

NORTH CAROLINA MOVING AHEAD SIGNS:

(7-18-06)

RWZ-6

Description

The Department will furnish the Contractor with the North Carolina Moving Ahead (NCMA) logo signs. The Contractor shall procure these signs from either the local Traffic Services office or directly from the Bunn Sign Plant. NCMA signs shall be installed as shown elsewhere in the contract and shall be left in place at the completion of the project. The NCMA signs and supports shall remain the property of NCDOT and will be removed by Division forces.

The Contractor shall have a sign fabricated with the name of his company, which will be mounted under the NCMA logo sign. The Contractor shall remove and keep the signs with the name of his company after final project acceptance, leaving the supports and NCMA logo signs in place.

The Contractor shall furnish all material, labor, hardware and supports necessary to erect the NCMA logo and Prime Contractor's name signs. There will only be one set of NCMA logo and Prime Contractor name signs in each direction on the mainline unless the Department identifies extenuating circumstances. These signs shall be erected prior to any work beginning on the project and shall not be installed more than three days prior to the beginning of work. After construction begins, the Contractor shall cover the NCMA signs if inactivity on the project site occurs for at least 7 days. All other required standard work zone signs shall be provided as described in Section 1110 of the *Standard Specifications* and elsewhere in the contract.

Materials

The materials for the Contractor's Company name sign and standard work zone signing shall meet the requirements of Article 1110 of the *Standard Specifications*.

The sign sheeting for the Contractor's Name Sign shall be black on orange Type I (Engineer's Grade) with 4 inch C Copy lettering. When the name of the Contractor with 4 inch C Copy lettering exceeds the maximum 60 inch width of the sign, the size of the letters shall be reduced to meet this maximum 60 inch width requirement.

Construction Methods

Construction of signs shall conform to the requirements of Article 1110-3 of the *Standard Specifications*.

Maintenance

Maintenance of the signs shall conform to the requirements of Article 1105-4 of the *Standard Specifications*. Maintenance for the NCMA signs will end upon final acceptance of the project.

Measurement and Payment

There will be no measurement and payment for the NCMA signs or the Contractor's Company name signs. All material, hardware, supports, and labor necessary shall be incidental to other items in the contract.

WATER FILLED BARRIER:

3-20-07

SPI

Description

Furnish, install, secure, maintain, remove, and reset Water Filled Barrier in accordance with the contract.

Materials

(A) General

Provide Water Filled Barrier that meets the requirements of NCHRP 350 Test Level II for work zones that have a posted speed limit of 45 mph or less. Provide Water Filled Barrier that acts as its own free standing, non-redirective end treatment. Use environmentally safe anti-freezing agent in the water per manufacturer specifications and recover agent when the barrier is drained. Do not drain Water Filled Barrier into or across an existing travel lane. Provide barrier units that are capable of being lifted and moved when filled if draining is not possible. Dispose of water and agent properly.

(B) Material Qualifications

Use Water Filled Barrier that is on the Approved Products List or is Traffic-qualified by the Work Zone Traffic Control Unit. For more information on the Traffic-qualification process, contact the Work Zone Traffic Control Unit at Century Center Building B, 1020 Birch Ridge Dr., Raleigh, NC, 27610 (919) 250-4159, or see the approved product list on NCDOT web site at: <http://www.ncdot.org/doh/preconstruct/wztc/>

(C) Historical Performance

Historical performance of the Water Filled Barrier will be used in determining future use of the material by the Department, regardless if the Water Filled Barrier has been traffic-qualified. Poor past or poor current performance of Water Filled Barrier at any site, whether or not related to a specific contract may be grounds for non-acceptance of a product on any project under contract.

Construction Methods

Place and install Water Filled Barrier units as shown in the plans and per manufacturer specifications on roadways with posted speed limits of 45 mph or less.

Furnish delineators for Water Filled Barrier that meet the requirements of Section 1088-2 and Section 1170-3 (E) of the *Standard Specifications*.

Measurement and Payment

Water Filled Barrier will be measured in accordance with Section 1170-4 of the *Standard Specifications* and paid for in linear feet.

Resetting Water Filled Barrier will be measured in accordance with Section 1170-4 of the *Standard Specifications* and paid for in linear feet.

There will be no direct payment for barrier delineators as they are considered incidental to these pay items.

Payment will be made under:

Pay Item	Pay Unit
Water Filled Barrier	Linear Foot
Reset Water Filled Barrier	Linear Foot

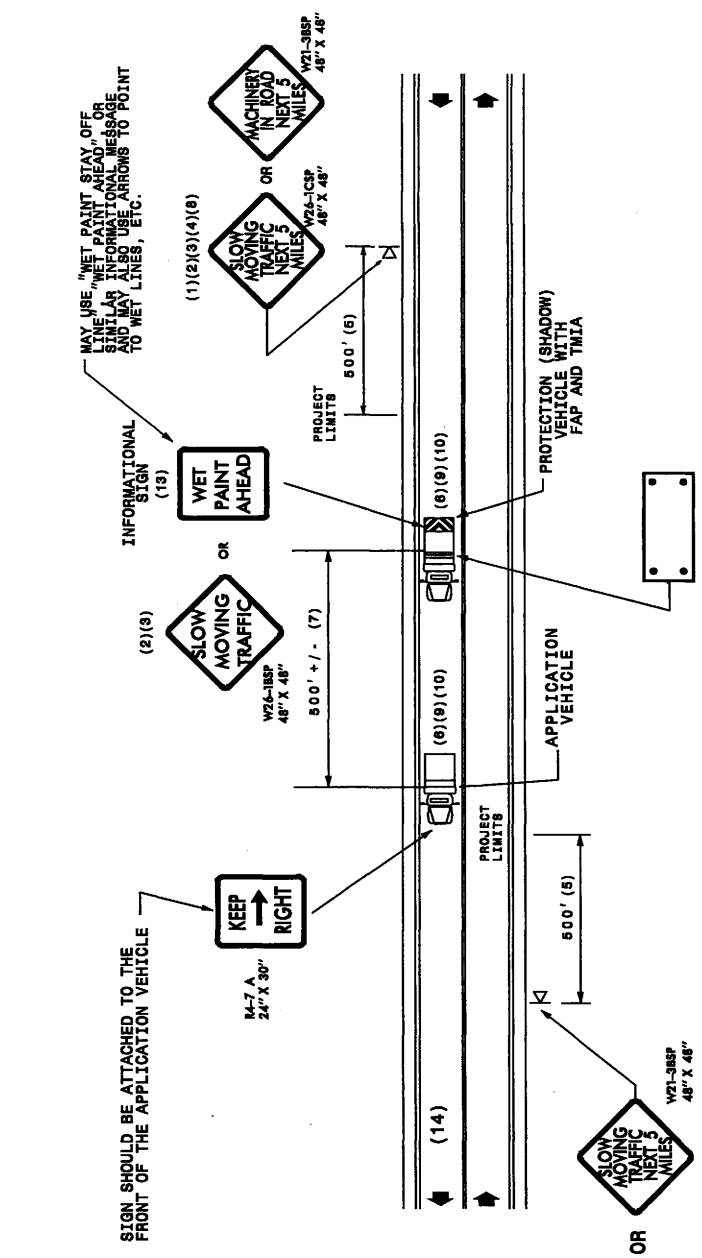
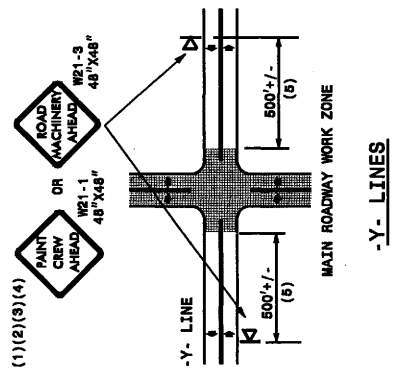
GENERAL NOTES

- (1) THE FOLLOWING OPTIONS MAY BE USED FOR ADVANCE WARNING SIGNS:
 - A. TRUCK MOUNTED CHANGEABLE MESSAGE SIGN (CMS)
 - B. TRUCK MOUNTED ADVANCE WARNING SIGNS
 - C. GROUND MOUNTED ADVANCE WARNING SIGNS (MUST CIRCLE TO PICK UP SIGNS)
 - D. GROUND MOUNTED CHANGEABLE MESSAGE SIGN (CMS) (MUST USE CIRCLE TO PICK UP SIGNS)
- (2) ALL ADVANCE WARNING SIGNS MUST BE 48" X 48" WITH FLUORESCENT CHANGE TYPE VII, VIII OR IX SHEETING. IF SPACE LIMITATIONS ON SHOULDER PROHIBIT A 48" X 48" SIGN, A SMALLER SIGN CAN BE USED WITH APPROVAL FROM ENGINEER.
- (3) SIGNS ON VEHICLES SHOULD BE MOUNTED A MINIMUM OF ONE (1) FOOT FROM THE GROUND AND SHOULD NOT BLOCK THE MOTORIST'S VIEW OF THE FLASHING ARROW PANEL AND/OR LIGHTBAR.
- (4) GROUND MOUNTED ADVANCED WARNING SIGNS SHOULD BE MOUNTED A MINIMUM OF ONE (1) FOOT FROM THE GROUND TO BOTTOM OF SIGN.
- (5) SIGN SPACING SHOULD BE ADJUSTED FOR HORIZONTAL AND VERTICAL CURVES, ETC. TO IMPROVE SIGHT DISTANCES.
- (6) ADDITIONAL VEHICLES SHOULD BE USED IN WORK CARAVAN TO FACILITATE DRYING OF PAVEMENT MARKING MATERIAL (TMA'S ARE OPTIONAL ON THESE ADDITIONAL VEHICLES). HOWEVER, THE FIRST VEHICLE MOTORISTS SEE IN THE TRAVEL LANE SHALL HAVE A TMA.

- (7) ADJUST DISTANCE AS NEEDED TO PREVENT MOTORISTS FROM ENTERING SPACE BETWEEN THE APPLICATION AND PROTECTION VEHICLE. DISTANCE CAN BE LENGTHENED TO ACCOMMODATE SIGHT DISTANCE NEEDS.
- (8) ROUND UP MILEAGE TO NEXT WHOLE MILE. WORK ZONE SHOULD NOT EXCEED FIVE (5) MILES IN LENGTH.
- (9) RADIO COMMUNICATION BETWEEN VEHICLES IS REQUIRED.
- (10) USE OF A LIGHT BAR ON ALL VEHICLES IS PREFERRED, BUT A ROTATING BEACON MAY BE USED INSTEAD.
- (11) IF WORK IS PERFORMED AT NIGHT THE WORK AREA MUST BE ILLUMINATED WITH MACHINE AND/OR TOWER LIGHTS AS APPROVED BY THE ENGINEER.
- (12) ALL TRAFFIC CONTROL DEVICES WILL BE CONSIDERED INCIDENTAL TO THE PAY ITEMS FOR PAVEMENT MARKING AND MARKERS.
- (13) INFORMATIONAL SIGNS SHOULD BE ACTIVITY SPECIFIC, I.E. PAINT CREW IN ROAD SIGNS MAY BE RECTANGULAR OR DIAMOND SHAPE. SIGN MESSAGE SHOULD BE BASED ON THE MOTORIST'S ABILITY TO RECOGNIZE SIGN WHEN TRAVELLING FIVE (5) MILES ABOVE POSTED SPEED LIMIT.
- (14) IF A LEAD VEHICLE IS ADDED TO OPERATION, IT SHOULD HAVE THE SAME ADVANCE WARNING SIGNS AS THE APPLICATION VEHICLE SHOWN BELOW.

LEGEND

- K PORTABLE SIGN. SIGNS MUST BE NCHRP-350 AND NCDOT APPROVED.
- ➔ DIRECTION OF TRAFFIC FLOW
- ☐ APPLICATION VEHICLE WITH LIGHT BAR
- ☐ PROTECTION VEHICLE WITH TRUCK MOUNTED IMPACT ATTENUATOR (TMA) AND LIGHT BAR (SEE ROADWAY STANDARD NO. 1186.01). TMA MUST BE NCHRP-350 TEST LEVEL 3 (60-MPH) APPROVED.
- ☐ FLASHING ARROW PANEL, TYPE (60" X 30" MIN.), CAUTION MODE.



MOVING OPERATION CARAVAN
 (OPERATIONS TRAVELING 3 MPH OR FASTER)
 PLACING PAVEMENT MARKING OR MARKERS
 ON TWO-LANE TWO-WAY ROADWAYS

DRAWING NUMBER 6
 IMPLEMENTATION DATE: 07/01/97
 REVISED: 11/03/04