. ALL TRAFFIC CONTROL DEVICES SHALL COMPLY WITH ALL MCDP REPORT 350 REQUIREMENTS AND SHALL REQUIRE APPROVAL BY THE DEPARTMENT. ONLY THOSE TRAFFIC CONTROL DEVICES INCLUDED ON THE "APPROVED PRODUCTS LIST FOR TRAFFIC CONTROL DEVICES IN WORK ZONES" ARE CONSIDERED ACCEPTABLE FOR USE. THIS LIST MAY BE ACCESSSED ON THE DEPARTMENT'S WEB SITE AT: www.scdot.org.
7. THE CONTRACTOR SHALL PROVIDE AND UTILIZE ANY SPECIAL SIGN MOUNTING ASSEMBLIES AND HARDWARE THAT MAY BE NECESSARY FOR INSTALLING AND MOUNTING SIGNS IN AREAS OF CONCRETE MEDIAN BARRIER, BRIDGE PARAPET WALLS OR DOUBLE-SLOPED CURB/RAMP.
8. THE PRIMARY TRAFFIC CONTROL DEVICES UTILIZED FOR DAYTIME SHOULDER CLOSURES ARE 36" CONES. THE PRIMARY TRAFFIC CONTROL DEVICES UTILIZED FOR NIGHTTIME SHOULDER CLOSURES ARE PORTABLE PLASTIC DRUMS. DURING DAYTIME SHOULDER CLOSURES, 42" OVERSIZED CONES MAY BE SUBSTITUTED FOR 36" CONES. DURING NIGHTTIME SHOULDER CLOSURES, 42" OVERSIZED CONES ARE PROHIBITED FOR USE. IF THIS TRAFFIC CONTROL SETUP EXTENDS INTO THE HOURS OF DARKNESS, REPLACE ALL CONES, 36" OR 42" OVERSIZED, WITH PORTABLE PLASTIC DRUMS.
9. THE 36" CONES UTILIZED DURING DAYLIGHT HOURS ARE NOT REQUIRED TO BE REFLECTORIZED. REFLECTORIZED 42" OVERSIZED CONES UTILIZED DURING DAYTIME SHOULDER CLOSURES WITH TYPE B FLUORESCENT PRISMATIC RETROREFLECTIVE SHEETING UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. REFLECTORIZED ALL PORTABLE PLASTIC DRUMS WITH TYPE B FLUORESCENT PRISMATIC RETROREFLECTIVE SHEETING UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
10. THE DEPARTMENT PROHIBITS CONDUCTING WORK ON PRIMARY AND SECONDARY ROUTES WITHIN 1' OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE UNDER A SHOULDER CLOSURE. ALL WORK THAT MAY REQUIRE THE PRESENCE OF EQUIPMENT, PERSONNEL, MATERIALS OR WORK VEHICLES WITHIN 1' OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE SHALL BE CONDUCTED UNDER A LANE CLOSURE.

CASE 1: WHENEVER ANY PORTION OF THE SHOULDER AREA WITHIN 15' BUT NOT CLOSER THAN 1' OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE MUST BE OCCUPIED BY EQUIPMENT, PERSONNEL, MATERIALS OR WORK VEHICLES TO CONDUCT THE WORK, INSTALL AND MAINTAIN THE SIGNING AND TRAFFIC CONTROL DEVICES AS ILLUSTRATED.

CASE 2: WHENEVER THE WORK IS CONDUCTED BEYOND 15' BUT WITHIN 30' OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE, INCLUDING THE PRESENCE OF EQUIPMENT, PERSONNEL, MATERIALS OR WORK VEHICLES, INSTALL AND MAINTAIN THE SIGNING AND TRAFFIC CONTROL DEVICES AS ILLUSTRATED.

2. CONDUCT THE WORK IN SUCH A MANNER THAT WILL NOT REQUIRE ENCROACHMENT OF TRAFFIC CONTROL DEVICES, EQUIPMENT, PERSONNEL, MATERIALS OR ANY WORK RELATED VEHICLES WITHIN 1' OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE.

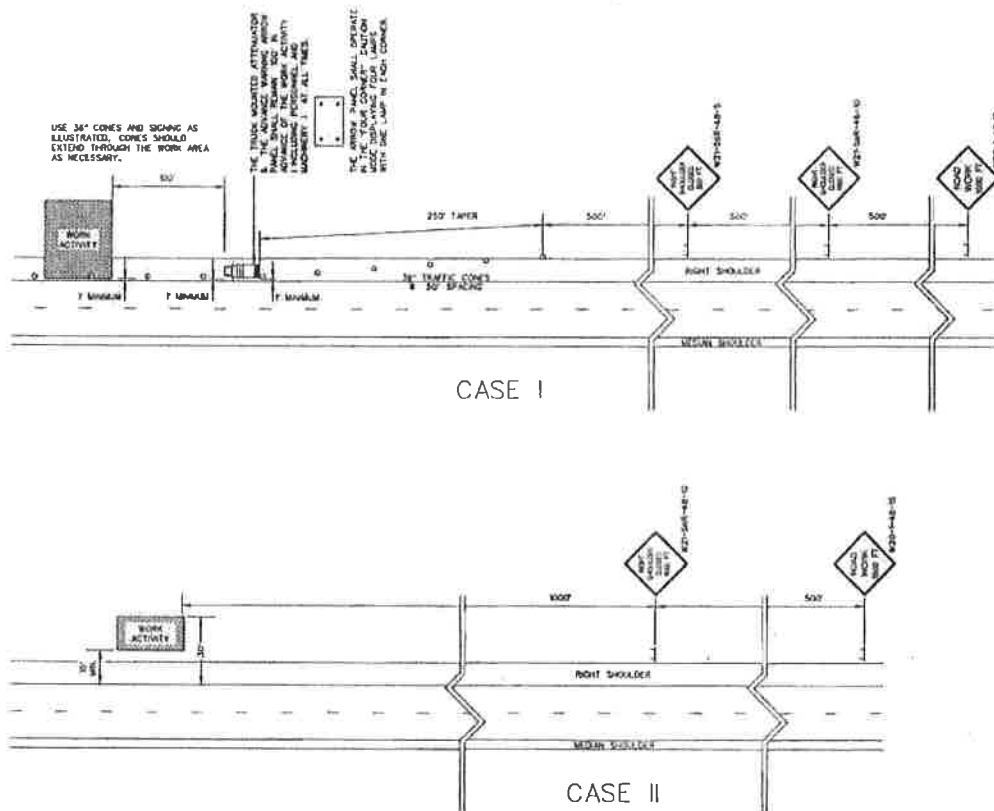
3. PLACE THE TRUCK MOUNTED ATTENUATOR AT A LOCATION 100' IN ADVANCE OF THE WORK ACTIVITY AND NO CLOSER THAN 1' FROM THE NEAR EDGE OF THE ADJACENT TRAVEL LANE.

4. FOR A CASE 1 SCENARIO IN THE RIGHT SHOULDER AREA, ADJUST THE TAPER AS NECESSARY TO FIT THE WIDTH OF THE SHOULDER WHILE MAINTAINING THE REQUIRED 25:1 TAPER LENGTH.

5. IF WORK IS BEING CONDUCTED SIMULTANEOUSLY AT TWO DIFFERENT LOCATIONS AT THE SAME TIME UNDER CASE 1 SHOULDER CLOSURES, SEPARATE THE TWO LOCATIONS BY NO LESS THAN 1 MILE FROM THE END OF THE FIRST CASE 1 CLOSURE. A MOTORIST WILL ENCOUNTER THE BEGINNING OF THE TAPER OF THE SECOND CASE 1 CLOSURE. A MINIMUM SEPARATION DISTANCE OF ONE MILE IS RECOMMENDED BETWEEN SHOULDER CLOSURES WHEN ONE OR BOTH SHOULDER CLOSURES IS A CASE 2 CLOSURE.

6. THE DEPARTMENT RESERVES THE RIGHT TO RESTRICT WORK OPERATIONS AND/OR WITHHOLD THE WORKING UTILITY IF THE TRAFFIC CONTROL IS NOT PROPERLY INSTALLED AND MAINTAINED AS DIRECTED BY THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, THE STANDARD DRAWINGS, THE PLANS AND/OR THE ENGINEER.

7. THIS TYPICAL TRAFFIC CONTROL SETUP APPLIES TO THE INSTALLATION OF SHOULDER CLOSURES IN THE RIGHT SHOULDER AREAS OF PRIMARY AND SECONDARY ROADWAYS.



PORTABLE TRUCK MOUNTED ATTENUATOR

1. UTILIZE A TRUCK MOUNTED ATTENUATOR ATTACHED TO THE REAR OF A TRUCK WITH A MINIMUM GROSS VEHICLE WEIGHT (GVW) OF 15,000 POUNDS (ACTUAL WEIGHT). IF THE ADDITION OF SUPPLEMENTAL WEIGHT TO THE VEHICLE AS BALLAST IS NECESSARY, CONTAIN THE MATERIAL WITHIN A STRUCTURE CONSTRUCTED OF STEEL. CONSTRUCT THIS STEEL STRUCTURE TO HAVE A MINIMUM OF FOUR SIDES AND A BOTTOM. A TOP IS OPTIONAL. BOLT THIS STRUCTURE TO THE FRAME OF THE TRUCK. UTILIZE A SUFFICIENT NUMBER OF FASTENERS FOR ATTACHMENT OF THE STEEL STRUCTURE TO THE FRAME OF THE TRUCK TO ENSURE THE STRUCTURE WILL NOT SEPARATE FROM THE FRAME OF THE TRUCK DURING AN IMPACT UPON THE ATTACHED TRUCK MOUNTED ATTENUATOR. UTILIZE EITHER DRY LOOSE SAND OR STEEL REINFORCED CONCRETE FOR BALLAST MATERIAL WITHIN THE STEEL STRUCTURE TO ACHIEVE THE NECESSARY WEIGHT. THE BALLAST MATERIAL SHALL REMAIN CONTAINED WITHIN THE CONFINES OF THE STEEL STRUCTURE AND SHALL NOT PROTRUDE FROM THE STEEL STRUCTURE IN ANY MANNER.

2. LOCATE THE TRUCK MOUNTED ATTENUATOR 100 FEET IN ADVANCE OF THE WORK AREA UNLESS OTHERWISE SPECIFIED.

3. PROVIDE, INSTALL AND MAINTAIN THE TRUCK MOUNTED ATTENUATOR AS SPECIFIED BY THE STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER.

ADVANCE WARNING ARROW PANEL

ALL ADVANCE WARNING ARROW PANELS SHALL BE 48" x 80" WITH A MINIMUM LEGIBILITY DISTANCE OF 1 MILE. PLACEMENT OF AN ADVANCE WARNING ARROW PANEL MAY REQUIRE ADJUSTMENTS DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENT OR OTHER SIGHT DISTANCE RESTRICTIONS. THE PANEL FACE SHALL BE RETROREFLECTIVE BLACK. ALL ADVANCE WARNING ARROW PANELS SHALL COMPLY WITH THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION.

WHEN AN ADVANCE WARNING ARROW PANEL IS REQUIRED TO OPERATE IN THE CAUTION MODE, THE ADVANCE WARNING ARROW PANEL SHALL DISPLAY THE "FOUR CORNERS" CAUTION MODE, WITH ONE LAMP IN EACH CORNER. DISPLAY OF ANY OTHER TYPE OF CAUTION MODE OTHER THAN THE "FOUR CORNERS" CAUTION MODE SUCH AS THE "FLASHING BAY" OR THE "ALTERNATING DIAMOND" CAUTION MODES ARE UNACCEPTABLE AND PROHIBITED.

LEGEND

36" TRAFFIC CONES

WORK ZONE TRAFFIC CONTROL ENGINEER



SIGNATURE

8/2/12
DATE

DATE	BY	DESCRIPTION
8-10-11	JCS	GENERAL UPDATE
8-25-11	JCS	DRAWING NO. UPDATE
8-25-11	JCS	DESCRIPTION

SCDOT

South Carolina Department of Transportation
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

RIGHT SHOULDER CLOSURE
(CASE 1 / CASE 2)
PRIMARY ROUTES

610-205-00

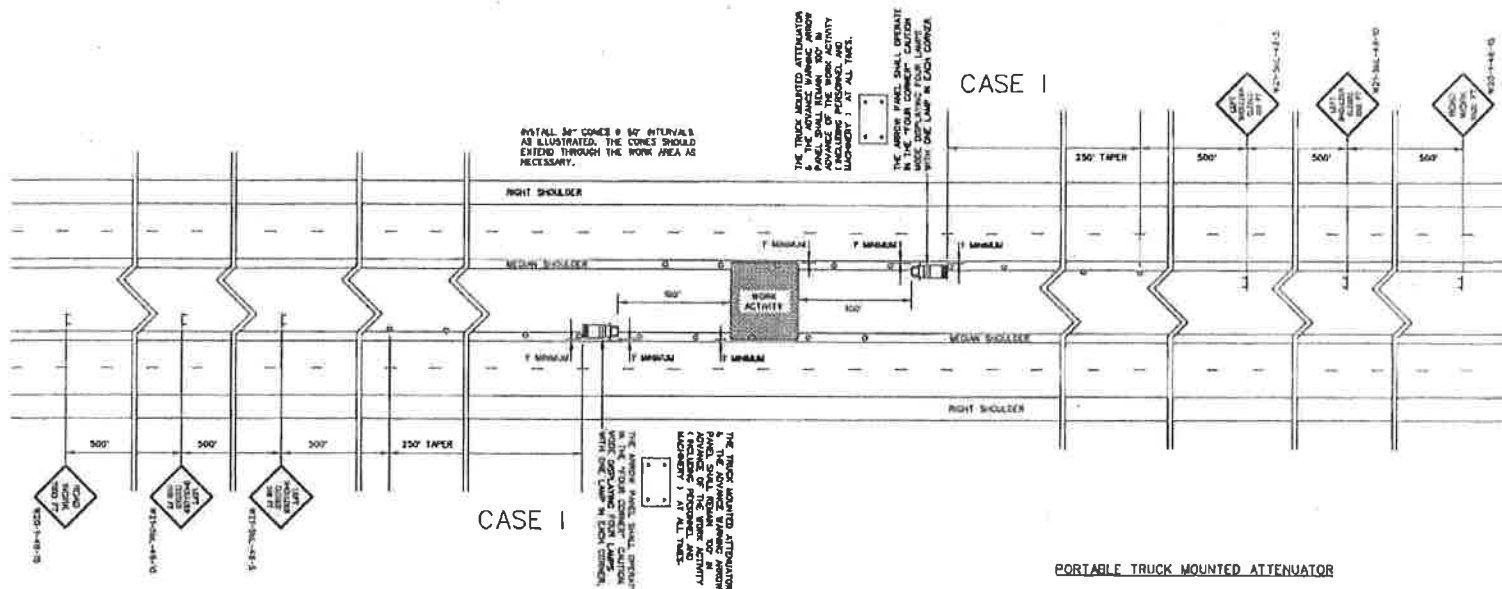
EFFECTIVE LITTING DATE: Spring, 2013. THIS DRAWING IS NOT TO SCALE

GENERAL NOTES

1. ALL SIGN LOCATIONS ARE TO BE MEASURED FROM THE WORK AREA. SIGN LIMITS FOR THE PROJECT WILL BE DETERMINED BY THE ENGINEER AND AS INDICATED IN THE CONTRACT.
2. INSTALL ADVANCE WARNING SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS NO LESS THAN 4 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH EARTH SHOULDERS AND NO LESS THAN 6 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH PAVED SHOULDERS. WHEN CURB & GUTTER IS PRESENT, INSTALL THE SIGN NO LESS THAN 3 FEET FROM THE NEAR EDGE OF THE SIGN TO THE FACE OF THE CURB.
3. SPACINGS INDICATED ARE FOR NORMAL CONDITIONS. ADJUSTMENTS MAY BE REQUIRED DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENTS OR OTHER SIGHT DISTANCE RESTRICTIONS.
4. ALL SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 5 FEET FROM THE GROUND TO THE BOTTOM OF THE SIGN. ALL SIGNS MOUNTED ON GROUND MOUNTED U-CURVED POSTS OR SQUARE STEEL TUBE POSTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 7 FEET FROM THE GRADE ELEVATION OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE TO THE BOTTOM OF THE SIGN UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. MOUNT ALL SIGNS STRAIGHT AND LEVEL AND WITH THE FACE OF THE SIGNS PERPENDICULAR TO THE SURFACE OF THE ROADWAY.
5. REFLECTORIZED ORANGE ADVANCE WARNING SIGNS AND ANY ORANGE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A FLUORESCENT ORANGE COLORED PRISMATIC RETROREFLECTIVE SHEETING. REFLECTORIZED WHITE REGULATORY SIGNS AND ANY WHITE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A WHITE COLORED PRISMATIC RETROREFLECTIVE SHEETING.
6. ALL TRAFFIC CONTROL DEVICES SHALL COMPLY WITH ALL MOWP REPORT 330 REQUIREMENTS AND SHALL REQUIRE APPROVAL BY THE DEPARTMENT. ONLY THOSE TRAFFIC CONTROL DEVICES INCLUDED ON THE "APPROVED PRODUCTS LIST FOR TRAFFIC CONTROL DEVICES IN WORK ZONES" ARE CONSIDERED ACCEPTABLE FOR USE. THIS LIST MAY BE ACCESSIBLE ON THE DEPARTMENT'S WEB SITE AT: www.scdot.org.
7. THE CONTRACTOR SHALL PROVIDE AND UTILIZE ANY SPECIAL SIGN MOUNTING ASSEMBLIES AND HARDWARE THAT MAY BE NECESSARY FOR INSTALLING AND MOUNTING SIGNS IN AREAS OF CONCRETE MEDIAN BARRIER, BRIDGE PARAPET WALLS OR DOUBLESIDE GUARDRAIL.

8. THE PRIMARY TRAFFIC CONTROL DEVICES UTILIZED FOR DAYTIME SHOULDER CLOSURES ARE 36" CONES. THE PRIMARY TRAFFIC CONTROL DEVICES UTILIZED FOR NIGHTTIME SHOULDER CLOSURES ARE PORTABLE PLASTIC DRUMS. DURING DAYTIME SHOULDER CLOSURES, 42" OVERSIZED CONES MAY BE SUBSTITUTED FOR 36" CONES. DURING NIGHTTIME SHOULDER CLOSURES, 42" OVERSIZED CONES ARE PROHIBITED FOR USE. IF THIS TRAFFIC CONTROL SETUP EXTENDS INTO THE HOURS OF DARKNESS, REPLACE ALL CONES, 36" OR 42" OVERSIZED, WITH PORTABLE PLASTIC DRUMS.
 9. THE 36" CONES UTILIZED DURING DAYLIGHT HOURS ARE NOT REQUIRED TO BE REFLECTORIZED. REFLECTORIZED ALL 42" OVERSIZED CONES UTILIZED DURING DAYTIME SHOULDER CLOSURES WITH TYPE II FLEXIBLE PRISMATIC RETROREFLECTIVE SHEETING UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. REFLECTORIZED ALL PORTABLE PLASTIC DRUMS WITH TYPE II FLEXIBLE PRISMATIC RETROREFLECTIVE SHEETING UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
 10. THE DEPARTMENT PROHIBITS CONDUCTING WORK ON PRIMARY AND SECONDARY ROUTES WITHIN 1' OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE UNDER A SHOULDER CLOSURE. ALL WORK THAT MAY REQUIRE THE PRESENCE OF EQUIPMENT, PERSONNEL, MATERIALS OR WORK VEHICLES WITHIN 1' OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE SHALL BE CONDUCTED UNDER A LANE CLOSURE.
- CASE 1: WHENEVER ANY PORTION OF THE SHOULDER AREA WITHIN 15' BUT NOT CLOSER THAN 7' OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE MUST BE OCCUPIED BY EQUIPMENT, PERSONNEL, MATERIALS OR WORK VEHICLES TO CONDUCT THE WORK, INSTALL AND MAINTAIN THE SIGNS AND TRAFFIC CONTROL DEVICES AS ILLUSTRATED.
- CASE 2: WHENEVER THE WORK IS CONDUCTED BEYOND 15' BUT WITHIN 30' OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE, INCLUDING THE PRESENCE OF EQUIPMENT, PERSONNEL, MATERIALS OR WORK VEHICLES, INSTALL AND MAINTAIN THE SIGNS AND TRAFFIC CONTROL AS ILLUSTRATED.

11. CONDUCT THE WORK IN SUCH A MANNER THAT WILL NOT REQUIRE ENCROACHMENT OF TRAFFIC CONTROL DEVICES, EQUIPMENT, PERSONNEL, MATERIALS OR ANY WORK RELATED VEHICLES WITHIN 1' OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE.
12. PLACE THE TRUCK MOUNTED ATTENUATOR AT A LOCATION 100' IN ADVANCE OF THE WORK ACTIVITY AND NO CLOSER THAN 1' FROM THE NEAR EDGE OF THE ADJACENT TRAVEL LANE.
13. FOR A CASE 2 SCENARIO IN THE LEFT SHOULDER AREA, ADJUST THE TAPER AS NECESSARY TO FIT THE WIDTH OF THE SHOULDER WHILE MAINTAINING THE REQUIRED 750' TAPER LENGTH.
14. IF WORK IS BEING CONDUCTED SIMULTANEOUSLY AT TWO DIFFERENT LOCATIONS AT THE SAME TIME UNDER CASE 1 SHOULDER CLOSURES, SEPARATE THE TWO LOCATIONS BY NO LESS THAN 1 MILE FROM THE END OF THE FIRST CASE 1 CLOSURE THAT A MOTORIST WILL ENCOUNTER TO THE BEGINNING OF THE TAPER OF THE SECOND CASE 1 CLOSURE. A MINIMUM SEPARATION DISTANCE OF ONE-HALF MILE IS RECOMMENDED BETWEEN SHOULDER CLOSURES WHEN ONE OR BOTH SHOULDER CLOSURES IS A CASE 1 CLOSURE.
15. THE DEPARTMENT RESERVES THE RIGHT TO RESTRICT WORK OPERATIONS AND/OR WITHHOLD THE MONTHLY ESTIMATE IF THE TRAFFIC CONTROL IS NOT PROPERLY INSTALLED AND MAINTAINED AS DIRECTED BY THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, THE STANDARD DRAWINGS, THE PLANS AND/OR THE ENGINEER.
16. THIS TYPICAL TRAFFIC CONTROL SETUP APPLIES TO THE INSTALLATION OF SHOULDER CLOSURES IN THE LEFT SHOULDER AREAS OF PRIMARY AND SECONDARY ROADWAYS.



ADVANCE WARNING ARROW PANEL

ALL ADVANCE WARNING ARROW PANELS SHALL BE 48" x 96" WITH A MINIMUM LEGIBILITY DISTANCE OF 1 MILE. PLACEMENT OF AN ADVANCE WARNING ARROW PANEL MAY REQUIRE ADJUSTMENTS DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENT OR OTHER SIGHT DISTANCE RESTRICTIONS. THE PANEL FACE SHALL BE RETROREFLECTIVE BLACK. ALL ADVANCE WARNING ARROW PANELS SHALL COMPLY WITH THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION.

WHEN AN ADVANCE WARNING ARROW PANEL IS REQUIRED TO OPERATE IN THE CAUTION MODE, THE ADVANCE WARNING ARROW PANEL SHALL DISPLAY THE "FOUR CORNERS" CAUTION MODE, WITH ONE LAMP IN EACH CORNER. DISPLAY OF ANY OTHER TYPE OF CAUTION MODE OTHER THAN THE "FOUR CORNERS" CAUTION MODE SUCH AS THE "FLASHING BAMP" OR THE "ALTERNATING WARNING" CAUTION MODES ARE UNACCEPTABLE AND PROHIBITED.

THIS DRAWING IS NOT TO SCALE

PORTABLE TRUCK MOUNTED ATTENUATOR

1. UTILIZE A TRUCK MOUNTED ATTENUATOR ATTACHED TO THE REAR OF A TRUCK WITH A MINIMUM CROSS VEHICULAR WEIGHT (LOAD OF 15,000 POUNDS (ACTUAL WEIGHT)). IF THE ADDITION OF SUPPLEMENTAL WEIGHT TO THE VEHICLE AS BALLAST IS NECESSARY, CONTAIN THE MATERIAL WITHIN A STRUCTURE CONSTRUCTED OF STEEL. CONSTRUCT THE STEEL STRUCTURE TO HAVE A MINIMUM OF FOUR SIDES AND A BOTTOM. A TOP IS OPTIONAL. BOLT THIS STRUCTURE TO THE FRAME OF THE TRUCK. UTILIZE A SUFFICIENT NUMBER OF FASTENERS FOR ATTACHMENT OF THE STEEL STRUCTURE TO THE FRAME OF THE TRUCK TO ENSURE THE STRUCTURE WILL NOT SEPARATE FROM THE FRAME OF THE TRUCK DURING AN IMPACT UPON THE ATTACHED TRUCK MOUNTED ATTENUATOR. UTILIZE EITHER ONE LOOSE SAND OR STEEL REINFORCED CONCRETE FOR BALLAST MATERIAL. WITHIN THE STEEL STRUCTURE TO ACHIEVE THE NECESSARY WEIGHT, THE BALLAST MATERIAL SHALL REMAIN CONTAINED WITHIN THE COFFERS OF THE STEEL STRUCTURE AND SHALL NOT PROTRUDE FROM THE STEEL STRUCTURE IN ANY MANNER.
2. LOCATE THE TRUCK MOUNTED ATTENUATOR 100 FEET IN ADVANCE OF THE WORK AREA UNLESS OTHERWISE SPECIFIED.
3. PROVIDE, INSTALL AND MAINTAIN THE TRUCK MOUNTED ATTENUATOR AS SPECIFIED BY THE STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER.

REFERENCES

WORK ZONE TRAFFIC CONTROL ENGINEER



SIGNATURE
8/2/12
DATE

#	DATE	CHK	DESCRIPTION
1	8-15-12	JCS	GENERAL UPDATE
2	8-15-12	JCS	DRAWING NO. UPDATE

SCDOT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

LEFT SHOULDER CLOSURE
(CASE 1 / CASE 2)
PRIMARY ROUTES

610-210-00
EFFECTIVE TESTING DATE: 2/15/13

REFERENCES

1. ALL SIGN LOCATIONS ARE TO BE MEASURED FROM THE WORK AREA. WORK LIMITS FOR THE PROJECT WILL BE DETERMINED BY THE ENGINEER AND AS INDICATED IN THE CONTRACT.
2. INSTALL ADVANCE WARNING SIGNS ON PORTABLE SIGN SUPPORTS NO LESS THAN 4 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH EARTH SHOULDER AND NO LESS THAN 8 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH PAVED SHOULDER. WHEN CURB & GUTTER IS PRESENT, INSTALL THE SIGN NO LESS THAN 3 FEET FROM THE NEAR EDGE OF THE SIGN TO THE FACE OF THE CURB.
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6. ALL TRAFFIC CONTROL DEVICES SHALL COMPLY WITH ALL NORTH CAROLINA 350 REQUIREMENTS AND SHALL REQUIRE APPROVAL BY THE DEPARTMENT. ONLY THOSE TRAFFIC CONTROL DEVICES INCLUDED ON THE "APPROVED PRODUCTS LIST" FOR TRAFFIC CONTROL DEVICES IN WORK ZONES ARE CONSIDERED ACCEPTABLE FOR USE. THIS LIST MAY BE ACCESSED ON THE DEPARTMENT'S WEB SITE AT: www.ncdot.org
7. THE CONTRACTOR SHALL PROVIDE AND UTILIZE ANY SPECIAL SIGN MOUNTING ASSEMBLIES AND HARDWARE THAT MAY BE NECESSARY FOR INSTALLING AND MOUNTING SIGNS IN AREAS OF CONCRETE MEDIAN BARRIER, BRIDGE PARAPET WALLS OR DOUBLE-ENDED GUARDRAIL.

GENERAL NOTES

8. THE PRIMARY TRAFFIC CONTROL DEVICES UTILIZED FOR DAYTIME SHOULDER CLOSURES ARE 36" CONES. THE PRIMARY TRAFFIC CONTROL DEVICES UTILIZED FOR NIGHTTIME SHOULDER CLOSURES ARE PORTABLE PLASTIC DRUMS. DURING DAYTIME SHOULDER CLOSURES, 42" OVERSIZED CONES MAY BE SUBSTITUTED FOR 36" CONES. DURING NIGHTTIME SHOULDER CLOSURES, 42" OVERSIZED CONES ARE PROHIBITED FOR USE. IF THIS TRAFFIC CONTROL SETUP EXTENDS INTO THE HOURS OF DARKNESS, REPLACE ALL CONES, 36" OR 42" OVERSIZED, WITH PORTABLE PLASTIC DRUMS.
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11. THE DEPARTMENT PROHIBITS CONDUCTING WORK ON PRIMARY AND SECONDARY ROUTES WITHIN 7' OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE UNDER A SHOULDER CLOSURE. ALL WORK THAT MAY REQUIRE THE PRESENCE OF EQUIPMENT, PERSONNEL, MATERIALS OR WORK VEHICLES WITHIN 7' OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE SHALL BE CONDUCTED UNDER A LANE CLOSURE.
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- CASE 2: WHENEVER THE WORK IS CONDUCTED BEYOND 15' BUT WITHIN 30' OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE, INCLUDING THE PRESENCE OF EQUIPMENT, PERSONNEL, MATERIALS OR WORK VEHICLES, INSTALL AND MAINTAIN THE SIGNING AND TRAFFIC CONTROL AS ILLUSTRATED.

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13. PLACE THE TRUCK MOUNTED ATTENUATOR AT A LOCATION 100' IN ADVANCE OF THE WORK ACTIVITY AND NO CLOSER THAN 7' FROM THE NEAR EDGE OF THE ADJACENT TRAVEL LANE.
14. FOR A CASE 1 SCENARIO IN THE LEFT SHOULDER AREA, ADJUST THE TAPER AS NECESSARY TO FIT THE WIDTH OF THE SHOULDER WHILE MAINTAINING THE REQUIRED 350' TAPER LENGTH.
15. IF WORK IS BEING CONDUCTED SIMULTANEOUSLY AT TWO DIFFERENT LOCATIONS AT THE SAME TIME UNDER CASE 1 SHOULDER CLOSURES, SEPARATE THE TWO LOCATIONS BY NO LESS THAN 1 MILE FROM THE END OF THE FIRST CASE 1 CLOSURE THAT A MOTORIST WILL ENCOUNTER TO THE BEGINNING OF THE TAPER OF THE SECOND CASE 1 CLOSURE. A MINIMUM SEPARATION DISTANCE OF ONE-HALF MILE IS RECOMMENDED BETWEEN SHOULDER CLOSURES WHEN ONE ON BOTH SHOULDER CLOSURES IS A CASE 6 CLOSURE.
16. THE DEPARTMENT RESERVES THE RIGHT TO RESTRICT WORK OPERATIONS AND/OR WITHHELD THE MONTHLY ESTIMATE IF THE TRAFFIC CONTROL IS NOT PROPERLY INSTALLED AND MAINTAINED AS DIRECTED BY THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, THE STANDARD DRAWINGS, THE PLANS AND/OR THE ENGINEER.
17. THIS TYPICAL TRAFFIC CONTROL SETUP APPLIES TO THE INSTALLATION OF SHOULDER CLOSURES IN THE LEFT SHOULDER AREAS OF PRIMARY AND SECONDARY ROADWAYS.

WORK ZONE TRAFFIC CONTROL ENGINEER



SIGNATURE

8/2/12
DATE

DATE	CON	DESCRIPTION
8-10-11	JCE	GENERAL UPDATE
8-24-07	JCS	DRAWING NO. UPDATE

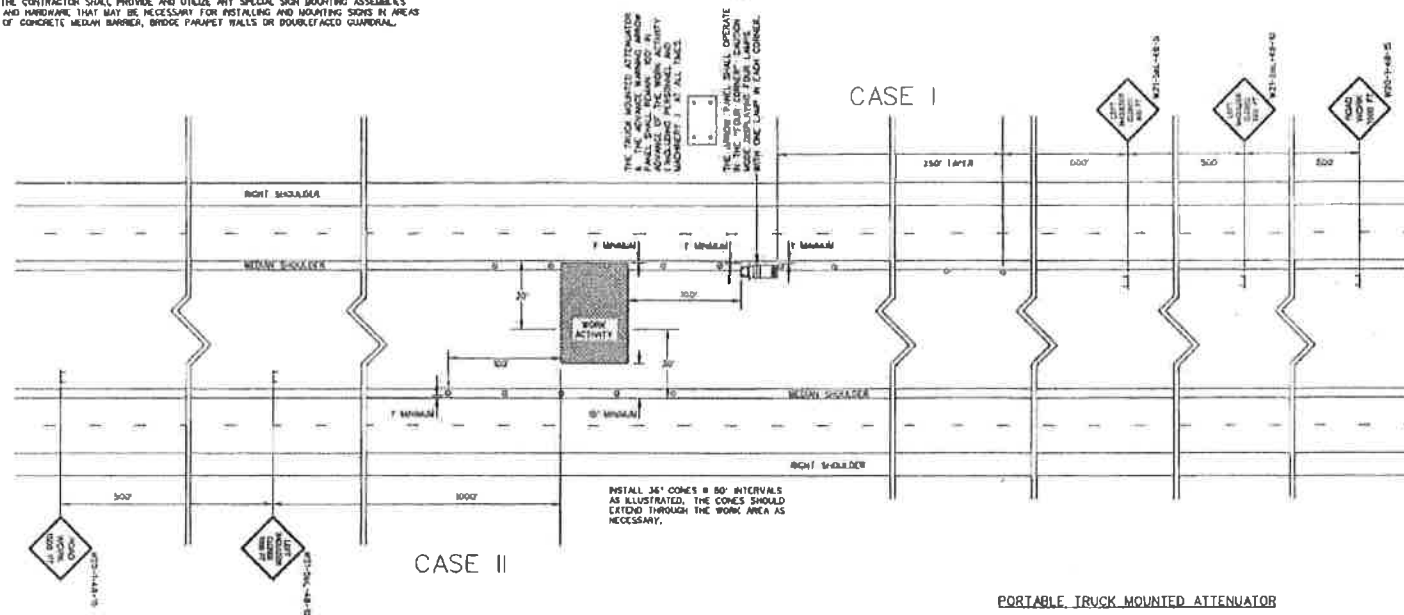
SCDOT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

LEFT SHOULDER CLOSURE
(CASE I / CASE II)
PRIMARY ROUTES

610-215-00

EFFECTIVE LITTING DATE: JAN, 2013 THIS DRAWING IS NOT TO SCALE



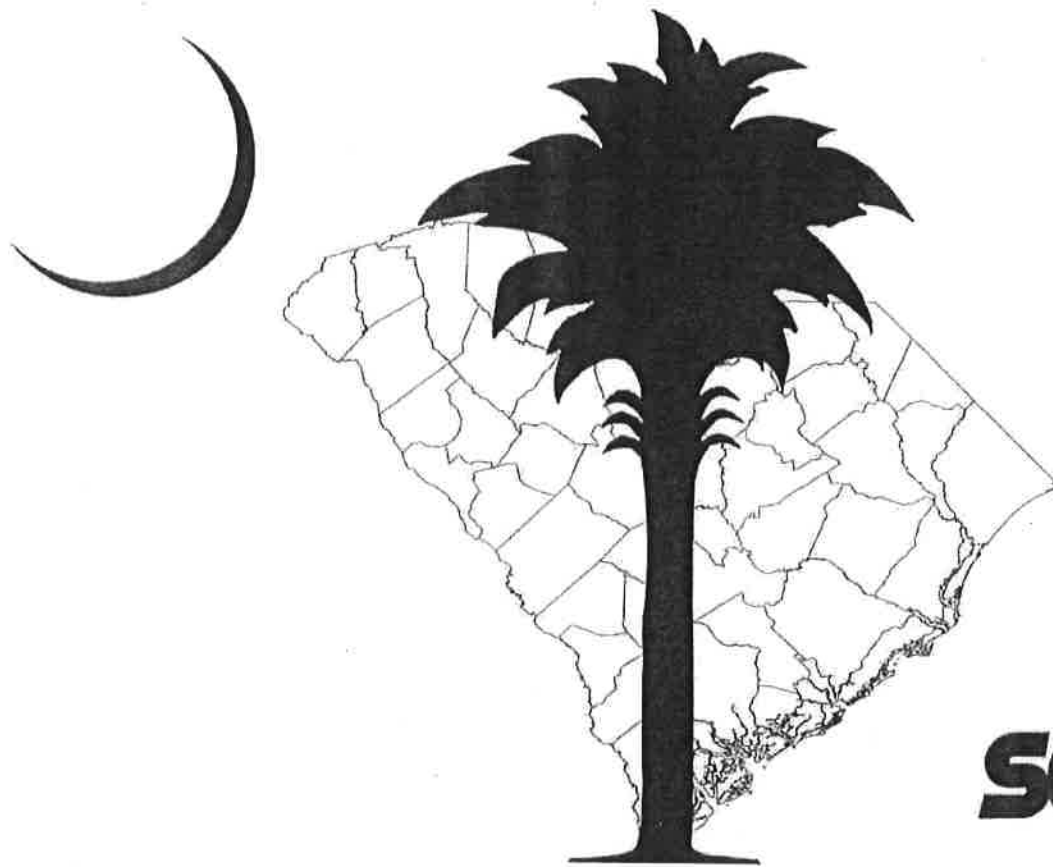
ADVANCE WARNING ARROW PANEL

ALL ADVANCE WARNING ARROW PANELS SHALL BE 40" x 90" WITH A MINIMUM LEGIBILITY DISTANCE OF 1 MILE. PLACEMENT OF AN ADVANCE WARNING ARROW PANEL MAY REQUIRE ADJUSTMENTS DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENT OR OTHER SIGHT DISTANCE RESTRICTIONS. THE PANEL FACE SHALL BE NONREFLECTIVE BLACK. ALL ADVANCE WARNING ARROW PANELS SHALL COMPLY WITH THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION.

WHEN AN ADVANCE WARNING ARROW PANEL IS REQUIRED TO OPERATE IN THE CAUTION MODE, THE ADVANCE WARNING ARROW PANEL SHALL DISPLAY THE "FOUR CORNERS" CAUTION MODE, WITH ONE LAMP IN EACH CORNER, DISPLAY OF ANY OTHER TYPE OF CAUTION MODE OTHER THAN THE "FOUR CORNERS" CAUTION MODE SUCH AS THE "FLASHER RAMP" OR THE "ALTERNATING DIAMOND" CAUTION MODES ARE UNACCEPTABLE AND PROHIBITED.

PORTABLE TRUCK MOUNTED ATTENUATOR

1. UTILIZE A TRUCK MOUNTED ATTENUATOR ATTACHED TO THE REAR OF A TRUCK WITH A MINIMUM GROSS VEHICLE WEIGHT (GVW) OF 15,000 POUNDS (ACTUAL WEIGHT). IF THE ADDITION OF SUPPLEMENTAL WEIGHT TO THE VEHICLE AS BALLAST IS NECESSARY, CONTAIN THE MATERIAL WITHIN A STRUCTURE CONSTRUCTED OF STEEL. CONSTRUCT THIS STEEL STRUCTURE TO HAVE A MINIMUM OF FOUR SIDES AND A BOTTOM. A TOP IS OPTIONAL. BOLT THIS STRUCTURE TO THE FRAME OF THE TRUCK. UTILIZE A SUFFICIENT NUMBER OF FASTENERS FOR ATTACHMENT OF THE STEEL STRUCTURE TO THE FRAME OF THE TRUCK TO ENSURE THE STRUCTURE WILL NOT SEPARATE FROM THE FRAME OF THE TRUCK DURING AN IMPACT UPON THE ATTACHED TRUCK MOUNTED ATTENUATOR. UTILIZE EITHER DRY LOOSE SAND OR STEEL REINFORCED CONCRETE FOR BALLAST MATERIAL WITHIN THE STEEL STRUCTURE TO ACHIEVE THE NECESSARY WEIGHT. THE BALLAST MATERIAL SHALL REMAIN CONTAINED WITHIN THE CONTOUR OF THE STEEL STRUCTURE AND SHALL NOT PROTRUDE FROM THE STEEL STRUCTURE IN ANY MANNER.
2. LOCATE THE TRUCK MOUNTED ATTENUATOR 100 FEET IN ADVANCE OF THE WORK AREA UNLESS OTHERWISE SPECIFIED.
3. PROVIDE, INSTALL AND MAINTAIN THE TRUCK MOUNTED ATTENUATOR AS SPECIFIED BY THE STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER.



SCDOT

LANE CLOSURES SECONDARY
& PRIMARY ROUTES

SCDOT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

SECTION
610-000

REFERENCES

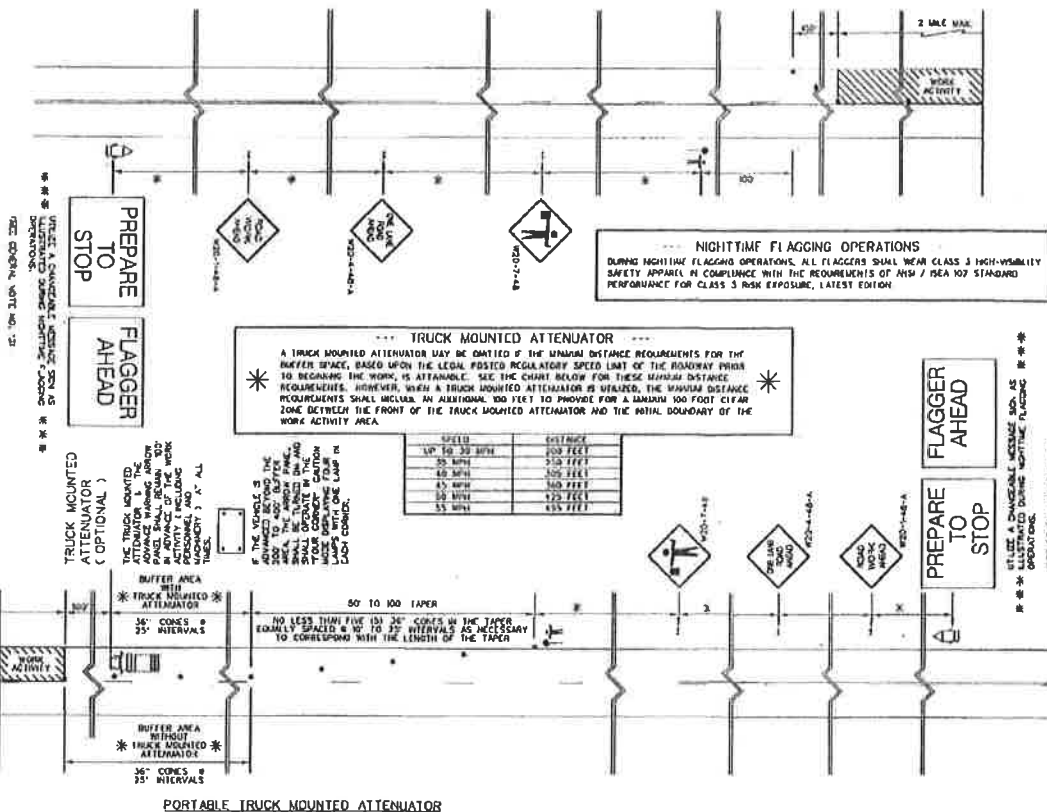
GENERAL NOTES

- [illegible]

ADVANCE WARNING ARROW PANEL

DURING FLAGGED OPERATIONS, AN ADVANCE WARNING ARMOR PANEL SHALL OPERATE IN THE "FOUR CORNERS" CAUTION MODE ONLY. DISPLAY OF AN ARROW OR CHEVRON OPERATING MODE OR ANY OTHER TYPE OF CAUTION MODE OTHER THAN THE "FOUR CORNERS" IS PROHIBITED DURING FLAGGED OPERATIONS.

ALL ADVANCE WARNING ARROW PANELS SHALL BE 60" x 96" WITH A MINIMUM LEGIBILITY DISTANCE OF 1 MILE. PLACEMENT OF AN ADVANCE WARNING ARROW PANEL MAY REQUIRE ADJUSTMENTS DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENT OR OTHER SIGHT DISTANCE RESTRICTIONS. THE PANEL FACE SHALL BE HIGH-REFLECTIVE BLACK. ALL ADVANCE WARNING ARROW PANELS SHALL COMPLY WITH THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION 2003.



TRAFFIC CONTROL DEVICES NOTE

THE CONTRACTOR SHALL DELINEATE THE TANGENT AREA OF THE LANE CLOSURE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL RELocate THE TANGENT AREA OF THE LANE CLOSURE DURING WORK OPERATIONS THAT CREATE GRADE ELEVATION DIFFERENCES GREATER THAN 2 FEET WITHIN OR ADJACENT TO THE CLOSED TRAVEL LANE UNLESS

THE CONTRACTOR SHALL MAINTAIN THE TANGENT AREA OF THE LANE CLOSURE WITH EITHER PORTABLE PLASTIC DRAWS OR OVSIZED CONES DURING NIGHTTIME FLAGGING OPERATIONS.

ROAD TYPE	密	中	稀
< 35 MPH (LOW SPEED)	700	200	200
40 - 50 MPH (MEDIUM DENSITY ROAD)	350	350	350
55 MPH (HIGH SPEED)	500	500	500

- REGULATORY POSTED SPEED LIMIT

WORK ZONE TRAFFIC
CONTROL ENGINEER



SIGNATURE
8/2013
date

6	1-3-15	JCS	IMA UPDATE OPTIMIZATION
5	8-1-11	JCS	IMA UPDATE
4	1-5-11	JCS	SCR MANAGER UPDATE
3	8-28-09	JCS	IC DRUCKS NOTE REV
2	8-8-09	JCS	IC DEVICE UPDATE
1	2-27-08	JCS	FLADDER STATION REV
0	6-20-01	JCS	DRINKING HD. UPDATE
	DATE	FW	DESCRIPTION

SCDOT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

FLAGGING
OPERATIONS
TWO-LANE TWO-WAY
PRIMARY &
SECONDARY ROUTES

610-005-00

EFFECTIVE LIFTING DATE 1/16, 2013 THIS DRAWING IS NOT TO SCALE

GENERAL NOTES

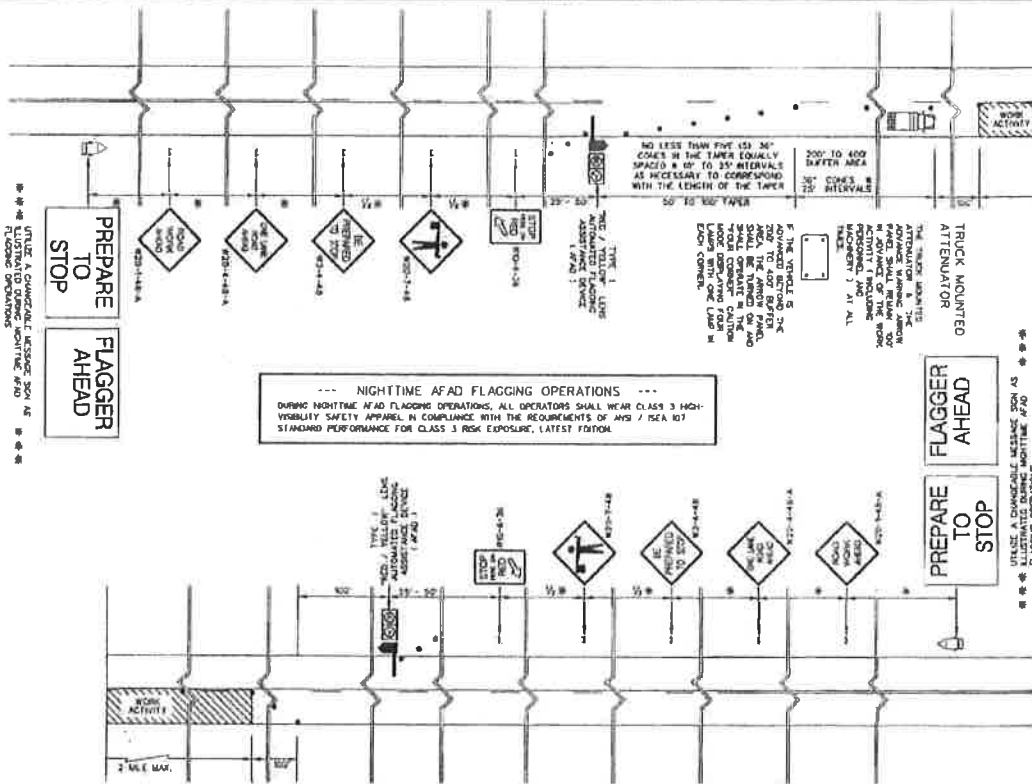
1. ALL SIGN LOCATIONS ARE TO BE MEASURED FROM THE WORK AREA, FROM LIMITS FOR THE PROJECT WILL BE DETERMINED BY THE ENGINEER AND AS INDICATED IN THE CONTRACT.
2. INSTALL ADVANCE WARNING SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS NO LESS THAN 4 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH EARTH SHOULDER AND NO LESS THAN 6 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH PAVED SHOULDER. WHEN CURB & GUTTER IS PRESENT, INSTALL THE SIGN NO LESS THAN 2 FEET FROM THE NEAR EDGE OF THE SIGN TO THE FACE OF THE CURB.
3. SPACINGS INDICATED ARE FOR NORMAL CONDITIONS. ADJUSTMENTS MAY BE REQUIRED DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENTS OR OTHER SIGN DISTANCE RESTRICTIONS.
4. ALL SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 3 FEET FROM THE GROUND TO THE BOTTOM OF THE SIGN. ALL SIGNS MOUNTED ON GROUND MOUNTED U-CURVED POSTS OR SOLID STEEL TUBE POSTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 7 FEET FROM THE GRADE ELEVATION OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE TO THE BOTTOM OF THE SIGN UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. MOUNT ALL SIGNS STRAIGHT AND LEVEL AND WITH THE FACE OF THE SIGNS PERPENDICULAR TO THE SURFACE OF THE ROADWAY.
5. REFLECTORIZE ORANGE ADVANCE WARNING SIGNS AND ANY ORANGE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A FLUORESCENT ORANGE COLORED PNEUMATIC RETROREFLECTIVE SHEETING. REFLECTORIZE WHITE REGULATORY SIGNS AND ANY WHITE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A WHITE COLORED PNEUMATIC RETROREFLECTIVE SHEETING.
6. ALL TRAFFIC CONTROL DEVICES SHALL COMPLY WITH ALL WORK REPORT 350 REQUIREMENTS AND SHALL REQUIRE APPROVAL BY THE DEPARTMENT. ONLY THOSE TRAFFIC CONTROL DEVICES INCLUDED ON THE "APPROVED PRODUCTS LIST FOR TRAFFIC CONTROL DEVICES IN WORK ZONES" ARE CONSIDERED ACCEPTABLE FOR USE. THIS LIST MAY BE ACCESSSED ON THE DEPARTMENT'S WEB SITE AT: www.scdot.gov.
7. REFLECTORIZATION OF 36" TRAFFIC CONES USED DURING DAYLIGHT HOURS IS NOT REQUIRED. IF THIS TRAFFIC CONTROL SETUP EXTENDS INTO THE NIGHTTIME HOURS, REPLACE ALL 36" TRAFFIC CONES WITH EITHER PORTABLE PLASTIC ORANGE OR 42" OVERSIZED TRAFFIC CONES. REFLECTORIZE ALL PORTABLE PLASTIC ORANGE AND 42" OVERSIZED TRAFFIC CONES WITH TYPE B FLUORESCENT PNEUMATIC RETROREFLECTIVE SHEETING UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
8. LANE CLOSURES ARE RESTRICTED TO A MAXIMUM DISTANCE OF 2 MILES UNLESS OTHERWISE DIRECTED BY THE SPECIAL PROVISIONS, THE PLANS AND/OR THE DIRECTION OF TRAFFIC ENGINEERING.
9. INSTALL, CONDUCT AND MAINTAIN AFAD FLAGGING OPERATIONS IN ACCORDANCE WITH THIS STANDARD DRAWING AND THE SUPPLEMENTAL SPECIFICATION FOR TRAILER MOUNTED AUTOMATED FLAGGING ASSISTANCE DEVICES (AFAD), THE AUTO AND THE "SOUTH CAROLINA FLAGGERS HANDBOOK" UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. DIRECT ALL SIGNS RELATIVE TO AN AFAD FLAGGING OPERATION PRIOR TO INITIATION OF THE OPERATION AND REMOVE OR COVER ALL SIGNS IMMEDIATELY UPON TERMINATION OF THE OPERATION.
10. EACH AFAD OPERATOR SHALL BE A RECIPIENT OF AND HAVE SUCCESSFULLY COMPLETED A FLAGGER TRAINING COURSE SPONSORED BY A SCDOT APPROVED WORK ZONE TRAFFIC CONTROL TRAINING PROVIDER.
11. EACH AFAD OPERATOR SHALL BE A RECIPIENT OF AND HAVE SUCCESSFULLY COMPLETED INSTRUCTION IN THE OPERATION OF THE AFAD BY THE MANUFACTURER OF THE AFAD BEING OPERATED. INSTRUCTION IN THE OPERATION OF THE UNIT DOES NOT QUALIFY THE OPERATOR TO OPERATE AN AFAD UNLESS APPROVED BY ANOTHER MANUFACTURER.
12. THE AFAD OPERATOR SHALL CONTROL THE AFAD FROM A LOCATION WITH AN UNOBSTRUCTED VIEW OF THE AFAD AND THE APPROACHING TRAFFIC.
13. INSTALL AND MAINTAIN THE PROPER ARRAY OF ADVANCE WARNING SIGNS FOR EACH APPROACH WHEN AN AFAD FLAGGING OPERATION IS IN PLACE AND ACTIVE. WHEN NECESSARY TO RELOCATE THE AFAD FLAGGING STATION WHILE ACTIVELY MAINTAINING THE AFAD FLAGGING OPERATION, INSTALL AN ADDITIONAL ARRAY OF ADVANCE WARNING SIGNS AT THE NEW LOCATION FOR THE AFAD FLAGGER STATION AND COMPLETE THE RELOCATION OF THE AFAD FLAGGER STATION PRIOR TO REMOVING THE ORIGINAL ARRAY OF ADVANCE WARNING SIGNS.
14. DURING NIGHTTIME AFAD FLAGGING OPERATIONS, ILLUMINATE EACH AFAD FLAGGER STATION WITH ANY COMBINATION OF PORTABLE LIGHTS, STANDARD ELECTRIC LIGHTS, EXISTING STREET LIGHTS, ETC., THAT PROVIDE A MINIMUM ILLUMINATION LEVEL OF .010 Lx ON TO.
15. DURING NIGHTTIME AFAD FLAGGING OPERATIONS, AFAD OPERATORS SHALL WEAR SAFETY APPAREL THAT MEET THE REQUIREMENTS OF 19C/SCS 107, STANDARD PERFORMANCE FOR CLASS 3 RISK EXPOSURE, LATEST EDITION, AND A FLUORESCENT VEST.
16. DURING NIGHTTIME AFAD FLAGGING OPERATIONS, SUPPLEMENT EACH ARRAY OF ADVANCE WARNING SIGNS ON EACH APPROACH WITH A TRAILER MOUNTED CHANGEABLE MESSAGE SIGN. THESE CHANGEABLE MESSAGE SIGNS ARE NOT REQUIRED DURING DAYTIME AFAD FLAGGING OPERATIONS. INSTALL THE CHANGEABLE MESSAGE SIGNS IN ADVANCE OF THE ADVANCE WARNING SIGN ARRAYS. THE MESSAGE SHOULD BE "PREPARE TO STOP" / "FLAGGER AHEAD". A TRAILER MOUNTED CHANGEABLE MESSAGE SIGN IS NOT AN ACCEPTABLE ALTERNATIVE TO A TRAILER MOUNTED MESSAGE SIGN DURING AFAD FLAGGING OPERATIONS.
17. CONDUCT THE WORK IN SUCH A MANNER SO AS NOT TO ENDOURCH ONTO THE ADJACENT TRAVEL LANE OPEN TO TRAFFIC. INSTALL, MAINTAIN AND ADJUST THE TRAFFIC CONTROL DEVICES AS NECESSARY TO ENSURE PROPER DELINEATION OF THE WORK AREA.
18. IF WORK IS BEING CONDUCTED AT TWO DIFFERENT LOCATIONS AT THE SAME TIME, THE TWO LOCATIONS ARE TO BE SEPARATED BY NO LESS THAN 2 MILES FROM THE END OF THE FIRST LANE CLOSURE TO THE BEGINNING OF THE TAPER OF THE SECOND LANE CLOSURE.
19. THE DEPARTMENT RESERVES THE RIGHT TO RESTRICT WORK OPERATIONS AND/OR WITHHOLD THE MONTHLY ESTIMATE IF THE TRAFFIC CONTROL IS NOT PROPERLY MAINTAINED AS DIRECTED BY THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, THE STANDARD DRAWINGS, THE PLANS AND/OR THE ENGINEER.

ADVANCE WARNING ARROW PANEL

DURING AFAD FLAGGING OPERATIONS, AN ADVANCE WARNING ARROW PANEL SHALL OPERATE IN THE "FOUR CORNERS" CAUTION MODE ONLY. DISPLAY OF AN ARROW OR CHEVRON OPERATING MODE OR ANY OTHER TYPE OF CAUTION MODE OTHER THAN THE "FOUR CORNERS" IS PROHIBITED DURING AFAD FLAGGING OPERATIONS.

ALL ADVANCE WARNING ARROW PANELS SHALL BE 48" x 96" WITH A MINIMUM LEGIBILITY DISTANCE OF 1 MILE. PLACEMENT OF AN ADVANCE WARNING ARROW PANEL MAY INCURE ADJUSTMENTS DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENT OR OTHER SIGN DISTANCE RESTRICTIONS. THE PANEL FACE SHALL BE RETROREFLECTIVE BLACK. ALL ADVANCE WARNING ARROW PANELS SHALL COMPLY WITH THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION.

THIS DRAWING IS NOT TO SCALE



PORTABLE TRUCK MOUNTED ATTENUATOR

1. UTILIZE A TRUCK MOUNTED ATTENUATOR ATTACHED TO THE REAR OF A TRUCK WITH A MINIMUM GROSS VEHICLE WEIGHT (GVW) OF 10,000 POUNDS (ACTUAL WEIGHT). IF THE ADDITION OF SUPPLEMENTAL WEIGHT TO THE VEHICLE AS BALLAST IS NECESSARY, CONTAIN THE MATERIAL WITHIN A STRUCTURE CONSTRUCTED OF STEEL. CONSTRUCT THIS STEEL STRUCTURE TO HAVE A MINIMUM OF FOUR SIDES AND A BOTTOM TO CONTAIN THE BALLAST MATERIAL IN ITS ENTIRETY. A TOP IS OPTIONAL. BOLT THIS STRUCTURE TO THE FRAME OF THE TRUCK. UTILIZE A SUFFICIENT NUMBER OF FASTENERS FOR ATTACHMENT OF THE STEEL STRUCTURE TO THE FRAME OF THE TRUCK TO ENSURE THE STRUCTURE WILL NOT SEPARATE FROM THE FRAME OF THE TRUCK DURING AN IMPACT UPON THE ATTACHED TRUCK MOUNTED ATTENUATOR. UTILIZE EITHER DRY LOOSE SAND OR STEEL REINFORCED CONCRETE FOR BALLAST MATERIAL WITHIN THE STEEL STRUCTURE TO ACHIEVE THE NECESSARY WEIGHT. THE BALLAST MATERIAL SHALL REMAIN CONTAINED WITHIN THE CONFINES OF THE STEEL STRUCTURE AND SHALL NOT PROTRUDE FROM THE STEEL STRUCTURE IN ANY MANNER.
2. LOCATE THE TRUCK MOUNTED ATTENUATOR 100 FEET IN ADVANCE OF THE WORK AREA UNLESS OTHERWISE SPECIFIED.
3. PROVIDE, INSTALL AND MAINTAIN THE TRUCK MOUNTED ATTENUATOR AS SPECIFIED BY THE STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER.
4. A TRUCK MOUNTED ATTENUATOR SUPPLEMENTED WITH AN ADVANCE WARNING ARROW PANEL MAY BE REPLACED WITH A TRAILER MOUNTED ADVANCE WARNING ARROW PANEL WHEN THE TRAFFIC CONTROL SETUP IS UTILIZED FOR ASPHALT CONCRETE PLACEMENT OPERATIONS. REPLACEMENT WITH A TRAILER MOUNTED ADVANCE WARNING ARROW PANEL SHALL REQUIRE THE ENGINEER'S APPROVAL.

TRAFFIC CONTROL DEVICES NOTE

DELINEATE THE TANGENT AREA OF A LANE CLOSURE UNLESS OTHERWISE DIRECTED BY THE ENGINEER. DELINEATE THE TANGENT AREA OF A LANE CLOSURE WITH EITHER PORTABLE PLASTIC ORANGE OR 42" OVERSIZED TRAFFIC CONES DURING NIGHTTIME AFAD FLAGGING OPERATIONS.

SINGLE OPERATOR PROHIBITION

AN AUTOMATED FLAGGING ASSISTANCE DEVICES (AFAD) SYSTEM SHALL REQUIRE NO LESS THAN TWO (2) AFAD UNITS AND TWO (2) AFAD UNIT OPERATORS. OPERATION OF AN AFAD FLAGGING OPERATION BY ONE (1) OPERATOR IS PROHIBITED. AN OPERATOR IS REQUIRED FOR EACH AFAD UNIT.

SIGN PLACEMENT INTERVALS			
ROAD TYPE	A	B	C
1. 25 MPH (LOW SPEED)	200	200	200
2. 40 - 50 MPH (INTERMEDIATE SPEED)	350	350	350
3. 55 MPH (HIGH SPEED)	500	500	500

* REGULATORY POSTED SPEED LIMIT PRIOR TO BEGINNING WORK

REFERENCES

WORK ZONE TRAFFIC CONTROL ENGINEER



Signature: *Willie E. McConnell*
Date: 8/2/12

NO.	DATE	BY	DESCRIPTION
1	6-29-10	JCS	NEW DRAWING



SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

AUTOMATED FLAGGING ASSISTANCE DEVICES
(AFAD)
TYPE 1
"RED / YELLOW" LENS

610-006-01
EFFECTIVE LATE 2011 EDITION, 2011

REFERENCES

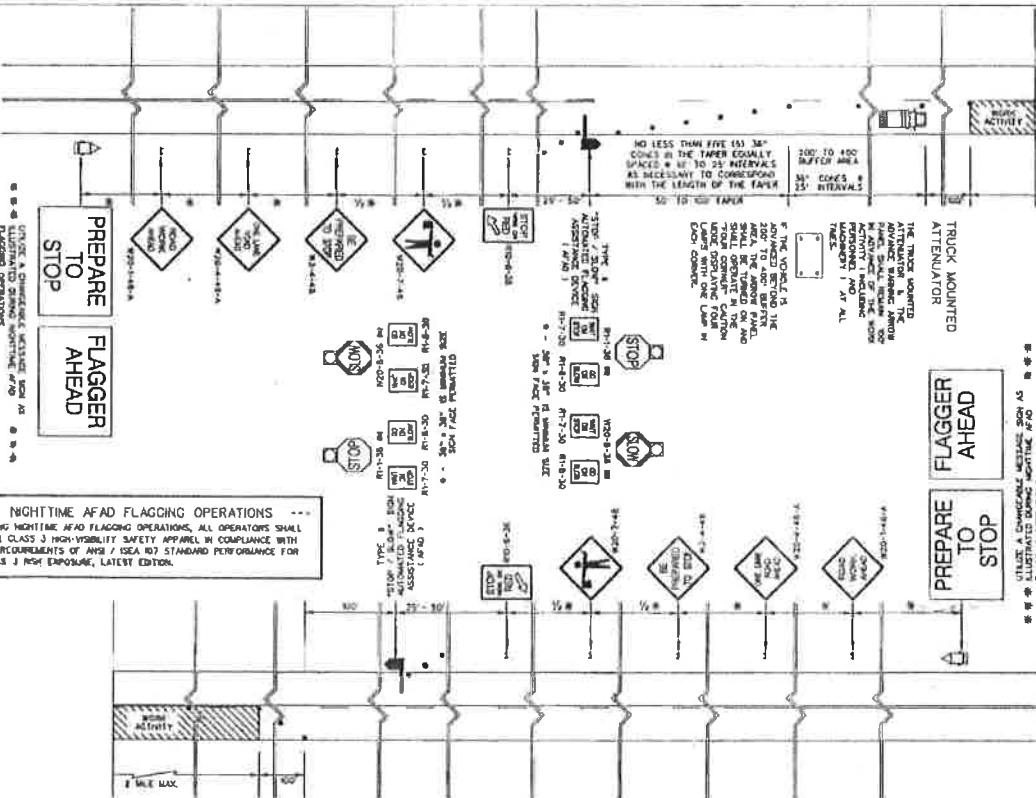
GENERAL NOTES

1. ALL SIGN LOCATIONS ARE TO BE MEASURED FROM THE WORK AREA. WORK LIMITS FOR THE PROJECT WILL BE DETERMINED BY THE ENGINEER AND AS INDICATED IN THE CONTRACT.
2. INSTALL ADVANCE WARNING SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS NO LESS THAN 4 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH EARTH SHOULDER AND NO LESS THAN 6 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH PAVED SHOULDER. WHEN CURB & GUTTER IS PRESENT, INSTALL THE SIGN NO LESS THAN 2 FEET FROM THE NEAR EDGE OF THE SIGN TO THE FACE OF THE CURB.
3. SPACINGS INDICATED ARE FOR NORMAL CONDITIONS. ADJUSTMENTS MAY BE REQUIRED DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENTS OR OTHER SIGHT DISTANCE RESTRICTIONS.
4. ALL SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 5 FEET FROM THE GROUND TO THE BOTTOM OF THE SIGN. ALL SIGNS MOUNTED ON GROUND MOUNTED U-SHAPED POSTS OR SQUARE STEEL TUBE POSTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 7 FEET FROM THE GRADE ELEVATION OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE TO THE BOTTOM OF THE SIGN UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. MOUNT ALL SIGNS STRAIGHT AND LEVEL AND WITH THE FACE OF THE SIGNS PERPENDICULAR TO THE SURFACE OF THE ROADWAY.
5. REFLECTORIZED ORANGE ADVANCE WARNING SIGNS AND ANY ORANGE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A FLUORESCENT ORANGE COLORED PRISMATIC RETROREFLECTIVE SHEETING, REFLECTORIZED WHITE REGULATORY SIGNS AND ANY WHITE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A WHITE COLORED PRISMATIC RETROREFLECTIVE SHEETING.
6. ALL TRAFFIC CONTROL DEVICES SHALL COMPLY WITH ALL MHPRP REPORT 350 REQUIREMENTS AND SHALL REQUIRE APPROVAL BY THE DEPARTMENT. ONLY THOSE TRAFFIC CONTROL DEVICES INCLUDED ON THE "APPROVED PRODUCTS LIST FOR TRAFFIC CONTROL DEVICES IN WORK ZONES" ARE CONSIDERED ACCEPTABLE FOR USE. THE LIST MAY BE ACCESSIBLE ON THE DEPARTMENT'S WEB SITE AT: www.scdot.org.
7. REFLECTORIZATION OF 36" TRAFFIC CONES USED DURING DAYLIGHT HOURS IS NOT REQUIRED. IF THE TRAFFIC CONES SETUP EXTENDS INTO THE NIGHTTIME HOURS, REPLACE ALL 36" TRAFFIC CONES WITH OTHER PORTABLE PLASTIC DRUMS OR 42" OVERSIZE TRAFFIC CONES. REFLECTORIZE ALL PORTABLE PLASTIC DRUMS AND 42" OVERSIZE TRAFFIC CONES WITH TYPE B FLEXIBLE PRISMATIC RETROREFLECTIVE SHEETING UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
8. LANE CLOSURES ARE RESTRICTED TO A MAXIMUM DISTANCE OF 2 MILES UNLESS OTHERWISE DIRECTED BY THE SPECIAL PROVISIONS, THE PLANS AND/OR THE DIRECTION OF TRAFFIC ENGINEERING.
9. INSTALL, CONDUCT AND MAINTAIN AFD FLAGGING OPERATIONS IN ACCORDANCE WITH THIS STANDARD DRAWING AND THE SUPPLEMENTAL SPECIFICATION FOR TRAILER MOUNTED AUTOMATED FLAGGING ASSISTANCE DEVICE SYSTEMS, THE MATED AND THE "SOUTH CAROLINA FLAGGER'S HANDBOOK" UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. ERECT ALL SIGNS RELATIVE TO AN AFD FLAGGING OPERATION PRIOR TO INITIATION OF THE OPERATION AND REMOVE OR COVER ALL SIGNS IMMEDIATELY UPON COMPLETION OF THE OPERATION.
10. EACH AFD OPERATOR SHALL BE A RECIPIENT OF AND HAVE SUCCESSFULLY COMPLETED A FLAGGER TRAINING COURSE SPONSORED BY A SCDOT APPROVED WORK ZONE TRAFFIC CONTROL TRAINING PROVIDER.
11. EACH AFD OPERATOR SHALL BE A RECIPIENT OF AND HAVE SUCCESSFULLY COMPLETED INSTRUCTION IN THE OPERATION OF THE AFD BY THE MANUFACTURER OF THE AFD BEING OPERATED. INSTRUCTION IN THE OPERATION OF THE UNIT DOES NOT QUALIFY THE OPERATOR TO OPERATE AN AFD UNLESS MANUFACTURED BY ANOTHER MANUFACTURER.
12. THE AFD OPERATOR SHALL CONTROL THE AFD FROM A LOCATION WITH AN UNOBSTRUCTED VIEW OF THE AFD AND THE APPROACHING TRAFFIC.
13. INSTALL AND MAINTAIN THE PROPER ARRAY OF ADVANCE WARNING SIGNS FOR EACH APPROACH WHEN AN AFD FLAGGING OPERATION IS IN PLACE AND ACTIVE. WHEN NECESSARY TO RELOCATE THE AFD FLAGGER STATION WHILE ACTIVELY MAINTAINING THE AFD FLAGGING OPERATION, INSTALL AN ADDITIONAL ARRAY OF ADVANCE WARNING SIGNS AT THE NEW LOCATION FOR THE AFD FLAGGER STATION AND COMPLETE THE RELOCATION OF THE AFD FLAGGER STATION PRIOR TO REMOVING THE ORIGINAL ARRAY OF ADVANCE WARNING SIGNS.
14. DURING NIGHTTIME AFD FLAGGING OPERATIONS, ILLUMINATE EACH AFD FLAGGER STATION WITH ANY COMBINATOR OF PORTABLE LIGHTS, STANDING ELECTRIC LIGHTS, EXISTING STREET LIGHTS, ETC., THAT PROVIDE A MINIMUM ILLUMINATION LEVEL OF 100 Lx ON 10 ft.
15. DURING NIGHTTIME AFD FLAGGING OPERATIONS, AFD OPERATORS SHALL WEAR SAFETY APPARATUS THAT MEET THE REQUIREMENTS OF ANSI/ISEA 107, STANDARD PERFORMANCE FOR CLASS 3 HIGH EXPOSURE, LAL(S) VESTS, AND A FLUORESCENT HAZARD.
16. DURING NIGHTTIME AFD FLAGGING OPERATIONS, SUPPLEMENT EACH ARRAY OF ADVANCE WARNING SIGNS ON EACH APPROACH WITH A TRAILER MOUNTED CHANGEBLE MESSAGE SIGN. THESE CHANGEBLE MESSAGE SIGNS ARE NOT REQUIRED DURING DAYTIME AFD FLAGGING OPERATIONS. INSTALL THE CHANGEBLE MESSAGE SIGNS IN ADVANCE OF THE ADVANCE WARNING SIGN ARRAYS. THE MESSAGES SHOULD BE "PREPARE TO STOP", "FLAGGER AHEAD", A TRAILER MOUNTED CHANGEBLE MESSAGE SIGN IS NOT AN ACCEPTABLE SUBSTITUTE TO A TRAILER MOUNTED CHANGEBLE MESSAGE SIGN DURING AFD FLAGGING OPERATIONS.
17. CONDUCT THE WORK IN SUCH A MANNER SO AS NOT TO ENCROACH ONTO THE ADJACENT TRAVEL LANE OPEN TO TRAFFIC. INSTALL, MAINTAIN AND ADJUST THE TRAFFIC CONTROL DEVICES AS NECESSARY TO ENSURE PROPER DELINEATION OF THE WORK AREA.
18. IF WORK IS BEING CONDUCTED AT TWO DIFFERENT LOCATIONS AT THE SAME TIME, THE TWO LOCATIONS ARE TO BE SEPARATED BY NO LESS THAN 3 MILES FROM THE END OF THE FIRST LANE CLOSURE TO THE BEGINNING OF THE TAPER OF THE SECOND LANE CLOSURE.
19. THE DEPARTMENT RESERVES THE RIGHT TO RESTRICT WORK OPERATIONS AND/OR WITHHOLD THE MONTHLY ESTIMATE IF THE TRAFFIC CONTROL IS NOT PROPERLY INSTALLED AND MAINTAINED AS DIRECTED BY THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, THE STANDARD DRAWINGS, THE PLANS AND/OR THE ENGINEER.

ADVANCE WARNING ARROW PANEL

DURING AFD FLAGGING OPERATIONS, AN ADVANCE WARNING ARROW PANEL SHALL OPERATE IN "STOP" OR "SLOW" MODE ONLY. DISPLAY OF AN ARROW OR OTHER OPERATIONAL MODE OR ANY OTHER TYPE OF CAUTION MODE OTHER THAN THE "STOP" OR "SLOW" MODE IS PROHIBITED DURING AFD FLAGGING OPERATIONS.

ALL ADVANCE WARNING ARROW PANELS SHALL BE 48" x 96" WITH A MINIMUM LEGIBILITY DISTANCE OF 1 MILE. PLACEMENT OF AN ADVANCE WARNING ARROW PANEL MAY REQUIRE ADJUSTMENTS DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENT OR OTHER SIGHT DISTANCE RESTRICTIONS. THE PANEL FACE SHALL BE NONREFLECTIVE BLACK. ALL ADVANCE WARNING ARROW PANELS SHALL COMPLY WITH THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION.



*** NIGHTTIME AFD FLAGGING OPERATIONS ***
DURING NIGHTTIME AFD FLAGGING OPERATIONS, ALL OPERATORS SHALL WEAR CLASS 3 HIGH-VISIBILITY SAFETY APPARATUS IN COMPLIANCE WITH THE REQUIREMENTS OF ANSI/ISEA 107, STANDARD PERFORMANCE FOR CLASS 3 HIGH EXPOSURE, LATEST EDITION.

PORTABLE TRUCK MOUNTED ATTENUATOR

1. UTILIZE A TRUCK MOUNTED ATTENUATOR ATTACHED TO THE REAR OF A TRUCK WITH A MINIMUM GROSS VEHICLE WEIGHT (GVW) OF 10,000 POUNDS (ACTUAL WEIGHT). IF THE ADDITION OF SUPPLEMENTAL WEIGHT TO THE VEHICLE AS BALLAST IS NECESSARY, CONTAIN THE MATERIAL WITHIN A STRUCTURE CONSTRUCTED OF STEEL. CONSTRUCT THIS STEEL STRUCTURE TO HAVE A MINIMUM OF FOUR SIDES AND A BOTTOM TO CONTAIN THE BALLAST MATERIAL IN ITS ENTIRETY. A TOP IS OPTIONAL. BOLT THIS STRUCTURE TO THE FRAME OF THE TRUCK. UTILIZE A SUFFICIENT NUMBER OF FASTENERS FOR ATTACHMENT OF THE STEEL STRUCTURE TO THE FRAME OF THE TRUCK TO ENSURE THE STRUCTURE WILL NOT SEPARATE FROM THE FRAME OF THE TRUCK DURING AN IMPACT UPON THE ATTACHED TRUCK MOUNTED ATTENUATOR. UTILIZE EITHER DRY LOOSE SAND OR STEEL REINFORCED CONCRETE FOR BALLAST MATERIAL WITHIN THE STEEL STRUCTURE TO ACHIEVE THE NECESSARY WEIGHT. THE BALLAST MATERIAL SHALL REMAIN CONTAINED WITHIN THE CONTAINER OF THE STEEL STRUCTURE AND SHALL NOT PROTRUDE FROM THE STEEL STRUCTURE AT ANY MANNER.
2. LOCATE THE TRUCK MOUNTED ATTENUATOR 100 FEET IN ADVANCE OF THE WORK AREA UNLESS OTHERWISE SPECIFIED.
3. PROVIDE, INSTALL AND MAINTAIN THE TRUCK MOUNTED ATTENUATOR AS SPECIFIED BY THE STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER.
4. A TRUCK MOUNTED ATTENUATOR SUPPLEMENTED WITH AN ADVANCE WARNING ARROW PANEL MAY BE REPLACED WITH A TRAILER MOUNTED ADVANCE WARNING ARROW PANEL UNDER THIS TRAFFIC CONTROL SETUP IS UTILIZED FOR ASPHALT CONCRETE PLACEMENT OPERATIONS. REPLACEMENT WITH A TRAILER MOUNTED ADVANCE WARNING ARROW PANEL SHALL REQUIRE THE ENGINEER'S APPROVAL.

TRAFFIC CONTROL DEVICES NOTE

DELINEATE THE TANGENT AREA OF A LANE CLOSURE UNLESS OTHERWISE DIRECTED BY THE ENGINEER. DELINEATE THE TANGENT AREA OF A LANE CLOSURE WITH EITHER PORTABLE PLASTIC DRUMS OR 42" OVERSIZE TRAFFIC CONES DURING NIGHTTIME AFD FLAGGING OPERATIONS.

SINGLE OPERATOR PROHIBITION

AN AUTOMATED FLAGGING ASSISTANCE DEVICES (AFAD) SYSTEM SHALL REQUIRE NO LESS THAN TWO (2) AFD UNITS AND TWO (2) AFD UNIT OPERATORS. OPERATION OF AN AFD FLAGGING OPERATION BY ONE (1) OPERATOR IS PROHIBITED. AN OPERATOR IS REQUIRED FOR EACH AFD UNIT.

SIGN PLACEMENT INTERVALS

ROAD TYPE	1	2	3
1. 35 MPH (LOW SPEED)	700	700	200
2. 40 - 50 MPH (INTERMEDIATE SPEED)	350	350	350
3. 65 MPH (HIGH SPEED)	500	500	500

* REGULARLY POSTED SPEED LIMIT PRIOR TO BEGINNING WORK

WORK ZONE TRAFFIC CONTROL ENGINEER



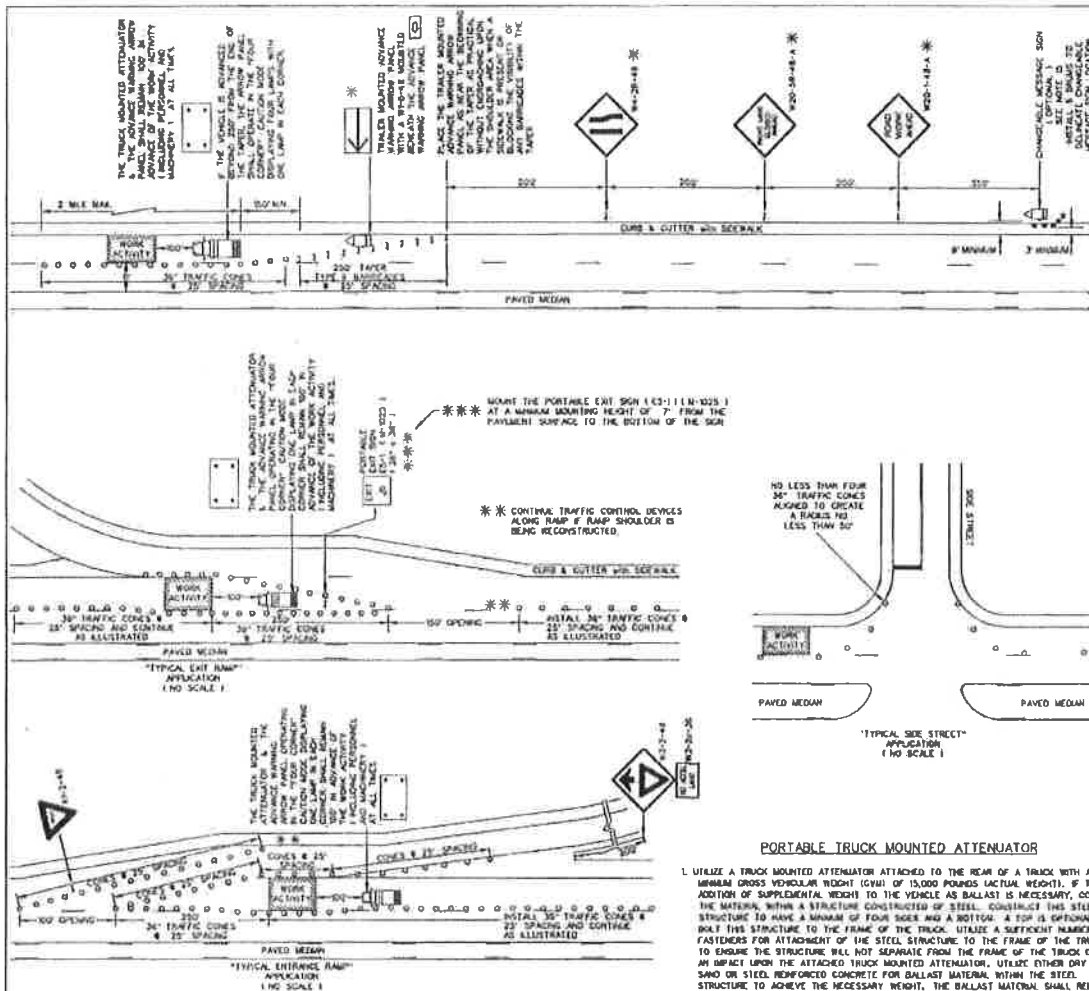
DATE	DESCRIPTION
8/2/12	NEW DRAWING

SCDOT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

AUTOMATED FLAGGING ASSISTANCE DEVICES (AFAD)
TYPE II
"STOP" OR "SLOW" SIGN

610-006-02
EFFECTIVE LATEST DATE JAN 2013 THIS DRAWING IS NOT TO SCALE



GENERAL NOTES

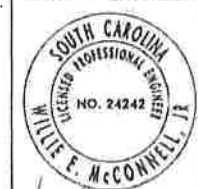
1. ALL SIGN LOCATIONS ARE TO BE MEASURED FROM THE WORK AREA. WORK LIMITS FOR THE PROJECT WILL BE DETERMINED BY THE ENGINEER AND AS INDICATED IN THE CONTRACT.
2. INSTALL ADVANCE WARNING SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS NO LESS THAN 4 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH EARTH SHOULDERS AND NO LESS THAN 6 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH PAVED SHOULDERS. WHEN CURB & GUTTER IS PRESENT, INSTALL THE SIGN NO LESS THAN 2 FEET FROM THE NEAR EDGE OF THE SIGN TO THE FACE OF THE CURB.
3. SPACINGS INDICATED ARE FOR NORMAL CONDITIONS. ADJUSTMENTS MAY BE REQUIRED DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENTS OR OTHER SIGHT DISTANCE RESTRICTIONS.
4. ALL SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 3 FEET FROM THE GROUND TO THE BOTTOM OF THE SIGN. ALL SIGNS MOUNTED ON GROUND MOUNTED U-CURVE POSTS OR SQUARE STEEL (LUG POSTS) SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 3 FEET FROM THE CRANE ELEVATION OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE TO THE BOTTOM OF THE SIGN UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. MOUNT ALL SIGNS STRAIGHT AND LEVEL AND WITH THE FACE OF THE SIGNS PERPENDICULAR TO THE FACE OF THE ROADWAY.
5. REFLECTORIZE ORANGE ADVANCE WARNING SIGNS AND ANY ORANGE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A FLUORESCENT ORANGE COLORED PHOSPHATIC RETROREFLECTIVE SHEETING. REFLECTORIZE WHITE REGULATORY SIGNS AND ANY WHITE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A WHITE COLORED PHOSPHATIC RETROREFLECTIVE SHEETING.
6. ALL TRAFFIC CONTROL DEVICES SHALL COMPLY WITH ALL MCDOT REPORT 350 REQUIREMENTS AND SHALL REQUIRE APPROVAL BY THE DEPARTMENT. ONLY THOSE TRAFFIC CONTROL DEVICES INCLUDED ON THE "APPROVED PRODUCTS LIST FOR TRAFFIC CONTROL DEVICES IN WORK ZONES" ARE CONSIDERED ACCEPTABLE FOR USE. THIS LIST MAY BE ACCESSSED ON THE DEPARTMENT'S WEB SITE AT: www.mcdot.org.
7. THE CONTRACTOR SHALL PROVIDE AND UTILIZE ANY SPECIAL SIGN MOUNTING ASSEMBLIES AND HARDWARE THAT MAY BE NECESSARY FOR INSTALLING AND MOUNTING SIGNS IN AREAS OF CONCRETE MEDIAN BARRIER, BRIDGE PARAPET WALLS OR DOUBLEFACED CURB/RAMP.
8. REFLECTORIZATION OF 36" TRAFFIC CONES USED DURING DAYLIGHT HOURS IS NOT REQUIRED. IF THIS TRAFFIC CONTROL SETUP EXTENDS INTO THE NIGHTTIME HOURS, REPLACE ALL 36" TRAFFIC CONES WITH OTHER PORTABLE PLASTIC ORRANS OR 42" OVERSIZED TRAFFIC CONES. REFLECTORIZE ALL PORTABLE PLASTIC ORRANS AND 42" OVERSIZED TRAFFIC CONES WITH TYPE B FLUORESCENT PHOSPHATIC RETROREFLECTIVE SHEETING UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
9. REFLECTORIZE ALL BARRICADES WITH A TYPE VII OR IX PHOSPHATIC RETROREFLECTIVE SHEETING ON ALL PROJECTS LEFT TO CONTRACT AFTER MAY 1, 2012 UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
10. TYPE B BARRICADES SHALL HAVE A MINIMUM WIDTH OF 3 FEET UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
11. CONDUCT THE WORK IN SUCH A MANNER THAT WILL MINIMIZE ENDOURANCEMENT OF TRAFFIC CONTROL DEVICES, EQUIPMENT, PERSONNEL, MATERIALS OR ANY WORK RELATED VEHICLES ONTO AN ADJACENT TRAVEL LANE OPEN TO TRAFFIC. INSTALL, MAINTAIN AND ADJUST THE TRAFFIC CONTROL DEVICES AS NECESSARY TO ENSURE PROPER DELINEATION OF THE WORK AREA.
12. LANE CLOSURES ARE RESTRICTED TO MAXIMUM LENGTHS OF 2 MILES UNLESS OTHERWISE DIRECTED BY THE SPECIAL PROVISIONS AND/OR THE DEPARTMENT.
13. IF WORK IS BEING CONDUCTED SIMULTANEOUSLY AT TWO DIFFERENT LOCATIONS WITHIN THE SAME TRAVEL LANE UNDER TWO SEPARATE LANE CLOSURES ON A LOW SPEED URBAN ROADWAY, SEPARATE THE TWO LANE CLOSURES BY NO LESS THAN 1 MILE FROM THE END OF THE FIRST CLOSURE THAT A MOTORIST WILL ENCOUNTER TO THE BEGINNING OF THE TAPER OF THE SECOND CLOSURE.
14. IF WORK IS BEING CONDUCTED SIMULTANEOUSLY AT TWO DIFFERENT LOCATIONS IN THE SAME DIRECTION BUT WITHIN DIFFERENT TRAVEL LANES UNDER TWO SEPARATE LANE CLOSURES ON A LOW SPEED URBAN ROADWAY, SEPARATE THE TWO LANE CLOSURES BY NO LESS THAN 1 MILE FROM THE END OF THE FIRST CLOSURE THAT A MOTORIST WILL ENCOUNTER TO THE BEGINNING OF THE TAPER OF THE SECOND CLOSURE.
15. UTILIZATION OF A CHANGEABLE MESSAGE SIGN IS OPTIONAL WITH THIS TRAFFIC CONTROL SETUP. HOWEVER, WHEN A CHANGEABLE MESSAGE SIGN IS UTILIZED, INSTALL THE SIGN AS ILLUSTRATED ON THIS STANDARD DRAWING UNLESS OTHERWISE DIRECTED BY THE SPECIAL PROVISIONS. THE PLANS AND/OR THE ENGINEER. INSTALL THE CHANGEABLE MESSAGE SIGN NO LESS THAN 4 FEET FROM THE NEAR EDGE OF THE ADJACENT TRAVEL LANE AND MAINTAIN THE SIGN LOCATION WITH NO LESS THAN 3 PORTABLE PLASTIC ORRANS FOR DELINEATION AS ILLUSTRATED. 36" STANDARD TRAFFIC CONES OR 42" OVERSIZED TRAFFIC CONES ARE PROHIBITED AS SUBSTITUTES FOR THE PORTABLE PLASTIC ORRANS IN THIS APPLICATION. DURING A RIGHT LANE CLOSURE, THE SIGN SHOULD FLASH ALTERNATELY TO READ "RIGHT LANE CLOSED", "MERGE LEFT" AT A RATE THAT WILL PROMPT MOTORISTS TO READ BOTH MESSAGES AT LEAST ONCE.
16. THE DEPARTMENT RESERVES THE RIGHT TO RESTRICT WORK OPERATIONS AND/OR WITHHOLD THE MONTHLY ESTIMATE IF THE TRAFFIC CONTROL IS NOT PROPERLY INSTALLED AND MAINTAINED AS DIRECTED BY THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, THE STANDARD DRAWINGS, THE PLANS AND/OR THE ENGINEER.
17. THIS TYPICAL TRAFFIC CONTROL SETUP APPLIES TO THE INSTALLATION OF A LANE CLOSURE ON AN URBAN ROADWAY WITH A POSTED REGULATORY SPEED LIMIT OF 35 MPH OR LESS.

* LEFT LANE CLOSURE

1. SIGNS ILLUSTRATED ARE FOR A RIGHT LANE CLOSURE.
2. WHEN CLOSING THE LEFT TRAVEL LANE, USE THE FOLLOWING:
1 - W4-3L-4B
1 - W20-3L-4B-A
3. THE STRIPES ON THE BARRICADES TO THE LEFT OF TRAFFIC SHALL SLOPE DOWNWARD FROM THE UPPER LEFT TO THE LOWER RIGHT.
4. THE FLASHING ARROW AND THE "LANE ARROW" SIGN (41-8-4B) SHALL POINT TO THE RIGHT.
5. THE CHANGEABLE MESSAGE SIGN SHALL FLASH ALTERNATELY TO READ "LEFT LANE CLOSED", "MERGE RIGHT".

REFERENCES

WORK ZONE TRAFFIC CONTROL ENGINEER



W. McConnell
SIGNATURE
8/2/12
DATE

#	DATE	FOR	DESCRIPTION
1	8/2/12	JCS	GENERAL UPDATE
2	5-28-10	JCS	CORRECTION
3	8-28-07	JCS	DRAWING MILE UPDATE
4	8/2/07	JCS	DESCRIPTION

SCDOT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

LANE CLOSURE
DAYTIME
URBAN LOW SPEED
≤ / = 35 MPH

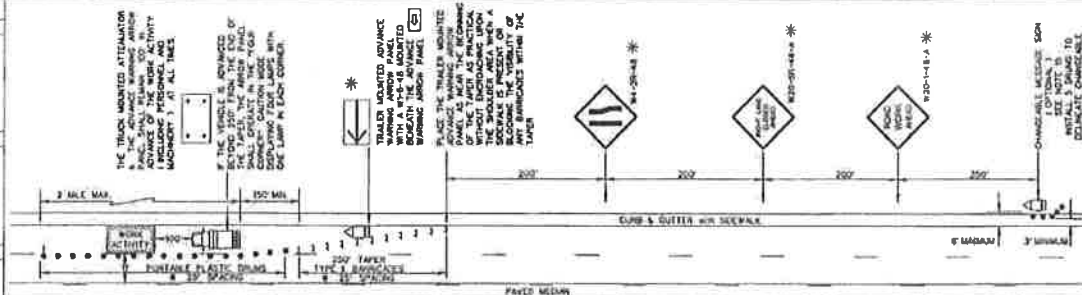
610-010-00
EFFECTIVE LITTING SHEET 3/01, 3/03

LEGEND

○ 36" TRAFFIC CONES

THIS DRAWING IS NOT TO SCALE

REFERENCES



WORK ZONE TRAFFIC
CONTROL ENGINEER



W. M. Connell
SIGNATURE
8/2/12
DATE

6			
5			
4			
3			
2			
1	2-14-81	JCS	GENERAL UPDATE
0	8-25-81	JCS	DRILLING DIV. UPDATE
U	DATE	CHK	DESCRIPT

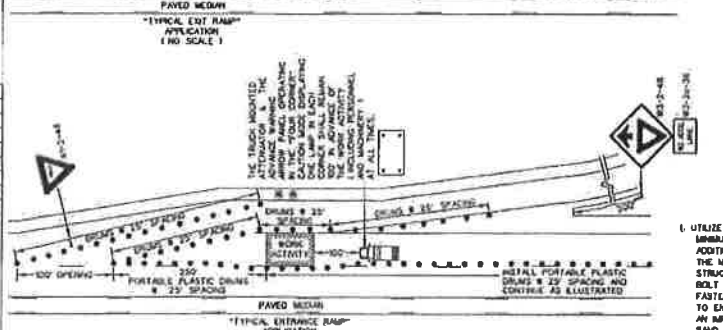
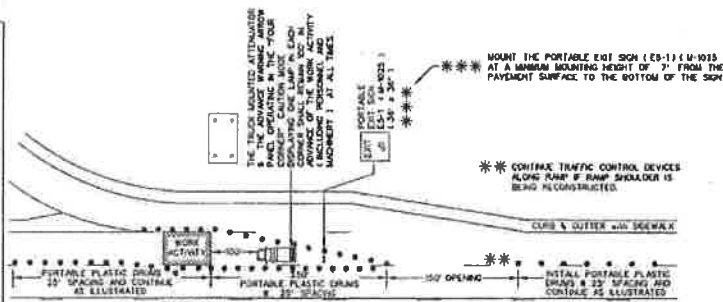
SCDOT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

LANE CLOSURE
NIGHTTIME
URBAN LOW SPEED
≤ / = 35 MPH

610-015-00

EFFECTIVE LIFTING DATE JAN. 2015 THIS DRAWING IS NOT TO SCALE



ADVANCE WARNING ARROW PANEL

ALL ADVANCE WARNING ARROW PANELS SHALL BE 48" x 96" WITH A MINIMUM LEGIBILITY DISTANCE OF 1 MILE. PLACEMENT OF AN ADVANCE WARNING ARROW PANEL MAY REQUIRE ADJUSTMENTS DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENT OR OTHER SIGHT DISTANCE RESTRICTIONS. THE PANEL FACE SHALL BE NONREFLECTIVE BLACK. ALL ADVANCE WARNING ARROW PANELS SHALL COMPLY WITH THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION.

WHEN AN ADVANCE WARNING ARROW PANEL IS REQUIRED TO OPERATE IN THE CAUTION MODE, THE ADVANCE WARNING ARROW PANEL SHALL DISPLAY THE "FOUR CORNERS" CAUTION MODE WITH ONE LAMP IN EACH CORNER. DISPLAY OF ANY OTHER TYPE OF CAUTION MODE OTHER THAN THE "FOUR CORNERS" CAUTION MODE SUCH AS THE "FLASHING BARS" OR THE "ALTERNATING DIAMOND" CAUTION MODES ARE UNACCEPTABLE AND PROHIBITED.

LEGEND

9 PORTABLE PLASTIC CRADLES

GENERAL NOTES

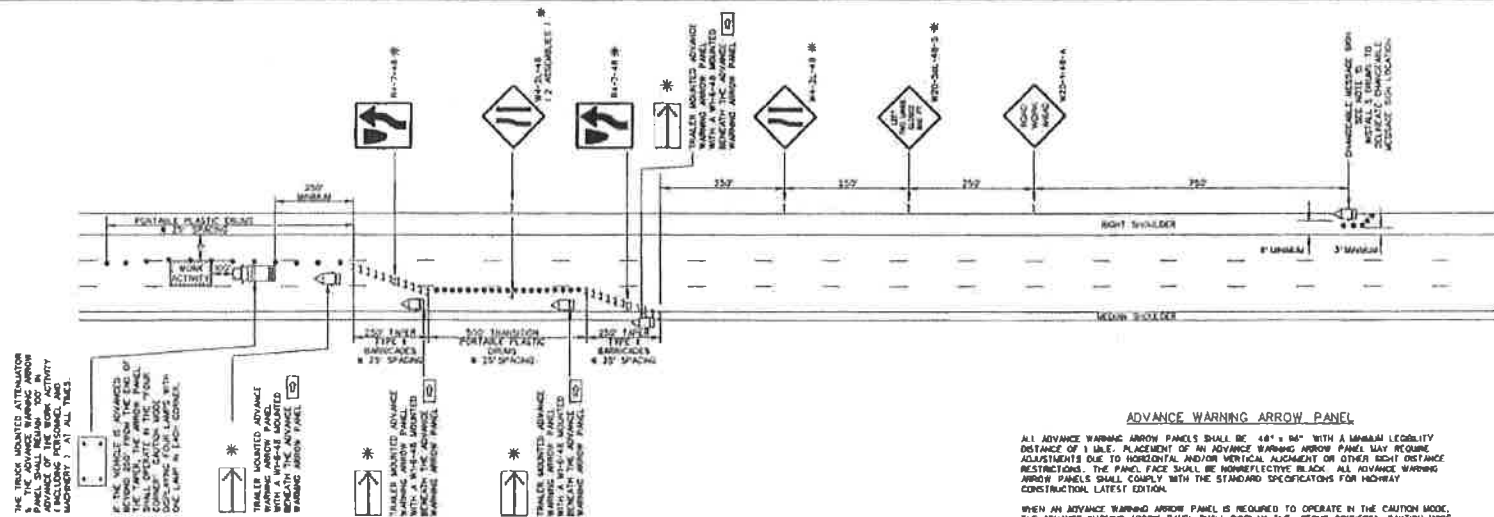
1. ALL SIGN LOCATIONS ARE TO BE MEASURED FROM THE WORK AREA. WORK LANE(S) FOR THE PROJECT WILL BE DETERMINED BY THE ENGINEER AND AS INDICATED IN THE CONTRACT.
2. INITIAL ADVANCE WARNING SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS NO LESS THAN 2 FEET FROM THE NEAR EDGE OF THE SIGN AND NO MORE THAN 2 FEET FROM THE NEAR EDGE OF THE SIGN WITH SPACINGS OF NO LESS THAN 8 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH TWO OR MORE TRAVEL LANES. ADVANCE WARNING SIGNS ON ROADWAYS WITH NO LESS THAN 2 FEET FROM THE NEAR EDGE OF THE SIGN TO THE FACE OF THE CURB.
3. SPACINGS INDICATED ARE FOR NORMAL ECONOMY ADJUSTMENTS MAY BE REQUIRED DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENTS OR OTHER SIGHT DISTANCE RESTRICTIONS.
4. ALL SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS SHALL HAVE A MINIMUM HEIGHTING REQUIREMENT OF 10 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON TWO LANE ROADWAYS. TWO PORTS SHALL HAVE A MINIMUM HEIGHTING REQUIREMENT OF 10 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE TO THE BOTTOM OF THE SIGN UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. MOUNT ALL SIGNS STRAIGHT AND LEVEL AND WITH THE FACE OF THE SIGNS PARALLEL TO THE FACE OF THE ROADWAY.
5. REFLECTORIZE ORANGE ADVANCE WARNING SIGNS AND ANY ORANGE AREA OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A FLUORESCENT ORANGE COLORED PRISMATIC RETROREFLECTIVE SHEETING. REFLECTORIZE WHITE REGULATORY SIGNS AND ANY WHITE AREA OF A MULTI-COLORED REGULATORY SIGN WITH A RAY OF WHITE COLORED PRISMATIC RETROREFLECTIVE SHEETING.
6. ALL TRAFFIC CONTROL DEVICES SHALL COMPLY WITH ALL NCHRP REPORT 350 REQUIREMENTS. ALL TRAFFIC CONTROL DEVICES SHALL BE USED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR TRAFFIC CONTROL DEVICES INCLUDED ON THE "APPROVED PRODUCTS LIST FOR 350". TRAFFIC CONTROL DEVICES IN WORK ZONES ARE CONSIDERED ACCEPTABLE FOR USE. THIS LIST MAY BE OBTAINED FROM THE DEPARTMENT.
7. THE CONTRACTOR SHALL PROVIDE AND UTILIZE ANY SPECIAL SIGN MOUNTING ASSEMBLIES AND HARDWARE THAT MAY BE NECESSARY FOR INSTALLING AND MOUNTING SIGNS IN AREAS OF SPECIAL MEDIUM-CURVED, RAMP, OR PHASED APPROACHES.
8. REFLECTORIZE ALL PORTABLE TRAFFIC SIGNS AND 42" OVERSIZED TRAFFIC CONES WITH TYPE B FLEXIBLE PRISMATIC RETROREFLECTIVE SHEETING UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. 42" OVERSIZED TRAFFIC CONES MAY BE SUBSTITUTED FOR THE PORTABLE TRAFFIC SIGNS IN THE EVENT OF A SHORTAGE OF PORTABLE TRAFFIC SIGNS. PORTABLE TRAFFIC CONES SHALL COMPLY WITH ALL REQUIREMENTS OF THE STANDARD SPECIFICATIONS.
9. REFLECTORIZE ALL BARRICADES WITH A TYPE IV OR B PRISMATIC RETROREFLECTIVE SHEETING ON ALL PROJECTS LIST TO CONTRACT AFTER MAY 1, 2019 UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
10. TYPE B BARRICADES SHALL HAVE A MINIMUM WIDTH OF 3 FEET UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
11. CONDUCT THE WORK IN SUCH A MANNER THAT WILL UNNECESSARILY OBSTRUCTION OF TRAFFIC CONSIDERED. CONDUCT THE WORK IN SUCH A MANNER THAT NO ANY WORK RELATED VEHICLES ON AN ADJACENT TRAVEL LANE DUE TO TRAFFIC, SIGNAL, MAINTAIN AND ADJUST THE TRAFFIC CONTROL DEVICES AS NECESSARY TO ENSURE PROPER DELINEATION OF THE WORK AREA.
12. LANE CLOSURES ARE RESTRICTED TO MAXIMUM LENGTHS OF 2 MILES UNLESS OTHERWISE DIRECTED BY THE SPECIAL PROVISIONS AND/OR THE DEPARTMENT.
13. IF WORK IS BEING CONDUCTED SIMULTANEOUSLY AT TWO DIFFERENT LOCATIONS WITHIN THE SAME DIRECTION, A LOW SPEED ADVANCE WARNING SIGN AND TWO LOW SPEED ADVANCE WARNING ROADWAY, SEPARATE THE TWO LANE CLOSURES BY NO LESS THAN 1 MILE FROM THE END OF THE FIRST CLOSURE THAT A MOTORIST WILL ENCOUNTER TO THE BEGINNING OF THE SECOND CLOSURE.
14. IF WORK IS BEING CONDUCTED SIMULTANEOUSLY AT TWO DIFFERENT LOCATIONS IN THE SAME DIRECTION BUT WITHIN DIFFERENT TRAVEL LANES UNDER TWO SEPARATE LANE CLOSURES, A LOW SPEED ADVANCE WARNING SIGN AND TWO LOW SPEED ADVANCE WARNING ROADWAY, SEPARATE THE TWO LANE CLOSURES BY NO LESS THAN 2 MILES FROM THE END OF THE FIRST CLOSURE THAT A MOTORIST WILL ENCOUNTER TO THE BEGINNING OF THE TAPET OF THE SECOND CLOSURE.
15. UTILIZATION OF A CHANGEABLE MESSAGE SIGN IS OPTIONAL WITH THE TRAFFIC CONTROL DEPARTMENT. WHEN USED, THE MESSAGE SHALL BE IN ACCORDANCE WITH THE SIGN AS ILLUSTRATED ON THIS STANDARD DRAWING UNLESS OTHERWISE DIRECTED BY THE SPECIAL PROVISIONS. THE PLANS AND/OR THE SPECIAL PROVISIONS SHALL REQUIRE THE MESSAGE SIGN NO LESS THAN 8 FEET FROM THE NEAR EDGE OF THE ADJACENT TRAVEL LANE AND SUPPLEMENT THE SIGN LOCATION WITH NO LESS THAN 8 PORTABLE PLASTIC DRUMS FOR DELINEATION. THE PLANS AND/OR THE SPECIAL PROVISIONS SHALL REQUIRE THE MESSAGE SIGNS ARE PROMINENT AS SUBSTITUTES FOR THE PORTABLE PLASTIC DRUMS IN THIS APPLICATION. DURING A NIGHT LANE CLOSURE, THE SIGN SHOULD FLASH ALTERNATELY TO BEAR THE LANE CLOSURE MESSAGE EFFECTIVELY AT A RATE THAT WILL PENETRATE MOTORISTS TO ALL ROAD MESSAGE AT LEAST ONCE.
16. THE DEPARTMENT RESERVES THE RIGHT TO RESTRICT WORK OPERATIONS AND/OR WITHHOLD THE RIGHT TO ESTABLISH A LANE CLOSURE OR TO WITHHOLD THE RIGHT TO ESTABLISH A LANE CLOSURE MAINTAINED AS DIRECTED BY THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, THE STANDARD DRAWINGS, THE PLANS AND/OR THE ENGINEER.
17. THIS TYPICAL TRAFFIC CONTROL SETUP APPLIES TO THE INSTALLATION OF A LANE CLOSURE OR LANE CLOSURE DOWNSHIFT. THE TYPICAL TRAFFIC CONTROL SETUP SHALL BE 35 MPH OR LESS.

* LEFT LANE CLOSURE

1. SIGNS ILLUSTRATED ARE FOR A RIGHT LANE CLOSURE.
2. WHEN CLOSING THE LEFT TRAVEL LANE, USE THE FOLLOWING:
 - 1 - W-25-48
 - 1 - W-25-48A
3. THE STORIES ON THE BALDWIN RD. TO THE LEFT OF TRAFFIC SHALL BE DOWNDROPPED FROM THE UPPER LEFT TO THE LOWER RIGHT.
4. THE FLASHING ARROWS AND THE "LANE AHEAD" SIGN 1810-43H SHALL POINT TO THE RIGHT.
5. THE CHANGEABLE MESSAGE SIGN SHALL FLASH ALTERNATELY TO READ "LEFT LANE CLOSURE," "MENDY RD."

PORTABLE TRUCK MOUNTED ATTENUATOR

3. UTILIZE A TRUCK MOUNTED ATTENUATOR ATTACHED TO THE REAR OF A TRUCK WITH A MINIMUM GROSS VOLUMARIC WEIGHT (GVWR) OF 15,000 POUNDS (ACTUAL WEIGHT). IF THE ADDITION OF SUPPLEMENTAL WEIGHT TO THE VEHICLE AS REQUIRED IS NECESSARY, CONTAIN THE WEIGHT WITHIN THE STRUCTURED STEEL. CONSTRUCT THIS STEEL STRUCTURE TO HAVE A MINIMUM OF FOUR SIDES AND A BOTTOM. A TOP IS OPTIONAL. BOLT THIS STRUCTURE TO THE FRAME OF THE TRUCK. UTILIZE A SUFFICIENT NUMBER OF FASTENERS FOR ATTACHMENT OF THE STEEL STRUCTURE TO THE FRAME OF THE TRUCK. THE TRUCK SHOULD BE DRIVEN TO THE WORK AREA AND THE ATTENUATOR SHOULD BE POSITIONED IN ADVANCE OF THE WORK AREA. ON IMPACT UPON THE ATTACHED TRUCK MOUNTED ATTENUATOR, UTILIZE EITHER LUG BOLDS AND OR STEEL REINFORCED CONCRETE FOR BALLAST MATERIAL WITHIN THE STEEL STRUCTURE. THE ATTENUATOR SHOULD BE DESIGNED TO ABSORB THE ENERGY MECHAN CONTAINED WITHIN THE COMPRESSION OF THE STEEL STRUCTURE AND SHALL NOT PROTRUDE FROM THE STEEL STRUCTURE IN ANY MANNER.
2. LOCATE THE TRUCK MOUNTED ATTENUATOR 10 FEET IN ADVANCE OF THE WORK AREA UNLESS OTHERWISE SPECIFIED.
3. PROVIDE, INSTALL AND MAINTAIN THE TRUCK MOUNTED ATTENUATOR AS SPECIFIED BY THE STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER.
4. DUE TO THE WEIGHT OF A TRUCK MOUNTED ATTENUATOR, THE TRUCK MOUNTED ATTENUATOR SUPPLEMENTED WITH AN ADVANCE WARNING ARROW PANEL MAY BE REPLACED WITH A TRAILER MOUNTED ADVANCE WARNING ARROW PANEL WHEN THE TRAFFIC CONTROL SIGNAL IS UTILIZED FOR ASPHALT CONCRETE PAVEMENT OPERATIONS. REPLACEMENT WITH A TRAILER MOUNTED ADVANCE WARNING ARROW PANEL SHALL BE APPROVED BY THE ENGINEER.



THE TRUCK MOUNTED ATTENUATOR (TMA) SHALL BE ATTACHED TO THE REAR OF A TRUCK WITH A MINIMUM GROSS VEHICLE WEIGHT (GVW) OF 10,000 POUNDS (ACTUAL WEIGHT). IF THE ADDITION OF SUPPLEMENTAL WEIGHT TO THE VEHICLE AS BALLAST IS NECESSARY, CONTAIN THE MATERIAL WITHIN A STRUCTURE CONSTRUCTED OF STEEL. CONSTRUCT THIS STEEL STRUCTURE TO HAVE A MINIMUM OF FOUR SIDES AND A BOTTOM. A TOP IS OPTIONAL. BOLT THIS STRUCTURE TO THE FRAME OF THE TRUCK. UTILIZE A SUFFICIENT NUMBER OF FASTENERS FOR ATTACHMENT OF THE STEEL STRUCTURE TO THE FRAME OF THE TRUCK TO ENSURE THE STRUCTURE WILL NOT SEPARATE FROM THE FRAME OF THE TRUCK DURING AN IMPACT UPON THE ATTACHED TRUCK MOUNTED ATTENUATOR. UTILIZE EITHER DRY LOOSE SAND OR STEEL REINFORCED CONCRETE FOR BALLAST MATERIAL WITHIN THE STEEL STRUCTURE TO ACHIEVE THE NECESSARY WEIGHT. THE BALLAST MATERIAL SHALL REMAIN CONFINED WITHIN THE CONFINES OF THE STEEL STRUCTURE AND SHALL NOT PROTRUDE FROM THE STEEL STRUCTURE IN ANY MANNER.

PORTABLE TRUCK MOUNTED ATTENUATOR

1. UTILIZE A TRUCK MOUNTED ATTENUATOR ATTACHED TO THE REAR OF A TRUCK WITH A MINIMUM GROSS VEHICLE WEIGHT (GVW) OF 10,000 POUNDS (ACTUAL WEIGHT). IF THE ADDITION OF SUPPLEMENTAL WEIGHT TO THE VEHICLE AS BALLAST IS NECESSARY, CONTAIN THE MATERIAL WITHIN A STRUCTURE CONSTRUCTED OF STEEL. CONSTRUCT THIS STEEL STRUCTURE TO HAVE A MINIMUM OF FOUR SIDES AND A BOTTOM. A TOP IS OPTIONAL. BOLT THIS STRUCTURE TO THE FRAME OF THE TRUCK. UTILIZE A SUFFICIENT NUMBER OF FASTENERS FOR ATTACHMENT OF THE STEEL STRUCTURE TO THE FRAME OF THE TRUCK TO ENSURE THE STRUCTURE WILL NOT SEPARATE FROM THE FRAME OF THE TRUCK DURING AN IMPACT UPON THE ATTACHED TRUCK MOUNTED ATTENUATOR. UTILIZE EITHER DRY LOOSE SAND OR STEEL REINFORCED CONCRETE FOR BALLAST MATERIAL WITHIN THE STEEL STRUCTURE TO ACHIEVE THE NECESSARY WEIGHT. THE BALLAST MATERIAL SHALL REMAIN CONFINED WITHIN THE CONFINES OF THE STEEL STRUCTURE AND SHALL NOT PROTRUDE FROM THE STEEL STRUCTURE IN ANY MANNER.
2. LOCATE THE TRUCK MOUNTED ATTENUATOR 100 FEET IN ADVANCE OF THE WORK AREA UNLESS OTHERWISE SPECIFIED.
3. PROVIDE, INSTALL AND MAINTAIN THE TRUCK MOUNTED ATTENUATOR AS SPECIFIED BY THE STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER.
4. DUE TO THE WEIGHT OF A TRUCK MOUNTED ATTENUATOR, THE TRUCK MOUNTED ATTENUATOR SUPPLEMENTED WITH AN ADVANCE WARNING ARROW PANEL MAY BE REPLACED WITH A TRAILER MOUNTED ADVANCE WARNING ARROW PANEL WHEN THIS TRAFFIC CONTROL SETUP IS UTILIZED FOR ASPHALT CONCRETE PAVEMENT OPERATIONS. REPLACEMENT WITH A TRAILER MOUNTED ADVANCE WARNING ARROW PANEL SHALL REQUIRE THE ENGINEER'S APPROVAL.

* RIGHT LANE CLOSURE

1. SIGNS ILLUSTRATED ARE FOR CLOSURE OF THE LEFT TWO LANES.
2. WHEN CLOSING THE RIGHT TWO TRAVEL LANES, USE THE FOLLOWING:
 - 1 - W20-48-48-5
 - 2 - W1-20-48
 - 3 - R4-8-48
3. THE STRIKES ON THE BARRICADES TO THE RIGHT OF TRAFFIC SHALL SLOPE DOWNWARD FROM THE UPPER RIGHT TO THE LOWER LEFT.
4. THE FLASHING ARROWS AND THE "LARGE ARROW" SIGNS (W1-48) SHALL POINT TO THE LEFT.
5. THE CHANGEABLE MESSAGE SIGN SHALL FLASH ALTERNATELY TO READ "RIGHT 2 LANES CLOSED" "MOVE LEFT". MAINTAIN THE CHANGEABLE MESSAGE SIGN ON A SHOULDER WHERE SUFFICIENT SPACE EXISTS SUCH THAT THE SIGN DOES NOT ENROACH UPON THE ADJACENT TRAVEL LANE.

THIS DRAWING IS NOT TO SCALE

GENERAL NOTES

1. ALL SIGN LOCATIONS ARE TO BE MEASURED FROM THE WORK AREA. WORK LIMITS FOR THE PROJECT WILL BE DETERMINED BY THE ENGINEER AND AS INDICATED IN THE CONTRACT.
2. INSTALL ADVANCE WARNING SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS NO LESS THAN 4 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH EARTH SHOULDERS AND NO LESS THAN 6 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH PAVED SHOULDERS. WHEN CURB & GUTTER IS PRESENT, INSTALL THE SIGN NO LESS THAN 2 FEET FROM THE NEAR EDGE OF THE SIGN TO THE FACE OF THE CURB.
3. SPACINGS INDICATED ARE FOR NORMAL CONDITIONS. ADJUSTMENTS MAY BE REQUIRED DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENTS OR OTHER SIGHT DISTANCE RESTRICTIONS.
4. ALL SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 8 FEET FROM THE GROUND TO THE BOTTOM OF THE SIGN. ALL SIGNS MOUNTED ON GROUND MOUNTED U-CURVE POSTS OR SQUARE STEEL TUB POSTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 7 FEET FROM THE GRADE ELEVATION OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE TO THE BOTTOM OF THE SIGN UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. MOUNT ALL SIGNS STRAIGHT AND LEVEL AND WITH THE FACE OF THE SIGNS PERPENDICULAR TO THE SURFACE OF THE ROADWAY.
5. REFLECTORIZED ORANGE ADVANCE WARNING SIGNS AND ANY ORANGE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A FLUORESCENT ORANGE COLORED PHOSPHATIC RETROREFLECTIVE SHEETING, REFLECTORIZED WHITE REGULATORY SIGNS AND ANY WHITE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A WHITE COLORED PHOSPHATIC RETROREFLECTIVE SHEETING.
6. ALL TRAFFIC CONTROL DEVICES SHALL COMPLY WITH ALL NORTH REPORT 350 REQUIREMENTS AND SHALL REQUIRE APPROVAL BY THE DEPARTMENT. ONLY THOSE TRAFFIC CONTROL DEVICES INCLUDED ON THE "APPROVED PRODUCTS LIST FOR TRAFFIC CONTROL DEVICES IN WORK ZONES" ARE CONSIDERED ACCEPTABLE FOR USE. THIS LIST MAY BE ACCESSSED ON THE DEPARTMENT'S WEB SITE AT: www.scdot.org.
7. THE CONTRACTOR SHALL PROVIDE AND UTILIZE ANY SPECIAL SIGN MOUNTING ASSEMBLIES AND HARDWARE THAT MAY BE NECESSARY FOR INSTALLING AND MOUNTING SIGNS IN AREAS OF CONCRETE MEDIAN BARRIERS, BRIDGE PARAPET WALLS OR DOUBLED FENCED GUARDRAIL.
8. REFLECTORIZED ALL PORTABLE PLASTIC DRUMS AND 42" OVERSIZED TRAFFIC CONES WITH TYPE II FLUORESCENT PHOSPHATIC RETROREFLECTIVE SHEETING UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. 42" OVERSIZED TRAFFIC CONES MAY BE SUBSTITUTED FOR THE PORTABLE PLASTIC DRUMS IN THIS TYPICAL TRAFFIC CONTROL SETUP. THE 42" OVERSIZED TRAFFIC CONES SHALL COMPLY WITH ALL REQUIREMENTS OF THE STANDARD SPECIFICATIONS.
9. REFLECTORIZED ALL BARRICADES WITH A TYPE VB OR 16 PHOSPHATIC RETROREFLECTIVE SHEETING ON ALL PROJECTS LET TO CONTRACT AFTER MAY 1, 2010 UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.

ADVANCE WARNING ARROW PANEL
 ALL ADVANCE WARNING ARROW PANELS SHALL BE 48" x 96" WITH A MINIMUM LEGIBILITY DISTANCE OF 1 MILE. PLACEMENT OF AN ADVANCE WARNING ARROW PANEL MAY REQUIRE ADJUSTMENTS DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENT OR OTHER SIGHT DISTANCE RESTRICTIONS. THE FACE SHALL BE RETROREFLECTIVE BLACK. ALL ADVANCE WARNING ARROW PANELS SHALL COMPLY WITH THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION.

WHEN AN ADVANCE WARNING ARROW PANEL IS REQUIRED TO OPERATE IN THE CAUTION MODE, THE ADVANCE WARNING ARROW PANEL SHALL DISPLAY THE "FOUR CORNERS" CAUTION MODE, WITH ONE LAMP IN EACH CORNER. DISPLAY OF ANY OTHER TYPE OF CAUTION MODE OTHER THAN THE "FOUR CORNERS" CAUTION MODE SUCH AS THE "FLASHING BAR" OR THE "ALTERNATING DIAMOND" CAUTION MODES ARE UNACCEPTABLE AND PROHIBITED.

10. TYPE B BARRICADES SHALL HAVE A MINIMUM WIDTH OF 3 FEET UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
11. CONDUCT THE WORK IN SUCH A MANNER THAT WILL MINIMIZE ENCROACHMENT OF TRAFFIC CONTROL DEVICES, EQUIPMENT, PERSONNEL, MATERIALS ON ANY WORK INSTALLED VEHICLES ONTO AN ADJACENT TRAVEL LANE OPEN TO TRAFFIC. INSTALL, MAINTAIN AND ADJUST THE TRAFFIC CONTROL DEVICES AS NECESSARY TO ENSURE PROPER DELINEATION OF THE WORK AREA.
12. LANE CLOSURES ARE RESTRICTED TO MAXIMUM LENGTHS OF 2 MILES UNLESS OTHERWISE DIRECTED BY THE SPECIAL PROVISIONS AND/OR THE DEPARTMENT.
13. IF WORK IS BEING CONDUCTED SIMULTANEOUSLY AT TWO DIFFERENT LOCATIONS WITHIN THE SAME TRAVEL LANE UNDER TWO SEPARATE LANE CLOSURES ON A LOW SPEED URBAN ROADWAY, SEPARATE THE TWO LANE CLOSURES BY NO LESS THAN 1 MILE FROM THE END OF THE FIRST CLOSURE THAT A MOTORIST WILL ENCOUNTER TO THE BEGINNING OF THE TAPER OF THE SECOND CLOSURE.
14. IF WORK IS BEING CONDUCTED SIMULTANEOUSLY AT TWO DIFFERENT LOCATIONS IN THE SAME DIRECTION BUT WITHIN DIFFERENT TRAVEL LANES UNDER TWO SEPARATE LANE CLOSURES ON A LOW SPEED URBAN ROADWAY, SEPARATE THE TWO LANE CLOSURES BY NO LESS THAN 2 MILES FROM THE END OF THE FIRST CLOSURE THAT A MOTORIST WILL ENCOUNTER TO THE BEGINNING OF THE TAPER OF THE SECOND CLOSURE.
15. A TRAILER MOUNTED CHANGEABLE MESSAGE SIGN IS REQUIRED FOR THIS TRAFFIC CONTROL SETUP FOR A DUAL LANE CLOSURE. INSTALL THE CHANGEABLE MESSAGE SIGN AS ILLUSTRATED ON THIS STANDARD DRAWING UNLESS OTHERWISE DIRECTED BY THE SPECIAL PROVISIONS, THE PLANS AND/OR THE ENGINEER. INSTALL THE CHANGEABLE MESSAGE SIGN NO LESS THAN 8 FEET FROM THE NEAR EDGE OF THE ADJACENT TRAVEL LANE AND SUPPLEMENT THE SIGN LOCATION WITH NO LESS THAN 8 PORTABLE PLASTIC DRUMS FOR DELINEATION AS ILLUSTRATED. 36" STANDARD TRAFFIC CONES OR 42" OVERSIZED TRAFFIC CONES ARE PROHIBITED AS SUBSTITUTES FOR THE PORTABLE PLASTIC DRUMS IN THIS APPLICATION. DURING A DUAL LANE CLOSURE, THE SIGN SHOULD FLASH ALTERNATELY TO READ "LEFT 2 LANES CLOSED" "MOVE RIGHT" AT A RATE THAT WILL PERMIT THE MOTORISTS TO READ BOTH MESSAGES AT LEAST ONCE.
16. THE DEPARTMENT RESERVES THE RIGHT TO RESTRICT WORK OPERATIONS AND/OR WITHHOLD THE MONTHLY ESTIMATE IF THE TRAFFIC CONTROL IS NOT PROPERLY INSTALLED AND MAINTAINED AS DIRECTED BY THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, THE STANDARD DRAWINGS, THE PLANS AND/OR THE ENGINEER.
17. THIS TYPICAL TRAFFIC CONTROL SETUP APPLIES TO THE INSTALLATION OF A DUAL LANE CLOSURE ON AN URBAN ROADWAY WITH A POSTED REGULATORY SPEED (RAT) OF 35 MPH OR LESS.

LEGEND

● PORTABLE PLASTIC DRUMS

REFERENCES

WORK ZONE TRAFFIC CONTROL ENGINEER



Signature: *Willie E. McConnell, Jr.*
 Date: 8/2/12

NO.	DATE	BY	DESCRIPTION
1	12-14-11	JCS	GENERAL UPDATE
2	8-22-07	LES	CHANGING INS. UPDATE
3			
4			
5			
6			
7			
8			
9			
10			

SCDOT
 SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DESIGN STANDARDS OFFICE
 ROOM 405
 COLUMBIA, SC 29201

STANDARD DRAWING

DUAL
 LANE CLOSURE
 URBAN LOW SPEED
 < / = 35 MPH

610-020-00

EFFECTIVE LATEST EDITION: JAN, 2012

REFERENCES

WORK ZONE TRAFFIC CONTROL ENGINEER



Signature: *W. McConnell*
Date: 8/2/12

DATE	BY	DESCRIPTION
2-15-12	JCS	GENERAL UPDATE
8-22-07	JCS	SHAWING NO. 10, 10, 10, 10

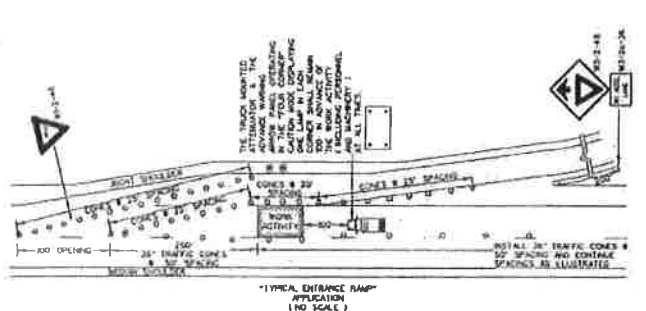
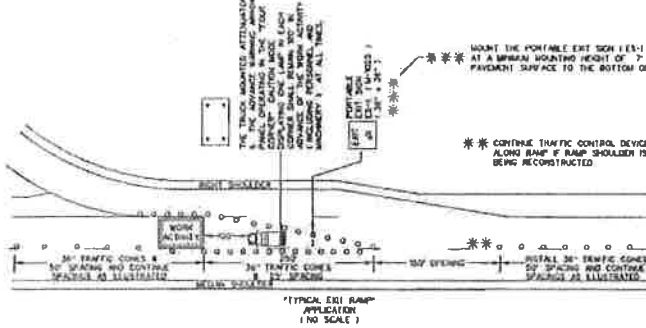
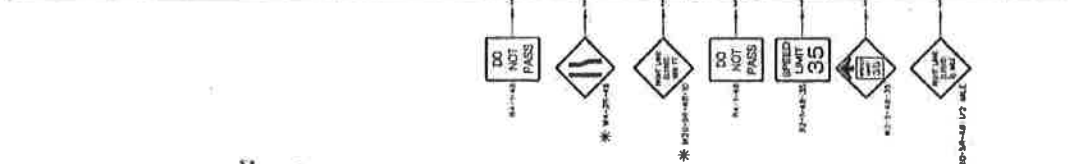
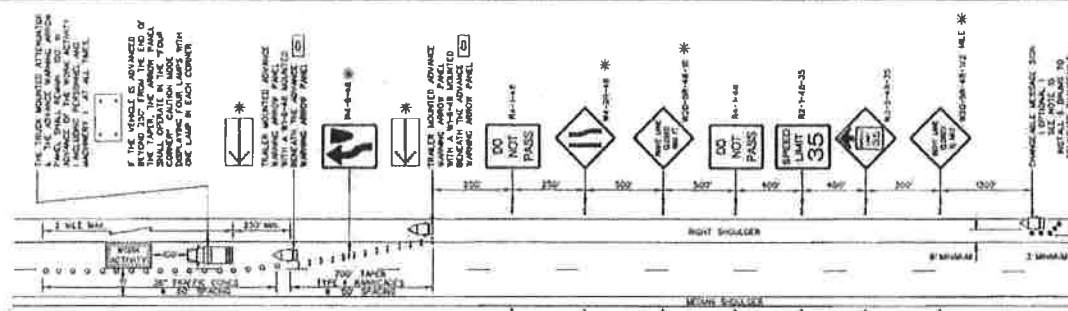
SCDOT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

LANE CLOSURE
DAYTIME
MULTILANE
PRIMARY MODE

610-025-00

EFFECTIVE LITTING SHEET 1/24/12 THIS DRAWING IS NOT TO SCALE



LEFT LANE CLOSURE

1. SIGNS ILLUSTRATED ARE FOR A RIGHT LANE CLOSURE.
2. WHEN CLOSING THE LEFT TRAVEL LANE, USE THE FOLLOWING:
 - 2 - W20-SL-48-10
 - 2 - W20-SL-48-10-1/2 MILE
 - 1 - R17-1-18
3. THE STRIPES ON THE BARRICADES TO THE LEFT OF TRAFFIC SHALL SLOPE DOWNWARD FROM THE UPPER LEFT TO THE LOWER RIGHT.
4. THE FLASHING ARROW AND THE "LARGE ARROW" SIGN (R17-4-48) SHALL POINT TO THE RIGHT.
5. THE CHANGEABLE MESSAGE SIGN SHALL ALTERNATELY TO READ "LEFT LANE CLOSED," "MERGE RIGHT."

PORTABLE TRUCK MOUNTED ATTENUATOR

1. UTILIZE A TRUCK MOUNTED ATTENUATOR ATTACHED TO THE REAR OF A TRUCK WITH A MINIMUM GROSS VEHICLE WEIGHT (GVW) OF 10,000 POUNDS. EXCEPT, IF THE ADDITION OF SUPPLEMENTAL WEIGHT TO THE VEHICLE AS BALLAST IS NECESSARY, CONTAIN THE MATERIAL WITHIN A STRUCTURE CONSTRUCTED OF STEEL. CONSTRUCT THIS STEEL STRUCTURE TO HAVE A MINIMUM OF FOUR SIDES AND A BOTTOM. A TOP IS OPTIONAL. BOLT THIS STRUCTURE TO THE FRAME OF THE TRUCK. UTILIZE A SUFFICIENT NUMBER OF FASTENERS FOR ATTACHMENT OF THE STEEL STRUCTURE TO THE FRAME OF THE TRUCK. TO ENSURE THE STRUCTURE WILL NOT SEPARATE FROM THE FRAME OF THE TRUCK DURING AN IMPACT UPON THE ATTACHED TRUCK MOUNTED ATTENUATOR, UTILIZE OTHER DRY LOOSE SAND OR STEEL REINFORCED CONCRETE FOR BALLAST MATERIAL WITHIN THE STEEL STRUCTURE TO ACHIEVE THE NECESSARY WEIGHT. THE BALLAST MATERIAL SHALL REMAIN CONTAINED WITHIN THE COMPARTMENT OF THE STEEL STRUCTURE AND SHALL NOT PROTRUDE FROM THE STEEL STRUCTURE IN ANY MANNER.
2. LOCATE THE TRUCK MOUNTED ATTENUATOR 100 FEET IN ADVANCE OF THE WORK AREA UNLESS OTHERWISE SPECIFIED.
3. PROVIDE, INSTALL AND MAINTAIN THE TRUCK MOUNTED ATTENUATOR AS SPECIFIED BY THE STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER.
4. DUE TO THE WEIGHT OF A TRUCK MOUNTED ATTENUATOR, THE TRUCK MOUNTED ATTENUATOR SUPPLEMENTED WITH AN ADVANCE WARNING ARROW PANEL MAY BE REPLACED WITH A TRAILER MOUNTED ADVANCE WARNING ARROW PANEL WHEN THE TRAFFIC CONTROL SETUP IS UTILIZED FOR ADVANCED PAVEMENT OPERATIONS. REPLACEMENT WITH A TRAILER MOUNTED ADVANCE WARNING ARROW PANEL SHALL REQUIRE THE ENGINEER'S APPROVAL.

GENERAL NOTES

1. ALL SIGN LOCATIONS ARE TO BE MEASURED FROM THE WORK AREA. WORK LIMITS FOR THE PROJECT WILL BE DETERMINED BY THE ENGINEER AND AS INDICATED IN THE CONTRACT.
2. INSTALL ADVANCE WARNING SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS NO LESS THAN 4 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH EARTH SHOULDERS AND NO LESS THAN 6 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH PAVED SHOULDERS. WHEN CURB & GUTTER IS PRESENT, INSTALL THE SIGN NO LESS THAN 3 FEET FROM THE NEAR EDGE OF THE SIGN TO THE FACE OF THE CURB.
3. SPACINGS INDICATED ARE FOR MINIMUM CONDITIONS. ADJUSTMENTS MAY BE REQUIRED DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENTS OR OTHER SIGHT DISTANCE RESTRICTIONS.
4. ALL SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 3 FEET FROM THE GROUND TO THE BOTTOM OF THE SIGN. ALL SIGNS MOUNTED ON CHANGED MOUNTING (U-SHAPED) POSTS OR SQUARE STEEL TUBE POSTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 7 FEET FROM THE GROUND TO THE TOP OF THE SIGN. THE NEAR EDGE OF THE SIGN SHALL BE STRAIGHT AND LEVEL AND WITH THE FACE OF THE SIGN PERPENDICULAR TO THE SURFACE OF THE ROADWAY.
5. REFLECTORIZED ORANGE ADVANCE WARNING SIGNS AND ANY ORANGE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A FLUORESCENT ORANGE PNEUMATIC RETROREFLECTIVE SHEETING. REFLECTORIZED WHITE REGULATORY SIGNS AND ANY WHITE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A WHITE PNEUMATIC RETROREFLECTIVE SHEETING.
6. ALL TRAFFIC CONTROL DEVICES SHALL COMPLY WITH ALL MCDOT REPORT 350 REQUIREMENTS AND SHALL REQUIRE APPROVAL BY THE DEPARTMENT. ONLY THOSE TRAFFIC CONTROL DEVICES INCLUDED ON THE "APPROVED PRODUCTS LIST FOR TRAFFIC CONTROL DEVICES IN WORK ZONES" ARE CONSIDERED ACCEPTABLE FOR USE. THIS LIST MAY BE ACCESSIBLE ON THE DEPARTMENT'S WEB SITE AT: www.scdot.gov
7. THE CONTRACTOR SHALL PROVIDE AND UTILIZE ANY SPECIAL SIGN MOUNTING ASSEMBLIES AND HARDWARE THAT MAY BE NECESSARY FOR INSTALLING AND MAINTAINING SIGNS IN AREAS OF CONCRETE MOUNTING BARRIERS, BRIDGE PAVEMENT WALLS OR SOLID EXISTING BARRIERS.
8. REFLECTORIZED ORANGE ADVANCE WARNING SIGNS DURING DAYLIGHT HOURS IS NOT REQUIRED. IF THIS TRAFFIC CONTROL SETUP EXTENDS INTO THE NIGHTTIME HOURS, REPLACE ALL 36" TRAFFIC CONES WITH EITHER PORTABLE PLASTIC CONES OR 42" OVERSEED TRAFFIC CONES. REFLECTORIZED ALL PORTABLE PLASTIC CONES AND 42" OVERSEED TRAFFIC CONES WITH TYPE B FLEXIBLE PNEUMATIC RETROREFLECTIVE SHEETING UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
9. REFLECTORIZED ALL BARRICADES WITH A TYPE IV OR II PNEUMATIC RETROREFLECTIVE SHEETING ON ALL PROJECTS LET TO CONTRACT AFTER MAY 1, 2010 UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
10. TYPE I BARRICADES SHALL HAVE A MINIMUM WIDTH OF 3 FEET UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
11. CONDUCT THE WORK IN SUCH A MANNER THAT WILL MINIMIZE ENDOURANCEMENT OF TRAFFIC CONTROL DEVICES, EQUIPMENT, PERSONNEL, MATERIALS OR ANY WORK RELATED VEHICLES INTO AN ADJACENT TRAVEL LANE. ORDER TO TRAFFIC INSTALL, MAINTAIN AND ADJUST THE TRAFFIC CONTROL DEVICES AS NECESSARY TO ENSURE PROPER DELINEATION OF THE WORK AREA.
12. LANE CLOSURES ARE RESTRICTED TO MAXIMUM LENGTHS OF 2 MILES UNLESS OTHERWISE DIRECTED BY THE SPECIAL PROVISIONS AND/OR THE DEPARTMENT.
13. IF WORK IS BEING CONDUCTED SIMULTANEOUSLY AT TWO DIFFERENT LOCATIONS WITHIN THE SAME TRAVEL LANE UNDER TWO SEPARATE LANE CLOSURES ON A PRIMARY ROADWAY WITH A POSTED REGULATORY SPEED LIMIT OF 40 MPH OR GREATER, SEPARATE THE TWO LANE CLOSURES BY NO LESS THAN 3 MILES FROM THE END OF THE FIRST CLOSURE THAT A MOTORIST WILL ENCOUNTER TO THE BEGINNING OF THE TAPER OF THE SECOND CLOSURE.
14. IF WORK IS BEING CONDUCTED SIMULTANEOUSLY AT TWO DIFFERENT LOCATIONS IN THE SAME DIRECTION BUT WITHIN DIFFERENT TRAVEL LANE UNDER TWO SEPARATE LANE CLOSURES ON A PRIMARY ROADWAY WITH A POSTED REGULATORY SPEED LIMIT OF 40 MPH OR GREATER, SEPARATE THE TWO LANE CLOSURES BY NO LESS THAN 3 MILES FROM THE END OF THE FIRST CLOSURE THAT A MOTORIST WILL ENCOUNTER TO THE BEGINNING OF THE TAPER OF THE SECOND CLOSURE.
15. UTILIZATION OF A CHANGEABLE MESSAGE SIGN IS OPTIONAL WITH THIS TRAFFIC CONTROL SETUP. HOWEVER, WHEN A CHANGEABLE MESSAGE SIGN IS UTILIZED, INSTALL THE SIGN AS ILLUSTRATED ON THIS STANDARD DRAWING UNLESS OTHERWISE DIRECTED BY THE SPECIAL PROVISIONS, THE PLANS AND/OR THE ENGINEER. INSTALL THE CHANGEABLE MESSAGE SIGN NO LESS THAN 6 FEET FROM THE NEAR EDGE OF THE ADJACENT TRAVEL LANE AND SUPPLEMENT THE SIGN LOCATION WITH NO LESS THAN 3 PORTABLE PLASTIC CONES FOR DELINEATION AS ILLUSTRATED. 36" STANDARD TRAFFIC CONES OR 42" OVERSEED TRAFFIC CONES ARE PROHIBITED AS SUBSTITUTES FOR THE PORTABLE PLASTIC CONES IN THIS APPLICATION. DURING A RIGHT LANE CLOSURE, THE SIGN SHOULD FLASH ALTERNATELY TO READ "RIGHT LANE CLOSED," "MERGE LEFT" AT A RATE THAT WILL PERMIT MOTORISTS TO READ BOTH MESSAGES AT LEAST ONCE.
16. THE DEPARTMENT RESERVES THE RIGHT TO RESTRICT WORK OPERATIONS AND/OR WITHHOLD THE MONTHLY ESTIMATE IF THE TRAFFIC CONTROL IS NOT PROPERLY INSTALLED AND MAINTAINED AS DIRECTED BY THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, THE STANDARD DRAWINGS, THE PLANS AND/OR THE ENGINEER.
17. THIS TYPICAL TRAFFIC CONTROL SETUP APPLIES TO THE INSTALLATION OF A LANE CLOSURE ON A PRIMARY ROADWAY WITH A POSTED REGULATORY SPEED LIMIT OF 40 MPH OR GREATER.

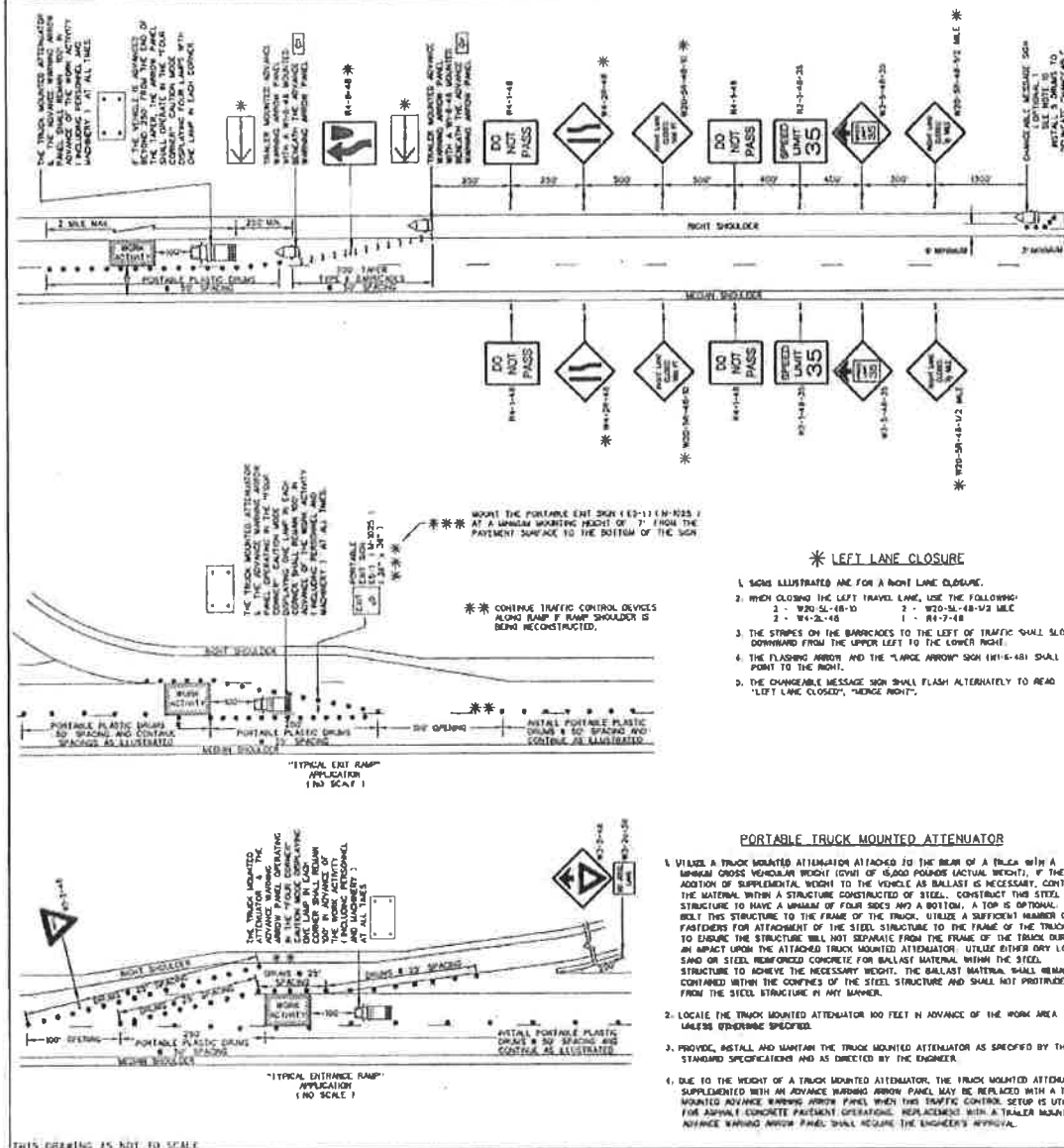
ADVANCE WARNING ARROW PANEL

ALL ADVANCE WARNING ARROW PANELS SHALL BE 48" x 96" WITH A MINIMUM LEGIBILITY DISTANCE OF 1 MILE. IN ADDITION, ADVANCE WARNING ARROW PANELS MAY REQUIRE ADJUSTMENTS DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENT OR OTHER SIGHT DISTANCE RESTRICTIONS. THE PANEL FACE SHALL BE NONREFLECTIVE BLACK. ALL ADVANCE WARNING ARROW PANELS SHALL COMPLY WITH THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION.

WHEN AN ADVANCE WARNING ARROW PANEL IS REQUIRED TO OPERATE IN THE CAUTION MODE, THE ADVANCE WARNING ARROW PANEL SHALL DISPLAY THE "FOUR CORNERS" CAUTION MODE, WITH ONE LAMP IN EACH CORNER. DISPLAY OF ANY OTHER TYPE OF CAUTION MODE OTHER THAN THE "FOUR CORNERS" CAUTION MODE SUCH AS THE "FLASHING BAR" OR THE "ALTERNATING BAR" CAUTION MODES ARE UNACCEPTABLE AND PROHIBITED.

LEGEND

36" TRAFFIC CONES



GENERAL NOTES

1. ALL SIGN LOCATIONS ARE TO BE MEASURED FROM THE WORK AREA. WORK LIMITS FOR THE PROJECT WILL BE DETERMINED BY THE ENGINEER AND AS INDICATED IN THE CONTRACT.
2. INSTALL ADVANCE WARNING SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS NO LESS THAN 5 FEET FROM THE NEAR EDGE OF THE SHOULDER TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE OR ROADWAY WITHIN THE SHOULDER AND NO LESS THAN 5 FEET FROM THE NEAR EDGE OF THE SHOULDER TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE OR ROADWAY WITHIN THE SHOULDER. WHEN CHAIN & CUTTER IS PRESENT, INSTALL THE SIGN NO LESS THAN 2 FEET FROM THE NEAR EDGE OF THE SHOULDER TO THE FACE OF THE CURB.
3. SPACINGS INDICATED ARE FOR NORMAL CONDITIONS. ADJUSTMENTS MAY BE REQUIRED DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENT OR OTHER RIGHT OF WAY OBSTRUCTIONS.
4. ALL SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 5 FEET FROM THE GROUND TO THE BOTTOM OF THE SIGN. ALL SIGNS MOUNTED ON GROUND UNMOUNTED IN-CHANNEL POSTS OR SQUARE POSTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 3 FEET FROM THE GROUND ELEVATION OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE TO THE BOTTOM OF THE SIGN UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. MOUNT ALL SIGNS STRAIGHT AND LEVEL AND WITH THE FACE OF THE SIGNS PERPENDICULAR TO THE SURFACE OF THE ROADWAY.
5. REFLECTORIZED ORANGE ADVANCE WARNING SIGNS AND ANY ORANGE MATERIAL OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A FLUORESCENT ORANGE COLORED PRISMATIC RETROREFLECTIVE SHEETING. REFLECTORIZED WHITE REGULARITY SIGNS AND ANY WHITE MATERIAL OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A WHITE COLORED PRISMATIC RETROREFLECTIVE SHEETING.
6. ALL TRAFFIC CONTROL DEVICES SHALL COMPLY WITH ALL NORTH CAROLINA DEPARTMENT OF TRANSPORTATION AND SHALL REQUIRE APPROVAL BY THE DEPARTMENT. ONLY THOSE TRAFFIC CONTROL DEVICES IN WORK ZONES ARE CONSIDERED ACCEPTABLE FOR USE. THIS LIST MAY BE ACCESSIBLE ON THE DEPARTMENT'S WEB SITE AT: www.ncdot.org
7. THE CONTRACTOR SHALL PROVIDE AND UTILIZE ANY SPECIAL SIGN MOUNTING ACCESSORIES AND MATERIALS THAT MAY BE NECESSARY FOR INSTALLING AND MOUNTING SIGNS IN AREAS OF CONCRETE MEDIAN BARRIERS, BRIDGE PARAPETS, WALLS OR COMBINED STRUCTURES.
8. REFLECTORIZED ALL PORTABLE PLASTIC DRUMS AND 12" OVERSIZED TRAFFIC CONES WITH TYPE II FLUORESCENT PRISMATIC RETROREFLECTIVE SHEETING UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. 12" OVERSIZED TRAFFIC CONES MAY BE SUBSTITUTED FOR THE PORTABLE PLASTIC DRUMS IN THIS TYPICAL TRAFFIC CONTROL SETUP. THE 12" OVERSIZED TRAFFIC CONES SHALL COMPLY WITH ALL REQUIREMENTS OF THE STANDARD SPECIFICATIONS.
9. REFLECTORIZED ALL BARRIERS WITH A TYPE III OR PRISMATIC RETROREFLECTIVE SHEETING ON ALL PROJECTS LET TO CONTRACT AFTER MAY 1, 2015 UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
10. TYPE I BARRIERS SHALL HAVE A MINIMUM WIDTH OF 3 FEET UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
11. CONDUCT THE WORK IN SUCH A MANNER THAT WILL MINIMIZE ENCROACHMENT OF TRAFFIC CONTROL DEVICES, EQUIPMENT, PERSONNEL, MATERIALS OR ANY OTHER RELATED VEHICLES ONTO AN ADJACENT TRAVEL LANE OPEN TO TRAFFIC. INSTALL, MAINTAIN AND ADJUST THE TRAFFIC CONTROL DEVICES AS NECESSARY TO ENSURE PROPER DELINEATION OF THE WORK AREA.
12. LANE CLOSURES ARE RESTRICTED TO A MINIMUM LENGTH OF 1/4 MILE UNLESS OTHERWISE DIRECTED BY THE SPECIAL PROVISIONS AND/OR THE DEPARTMENT.
13. IF WORK IS BEING CONDUCTED SIMULTANEOUSLY AT TWO DIFFERENT LOCATIONS WITHIN THE SAME TRAVEL LANE UNDER TWO SEPARATE LANE CLOSURES ON A PRIMARY ROADWAY WITH A POSTED REGULATORY SPEED LIMIT OF 40 MPH OR GREATER, SEPARATE THE TWO LANE CLOSURES BY NO LESS THAN 2 MILES FROM THE END OF THE FIRST CLOSURE THAT A MOTORIST WILL ENCOUNTER TO THE BEGINNING OF THE TAPER OF THE SECOND CLOSURE.
14. IF WORK IS BEING CONDUCTED SIMULTANEOUSLY AT TWO DIFFERENT LOCATIONS IN THE SAME DIRECTION BUT WITHIN DIFFERENT TRAVEL LANE UNDER TWO SEPARATE LANE CLOSURES ON A PRIMARY ROADWAY WITH A POSTED REGULATORY SPEED LIMIT OF 40 MPH OR GREATER, SEPARATE THE TWO LANE CLOSURES BY NO LESS THAN 1/4 MILE FROM THE END OF THE FIRST CLOSURE THAT A MOTORIST WILL ENCOUNTER TO THE BEGINNING OF THE TAPER OF THE SECOND CLOSURE.
15. UTILIZATION OF A CHANGEABLE MESSAGE SIGN IS OPTIONAL WITH THIS TRAFFIC CONTROL SETUP. HOWEVER, WHEN A CHANGEABLE MESSAGE SIGN IS UTILIZED, INSTALL THE SIGN AS ILLUSTRATED ON THIS STANDARD DRAWING UNLESS OTHERWISE DIRECTED BY THE SPECIAL PROVISIONS. THE PLANS AND/OR THE ENGINEER. INSTALL THE CHANGEABLE MESSAGE SIGN NO LESS THAN 5 FEET FROM THE NEAR EDGE OF THE ADJACENT TRAVEL LANE AND SUPPLEMENT THE SIGN LOCATION WITH NO LESS THAN 5 PORTABLE PLASTIC DRUMS FOR DELINEATION AS ILLUSTRATED. 30" STANDARD TRAFFIC CONES OR 12" OVERSIZED TRAFFIC CONES ARE PROHIBITED AS SUBSTITUTES FOR THE PORTABLE PLASTIC DRUMS IN THIS APPLICATION. DURING A RIGHT LANE CLOSURE, THE SIGN SHOULD FLASH ALTERNATELY TO READ "RIGHT LANE CLOSED", "MERGE LEFT" AT A RATE THAT WILL REPEAT MESSAGES TO REACH BOTH MESSAGES AT LEAST ONCE.
16. THE DEPARTMENT RESERVES THE RIGHT TO RESTRICT WORK OPERATIONS AND/OR WITHHOLD THE MONTHLY ESTIMATE IF THE TRAFFIC CONTROL IS NOT PROPERLY INSTALLED AND MAINTAINED AS DIRECTED BY THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, THE STANDARD DRAWINGS, THE PLANS AND/OR THE ENGINEER.
17. THIS TYPICAL TRAFFIC CONTROL SETUP APPLIES TO THE INSTALLATION OF A LANE CLOSURE ON A PRIMARY ROADWAY WITH A POSTED REGULATORY SPEED LIMIT OF 40 MPH OR GREATER.

ADVANCE WARNING ARROW PANEL

ALL ADVANCE WARNING ARROW PANELS SHALL BE 48" x 60" WITH A MINIMUM LUMINOUS INTENSITY OF 100 CD. PLACEMENT OF AN ADVANCE WARNING ARROW PANEL MAY REQUIRE ADJUSTMENTS DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENT OR OTHER RIGHT OF WAY OBSTRUCTIONS. THE PANEL FACE SHALL BE RETROREFLECTIVE BLACK. ALL ADVANCE WARNING ARROW PANELS SHALL COMPLY WITH THE STANDARD SPECIFICATIONS FOR WORK ZONE CONSTRUCTION, LATEST EDITION.

WHEN AN ADVANCE WARNING ARROW PANEL IS REQUIRED TO OPERATE IN THE CAUTION MODE, THE ADVANCE WARNING ARROW PANEL SHALL DISPLAY THE "YOUR CORNERS" CAUTION MODE, WITH ONE LAMP IN EACH CORNER. DISPLAY OF ANY OTHER TYPE OF CAUTION MODE OTHER THAN THE "YOUR CORNERS" CAUTION MODE SUCH AS THE "FLASHING BAR" OR THE "ALTERNATING DASH" CAUTION MODES ARE UNACCEPTABLE AND PROHIBITED.

LEGEND

1. PORTABLE PLASTIC DRUM

REFERENCES

WORK ZONE TRAFFIC CONTROL ENGINEER



Signature
8/2/12
DATE

#	DATE	BY	DESCRIPTION
1	8-10-11	JCS	GENERAL UPDATE
2	8-22-07	JCS	DRAWING AND UPDATE
3			
4			
5			
6			

SCDOT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

LANE CLOSURE
NIGHTTIME
MULTILANE
PRIMARY ROUTES

610-030-00

EFFECTIVE LISTS DATE: 10/11/11

REFERENCES

PORTABLE TRUCK MOUNTED ATTENUATOR

1. UTILIZE A TRUCK MOUNTED ATTENUATOR ATTACHED TO THE REAR OF A TRUCK WITH A MAXIMUM GROSS VEHICLE WEIGHT (GVW) OF 15,000 POUNDS (ACTUAL WEIGHT). IF THE ADDITION OF SUPPLEMENTAL WEIGHT TO THE VEHICLE AS BALLAST IS NECESSARY, CONTAIN THE MATERIAL WITHIN A STRUCTURE CONSTRUCTED OF STEEL. CONSTRUCT THIS STEEL STRUCTURE TO HAVE A MINIMUM OF FOUR SIDES AND A NOTCH. A TOP IS OPTIONAL. BUILD THIS STRUCTURE TO THE FRAME OF THE TRUCK. UTILIZE A SUFFICIENT NUMBER OF FASTENERS FOR ATTACHMENT OF THE STEEL STRUCTURE TO THE FRAME OF THE TRUCK TO ENSURE THE STRUCTURE WILL NOT SEPARATE FROM THE FRAME OF THE TRUCK DURING AN IMPACT UPON THE ATTACHED TRUCK MOUNTED ATTENUATOR. UTILIZE EITHER DRY LOOSE SAND OR STEEL REINFORCED CONCRETE FOR BALLAST MATERIAL WITHIN THE STEEL STRUCTURE TO ACHIEVE THE NECESSARY HEIGHT. THE BALLAST MATERIAL SHALL REMAIN CONTAINED WITHIN THE CONFINES OF THE STEEL STRUCTURE AND SHALL NOT PROTRUDE FROM THE STEEL STRUCTURE IN ANY MANNER.
2. LOCATE THE TRUCK MOUNTED ATTENUATOR 100 FEET IN ADVANCE OF THE WORK AREA UNLESS OTHERWISE SPECIFIED.
3. PROVIDE, INSTALL AND MAINTAIN THE TRUCK MOUNTED ATTENUATOR AS SPECIFIED BY THE STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER.
4. DUE TO THE WEIGHT OF A TRUCK MOUNTED ATTENUATOR, THE TRUCK MOUNTED ATTENUATOR SUPPLEMENTED WITH AN ADVANCE WARNING ARROW PANEL MAY BE REPLACED WITH A TRAILER MOUNTED ADVANCE WARNING ARROW PANEL WHEN THIS TRAFFIC CONTROL SETUP IS UTILIZED FOR ASPHALT CONCRETE PAVEMENT OPERATIONS. REPLACEMENT WITH A TRAILER MOUNTED ADVANCE WARNING ARROW PANEL SHALL REQUIRE THE ENGINEER'S APPROVAL.

* RIGHT LANE CLOSURE

1. SIGNS ILLUSTRATED ARE FOR CLOSURE OF THE LEFT TWO TRAVEL LINES.
2. WHEN CLOSING THE RIGHT TWO TRAVEL LINES, USE THE FOLLOWING:
2 - R4-48
2 - W1-48-48
2 - R20-54R-48-48
2 - R20-54R-48-48-48
2 - R20-54R-48-48-48-48
3. THE STRIPES ON THE BARRICADES TO THE RIGHT OF TRAFFIC SHALL SLOPE DOWNWARD FROM THE UPPER RIGHT TO THE LOWER LEFT.
4. THE FLASHING ARROW AND THE "LARGE ARROW" SIGN (W1-8-48) SHALL POINT TO THE LEFT.
5. THE CHANGEABLE MESSAGE SIGN SHALL FLASH ALTERNATELY TO READ "RIGHT 2 LINES CLOSED", "MILEAGE LEFT", MAINTAIN THE CHANGEABLE MESSAGE SIGN ON A SHOULDER WHERE SUFFICIENT SPACE EXISTS SUCH THAT THE SIGN DOES NOT ENDOUR ON TO THE ADJACENT TRAVEL LANE.

ADVANCE WARNING ARROW PANEL

ALL ADVANCE WARNING ARROW PANELS SHALL BE 18" x 96" WITH A MINIMUM LEGIBILITY DISTANCE OF 1 MILE. PLACEMENT OF AN ADVANCE WARNING ARROW PANEL MAY REQUIRE ADJUSTMENTS DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENT OR OTHER SIGHT DISTANCE RESTRICTIONS. THE PANEL FACE SHALL BE NONREFLECTIVE BLACK. ALL ADVANCE WARNING ARROW PANELS SHALL COMPLY WITH THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION.

WHEN AN ADVANCE WARNING ARROW PANEL IS REQUIRED TO OPERATE IN THE CAUTION MODE, THE ADVANCE WARNING ARROW PANEL SHALL DISPLAY THE "FOUR CORNERS" CAUTION MODE, WITH ONE LAMP IN EACH CORNER. DISPLAY OF ANY OTHER TYPE OF CAUTION MODE OTHER THAN THE "FOUR CORNERS" CAUTION MODE SUCH AS THE "FLASHING BARS" OR THE "ALTERNATING DIAMOND" CAUTION MODES ARE UNACCEPTABLE AND PROHIBITED.

WORK ZONE TRAFFIC CONTROL ENGINEER



SIGNATURE
8/2/12
DATE

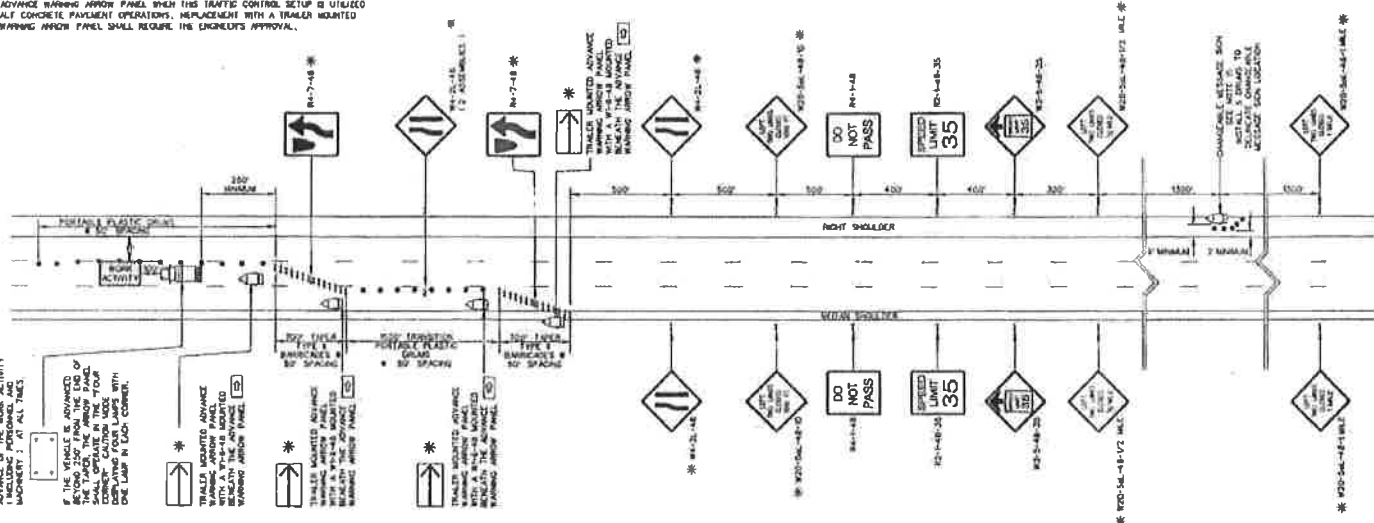
SCDOT
South Carolina Department of Transportation
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

DUAL
LANE CLOSURE
MULTILANE
PRIMARY ROUTES

610-035-00

EFFECTIVE DATE: JAN. 2011 THIS DRAWING IS NOT TO SCALE

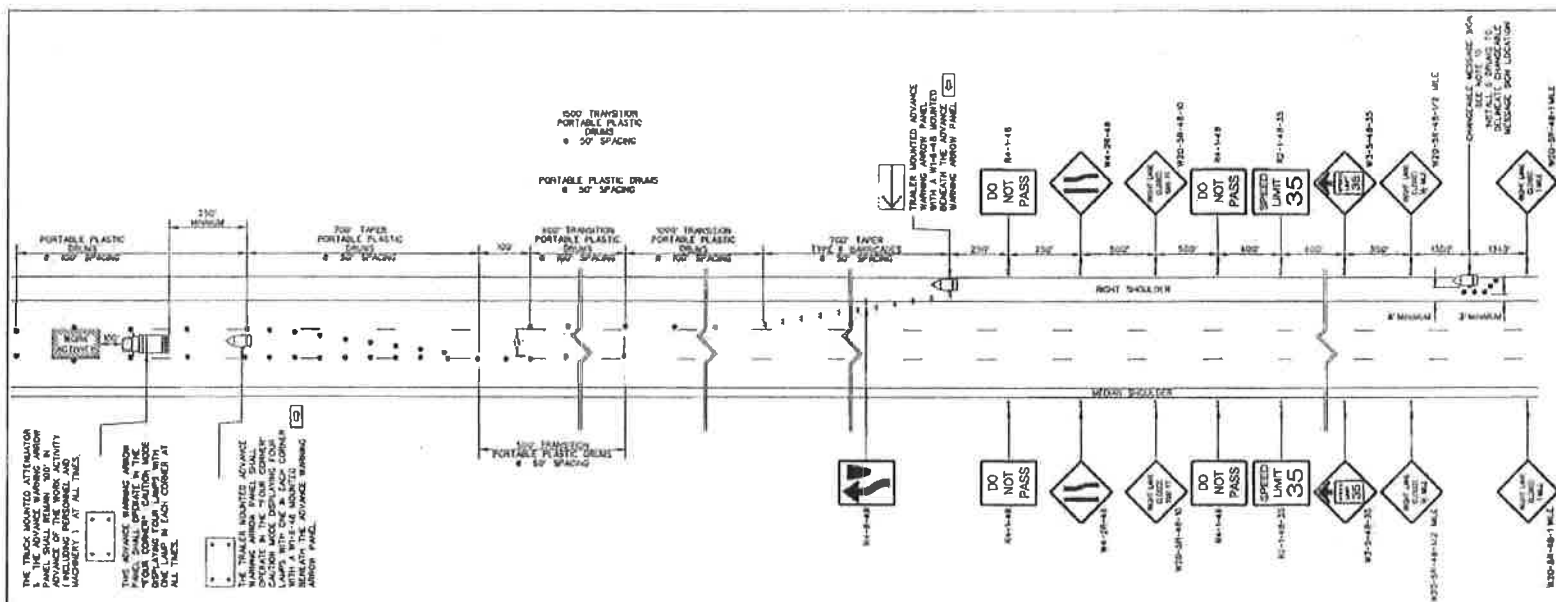


GENERAL NOTES

1. ALL SIGN LOCATIONS ARE TO BE MEASURED FROM THE WORK AREA. WORK LIMITS FOR THE PROJECT WILL BE DETERMINED BY THE ENGINEER AND AS INDICATED IN THE CONTRACT.
2. INSTALL ADVANCE WARNING SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS NO LESS THAN 4 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON HIGHWAYS WITH EARTH SHOULDERS AND NO LESS THAN 8 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH PAVED SHOULDERS. WHEN CURB & GUTTER IS PRESENT, INSTALL THE SIGN NO LESS THAN 2 FEET FROM THE NEAR EDGE OF THE SIGN TO THE FACE OF THE CURB.
3. SPACINGS INDICATED ARE FOR NORMAL CONDITIONS. ADJUSTMENTS MAY BE REQUIRED DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENTS OR OTHER SIGHT DISTANCE RESTRICTIONS.
4. ALL SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 3 FEET FROM THE GROUND TO THE BOTTOM OF THE SIGN. ALL SIGNS MOUNTED ON CONCRETE MOUNTED SIGNS OR STEEL SIGNS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 2 FEET FROM THE GROUND ELEVATION OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE TO THE BOTTOM OF THE SIGN UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. MOUNT ALL SIGNS STRAIGHT AND LEVEL AND WITH THE FACE OF THE SIGNS PERPENDICULAR TO THE SURFACE OF THE ROADWAY.
5. REFLECTORIZED ORANGE ADVANCE WARNING SIGNS AND ANY ORANGE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN OR A FLUORESCENT ORANGE COLORED PRISMATIC RETROREFLECTIVE SHEETING. PROTECTORIZE WHITE REGULATORY SIGNS AND ANY WHITE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A WHITE COLORED PRISMATIC RETROREFLECTIVE SHEETING.
6. ALL TRAFFIC CONTROL DEVICES SHALL COMPLY WITH ALL MCHRP REPORT 350 REQUIREMENTS AND SHALL REQUIRE APPROVAL BY THE DEPARTMENT. ONLY THOSE TRAFFIC CONTROL DEVICES INCLUDED ON THE "APPROVED PRODUCTS LIST FOR TRAFFIC CONTROL DEVICES IN WORK ZONES" ARE CONSIDERED ACCEPTABLE FOR USE. THIS LIST MAY BE ACCESSSED ON THE DEPARTMENT'S WEB SITE AT: www.scdot.org.
7. THE CONTRACTOR SHALL PROVIDE AND UTILIZE ANY SPECIAL SIGN MOUNTING ASSEMBLIES AND HARDWARE THAT MAY BE NECESSARY FOR INSTALLING AND MOUNTING SIGNS IN AREAS OF CONCRETE MEDIUM BARRIER, BRIDGE PARAPET WALLS OR DOUBLEFACED CURBRAIL.
8. REFLECTORIZED ALL PORTABLE PLASTIC DRUMS AND 42" OVERSIZED TRAFFIC CONES WITH TYPE B FLEXIBLE PRISMATIC RETROREFLECTIVE SHEETING UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. 42" OVERSIZED TRAFFIC CONES MAY BE SUBSTITUTED FOR THE PORTABLE PLASTIC DRUMS IN THIS TYPICAL TRAFFIC CONTROL SETUP. THE 42" OVERSIZED TRAFFIC CONES SHALL COMPLY WITH ALL REQUIREMENTS OF THE STANDARD SPECIFICATIONS.
9. REFLECTORIZED ALL BARRICADES WITH A TYPE VII OR II PRISMATIC RETROREFLECTIVE SHEETING ON ALL PROJECTS LET TO CONTRACT AFTER MAY 1, 2002 UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
10. TYPE II BARRICADES SHALL HAVE A MINIMUM WIDTH OF 3 FEET UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
11. CONDUCT THE WORK IN SUCH A MANNER THAT WILL MINIMIZE ENCROACHMENT OF TRAFFIC CONTROL DEVICES, EQUIPMENT, PERSONNEL, MATERIALS ON ANY WORK RELATED VEHICLES ON AN ADJACENT TRAVEL LANE OPEN TO TRAFFIC. INSTALL, MAINTAIN AND ADJUST THE TRAFFIC CONTROL DEVICES AS NECESSARY TO ENSURE PROPER COLORATION OF THE WORK AREA.
12. LANE CLOSURES ARE RESTRICTED TO MAXIMUM LENGTHS OF 2 MILES UNLESS OTHERWISE DIRECTED BY THE SPECIAL PROVISIONS AND/OR THE DEPARTMENT.
13. IF WORK IS BEING CONDUCTED SIMULTANEOUSLY AT TWO DIFFERENT LOCATIONS WITHIN THE SAME TRAVEL LANE UNDER TWO SEPARATE LANE CLOSURES ON A PRIMARY ROADWAY WITH A POSTED REGULATORY SPEED LIMIT OF 40 MPH OR GREATER, SEPARATE THE TWO LANE CLOSURES BY NO LESS THAN 2 MILES FROM THE END OF THE FIRST CLOSURE THAT A MOTORIST WILL ENCOUNTER TO THE BEGINNING OF THE TAPER OF THE SECOND CLOSURE.
14. IF WORK IS BEING CONDUCTED SIMULTANEOUSLY AT TWO DIFFERENT LOCATIONS IN THE SAME DIRECTION BUT WITHIN DIFFERENT TRAVEL LINES UNDER TWO SEPARATE LANE CLOSURES ON A PRIMARY ROADWAY WITH A POSTED REGULATORY SPEED LIMIT OF 40 MPH OR GREATER, SEPARATE THE TWO LANE CLOSURES BY NO LESS THAN 4 MILES FROM THE END OF THE FIRST CLOSURE THAT A MOTORIST WILL ENCOUNTER TO THE BEGINNING OF THE TAPER OF THE SECOND CLOSURE.
15. A TRAILER MOUNTED CHANGEABLE MESSAGE SIGN IS REQUIRED FOR THIS TRAFFIC CONTROL SETUP FOR A DUAL LANE CLOSURE. INSTALL THE CHANGEABLE MESSAGE SIGN AS ILLUSTRATED ON THIS STANDARD DRAWING UNLESS OTHERWISE DIRECTED BY THE SPECIAL PROVISIONS. THE PLANS AND/OR THE ENGINEER. INSTALL THE CHANGEABLE MESSAGE SIGN NO LESS THAN 4 FEET FROM THE NEAR EDGE OF THE ADJACENT TRAVEL LANE AND SUPPLEMENT THE SIGN LOCATION WITH NO LESS THAN 5 PORTABLE PLASTIC DRUMS FOR ORIENTATION AS ILLUSTRATED. 30" STANDARD TRAFFIC CONES OR 42" OVERSIZED TRAFFIC CONES ARE PROHIBITED AS SUBSTITUTES FOR THE PORTABLE PLASTIC DRUMS IN THIS APPLICATION. DURING A DUAL LEFT LANE CLOSURE, THE SIGN SHOULD FLASH ALTERNATELY TO READ "LEFT 2 LINES CLOSED", "MILEAGE RIGHT" AT A RATE THAT WILL PERMIT THE MOTORISTS TO READ BOTH MESSAGES AT LEAST ONCE.
16. THE DEPARTMENT RESERVES THE RIGHT TO RESTRICT WORK OPERATIONS AND/OR WITHHOLD THE MONTHLY ESTIMATE IF THE TRAFFIC CONTROL IS NOT PROPERLY INSTALLED AND MAINTAINED AS DIRECTED BY THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, THE STANDARD DRAWINGS, THE PLANS AND/OR THE ENGINEER.
17. THIS TYPICAL TRAFFIC CONTROL SETUP APPLIES TO THE INSTALLATION OF A DUAL LANE CLOSURE ON A PRIMARY ROADWAY WITH A POSTED REGULATORY SPEED LIMIT OF 40 MPH OR GREATER.

LEGEND

- 1 PORTABLE PLASTIC DRUM



ADVANCE WARNING ARROW PANEL

ALL ADVANCE WARNING ARROW PANELS SHALL BE 48" x 96" WITH A MINIMUM LEGIBILITY DISTANCE OF 1 MILE. PLACEMENT OF AN ADVANCE WARNING ARROW PANEL MAY REQUIRE ADJUSTMENTS DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENT OR OTHER SIGHT DISTANCE RESTRICTIONS. THE PANEL FACE SHALL BE NONREFLECTIVE BLACK. ALL ADVANCE WARNING ARROW PANELS SHALL COMPLY WITH THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION.

WHEN AN ADVANCE WARNING ARROW PANEL IS REQUIRED TO OPERATE IN THE CAUTION MODE, THE ADVANCE WARNING ARROW PANEL SHALL DISPLAY THE "YOUR CONSIDER" CAUTION MODE, WITH ONE LAMP IN EACH CORNER. DISPLAY OF ANY OTHER TYPE OF CAUTION MODE OTHER THAN THE "YOUR CONSIDER" CAUTION MODE SUCH AS THE "FLASHING BARS" OR THE "ALTERNATING DIAGONAL" CAUTION MODES ARE UNACCEPTABLE AND PROHIBITED.

PORTABLE TRUCK MOUNTED ATTENUATOR

1. UTILIZE A TRUCK MOUNTED ATTENUATOR ATTACHED TO THE REAR OF A TRUCK WITH A MINIMUM GROSS VEHICULAR WEIGHT (GVW) OF 15,000 POUNDS (ACTUAL WEIGHT). IF THE ADDITION OF SUPPLEMENTAL WEIGHT TO THE VEHICLE AS BALLAST IS NECESSARY, CONTAIN THE MATERIAL WITHIN A STRUCTURE CONSTRUCTED OF STEEL. CONSTRUCT THIS STEEL STRUCTURE TO HAVE A MINIMUM OF FOUR SIDES AND A BOTTOM. A TIE IS OPTIONAL. BOLT THIS STRUCTURE TO THE FRAME OF THE TRUCK. UTILIZE A SUFFICIENT NUMBER OF FASTENERS FOR ATTACHMENT OF THE STEEL STRUCTURE TO THE FRAME OF THE TRUCK TO ENSURE THE STRUCTURE WILL NOT SEPARATE FROM THE FRAME OF THE TRUCK DURING AN IMPACT UPON THE ATTACHED TRUCK MOUNTED ATTENUATOR. UTILIZE EITHER DRY LOOSE SAND OR STEEL REINFORCED CONCRETE FOR BALLAST MATERIAL WITHIN THE STEEL STRUCTURE TO ACHIEVE THE NECESSARY WEIGHT. THE BALLAST MATERIAL SHALL REMAIN CONTAINED WITHIN THE CORNERS OF THE STEEL STRUCTURE AND SHALL NOT PROTRUDE FROM THE STEEL STRUCTURE IN ANY MANNER.
2. LOCATE THE TRUCK MOUNTED ATTENUATOR 100 FEET IN ADVANCE OF THE WORK AREA UNLESS OTHERWISE SPECIFIED.
3. PROVIDE, INSTALL AND MAINTAIN THE TRUCK MOUNTED ATTENUATOR AS SPECIFIED BY THE STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER.
4. DUE TO THE WEIGHT OF A TRUCK MOUNTED ATTENUATOR, THE TRUCK MOUNTED ATTENUATOR SUPPLEMENTED WITH AN ADVANCE WARNING ARROW PANEL MAY BE REPLACED WITH A TRAILER MOUNTED ADVANCE WARNING ARROW PANEL WHEN THIS TRAFFIC CONTROL SETUP IS UTILIZED FOR ASPHALT CONCRETE PAVEMENT OPERATIONS. REPLACEMENT WITH A TRAILER MOUNTED ADVANCE WARNING ARROW PANEL SHALL REQUIRE THE ENGINEER'S APPROVAL.

THIS DRAWING IS NOT TO SCALE

GENERAL NOTES

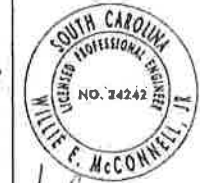
1. ALL SIGN LOCATIONS ARE TO BE MEASURED FROM THE WORK AREA. WORK LIMITS FOR THE PROJECT WILL BE DETERMINED BY THE ENGINEER AND AS INDICATED IN THE CONTRACT.
2. INSTALL ADVANCE WARNING SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS NO LESS THAN 4 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH EARTH SHOULDER AND NO LESS THAN 6 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH PAVED SHOULDER. WHEN CURB & GUTTER IS PRESENT, INSTALL THE SIGN NO LESS THAN 2 FEET FROM THE NEAR EDGE OF THE SIGN TO THE FACE OF THE CURB.
3. SPACING'S INDICATED ARE FOR NORMAL CONDITIONS. ADJUSTMENTS MAY BE REQUIRED DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENTS OR OTHER SIGHT DISTANCE RESTRICTIONS.
4. ALL SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 8 FEET FROM THE GROUND TO THE BOTTOM OF THE SIGN. ALL SIGNS MOUNTED ON GROUND MOUNTED U-CORNER POSTS OR SQUARE STEEL TUBE POSTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 7 FEET FROM THE GRADE ELEVATION OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE TO THE BOTTOM OF THE SIGN UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. MOUNT ALL SIGNS STRAIGHT AND LEVEL WITH THE FACE OF THE SIGNS PERPENDICULAR TO THE SURFACE OF THE ROADWAY.
5. REFLECTORIZED ORANGE ADVANCE WARNING SIGNS AND ANY ORANGE AREAS OF A VALLI-COLORED ADVANCE WARNING SIGN WITH A FLUORESCENT ORANGE COLORED PRISMATIC RETROREFLECTIVE SHEETING. REFLECTORIZED WHITE REGULATORY SIGNS AND ANY WHITE AREAS OF A VALLI-COLORED ADVANCE WARNING SIGN WITH A WHITE COLORED PRISMATIC RETROREFLECTIVE SHEETING.
6. ALL TRAFFIC CONTROL DEVICES SHALL COMPLY WITH ALL NCHRP REPORT 350 REQUIREMENTS AND SHALL REQUIRE APPROVAL BY THE DEPARTMENT. ONLY THOSE TRAFFIC CONTROL DEVICES INCLUDED ON THE "APPROVED PRODUCTS LIST FOR TRAFFIC CONTROL DEVICES IN WORK ZONES" ARE CONSIDERED ACCEPTABLE FOR USE. THIS LIST MAY BE ACCESSIBLE ON THE DEPARTMENT'S WEB SITE AT: www.scdot.gov.
7. THE CONSTRUCTION SHALL PROVIDE AND UTILIZE ANY SPECIAL SIGN MOUNTING ASSEMBLIES AND HARDWARE THAT MAY BE NECESSARY FOR INSTALLING AND MOUNTING SIGNS IN AREAS OF CONCRETE MEDIAN BARRIER, BRIDGE PAVEMENT WALLS OR DOUBLED-ENDED GUARDRAIL.
8. REFLECTORIZED ALL PORTABLE PLASTIC DRUMS AND 42" OVERSIZED TRAFFIC CONES WITH TYPE II FLEXIBLE PRISMATIC RETROREFLECTIVE SHEETING UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. 42" OVERSIZED TRAFFIC CONES MAY BE SUBSTITUTED FOR THE PORTABLE PLASTIC DRUMS IN THIS TYPICAL TRAFFIC CONTROL SETUP. THE 42" OVERSIZED TRAFFIC CONES SHALL COMPLY WITH ALL REQUIREMENTS OF THE STANDARD SPECIFICATIONS.
9. REFLECTORIZED ALL BARRICADES WITH A TYPE VII OR IX PRISMATIC RETROREFLECTIVE SHEETING ON ALL PROJECTS LET TO CONTRACT AFTER MAY 1, 2012 UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
10. TYPE B BARRICADES SHALL HAVE A MINIMUM WIDTH OF 3 FEET (AFTS) OTHERWISE DIRECTED BY THE DEPARTMENT.
11. CONDUCT THE WORK IN SUCH A MANNER THAT WILL MINIMIZE ENCROACHMENT OF TRAFFIC CONTROL DEVICES, EQUIPMENT, PERSONNEL, MATERIALS OR ANY WORK RELATED VEHICLES ONTO AN ADJACENT TRAVEL LANE OPEN TO TRAFFIC. INSTALL, MAINTAIN AND ADJUST THE TRAFFIC CONTROL DEVICES AS NECESSARY TO ENSURE PROPER DELINEATION OF THE WORK AREA.
12. LANE CLOSURES ARE RESTRICTED TO MAXIMUM LENGTHS OF 3 MILES UNLESS OTHERWISE DIRECTED BY THE SPECIAL PROVISIONS AND/OR THE DEPARTMENT.
13. IF WORK IS BEING CONDUCTED SIMULTANEOUSLY AT TWO DIFFERENT LOCATIONS WITHIN THE CENTER TRAVEL LANE UNDER TWO SEPARATE CENTER LANE CLOSURES ON A PRIMARY ROADWAY, SEPARATE THE TWO LANE CLOSURES BY NO LESS THAN 4 MILES FROM THE END OF THE FIRST CLOSURE THAT A MOTORIST WILL ENCOUNTER TO THE BEGINNING OF THE TAPER OF THE SECOND CLOSURE.
14. A TRAILER MOUNTED CHANGEABLE MESSAGE SIGN IS REQUIRED FOR THIS TRAFFIC CONTROL SETUP FOR A CENTER LANE CLOSURE. INSTALL THE CHANGEABLE MESSAGE SIGN AS ILLUSTRATED ON THIS STANDARD DRAWING UNLESS OTHERWISE DIRECTED BY THE SPECIAL PROVISIONS. THE PLANS AND/OR THE ENGINEER. INSTALL THE CHANGEABLE MESSAGE SIGN NO LESS THAN 8 FEET FROM THE NEAR EDGE OF THE ADJACENT TRAVEL LANE AND SUPPLEMENT THE SIGN LOCATION WITH NO LESS THAN 8 PORTABLE PLASTIC DRUMS FOR DELINEATION AS ILLUSTRATED. 36" STANDARD TRAFFIC CONES OR 42" OVERSIZED TRAFFIC CONES ARE PROHIBITED AS SUBSTITUTES FOR THE PORTABLE PLASTIC DRUMS IN THIS APPLICATION. DURING THIS CENTER LANE CLOSURE SETUP, THE SIGN SHOULD FLASH ALTERNATELY TO READ "HEAD" LANE CLOSURE, "BEYOND LEFT" AT A RATE THAT WILL PERMIT THE MOTORISTS TO READ BOTH MESSAGES AT LEAST ONCE.
15. THE DEPARTMENT RESERVES THE RIGHT TO RESTRICT WORK OPERATIONS AND/OR WITHHOLD THE MONTHLY ESTIMATE IF THE TRAFFIC CONTROL IS NOT PROPERLY INSTALLED AND MAINTAINED AS DIRECTED BY THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, THE STANDARD DRAWINGS, THE PLANS AND/OR THE ENGINEER.
16. THIS TYPICAL TRAFFIC CONTROL SETUP APPLIES TO THE INSTALLATION OF A CENTER LANE CLOSURE ON A PRIMARY ROADWAY AND IS RESTRICTED TO INSTALLATION DURING DAYTIME HOURS ONLY UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.

LEGEND

- PORTABLE PLASTIC DRUMS

REFERENCES

WORK ZONE TRAFFIC CONTROL ENGINEER



Signature: *William E. McConnell, Jr.*
Date: 8/2/12

#	DATE	BY	DESCRIPTION
1	2-17-11	JCS	GENERAL UPDATE
2	8-22-07	JCS	DRAWING NO. UPDATE
3			
4			
5			
6			
7			
8			
9			
10			

STANDARD DRAWING

CENTER LANE CLOSURE
MULTILANE
PRIMARY ROUTES

610-040-00
EFFECTIVE LITTING DATE: 3/27/12