

TRAFFIC CONTROL:

The Contractor shall execute the item of Traffic Control as required by the Standard Specifications, the plans, the Standard Drawings For Road Construction, these special provisions, all supplemental specifications, the MUTCD, and the Engineer. This is an amendment to the Standard Specifications to require the following:

GENERAL REGULATIONS -

These special provisions shall have priority to the plans and comply with the requirements of the MUTCD and the standard specifications. Revisions to the traffic control plan through modifications of the special provisions and the plans shall require approval by the department. **Final approval of any revisions to the traffic control plan shall be pending upon review by the Director of Traffic Engineering.**

In accordance with the document, *Rule on Work Zone Safety and Mobility: Implementation, Maintenance, and Safety Guidelines*, this project has been classified as “SIGNIFICANT” and all components of the Transportation Management Plan are required and shall be implemented.

Install and utilize changeable message signs in all lane closures installed on high volume high-speed multilane roadways. Use of changeable message signs in lane closures installed on low volume low speed multilane roadways is optional unless otherwise directed by the plans and the Engineer. Install and use a changeable message sign within a lane closure set-up as directed by the *Standard Drawings For Road Construction*. When a lane closure is not present for any time to exceed 24 hours, remove the changeable message sign from the roadway. Place the sign in a predetermined area on the project site, as approved by the Engineer, where the sign is not visible to passing motorists. Utilize preprogrammed messages in accordance with the *Standard Drawings For Road Construction* when using the changeable message sign as part of the traffic control set-up for lane closures. Only those messages pertinent to the requirements of the traffic control situation and the traffic conditions are permitted for display on a changeable message sign at all times. At no time will the messages displayed on a changeable message sign duplicate the legends on the permanent construction signs.

During operation of changeable message signs, place the changeable message sign on the shoulder of the roadway no closer than 6 feet between the sign and the near edge of the adjacent travel lane. When the sign location is within 30' of the near edge of a travel lane open to traffic, supplement the sign location with no less than 5 portable plastic drums placed between the sign and the adjacent travel lane for delineation of the sign location. Install and maintain the drums no closer than 3 feet from the near edge of the adjacent travel lane. This requirement for delineation of the sign location shall apply during all times the sign location is within 30' of the near edge of a travel lane open to traffic, including times of operation and non-operation. Oversized cones are prohibited as a substitute for the portable plastic drums during this application.

All signs mounted on portable sign supports shall have a minimum mounting height of 5' from the bottom of the sign to the ground. All signs mounted on ground mounted u-channel posts or square steel tube posts shall have a minimum mounting height of 7' from the bottom of the sign to the grade elevation of the near edge of the adjacent travel lane or sidewalk when a sidewalk is present.

On multilane primary routes, avoid placement of signs mounted on portable sign supports within paved median areas utilized for two-way left turns unless otherwise directed by the RCE.

When mounting signs on multiple ground mounted sign supports, ensure that each post is of the same type. Combining and installing both ground mounted u-section and square steel tube posts within the same sign assembly is prohibited.

When mounting signs on ground mounted u-section or square steel tube posts, utilize either a sign support / ground support post combination with an approved breakaway assembly or a single direct driven post for each individual sign support of a sign assembly installation. Do not combine a sign support / ground support post combination and a direct driven post on the same sign assembly installation that contains two or more sign supports. Regarding sign support / ground support post combination installations, ensure that post lengths, stub heights and breakaway assemblies comply with the manufacturer's requirements and specifications. Use approved breakaway assemblies found on the *Approved Products List For Traffic Control Devices in Work Zones*.

Temporary “Exit” signs (M1025-00) shall be located within each temporary gore during lane closures on multilane roadways. Mount these signs a minimum of 7’ from the pavement surface to the bottom of the sign in accordance with the requirements of the MUTCD.

When covering signs with opaque materials, the Department prohibits attaching a covering material to the face of the sign with tape or a similar product or any method that will leave a residue on the retroreflective sheeting. Residue from tape or similar products, as well as many methods utilized to remove such residue, damages the effective reflectivity of the sign. Therefore, contact of tape or a similar product with the retroreflective sheeting will require replacement of the sign. Cost for replacement of a sign damaged by improper covering methods will be considered incidental to providing and maintaining the sign; no additional payment will be made.

Overlays are prohibited on all rigid construction signs. The legends and borders on all rigid construction signs shall be either reversed screened or direct applied.

Signs not illustrated on the typical traffic control standard drawings designated for permanent construction signs shall be considered temporary and shall be included in the lump sum price bid item for “Traffic Control” unless otherwise specified.

Install “Grooved Pavement” signs (W8-15-48) supplemented with the “Motorcycle” plaque (W8-15P-30) in advance of milled or surface planed pavement surfaces. On primary routes, install these signs no further than 500 feet in advance of the beginning of the pavement condition. On interstate routes, install these signs no less than 500 feet in advance of the beginning of the pavement condition. Install two sign assemblies at each sign location, one on each side of the roadway, on multilane roadways when the pavement condition is present. Install these signs immediately upon creation of this pavement condition and maintain these signs until this pavement condition is eliminated.

Install “Steel Plate Ahead” signs (W8-24-48) in advance of an area of roadway where temporary steel plates are present. Install these signs no further than 300 feet in advance of locations where steel plates are present. On multilane roadways, comply with the same guidelines as applied to all other advance warning signs and install two sign assemblies at each sign location, one on each side of the roadway, when roadway conditions warrant. Install these signs immediately upon installation of a temporary steel plate and maintain the signs until the temporary steel plates are removed.

Install and maintain any necessary detour signing as specified by the typical traffic control standard drawings designated for detour signing, Part VI of the MUTCD, these Special Provisions, and the Engineer. The lump sum price bid item for “Traffic Control” includes payment for installation and maintenance of the detour signing.

The Contractor shall maintain the travel patterns as directed by the traffic control plans and shall execute construction schedules expeditiously. The Contractor shall provide the Resident Engineer with no less than a two-week prior notification of changes in traffic patterns.

During nighttime flagging operations, flaggers shall wear a safety vest and safety pants that comply with the requirements of ANSI / ISEA 107 standard performance for Class 3 risk exposure, latest revision, and a fluorescent hard hat. The safety vest and the safety pants shall be retroreflectorized and the color of the background material of the safety vest and safety pants shall be fluorescent orange-red or fluorescent yellow-green.

During nighttime flagging operations, the contractor shall illuminate each flagger station with any combination of portable lights, standard electric lights, existing street lights, etc., that will provide a minimum illumination level of 108 Lx or 10 fc.

During nighttime flagging operations, supplement the array of advance warning signs with a changeable message sign for each approach. These changeable message signs are not required during daytime flagging operations. Install the changeable message signs 500’ in advance of the advance warning sign arrays. Messages should be “Flagger Ahead” and “Prepare To Stop”.

During surface planing and milling operations, grade elevation differences greater than 1 inch in areas with pavements composed of hot mixed asphalt (HMA) base courses, intermediate courses or surface courses and Portland cement concrete are PROHIBITED unless otherwise directed by the Department. However, during surface planing and milling operations for removal of Open-Graded Friction courses ONLY, a grade elevation difference of 1½ inches between adjacent travel lanes opened to traffic may exist unless otherwise directed by the Department.

During the paving operations, the length of roadway with an acceptable grade elevation difference less than or equal to 2" shall be restricted to 4 miles.

During the milling and surface planing operations, the length of roadway with an acceptable grade elevation difference less than or equal to 1" shall be restricted to 4 miles.

During construction on the ramps, the contractor shall conduct flagging operations. The flagging operations shall either stop traffic or direct the traffic around the work area. Installation and operation of these flagging operations shall be according to these special provisions and the MUTCD.

Supplement and delineate the shoulder edges of travel lanes through work zones with traffic control devices to provide motorists with a clear and positive travel path. Utilize portable plastic drums unless otherwise directed by the Department. Vertical panels may be used where specified by the plans and directed by the RCE. The installation of traffic control devices are required in all areas where those areas immediately adjacent to a travel lane open to traffic have been altered in any manner by work activities, including but not limited to activities such as grading, milling, etc. Install the traffic control devices immediately upon initiating any alterations to the areas immediately adjacent to or within 15 feet of the near edge line of the adjacent travel lane. When sufficient space is available, place the traffic control devices no closer than 3 feet from the near edge of the traffic control device to the near edge line on the adjacent travel lane. When sufficient space is unavailable, place the traffic control device at the maximum distance from the near edge of the adjacent travel lane available.

I-85 MAINLINE SPEED LIMIT -

Upon initiating the reduction of the travel lanes of I-85 from three (3) travel lanes in each direction to two (2) travel lanes in each direction in Stage 1, reduce the existing speed limit of 70 MPH to 60 MPH. The 60 MPH speed limit will remain in effect for the duration of the project until all travel lanes, three (3) travel lanes in each direction, are open to traffic at or near the end of the project unless otherwise directed by the Engineer. The 60 MPH speed limit will be reduced to 45 MPH during lane closures as directed by the standard drawings, these special provisions and the Engineer.

LANE CLOSURE RESTRICTIONS -

The lane closure restrictions stated below are project specific, for all other restrictions, see supplemental specification, "Restrictions", dated September 1, 2015.

THE TRAFFIC CONTROL PLAN REQUIRES I-85 BE REDUCED TO TWO TRAVEL LANES IN EACH DIRECTION DURING THIS PROJECT.

THE DEPARTMENT PROHIBITS CLOSURE OF EITHER TRAVEL LANE OF THE DIRECTION OF TRAVEL IMPACTED BY AND DURING THE IMPLEMENTATION AND OPERATION OF THE TRAFFIC SEPARATION / TRAFFIC SPLIT UNLESS OTHERWISE DIRECTED BY THESE SPECIAL PROVISIONS AND/OR THE ENGINEER.

SINGLE LANE CLOSURES ARE ONLY PERMISSIBLE IN THE DIRECTION OF TRAVEL NOT IMPACTED BY THE IMPLEMENTATION AND OPERATION OF THE TRAFFIC SEPARATION / TRAFFIC SPLIT UNLESS OTHERWISE DIRECTED BY THESE SPECIAL PROVISIONS AND/OR THE ENGINEER.

SINGLE LANE CLOSURES

The Department prohibits single lane closures on northbound I-85 Monday through Tuesday from 7:00 am to 7:00 pm, Wednesday through Thursday from 7:00 am to 7:00 pm, Friday from 7:00 am to 7:00 pm, Saturday from 12:00 pm (Noon) to 6:00 pm and Sunday from 12:00 pm (Noon) to 6:00 pm. The Department prohibits single lane closures on southbound I-85 Monday through Wednesday from 6:00 am to 7:00 pm, Thursday from 6:00 am to 8:00 pm, Friday from 6:00 am to 8:00 pm, Saturday from 11:00 am to 5:00 pm and Sunday from 12:00 pm (Noon) to 7:00 pm. These restrictions also apply to all road closures and pacing operations.

HOURLY LANE CLOSURE PROHIBITIONS (Single)	
Northbound	Southbound
MON-TUE: 7AM-7PM	MON-WED: 6AM-7PM
WED-THU: 7AM-7PM	THU: 6AM-8PM
FRI: 7AM-7PM	FRI: 6AM-8PM
SAT: 12PM(Noon)-6PM	SAT: 11AM-5PM
SUN: 12PM(Noon)-6PM	SUN: 12PM(Noon)-7PM

DUAL LANE CLOSURES

DUE TO THE REDUCTION OF THE NUMBER OF TRAVEL LANES (SIX [6] to FOUR [4]) DURING THIS PROJECT, DUAL LANE CLOSURES WILL ONLY BE PERMISSIBLE UPON COMPLETION OF ALL PAVING OPERATIONS AND AFTER ALL TRAVEL LANES, THREE IN EACH DIRECTION, ARE OPENED TO TRAFFIC.

The Department prohibits dual lane closures on northbound I-85 Monday through Wednesday from 6:00 am to 10:00 pm, Thursday from 6:00 am to 11:00 pm, Friday from 6:00 am to 11:00 pm, Saturday from 7:00 am to 10:00 pm and Sunday from 9:00 am to 10:00 pm. The Department prohibits dual lane closures on southbound I-85 Monday through Thursday from 5:00 am to 10:00 pm, Friday from 5:00 am to 11:00 pm, Saturday from 6:00 am to 10:00 pm and Sunday from 9:00 am to 10:00 pm. The Department reserves the right to suspend a lane closure if any resulting traffic backups are deemed excessive by the Engineer. Maintain all lane closure restrictions as directed by the plans, these special provisions, and the Engineer.

HOURLY LANE CLOSURE PROHIBITIONS (Dual)	
Northbound	Southbound
MON-WED: 6AM-10PM	MON-THU: 5AM-10PM
THU: 6AM-11PM	FRI: 5AM-11PM
FRI: 6AM-11PM	SAT: 6AM-10PM
SAT: 7AM-10PM	SUN: 9AM-10PM
SUN: 9AM-10PM	

Installation and maintenance of a lane closure is PROHIBITED when the Contractor is not actively engaged in work activities specific to the location of the lane closure unless otherwise specified and approved by the Engineer. The length of the lane closure shall not exceed the length of roadway anticipated to be subjected to the proposed work activities within the work shift time frame or the maximum lane closure length specified unless otherwise approved by the Engineer. Also, the maximum lane closure length specified does not warrant installation of the specified lane closure length when the length of the lane closure necessary for conducting the work activity is less. The length and duration of each lane closure, within the specified parameters, shall require approval by the Engineer prior to installation. The length and duration of each lane closure may be reduced by the Engineer if the work zone impacts generated by a lane closure are deemed excessive or unnecessary.

The presence of temporary signs, portable sign supports, traffic control devices, trailer mounted equipment, truck mounted equipment, vehicles and vehicles with trailers relative to the installation or removal of a closure and personnel are prohibited within the 15 to 30 foot clear zone based upon the roadway speed limit during the prohibitive hours for lane closures specified by these special provisions.

A reduced regulatory speed limit of 45 MPH shall be in effect on I-95 during lane closures. Erect temporary regulatory "Speed Limit" signs (R2-1-48-45) and "Speed Reduction 45 MPH" signs (W3-5-48-45) on temporary supports according to the typical traffic control standard drawings. Cover the existing regulatory speed limit signs when reduced speed limits are in place. Immediately remove or cover the "Speed Limit" signs (R2-1-48-45) and the "Speed Reduction 45 MPH" signs (W3-5-48-45) upon the removal of the lane closures.

Truck mounted changeable message signs shall be required during all interstate lane closures. The Contractor shall provide, install, and maintain these signs in accordance with all requirements of the "2007 Standard Specifications for Highway Construction" and the typical traffic control standard drawings designated for interstate lane closures.

The truck mounted changeable message signs are in addition to the requirements for trailer mounted changeable message signs. Truck mounted changeable message signs and trailer mounted changeable message signs are not interchangeable.

SHOULDER CLOSURE RESTRICTIONS -

The Department prohibits the Contractor from conducting work within 15' of the near edge of the adjacent travel lane on the outside shoulders or the median areas on northbound I-85 Monday through Tuesday from 7:00 am to 7:00 pm, Wednesday through Thursday from 7:00 am to 7:00 pm, Friday from 7:00 am to 7:00 pm, Saturday from 12:00 pm (Noon) to 6:00 pm and Sunday from 12:00 pm (Noon) to 6:00 pm. The Department prohibits the Contractor from conducting work within 15' of the near edge of the adjacent travel lane on the outside shoulders or the median areas on southbound I-85 Monday through Wednesday from 6:00 am to 7:00 pm, Thursday from 6:00 am to 8:00 pm, Friday from 6:00 am to 8:00 pm, Saturday from 11:00 am to 5:00 pm and Sunday from 12:00 pm (Noon) to 7:00 pm. The hourly restrictions for lane closures shall also apply to work activities conducted under a shoulder closure within 15' of the near edge of an adjacent travel lane or a median area. The Department reserves the right to suspend work conducted under a shoulder closure if any traffic backups develop and are deemed excessive by the Engineer. Maintain all shoulder closure restrictions as directed by the plans, these special provisions, and the Engineer.

On interstate highways, the Department prohibits the Contractor from conducting work within the limits of a paved shoulder or within 10' of the near edge of an adjacent travel lane under a shoulder closure. All work that may require the presence of personnel, tools, equipment, materials, vehicles, etc., within the limits of a paved shoulder or within 10' of the near edge of an adjacent travel lane shall be conducted under a lane closure.

On primary and secondary roadways, the Department prohibits the Contractor from conducting work within 1' or less of the near edge of an adjacent travel lane under a shoulder closure. All work that may require the presence of personnel, tools, equipment, materials, vehicles, etc., within 1' of the near edge of an adjacent travel lane shall be conducted under a lane closure.

MOBILE OPERATIONS -

A mobile operation moves continuously at all times at speeds 3 mph or greater without any stops. The minimal traffic flow impacts generated by these operations involve brief traffic flow speed reductions and travel path diversions. Conduct work operations that cannot be performed at speeds of 3 mph or greater under standard stationary lane closures.

The distance intervals between the vehicles, as indicated in the *Standard Drawings For Road Construction*, may require adjustments to compensate for sight distance obstructions created by hills and curves and any other conditions that may obstruct the sight distance between the vehicles. However, adjustments to the distance intervals between the vehicles should be maintained within the range of variable distance intervals indicated in the standard drawings unless otherwise directed by the Engineer.

Maintain two-way radio communication between all vehicles in the vehicle train operating in a mobile operation.

Supplement the work vehicles and the shadow vehicles with amber colored flashing dome lights. The vehicles may also be supplemented with advance warning arrow panels and truck mounted attenuators as directed in the *Standard Drawings For Road Construction* and the Standard Specifications.

The Contractor shall install, operate and maintain all advance warning arrow panels, truck mounted attenuators and truck mounted changeable message signs as required by these special provisions, the

manufacturer's specifications, the *Standard Drawings For Road Construction*, the Standard Specifications, the plans and the Engineer.

CABLE GUARDRAIL -

THE CONTRACTOR SHALL MAINTAIN EXISTING CABLE GUARDRAIL IN THE MEDIAN AREAS OF I-85 IN ALL AREAS NOT PAVED AND UTILIZED FOR THE TEMPORARY CROSSOVERS, STATION 136+00 TO STATION 161+00 AND STATION 521+00 TO STATION 549+00.

TEMPORARY RAMP CLOSURE RESTRICTIONS -

Ramp construction and right shoulder, right travel lane and center travel lane construction operations in specific locations will require temporary ramp closures. These ramp closures will include the on-ramps to northbound and southbound I-85 from eastbound and westbound I-26 and the on-ramps from and off-ramps to the US 176 (N. Pine Street) and SC 9 (Boiling Springs Road) interchanges. Each temporary ramp closure shall be restricted to a time period not to exceed 54 hours. The Department will ONLY permit these temporary ramp closures during weekends from 12:00 AM (Mid-Night) Friday to 6:00 AM Monday. The Contractor shall notify the Resident Engineer of intent to close a ramp to conduct these construction operations no less than 30 days prior to each temporary ramp closure.

Do NOT close MORE than one (1) off-ramp and one (1) on-ramp in the same direction simultaneously. Restrict simultaneous ramp closures to one (1) interchange at a time.

The Department PROHIBITS simultaneous closure of the on-ramps from Eastbound and Westbound I-26 to northbound I-85 or simultaneous closure of the on-ramps from Eastbound and Westbound I-26 to southbound I-85.

INGRESS / EGRESS - MEDIAN WORK AREAS -

The Contractor's vehicles shall not disrupt the normal flow of traffic when either exiting or entering the travel lanes of I-85 from the work areas. All construction and work vehicles in compliance with the requirements of "Addendum A Construction Vehicles" of these special provisions shall enter and exit the work areas during the presence of lane closures. At no time will these vehicles be permitted to enter and exit these work areas without the presence of active lane closures. Shoulder closures are unacceptable and insufficient methods for control of traffic at ingress / egress areas for these vehicles.

The Contractor may install openings within the lines of the temporary concrete barrier wall for access to the work areas. Install these openings in accordance with the typical traffic control standard drawing, drawing No. 605-425-00 and as directed by the Engineer.

Specific locations of the access points shall require the Engineer's approval prior to installation.

I-85 - SEPARATION OF ADJACENT TRAVEL LANES / TRAFFIC SPLIT -

The Contractor will separate and relocate the right and left travel lanes of northbound and southbound I-85 during the staged construction of I-85. The Contractor shall install overhead span wire structures and ground mounted sign structures that will support sign assemblies that will provide motorists with information regarding lane designations and destinations. The Contractor shall cover any existing signs that conflict with the revised travel patterns during the traffic relocations and splits.

Install the overhead span wire structures and ground mounted sign structures as directed by the plans, these special provisions and the Engineer. The layouts for the signs mounted on these structures are included in the plans.

**TRAILER-MOUNTED CHANGEABLE MESSAGE SIGNS
for TEMPORARY RAMP CLOSURE NOTIFICATION -**

The Contractor shall install a trailer-mounted changeable message sign adjacent to the right shoulder of I-85 no less than 10 days prior to the temporary ramp closure to provide motorists with advance notice of an impending temporary closure of an off-ramp.

The Contractor shall install a trailer-mounted changeable message sign adjacent to the right shoulder of an on-ramp to I-85 no less than 10 days prior to the temporary ramp closure to provide motorists with advance notice of an impending temporary closure of an on-ramp.

Specific locations of these trailer-mounted changeable message signs shall require the Engineer’s approval prior to installation.

Pay items are provided for these trailer-mounted changeable message signs installed to provide notification to motorists of an impending temporary ramp closure. All other trailer-mounted changeable message signs are included in the lump sum item for Traffic Control.

**TRAILER-MOUNTED CHANGEABLE MESSAGE SIGNS
for ALTERNATE ROUTE NOTIFICATION -**

The Contractor shall install two (2) trailer-mounted changeable message signs adjacent to the right shoulder of I-85 in each direction upon reduction of the existing six (6) travel lanes, with three (3) in each direction, to four (4) travel lanes, with two (2) in each direction. These signs will provide notification to motorists of the presence of SC 85 Business as a potential alternate route.

These changeable message signs will provide information designating SC 85 Business as an alternate route for automobile traffic. ALL truck traffic will be directed to remain on I-85.

The following messages are recommended for display on the changeable message signs. These signs should flash alternately at a rate to permit motorists to read both messages.:

	SIGN 1	SIGN 2
Message 1	SC 85 ALT RTE	ALL TRUCKS
Message 2	CARS ONLY	REMAIN I-85

Modifications to these messages may be necessary upon evaluation of motorists’ responses. Modifications will require the Engineer’s approval.

Install these signs at the approximate following locations. Field adjustments to these locations may be necessary due to sight distance restrictions, physical site conditions and motorist response.

Northbound I-85

- SIGN 1:** 3000 feet in advance of the painted gore pavement markings
SIGN 2: 1000 feet in advance of the painted gore pavement markings

Southbound I-85

- SIGN 1:** 3000 feet in advance of the painted gore pavement markings
SIGN 2: 1000 feet in advance of the painted gore pavement markings

TYPICAL TRAFFIC CONTROL STANDARD DRAWINGS -

The typical traffic control standard drawings of the “Standard Drawings For Road Construction”, although compliant with the MUTCD, shall take precedence over the MUTCD. The typical traffic control standard drawings of the “Standard Drawings For Road Construction” shall apply to all projects let to contract.

Install the permanent construction signs as shown on the typical traffic control standard drawings designated for permanent construction signing.

Standard Drawing 605-015-00 -

Scheme B	N.B. I-85	184 Square Feet
	S.B. I-85	184 Square Feet
Scheme C	S.B. I-85 @ SC 129 (Off-Ramp)	16 Square Feet
	N.B. I-85 @ I-26 (Off-Ramp)	16 Square Feet
	N.B. I-85 @ E.B. I-26 (On-Ramp)	32 Square Feet
	N.B. I-85 @ W.B. I-26 (On-Ramp)	32 Square Feet
	S.B. I-85 @ I-26 (Off-Ramp)	16 Square Feet
	S.B. I-85 @ W.B. I-26 (On-Ramp)	32 Square Feet
	S.B. I-85 @ E.B. I-26 (On-Ramp)	32 Square Feet
	N.B. I-85 @ US 176 (N. Pine Street) (Off-Ramp / On-Ramp)	48 Square Feet
	S.B. I-85 @ US 176 (N. Pine Street) (Off-Ramp / On-Ramp)	48 Square Feet
	N.B. I-85 @ SC 9 (Boiling Springs Road) (Off-Ramp / On-Ramp)	48 Square Feet
	S.B. I-85 @ SC 9 (Boiling Springs Road) (Off-Ramp / On-Ramp)	48 Square Feet
	N.B. I-85 @ S.B. SC 85 (Off-Ramp)	16 Square Feet
	S.B. I-85 @ N.B. SC 85 (On-Ramp)	32 Square Feet
Total		784 Square Feet

ADDENDUMS

(Addendums to the “2007 Standard Specifications for Highway Construction”)

(A) Construction (Sub-section 601.4) –

Sub-section 601.4.2 Construction Vehicles (paragraph 2) -

When working within the rights-of-way of access-controlled roadways such as Interstate highways, the Contractor's vehicles may only change direction of travel at interchanges. These vehicles are prohibited from crossing the roadway from right side to the median or vice versa. Use a flagger to control the Contractor's vehicles when these vehicles attempt to enter the roadway from a closed lane or the median area. Ensure the flagger does not stop roadway traffic, cause roadway traffic to change lanes, or affect roadway traffic in any manner. The Contractor's vehicles may not disrupt the normal flow of roadway traffic or enter the travel lane of the roadway until a sufficient gap is present.

The Contractor shall have flaggers available to control all construction vehicles entering or crossing the travel lanes of secondary and primary routes. The RCE shall determine the necessity of these flaggers for control of these construction vehicles. The RCE shall consider sight distance, vertical and horizontal curves of the roadway, prevailing speeds of roadway traffic, frequency of construction vehicles entering or crossing the roadway and other site conditions that may impact the safety of the workers and motorists when determining the necessity of these flaggers. Ensure these flaggers do not stop roadway traffic, cause roadway traffic to change lanes or affect roadway traffic in any manner. The Contractor's vehicles may not disrupt the normal flow of roadway traffic or enter the travel lane of the roadway until a sufficient gap is present.

When working within the rights-of-way of access-controlled roadways with posted regulatory speed limits of 55 MPH or greater and average daily traffic volumes {ADT} of 10,000 vehicles per day or greater, i.e. Interstate highways, all construction and work vehicles possessing any one or more of the vehicular characteristics listed below are only permitted to enter a travel lane open to traffic from a work area during the presence of active lane closures unless otherwise directed by the RCE. These vehicles are not permitted to enter a travel lane open to traffic from a work area without the presence of active lane closures unless otherwise directed by the RCE. Shoulder closures are unacceptable and insufficient methods for control of traffic at ingress / egress areas for these vehicles. The restrictive vehicular characteristics include the following:

- Over six (6) tires
- Tandem rear axles
- A base curb weight greater than 8000 lbs.
- A gross vehicular weight greater than 12000 lbs. unless performing duties as a shadow vehicle while supporting a truck mounted attenuator
- A trailer in tow except under the following conditions:
 - Trailers transporting traffic control devices (including but not limited to standard and 42" oversized traffic cones, portable plastic drums, signs, portable sign supports, u-channel and square steel tube sign posts) relative to the installation of lane closures, shoulder closures or other traffic control operations approved by the RCE
 - Trailer mounted traffic control devices (including but not limited to advance warning arrow panels, changeable message signs, temporary traffic signals, highway advisory radios, work zone intelligent transportation systems and trailer towed truck mounted attenuators)

(B) Construction (Sub-section 601.4) –

Sub-section 601.4.2 Construction Vehicles -

Auxiliary Warning Lights for Vehicles and Equipment -

Supplement all construction and/or construction-related vehicles and equipment that operate in a stationary or mobile work zone within or adjacent to a roadway within the highway rights-of-way with AMBER or YELLOW colored high intensity rotating or strobe type flashing auxiliary warning light devices. Utilize, install, operate and maintain a single or multiple lighting devices as necessary to provide visibility to approaching motorists.

All auxiliary warning light models shall meet *Society of Automotive Engineers* (SAE) Class I standards and SAE Standard J575 relative to *Tests for Motor Vehicle Lighting Devices and Components* and these specifications.

The amber/yellow color of the dome/lens of an auxiliary warning light device shall meet SAE Standard J578 for amber/yellow color specifications.

Auxiliary warning lights with parabolic reflectors that rotate shall rotate around a halogen lamp at a rate to produce approximately 175 flashes per minute. The parabolic reflector shall produce a minimum 80,000 candle power and a minimum 54,000 candela through an SAE Standard J846 approved amber dome.

Equip strobe type flashing auxiliary warning light devices with photosensitive circuit controls to adjust the lighting intensity in response to changes in ambient light conditions such as from day to night. These lights shall have a double-flash capability rated at approximately 80 double flashes per minute and produce a minimum 24 joules of flash energy at the highest power level setting.

Acceptable auxiliary warning light models shall provide sufficient light output to be clearly recognizable at a minimum distance of 1750 feet.

Mount all auxiliary warning light devices intended to function as the auxiliary warning light system or as an element thereof on vehicles and equipment at locations no less than 3 feet above the ground and in conspicuous locations to provide visibility to approaching motorists.

Auxiliary warning light devices and/or models that mount in the locations of the standard vehicle lighting system are unacceptable as the specified auxiliary warning light system due to restrictive simultaneous visibility capabilities from multiple sight angles. However, auxiliary warning light devices that mount in the standard vehicle lighting system locations are acceptable as supplements to the specified lighting devices mounted in locations that do meet the minimum height requirements and provide simultaneous visibility capabilities from multiple sight angles.

Standard vehicle hazard warning lights are only permitted as supplements to the specified auxiliary warning light devices.

(C) Category I Traffic Control Devices (Section 603) –

***** (Effective on all projects let to contract after May 1, 2010) *****

Sub-section 603.2.2 Oversized Traffic Cones (paragraph 6) -

Reflectorize each oversized traffic cone with 4 retroreflective bands: 2 orange and 2 white retroreflective bands. Alternate the orange and white retroreflective bands, with the top band always being orange. Make each retroreflective band not less than 6 inches wide. Utilize Type III – Microprismatic retroreflective sheeting for retroreflectorization on all projects let to contract after May 1, 2010 unless otherwise specified. Separate each retroreflective band with not more than a 2-inch non-reflectorized area. Do not splice the retroreflective sheeting to create the 6-inch retroreflective bands. Apply the retroreflective

sheeting directly to the cone surface. Do not apply the retroreflective sheeting over a pre-existing layer of retroreflective sheeting.

Sub-section 603.2.3 Portable Plastic Drums (paragraph 3) -

Reflectorize each drum with Type III – Microprismatic retroreflective sheeting: 2 orange and 2 white retroreflective bands, 6 inches wide on all projects let to contract after May 1, 2010 unless otherwise specified. Alternate the orange and white retroreflective bands with the top band always being orange. Ensure that any non-reflectorized area between the orange and white retroreflective bands does not exceed 2 inches. Do not splice the retroreflective sheeting to create the 6-inch retroreflective bands. Apply the retroreflective sheeting directly to the drum surface. Do not apply the retroreflective sheeting over a pre-existing layer of retroreflective sheeting.

(D) Category II Traffic Control Devices (Section 604) –

*** *(Effective on all projects let to contract after May 1, 2012)* ***

Sub-section 604.2.1 Type I and Type II Barricades (paragraph 3) -

Reflectorize these barricades with Type VIII or IX Prismatic retroreflective sheeting on all projects let to contract after May 1, 2012 unless otherwise specified. Ensure that the retroreflective sheeting has alternate orange and white stripes sloping downward at a 45-degree angle in the direction of passing traffic. The stripes shall be 6 inches wide.

Sub-section 604.2.2 Type III Barricades (paragraph 3) -

Reflectorize these barricades with Type VIII or IX Prismatic retroreflective sheeting on all projects let to contract after May 1, 2012 unless otherwise specified. Ensure that the retroreflective sheeting has alternate orange and white stripes sloping downward at a 45-degree angle. Apply the sloping orange and white stripes in accordance with the requirements of the Plans, SCDOT Standard Drawings and the MUTCD. The stripes shall be 6 inches wide.

(E) Temporary Concrete Barrier (Sub-section 605.2.3.2) –

Sub-section 605.2.3.2 Temporary Concrete Barrier (paragraph 6) -

Previously used temporary concrete barrier walls are subject to inspection and approval by the RCE before use. Ensure that previously used temporary concrete barrier walls are in good condition. Defects to a temporary concrete barrier wall that may disqualify a section of wall for use include gouges, cracks, chipped, or spalled areas. A defect that exposes reinforcing steel warrants immediate disqualification. A disqualification grade type defect shall consist of measurements in excess of 1 inch, entirely or partially within the boundaries of the end connection areas and the drainage slot areas as illustrated in the “Standard Drawings for Road Construction”, and/or in excess of 4 inches for all areas beyond the end connection areas. To warrant disqualification, these measurements shall exceed the specified dimensions in all three directions, width, height, and depth. A defect that exceeds the specified dimensions in only one or two of the three directions does not warrant disqualification.

Temporary concrete barrier walls with defects less than 6 inches in all three directions, width, height, and depth that do not expose reinforcing steel may be repaired in accordance with the following requirements. Repair is prohibited on temporary concrete barrier walls with defects 6 inches or greater in all three directions, width, height and depth.

For repair of temporary concrete barrier walls with defects less than 6 inches in all three directions, width, height, and depth that do not expose reinforcing steel, repair the defect with a premanufactured patching material specifically fabricated for patching structural concrete. The strength of the patch must meet or exceed the design strength of the class 3000 concrete of the temporary concrete barrier wall. Perform the repair procedures in accordance with all requirements and instructions from the manufacturer of the patch

material. Use a bonding compound between the patch material and the concrete unless specifically stated by the manufacturer that a bonding compound is not required. If the manufacturer states that application of a bonding compound is optional, SCDOT requires application of a bonding compound compatible with the patch material. If cracking occurs within the patched area, remove the patch material completely and repeat the repair process. The contractor shall submit documentation stating all repairs have been conducted in accordance with these requirements prior to installing any temporary concrete barrier walls with repairs. Utilization of temporary concrete barrier walls with repairs shall require approval by the RCE prior to installation.

The Contractor shall submit certification documents for the patch material utilized for repairs to the Engineer prior to placing temporary concrete barrier walls that have been repaired on the project site.

*** **(Effective on all projects let to contract after January 1, 2017)** ***

Sub-section 605.2.3.2 Temporary Concrete Barrier (paragraph 5) -

In regard to projects let to contract after January 1, 2017, ALL *NCHRP Report 350* compliant temporary concrete barrier walls placed on a project site SHALL comply with the requirements for the recessed approval stamp as directed by the *SCDOT Standard Drawings*. Those *NCHRP Report 350* compliant temporary concrete barrier walls with the original recessed approval stamp that reads "SCDOT 350" will continue to be acceptable on projects let to contract after January 1, 2017. However, those temporary concrete barriers with the "SCDOT 350" identification plate attached to the side of the barrier walls with mechanical anchors previously grandfathered will no longer be acceptable on projects let to contract after January 1, 2017.

(F) Construction Signs (Sub-section 605.4.1.1) –

*** **(Effective on all projects let to contract after January 1, 2016)** ***

On all projects relative to **interstate highways** let to contract after January 1, 2016, all signs attached to portable sign supports on and/or adjacent to **interstate highways** shall be rigid. Fabricate each of these rigid signs from an approved aluminum laminate composite rigid sign substrate approved by the Department. Utilization of signs fabricated from roll-up fabric substrates attached to portable sign supports installed on and/or adjacent to **interstate highways** will no longer be acceptable on projects let to contract after January 1, 2016.

ONLY those portable sign supports specified and approved for support of rigid signs fabricated from approved aluminum laminated composite rigid sign substrates and included on the *Approved Products List for Traffic Control Devices in Work Zones*, latest edition, are acceptable. To facilitate location of acceptable portable sign supports, the listing of portable sign supports is now separated into two (2) sections; "Portable Sign Supports for Use with Roll-Up Signs ONLY" and "Portable Sign Supports for Use with Roll-Up Sign Substrates and Rigid Sign Substrates".

The trade names of the approved aluminum laminate composite rigid sign substrates are "Acopan", "Alpolic", "Dibond" and "Reynolite". These rigid sign substrates are restricted to thicknesses no greater than 2 millimeters.

Rigid signs fabricated from standard aluminum sign blanks or any other rigid material other than Acopan, Alpolic, Dibond or Reynolite are PROHIBITED for attachment to portable sign supports. However, rigid signs fabricated from standard 0.080 and 0.100 inches thick aluminum sign blanks will continue to be acceptable for mounting on ground mounted sign supports.

Signs fabricated from roll-up fabric substrates approved by the Department will continue to be acceptable for use on and/or adjacent to secondary and primary roadways unless otherwise directed by the Department.

The minimum mounting height of signs mounted on these portable sign supports shall continue to be 5 feet from the ground to the bottom edge of the sign except where a minimum 7 foot mounting height is required in accordance with the standard specifications, the standard drawings, these special provisions and the MUTCD, latest edition.

(G) Truck-Mounted Attenuator (Sub-section 605.4.2.2) –

Sub-section 605.2.2.2.3.3 Color (paragraph 1) -

Use industrial grade enamel paint for cover of the metal aspects of the unit. Provide and attach supplemental striping to the rear face of the unit with a minimum Type III high intensity retroreflective sheeting unless otherwise directed by the Department. Utilize an alternating 4 to 8 inch black and 4 to 8 inch yellow 45-degree striping pattern that forms an inverted "V" at the center of the unit that slopes down and to the sides of the unit in both directions from the center.

(H) Truck-Mounted Attenuator (Sub-section 605.4.2.2) –

Sub-section 605.4.2.2 Truck-Mounted Attenuators (paragraph 6) -

A direct truck mounted truck mounted attenuator is mounted and attached to brackets or similar devices connected to the frame of a truck with a minimum gross vehicular weight (GVW) of 15,000 pounds (actual weight) unless otherwise directed. A trailer towed truck mounted attenuator is towed from behind and attached via a standard pintle hook / hitch to the frame of a truck with a minimum gross vehicular weight (GVW) of 10,000 pounds (actual weight) unless otherwise directed.

Each truck utilized with a truck mounted attenuator shall comply with the manufacturer's requirements to ensure proper operation of the attenuator. The minimum gross vehicular weight (GVW) (actual weight) for each truck shall comply with these specifications unless otherwise directed within the "Remarks" column of the *Approved Products List For Traffic Control Devices in Work Zones* in regard to specific requirements for the device in question.

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 part 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 in its entirety and shall not protrude from the steel structure in any manner.

(I) Trailer-Mounted Changeable Message Signs (Sub-section 606.3.2) -

Sub-section 606.3.2.7 Controller (paragraphs 1-4) -

The controller shall be an electronic unit housed in a weatherproof, rust resistant box with a keyed lock and a light for night operation. Provide the unit with a jack that allows direct communications between the on-board controller and a compatible personal computer. The unit shall have a LCD display screen that allows the operator to review messages prior to displaying the message on the sign.

The controller shall have the capability to store 199 factory preprogrammed messages and up to 199 additional messages created by the user in a manner that does not require a battery to recall the messages. Also, the controller shall allow the operator the capability to program the system to display multiple messages in sequence.

Provide the controller with a selector switch to allow the operator to control the brightness or intensity level of the light source of the sign panel. The selector switch shall include "bright," "dim" and "automatic" modes; inclusion of additional modes is permissible. When the selector switch is in the "automatic" mode, a photosensitive circuit shall control the brightness or intensity level of the light source in response to changes in ambient light such as from day to night and other various sources of ambient light.

Equip each sign with remote communications capabilities, such as utilization of cellular telephone or internet browser technology, to allow the operator to revise or modify the message selection from the office or other remote location. Also, provide protection to prohibit unauthorized access to the controller, (i.e. password protection).

Sub-section 606.5 Measurement (paragraph 2) -

Trailer-mounted changeable message signs are included in the lump sum item for Traffic Control in accordance with **Subsections 107.12** and **601.5** of the “2007 Standard Specifications for Highway Construction”. No separate measurement will be made for trailer-mounted changeable message signs unless the contract includes a specific pay item for trailer-mounted changeable message signs.

The Contractor shall provide, install, operate, and maintain the trailer-mounted changeable message sign per traffic control set-up as directed by the Plans, the “Standard Drawings for Road Construction”, these Special Provisions, the Specifications, and the Engineer.

Sub-section 606.6 Payment (paragraph 2) -

In addition to **Subsections 107.12** and **601.6**, the payment for Traffic Control is full compensation for providing, installing, removing, relocating, operating, and maintaining trailer-mounted advance warning arrow panels and trailer-mounted changeable message signs as specified or directed and includes providing the units’ primary power source; repairing or replacing damaged or malfunctioning units within the specified time; providing traffic control necessary for installing, operating, and maintaining the units; and all other materials, labor, hardware, equipment, tools, supplies, transportation, incidentals, and any miscellaneous items necessary to fulfill the requirements of the pay item in accordance with the Plans, the Specifications, and other items of the Contract.

Sub-section 606.6 Payment (paragraph 3) -

Disregard this paragraph unless the Contract includes a specific pay item for trailer-mounted changeable message signs.

(J) Temporary Pavement Markings (Sub-section 609.4.1) –

Sub-section 609.4.1.1.1 Application Requirements General (in addition to paragraph 3) -

On two-lane two-way roadways, apply and place temporary or permanent pavement markings, as specified hereupon, prior to the end of each day’s work or shift or reopening a closed travel lane to traffic. These pavement markings shall include 4-inch wide solid lines on edge lines and solid center lines and 4-inch wide by 10 feet long broken lines with a 30-foot gap for broken center lines and lane lines unless otherwise specified. The center line pavement markings shall be either double yellow solid lines, yellow broken lines or an appropriate combination of a yellow solid line and yellow broken lines for passing / no passing zones. Placement of a singular yellow solid line for a center line pavement marking is unacceptable. The edge line pavement markings shall be a white solid line.

On multilane primary and secondary roadways, apply and place temporary or permanent pavement markings, as specified hereupon, to the travel lanes prior to reopening a closed travel lane to traffic. These pavement markings shall include 4-inch wide solid lines, utilized for edge lines and solid center lines, and 4-inch wide by 10 feet long broken lines with a 30-foot gap, utilized for lane lines and turn lanes, unless otherwise specified. The center line pavement markings shall be either double yellow solid lines or an appropriate combination of a yellow solid line and 4-inch wide by 10 feet long yellow broken lines for two-way left turn median areas. The right edge line pavement markings shall be a white solid line and the left edge line shall be a yellow solid line except in areas where the travel lanes separate to create a gore type situation and then the color schemes shall comply with SCDOT application practices for gore areas. The lane lines between travel lanes and turn lanes shall be 4-inch wide by 10 feet long white broken lines with a 30-foot gap.

However, on two-lane two-way and multilane primary and secondary roadways, application of a 4-inch wide solid line utilized for an edge line adjacent to an earth shoulder, white or yellow, may be delayed up to 72 hours after eradication of the original line when the length of eradicated line at a single location is no longer than 250 feet. In the event of multiple locations along the same line, each location must be separated

from the adjacent location by no less than 250 feet with a cumulative total distance of eradicated line of no more than 1300 feet within any continuous 1 (one) mile length of roadway measured from a selected location. If the length of eradicated line exceeds 250 feet at any single location, the distance interval between multiple adjacent locations is less than 250 feet or a cumulative total distance of multiple locations of eradicated line exceeds 1300 feet within any continuous 1 (one) mile length of roadway measured from a selected location, replace the eradicated line(s) prior to reopening the adjacent travel lane to traffic.

On interstate roadways, apply and place temporary or permanent pavement markings, as specified hereupon, to the travel lanes prior to reopening a closed travel lane to traffic. These pavement markings shall include 6-inch wide solid lines, utilized for edge lines, and 6-inch wide by 10 feet long white broken lines with a 30-foot gap, utilized for lane lines between travel lanes and auxiliary lanes, unless otherwise specified. The right edge line pavement markings shall be a white solid line and the left edge line shall be a yellow solid line except in areas where the travel lanes separate to create a gore type situation and then the color schemes shall comply with SCDOT application practices for gore areas.

On all roadways, apply and place white stop bars and white triangle yield bars in all locations where previous stop bars and triangle yield bars have been eradicated by the work. Apply and place white stop bars and white triangle yield bars at intersections controlled by stop and yield signs within 72 hours of the eradication of the original pavement marking. Apply and place white stop bars at signalized intersections controlled by traffic control signals and at railroad crossings prior to reopening a closed travel lane to traffic.

Within the limits of existing turn lanes on all roadways, apply and place white arrows in all locations where previous arrows have been eradicated by the work unless otherwise directed by the RCE. Apply and place white arrows within 72 hours of the eradication of the original pavement markings. However, in regard to newly constructed turn lanes, apply and place white arrows the within turn lanes as directed by the RCE.

Within the limits of existing lane-drop sites on all roadways, apply and place white arrows in all locations where previous arrows have been eradicated by the work prior to the end of each day's work or shift or reopening the closed travel lane to traffic. In regard to newly constructed lane-drop sites, apply and place white arrows within the travel lane to be terminated prior to opening the travel lane to traffic and as directed by the RCE.

(K) Temporary Pavement Markings (Sub-section 609.4.1) –

Sub-section 609.4.1.1 Application Requirements General (Revision to paragraph 8) -

On two-lane, two-way roadways, passing zones may be eliminated within the work zone through application of 4-inch double yellow centerline pavement markings if determined feasible and directed to do so by the Plans and/or the RCE. Apply no passing zone markings as specified by the Plans, the Specifications, the *MUTCD* and the RCE.

(L) Flagging Operations (Sub-section 610.4.1) –

Sub-section 610.4.1.1 Flagging Operations (paragraph 1) -

Use a flagging operation to control the flow of traffic when two opposing directions of traffic must share a common travel lane. A flagging operation may be necessary during a lane closure on a two-lane two-way roadway, an intermittent ramp closure or an intermittent encroachment of equipment onto a portion of the roadway. Utilize flagging operations to direct traffic around work activities and maintain continuous traffic flow at reduced speeds when determined to be appropriate by the RCE. As stated above, flagging operations shall direct traffic around the work activities and maintain continuous traffic flow, therefore, stopped traffic shall not be required to stop for time durations greater than those listed below unless otherwise directed by the RCE. Begin measurement of the time interval immediately upon the moment the Flagger rotates the Stop/Slow paddle to display the "Stop" condition to the approaching motorists.

LENGTH OF CLOSURE	MAXIMUM TIME DURATION FOR STOPPED TRAFFIC
1 MILE or LESS	5 Minutes
1 to 2 MILES	7 ½ Minutes

If the work activities require traffic to be stopped for periods greater than 5 to 7 ½ minutes as stated above, consider alternate work methods, conducting work activities during times of lowest traffic volumes such as during the hours of darkness or complete road closure with detour installation.

(M) Paving and Resurfacing (Sub-section 611.4.1) –

Sub-section 611.4.1.2 Requirements (paragraph 8) -

Whenever travel lanes with acceptable grade elevation differences are open to traffic, provide “Uneven Lanes” signs (W8-11-48) or “Uneven Pavement” signs (W8-11A-48). Reflectorize these signs with a fluorescent orange colored prismatic retroreflective sheeting unless otherwise specified. Install these signs adjacent to roadways with uneven pavement surfaces between travel lanes or between travel lanes and the adjacent paved shoulders. Install these signs at intervals no greater than 2600 feet.

STAGING

TRAFFIC CONTROL RESTRICTIONS (Project Specific) -

The number of travel lanes prior to beginning work, six (6) with three (3) in each direction, will be reduced to four (4) with two (2) in each direction. This condition will remain in place until all paving of the travel lanes and adjacent shoulders is complete unless otherwise directed by the Engineer.

During those times when the travel lanes of a specific direction are separated and divided by the earth median, NO lane closures of either of the separated travel lanes in that specific direction is permissible unless otherwise directed by these special provisions and/or the Engineer.

Single lane closures are permissible in accordance with all hourly lane closure prohibition restrictions in ONLY the direction of travel the travel lanes NOT separated and divided by the earth median.

SINGLE LANE CLOSURES ARE ONLY PERMISSIBLE IN THE DIRECTION OF TRAVEL NOT IMPLACED BY THE IMPLEMENTATION AND OPERATION OF THE TRAFFIC SEPARATION / TRAFFIC SPLIT UNLESS OTHERWISE DIRECTED BY THESE SPECIAL PROVISIONS AND/OR THE ENGINEER.

HOWEVER, SINGLE LANE CLOSURES IN THOSE TRAVEL LANES INTENDED FOR SEPARATION OF ADJACENT TRAVEL LANES / TRAFFIC SPLIT MAY BE PERMISSIBLE DURING THE INITIAL INSTALLATION-IMPLEMENTATION OPERATIONS OF THE SEPARATION OF ADJACENT TRAVEL LANES / TRAFFIC SPLIT ONLY. THE DEPARTMENT PROHIBITS SINGLE LANE CLOSURES IN THESE TRAVEL LANES AT ALL OTHER TIMES UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

Ramp construction and right travel lane construction operations in specific locations will require temporary closure of the off-ramps and on-ramps at the on-ramps to northbound and southbound I-85 from eastbound and westbound I-26 and the interchanges at US 176 (N. Pine Street) and SC 9 (Boiling Springs Road. Each temporary ramp closure is restricted to a time duration not to exceed 54 hours. These temporary ramp closures are only permitted during weekends from 12:00 AM (Mid-Night) Friday to 6:00 AM Monday. The Contractor shall notify the Resident Engineer of intent to close a ramp to conduct these construction operations no less than 30 days prior to each temporary ramp closure. Simultaneous closure of the same type ramp, off-ramp or on-ramp, in the same direction at the I-26, the US 176 (N. Pine Street) and SC 9 (Boiling Springs Road) interchanges is PROHIBITED.

The presence of a grade elevation difference between or adjacent to a travel lane open to traffic that may collect water within the travel lane open to traffic is prohibited.

STAGE 1

Construct the left shoulders of northbound and southbound I-85, the temporary median crossovers and eliminate the existing rumble strips in the right shoulders during Stage 1.

Eliminate the existing rumble strips in the right shoulders of northbound and southbound I-85 from Station 120+51.74 to Station 549+00.

Immediately prior to beginning the left shoulder construction operations, reduce the travel lanes of I-85 from three (3) travel lanes in each direction to two (2) travel lanes in each direction. This condition will remain in effect for the duration of the project unless otherwise directed by the Engineer.

Install left lane closures in each direction. Begin the merging taper of the left lane closure in the northbound I-85 travel lanes at Station 107+00. Begin the merging taper of the left lane closure in the southbound I-85 travel lanes at Station 752+00. Install and maintain these lane closures in accordance with the typical traffic control standard drawings, the plans, these special provisions and the Engineer.

Construct the new left shoulders of northbound and southbound I-85 from Station 120+51.74 to Station 549+00.

Construct the southern temporary median crossover from Station 136+00 to Station 161+00 and the northern temporary median crossover from Station 521+00 to Station 549+00.

Upon completion of the construction of the left shoulder of southbound I-85, install temporary concrete barrier wall supplemented with portable terminal impact attenuators – test level 3 – 70 mph in the southbound I-85 travel lanes as illustrated in the plans and as directed by the Engineer.

Supplement the temporary concrete barrier wall installed in the southbound I-85 travel lanes adjacent to the left travel lane of southbound I-85 with a temporary glare shield system from Station 136+00 to Station 525+00. Provide, install and maintain this temporary glare shield system as directed by the standard specifications and as directed by the Engineer.

STAGE 2

Construct the right shoulder, right travel lane and center travel lane of northbound I-85 and the temporary ramp connector from northbound I-85 to the northbound I-85 off-ramp to I-26 during Stage 2.

Maintain closure of the left travel lane of southbound I-85 during Stage 2.

Convert the left lane closure installed during Stage 1 to a right lane closure upon entering Stage 2. Begin the merging taper of this right lane closure at Station 107+00.

Construct the temporary ramp connector from northbound I-85 to the northbound I-85 off-ramp to I-26. Supplement the locations of this connector adjacent to the travel lanes and the ramp lanes open to traffic with portable plastic drums. Install and maintain these drums at intervals of 10 feet. Also, install these drums to begin no less than 50 feet in advance of near edge of the temporary ramp connector first encountered by approaching motorists to 50 feet beyond the downstream edge of the connector. Complete this construction prior to implementation of the separation of the northbound I-85 travel lanes / traffic split.

Upon completion of the construction of the temporary ramp connector, begin installation of the separation of the northbound I-85 travel lanes / traffic split.

Install and maintain ground mounted signs and the spanwire structure with overhead signs relative to the separation of travel lanes / traffic split (see sheet TC-8) as directed by the plans. Install the ground mounted sign assemblies 800' to 1000' in advance of the spanwire structure; adjust accordingly to compensate for any sight distance restrictions. Cover and maintain coverage of these signs until immediately prior to the separation of the northbound I-85 travel lanes / traffic split.

Install temporary pavement markings and traffic control devices to implement the separation of adjacent travel lanes / traffic split of the I-85 northbound travel lanes as illustrated in the plans and directed by these special provisions and the Engineer.

Supplement the 12" white solid line separating the northbound travel lanes with 4" X 4" temporary clear mono-directional pavement markers at 10' intervals adjacent to each side of the 12" white solid line from Station 133+00 to Station 137+00 as illustrated in the plans and as directed by these special provisions and the Engineer.

Implement the separation of the northbound I-85 travel lanes / traffic split. Relocate the northbound left travel lane onto the left travel lane / left shoulder of southbound I-85. The contractor may utilize lane closures as necessary during the implementation phase of the separation of the northbound I-85 travel lanes / traffic split as approved by the Engineer. **Upon completion of this implementation phase of the separation of the northbound I-85 travel lanes / traffic split, lane closures shall no longer be permitted in the northbound I-85 travel lanes until the separation of the northbound I-85 travel lanes / traffic split is discontinued and all northbound I-85 travel lanes are returned to their original locations unless otherwise directed by the Engineer.**

Upon implementation of the separation of the northbound I-85 travel lanes / traffic split, relocate off-ramp traffic from northbound I-85 to I-26 onto the temporary ramp connector. Also, relocate on-ramp traffic from I-26, off-ramp traffic to and on-ramp traffic from US 176 and SC 9 into their new temporary configurations as illustrated in the plans.

Upon implementation of the separation of the northbound I-85 travel lanes / traffic split and relocation of the right travel lane onto the left shoulder / left travel lane of northbound I-85, install temporary concrete barrier wall supplemented with portable terminal impact attenuators – test level 3 – 70 mph adjacent to the relocated right travel lane of northbound I-85 as illustrated in the plans and as directed by the Engineer.

Construct the right shoulder, right travel lane and center travel lane of northbound I-85 and those designated areas of the off-ramp from northbound I-85 to I-26 as illustrated in the plans and as directed by the Engineer.

STAGE 2-A

Construct those areas of the right shoulder, right travel lane, center travel lane of northbound I-85 and the areas of the off-ramps from and on-ramps to northbound I-85 during Stage 2-A.

Construct the designated areas of the right shoulder, right travel lane, center travel and areas of the off-ramps from and on-ramps to northbound I-85 utilizing Portland Cement Concrete Pavement – Fast Track.

Maintain the separation of the northbound I-85 travel lanes / traffic split during Stage 2-A.

Maintain and relocate the off-ramp traffic from northbound I-85 to I-26 onto the travel lanes and deceleration lanes constructed during Stage 2 as illustrated in the plans.

Construct those areas of the right shoulder, right travel lane, center travel lane of northbound I-85 and the areas of the off-ramp at the off-ramp from northbound I-85 to I-26 as illustrated in the plans.

Ramp construction and right shoulder, right travel lane and center travel lane construction operations in locations contiguous to specified ramps will require temporary ramp closures. These ramp closures will include the on-ramps to and off-ramps from northbound I-85. The ramps requiring temporary closure will include:

- On-Ramp from Westbound I-26**
- On-Ramp from Eastbound I-26**
- Off-Ramp to US 176 (N. Pine Street)**
- On-Ramp from US 176 (N. Pine Street)**
- Off-Ramp to SC 9 (Boiling Springs Road)**

On-Ramp from SC 9 (Boiling Springs Road)

The Department restricts each temporary ramp closure to a period of time not to exceed 54 hours. The Department will **ONLY** permit these temporary ramp closures during weekends from 12:00 AM (Mid-Night) Friday to 6:00 AM Monday. The Contractor shall notify the Resident Engineer of intent to close a ramp to conduct these construction operations no less than 30 days prior to each temporary ramp closure.

Do **NOT** close **MORE** than one (1) off-ramp and one (1) on-ramp in the same direction simultaneously. Restrict simultaneous ramp closures to one (1) interchange at a time.

The Department **PROHIBITS** simultaneous closure of the on-ramps from Eastbound and Westbound I-26 to northbound I-85.

In those locations where sections of temporary concrete barrier wall require removal or relocation to conduct the work, install portable terminal impact attenuators – test level 3 – 70 mph as illustrated in the plans and as directed by the Engineer to ensure no unprotected approach ends of the barrier wall are present within 30' of the near edge of the adjacent travel lane open to traffic.

Install all traffic control devices and signs as illustrated in the plans and as directed by the typical traffic control standard drawings, these special provisions and the Engineer.

Construct those areas of the right shoulder, right travel lane, center travel lane of northbound I-85 and the areas of the off-ramps from and on-ramps to northbound I-85 not constructed during Stage 2 during temporary ramp closures. These areas will include:

- On-Ramp from Westbound I-26
- On-Ramp from Eastbound I-26
- Off-Ramp to US 176 (N. Pine Street)
- On-Ramp from US 176 (N. Pine Street)
- Off-Ramp to SC 9 (Boiling Springs Road)
- On-Ramp from SC 9 (Boiling Springs Road)

STAGE 3

Construct the left travel lane of northbound I-85 during Stage 3.

Maintain closure of the left travel lane of southbound I-85 from Stage 2 into and during Stage 3.

Maintain the separation of the northbound I-85 travel lanes / traffic split and the relocation of the left travel lane of northbound I-85 in the left travel lane / left shoulder of southbound I-85 during Stage 3.

Prior to or immediately upon entering Stage 3, install pavement markings and traffic control devices to the new northbound I-85 right travel lane and ramp areas from Station 161+00 to Station 531+00 as illustrated in the plans and as directed by the Engineer.

Relocate and return the right travel lane traffic of northbound I-85 from the left shoulder / left travel lane utilized during Stage 2 and Stage 2-A to the right travel lane upon entering Stage 3. Relocate the temporary concrete barrier wall and apply the pavement markings in those areas adjacent to the temporary median crossovers to facilitate and implement the relocation and return of the right travel lane traffic to the right travel lane.

Relocate the temporary concrete barrier from its location utilized during Stage 2 and Stage 2-A to the center of the center travel lane as illustrated in the plans and as directed by the Engineer. Supplement the temporary concrete barrier wall with portable terminal impact attenuators – test level 3 – 70 mph as necessary and as illustrated in the plans and directed by the Engineer to ensure no unprotected approach ends of the barrier wall are present within 30' of the near edge of the adjacent travel lane open to traffic.

Construct the left travel lane of northbound I-85.

STAGE 3-A

Install, relocate and revise the traffic control devices necessary to implement the separation of adjacent travel lanes / traffic split of the I-85 southbound travel lanes during Stage 4.

Upon entering Stage 3-A, relocate temporary concrete barrier wall located in the center travel lane of the northbound I-85 travel lanes to the left travel lane from Station 522+00 to Station 153+00 as illustrated in the plans.

Supplement the temporary concrete barrier wall installed in the northbound I-85 travel lanes adjacent to the left travel lane of the northbound I-85 with a temporary glare shield system from Station 531+00 to Station 155+00. Provide, install and maintain this temporary glare shield system as directed by the standard specifications and as directed by the Engineer.

Upon completion of the relocation of this line of barrier wall, remove and replace the 6" yellow edge line between the right travel lane and center travel lane of northbound I-85 with 6" white broken lane lines. Install the 6" yellow solid edge line to the left of the relocated left travel lane of northbound I-85.

Upon completion of the revision of the pavement markings in the northbound I-85 travel lanes, relocate and return the left travel lane traffic on northbound I-85 from the left shoulder / left travel lane of southbound I-85 utilized during Stage 2, Stage 2-A and Stage 3.

Upon completion the relocation of the left northbound I-85 traffic, install the additional temporary concrete barrier wall supplemented with portable terminal impact attenuators – test level 3 – 70 mph in both the northbound and southbound I-85 travel lanes as illustrated in the plans.

Immediately upon discontinuation of the separation of the northbound I-85 travel lanes / traffic split, cover the ground mounted signs and the spanwire structure with overhead signs relative to the separation of the northbound travel lanes / traffic split. Remove these signs and the spanwire structure.

Revise the traffic control devices and pavement markings within the temporary median crossover to accommodate the separation of adjacent travel lanes / traffic split of the I-85 southbound travel lanes.

Install and maintain ground mounted signs and the spanwire structure with overhead signs relative to the separation of travel lanes / traffic split (see sheet TC-8) as directed by the plans. Install the ground mounted sign assemblies 800' to 1000' in advance of the spanwire structure; adjust accordingly to compensate for any sight distance restrictions. Cover and maintain coverage of these signs until immediately prior to the separation of the southbound I-85 travel lanes / traffic split.

STAGE 4

Construct the right shoulder, right travel lane and center travel lane of southbound I-85 and the temporary ramp connector from southbound I-85 to the southbound I-85 off-ramp to I-26 during Stage 4.

Maintain northbound I-85 traffic in the right and center travel lanes of the northbound I-85 travel lanes during Stage 4.

Upon entering Stage 4, install temporary pavement markings and traffic control devices to implement the separation of adjacent travel lanes / traffic split of the I-85 southbound travel lanes as illustrated in the plans and directed by these special provisions and the Engineer.

Supplement the 12" white solid line separating the southbound travel lanes with 4" X 4" temporary clear mono-directional pavement markers at 10' intervals adjacent to each side of the 12" white solid line from Station 549+50 to Station 546+00 as illustrated in the plans and as directed by these special provisions and the Engineer.

Implement the separation of the southbound I-85 travel lanes / traffic split. Relocate the southbound left travel lane onto the left travel lane / left shoulder of northbound I-85. The contractor may utilize lane closures as necessary during the implementation phase of the separation of the southbound I-85 travel lanes / traffic split as approved by the Engineer. **Upon completion of this implementation phase of the separation of the southbound I-85 travel lanes / traffic split, lane closures shall no longer be permitted in the southbound I-85 travel lanes until the separation of the southbound I-85 travel lanes / traffic split is discontinued and all southbound I-85 travel lanes are returned to their original locations unless otherwise directed by the Engineer.**

Upon implementation of the separation of the southbound I-85 travel lanes / traffic split, relocate off-ramp traffic from southbound I-85 to I-26 onto the temporary ramp connector. Also, relocate on-ramp traffic from I-26, off-ramp traffic to and on-ramp traffic from US 176 and SC 9 into their new temporary configurations as illustrated in the plans.

Upon implementation of the separation of the southbound I-85 travel lanes / traffic split and relocation of the right travel lane onto the left shoulder / left travel lane of southbound I-85, install temporary concrete barrier wall supplemented with portable terminal impact attenuators – test level 3 – 70 mph adjacent to the relocated right travel lane of northbound I-85 as illustrated in the plans and as directed by the Engineer.

Construct the right shoulder, right travel lane and center travel lane of southbound I-85 and those designated areas of the off-ramp from southbound I-85 to I-26 as illustrated in the plans and as directed by the Engineer.

STAGE 4-A

Construct those areas of the right shoulder, right travel lane, center travel lane of southbound I-85 and the areas of the off-ramps from and on-ramps to southbound I-85 during Stage 4-A.

Construct the designated areas of the right shoulder, right travel lane, center travel and areas of the off-ramps from and on-ramps to southbound I-85 utilizing Portland Cement Concrete Pavement – Fast Track.

Maintain the separation of the southbound I-85 travel lanes / traffic split during Stage 4-A.

Maintain and relocate the off-ramp traffic from southbound I-85 to I-26 onto the travel lanes and deceleration lanes constructed during Stage 4 as illustrated in the plans.

Construct those areas of the right shoulder, right travel lane, center travel lane of southbound I-85 and the areas of the off-ramp at the off-ramp from southbound I-85 to I-26 as illustrated in the plans.

Ramp construction and right shoulder, right travel lane and center travel lane construction operations in locations contiguous to specified ramps will require temporary ramp closures. These ramp closures will include the on-ramps to and off-ramps from southbound I-85. The ramps requiring temporary closure will include:

**Off-Ramp to SC 9 (Boiling Springs Road)
On-Ramp from SC 9 (Boiling Springs Road)
Off-Ramp to US 176 (N. Pine Street)
On-Ramp from US 176 (N. Pine Street)
On-Ramp from Westbound I-26**

The Department restricts each temporary ramp closure to a period of time not to exceed 54 hours. The Department will ONLY permit these temporary ramp closures during weekends from 12:00 AM (Mid-Night) Friday to 6:00 AM Monday. The Contractor shall notify the Resident Engineer of intent to close a ramp to conduct these construction operations no less than 30 days prior to each temporary ramp closure.

Do NOT close MORE than one (1) off-ramp and one (1) on-ramp in the same direction simultaneously. Restrict simultaneous ramp closures to one (1) interchange at a time.

The Department PROHIBITS simultaneous closure of the on-ramps from Eastbound and Westbound I-26 to southbound I-85.

In those locations where sections of temporary concrete barrier wall require removal or relocation to conduct the work, install portable terminal impact attenuators – test level 3 – 70 mph as illustrated in the plans and as directed by the Engineer to ensure no unprotected approach ends of the barrier wall are present within 30' of the near edge of the adjacent travel lane open to traffic.

Install all traffic control devices and signs as illustrated in the plans and as directed by the typical traffic control standard drawings, these special provisions and the Engineer.

Construct those areas of the right shoulder, right travel lane, center travel lane of southbound I-85 and the areas of the off-ramps from and on-ramps to southbound I-85 not constructed during Stage 4 during temporary ramp closures. These areas will include:

- Off-Ramp to SC 9 (Boiling Springs Road)
- On-Ramp from SC 9 (Boiling Springs Road)
- Off-Ramp to US 176 (N. Pine Street)
- On-Ramp from US 176 (N. Pine Street)
- On-Ramp from Westbound I-26

STAGE 4-B

Construct those areas of the right shoulder, right travel lane, center travel lane of southbound I-85 and the area of the on-ramp to southbound I-85 from eastbound I-26 during Stage 4-B.

Construct the designated areas of the right shoulder, right travel lane, center travel and area of the on-ramp to southbound I-85 from eastbound I-26 utilizing Portland Cement Concrete Pavement – Fast Track.

Maintain the separation of the southbound I-85 travel lanes / traffic split during Stage 4-B.

Ramp construction and right shoulder, right travel lane and center travel lane construction operations in the locations contiguous to the on-ramp to southbound I-85 from eastbound I-26 will require temporary closure. The Department restricts this temporary ramp closure to a period of time not to exceed 54 hours. The Department will ONLY permit these temporary ramp closures during weekends from 12:00 AM (Mid-Night) Friday to 6:00 AM Monday. The Contractor shall notify the Resident Engineer of intent to close this ramp to conduct these construction operations no less than 30 days prior to this temporary ramp closure.

Do NOT close MORE than one (1) off-ramp and one (1) on-ramp in the same direction simultaneously. Restrict simultaneous ramp closures to one (1) interchange at a time.

The Department PROHIBITS simultaneous closure of the on-ramps from Eastbound and Westbound I-26 to southbound I-85.

In those locations where sections of temporary concrete barrier wall require removal or relocation to conduct the work, install portable terminal impact attenuators – test level 3 – 70 mph as illustrated in the plans and as directed by the Engineer to ensure no unprotected approach ends of the barrier wall are present within 30' of the near edge of the adjacent travel lane open to traffic.

Install all traffic control devices and signs as illustrated in the plans and as directed by the typical traffic control standard drawings, these special provisions and the Engineer.

Construct those areas of the right shoulder, right travel lane, center travel lane of the on-ramp to southbound I-85 from eastbound I-26 not constructed during Stage 4 during this temporary ramp closure.

STAGE 5

Construct the left travel lane of southbound I-85 during Stage 5.

Maintain northbound I-85 traffic in the right and center travel lanes of the northbound I-85 travel lanes during Stage 5.

Maintain the separation of the southbound I-85 travel lanes / traffic split and the relocation of the left travel lane of southbound I-85 in the left travel lane / left shoulder of northbound I-85 during Stage 5.

Prior to or immediately upon entering Stage 5, install pavement markings and traffic control devices to the new southbound I-85 right travel lane and ramp areas from Station 523+00 to Station 159+00 as illustrated in the plans and as directed by the Engineer.

Relocate and return the right travel lane traffic of southbound I-85 from the left shoulder / left travel lane utilized during Stage 4, Stage 4-A and Stage 4-B to the right travel lane upon entering Stage 5. Relocate the temporary concrete barrier wall and apply the pavement markings in those areas adjacent to the temporary median crossovers to facilitate and implement the relocation and return of the right travel lane traffic to the right travel lane.

Relocate the temporary concrete barrier from its location utilized during Stage 4, Stage 4-A and Stage 4-B to the center of the center travel lane as illustrated in the plans and as directed by the Engineer. Supplement the temporary concrete barrier wall with portable terminal impact attenuators – test level 3 – 70 mph as necessary and as illustrated in the plans and directed by the Engineer to ensure no unprotected approach ends of the barrier wall are present within 30' of the near edge of the adjacent travel lane open to traffic.

Construct the left travel lane of southbound I-85.

STAGE 5-A

Remove the temporary median crossovers during Stage 5-A.

Upon entering Stage 5-A, discontinue the separation of the southbound I-85 travel lanes / traffic split.

Install, relocate and revise the traffic control devices necessary to discontinue the separation of adjacent travel lanes / traffic split of the I-85 southbound travel lanes.

Immediately upon discontinuation of the separation of the southbound I-85 travel lanes / traffic split, cover the ground mounted signs and the spanwire structure with overhead signs relative to the separation of the southbound travel lanes / traffic split. Remove these signs and the spanwire structure.

Remove the temporary concrete barrier wall located in the center travel lane of the southbound I-85 travel lanes. Upon completion of the removal of this line of barrier wall, relocate the left southbound travel lane traffic from the northbound left travel lane / left shoulder to the to the southbound I-85 center travel lane.

Revise the pavement markings in the southbound I-85 travel lanes as necessary.

Upon relocation of the left southbound travel lane traffic from the northbound left travel lane / left shoulder to the to the southbound I-85 center travel lane, remove the temporary concrete barrier wall located in the left travel lane of the northbound I-85 travel lanes.

Revise the pavement markings in the northbound I-85 travel lanes as necessary.

Maintain closure of the left travel lane in the northbound and southbound I-85 travel lanes at this time.

Remove the southern temporary median crossover from Station 136+00 to Station 161+00, the northern temporary median crossover from Station 521+00 to Station 549+00, and reconstruct the right

shoulders, the right, center and left travel lanes of northbound and southbound I-85 from Station 120+51.74 to Station 161+00 and from Station 521+00 to Station 549+00.

STAGE 6

Reconstruct right shoulder, right travel lane, center travel lane and left travel lane of northbound and southbound I-85 during Stage 6.

Install temporary concrete barrier wall in the center travel lanes of northbound and southbound I-85 a to shield the construction areas from Station 120+51.74 to Station 161+00 and from Station 521+00 to Station 549+00. Install these lines of barrier wall to extend no less than 100 feet beyond either end of the construction area. Supplement these lines of barrier wall with portable terminal impact attenuators – test level 3 – 70 mph in those locations that option to extend the barrier wall at a 10 : 1 taper rate to a point that locates the approach end no less than 30 feet from the near edge of the adjacent travel lane is not available.

PHASE 1 (Northbound)

Relocate all traffic into the left shoulder and left travel lane. Close the center and right travel lanes and the right shoulder to traffic.

Install the temporary concrete barrier wall in the northbound center travel lane as illustrated in the plans, these special provisions and the Engineer.

Construct the right shoulder, the right travel lane and six (6) feet of the right side of the center travel lane from Station 120+51.74 to Station 161+00 and from Station 521+00 to Station 549+00.

Saw cut a longitudinal joint at the location between the left edge of the right travel lane and the right edge of the center travel lane. The purpose of this joint is to provide visual assistance to motorists when inclement weather conditions may diminish visibility of the pavement markings. This joint should help motorists determine their location on the roadway relative to the divisions between the center and right travel lanes.

PHASE 2 (Northbound)

Relocate all traffic into the right shoulder and right travel lane. Close the center and left travel lanes and the left shoulder to traffic.

Relocate and reinstall the temporary concrete barrier wall as illustrated in the plans and as directed by the typical traffic control standard drawings, these special provisions and the Engineer.

Construct the left shoulder, the left travel lane and six (6) feet of the left side of the center travel lane from Station 120+51.74 to Station 161+00 and from Station 521+00 to Station 549+00.

Saw cut a longitudinal joint at the location between the right edge of the left travel lane and the left edge of the center travel lane. The purpose of this joint is to provide visual assistance to motorists when inclement weather conditions may diminish visibility of the pavement markings. This joint should help motorists determine their location on the roadway relative to the divisions between the center and right travel lanes.

PHASE 3 (Southbound)

Relocate all traffic into the left shoulder and left travel lane. Close the center and right travel lanes and the right shoulder to traffic.

Install the temporary concrete barrier wall in the southbound center travel lane as illustrated in the plans, these special provisions and the Engineer.

Construct the right shoulder, the right travel lane and six (6) feet of the right side of the center travel lane from Station 120+51.74 to Station 161+00 and from Station 521+00 to Station 549+00.

Saw cut a longitudinal joint at the location between the left edge of the right travel lane and the right edge of the center travel lane. The purpose of this joint is to provide visual assistance to motorists when inclement weather conditions may diminish visibility of the pavement markings. This joint should help motorists determine their location on the roadway relative to the divisions between the center and right travel lanes.

PHASE 4 (Southbound)

Relocate all traffic into the right shoulder and right travel lane. Close the center and left travel lanes and the left shoulder to traffic.

Relocate and reinstall the temporary concrete barrier wall as illustrated in the plans and as directed by the typical traffic control standard drawings, these special provisions and the Engineer.

Construct the left shoulder, the left travel lane and six (6) feet of the left side of the center travel lane from Station 120+51.74 to Station 161+00 and from Station 521+00 to Station 549+00.

Saw cut a longitudinal joint at the location between the right edge of the left travel lane and the left edge of the center travel lane. The purpose of this joint is to provide visual assistance to motorists when inclement weather conditions may diminish visibility of the pavement markings. This joint should help motorists determine their location on the roadway relative to the divisions between the center and right travel lanes.

STAGE 7

Apply the permanent pavement markings during Stage 7.

Install and maintain the traffic control for the application of the permanent pavement markings as directed by the typical traffic control standard drawings designated for mobile operations, the standard specifications, the special provisions, and the Engineer.