1105-4 MAINTENANCE AND INSPECTION

Submit a proposed traffic control device maintenance schedule and checklist for approval before construction. Perform continuous maintenance and daily scheduled inspections of temporary traffic control devices. Review and maintain all traffic handling measures to ensure that adequate provisions are in place for public and workers' safety.

Maintenance activities include cleaning, repair, or replacement, and prompt disposal of temporary traffic control devices that are damaged, torn, crushed, discolored, displaced or deteriorated beyond effectiveness.

Replace work zone traffic control devices deemed unacceptable according to the guidelines set forth in the American Traffic Safety Service Association's (ATSSA) Quality Guidelines for Work Zone Traffic Control Devices.

If the name and telephone number of the agency, Contractor or supplier is shown on the non-retroreflective surface of all channelizing devices, use letters and numbers that are non-reflective and not over 2 inches in height.

1105-5 FAILURE TO MAINTAIN TRAFFIC CONTROL

Failure to maintain acceptable traffic control measures or temporary traffic control devices may result in formal notification of noncompliance. Implement remedial action immediately for imminent danger situations as directed by the Engineer. Implement remedial action within 48 hours after notification of a safety issue that is not an imminent danger. See Articles 107-21 and 108-7.

Failure to comply may result in having the work performed with available forces and equipment. In cases of willful disregard for the safety of the public, the Engineer may proceed immediately to implement the measures necessary to provide the appropriate level of traffic control to ensure that the safety of all concerned parties is maintained.

1105-6 MEASUREMENT AND PAYMENT

Payment at the contract unit prices for the various items in the contract will be full compensation for all work covered by this specification.

If the Contractor fails to maintain acceptable traffic control measures or temporary traffic control devices and the Engineer implements measures necessary to provide the appropriate level of traffic control, the actual cost of performing said work will be deducted from the monies due the Contractor on the contract.

SECTION 1110
WORK ZONE SIGNS

1110-1 DESCRIPTION

Furnish, install, maintain, temporarily cover and uncover, relocate and remove stationary and barricade mounted work zone signs in accordance with the contract.

Furnish, install, maintain and relocate portable work zone signs and portable work zone sign stands in accordance with the plans and the *Standard Specifications*. When portable work zone signs and portable work zone sign stands are not in use for periods longer than 30 minutes, collapse or remove sign stands and reinstall once work begins again.

1110-2 MATERIALS

Refer to Division 10.

Item	Section
Barricade Mounted Signs	1089-3
Work Zone Signs	1089-1
Work Zone Sign Supports	1089-2

Portable work zone signs shall be roll up or approved composite substrates. Use portable work zone signs only with portable work zone sign stands specifically designed for one another.

Provide portable work zone sign stands, portable signs and sheeting that meet NCHRP 350 for Category II temporary traffic control devices and are listed on the NCDOT APL.

Provide portable work zone signs and stands that are crash tested together as a system by the manufacturer. Poor performance of portable work zone signs or portable work zone sign stands at any site, whether or not related to a specific contract, will be grounds for non-acceptance of a product on any project under contract.

1110-3 CONSTRUCTION METHODS

(A) Work Zone Signs (Stationary)

All stationary Advance/General warning work zone signs require notification to existing utility owners per Article 105-8 within 3 to 12 working days prior to installation.

Install work zone signs (stationary) to stand within 2° of plumb in all directions and under all conditions. Erect signs per *Roadway Standard Drawings*.

Splicing of work zone sign (stationary) posts is acceptable. Splice work zone sign (stationary) posts according to *Roadway Standard Drawings*. Remove entire post when removing signs with spliced posts.

When required, cover work zone signs with an opaque material that prevents reading of the sign at night by a driver using high beam headlights. Use material that does not damage the sign sheeting.

Any damage incurred from the covering of work zone signs will be determined using Article 901-5. Replace or repair any damaged signs due to the covering.

(B) Work Zone Signs (Barricade Mounted)

Mount approved composite or roll up signs to barricade rails so the signs do not cover more than 50% of the top 2 rails or 33% of the total area of the 3 rails. Mount signs at least one foot from the ground to the bottom of the sign.

(C) Work Zone Signs (Portable)

Install the portable work zone sign and sign stand to stand plumb within 10° left and right, within 20° front and back and be capable of standing erect in windy conditions.

Install roll up or approved composite signs at least one foot from the bottom of the sign to the edge of pavement elevation on two-lane two-way roadways. Install roll up or approved composite signs at least 5 feet from the bottom of the sign to the edge of pavement elevation on multi-lane roadways.

Clean the sign face before use.

When not in use for periods longer than 30 minutes, lay the portable work zone sign flat on the ground and collapse the sign stand and lay it flat on the ground.

1110-4 MEASUREMENT AND PAYMENT

Nominal dimensions will be used to compute the sign panel areas.

Work Zone Signs (Stationary) will be measured and paid as the actual number of square feet satisfactorily installed at each location and accepted by the Engineer. Where a particular sign is used at more than one location, measurement will be made at each location.

Work Zone Signs (Barricade Mounted) will be measured and paid as the actual number of square feet satisfactorily installed on barricades and accepted by the Engineer. Payment will

be made for the initial installation only. Relocation of signs will be incidental to the measurement of the quantity of signs.

Work Zone Signs (Portable) will be measured and paid as the actual number of square feet satisfactorily installed and accepted by the Engineer. Payment will be made for the initial installation only. Relocation of signs will be incidental to the measurement of the quantity of signs.

No direct payment will be made for stationary work zone sign supports or portable work zone sign stands. All stationary work zone sign supports or portable work zone sign stands will be incidental to the work of providing work zone signs.

Payment will be made under:

Pay Item	Pay Unit
Work Zones Signs (Stationary)	Square Foot
Work Zones Signs (Barricade Mounted)	Square Foot
Work Zones Signs (Portable)	Square Foot

SECTION 1115
FLASHING ARROW BOARDS

1115-1 DESCRIPTION

Furnish, install, operate, maintain, relocate and remove arrow boards.

1115-2 MATERIALS

Refer to Division 10.

Item	Section
Flashing Arrow Boards	1089-6

Use arrow boards listed on the NCDOT APL.

Poor performance of arrow boards at any site, whether or not related to a specific contract, will be grounds for non-acceptance of a product on any project under contract.

1115-3 CONSTRUCTION METHODS

Use arrow boards that have the capability to display mode selections.

Do not use straight-line caution or chevron displays.

Mount flashing arrow boards on trucks, trailers or other mobile units.

Expedite repairs due to failure, malfunction or damage to an arrow board. Furnish another arrow board approved by the Engineer during the repair time. Repair or replace arrow boards immediately; otherwise, suspend all construction activities requiring the use of the arrow board until the arrow board is restored to operation.

Perform all maintenance operations recommended by the manufacturer of the arrow board.

1115-4 MEASUREMENT AND PAYMENT

Flashing Arrow Board will be measured and paid as the maximum number of arrow boards satisfactorily placed and accepted by the Engineer in use at any one time during the life of the project as required by the contract.

Flashing arrow boards installed on truck mounted attenuators (TMAs) will not be paid for separately as they are incidental to the cost of the TMA.

Replacement, repair and maintenance of arrow boards will be incidental to the work of this section.