



**CONTRACT DOCUMENTS  
FOR**

**BID NO.: 23-42001-001**

**2023 LMIG RESURFACING**

**PUTNAM COUNTY**

**PUTNAM COUNTY  
BOARD OF COMMISIONERS**

# **SPECIAL NOTICE 1**

**A COMPLETION DATE OF SEPTEMBER 29, 2023, IS SET FOR CONSTRUCTION ON THE 2023 LMIG RESURFACING PROJECT IN PUTNAM COUNTY. CONTRACTOR WILL BE ASSESSED LIQUIDATED DAMAGES IN THE AMOUNT OF \$750.00 PER CALENDAR DAY FOR FAILURE TO COMPLETE THE PROJECT BY SEPTEMBER 29, 2023.**

**THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL REQUIREMENTS COVERED UNDER SPECIAL PROVISION 150 – TRAFFIC CONTROL. ALL COST ASSOCIATED WITH TRAFFIC CONTROL SHALL BE INCLUDED IN THE OVERALL BID.**

**THE CONTRACTOR IS ADVISED ALL WORK IN THE CONTRACT WHICH PERTAINS TO “FULL DEPTH RECLAMATION” SHALL BE IN ACCORDANCE WITH GDOT SPECIFICATIONS, SECTION 301.**

**CONTRACTOR WILL BE REQUIRED TO COORDINATE WITH THE SURROUNDING PROPERTY OWNER ON BOOGER BEAR ROAD/CLARK FORK ROAD TWO WEEKS IN ADVANCE OF THE WORK.**

# **SPECIAL NOTICE 2**

**THE CONTRACTOR WILL BE RESPONSIBLE FOR RAISING (2) MANHOLES ON OLD PHOENIX ROAD. THE COST FOR THIS WORK WILL BE PAID FOR BY PAY ITEM 611-8050 ADJUST MANHOLE TO GRACE.**

**THE CONTRACTOR WILL BE RESPONSIBLE FOR CLIPPING SHOULDERS PRIOR TO PAVING OPERATIONS.**

**THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL SHOULDER BUILDING AND FINAL GRASSING.**

## 2023 LMIG RESURFACING PUTNAM COUNTY

BIDDERS ARE ADVISED TO THOROUGHLY UNDERSTAND THE GENERAL CONDITIONS AND SPECIAL PROVISIONS, PRIOR TO SUBMITTING THEIR BID.

### I. GENERAL CONDITIONS

#### A. QUALIFICATIONS

1. Bids will be considered only from experienced and well-equipped Contractor engaged in work of this type and magnitude.
2. Bidders may be required to submit evidence setting forth qualifications, which entitle him to consideration as a responsible Contractor. A list of work of similar character successfully completed within the last two years may be required giving the location, size and listing equipment available for use on this work. Before accepting any bid, the County may require evidence of the Contractor's financial ability to successfully perform the work to be accomplished under the contract.
3. Status as a Georgia D.O.T. certified contractor is one of the factors to be considered in determining qualification for this bid.
4. All questions concerning the project shall be addressed in writing to John Solomon at [john.solomon@oneatlas.com](mailto:john.solomon@oneatlas.com) no later than **Tuesday, June 6, 2023**.

#### B. GUARANTEE TO ACCOMPANY BID

1. Bids must be accompanied by a certified check or cashier's check or acceptable bid bond (Putnam County form provided) in an amount not less than five percent (5%) of the amount bid per section and made payable to Board of Commissioners of Putnam County. Failure to use Putnam County form may result in bid being deemed non-responsive. Failure to submit a bid bond will be cause for rejection.

#### C. JOINT VENTURES

1. Joint Ventures between two contractors will NOT be allowed. The General Contractor shall be required to perform 100% of the actual resurfacing/patching work and will not be allowed to sublet these items.

Subletting of the additional items (milling, structure adjustment, crack filling, surface treatment, etc.) shall be in accordance with Section 108.01 of the Standard Specifications of the Georgia Department of Transportation.

#### D. SUBMITTING BIDS

Sealed bids will be received by Board of Commissioners of Putnam County, Georgia, 117 Putnam Drive, Suite A, Eatonton, Georgia 31024 until 10:00 a.m. local time, **June 15, 2023**, for:

1. Bids received after this date and time will not be accepted.
2. Bids must be submitted in envelope with the following information clearly typed or printed on the outside:

Putnam County Board of Commissioners  
2023 LMIG Resurfacing: Putnam County  
Date of Bid Opening  
Company Name

3. The Bid should be submitted in duplicate.

**E. AUTHORITY TO SIGN**

The Bidder should ensure that the legal and proper name of proprietorship, firm, partnership or corporation is printed or typed in the space provided on the Schedule of Items.

**F. RIGHTS RESERVED**

1. Putnam County reserves the right to reject any or all Bids, to waive informalities and to re-advertise. It is understood that all Bids are made subject to this agreement, that Putnam County reserves the right to decide which Bid it deems lowest and best, and in arriving at this decision, full consideration will be given to the reputation of the Bidder, his financial responsibility, and work of this type successfully completed.
2. Bidders are advised to examine the Plans and Specifications carefully and to make examinations of the Site of the proposed work as are necessary to familiarize themselves with local conditions, which may affect the proposed work. Bidders are also advised to inform themselves fully in regard to conditions under which the work will be performed. Putnam County will not be responsible for Bidders errors or misjudgment, nor for any information on local conditions or general laws and regulations.
3. Any unauthorized additions, conditions, limitations, or provisions attached to the Bid shall render it informal and may be cause for rejection.
4. Putnam County reserves the right to reject any and all bids from any person, firm, or corporation who is in arrears in any department or obligation to Putnam County, Georgia.
5. Individuals, firms and businesses seeking an award of a Putnam County contract may not initiate or continue any verbal or written communications regarding a solicitation with any County or City officer, elected official, employee or other County or City representative.

#### G. AWARD OF CONTRACT

1. The work will be awarded to the single lowest responsive and responsible bidder. The lowest responsive and responsible contractor will be required to enter into a contract with Putnam County.
2. Prior to execution of a contract, a Contract Performance Bond and a Payment Bond, each equal to 100% of the Contract amount must be provided by the successful Bidder (Putnam County form provided by a surety company qualified to do business in the State of Georgia and satisfactory to Putnam County. Bonds given shall meet the requirements as listed in this Bid package. Failure to execute the Contract, Contract Performance Bond and Payment Bond, or furnish satisfactory proof of coverage of the insurance required within ten days after the date of Notice of the Contract may be just cause for the annulment of the award and for the forfeiture of the guaranty to Putnam County, not as a penalty, but as liquidation of damages sustained. Failure to progress in a timely manner after beginning may also be just cause for such which annulment of award. At the discretion of the County, re-advertised or constructed by County forces. The Contracts and Contract Bonds shall be executed in duplicate.

#### H. TERM

1. The Contract Time charges shall begin on the day after issuance of the Notice to Proceed and continue until **September 29, 2023**. The Contractor will be required to perform such resurfacing within a time agreed to by both parties and at the Contract unit prices. Failure to perform such work in the time agreed will result in Liquidated Damages of \$750.00 per day until such work is completed.

#### I. PRODUCTION REQUIREMENTS

1. Time is of the utmost importance of this project. The successful bidder will be required to commence work within ten (10) calendar days from receipt of the Notice to Proceed, and must carry on with utmost diligence in order to complete the work at the earliest possible date. For additional work, the contractor shall begin work within 14 calendar days from date of request approval and proceed without undue delay until work is completed.
2. Failure to meet the **September 29, 2023** completion date will result in the assessment of liquidated damages of \$750 per calendar day for failure to complete work by **September 29, 2023**

#### J. RETAINAGE

1. Retainage on work completed will be withheld by Putnam County as follows:
  - a. The county shall retain 5% of the gross value of the completed work, indicated by current estimates, until all pay items are completed.

K. LOCATION AND SITE

1. The site of the proposed work is at the stated location within Putnam County, Georgia. A list of roads is included in these specifications.
2. The Contractor shall accept the site in its present condition and carry out all work in accordance with the requirements of the specifications, as indicated on the drawings or as directed by the engineer.
3. The Contractor, before submitting a bid, is advised to visit the site, and acquaint themselves with the actual conditions and the location of any or all obstructions that may exist on the site.
4. The Contract Documents contain the provisions required for the completion of the work to be performed pursuant to this Contract. Information obtained from an Officer, agent, or employee of Putnam County or any other person shall not affect the risks or obligations assumed by the Contractor or relieve him from fulfilling any of the conditions of the Contract. Each Bidder is responsible for inspecting the site and for reading and being thoroughly familiar with the Contract Documents. The failure or omission of any Bidder to so familiarize himself shall in no way relieve any Bidder from any obligation in respect to his Bid.
5. The Contractor is responsible for the location of above and below ground utilities and structures, which may be affected by the work.

L. COMPLIANCE WITH OSHA STANDARDS AND REGULATIONS

The work connected with this Contract shall be performed in accordance with all applicable OSHA regulations and standards including any additions or revisions thereto until the job is completed and accepted by Putnam County.

M. MATERIALS

All materials furnished and/or installed by the Contractor shall be furnished only by Georgia Department of Transportation certified source and shall be within the limits, tolerances, formulae, etc., as established by the Georgia Department of Transportation.

N. INSPECTION

Putnam County does not commit to have full time inspection or testing of work while in progress or at sources of materials furnished. Any lack of inspection and/or testing will in no way relieve the Contractor of his responsibility to provide quality workmanship in accordance with the Specifications. Any test ordered under the supervision of the County that fails to meet standards and retesting is required will be at the contractor's expense.

O. GENERAL BOND REQUIREMENTS

1. Bid Bonds - Amount of bond should be 5% of total contract amount. Putnam County form attached. Failure to use Putnam County Bid Bond Form may result in bid being deemed non-responsive and automatic rejection may occur.
2. Performance Bond - (Completed by successful vendor) - Amount of bond should be 100% of contract amount for each contract.
3. Payment, Labor and Materials Bonds - (Completed by successful vendor) - Amount of bond should be 100% of contract amount for each contract.
4. Bonding Company must be authorized to do business by the Georgia Secretary of State and by the Georgia Insurance Department.
5. An original/certified copy of the Bonding Company's Certificate of Authority must be attached to bond. The Certificate of Authority may be obtained from the Georgia Insurance Department.
6. Bonding Company must have a minimum AM Best rating of **A-10** or higher.
7. Bonding Company must be listed in the Department of the Treasury's publication of companies holding Certificates of Authority as acceptable surety on Federal Bonds and as acceptable reinsuring companies. (Dept. Circular 570; 2022 Revision).
8. After bid opening, vendor has up to twenty-four (24) hours to notify the Putnam County Manager of an obvious error made in calculation of Bid. Withdrawal of Bid Bond for this reason must be done in writing within the twenty-four (24) hour period. Bid Bond may not be withdrawn otherwise.

P. CONTRACT REQUIREMENTS

1. Successful vendor is required to do the following within ten (10) days of Notice:
  - a) Return to Putnam County contract documents executed by the authorized representative and attested by the corporate secretary treasurer.
  - b) Provide Insurance certificates as specified in the bid documents.
  - c) Provide bonding as required by the bid documents.
2. Failure to execute the Contract, Contract Performance Bond and Payment Bond, or furnish satisfactory proof of carriage of the insurance required within ten days after the date of Notice of Award of the Contract may be just cause for the annulment of the award and for the forfeiture of the bid guaranty to Putnam County, not as a penalty, but as liquidation of damages sustained. At the discretion of the County, the award may then be made to the next lowest, responsible bidder, or the work may be re-advertised or constructed by County forces. The Contracts and Contract Bonds shall be executed in duplicate.



**II. SPECIAL PROVISIONS**

**A. AREAS OF WORK**

1. The area of work for resurfacing will be within the limits defined on the “Road Resurfacing List.”

**B. GEORGIA DEPARTMENT OF TRANSPORTATION**

Unless otherwise directed, all work performed under contract shall be in accordance with the Georgia Department of Transportation, Standard Specifications Construction of Transportation Systems, 2021 Edition, and any supplemental specification (Published and unpublished) modifying them except as noted below and in the special provisions.

1. Modifications of Standard Specifications

Section 101	Definition of Terms
Section 101.14 COMMISSIONER	Delete in its entirety
Section 101.22 DEPARTMENT	Delete as written and substitute the following: The Putnam County Road Department
Section 101.24 (ENGINEER)	The Director of the Putnam County Road Department, acting directly or through his duly authorized representative.
Section 101.26 EXTENSION AGREEMENT	Delete in its entirety
Section 101.28 FORCE ACCOUNT	Delete in its entirety

**C. FEDERAL REGULATIONS**

The Contractor must be in compliance with all applicable Federal regulation, to the extent applicable to a 100% locally or state funded project. Provide all required affidavits of compliance in these documents at the time of bid.

**D. RECORDS**

The Contractor is required to maintain and make available to Putnam County and auditors complete records of the work covered, for the life of the contract and for three years thereafter. All tickets must show the road name where the mix was used.

**E. ANTI-STRIPPING ADDITIVE**

The asphaltic cement used in all asphaltic concrete mixtures shall have a heat stable anti-stripping additive in accordance with Section 828.2A of the Georgia Department of Transportation, Standard Specifications Construction of Transportation Systems, 2021 Edition.

**F. GENERAL CONSTRUCTION GUIDELINES**

1. The General Contractor shall be required to perform 100% of the actual resurfacing paving work, and will not be allowed to sublet this item. Contractor must demonstrate successful experience in placing at least 25,000 tons of surface mix using their own labor and equipment over the past 5 years, with at least 5,000 tons being on a single project. Subletting of the additional items (milling, structure adjustment, crack filling, surface treatment, etc.) shall be in accordance with Section 108.01 of the Standard Specifications of the Georgia Department of Transportation.
2. The contractor shall be required to give 24 hours' notice to Putnam County or its Representative before proceeding with paving on any road.
3. The contractor shall be required to provide a work schedule weekly during the course of the resurfacing contract to Putnam County or its representative. This paving schedule shall outline the anticipated work activities planned for the following week and locations in which this work will take place.
4. Prior to beginning the patching work (or paving work if there is no patching), the Contractor shall install the appropriate post-mounted road construction signs on each non-residential road they are resurfacing. These signs will remain in place until approved for removal by the Engineer.
5. Control and testing of materials will be the contractors' responsibility for all mix provided in accordance with sections 106, 400, 402 and related special provisions of the Georgia Department of Transportation Standard Specifications. The cost of such testing shall be included in the unit price of the material being used, and no additional compensation will be made.
6. All driveways and intersections shall be tied-in with surface mix at the time of paving for a sufficient distance to provide a smooth transition from the new pavement to the existing surface. Unless approved by the Engineer, all intersections will be pulled back a minimum of a spreader length (12'). Speed humps shall be tied-in as stated above, to a distance of 12" – 18" from the edge of the humps. The tied-in area shall be cleaned and tacked prior to paving, and the material placed and compacted in such a manner to eliminate edge raveling.
7. Putnam County does not commit to furnishing full-time inspection or testing of the work in progress, or at material sources. Lack of inspection and/or testing by the County will in no way relieve the Contractor of his responsibility to provide quality workmanship in accordance with the Specifications.

8. The contractor shall furnish, install, maintain and remove all necessary traffic signs, barricades, lights, signals, cones and other traffic control devices, and all flagging and other means of traffic protection and guidance as required by the Standard Specifications of the Georgia Department of Transportation. Such work shall be considered incidental to the overall contract, and no additional compensation will be made.
9. On roads without curb and gutter, where the contractor is not to perform Shoulder Reconstruction; the contractor shall be required to knock down any windrows created by the clipping operation. This work shall be done following resurfacing, at such time that the mix has sufficiently cured to prevent damage. Such work shall be incidental to the cost of the resurfacing work being performed and no additional payment shall be made.
10. Any excess tape, not covered by pavement marking, must be removed.
11. The contractor will be required to re-establish the traffic pavement marking in accordance with the details in the special provisions.

#### G. ROAD PATCHING

1. Road Patching, as described herein, shall apply to the removal and replacement of failed areas, as indicated by the Engineer, on roads scheduled for resurfacing.
2. Putnam County will pre-mark the areas to be patched.
3. The Contractor will give the County at least 24 hours' notice before proceeding on patching a particular road.
4. The required procedures for patching Bituminous Asphaltic Concrete roads shall be as follows:
  - a) Areas to be patched shall be milled using an approved milling machine.
  - b) Material shall normally be removed to a required depth of 4". Where existing pavement thickness causes more than the required depth to be removed, the additional depth shall be inspected and approved by the Engineer prior to placing the asphalt. Less milling may be allowed but must be approved by the Engineer prior to placing the asphalt.
  - c) Where unsuitable material exists below the required depth, the contractor will notify the Engineer prior to placing asphalt; so a decision can be made as to the method of dealing with the unsuitable material. When directed by the Engineer, the Contractor shall remove the unsuitable material, and replace it with Graded Aggregate Base, which will then be leveled to the appropriate grade.
  - d) The base and edges around the patch shall be tack coated using approved material.
  - e) Patch material, Bituminous Asphaltic Concrete, shall be compacted using approved equipment. Prior to starting any work, the county shall approve the job mix design.

- f) The existing pavement surface shall be cleaned to remove all loose patching related materials, upon completion of the day's work, using suitable equipment.
5. The above patching operations shall be paid for as follows:
- a) Bituminous Asphaltic Concrete Roads: Will be paid at the Unit price bid for Asphalt Concrete Patching, 25mm Superpave, and shall cover all work required; including milling, removal and disposal of all existing material disturbed during the patching operation and any new loose material not incorporated into the patching on the same day; applying tack coat; placing and compacting new material and all required traffic control.

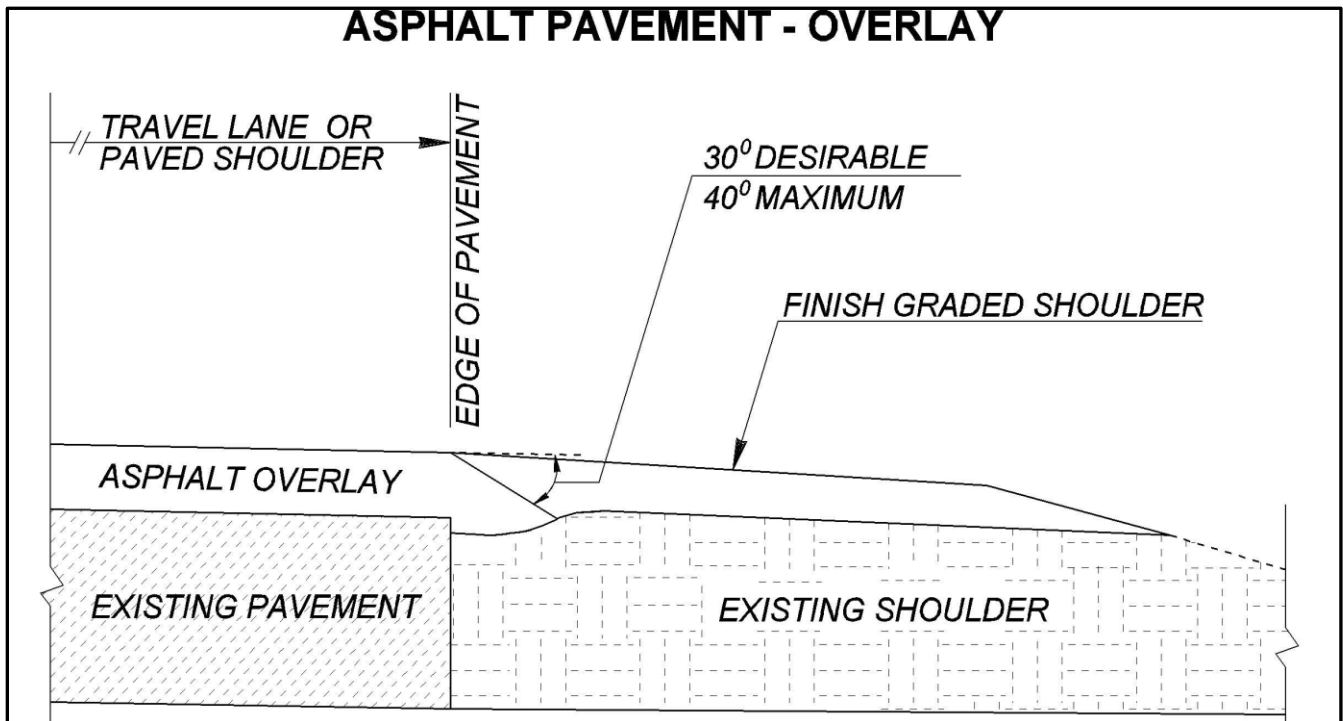
#### H. MANHOLE ADJUSTMENT & WATER VALVE BOX ADJUSTMENT

1. All work, if included in the Contractors Scope of Work, shall be performed in accordance with the Georgia Department of Transportation Standard Specifications, Section 611.
2. The following procedure shall be used in the adjustment of the structures:
  - a) It shall be the Contractor's responsibility to note and mark the location of each water valve box and manhole covers on the streets to be resurfaced, prior to the resurfacing work then locate and adjust each of these after resurfacing.
  - b) Structures, both manholes and water valves, shall be adjusted within **30 days** after the road is resurfaced. Failure to do so will result in the assessment of Liquidated Damages in the amount of twenty-five dollars (\$25.00) per calendar day per structure for every day beyond this 30-day requirement.
  - c) The existing pavement will be removed a minimum of 9" outside the most exterior points of the structures.
  - d) Structures will be adjusted to pavement grade using bricks, shims or other non-organic material.
  - e) Concrete having a minimum compressive strength of 3000 p.s.i. at 28 days shall be placed around the adjusted structure, consolidated to fill the voids, and finished to pavement grade. Care should be taken to prevent concrete from falling into manholes, with any such material being removed by the contractor as soon as possible.
  - f) Concrete shall be protected from traffic for a minimum of 3 days with steel plates, or other measures as approved by the Engineer.
  - g) The unit prices bid for Manhole Adjustment and/or Water Valve Box Adjustment will be for all work performed, including excavation and disposal of existing material, adjustment of structure, traffic control, and protection of the concrete.
  - h) The Contractor will give the County a minimum of 24 hours' notice as to the locations to be adjusted to allow for inspection scheduling.

- i) Putnam County reserves the right to adjust any structures using in-house labor as deemed practicable.
- j) In the event an existing casting or structure is found to be structurally deficient, it shall be reported to the engineer for evaluation.

I. ASPHALTIC CONCRETE PAVEMENT EDGE

- 1. This work shall consist of constructing a pavement edge treatment as per Georgia Department of Transportation Construction Detail number P-7.
- 2. Any additional labor or equipment necessary to place this pavement edge shall be considered incidental to the resurfacing operation, and no additional compensation will be made with the exception of the extra asphalt material being paid for at the bid unit price for the particular material being used



## J. SHOULDER RECONSTRUCTION

1. In general, the Shoulder Reconstruction work described herein shall be performed by the Contractor on every non-residential road they resurface, where curb and gutter is not present; unless otherwise directed in writing by the Engineer. This work shall consist of preparation, construction, grading, hydro seeding and maintaining grass shoulders adjacent to the pavement edge, on those particular roads designated in this contract. Unless specified otherwise within the contract, all work shall be in accordance with the Georgia Department of Transportation Standard Specifications.
2. On roads designated for Shoulder Reconstruction, the Contractor shall erect "Low Shoulder" signs at the time the resurfacing operation begins. These signs shall be mounted on posts, and shall remain in place until release is authorized by the Engineer.
3. The required procedures for Shoulder Reconstruction shall be as follows:
  - a) After asphalt has sufficiently cured to prevent damage, but not to exceed **15 working days**, the contractor shall re-grade the entire shoulder area along the road to dress the edge of the pavement. The contractor shall then place "Select Material-Class I or II" (Sec. 209.2.C.) in sufficient quantity to meet the lines and grades specified herein. Contractor will be required to provide this material, from off-site and haul it to the job site with all associated costs included in the bid unit price for "Shoulder Reconstruction". Failure to reach the milestone in the time listed above will result in Liquidated Damages of \$50 per calendar day per road until such work is completed.
  - b) The materials shall then be thoroughly incorporated into the existing shoulder to a depth of at least 6", and then mixed until the materials are uniform and homogenous throughout. Any material which could interfere with mixing, planting and maintaining will be considered unsuitable and must be removed by the Contractor.
  - c) Contractor shall then use the material to construct a shoulder which is level with the new pavement for a distance of at least two feet from the edge of pavement, and then tapered to the existing ground line at a slope no steeper than 2:1. All work will be done within the County's right-of-way, and the distance from the edge of pavement to the new toe of slope will not exceed fifteen feet.
  - d) The Contractor will be responsible for the relocation of any mailboxes except permanent structures such as brick which are affected by the reconstruction work, and for saw cutting and removing affected portions of asphalt and concrete driveways. However, the Contractor will not be responsible for removing or relocating any drainage structures, or for replacing any sections of concrete driveways with concrete.
  - e) Contractor shall then roll the constructed shoulders and slope using approved equipment, with an effort sufficient to provide stabilization while allowing penetration and growth of the hydro seeding.

- f) The entire area will then be raked either by hand or a mechanical rake, and all loose asphalt, as well as any material, which cannot be re-worked into the slopes, will be picked up and hauled off by the contractor. The Contractor shall remove all shoulder dirt, which was placed on driveways.
- g) If Grassing Complete Item is included in the contract, all constructed areas shall then be hydro seeded with seed, fertilizer and wood fiber mulch by the Contractor, in accordance with Section 700; and maintained by the Contractor until sufficient permanent growth cover is established, including regrading and reseeding, if necessary, at no additional cost to Putnam County. In particular areas subject to high volumes of water runoff, the contractor will, when directed by the engineer, install erosion control netting, to help establish vegetation. Cost of this material and its installation shall be incidental to shoulder reconstruction, with no additional compensation paid.

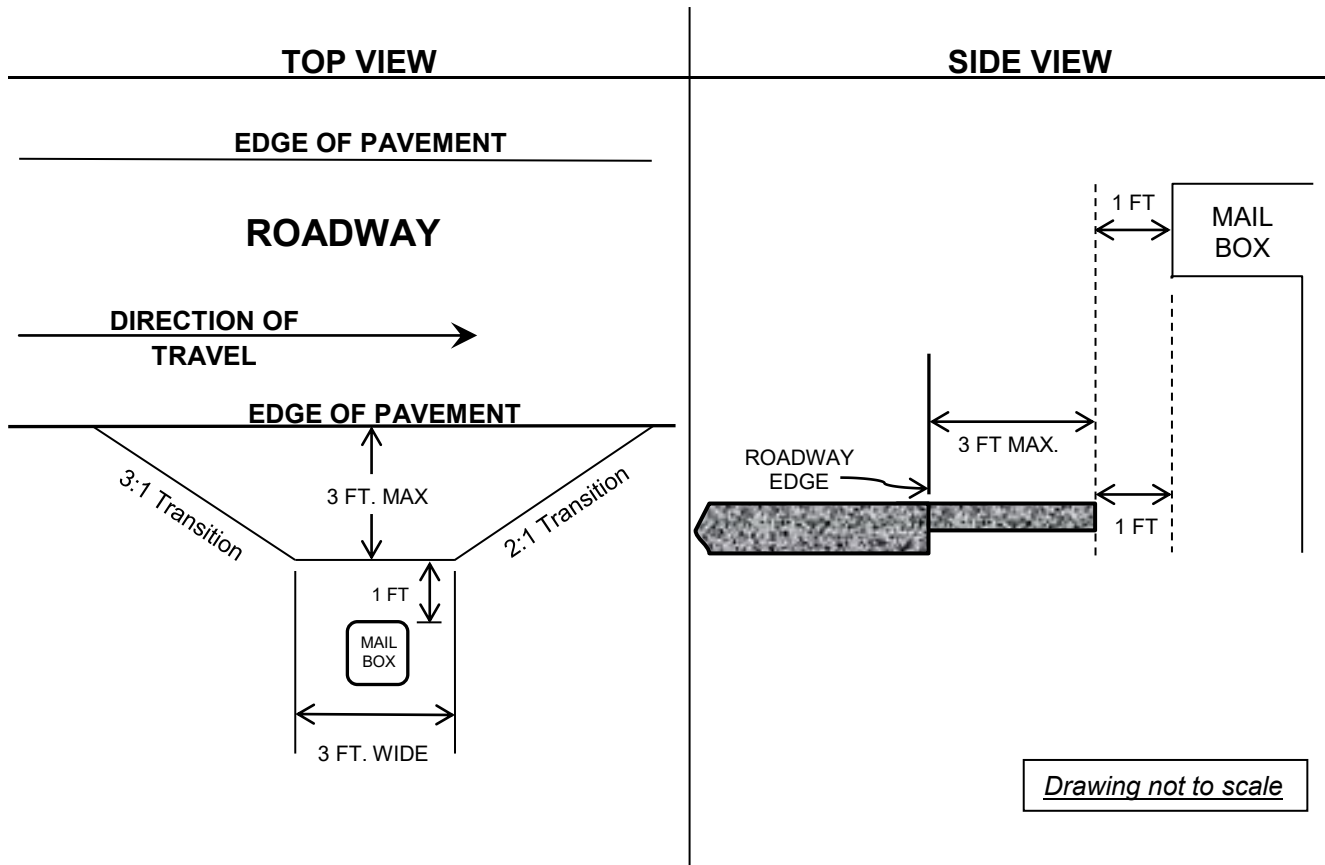
NOTE: If the timing of the shoulder reconstruction and seeding operation is such that it is not the proper season to plant permanent grass, the contractor shall plant temporary annual rye grass to obtain stability. The affected area must then be sown with permanent material, as required, as soon as possible during the next growing season at no additional cost to Putnam County.

- h) In addition to the above shoulder construction where there is no curb and gutter and mailboxes are set back sufficiently to allow construction, asphaltic concrete Mailbox Turnouts shall be constructed to the dimensions and specifications shown on the Mailbox Turnout details. Grading and preparation of mailbox turnout areas will be considered incidental to the overall contract, and no additional compensation will be made for this work.
- i) On roads where existing asphalt is widened to allow a 2-foot paved shoulder, in addition to the shoulder reconstruction specified herein, the preparatory work required for the paving operation will be considered incidental to Shoulder Reconstruction.
- j) All above work will be paid for as Shoulder Reconstruction - Per Linear Mile, and shall include, but not be limited to: all labor, materials and equipment required for preparation and dressing of all areas, removing and resetting affected mailboxes, the saw cutting, removal and disposal of affected driveway areas, hauling additional or excess material, grading and rolling shoulders, hydro seeding, erosion control, required traffic control and necessary maintenance to insure sufficient grass cover. This pay item will be measured in linear miles (item includes both sides of roadway). This includes earth medians.

NOTE: Asphalt Concrete materials used in construction of paved shoulders and mailbox turnouts will be paid for at the bid unit price per ton for the particular material type used.

- k) Putnam County reserves the right to reconstruct any shoulders using in-house labor as deemed practical.

## MAILBOX TURNOUTS



### GENERAL NOTES:

1. Area involved will be graded and compacted to a depth of 2 inches.
2. 2 inches of asphaltic concrete topping will be placed and rolled.
3. Turnout will extend to within one foot of front of mailbox structure, up to a maximum of 3 ft. wide from edge of pavement.
4. Turnout will be tapered out on a 3:1 , and back to roadway on a 2:1 to allow adequate transition.
5. Any excess material will be picked up and hauled off.
6. Preparation and grading work will be considered incidental to the overall contract, and no additional compensation will be made. All asphalt will be paid at the contract unit price for mix used.



**K. MILL ASPHALTIC CONCRETE PAVEMENT**

1. This work if included shall consist of Milling and removing existing asphaltic concrete pavement prior to resurfacing, locations designated by the Engineer, primarily to minimize material build-up above existing curb and gutter.
2. All work shall be performed in accordance with the Georgia Department of Transportation Standard Specifications, Section 432, with the exception of the required lighting system for night work, and other exceptions noted herein.
3. The County will provide the contractor with a list of roads to mill and will pre-mark the areas of removal.
4. The Contractor will give the County and public a minimum of 24 hours' notice before proceeding on patching a particular road and proper posting of such work associated with resurfacing is required for the public.
5. Areas to be milled will be specified by the Engineer but generally 4-6 feet in width, between 1 1/2" and 3" in depth with variable lengths. If the contractor is required to make two milling passes on a specific road, in order to facilitate smooth traffic flow, total payment will be based on the number of total square yards. However, no additional payment will be made on roads where the contractor chooses to make two or more passes for equipment, productivity or other reasons.
6. The removal and disposal of the milled material will be the responsibility of the contractor and done to the satisfaction of the engineer and his time allowances.
7. The contractor shall prepare and pave the milled areas with the specified mix, as directed by the Engineer. Paving of these milled areas shall occur at the discretion of the Engineer. The contractor shall erect and maintain signs warning of uneven pavement, for the period of time between the milling and paving operations. If resurfacing is not required after milling, County forces will install all signage.
8. The above milling work shall be paid for by the square yard of Mill Asphaltic Concrete Pavement - Variable Depth (or specified Depth), and shall include all milling, disposal and required traffic control.
9. The cleaning and paving of the milled area prior to resurfacing will be paid for at the bid unit price per ton for the particular type of asphalt used.

**L. HOT MIX RECYCLED ASPHALTIC CONCRETE**

1. All work shall be performed in accordance with the Georgia Department of Transportation Standard Specifications - Section 402 except where otherwise noted herein:
2. References to "The Department" shall be taken to mean Putnam County or their representative.
3. References to "The Laboratory" shall be taken to mean either the Georgia Department of Transportation's Materials Lab, or a private testing consultant firm approved by Putnam County.

4. It shall be the responsibility of the Contractor to determine the actual composition of the RAP material and to fabricate from that the final asphaltic concrete design(s) and grade of asphalt cement necessary to meet the performance requirements of these Specifications. The contractor shall be responsible for performing daily testing on plant produced asphalt mixes as described in the Georgia Department of Transportation, Standard Specifications Construction of Transportation Systems, 2021 Edition Section 400.3.06. The contractor shall supply these results to inspecting representative designated by Putnam County by noon of the day following production. Any deficiencies in the material characteristics or performance will be corrected by the Contractor, as provided for in the Specifications, at no additional cost to the County.
5. References to "The Plans" shall be taken to mean the contents of the contract and bid documents, or written supplements to these documents.
6. The work performed and materials furnished, as prescribed by these specifications, will be paid for at Contract Unit Price per ton for the type of mix being placed. This payment shall be full compensation for providing all materials, hauling and necessary crushing, processing, placing, rolling, and finishing of the recycled mixture, and labor, tools, equipment, and incidentals necessary to complete the work, including hauling and stockpiling of any surplus RAP material.

**M. DEBRIS CLEAN UP**

1. Once the contractor has been notified to clean up debris associated from patching, milling, resurfacing, or shoulder reconstruction this will be completed within five (5) working days and approved by the Engineer. If not completed within that time and the County has this done by in house forces or others the cost will be deducted from payment to the contractor. If done by an outside contractor a copy of the invoice will be provided to the resurfacing contractor. If done by in house forces a flat rate of \$100 per hour will be accessed.

**N. PAVEMENT MARKINGS**

1. This work shall consist of the re-establishment of the existing roadway pavement markings upon completion of the streets resurfacing at locations designated by the engineer.
2. All work shall be performed in accordance with the Georgia Department of Transportation Standard Specification section 652.
3. The Contractor shall notify the County a minimum of 24 hours before proceeding with the pavement marking work.
4. Temporary striping is required in accordance with section 150.2.08 and 150.3.10 of the Georgia specifications. Placement of permanent pavement markings shall not begin until final surface course has been completed for fifteen (15) calendar days.

5. The Contractor shall place the pavement marking upon completion of the streets resurfacing and in no case later than 15 days afterward. Interim markings consisting of temporary tape will be required if not striped by the end of the working day and shall be removed prior to placement of the permanent pavement markings. No pay item will be established for temporary tape/stripping. Failure to reach the milestone in the time listed above will result in Liquidated Damages of \$100 per calendar day per road until such work is completed.
6. Pavement marking is required for those streets that have existing roadway markings, replacing markings consisting of centerlines, edge lines, skip lane lines and stop bars.
  - a) Pavement marking work shall follow the existing pavement marking configuration unless directed otherwise by the engineer. There will be locations where pavement marking plans will be provided by the engineer.
  - b) Re-establish existing stop bars at all resurfaced intersections and side roads with tape.
7. Putnam County reserves the right to install any pavement marking using in-house labor or contractor as deemed practical.
8. Any high build paint work shall follow the current standard specifications section 652, specifically high build standard application guidelines.

**PUTNAM COUNTY: 2023 LMIG RESURFACING ROAD LIST**

**DESCRIPTION OF SERVICES:**

<b>Road</b>	<b>Beginning</b>	<b>Ending</b>	<b>Length/Miles (Width)</b>	<b>Description</b>
OLD PHOENIX ROAD	LAKE OCONEE PARKWAY (GREENSBORO RD)	BRIDGE OVER LAKE OCONEE	1.21 Miles (20 FT)	LEVEL/SEAL, RESURFACING, STRIPING & SHOULDERS
* BOOGER BEAR LANE/CLARK FORK ROAD	LITTLE ROAD	MORGAN COUNTY LINE	0.19 Miles (16 FT)	FULL DEPTH RECLAMATION, RESURFACING, STRIPING & SHOULDERS
LITTLE ROAD	MORGAN COUNTY LINE	LOG MI. 0.70 MILES	0.70 Miles (20 FT)	LEVEL/SEAL, RESURFACING, STRIPING & SHOULDERS
DENNIS STATION ROAD	SOUTH OF INTERFOR COMPANY DRIVEWAY	LOG MILE 1.06 (SOUTH)	1.06 Miles (21 FT)	LEVEL/SEAL, RESURFACING, STRIPING & SHOULDERS

**Note:** All work and all items are to be directed by the engineer

**The intended spread rates are as follows:**

- Item 402-3113      165 lbs/sy (Surface)
- Item 415-5000      100 lbs/sy (Level/Seal)

**(\*) Work on Booger Bear Lane/ Clark Fork Road will be (8 inch) Full Depth Reclamation (FDR) with 45 lbs. of portland cement.**

**The contractor will be responsible for raising (2) manholes on Old Phoenix Road.**

**Final shoulder reconstruction and final grassing to be completed by contractor and paid for under Grading per Mile and Permanent Grassing respectively.**

**PUTNAM COUNTY  
CONSTRUCTION CONTRACT**

This Agreement is made this \_\_\_\_\_ day of \_\_\_\_\_, 2023 between the Putnam County Board of Commissioners, (“Client”), and \_\_\_\_\_ (“Contractor”), with a principal place of business at \_\_\_\_\_

---

**ARTICLE 1  
SERVICES TO BE PERFORMED BY CONTRACTOR**

Contractor agrees to perform the services specified in the “Description of Services” attached to this Agreement and incorporated in this Agreement by reference. This contract shall commence upon Notice to Proceed through **September 29, 2023**.

**Independent Contractor**

Contractor hereby covenants and declares that it is an independent business and agrees to perform the Work as an independent contractor and not as the agent or employee of the Owner. The Contractor agrees to be solely responsible for its own matters relating to the time and place the services are performed; the instrumentalities, tools, supplies, and/or materials necessary to complete the Work; hiring of consultants, agents, or employees to complete the Work; and the payment of employees, including compliance with Social Security, withholding, and all other regulations governing such matters. The Contractor agrees to be solely responsible for its own acts and those of its subordinates and subcontractors during the life of this Agreement. Any provisions of this Agreement that may appear to give the Owner the right to direct Contractor as to the details of the services to be performed by Contractor or to exercise control over such services will be deemed to mean that Contractor shall follow the directions of the Owner with regard to the results of such services.

**ARTICLE 2  
COMPENSATION**

In consideration for the services to be performed by Contractor, the Client shall pay the Contractor for the actual quantity of work performed, which shall in no event exceed: \_\_\_\_\_, (\$ \_\_\_\_\_). The fees for the work to be performed under this Contract shall be charged to the County in accordance with the rate schedule referenced in the Bid Proposal. The County agrees to pay the Contractor following receipt by the County of a detailed invoice, reflecting the actual work performed by the Contractor.

Client agrees to pay the consideration set forth above as follows:

**ARTICLE 3  
OBLIGATIONS OF CONTRACTOR**

Contractor agrees to furnish all skill and labor necessary to carry out and complete in good, firm and substantial, workmanlike manner, the work specified, in strict conformity with the Bid to the satisfaction of Client in a timely manner.

**Licenses, Permits, Etc.**

The Contractor covenants and declares that it has obtained all diplomas, certificates, licenses, permits, or the like required by any and all national, state, regional, county, or local boards, agencies, commissions, committees or other regulatory bodies in order to perform the Work contracted for under this Agreement; provided that some permits or licenses related to the Project may be obtained as part of the Work and shall be obtained as required. All work performed by Contractor under this Agreement shall be in accordance with applicable legal requirements and shall meet the standard of quality ordinarily expected of competent professionals. The Contractor shall furnish copies of all such permits, licenses, or approvals to the Owner's Representative within ten (10) days after issuance.

**Warranty**

Except as may be otherwise specified or agreed, the Contractor shall repair or replace all defective materials, equipment, or workmanship appearing within one year from the date of Final Completion of the Project at no additional cost to the Owner. An inspection shall be conducted by the Owner or its representative(s) near the completion of the one-year general warranty period to identify any issues that must be resolved by the Contractor. After the expiration of such warranty, Owner shall be responsible for repairing issues resulting from normal wear and tear and shall be responsible for general maintenance of the equipment; however, expiration of such warranty period shall not affect the Contractor's continued liability under an implied warranty of merchantability and fitness. All other warranties implied by law, including fitness for a particular purpose and suitability, are hereby preserved and shall apply in full force and effect beyond the one-year period.

Contractor agrees that any services described in this Agreement that must be performed on Client's premises will be performed during Client's regular business hours.

Neither this Agreement nor any duties or obligations under this Agreement may be assigned by Contractor without the prior written consent of Client.

**ARTICLE 4  
HOLD-HARMLESS AND INDEMNIFICATION CLAUSE**

The Contractor covenants and agrees to take and assume all responsibility for the Work rendered in connection with this Agreement. The Contractor shall bear all losses and damages directly or indirectly resulting to it on account of the performance or character of the Work rendered pursuant to this Agreement. Contractor shall defend, indemnify and hold harmless the Owner, its officers, boards, commissions, elected and appointed officials, employees, servants, volunteers, agents, Owner's lender, Architect and Architect's consultants, agents, and

employees (hereinafter referred to as the “Owner Parties”) from and against any and all claims, injuries, suits, actions, judgments, damages, losses, costs, expenses and liability of any kind whatsoever, including but not limited to, attorney’s fees and costs of defense (hereinafter “Liabilities”) which may be the result of willful, negligent or tortious conduct arising out of the Work, performance of contracted services, or operations by the Contractor, any subcontractor, anyone directly or indirectly employed by the Contractor or subcontractor or anyone for whose acts the Contractor or subcontractor may be liable, regardless of whether or not the negligent act is caused in part by a party indemnified hereunder. This indemnity obligation does not include Liabilities caused by or resulting from the sole negligence of the Owner or Owner Parties. Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in this provision. In any and all claims against the Owner or Owner Parties by any employee of the Contractor, any subcontractor, anyone directly or indirectly employed by the Contractor or subcontractor or anyone for whose acts the Contractor or subcontractor may be liable, the indemnification obligation set forth in this provision shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any subcontractor under workers’ or workmen’s compensation acts, disability benefit acts or other employee benefit acts. This obligation to indemnify, defend, and hold harmless the Owner and Owner Parties shall survive expiration or termination of this Agreement, provided that the claims are based upon or arise out of actions that occurred during the performance of this Agreement.

## **ARTICLE 5 INSURANCE REQUIREMENTS**

### General Insurance, Workers’ Compensation Clause

(1.) Requirements:

The Contractor shall have and maintain in full force and effect for the duration of this Agreement, insurance protecting against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the Work by the Contractor, its agents, representatives, employees or subcontractors. All policies shall be subject to approval by the Local Government’s Attorney to form and content.

(2.) Minimum Limits of Insurance:

Contractors shall maintain insurance policies with coverage and limits no less than:

- (a) Commercial General Liability of \$1,000,000 (one million dollars) per occurrence and \$2,000,000 (two million dollars) aggregate for bodily and personal injury, sickness, disease or death, injury to or destruction of property, including loss of use resulting therefrom.
- (b) Commercial Automobile Liability (owned, non-owned, hired) of \$1,000,000 (one million dollars) per occurrence for bodily and personal injury, sickness, disease or death, injury to or destruction of property, including loss of use resulting therefrom.

(c) Workers' Compensation limits as required by the State of Georgia and Employers Liability limits of \$1,000,000 (one million dollars) per accident or disease.

(d) Professional Insurance (Errors and Omissions) is required for CPA's, attorneys, architects and insurance agents.

(3.) Self-Insured Retentions:

Any self-insured retention must be declared to and approved by the Local Government so that the Local Government may ensure the financial solvency of the Contractor; self-insured retention should be included on the certificate of insurance.

(4.) Other Insurance Provisions:

The policy is to contain, or be modified or endorsed to contain, the following provisions:

(a.) General Liability and Automobile Coverage.

- i. The Local Government and Local Government Parties are to be covered as additional insureds as respects: liability arising out of activities performed by or on behalf of the Contractor; products and completed operations of the Contractor; premises owned, leased, or used by the Contractor; automobiles owned, leased, hired, or borrowed by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to the Local Government or Local Government Parties.
- ii. The Contractor's insurance coverage shall be primary and noncontributing insurance as respects to any other insurance or self-insurance available to the Local Government or Local Government Parties. Any insurance or self-insurance maintained by the Local Government or Local Government Parties shall be in excess of the Contractor's insurance and shall not contribute with it.
- iii. Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the Local Government and Local Government Parties
- iv. Coverage shall state that the Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought.
- v. Coverage shall be provide on a "pay on behalf" basis, with defense costs payable in addition to policy limits. There shall be no cross liability exclusion.
- vi. The insurer shall agree to waive all rights of subrogation against the Local Government and Local Government Parties for losses arising from work performed by the Contractor for the Local Government.
- vii. All endorsements to policies shall be executed by an authorized representative of the insurer.



(b.) Workers' Compensation Coverage.

The insurer providing Workers' Compensation Coverage will agree to waive all rights of subrogation against the Local Government and Local Government Parties for losses arising from work performed by the Contractor for the Local Government.

(c.) All Coverages.

Each insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, or canceled except after thirty (30) days prior written notice (or 10 days if due to non-payment) has been given to the Local Government. Such notice shall be sent directly to:

Putnam County Board of Commissioners  
Attn: County Manager /Clerk  
117 Putnam Drive, Suite A,  
Eatonton, Georgia 31024

(5.) Acceptability of Insurers.

Insurance is to be placed with insurers with an A.M. Best Rating of no less than A-10.

(6.) Verification of Coverage.

Contractor shall furnish the Local Government with certificate of insurance and endorsements to the policies evidencing coverage required by this Article prior to the start of work. The certificates of insurance and endorsements for each insurance policy are to be signed by a person authorized by that insure to bind coverage on its behalf. The certificate of insurance and endorsements shall be on a form utilized by Contractor's insurer in its normal course of business and shall be received and approved by the Local Government prior to execution of this Agreement by the Local Government. The Local Government reserves the right to require complete, certified copies of all required insurance policies at any time. The Contractor shall provide proof that any expiring coverage has been renewed or replaced prior to the expiration of the coverage.

(7.) Claims-Made Policies:

Contractor shall extend any claims-made insurance policy for at least six (6) years after termination or final payment under the Agreement, whichever is later.

**Subcontractors**

Contractor shall include all subcontractors as insureds under its policies or shall furnish separate certificates and endorsements for each subcontractor. All coverage for subcontractors shall be subject to all of the requirements stated in this Agreement, including, but not limited to, naming the parties as additional insureds.

**ARTICLE 6  
OBLIGATIONS OF CLIENT**

Client agrees not to withhold approval and acceptance of Contractor's services unreasonably.

Client agrees to comply with all reasonable requests of Contractor necessary to the performance of Contractor's duties under this Agreement.

Client agrees to furnish reasonably necessary space on Client's premises for use by Contractor while performing the services under this Agreement.

Neither this Agreement nor any duties or obligations under this Agreement may be assigned by Client without the prior written consent of Contractor.

**ARTICLE 7  
GENERAL PROVISIONS**

Any notices to be given under this Agreement by either party shall be in writing and delivery shall be affected either by personal service or by registered or certified mail. Notices delivered personally will be deemed communicated at the time of delivery. Mailed notices will be deemed communicated three business days after mailing.

This Agreement supersedes any and all agreements, both oral and written, between the parties with respect to the rendering of services by Contractor for Client and contains all of the covenants and agreements between the parties with respect to the rendering of these services in any matter whatsoever. Each party acknowledges that no representations, inducements, promises, or agreements, written or oral, have been made by either party, or by anyone acting on behalf of either party, that are not embodied in this Agreement. Any modification of this Agreement will be effective only if set forth in writing and signed by the party to be charged.

This Agreement will be governed by and construed in accordance with the laws of the State of Georgia. If any provision in this Agreement is held by a court of competent jurisdiction to be invalid, void, or unenforceable, the remaining provisions will continue in full force and effect without being impaired or invalidated in any way.

If Contractor dies or is dissolved prior to the completion of this Agreement, any moneys that may be due to Contractor from Client for services rendered prior to the date of death or dissolution shall be paid to Contractor's executors, administrators, heirs, personal representative, successors, or assigns.

If any action at law or in equity, including an action for declaratory relief, is brought to enforce or interpret the provisions of this Agreement, the prevailing party will be entitled to reasonable attorney's fees in addition to any other relief to which that party may be entitled. The attorneys' fees may be set by the court in the same action or in a separate action brought for that purpose.

[Signatures Next Page]

Executed in \_\_\_\_\_, Georgia, on the date first written above.

**CLIENT:**

Putnam County Board of Commissioners

By: \_\_\_\_\_

B.W. "Bill" Sharp, Chairman

ATTEST: \_\_\_\_\_

Signature  
County Clerk  
Board of Commissioners

APPROVED AS TO FORM:

\_\_\_\_\_  
Signature  
Putnam County Staff Attorney

**CONTRACTOR:**

\_\_\_\_\_

By: \_\_\_\_\_

Signature

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Title

ATTEST: \_\_\_\_\_

Signature

\_\_\_\_\_  
Print Name  
Corporate Secretary  
(Seal)

## 2023 ROAD RESURFACING LIST

### PUTNAM COUNTY - DESCRIPTION OF SERVICES:

Road	Beginning	Ending	Length/Miles (Width)	Description
OLD PHOENIX ROAD	LAKE OCONEE PARKWAY (GREENSBORO RD)	BRIDGE OVER LAKE OCONEE	<i>1.21 Miles (20 FT)</i>	LEVEL/SEAL, RESURFACING, STRIPING & SHOULDERS
* BOOGER BEAR LANE/CLARK FORK ROAD	LITTLE ROAD	MORGAN COUNTY LINE	<i>0.19 Miles (16 FT)</i>	FULL DEPTH RECLAMATION, RESURFACING, STRIPING & SHOULDERS
LITTLE ROAD	MORGAN COUNTY LINE	LOG MI. 0.70 MILES	<i>0.70 Miles (20 FT)</i>	LEVEL/SEAL, RESURFACING, STRIPING & SHOULDERS
DENNIS STATION ROAD	SOUTH OF INTERFOR COMPANY DRIVEWAY	LOG MILE 1.06 (SOUTH)	<i>1.06 Miles (21 FT)</i>	LEVEL/SEAL, RESURFACING, STRIPING & SHOULDERS

**Note:** All work and all items are to be directed by the engineer

**The intended spread rates are as follows:**

- Item 402-3113      165 lbs/sy (Surface)
- Item 415-5000      100 lbs/sy (Level/Seal)

**(\*) Work on Booger Bear Lane/ Clark Fork Road will be (8 inch) Full Depth Reclamation (FDR) with 45 lbs. of portland cement.**

**The contractor will be responsible for raising (2) manholes on Old Phoenix Road.**

**Final shoulder reconstruction and final grassing to be completed by contractor and paid for under Grading per Mile and Permanent Grassing respectively.**

**O.C.G.A. § 50-36-1(e)(2) Affidavit**

By executing this affidavit under oath, as an applicant for a(n) **Suppliers of Goods and Services** as referenced in O.C.G.A. § 50-36-1, from **Putnam County**, the undersigned applicant verifies one of the following with respect to application for a public benefit:

- 1) \_\_\_\_\_ I am a United States citizen.
- 2) \_\_\_\_\_ I am a legal permanent resident of the United States.
- 3) \_\_\_\_\_ I am a qualified alien or non-immigrant under the Federal Immigration and Nationality Act with an alien number issued by the Department of Homeland Security or other Federal Immigration Agency.

My alien number issued by the Department of Homeland Security or other Federal Immigration Agency is: \_\_\_\_\_.

The undersigned applicant also hereby verifies that he or she is 18 years of age or older and has provided at least one secure and verifiable document, as required by O.C.G.A. § 50-36-1(e)(1), with this affidavit.

The secure and verifiable document provided with this affidavit can best be classified as:

\_\_\_\_\_.

In making the above representation under oath, I understand that any person who knowingly and willfully makes a false, fictitious, or fraudulent statement or representation in an affidavit shall be guilty of a violation of O.C.G.A. § 16-10-20, and face criminal penalties as allowed by such criminal statute.

Executed in \_\_\_\_\_ (City), \_\_\_\_\_ (State).

\_\_\_\_\_  
Name of Business

\_\_\_\_\_  
Signature of Applicant

\_\_\_\_\_  
Printed Name of Applicant

SUBSCRIBED AND SWORN  
BEFORE ME ON THIS THE  
\_\_ DAY OF \_\_\_\_\_, 20\_\_

\_\_\_\_\_  
NOTARY PUBLIC  
My Commission Expires:

**CONTRACTOR AFFIDAVIT AND AGREEMENT**

By executing this affidavit, the undersigned contractor verifies its compliance with The Illegal Immigration Reform Enhancements for 2013, stating affirmatively that the individual, firm, or corporation which is contracting with the Putnam County Board of Commissioners has registered with and is participating in a federal work authorization program\* [any of the electronic verification of work authorization programs operated by the United States Department of Homeland Security or any equivalent federal work authorization program operated by the United States Department of Homeland Security] to verify information of newly hired employees, pursuant to the Immigration Reform and Control Act, in accordance with the applicability provisions and deadlines established therein.

The undersigned further agrees that, should it employ or contract with any subcontractor(s) in connection with the physical performance of services or the performance of labor pursuant to this contract with the Putnam County Board of Commissioners, contractor will secure from such subcontractor(s) similar verification of compliance with the Illegal Immigration Reform and Enforcement Act on the Subcontractor Affidavit provided in Rule 300-10-01-.08 or a substantially similar form. Contractor further agrees to maintain records of such compliance and provide a copy of each such verification to the Putnam County Board of Commissioners at the time the subcontractor(s) is retained to perform such service.

\_\_\_\_\_  
E-Verify \* User Identification Number

\_\_\_\_\_  
Date Registered

\_\_\_\_\_  
Legal Company Name

\_\_\_\_\_  
Street Address

\_\_\_\_\_  
City/State/Zip Code

\_\_\_\_\_  
BY: Authorized Officer or Agent  
(Contractor Signature)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Title of Authorized Officer or Agent of Contractor

\_\_\_\_\_  
Printed Name of Authorized Officer or Agent

SUBSCRIBED AND SWORN  
BEFORE ME ON THIS THE

\_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_

\_\_\_\_\_  
Notary Public  
My Commission Expires: \_\_\_\_\_

\* As of the effective date of O.C.G.A. 13-10-91, the applicable federal work authorization program is "E-Verify" operated by the U.S. Citizenship and Immigration Services Bureau of the U.S. Department of Homeland Security, in conjunction with the Social Security Administration (SSA).

**PUTNAM COUNTY, GEORGIA**

**PAYMENT BOND**

KNOW ALL MEN BY THESE PRESENTS: that

\_\_\_\_\_  
(Name of Contractor)

\_\_\_\_\_  
(Address of Contractor)

a \_\_\_\_\_  
(Corporation, Partnership or Individual)

hereinafter called Principal, and

\_\_\_\_\_  
(Name of Surety)

\_\_\_\_\_  
(Address of Surety)

a Corporation of the State of \_\_\_\_\_, and a surety authorized by law to do business in the State of Georgia, hereinafter called Surety, are held and firmly bound unto

Putnam County Board of Commissioners  
(Name of Obligee)

117 Putnam Drive, Suite A, Eatonton, Georgia 31024  
(Address of Obligee)

hereinafter called Obligee;

for the use and protection of all subcontractors and all persons supplying labor, services, skill, tools, machinery, materials and/or equipment in the prosecution of the work provided for in the contract hereinafter referred to in the full and just sum of \_\_\_\_\_

\_\_\_\_\_ Dollars  
(\$ \_\_\_\_\_), in lawful money of the United States, for the payment of which sum, will and truly to be made, the Principal and Surety bind themselves, their, and each of their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

The condition of this obligation is such, as whereas the Principal entered into a certain contract, hereto attached, with the Obligee.

NOW, THEREFORE THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal shall well, truly, and faithfully perform said Contract according to its terms, covenants, and conditions, and shall promptly pay all persons furnishing labor, materials services, skill, tools, machinery and/or equipment for use in the performance of said Contract, then this obligation shall be void; otherwise it shall remain in full force and effect.

ALL persons who have furnished labor, materials, services, skill, tools, machinery and/or equipment for use in the performance of said Contract shall have a direct right of action on this Bond, provided payment has not been made

in full within ninety (90) days after the last day on which labor was performed, materials, services, skill, tools, machinery, and equipment furnished or the subcontract completed.

PROVIDED FURTHER, that said Surety to this Bond, for value received, hereby stipulates and agrees that no change, extension of time, alterations, or additions to the terms of the Contract or to the Work to be performed thereunder shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alterations, or additions to the terms of the Contract or to the work to be performed thereunder.

PROVIDED, HOWEVER, that no suit or action shall be commenced hereunder by any person furnishing labor, materials, services, skill, tools, machinery, and/or equipment having a direct contractual relationship with a subcontractor, but no contractual relationship express or implied with the Principal:

Unless such person shall have given notice to the Principal within ninety (90) days after such person did, or performed the last of the work or labor, or furnished the last of the materials, services, skill, tools, machinery and/or equipment for which claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials, services, skill, tools, machinery and/or equipment were furnished, or for whom the work or labor was done or performed. Such a notice shall be served by mailing the same by registered mail, postage prepaid, in an envelope addressed to the Principal, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the State in which the aforesaid project is located, save that such service need not be made by a public officer, and a copy of such notice shall be delivered to the Obligee, to the person and at the address provided for in the Contract, within five (5) days of the mailing of the notice to the Principal.

PROVIDED, FURTHER, that any suit under this bond must be instituted before the expiration of one (1) year after the acceptance of the public works covered by the Contract by the proper authorities.

PROVIDED, FURTHER, that Principal and Surety agree and represent that this bond is executed pursuant to and in accordance with the applicable provisions of the Official Code of Georgia Annotated, as Amended, including, but not limited to, O.C.G.A. § 36-91-1 et seq., and is intended to be and shall be construed as a bond in compliance with the requirements thereof.

[Signatures Next Page]



**PUTNAM COUNTY GEORGIA**

ATTEST:

\_\_\_\_\_  
(Principal Secretary)

(SEAL)

\_\_\_\_\_  
(Witness as to Principal)

\_\_\_\_\_  
(Address)

\_\_\_\_\_

\_\_\_\_\_  
(Principal)

By: \_\_\_\_\_

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Surety)

ATTEST:

\_\_\_\_\_  
Resident Agent

(SEAL)

\_\_\_\_\_  
(Witness as to Surety)

\_\_\_\_\_  
(Address)

\_\_\_\_\_

By: \_\_\_\_\_  
(Attorney-in-Fact)

\_\_\_\_\_  
(Address)

\_\_\_\_\_

**BONDING AGENT CONTACT INFO**

Print Name \_\_\_\_\_

Company Name \_\_\_\_\_

E-Mail \_\_\_\_\_

Phone \_\_\_\_\_

NOTE: If Contractor is Partnership, all partners should execute Bond. Surety Companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the Project is located.

**PUTNAM COUNTY, GEORGIA**

**PERFORMANCE BOND**

KNOW ALL MEN BY THESE PRESENTS: that

\_\_\_\_\_  
(Name of Contractor)

\_\_\_\_\_  
(Address of Contractor)

a \_\_\_\_\_  
(Corporation, Partnership or Individual)

hereinafter called Principal, and

\_\_\_\_\_  
(Name of Surety)

\_\_\_\_\_  
(Address of Surety)

a Corporation of the State of \_\_\_\_\_, and a surety authorized by law to do business in the State of Georgia, hereinafter called Surety, are held and firmly bound unto

Putnam County Board of Commissioners

\_\_\_\_\_  
(Name of Obligee)

117 Putnam Drive, Suite A, Eatonton, Georgia 31024

\_\_\_\_\_  
(Address of Obligee)

hereinafter referred to as Obligee, are held and firmly bound unto said Obligee and all persons doing work or furnishing skill, tools, machinery, supplies, or material under or for the purpose of the Contract hereinafter referred to, in the penal sum of \_\_\_\_\_

\_\_\_\_\_ Dollars

(\$ \_\_\_\_\_) in lawful money of the United States, for the payment of which sum will and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

The condition of this obligation is such, as whereas the Principal entered into a certain contract, hereto attached, with the Obligee.

NOW, THEREFORE THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal shall well, truly, fully and faithfully perform said contract according to its terms, covenants, conditions, and agreements of said contract during the original term of said contract and any extensions thereof that may be granted by the Obligee, with or without notice to the Surety, and during the life of any guaranty required under the contract, and shall also well and truly perform and fulfill all the undertakings, covenants, terms, conditions and agreement of any and all duly authorized modifications of said contract that may hereafter be made, then this obligation shall be void, otherwise to remain in full force and effect.

PROVIDED FURTHER, that said Surety to this Bond, for value received, hereby stipulates and agrees that no change, extension of time, alterations, or additions to the terms of the Contract or to the Work to be performed thereunder shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alterations, or additions to the terms of the Contract or to the work to be performed thereunder.

PROVIDED, FURTHER, that Principal and Surety agree and represent that this bond is executed pursuant to and in accordance with the applicable provisions of the Official Code of Georgia Annotated, as Amended, including, but not limited to, O.C.G.A. § 36-91-1 et seq., and is intended to be and shall be construed as a bond in compliance with the requirements thereof.

(Signatures Next Page)

**PUTNAM COUNTY, GEROGIA**

ATTEST:

\_\_\_\_\_  
(Principal Secretary)  
(SEAL)

\_\_\_\_\_  
(Witness as to Principal)  
\_\_\_\_\_  
(Address)

ATTEST:

\_\_\_\_\_  
Resident Agent  
(SEAL)  
\_\_\_\_\_  
(Witness as to Surety)  
\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Principal)

By: \_\_\_\_\_

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Surety)

By: \_\_\_\_\_  
(Attorney-in-Fact)

\_\_\_\_\_  
(Address)

<b><u>BONDING AGENT CONTACT INFO</u></b>	
Print Name	_____
Company Name	_____
E-Mail	_____
Phone	_____

NOTE: If Contractor is Partnership, all partners should execute Bond. Surety Companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the Project is located.

**PUTNAM COUNTY, GEORGIA**

**LIST OF SUBCONTRACTORS**

**I do \_\_\_\_\_, do not \_\_\_\_\_, propose to subcontract some of the work on this project. I propose to Subcontract work to the following subcontractors:**

NAME AND ADDRESS	TYPE OF WORK

Company Name\_\_\_\_\_

## REFERENCES

Putnam County request a minimum of three (3) references where work of a similar size and scope has been completed in the last (5) five years. DO NOT submit a project list in lieu of this form. Attaching a list may deem the contractor's bid non-responsive.

1. Company Name \_\_\_\_\_

Brief Description of Project \_\_\_\_\_

Completion Date \_\_\_\_\_

Start Date \_\_\_\_\_ Contract Amount \$ \_\_\_\_\_

Contact Person \_\_\_\_\_ Telephone \_\_\_\_\_

E-Mail Address \_\_\_\_\_

2. Company Name \_\_\_\_\_

Brief Description of Project \_\_\_\_\_

Completion Date \_\_\_\_\_

Start Date \_\_\_\_\_ Contract Amount \$ \_\_\_\_\_

Contact Person \_\_\_\_\_ Telephone \_\_\_\_\_

E-Mail Address \_\_\_\_\_

3. Company Name \_\_\_\_\_

Brief Description of Project \_\_\_\_\_

Completion Date \_\_\_\_\_

Start Date \_\_\_\_\_ Contract Amount \$ \_\_\_\_\_

Contact Person \_\_\_\_\_ Telephone \_\_\_\_\_

E-Mail Address \_\_\_\_\_

Company Name \_\_\_\_\_

*Note: References should be customized for each project vs. submitting the same set of references for every project bid. The references listed should be of similar size and scope of the project bidding for. Failure to return this page may result in rejection of bid.*

PUTNAM COUNTY, GEORGIA	
PROJECT:	2023 LMIG RESURFACING
BID NUMBER:	23-42001-001

**BID SCHEDULE**

Item #	GDOT #	Description	Units	Est. Bid Quantity	Unit Price Bid	Total Price Bid
005	210-0200	GRADING PER MILE (RESURFACING)	LM	3.16		
010	301-0320	FULL DEPTH RECLAMATION OF 8 IN OF EXISTING ASPHALT, CONC AND SUBGRADE WITH CEMENT STABILIZATION	SY	1,867.00		
015	301-5001	CEMENT FOR STABILIZATION @ 45 LBS/SY	TN	42.00		
020	402-3113	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	TN	3,494.00		
025	413-0750	TACK COAT	GL	4,050.00		
030	415-5000	ASPHALTIC CONCRETE OPEN GRADED CRACK RELIEF INTERLAYER, GP 2 ONLY, INCL BITUM MATL & H LIME	TN	1,940.00		
035	611-8050	ADJUST MANHOLE TO GRADE	EA	2		
040	652-2501	SOLID TRAFFIC STRIPE, 5 IN, WHITE	LM	6.90		
045	652-2502	SOLID TRAFFIC STRIPE, 5 IN, YELLOW	LM	4.54		
050	652-3501	SKIP TRAFFIC STRIPE, 5 IN, WHITE	GLM	0.06		
055	652-3502	SKIP TRAFFIC STRIPE, 5 IN, YELLOW	GLM	1.78		
060	653-0110	THERMOPLASTIC PVMT MARKING, ARROW, TP 1	EA	3		

COMPANY NAME: \_\_\_\_\_  
 Failure to return this page my result in rejection of bid.

<b>PUTNAM COUNTY, GEORGIA</b>	
PROJECT:	2023 LMIG RESURFACING
BID NUMBER:	23-42001-001

**BID SCHEDULE**

Item #	GDOT #	Description	Units	Est. Bid Quantity	Unit Price Bid	Total Price Bid
065	653-0120	THERMOPLASTIC PVMT MARKING, ARROW, TP 2	EA	11		
070	653-1704	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	LF	49.00		
075	653-8095	WET WEATHER THERMOPLASTIC TRAFFIC STRIPE, YELLOW	SY	195.00		
080	654-1001	RAISED PVMT MARKERS TP 1	EA	291		
085	654-1002	RAISED PVMT MARKERS TP 2	EA	20		
090	700-6910	PERMANENT GRASSING	AC	1.52		

**TOTAL**

--

COMPANY NAME: \_\_\_\_\_  
 Failure to return this page my result in rejection of bid.

<b>PUTNAM COUNTY, GEORGIA</b>	
PROJECT:	2023 LMIG RESURFACING
BID NUMBER:	23-42001-001

**BID SCHEDULE**

Item #	GDOT #	Description	Units	Est. Bid Quantity	Unit Price Bid	Total Price Bid
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**BID SCHEDULE**

Note: The County requires pricing and terms to remain firm for the duration of this contract. Contract to begin upon date of issuance of the "Notice to Proceed" and work continuously through **September 29, 2023**. Failure to hold pricing firm for the duration of this contract will be sufficient cause for the County to declare bid non-responsive.

The undersigned acknowledges receipt of the following addenda, listed by number and date appearing on each:

ADDENDUM NO.	DATE
_____	_____
_____	_____
_____	_____

CERTIFICATION OF NONCOLLUSION IN BID PREPARATION \_\_\_\_\_  
(Signature) (Date)

The County requires that all who enter into a contract for the physical performance of services with the County must satisfy O.C.G.A. § 13-10-91 and Rule 300-10-1-.02, in a manner, and such are conditions of the contract. Further, all bidders should identify which of the statutory employee-number categories they represent:

- \_\_\_\_\_ fewer than 100 employees
- \_\_\_\_\_ 100 or more employees

In compliance with the attached specifications, the undersigned offers and agrees, if this bid is accepted by the Board of Commissioners within fifty (50) days of the date of bid opening, to furnish any or all of the items upon which prices are quoted within the time specified in the bid schedule.

LEGAL BUSINESS NAME: \_\_\_\_\_  
*(If your company is an LLC, you must identify all principals to include address and phone numbers in your submittal)*

FED TAX ID \_\_\_\_\_

ADDRESS: \_\_\_\_\_

DOES YOUR COMPANY CURRENTLY HAVE A LOCATION WITHIN PUTNAM COUNTY?      YES          NO   

REPRESENTATIVE SIGNATURE: \_\_\_\_\_

PRINT AUTHORIZED REPRESENTATIVE'S NAME: \_\_\_\_\_

TELEPHONE NUMBER: \_\_\_\_\_ FAX: \_\_\_\_\_

E-MAIL ADDRESS \_\_\_\_\_

COMPANY NAME: \_\_\_\_\_  
 Failure to return this page my result in rejection of bid.



PUTNAM COUNTY, GEORGIA

**BID BOND**

KNOW ALL MEN BY THESE PRESENTS: that

\_\_\_\_\_  
(Name of Contractor)

\_\_\_\_\_  
(Address of Contractor)

a \_\_\_\_\_  
(Corporation, Partnership or Individual)

hereinafter called Principal, and

\_\_\_\_\_  
(Name of Surety)

\_\_\_\_\_  
(Address of Surety)

a Corporation of the State of \_\_\_\_\_, and a surety authorized by law to do business in the State of Georgia, hereinafter called Surety, are held and firmly bound unto

Putnam County Board of Commissioners  
(Name of Obligee)

117 Putnam Drive, Suite A, Eatonton, Georgia 31024  
(Address of Obligee)

Thereinafter referred to as Obligee: in the penal sum of \_\_\_\_\_ Dollars

(\$ \_\_\_\_\_) in lawful money of the United States, for the payment of which sum will and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

WHEREAS, the Principal is about to submit, or has submitted, to Putnam County, Georgia, a proposal for furnishing materials, labor, and equipment for: \_\_\_\_\_

WHEREAS, the Principal desires to file this Bond in accordance with law in lieu of a certified Bidder's check otherwise required to accompany this Proposal.

NOW, THEREFORE, the conditions of this obligation are such that if the proposal be accepted, the Principal shall within ten days after receipt of notification of the acceptance, execute a Contract in accordance with the Proposal and upon the terms, conditions, and prices set forth in the form and manner required by Putnam County, Georgia, and execute a sufficient and satisfactory Performance Bond and Payment Bond payable to Putnam County, Georgia, each in the amount of 100% of the total Contract Price, in form and with security satisfactory to said Putnam County, Georgia, and otherwise, to be and remain in full force and virtue in law, and the Surety shall, upon failure of the Principal to comply with any or all of the foregoing requirements within the time specified above, immediately pay to Putnam County, Georgia, upon demand, the amount hereof in good and lawful money of the United States of America, not as a penalty, but as liquidated damages.

PUTNAM COUNTY, **GEORGIA**

PROVIDED, FURTHER, that Principal and Surety agree and represent that this bond is executed pursuant to and in accordance with the applicable provisions of the Official Code of Georgia Annotated, as Amended, including, but not limited to, O.C.G.A. § 36-91-1 et seq., and is intended to be and shall be constructed as a bond in compliance with the requirements thereof.

Signed, sealed and dated this \_\_\_\_\_ day of \_\_\_\_\_, A.D., 20\_\_\_\_\_.

ATTEST:

\_\_\_\_\_  
(Principal Secretary)

(SEAL)

\_\_\_\_\_  
(Witness as to Principal)

\_\_\_\_\_  
(Address)

\_\_\_\_\_

\_\_\_\_\_  
(Principal)

By: \_\_\_\_\_

\_\_\_\_\_  
(Address)

\_\_\_\_\_

\_\_\_\_\_  
(Surety)

By: \_\_\_\_\_  
(Attorney-in-Fact)

ATTEST:

\_\_\_\_\_  
Resident Agent

(SEAL)

\_\_\_\_\_  
(Address)

\_\_\_\_\_

\_\_\_\_\_  
(Witness as to Surety)

\_\_\_\_\_  
(Address)

NOTE: If Contractor is Partnership, all partners should execute Bond. Surety Companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the Project is located.

FAILURE TO RETURN THIS PAGE MAY RESULT IN REMOVAL OF YOUR COMPANY FROM COMMODITY LISTING.

**Buyer Initials:**

**IF YOU DESIRE TO SUBMIT A "NO BID" IN RESPONSE TO THIS PACKAGE, PLEASE INDICATE BY CHECKING ONE OR MORE OF THE REASONS LISTED BELOW AND EXPLAIN.**

- Do not offer this product or service; remove us from your bidder's list for this item only.
- Specifications too "tight"; geared toward one brand or manufacturer only.
- Specifications are unclear.
- Unable to meet specifications.
- Unable to meet bond requirements.
- Unable to meet insurance requirements.
- Our schedule would not permit us to perform.
- Insufficient time to respond.
- Other

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COMPANY NAME \_\_\_\_\_

AUTHORIZED REPRESENTATIVE \_\_\_\_\_

SIGNATURE

**\*\*\*ATTENTION\*\*\***

FAILURE TO RETURN THE FOLLOWING DOCUMENTS MAY RESULT IN SUBMITTAL BEING DEEMED NON-RESPONSIVE AND AUTOMATIC REJECTION. THE COUNTY SHALL BE THE SOLE DETERMINANT OF TECHNICALITY VS. NON-RESPONSIVE SUBMITTAL:

1. FAILURE TO USE COUNTY BID SCHEDULE.
2. FAILURE TO RETURN OR ACKNOWLEDGE APPLICABLE COMPLIANCE / SPECIFICATION SHEETS.
3. FAILURE TO RETURN OR ACKNOWLEDGE APPLICABLE ADDENDA.
4. THE COUNTY SHALL BE THE SOLE DETERMINANT OF TECHNICALITY VS. NON-RESPONSIVE BID.
5. FAILURE TO PROVIDE BID BOND, WHEN REQUIRED, WILL RESULT IN SUBMITTAL BEING DEEMED NON-RESPONSIVE AND AUTOMATIC REJECTION. BID BONDS ARE NOT REQUIRED ON ALL SOLICITATIONS. BOND REQUIREMENTS ARE CLEARLY STATED ON THE INVITATION PAGE. IF CLARIFICATION IS NEEDED, CONTACT COUNTY LISTED IN THE INVITATION. **IF BONDS ARE REQUIRED, FORMS WILL BE PROVIDED IN THIS SOLICITATION DOCUMENT.**
6. FAILURE TO PROVIDE CONTRACTOR AFFIDAVIT AND AGREEMENT, WHEN REQUIRED, MAY RESULT IN SUBMITTAL BEING DEEMED NON-RESPONSIVE AND REJECTED. THE CONTRACTOR AFFIDAVIT AND AGREEMENT IS NOT REQUIRED ON ALL SOLICITATIONS. IF CLARIFICATION IS NEEDED, CONTACT THE COUNTY LISTED IN THE INVITATION.
7. FAILURE TO PROVIDE AN ETHICS AFFIDAVIT WHEN REQUIRED, MAY RESULT IN SUBMITTAL BEING DEEMED NON-RESPONSIVE AND REJECTED. THE ETHICS AFFIDAVIT IS REQUIRED ON ALL FORMAL SOLICITATIONS OVER \$100,000.00. IF CLARIFICATION IS NEEDED, CONTACT THE COUNTY LISTED IN THE INVITATION.

**PUTNAM COUNTY****GENERAL INSTRUCTIONS FOR BIDDERS, TERMS AND CONDITIONS****I. PREPARATION OF BIDS:**

- A. Each bidder shall examine the drawings, specifications, schedule and all instructions. Failure to do so will be at the bidder's risk, as the bidder will be held accountable for their bid response.
- B. Each bidder shall furnish all information required by the bid form or document. Each bidder shall sign the bid and print or type his or her name on the schedule. The person signing the bid must initial erasures or other changes. An authorized agent of the company must sign bids.
- C. Individuals, firms and businesses seeking an award of a Putnam County contract may not initiate or continue any verbal or written communications regarding a solicitation with any County officer, elected official, employee or other County representative without permission of the County Manager between the date of the issuance of the solicitation and the date of the final contract award by the Board of Commissioners. Violations will be reviewed by the County Manager. If determined that such communication has compromised the competitive process, the offer submitted by the individual, firm or business may be disqualified from consideration for award.
- D. Sample contracts (if pertinent) are attached, as are the affidavit(s) and affirmation. These do NOT have to be filled out with the bid/proposal submittal, but are contained for informational purposes only. If awarded, the successful bidder(s) will be required to complete them prior to contract execution.

**II. DELIVERY:**

- A. Each bidder should state time of proposed delivery of goods or services.
- B. Words such as "immediate," "as soon as possible," etc. shall not be used. The known earliest date or the minimum number of calendar days required after receipt of order (delivery A.R.O.) shall be stated (if calendar days are used, include Saturday, Sunday and holidays in the number).

**III. EXPLANATION TO BIDDERS:**

Any explanation desired by a bidder regarding the meaning or interpretation of the invitation for bids, drawings, specifications, etc. must be requested by the question cutoff deadline stated in the solicitation in order for a reply to reach all bidders before the close of bid. Any information given to a prospective bidder concerning an invitation for bid will be furnished to all prospective bidders as an addendum to the invitation if such information is necessary or if the lack of such information would be prejudicial to uninformed bidders. The written bid documents supersede any verbal or written communications between parties. Receipt

of addendum should be acknowledged in the bid. Although the County Manager will make every effort to send any addendum to known bidders, it is the bidder's ultimate responsibility to ensure that they have all applicable addenda prior to bid submittal. This may be accomplished via contact with the County Manager prior to bid submittal.

#### **IV. SUBMISSION OF BIDS:**

- A. Bids shall be enclosed in sealed envelopes, addressed to the Putnam County Board of Commissioners with the name of the bidder, the date and hour of opening on the face of the envelope. Telegraphic/faxed bids will not be considered. Any addenda should be enclosed in the sealed envelopes as well.
- B. ADD/DEDUCT: Add or deduct amounts indicated on the outside of the envelope are allowed and will be applied to the lump sum amount. Amount shall be clearly stated and should be initialed by an authorized company representative.
- C. Samples of items, when required, must be submitted within the time specified and, unless otherwise specified by the County, at no expense to the County. Unless otherwise specified, samples will be returned at the bidder's request and expense if items are not destroyed by testing.
- D. Items offered must meet required specifications and must be of a quality, which will adequately serve the use and purpose for which intended.
- E. Full identification of each item bid upon, including brand name, model, catalog number, etc. must be furnished to identify exactly what the bidder is offering. Manufacturer's literature may be furnished.
- F. The bidder must certify that items to be furnished are new and that the quality has not deteriorated so as to impair its usefulness.
- G. Unsigned bids will not be considered except in cases where bid is enclosed with other documents, which have been signed. The County will determine this.
- H. Putnam County is exempt from federal excise tax and Georgia sales tax with regard to goods and services purchased directly by Putnam County. Suppliers and contractors are responsible for federal excise tax and sales tax, including taxes for materials incorporated in county construction projects. Suppliers and contractors should contact the State of Georgia Sales Tax Division for additional information.
- I. Information submitted by a bidder in the bidding process shall be subject to disclosure after the public opening in accordance with the Georgia Open Records Act. Each page of proprietary information must be identified. Entire bid may not be deemed proprietary.

**V. WITHDRAWAL OF BID DUE TO ERRORS:**

The bidder shall give notice in writing of his claim of right to withdraw his bid without penalty due to an error within twenty-four (24) hours after the conclusion of the bid opening procedure. Bids may be withdrawn from consideration if the price was substantially lower than the other bids due solely to a mistake therein, provided the bid was submitted in good faith, and the mistake was a clerical mistake as opposed to a judgment mistake, and was actually due to an unintentional arithmetic error or an unintentional omission of a quantity of work, labor or material made directly in the compilation of the bid, which unintentional arithmetic error or unintentional omission can be clearly shown by objective evidence drawn from inspection of original work papers, documents and material used in the preparation of the bid sought to be withdrawn. The bidder's original work papers shall be the sole acceptable evidence of error and mistake if he elects to withdraw his bid. If a bid is withdrawn under the authority of this provision, the lowest remaining responsive bid shall be deemed to be low bid.

No bidder who is permitted to withdraw a bid shall, for compensation, supply any material or labor or perform any subcontract or other work agreement for the person or firm to whom the contract is awarded or otherwise benefit, directly or indirectly, from the performance of the project for which the withdrawn bid was submitted.

Supplier has up to twenty-four (24) hours to notify the Putnam County Manager of an obvious clerical error made in calculation of bid in order to withdraw a bid after bid opening. Withdrawal of bid for this reason must be done in writing within the twenty-four (24) hour period. Suppliers who fail to request withdrawal of bid by the required twenty-four (24) hours shall automatically forfeit bid bond. Bid may not be withdrawn otherwise.

Bid withdrawal is not automatically granted and will be allowed solely at Putnam County's discretion.

**VI. TESTING AND INSPECTION:**

Since tests may require several days for completion, the County reserves the right to use a portion of any supplies before the results of the tests are determined. Cost of inspections and tests of any item, which fails to meet the specifications, shall be borne by the bidder.

**VII. F.O.B. POINT:**

Unless otherwise stated in the invitation to bid and any resulting contract, or unless qualified by the bidder, items shall be shipped F.O.B. Destination. The seller shall retain title for the risk of transportation, including the filing for loss or damages. The invoice covering the items is not payable until items are delivered and the contract of carriage has been completed. Unless the F.O.B. clause states otherwise, the seller assumes transportation and related charges either by payment or allowance.

**VIII. PATENT INDEMNITY:**

The contractor guarantees to hold the County, its agents, officers or employees harmless from liability of any nature or kind for use of any copyrighted or uncopyrighted composition,

secret process, patented or unpatented invention, articles or appliances furnished or used in the performance of the contract, for which the contractor is not the patentee, assignee or licensee.

**IX. BID BONDS AND PAYMENT AND PERFORMANCE BONDS (IF REQUIRED):**

A five percent (5%) bid bond, a one hundred percent (100%) performance bond, and a one hundred percent (100%) payment bond shall be furnished to Putnam County for any bid as required in bid package or document. Failure to submit appropriate bonding will result in automatic rejection of bid. Bonding company must be authorized to do business in Georgia by the Georgia Insurance Commission, listed in the Department of the Treasury's publication of companies holding certificates of authority as acceptable surety on Federal bonds and as acceptable reinsuring companies, and have an A.M. Best rating as stated in the insurance requirement of the solicitation.

**X. AWARD:**

- A. Award will be made to the lowest responsive and responsible bidder. The quality of the articles to be supplied, their conformity with the specifications, their suitability to the requirements of the County, and the delivery terms will be taken into consideration in making the award. The County may make such investigations as it deems necessary to determine the ability of the bidder to perform, and the bidder shall furnish to the County all such information and data for this purpose as the County may request. The County reserves the right to reject any bid if the evidence submitted by, or investigation of such bidder fails to satisfy the County that such bidder is properly qualified to carry out the obligations of the contract.
- B. The County reserves the right to reject or accept any or all bids and to waive technicalities, informalities and minor irregularities in bids received.
- C. The County reserves the right to make an award as deemed in its best interest, which may include awarding a bid to a single bidder or multiple bidders; or to award the whole bid, only part of the bid, or none of the bid to single or multiple bidders, based on its sole discretion of its best interest.

**XI. DELIVERY FAILURES:**

Failure of a contractor to deliver within the time specified or within reasonable time as interpreted by the County Manager, or failure to make replacement of rejected articles/services when so requested, immediately or as directed by the County Manager, shall constitute authority for the County Manager to purchase in the open market articles/services of comparable grade to replace the articles/services rejected or not delivered. On all such purchases, the contractor shall reimburse the County within a reasonable time specified by the County Manager for any expense incurred in excess of contract prices, or the County shall have the right to deduct such amount from monies owed the defaulting contractor. Alternatively, the County may penalize the contractor one percent (1%) per day for a period of up to ten (10) days for each day that delivery or replacement



is late. Should public necessity demand it, the County reserves the right to use or consume articles delivered which are substandard in quality, subject to an adjustment in price to be determined by the County Manager.

## **XII. COUNTY FURNISHED PROPERTY:**

No material, labor or facilities will be furnished by the County unless so provided in the invitation to bid.

## **XIII. REJECTION AND WITHDRAWAL OF BIDS:**

Failure to observe any of the instructions or conditions in this invitation to bid may constitute grounds for rejection of bid.

## **XIV: CONTRACT:**

Each bid is received with the understanding that the acceptance in writing by the County of the offer to furnish any or all of the commodities or services described therein shall constitute a contract between the bidder and the County which shall bind the bidder on his part to furnish and deliver the articles quoted at the prices stated in accordance with the conditions of said accepted bid. The County, on its part, may order from such contractor, except for cause beyond reasonable control, and to pay for, at the agreed prices, all articles specified and delivered.

Upon receipt of a bid package containing a County "Sample Contract" as part of the requirements, it is understood that the bidder has reviewed the documents with the understanding the County requires that all agreements between the parties must be entered into via this document. If any exceptions are taken to any part, each must be stated in detail and submitted as part of the bid. If no exceptions are stated, it is assumed that the bidder fully agrees to the provisions contained in the "Sample Contract" in its entirety.

When the contractor has performed in accordance with the provisions of this agreement, the County shall pay to the contractor, within thirty (30) days of receipt of any payment request based upon work completed or service provided pursuant to the contract, the sum so requested, less the retainage stated in this agreement, if any. In the event that the County fails to pay the contractor within sixty (60) days of receipt of a pay requested based upon work completed or service provided pursuant to the contract, the County shall pay the contractor interest at the rate of ½% per month or pro rata fraction thereof, beginning the sixty-first (61<sup>st</sup>) day following receipt of pay requests. The contractor's acceptance of progress payments or final payment shall release all claims for interest on said payment.

## **XV. NON-COLLUSION:**

Bidder declares that the bid is not made in connection with any other bidder submitting a bid for the same commodity or commodities, and that the bid is bona fide and is in all respects fair and without collusion or fraud. An affidavit of non-collusion shall be executed

by each bidder. Collusion and fraud in bid preparation shall be reported to the State of Georgia Attorney General and the United States Justice Department.

**XVI. DEFAULT:**

The contract may be canceled or annulled by the County Manager in whole or in part by written notice of default to the contractor upon non-performance or violation of contract terms. An award may be made to the next low responsive and responsible bidder, or articles specified may be purchased on the open market similar to those so terminated. In either event, the defaulting contractor (or his surety) shall be liable to the County for costs to the County in excess of the defaulted contract prices; provided, however, that the contractor shall continue the performance of this contract to the extent not terminated under the provisions of this clause. Failure of the contractor to deliver materials or services within the time stipulated on his bid, unless extended in writing by the County Manager, shall constitute contract default.

**XVII. TERMINATION FOR CAUSE:**

The County may terminate this agreement for cause upon ten days prior written notice to the contractor of the contractor's default in the performance of any term of this agreement. Such termination shall be without prejudice to any of the County's rights or remedies by law.

**XVIII. TERMINATION FOR CONVENIENCE:**

The County may terminated this agreement for its convenience at any time upon 30 days written notice to the contractor. In the event of the County's termination of this agreement for convenience, the contractor will be paid for those services actually performed. Partially completed performance of the agreement will be compensated based upon a signed statement of completion to be submitted by the contractor, which shall itemize each element of performance.

**XIX. INELIGIBLE BIDDERS:**

The County may choose not to accept the bid of a bidder who is in default on the payment of taxes, licenses or other monies due to the County. Failure to respond to three (3) consecutive times for any given commodity/service may result in removal from the supplier list under that commodity/service.

**XX. AMERICANS WITH DISABILITIES ACT:**

All contractors for the County are required to comply with all applicable sections of the Americans with Disabilities Act (ADA) as an equal opportunity employer. In compliance with the Americans with Disabilities Act (ADA), The County provides reasonable accommodations to permit a qualified applicant with a disability to enjoy the privileges of employment equal to those employees with disabilities. Disabled individuals must satisfy

job requirements for education background, employment experience, and must be able to perform those tasks that are essential to the job with or without reasonable accommodations. Any requests for the reasonable accommodations required by individuals to fully participate in any open meeting, program or activity of Putnam County should be directed to Paul Van Haute, County Manager, 117 Putnam Drive, Suite A, Eatonton, Georgia 31024.

**XXI. TAX LIABILITY:**

Local and state governmental entities must notify contractors of their use tax liability on public works projects. Under Georgia law, private contractors are responsible for paying a use tax equal to the sales tax rate on material and equipment purchased under a governmental exemption that is incorporated into a government construction project: excluding material and equipment provided for the installation, repair, or expansion of a public water, gas or sewer system when the property is installed for general distribution purposes. To the extent the tangible personal property maintains its character (for example the installation of a kitchen stove), it remains tax-exempt. However, if the installation incorporates the tangible personal property into realty, e.g., the installation of sheetrock, it becomes taxable to the private contractor. See O.C.G.A. 48-8-3(2) and O.C.G.A. 48-8-63

**XXVII. STATE LAW REGARDING WORKER VERIFICATION:**

State Law requires that all who enter into a contract for the physical performance of services with the County must satisfy O.C.G.A. § 13-10-91 and Rule 300-10-1-.02, in all manner, and such are conditions of the contract.

By submitting a proposal to the County, contractor agrees that, in the event the contractor employs or contracts with any subcontractor(s) in connection with the covered contract, the contractor will secure from the subcontractor(s) such subcontractor(s)' indication of the employee-number category applicable to the subcontractor, as well as attestation(s) from such subcontractor(s) that they are in compliance with O.C.G.A. § 13-10-91 and Rule 300-10-1-.02. Such attestation(s) shall be maintained and may be inspected by the County at any time. Any such attestation shall become a part of the contractor/subcontractor agreement. An affidavit of such compliance with O.C.G.A. § 13-10-91 and Rule 300-10-1-.02 will be initiated by the County, signed by the contractor, and will become part of the contract.

**XXVIII. EMPLOYMENT OF UNAUTHORIZED ALIENS PROHIBITED:**

It is the policy of Putnam County that unauthorized aliens shall not be employed to perform work on County contracts involving the physical performance of services. Therefore, the County shall not enter into a contract for the physical performance of services within the State of Georgia unless the contractor shall provide evidence on County-provided forms that it and its subcontractors have registered for and are participating in the federal work authorization program as defined by O.C.G.A. § 13-10-90(2) to verify information of all new employees. The County Manager with the assistance of the Performance Analysis Division shall be authorized to conduct random audits of a contractor's or subcontractors'

compliance with O.C.G.A. § 13-10-91 and the rules and regulations of the Georgia Department of Labor. The contractor and subcontractors shall retain all documents and records of its compliance for a period of three (3) years following completion of the contract. This requirement shall apply to all contracts for the physical performance of services where more than three (3) persons are employed on the County contract.

Whenever it appears that a contractor's or subcontractor's records are not sufficient to verify the work eligibility of any individual in the employ of such contractor or subcontractor, the County Manager shall report same to the Department of Homeland Security.

A contractor's failure to participate in the federal work authorization program as defined by O.C.G.A. § 13-10-90(2) may be sanctioned by termination of the contract. If it is determined that a subcontractor is not participating in the federal work authorization program as defined by O.C.G.A. § 13-10-90(2), Putnam County may direct the contractor to terminate that subcontractor. A contractor's failure to follow Putnam County's instruction to terminate a subcontractor that is not participating in the federal work authorization program as defined by O.C.G.A. § 13-10-90(2) may be sanctioned by termination of the contract.

The above requirements shall be in addition to the requirements of state and federal law, and shall be construed to be in conformity with those laws.

## 2023 LMIG RESURFACING PUTNAM COUNTY

### SPECIAL PROVISIONS AND ADDITIONS

√ PUTNAM COUNTY - LOCATION MAP (5 PAGE)

- ❖ OLD PHOENIX ROAD
- ❖ BOOGER BEAR LANE/ CLARK FORK ROAD (FDR)
  - *TYPICAL SECTION FOR FULL DEPTH RECLAMATION (FDR)*
- ❖ LITTLE ROAD
- ❖ DENNIS STATION ROAD

√ SECTION 108 – PROSECUTION AND PROGRESS

√ SECTION 150 – TRAFFIC CONTROL

√ SECTION 301 – SOIL-CEMENT CONSTRUCTION

√ SECTION 415 – ASPHALTIC CONCRETE OPEN-GRADED CRACK  
RELIEF INTERLAYER

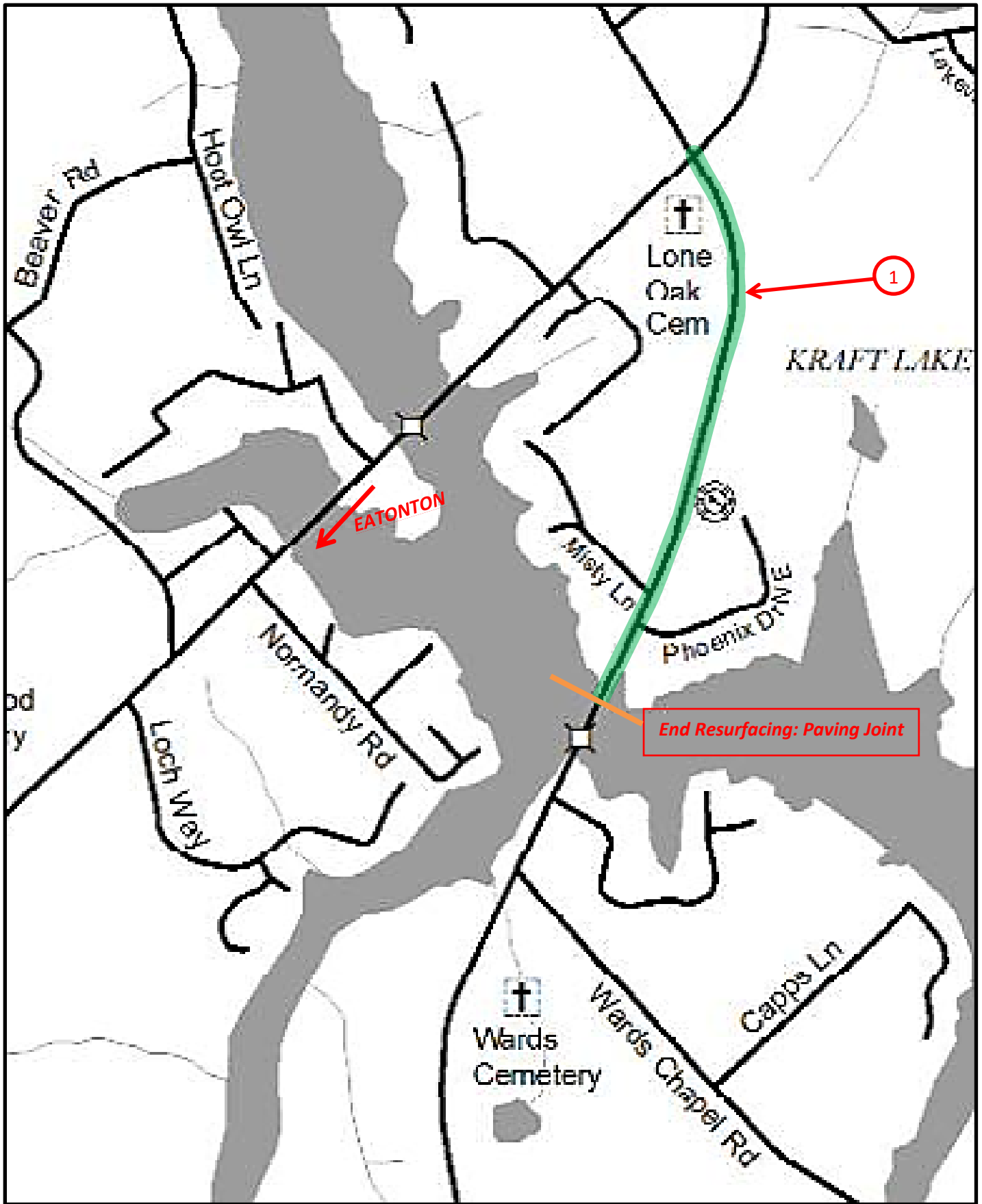
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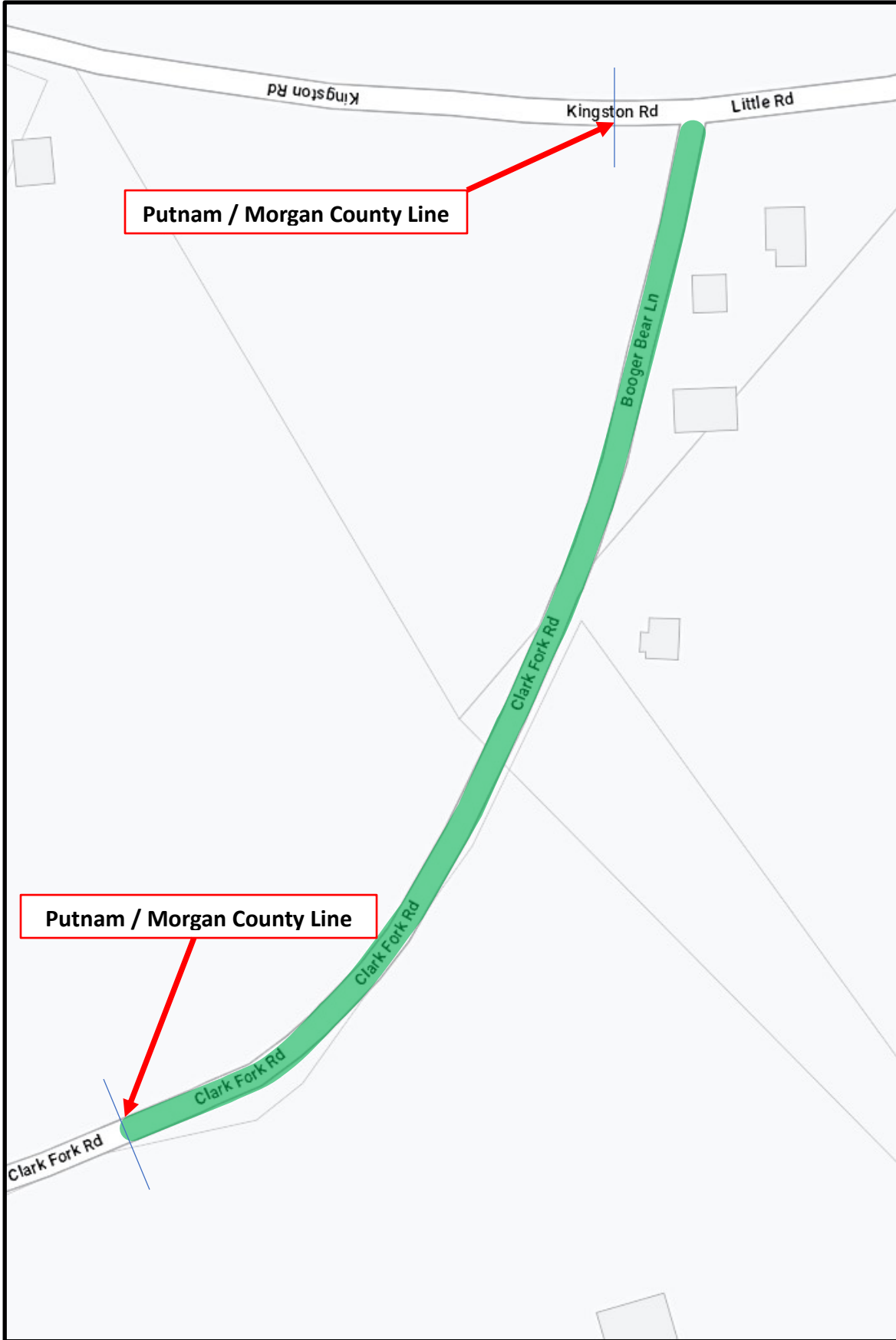
**PUTNAM COUNTY:**

**1: OLD PHOENIX ROAD**



PUTNAM COUNTY:

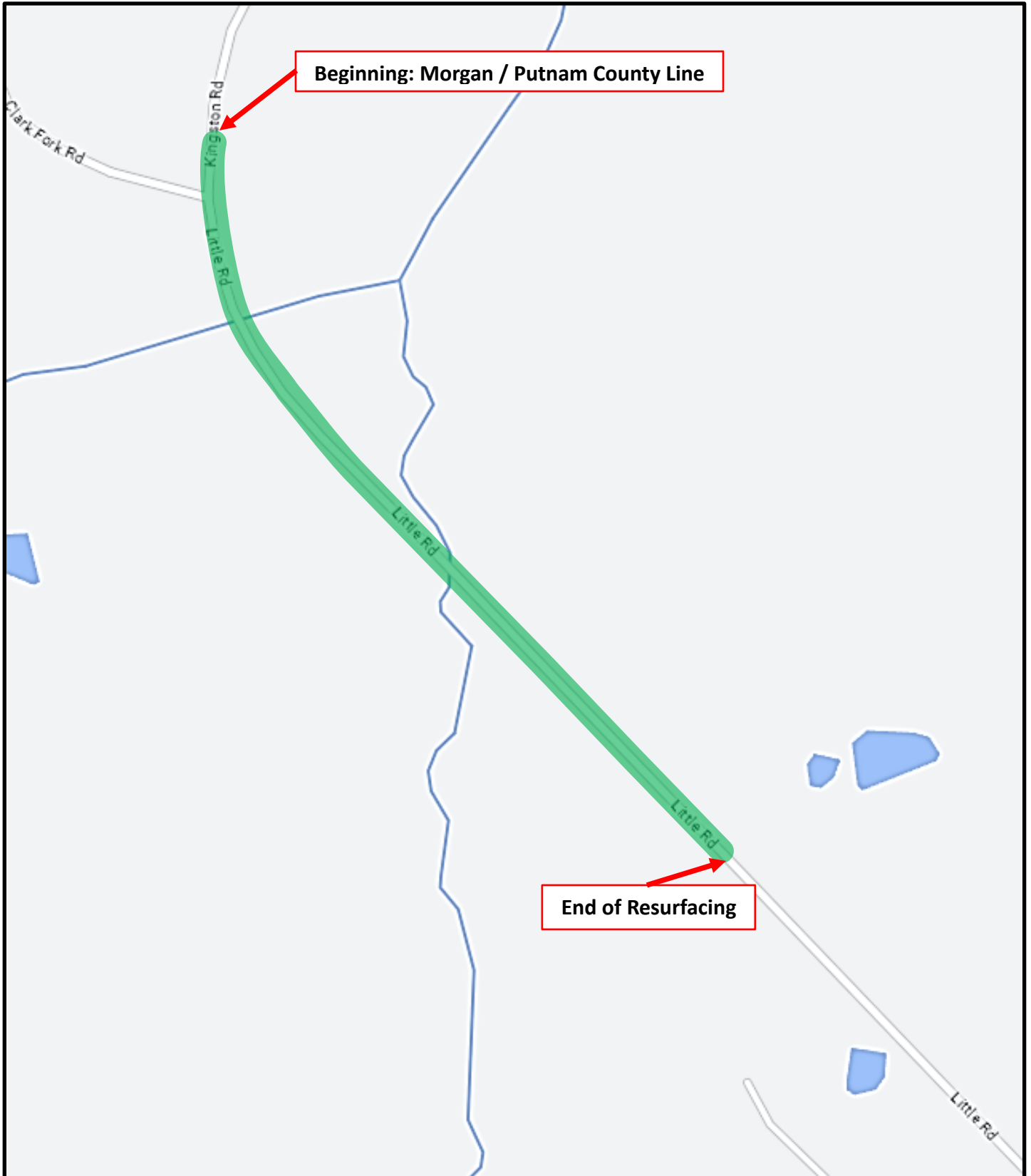
2. BOOGER BEAR LANE / CLARK FORK ROAD







PUTNAM COUNTY:  
3. LITTLE ROAD



PUTNAM COUNTY:

4. DENNIS STATION ROAD SW



# DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

## SUPPLEMENTAL SPECIFICATION

### Section 108—Prosecution and Progress

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*Replace Section 108 with the following:*

#### **108.01 Subletting of Contract**

The Contractor shall not sublet, sell, transfer, assign, or otherwise dispose of the Contract or Contracts, or any portion thereof, or of his/her right, title, or interest therein, without written consent of the Engineer. For Subcontracts, consent of the Engineer will not be considered until after award of the Contract.

In case such consent is given, the Contractor will be permitted to sublet a portion thereof, but shall perform, with his/her own organization, work amounting to not less than thirty percent (30%) of the total Contract cost, including materials, equipment, and labor.

As further exception, any items designated as Specialty Items may be performed by Subcontract and the cost of any such Specialty Items so performed by Subcontract may be deducted from the total cost before computing the amount of work required to be performed by the Contractor with his/her own organization.

Purchase of materials by the Prime Contractor for use by a Subcontractor will not be allowed when computing the 30% requirement.

No Subcontracts, or transfer of Contract, shall in any case release the Prime Contractor of his/her liability under the Contract and Bonds. No Subcontractor shall commence work in advance of the written approval of the Subcontract by the Department. Except for certain items exempted by the State Transportation Board, each Subcontractor shall be prequalified or registered with the Department. Each Subcontract for a Registered Subcontractor shall not exceed \$2,000,000.00 and Subcontracts for Prequalified Contractors shall not exceed their current capacity. Prequalified or Registered Subcontractors shall be qualified or registered with the Department in accordance with Chapter 672-5 of the Rules and Regulations Governing the Prequalification of Prospective Bidders adopted by the State Transportation Board.

In the event any portion of a Subcontract is further sublet, all of the provisions governing subletting, including registration and written approval by the Engineer, shall apply.

This Sub-Section shall not apply to Contracts between the Department and counties, municipalities, or other State agencies.

All subcontract agreements between the Prime Contractor and subcontractor shall be in writing and shall contain all of the Federal-Aid requirements and pertinent provisions of the Prime Contract. The Prime Contractor shall, upon request by the Engineer, furnish copies of any subcontract agreement to the Department within ten (10) days of such request. This provision applies to all subcontracts, including second or multi-tier subcontracts.

According to the provisions stated above, the following items are designated Specialty Items for general transportation system construction and building construction whenever they appear in the Contract:

#### General Transportation System Contracts

- Grassing items

## Section 108 — Prosecution and Progress

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- Fencing items
- Highway lighting items
- Sign items
- Guardrail items (except bridge handrail)
- Utility items
- Comfort and convenience items in rest areas
- Landscaping items
- Pressure grouting, slab removal and replacement
- Permanent traffic markings
- Signal systems
- Railroad track work above sub-ballast

### General Transportation System Contracts (continued)

- Drilled caisson foundations
- Construction layout
- Asphaltic concrete leveling and asphalt concrete patching (when used on surface treatment and slurry seal resurfacing contracts)

### Building Contracts

- Structural Steel
- Plumbing
- Heating, ventilation, and air conditioning (HVAC)
- Electrical
- Telephone service
- Masonry
- Glass work
- Drywall
- Ceiling installation
- Roofing
- Carpentry
- Floor covering
- Raised flooring
- Landscaping
- Security system
- Fire protection
- Gutters
- Painting
- Insulation
- Doors
- Elevators
- Construction layout

The Contractor's cost for Construction Layout shall be fully documented prior to deduction from the original Contract amount.

## Section 108 — Prosecution and Progress

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### 108.02 Notice to Proceed

The delivery to the Contractor of a notice, stating that construction is authorized, constitutes Notice to Proceed. The Contractor shall do no work under the Contract until receipt of the Notice to Proceed, and the Department will not be obligated to pay for work done prior to receipt of the Notice to Proceed.

Within 10 calendar days after the Notice to Proceed has been issued, the Contractor shall begin The Work. Contract Time charges for Available Day and Calendar Day projects will begin on the date the Contractor starts to work, or 10 days after the Notice to Proceed, whichever occurs first. For completion date projects contract time charges shall begin on the day after the Notice to Proceed.

Where the Contractor's access to part of the right-of-way is restricted, either the special provisions in the Contract or the conditional Notice to Proceed will indicate such restrictions. The Department may, at its option, issue a conditional Notice to Proceed if, in the opinion of the Engineer, a sufficient portion of the right-of-way is available to the Contractor to allow construction to proceed.

### 108.03 Prosecution and Progress

The Contractor shall provide sufficient materials, equipment, and labor to guarantee the completion of the Project in accordance with the Plans and Specifications within the time set forth in the Proposal. Unless otherwise required by the Engineer, each operation shall begin as soon after the Contract is awarded as conditions will permit. Each class of work will be expected to continue from the date it is begun until it is completed.

The Contractor shall furnish the Engineer, for approval, a progress schedule immediately following the receipt of the Notice to Proceed. Unless otherwise specified, the schedule shall be prepared on forms furnished by the Department or an acceptable critical path schedule will be used as the basis for establishing the controlling items of work and as a check on the progress of The Work. This schedule will not be required on resurfacing projects.

Approval of the progress schedule shall not be construed to imply approval of any particular method or sequence of construction or to relieve the Contractor of providing sufficient materials, equipment, and labor to guarantee the completion of the project in accordance with the plans, specifications, and special provisions within the time set forth in the proposal. Contract time as shown in the proposal is the allowable time. The Contractor's proposed progress schedule may indicate a completion date in advance of the Contract specified completion date; however, the Department will not be liable in any way for the Contractor's failure to complete the project prior to the Contract specified completion date.

At least 48 hours before commencing the work, the Contractor shall notify the Engineer of his intention to begin so that proper inspection may be provided. Should the prosecution of the work be discontinued for any reason, the Contractor shall notify the Engineer at least 24 hours in advance of resuming operations.

If the Contractor's operations are materially affected by changes in the plans or in the amount of work, or if he has failed to comply with the approved schedule, the Contractor shall submit a revised progress schedule, if requested by the Engineer, which schedule shall show how he proposes to prosecute the balance of the work. The Contractor shall submit the revised progress schedule within 10 days after the date of the request. The Contractor shall incorporate into every progress schedule submitted, any contract requirements regarding the order of performance of portions of the work.

No payments will be made to the Contractor while he is delinquent in the submission of a progress schedule or a revised progress schedule.

### 108.04 Limitation of Operations

The Contractor shall conduct the work at all times in such a manner and in such sequence as will assure the least interference with traffic and shall provide for smooth and safe traffic flow. It shall be the decision of the Engineer as to what will assure the least interference with traffic and smooth, safe traffic flow. Also, the Engineer may require the Contractor to finish a section on which work is in progress before work is started on any additional sections if the opening of such section is essential to public convenience.

## Section 108 — Prosecution and Progress

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### 108.05 Character of Workers, Methods and Equipment

The Contractor shall at all times employ sufficient labor and equipment for prosecuting the several classes of work to full completion in the manner and time required by these Specifications.

All workers shall have sufficient skill and experience to perform properly the work assigned to them. Workers engaged in special or skilled work shall have sufficient experience in such work and in the operation of the equipment required to perform all work properly and satisfactorily.

Any person employed by the Contractor or by any Subcontractor who the Engineer determines does not perform work in a proper and skilled manner or is intemperate or disorderly shall, at the written request of the Engineer, be removed forthwith by the Contractor or Subcontractor employing such person, and shall not be employed again in any portion of the work without the approval of the Engineer.

Should the Contractor fail to remove such person or persons as required above or fail to furnish suitable and sufficient personnel for the proper prosecution of the work, the Engineer may suspend the work by written notice until such orders are complied with.

All equipment that is proposed to be used on the work shall be of sufficient size and in such mechanical condition as to meet the requirements of the work and to produce a satisfactory quality of work. Equipment used on any portion of the project shall be such that no injury to the roadway, adjacent property, or other highways will result from its use.

When the methods and equipment to be used by the Contractor in accomplishing the construction are not prescribed in the Contract, the Contractor is free to use any methods or equipment that he demonstrates to the satisfaction of the Engineer will accomplish the work in conformity with the requirements of the Contract.

When the Contract specifies that the construction be performed by the use of certain methods and equipment, such methods and equipment shall be used unless others are authorized by the Engineer. If the Contractor desires to use a method or type of equipment other than those specified in the Contract, he may request authority from the Engineer to do so. The request shall be in writing and shall include a full description of the methods and equipment proposed to be used and an explanation of the reasons for desiring to make the change. If approval is given, it will be on the condition that the Contractor will be fully responsible for producing construction work in conformity with Contract requirements. If, after trial use of the substituted methods or equipment, the Engineer determines that the work produced does not meet Contract requirements, the Contractor shall discontinue the use of the substitute method or equipment and shall complete the remaining construction with the specified methods and equipment. The Contractor shall remove the deficient work and replace it with work of specified quality or take such other corrective action as the Engineer may direct. No change will be made in basis of payment for the construction items involved nor in Contract Time as a result of authorizing a change in methods or equipment under these provisions.

### 108.06 Temporary Suspension of Work

The Engineer has the authority to suspend the work wholly or in part, for as long as he may deem necessary, because of unsuitable weather, or other conditions considered unfavorable for continuing the work, or for as long as he may deem necessary by reason of failure of the Contractor to carry out orders given, or to comply with any provisions of the Contract. No additional compensation will be paid the Contractor because of suspension. If it becomes necessary to stop the work for an indefinite period, the Contractor shall store all materials in such a way that they will not impede the traveling public unnecessarily or become damaged in any way, and he shall take every precaution to prevent damage or deterioration of the work done; provide suitable drainage of the roadway, and erect temporary structures where necessary. The work shall be resumed when conditions are favorable or when corrective measures satisfactory to the Engineer have been applied; when, and as ordered by the Engineer in writing. The Contractor shall not stop the work without authority.

If the work is stopped by any temporary or permanent injunction, court restraining order, process or judgment of any kind, directed to either of the parties hereto, then such period or delay will not be charged against the Contract Time nor shall the Department be liable to the Contractor on account of such delay or termination of work

### **108.07 Determination of Contract Time**

The definition of Contract time and when Contract time officially begins is stated in Subsection 101.19. After the Contract has been signed by all parties, Contract time becomes the specified period of time, agreed upon by the Contractor, the Surety, and the Department, during which all Items and quantities of work set forth in the Proposal and included in the original Contract will be completed.

#### **A. Available Day Contracts**

An available day is defined in Subsection 101.04. The Engineer will furnish the Contractor a written monthly statement showing the total number of available days charged through the preceding month. The Contractor will be allowed one week in which to file a written protest setting forth in what respect said statement is incorrect, otherwise the statement shall be deemed to have been accepted by the Contractor as correct.

#### **B. Calendar Day Contracts**

When the Contract time is on a calendar day basis it shall consist of the number of calendar days stated in the Contract counting from the date Contract time starts as defined in Subsection 108.02, including all Sundays, holidays, and non-work days.

#### **C. Completion Day Contracts**

When the Contract completion time is a fixed date, it shall be the date on which all work on the project shall be completed.

#### **D. Settlement Periods**

Settlement periods shall be computed in calendar days unless otherwise stated in the contract documents.

#### **E. Extension of Contract Time**

If satisfactory fulfillment of the Contract requires performance of work in greater quantities than those set forth in the Proposal, the Contract time allowed for performance shall be extended on a basis commensurate with the amount and difficulty of the added work as determined by the Engineer, whose decision shall be final and conclusive.

If the estimated time for the consolidation of embankments at bridge ends is extended, the Contract time will be extended as provided in Subsection 208.3.05.B.3.

If the normal progress of the work is delayed for reasons beyond his control, the Contractor shall, within 15 days after the start of such delay, file a written request to the Engineer for an extension of time setting forth therein the reasons and providing complete documentation for the delay which he believes will justify the granting of his request. The Contractor's plea that insufficient time was specified is not a valid reason for extension of time. If the Engineer finds that the work was delayed because of conditions beyond the control and without the fault of the Contractor, he may extend the time for completion in such amount as the conditions justify.

Any authorized extension of the Contract Time will be in full force and effect the same as though it was the original Contract time.

#### **F. Suspension of Time Charges**

If the Engineer suspends the work by reason of failure of the Contractor to carry out written orders given, or to comply with any provision of the Contract, time charges will continue through the period of such suspension.

If the Contractor is declared in default, time charges will continue.

Except on completion date Contracts, time charges will not be made against the Contract when the only remaining controlling items of work are shut down by the Engineer because of seasonal limitations or temperature controls.

#### **G. When Time Charges Cease**

Time charges will cease when all work on Contract Items have been completed to the satisfaction of the Engineer. The only exceptions to this requirement are that a satisfactory growth of vegetative cover, application(s) of nitrogen

## Section 108 — Prosecution and Progress

and Final Documentation will not be required when time charges are stopped. Final documentation includes final DBE Report, Reflectivity testing Report, and NPDES Notice of Termination. Filling of all washes and repairs to planted areas have to be accomplished as a prerequisite of vegetative cover and nitrogen condition. Maintenance of planted areas in order to produce a satisfactory growth after time charges have stopped will be performed without assessment of liquidated damages provided this work is diligently prosecuted. If, during this waiting period, maintenance of any part of the project is inadequate, the Engineer may resume time charges 10 days after written notification to the Contractor and will continue time charges until the unsatisfactory conditions are corrected. If final documentation associated with the project is not received within fifty (50) days of the final inspection, the Engineer may resume time charges 10 days after written notification to the Contractor and will continue time charges until necessary documentation is received.

### 108.08 Failure or Delay in Completing Work on Time

Time is an essential element of the Contract, and any delay in the prosecution of the work may inconvenience the public, obstruct traffic, or interfere with business. In addition to the aforementioned inconveniences, any delay in completion of the work will always increase the cost of engineering. For this reason, it is important that the work be pressed vigorously to completion. Should the Contractor or, in case of default, the Surety fail to complete the work within the time stipulated in the Contract or within such extra time that may be allowed, charges shall be assessed against any money due or that may become due the Contractor in accordance with the following schedule:

Schedule of Deductions for Each Day of Overrun in Contract Time			
Original Contract Amount		Daily Charges	
From More Than	To and Including	Available Day	Calendar Day or Completion Date
\$0	\$2,000,000	\$298	\$213
\$2,000,000	\$4,000,000	\$893	\$638
\$4,000,000	\$7,000,000	\$1,636	\$1,169
\$7,000,000	\$12,000,000	\$2,826	\$2,019
\$12,000,000	\$20,000,000	\$4,759	\$3,399
\$20,000,000	\$30,000,000	\$7,436	\$5,311
\$30,000,000	\$40,000,000	\$8,328	\$5,949
\$40,000,000	\$50,000,000	\$10,707	\$7,648
\$50,000,000		\$11,897	\$8,498

When the Contract time is on either the calendar day or completion date basis, the schedule for calendar days shall be used. When the Contract time is based on an available day basis, the schedule for available days shall be used.

For each calendar day or available day, as specified, that any work shall remain uncompleted after the contract time specified for the completion of the work required by the Contract, the sum specified in the Contract will be deducted from any money due the Contractor, not as a penalty, but as liquidated damages; provided however, that due account shall be taken of any adjustment of the contract time for completion of the work granted under the provisions of Subsection 108.07.E.

The Department may waive such portions of the liquidated damages as may accrue after the work is in condition for safe and convenient use by the traveling public.

#### A. Liquidated Damages

The amount of such charges is hereby agreed upon as fixed liquidated damages due the Department after the expiration of the time for completion specified in the Contract. The Contractor and his Surety shall be liable for liquidated damages in excess of the amount due the Contractor on the final payment.



## Section 108 — Prosecution and Progress

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These fixed liquidated damages are not established as a penalty but are calculated and agreed upon in advance by the Department and the Contractor due the uncertainty and impossibility of making a determination as to the actual and consequential damages which are incurred by the Department, the State, and the general public as a result of the failure on the part of the Contractor to complete the work on time.

- 1. Deduction from Partial Payments:** Liquidated damages, as they accrue, will be deducted from periodic partial payments.
- 2. Deduction from Final Payment:** The full amount of liquidated damages will be deducted from final payment to the Contractor and/or its Surety.
- 3. No Liquidated Damages Charged for Delay by the Department:** In case of default of the Contract and the subsequent completion of the work by the Department as hereinafter provided, the Contractor and his Surety shall be liable for the liquidated damages under the Contract, but no liquidated damages shall be chargeable for any delay in the final completion of the work by the Department due to any unreasonable action, negligence, omission, or delay of the Department. In any suit for the collection of or involving the assessment of liquidated damages, the reasonableness of the amount shall be presumed. The liquidated damages referred to herein are intended to be and are cumulative and shall be in addition to every other remedy now or hereafter enforceable at law, in equity, by statute, or under the Contract.

### B. No Waiver of Department's Rights

Permitting the Contractor to continue and finish The Work or any part of it after the expiration of the time allowed for completion or after any extension of time, shall not operate as a waiver of the rights of the Department under the Contract.

## 108.09 Default of Contract

If the Contractor fails to begin the work within the time specified, or fails to perform the work with sufficient workers, equipment, or materials to ensure its prompt completion, or performs the work unsuitably, or neglects or refuses to remove materials or perform anew such work as shall be rejected as defective and unsuitable, or discontinues the prosecution of the work, or from any other cause whatsoever does not carry on the work in an acceptable manner, or becomes insolvent or is adjudicated a bankrupt, or commits any act of bankruptcy or insolvency, or allows any final judgement to stand against him unsatisfied for a period of 10 days, or makes an assignment for the benefit of creditors, or fails to comply with the contract requirements regarding wage payments or EEO requirements, or fails to sign the standard release form as stipulated in Subsection 109.08 *Final Payment*, the Engineer may give notice in writing by registered or certified mail to the Contractor and the Surety, stating the nature of the deficiencies and directing that The Work including its progress be remedied and made satisfactory.

If, within 10 days after such notice, the Contractor or its Surety does not proceed in satisfactory way to remedy the faults specified in said notice, the Engineer will notify the Contractor and its Surety by registered or certified mail that the Contractor is in default and, by the same message, direct the Surety to take over the work including all of the obligations pertaining to the Contract. If the Surety takes over the work in a satisfactory way within 10 days after such notice of default, the Department will thenceforth pay to the Surety the amounts due and to become due under the Contract, less all deductions provided herein including liquidated damages. The Department shall not be liable for any sums not due under the Contract and shall not be made a party to any dispute between the Contractor and the Surety.

If the Contractor is declared in default and the work and other Contract obligations are taken over by the Surety as required by its Bond, and when all parts of the work have been completed and found to be satisfactory by the Engineer, as provided for in Subsection 105.16 *Final Inspection and Acceptance*, the said Surety is hereby constituted the attorney in fact of the Contractor for the purpose of executing such final releases as may be required by the Department or to do any other act or thing, including the execution of any documents, necessary to the completion of the Contract and a final settlement of same, including but not limited to those documents required by the provisions regarding final payment and release as set forth in Subsection 109.08.

For all purposes, as herein set out and defined, including the execution of documents necessary to the final completion and settlement of the Contract, the Surety, under such circumstances, is hereby authorized and directed by the Contractor to perform such acts and execute such documents as fully and completely as though the same were performed or executed by such contractor, and to be lawfully binding upon such Contractor as though such acts had been performed or such documents executed by him in person.

## Section 108 — Prosecution and Progress

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If the Surety does not take over The Work in a satisfactory way within 10 days after the notice of default, or does not proceed to finish The Work according to the Contract, the Department shall have full power and authority, without impairing the obligation of the Contract or the Contract Bond, to take over the completion of The Work; to appropriate or use any or all material and equipment on the ground that may be suitable, to enter into agreements with others for the completion of the Contract according to the terms and provisions thereof; or to use such other methods as may be required for the completion of the Contract. In so assuming the obligations of the Contractor, the Department does so as the agent of the Contractor. Assumption of these duties and obligations by the Department will not act as a release of the Contractor or its Surety from any of the provisions of this Contract. The Contractor and its Surety shall be liable for all costs incurred by the Department in completing the work and also for all liquidated damages in conformity with the terms of the Contract. If the sum of such liquidated damages and the expense so incurred by the Department is less than the sum which would have been payable under this Contract if it had been completed by the Contractor or its Surety, the Contractor, or its Surety, shall be entitled to receive the difference; and if the sum of such expense and such liquidated damages exceeds the sum that would have been payable under the Contract, the Contractor and its Surety shall be liable and shall pay to the Department the amount of such excess. Notice to the Contractor shall be deemed to have been served when delivered to the person in charge of any office used by the Contractor, its representative at or near the work or by registered or certified mail addressed to the Contractor at the last known place of business.

Time charges shall continue through a period of a default in compliance with the provisions of Subsection 108.07.F.

### **108.10 Termination of Contractor's Responsibility**

Except as specified in the Contract Bond and in Subsection 107.20, the Contractor's responsibility for the work shall terminate upon final acceptance of the work by the Department.

# DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

## SPECIAL PROVISION

### Section 150—Traffic Control

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#### 150.1 General Description

This section, as supplemented by the Plans, Specifications, and Manual on Uniform Traffic Control Devices (MUTCD) shall be considered the Temporary Traffic Control (TTC) Plan in accordance with Work Zone Safety and Mobility Policy. Activities shall consist of furnishing, installing, maintaining, and removing necessary traffic signs, pedestrian signs, barricades, lights, signals, cones, pavement markings and other traffic control devices and shall include flagging and other means for guidance and protection of vehicular and pedestrian traffic through the Work Zone. This Work shall include both maintaining existing devices and installing additional devices as necessary in construction work zones.

The Contractor shall be responsible for the maintenance of traffic signals and Advanced Traffic Management System (ATMs) devices from the time that the system is modified until final acceptance. The maintenance of traffic signals and ATMs devices that are not a part of the Work and that are not in conflict with any portion of the Work shall not be the responsibility of the Contractor. However, the Contractor is still responsible for damages to all devices that he or his subcontractors cause, in accordance with Section 107 and other Specifications.

When any provisions of this Specification or the Plans do not meet the minimum requirements of the MUTCD, the MUTCD shall control. The 2009 Edition of the MUTCD including revisions shall be in effect for the duration of the project.

All traffic control devices used during the construction of the project shall meet the standards utilized in the MUTCD, and shall comply with the requirements of these Specifications, Georgia Construction Standards and Details, Project Plans, Design Manuals, and Special Provisions.

The needs and control of all road users (motorists, bicyclists and pedestrians within the highway right-of-way and easements, including persons with disabilities in accordance with the Americans with Disabilities Act of 1990 (ADA), Title II, Paragraph 35.130) through a Temporary Traffic Control (TTC) zone shall be an essential part of highway construction, utility work, maintenance operations and management of traffic incidents.

Utilities included in the Contract are bound by Special Provision 150 and shall follow its requirements. For utilities not included in the Contract but working within the project limits, they shall, at a minimum follow the MUTCD. Moreover, in accordance with Utility Accommodation Policy and Standards Manual dated 2016, the Engineer reserves the right to require additional certified flaggers, signs, warning lights, channelization devices, and other safety devices as may be necessary to properly protect, warn, and safeguard the traveling public. In addition, the Department reserves the right to place time restrictions or moratoriums on all utility work covered under a permit when, in the opinion of the Department, the continuance of the Work would seriously hinder traffic flow, be needlessly disruptive, or would unnecessarily inconvenience the traveling public. In case of emergencies, Utilities shall be provided access in accordance with Utility Accommodation Policy and Standards Manual.

#### 150.1.01 Definitions

For Special Provision 150, the definitions for “shall”, “should”, and “may” will be in accordance with MUTCD (1A.13).

Shall (Standard) - a statement of required, mandatory, or specifically prohibitive practice regarding a traffic control device.

Should (Guidance) - a statement of recommended, but not mandatory, practice in typical situations, with deviations allowed if engineering judgment or engineering study indicates the deviation to be appropriate.

May (Option) - a statement of practice that is a permissive condition and carries no requirement or recommendation.

## **150.1.02 Content**

### **150.1 General Description**

#### 150.1.01 Definitions

#### 150.1.02 Content

#### 150.1.03 Related References

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B. Reference Documents

#### 150.1.04 Submittals/Preconstruction

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B. Sequence of Operations

C. Pedestrian Considerations

1. Pedestrian Signage

2. Temporary Pedestrian Facilities

### **150.2 Materials and Traffic Control Devices**

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B. Approval

C. Quality Guidelines for All Temporary Traffic Devices

#### 150.2.02 Reflectorization Requirements

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B. Channelization Devices

#### 150.2.03 Arrow Panels

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B. Drums

1. Design

2. Application

3. Longitudinal Channelization

4. Removal

C. Vertical Panels

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2. Application

D. Cones

- 1. Design
- 2. Applications

E. Barricades

- 1. Design
- 2. Application

F. Warning Lights

- 1. Design
- 2. Application

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150.2.06 Guardrail

150.2.07 Interim Signs

- A. Posts
- B. Sign Blanks and Panels

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- A. All Traffic Striping for Forty-Five (45) Days or Less (<=45 Days)
- B. All Temporary Striping Beyond Forty-Five (45) days (>45 Days)
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150.2.09 Portable Changeable Message Signs

150.2.10 Portable Impact Attenuators

150.2.11 Portable Temporary Traffic Control Signals

150.2.12 Raised Pavement Markers

150.2.13 Rumble Strips

150.2.14 Temporary Barriers

- A. Design
- B. Application

150.2.15 Temporary Guardrail Anchorage- Type 12

150.2.16 Temporary Traffic Signal

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- A. Implementation Requirements
- B. Maintenance of Traffic Control Devices
- C. Traffic Interruption Restrictions
- D. Work Zone Restrictions

- 1. Interstate

- 2. Non-Interstate Divided Highways
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- E. Work Zone Geometric Restrictions
- F. Clear Zone
- G. Milled Surface Restrictions
- H. Construction Vehicle
- I. Environmental Impacts
- J. Existing Street Lights
- K. Nighttime Work Lighting
- L. Removal/Reinstallation of Miscellaneous Items

150.3.02 Personnel – Worker Safety Apparel

150.3.03 Signage – General

- A. Signing Requirements of the Temporary Traffic Control (TTC) Plan
- B. Conflicting or Non-Applicable Signs
- C. Removal of Existing Signs and Supports
- D. Interim Guide, Warning and Regulatory Signs
- E. Existing Special Guide Signs

- 1. Special Guide Signs
- 2. Interim Special Guide Signs
- 3. Interim Overhead Guide Sign Structures
- 4. Permanent Special Guide Signs

F. Stop Sign Regulated Intersections

G. Low Shoulder Signage

- 1. Low Shoulder for Construction/Reconstruction/Resurfacing Projects
- 2. Shoulder Drop-Off for Construction/Reconstruction/Resurfacing Project

H. Bump Signage

I. Sign Visibility

150.3.04 Advance Warning Signs

A. Project Signs - All Type of Highways

- 1. State Routes
- 2. Interstate, Limited Access and Multilane Divided Highways
- 3. Ramp Work on Limited Access Highways

B. Highway Work Zone

- 1. No Reduction in the Existing Posted Speed Limit in Highway Work Zone
- 2. Reducing the Speed Limit in a Highway Work Zone
- 3. Variable Speed Limit Zones

C. Installation/Removal of Work Area Signage

150.3.05 Shoulder/Lane Closure

A. Approval/Restrictions

1. Closure Length
2. Duration

B. Shoulder Closure

C. Lane Closure

1. Advance Warning Signs
2. Transition Area – Taper
3. Activity Area
4. Termination Area

D. Removal of Lane Closures

E. Exit and Entrance Ramps

150.3.06 Traffic Pacing Method

A. Pacing of Traffic

B. Methods of Signing for Traffic Pacing

150.3.07 Flagging Operation

A. Flaggers

B. Flagger Certification

C. Flagger Appearance and Equipment

D. Flagger Warning Signs

E. Pilot Vehicle Requirements

F. Automated Flagger Assistance Devices

G. Portable Temporary Traffic Control Signals

150.3.08 Traffic Signals

A. Responsibility/Cost

B. Law Enforcement Officer Requirement

150.3.09 Mobile Operations

150.3.10 Pavement Markings

A. General

1. Resurfacing Projects
2. Widening and Reconstruction Projects
3. New Location Construction Projects

B. Installation and Removal of Pavement Markings

1. Installation
2. Removal
3. Intermediate Surface
4. Final Surface
5. Pay Factor Reduction for Asphaltic Concrete Final Surfaces
6. Preparation and Planning for Traffic Shifts

C. Raised Pavement Markers

1. Supplementing Lane Lines
2. Supplementing Ramp Gore Lines

3. Other Lines

D. Exceptions for Interim Markings

1. Two-Lane, Two-Way Roadway
2. Multi-Lane Highway - with No Paved Shoulder(s) or Paved Shoulder(s) Four Feet or Less ( $\leq 4'$ )
3. Limited Access Roadways and Roadways with Paved Shoulder Greater than Four Feet ( $>4'$ )
4. Ramps for Multi-lane Divided Highways
5. Miscellaneous Pavement Markings

150.3.11 Differences in Elevation between Travel Lanes and Shoulders

A. Differences in Elevations

1. Difference of Two Inches ( $\leq 2''$ ) or Less Between Adjacent Travel Lanes
2. Difference of Two Inches ( $\leq 2''$ ) or Less Between Adjacent Travel Lane and Paved Shoulder
3. Difference of Greater Than Two Inches ( $>2''$ ) is Permitted for Continuous Operations
4. Difference of Greater Than Two Inches ( $>2''$ ) Between Travel Lanes and/or Shoulders for Non-Continuous Operations

B. Healed Section

C. Emergency Situations

D. Plating

E. Asphaltic Concrete Resurfacing Projects

1. Shoulder Construction Included as a Part of the Contract
2. Shoulder Construction Not Included as a Part of the Contract

150.3.12 Work Zone Law Enforcement

**150.4 Measurement**

150.4.01 Traffic Control Items

A. Traffic Control

B. Changeable Message Sign, Portable

C. Flashing Beacon Assembly

D. Pavement Markings

E. Portable Impact Attenuators

F. Signs

1. Interim Ground Mounted or Interim Overhead Special Guide Signs
2. Remove and Reset Existing Special Guide Signs, Ground Mount or Overhead
3. Modify Special Guide Signs, Ground Mount or Overhead

G. Temporary Audible Information Device

H. Temporary Barrier

I. Temporary Curb Cut Wheelchair Ramps

J. Temporary Guardrail Anchorage, Type 12

K. Temporary Walkways with Detectable Edging

L. Traffic Signal Installation - Temporary

M. Work Zone Law Enforcement

**150.5 Reserved**



## **150.6 Special Conditions**

## **150.7 Payment**

### 150.7.01 Enforcement and Adjustments

## **150.1.03 Related References**

### **A. Standard Specifications**

Section 104 - Scope of Work

Section 105 - -Control of Work-Legal Regulations and Responsibility to the Public

Section 107 - Legal Regulations and Responsibility to the Public

Section 108 - Prosecution and Progress

Section 209 - Subgrade Construction

Section 400 - Hot Mix Asphaltic Concrete Construction

Section 441 - Miscellaneous Concrete

Section 429 - Rumble Strips

Section 620 - Temporary Barrier

Section 632 - Portable Changeable Message Signs

Section 641 - Guardrail

Section 647 - Traffic Signal Installation

Section 648 - Traffic Impact Attenuator

Section 652 - Painting Traffic Stripe

Section 653 - Thermoplastic Traffic Stripe

Section 654 - Raised Pavement Markers

Section 656 - Removal of Pavement Markings

Section 657 - Preformed Plastic Pavement Markings

Section 658 - Polyurea Traffic Strip

Section 659 - Hot Applied Preformed Plastic Pavement Markings

Section 911 - Sign Posts

Section 912 - Sign Blanks and Panels

Section 913 - Reflectorizing Materials

## B. Referenced Documents

ASTM D4956-13 (Retro-reflectivity)

American Traffic Safety Services Association (ATSSA)

Construction Detail A-3 Curb Cut (Wheelchair) Ramps Concrete Sidewalk Details

Construction Detail A-4 Detectable Warning Surface Truncated Dome Size, Spacing and Alignment Requirements

Construction Detail T-3A (Type 7, 8, and 9 Square Tube Post Installation Detail)

GDOT Signing and Marking Design Guidelines

Georgia Standard 4000W “Lengths of Advancement, Clear Zone Distances, Fill Height Embankment”

Georgia Standard 4960 “Temporary Barrier (End Treatment Options)”

Georgia Standard 9102 “Traffic Control Detail for Lane Closure on Two-Lane Highway”

Georgia Standard 9106 “Traffic Control Detail for Lane Closure on Multi-Lane Divided Highway”

Georgia Standard 9107 “Traffic Control Detail for Lane Closure on Multi-Lane Undivided Highway”

Georgia Standard 9121 “Tapers, Signs, and Markings for Passing Lanes”

Manual for Assessing Safety Hardware (MASH)

Manual on Uniform Traffic Control Devices (MUTCD)

National Cooperative Highway Research Program (NCHRP) 350

National Safety Council

Qualified Product List #29 (QPL-29) Reflective Sheeting

Qualified Product List #34 (QPL-34) Work Zone Traffic Control Devices (Drums, Type III Barricades, Vertical Panels, and Portable Sign Systems)

Qualified Product List #35 (QPL-35) Drive Type Galvanized Steel Sign Posts

Qualified Product List #46 (QPL-46) Traffic Pavement Markings

Qualified Product List #64 (QPL-64) Attenuator Units (Compression Crash Cushion) and Guardrail End Treatments

Qualified Product List #76 (QPL-76) Raised Pavement Markers and Channel Markers

Qualified Product List #79 (QPL-79) Portable Arrow Boards

Qualified Product List #82 (QPL-82) “Portable Changeable Message Signs”

Utility Accommodation Policy and Standards Manual

Work Zone Safety and Mobility Policy

## 150.1.04 Submittals/Preconstruction

### A. Worksite Traffic Control Supervisor

The Contractor shall designate a qualified individual as the Worksite Traffic Control Supervisor (WTCS). The WTCS shall be responsible for selecting, installing and maintaining all traffic control devices in accordance with the Plans, Specifications, Special Provisions and the MUTCD. The WTCS shall be currently certified by the American Traffic Safety Services Association (ATSSA) Work Site Traffic Supervisor Certification program or the National Safety Council Certification program. On-line classes will not be accepted.

The WTCS shall be available on a twenty-four (24) hour basis to perform his duties. If the Work requires traffic control activities to be performed during the daylight and nighttime hours, it may be necessary for the Contractor to designate an alternate WTCS. An alternate WTCS must meet the same requirements and qualifications as the primary WTCS and be accepted by the Engineer prior to beginning any traffic control duties. The Worksite Traffic Control Supervisor's traffic control responsibilities shall have priority over all other assigned duties.

As the representative of the Contractor, the WTCS shall have full authority to act on behalf of the Contractor in administering the TTC Plan. The WTCS shall have appropriate training in safe traffic control practices in accordance with Part 6 of the MUTCD. In addition to the WTCS, all other individuals making decisions regarding traffic control shall meet the training requirements of the Part 6 of the MUTCD.

The Worksite Traffic Control Supervisor (WTCS) shall have a copy of Part 6 of the MUTCD and the Contract on the job site. Copies of the current MUTCD may be obtained from the FHWA web page at <http://mutcd.fhwa.dot.gov>.

The WTCS shall supervise the initial installation of traffic control devices. The Engineer, prior to the beginning of construction, will review the initial installation. Modifications to traffic control devices as required by sequence of operations or staged construction shall be reviewed by the WTCS.

Any work performed on the interstate or limited access highway right-of-way that requires traffic control shall be supervised by a submitted/approved certified Worksite Traffic Control Supervisor. No work requiring traffic control shall be performed unless the certified WTCS is on the worksite. Failure to maintain a Certified Worksite Traffic Control Supervisor on the Work will be considered as non-performance under Subsection 150.7.01.

The WTCS or alternate WTCS shall be available on a full-time basis to maintain traffic control devices with access to all personnel, materials, and equipment necessary to respond effectively to an emergency situation within forty-five (45) minutes of notification of the emergency.

The WTCS shall perform inspections, at a minimum once a month, to ensure that traffic control is maintained. For all interstate and limited access highways, the WTCS shall perform, as a minimum, weekly traffic control inspections. The inspections will start with the installation of the advance warning signs and will stop when a maintenance acceptance is issued or when the corrective list is completed.

An inspection shall include both daytime and nighttime reviews. The inspection shall be reported to the Engineer on a Traffic Control Inspection Report, (TC-1). Unless modified by the special conditions or by the Engineer, routine deficiencies shall be corrected within a twenty-four (24) hour period. Failure to comply with these provisions shall be grounds for dismissal from the duties of WTCS and/or removal of the WTCS from the project. Failure of the WTCS to execute his duties shall be considered as non-performance under Subsection 150.7.01.

**TRAFFIC CONTROL INSPECTION REPORT (TC-1)**

Project No.: \_\_\_\_\_ County: \_\_\_\_\_

Contractor: \_\_\_\_\_ Date: \_\_\_\_\_ Daytime: \_\_\_\_\_

Nighttime: \_\_\_\_\_

**PURPOSE:** To provide adequate warning, delineation, and channelization to assist in guiding road users in advance of and through the work zone by utilizing proper pavement markings, signs, and other MUTCD compliant devices.

**RESPONSIBILITY:** The Worksite Traffic Control Supervisor (WTCS) has the duty of ensuring that all traffic control devices are installed and maintained according to the requirements of the Traffic Control Plan.

**DEFICIENCIES:** Items noted below require corrective measures be performed within the next \_\_\_\_\_ hours/days.

<u>LOCATION</u>	<u>DESCRIPTION</u>	<u>ACTION REQUIRED</u>

(use additional sheets if needed)

Signature: \_\_\_\_\_ WTCS or DOT performing inspection

DOT inspection presented to WTCS Date: \_\_\_\_\_ Time: \_\_\_\_\_

**TO BE COMPLETED BY THE WTCS**

The attached deficiencies were corrected by Date: \_\_\_\_\_ Time: \_\_\_\_\_

Signature \_\_\_\_\_ Return TC-1 to DOT inspector.

The WTCS certifies that all traffic control devices in use on the project are MASH/NCHRP 350 crashworthy compliant.

## Traffic Control Checklist

Satisfactory Unsatisfactory Non-applicable

### Signs

S

U

N

- Are the signs correctly installed?
- Signs are in place according to TTC Plans. Signs are plumb and level. Signs are at the proper height.
- Are the signs visible and readable to the public both daytime and nighttime?
- Is retroreflectivity good?
- Are signs not in use including PCMS properly stored?

### TTC Devices

S

U

N

- Are they MASH/NHCRP 350 approved? Do they meet MUTCD and Special Provision 150 requirements?
- Are they installed according to manufacture recommendation?
- Are they in acceptable/marginal condition? Are they stable? Is the retroreflectivity good?

### Clear Zone

S

U

N

- Are all material and equipment stored beyond the clear zone?
- If stored in clear zone, are they protected by positive barrier?
- Are drop-offs marked and healed according to Special Provision 150?

### Positive Barriers

S

U

N

- Are the barriers in acceptable/marginal condition and FHWA approved?
- Are the barrier reflectors proper and in good condition?
- Do the barriers extend to the proper advancement length? Are the tapers according to GA Standards?

### Attenuators and Guardrails

S

U

N

- Are the proper attenuator assemblies in use?
- Gating - Is the recovery area free of debris and provide the necessary recovery area?
- Is the assembly in accordance with manufacture's recommendation?
- Are the guardrails properly anchored and/or attached to the barrier?
- Are shoes and transition sections in accordance with Standards?

### Pavement Markings

S

U

N

- Are the pavement markings visible and legible?
- Can they be seen during the daytime and nighttime?
- Are there no conflicting pavement markings?
- Are the pavement markings including RPM installed and maintained according to section 150?

The Engineer will periodically review the Work for compliance with the requirements of the TTC plan.

On projects where traffic control duties will not require full time WTCS supervision, the Engineer may allow the Contractor's Project superintendent, foreman, subcontractor, or other designated personnel to serve as the WTCS as long as satisfactory results are obtained. Nevertheless, the individual shall meet the requirements and perform the duties of a WTCS.

## **B. Sequence of Operations**

Any Sequence of Operations provided in this Contract in conjunction with any staging details which may be shown in the Plans, is a suggested sequence for performing the Work. It is intended as a general staging plan for the orderly execution of the Work while minimizing the impact on pedestrian facilities, mainline, cross-streets and side streets. The Contractor shall develop detailed staging and temporary traffic control plans for performing specific areas of the Work including but not limited to all traffic shifts, detours, bridge widenings, paces, or other activities that disrupt traffic or pedestrian flow. The Engineer may require detailed staging and TTC Plans for lane closures or disruption to pedestrian facilities. These Plans shall be submitted for approval at least two (2) weeks prior to the scheduled date of the activity. Activities that have not been approved at least seven (7) days prior to the scheduled date shall be rescheduled.

Where traffic is permitted through the work area under stage construction, the Contractor may choose to construct, at no additional expense to the Department, temporary on-site bypasses or detours in order to expedite the Work. Plans for such temporary bypasses or detours shall be submitted to the Engineer for review and approval thirty (30) calendar days prior to the proposed construction. Such bypasses or detours shall be removed promptly when in the opinion of the Engineer; they are no longer necessary for the satisfactory progress of the Work. Bypasses and detours shall meet the minimum requirements of Subsection 150.3.01.E.

As an option to the Sequence of Operations in the Contract, the Contractor may submit an alternative Sequence of Operations for review and approval. Alternate Sequence of Operations for pedestrian facilities shall be in compliance with the MUTCD and ADA. Pedestrian needs identified in the preconstruction phase shall be included in the proposed alternate plan.

The Department will not pay, or in any way, reimburse the Contractor for claims arising from the Contractor's inability to perform the Work in accordance with the Sequence of Operations provided in the Contract or from an approved Contractor alternate.

The Contractor shall secure the Engineer's approval of the Contractor's proposed plan of operation, sequence of work and methods of providing for the safe passage of vehicular and pedestrian traffic before it is placed in operation. The proposed plan of operation shall supplement the approved traffic control plan. Any major changes to the approved TTC plan, proposed by the Contractor, shall be submitted to the Department for approval.

Some additional traffic control details will be required prior to any major shifts or changes in traffic. The traffic control details shall include, but not be limited to, the following:

1. A detailed drawing showing traffic locations and lanes for each step of the change.
2. The location, size, and message of all signs required by the MUTCD, Plan, Special Provisions, and other signs as required to fit conditions. Any portable changeable message signs used shall be included in the details.
3. The method to be used in, and the limits of, the obliteration of conflicting lines and markings.
4. Type, location, and extent of new lines and markings.
5. Horizontal and vertical alignment and superelevation rates for detours, including cross-section and profile grades along each edge of existing pavement.
6. Drainage details for temporary and permanent alignments.
7. Location, length, and/or spacing of channelization and protective devices (temporary barrier, guardrail, barricades, etc.)

8. Starting time, duration and date of planned change.
9. For each traffic shift, a paving plan, erection plan, or work site plan, as appropriate, detailing workforce, materials, and equipment necessary to accomplish the proposed Work. This will be the minimum resource allocation required in order to start the Work.

The above details shall be submitted to the Engineer for approval at least fourteen (14) days prior to the anticipated traffic shift. Submission should be made electronically in a portable document format (pdf). The Contractor shall have traffic control details for a traffic shift which has been approved by the Engineer prior to commencement of the physical shift. All preparatory work relative to the traffic shift, which does not interfere with traffic, shall be accomplished prior to the designated starting time. The Engineer and the Contractor's representative will verify that all conditions have been met prior to the Contractor obtaining materials for the actual traffic shift.

### **C. Pedestrian Considerations**

All existing pedestrian facilities, including access to transit stops, shall be maintained. Where pedestrian routes are closed, alternate routes shall be provided. Closures of existing, interim and final pedestrian facilities shall have the prior written approval of the Engineer. When existing pedestrian facilities are disrupted, closed or relocated in a TTC zone, the temporary facilities shall be detectable and shall include accessibility features consistent with the features present in the existing pedestrian facility. Pedestrian facilities are considered improvements and provisions made to accommodate or encourage walking. Whenever a sidewalk is to be closed, the Engineer shall notify the maintaining agency two (2) weeks prior to the closure. Prior to closure, detectable barriers (that are detectable by a person with a visual disability traveling with the aid of a long cane), as described by the MUTCD, shall be placed across the full width of the closed sidewalk. Barriers and channelizing devices used along a temporary pedestrian route shall be in compliance with the MUTCD.

Temporary Traffic Control devices used to delineate a Temporary Traffic Control Zone Pedestrian Walkway shall be in compliance with Subsection 150.3.01.A. Appropriate signs as described in the MUTCD shall be maintained to allow safe passage of pedestrian traffic or to advise pedestrians of walkway closures (Refer to MUTCD Figures TA-28 and TA-29 for guidance). Advance closure signing should be placed at intersections rather than midblock locations so that pedestrians are not confronted with midblock work sites that will induce them to attempt skirting the work site or making a midblock crossing. Temporary Traffic Control devices and construction material shall not intrude into the usable width of the pedestrian walkway. Signs and other devices shall be placed such that they do not narrow or restrict any pedestrian passage to less than forty-eight inches ( $\geq 48''$ ).

#### **1. Pedestrian Signage**

A pedestrian walkway shall not be severed or relocated for non-construction activities, such as parking for construction vehicles and equipment. Movement by construction vehicles and equipment across designated pedestrian walkways should be minimized. When necessary, construction activities shall be controlled by flaggers. Pedestrian walkways shall be kept free of mud, loose gravel or other debris.

When temporary covered walkways are used, they shall be lighted during nighttime hours. When temporary traffic barrier is used to separate pedestrian and vehicular traffic, the temporary barrier shall meet NCHRP-350 Test Level Three. The barrier ends shall be protected in accordance with Georgia Standard 4960. Curbing shall not be used as a substitute for temporary traffic barriers when temporary traffic barriers are required. Tape, rope or plastic chain strung between temporary traffic control devices are not considered as detectable and shall not be used as a control for pedestrian movements.

The WTCS shall inspect the activity area daily to ensure that effective pedestrian TTC is being maintained. The inspection of TTC for pedestrian traffic shall be included as part of the TC-1 report.

#### **2. Temporary Pedestrian Facilities**

Temporary pedestrian facilities shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility. The geometry, alignment and construction of the facility should meet the applicable requirements of the "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG)".

**a. Temporary Walkways with Detectable Edging**

A smooth, continuous hard surface (firm, stable and slip resistant) shall be provided throughout the entire length of the temporary pedestrian facility. Compacted soils, sand, crushed stone or asphaltic pavement millings shall not be used as a surface course for walkways.

Temporary walkways shall include detectable edging as defined in the MUTCD. When temporary traffic barrier is included as a pay item in the Contract and where locations identified on the Plans for positive protection will also allow them to serve as pedestrian detectable edging, payment will be made for the temporary traffic barrier in accordance with Section 620. No payment will be made for temporary walkways with Detectable Edging where existing pavements or existing edging (that meets the requirements of MUTCD) are utilized as temporary walkways. Payment for temporary detectable edging, including approved barriers and channelizing devices, installed on existing pavements shall be included in Traffic Control-Lump Sum.

Regardless of the materials used, temporary walkways shall be constructed with sufficient thickness and durability to withstand the intended use for the duration of the construction project. If concrete or asphalt is used as the surface course for the walkway, it shall be a minimum of one and one-half inches ( $\geq 1\text{-}1/2''$ ) thick. Temporary walkways constructed across unimproved streets and drives shall be a minimum thickness of four inches ( $\geq 4''$ ) for concrete and three inches ( $\geq 3''$ ) for asphalt. Joints formed in concrete sidewalks shall be in accordance with Section 441. Concrete surfaces shall have a broom finish.

If plywood is used as a walkway, it must be a minimum of three quarters of an inch ( $\geq 3/4''$ ) thick, pressure treated and supported with pressure treated longitudinal joists spaced a maximum of sixteen inches ( $\leq 16''$ ) on center. The plywood shall be secured to the joist with galvanized nails or galvanized deck screws. Nails and screws shall be countersunk to prevent snagging or tripping the pedestrians. A slip resistant friction course shall be applied to any plywood surface that is used as a walkway. Any slip resistant material used shall have the prior written approval of the Engineer.

The Contractor may propose alternate types of Temporary Walkways provided that the Contractor can document that the proposed walkway meets the requirements of the "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG)". Alternate types of Temporary Walkways shall have the prior written approval of the Engineer.

Temporary walkways shall be constructed and maintained so there are no abrupt changes in grade or terrain that could cause a tripping hazard or could be a barrier to wheelchair use. The Contractor shall construct and maintain the walkway to ensure that joints in the walkway have a vertical difference in elevation of no more than one quarter ( $\leq 1/4''$ ) of an inch and that the horizontal joints have gaps no greater than one half ( $\leq 1/2''$ ) of an inch. The grade of the temporary walkway should parallel the grade of the existing walkway or roadway and the cross slope should be no greater than two percent ( $\leq 2\%$ ). A width of sixty inches (60"), if practical, should be provided throughout the entire length of any temporary walkway. The temporary walkway shall be a minimum width of forty eight inches (48"). When it is not possible to maintain a minimum width of sixty inches (60") throughout the entire length of temporary walkway, a sixty inch (60") by sixty inch (60") passing space should be provided at least every two hundred feet (200 ft.), to allow individuals in wheelchairs to pass.

Temporary walkways shall be constructed on firm subgrade. Compact the subgrade according to Section 209. Furnish and install any needed temporary pipes prior to constructing any walkway to ensure positive drainage away from or beneath the temporary walkway. Once the walkway is no longer required, remove any temporary materials and restore the area to the original conditions or as shown in the Plans.

**b. Temporary Curb Cut Wheelchair Ramps**

Temporary curb cut wheelchair ramps shall be constructed in accordance with Section 441 and Construction Detail A-3 Curb Cut (Wheelchair) Ramps Concrete Sidewalk Details. Ramps shall also include a detectable warning surface in accordance with Construction Detail A-4 Detectable Warning Surface Truncated Dome Size, Spacing and Alignment Requirements. Other types of material for the construction



of the temporary curb cut wheelchair ramps, including the detectable warning surface, may be used provided the Contractor can provide documentation that the material to be used meets the requirements of the “Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG)”. When a wheelchair ramp is no longer required, remove the temporary materials and restore the area to existing conditions or as shown in the Plans. For the items required to restore the area to original conditions or as shown in the Plans, measures for payment shall be covered by Contract pay items. If pay items are not included in the Contract, then payment for these items shall be included in Traffic Control-Lump Sum.

**c. Temporary Audible Information Device**

Temporary audible information devices, when shown in the Plans, shall be installed in compliance with the “Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG)”. The devices shall be installed in accordance with the manufacturer’s recommendations. Prior to installation, the Contractor shall provide the Engineer with a set of manufacturer’s drawings detailing the proper installation procedures for each device. When no longer required, the devices shall remain the property of the Contractor.

## **150.2 Materials and Traffic Control Devices**

### **150.2.01 Traffic Control Devices**

#### **A. NCHRP 350 and MASH**

All devices shall be certified in accordance with the Manual for Assessing Safety Hardware (MASH) Test Level 3 and/or the National Cooperative Highway Research Program (NCHRP) 350 Test Level 3 as applicable unless modified by this Special Provision. In addition, temporary work zone devices, including portable barriers, manufactured after December 31, 2019, must have been successfully tested under 2016 edition of MASH requirements. Such devices manufactured on or before this date, and successfully tested under either NCHRP Report 350 or the 2009 edition of MASH, may continue to be used throughout their normal service lives.

#### **B. Approval**

All traffic control devices with applicable Qualified Products List (QPL) categories shall come from the appropriate QPL list. Products not on the QPL may be used with an approval letter from the Georgia Department of Transportation Office of Materials and Testing. If there is no applicable QPL, the Contractor shall provide proof of MASH/NCHRP 350 certification. The proof may be a letter or written statement from the manufacturer that the product is MASH/NCHRP 350 approved. Decal certifications are not proof of certification and are not required.

#### **C. Quality Guidelines for All Temporary Traffic Devices**

All traffic control devices found to be unacceptable in accordance with the current ATSSA, “Quality Guidelines for Temporary Traffic Devices and Features” regardless of total numbers shall be replaced within twenty-four (24) hours unless stated otherwise in the Specifications, in the Contract, or as directed by the Engineer.

### **150.2.02 Retroreflectivity Requirements**

#### **A. Signs**

Reflective sheeting shall meet the requirements of Section 913 and QPL-29

All construction warning signs (black on fluorescent orange) shall meet the minimum reflectivity and color requirements of ASTM D4956 Type XI regardless of the mounting height. All other signs reflectorization shall be in accordance with the Plans, Contract, and “GDOT Signing and Marking Design Guidelines”.

## B. Channelization Devices

Reflective sheeting shall meet the requirements of Section 913 and QPL-29

All channelization devices (white/ fluorescent orange and white/red) shall meet the minimum retroreflectivity requirements of ASTM D4956 Type VI.

### 150.2.03 Arrow Panels

Arrow panels shall meet the requirements for MUTCD (6F.61) and QPL-79.

Portable sequential arrow, sequential chevron, or flashing arrow panels shall be a minimum size of forty-eight inches (48") high by ninety-six inches (96") wide with not less than fifteen (15) lamps used for the arrow. The arrow shall occupy virtually the entire size of the arrow panel and shall have a minimum legibility distance of one (1) mile. The minimum legibility distance is the distance at which the arrow panel can be comprehended by an observer on a sunny day, or clear night. Arrow panels shall be equipped with automatic dimming features for use during hours of darkness. The arrow panels shall also meet the requirements for a Type C panel as shown in the MUTCD (6F.61). The sequential or flashing arrow panels shall not be used for lane closure on two-lane, two-way highways when traffic is restricted to one-lane operations in which case, appropriate signing, flaggers and when required, pilot vehicles will be deemed sufficient.

The arrow panels shall be placed on the shoulder at or near the point where the lane closing transition begins. The panels shall be mounted on a vehicle, trailer, or other suitable support. Vehicle mounted panels shall be provided with remote controls. Minimum mounting height shall be seven feet (7') above the roadway to the bottom of the panel, except on vehicle mounted panels which should be as high as practical.

For emergency situations, arrow display panels that meet the MUTCD requirements for Type A or Type B panels may be used until Type C panels can be located and placed at the site. The use of Type A and Type B panels shall be held to the minimum length of time possible before having the Type C panel(s) in operation. The Engineer shall determine when conditions and circumstances are considered to be emergencies. The Contractor shall notify the Engineer, in writing, when any non-specification arrow display panel(s) is being used in the Work.

### 150.2.04 Channelization Devices

#### A. General

Channelization shall clearly delineate the travel way through the work zone and alert drivers and pedestrians to conditions created by work activities in or near the travel way. Channelization shall be in accordance with the Plans, Specifications, MUTCD, QPL-34, and the following requirements.

#### B. Drums

##### 1. Design

Drums shall meet the minimum requirement of the MUTCD (6F.67). Drums shall have six inch (6") wide stripes – white/fluorescent orange.

##### 2. Application

Drums shall be used as the required channelizing device to delineate the full length of a lane closure, shift, or encroachment, except as modified by this Subsection.

##### 3. Longitudinal Channelization

Drums shall be spaced as listed below for various roadside work conditions except as modified by Subsection 150.3.11. Spacing shall be used for situations meeting any of the conditions listed as follows:

**a. FORTY FOOT (40') SPACING MAXIMUM**

- For difference in elevation exceeding two inches ( $> 2''$ ).
- For heeled sections no steeper than 4:1 as shown in Subsection 150.3.11, Detail 150-H..

**b. EIGHTY FOOT (80') SPACING MAXIMUM**

- For difference in elevation of two inches ( $\leq 2''$ ) or less.
- Flush areas where equipment or workers are within ten feet ( $\leq 10'$ ) of the travel lane.

**c. 200 FOOT SPACING MAXIMUM: Where equipment or workers are more than ten feet ( $> 10'$ ) from travel lane. Lateral offset clearance to be four feet (4') from the travel lane.**

- For paved areas, eight feet ( $> 8'$ ) or greater in width that are paved flush with a standard width travel lane.
- For disturbed shoulder areas not completed to typical section that are flush to the travel lane and considered a usable shoulder.

**4. Removal of Drums**

Drums may be removed after shoulders are completed to typical section and grassed. Guardrail and other safety devices shall be installed and appropriate signs advising of conditions such as soft or low shoulder shall be posted before the drums are removed.

**C. Vertical Panels**

**1. Design**

All vertical panels shall meet the minimum requirements of the MUTCD (6F.66). All vertical panels shall have a minimum of 270 square inches of retroreflective area facing the traffic and be a minimum of thirty-six inches ( $\geq 36''$ ) high. The vertical panels shall be in addition a minimum eight inches ( $\geq 8''$ ) wide with a stripe width of six inches (6") – white/fluorescent orange.

**2. Application**

Vertical panels with retroreflectivity less than Type VI can only be used when traffic drums reduce the travel lane to less than ten feet ( $\leq 10'$ ); vertical panels shall be used to restore the travel lane to ten feet ( $\geq 10'$ ) or greater. No other application of vertical panels with retroreflectivity less than type VI will be permitted.

Vertical panels with a minimum type VI retroreflectivity and six inch (6") stripe may be used for longitudinal channelization in the activity zone where work takes place for short-term stationary lane closures and intermediate-term stationary lane closures. They can be used for lane closures lasting three (3) days and with Engineer approval up to seven (7) days. They shall not be used in the transition zone including the tapers and the tangent lengths between tapers.

**D. Cones**

**1. Design:**

All cones shall be a minimum of twenty-eight inches ( $\geq 28''$ ) in height regardless of application and shall meet the requirements of the MUTCD (6F.64).

Retroreflectivity may be deleted from all cones.

## 2. Application

On interstates, cones shall be prohibited. On all other routes, cones may only be used for longitudinal channelization in the activity zone where work takes place for short-term stationary lane closures. They shall not be used in the transition zone including the tapers and the tangent lengths between tapers. The use of cones for nighttime work will not be permitted. Cones shall not be stored or allowed to be visible on the worksite during nighttime.

Cones may be used for daytime flagging operations including tapers at flagging stations.

## E. Barricades

### 1. Design

Type 3 barricades shall meet the minimum requirements of the MUTCD (6F.68). The Contractor has the option of choosing Type 3 barricades from the QPL-34 or the Contractor may utilize generic barricades that are approved by the Federal Highway Administration (FHWA). When barricades have been specifically crash tested with signs attached, the Contractor has the responsibility to attach the signs as per the manufacturer's recommendations to ensure crashworthiness. If the barricades were not tested with the signs, crashworthy compliance may require that rigid signs be mounted separate from the Type 3 barricade.

The use of Type 1 and Type 2 barricades will not be permitted.

### 2. Application

Type 3 barricades shall be placed as required by the Plans, the Standards, and as directed by the Engineer.

When a barricade is placed so that it is subject to side impact from a vehicle, a drum shall be placed at the side of the barricade to add target value to the barricade.

## F. Warning Lights

### 1. Design

All warning lights shall meet the requirements of the MUTCD (6F.83).

### 2. Application:

- a. Type A low-intensity flashing lights shall be used as shown in the Plans, the Standards, and as directed by the Engineer.
- b. Type C Steady-Burn lights shall be used as shown in the Plans, the Standards, and as directed by the Engineer.

### 150.2.05 Flashing Beacon

The flashing beacon assembly, when specified, shall be used in conjunction with construction warning signs, regulatory, or guide signs to inform traffic of special road conditions which require additional driver attention. The flashing beacon assembly shall be installed in accordance with the requirements of Section 647.

### 150.2.06 Guardrail

Guardrail shall comply with Section 641 Guardrail and the guardrail standards.

When the removal and installation of guardrail is required, as a part of the Work, the following time restrictions shall apply unless modified by the special conditions:

From the time that the existing guardrail or temporary positive barrier protection is removed, the Contractor has fourteen (14) days to install the new guardrail and anchors. During the interim, the location without guardrail shall be protected with drums spaced at a maximum spacing of twenty feet (20'). The guardrail blunt end is to be treated as a fixed object and shall be protected. The maximum length of rail that can be removed at any time without being replaced with positive barrier protection is a total of 2000 linear feet of existing rail or the total length of one run of existing rail, whichever is less. Based on existing field conditions, the Engineer may review the Work and require that the guardrail be installed earlier than the maximum time allowed.

The Contractor shall install new guardrail, such that traffic exposure to fixed objects is minimized. Within the same workday, temporary attenuators, as defined in Subsection 150.2.10, should be installed on the approach to fixed objects that can't be protected with guardrail. Truck mounted attenuators may be used to shield exposed fixed objects for periods not to exceed fourteen (14) days. No separate payment will be made for truck mounted attenuators, attenuators, or other methods unless provided for in the Contract.

When the roadway is open to traffic, guardrail panels shall be lapped to comply with the directional flow of traffic. Should the staging of the Work require that the lap of the guardrail be changed, this Work shall be completed before the roadway is opened to traffic. The Work to change the lap of any guardrail shall be included in Traffic Control-Lump Sum.

The laps on anchors shall be in accordance with the manufacturer's recommendations and installation instructions. As a result, a trailing anchor may be lapped opposing the flow of traffic.

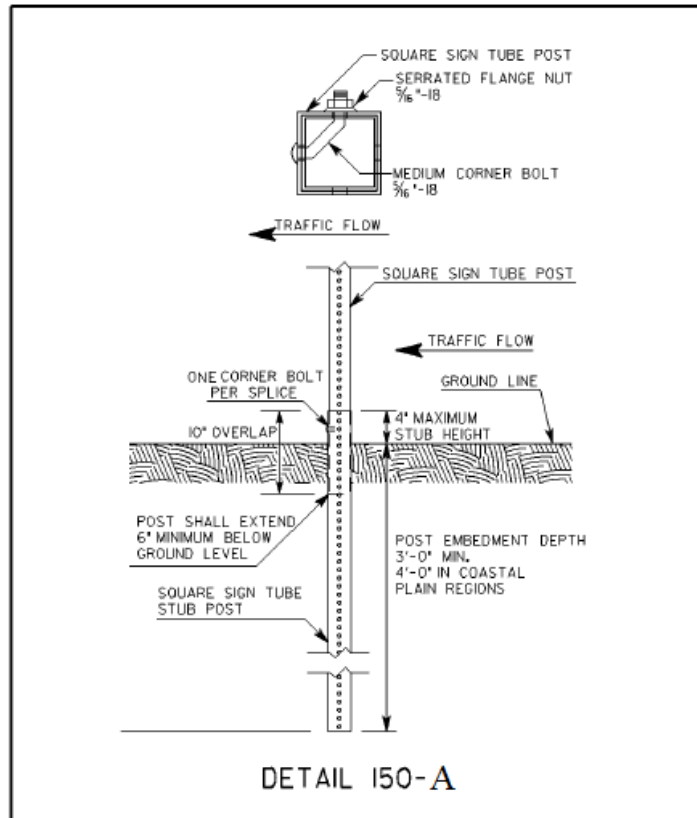
Failure to comply with the above time and quantity restrictions shall be considered as non-compliance under Subsection 150.7.01.

## **150.2.07 Interim Signs**

### **A. Posts**

Permanent mounting height to the bottom of sign shall be seven (7) feet to eight (8) feet measured vertically from the bottom of the sign to the elevation of the near edge of the pavement or from the walkway. Posts for all interim signs should be square tubular post meeting the requirements of Section 911, QPL-35, and Construction Detail T-3A (Type 7, 8, and 9 Square Tube Post Installation Detail). Ground mounted sign(s) that are 48" wide or greater shall be mounted on two posts. For barrier mounted sign, single post mount is allowed. The post(s) shall not extend beyond the top of the sign(s). The sign(s) shall be substantially plumbed and leveled.

Unprotected interim posts shall be spliced as shown in Detail 150-A, unless full length unspliced posts are used. Unprotected post splices will not be permitted any higher than four inches above the ground line to lessen the possibility of affecting the undercarriage of a vehicle. Installation of posts may require establishment of openings in existing pavements, islands, shoulders, etc.



## B. Sign Blanks and Panels

All TTC sign blanks and panels should conform to [Section 912](#) of the Specifications. Alternative sign blank materials (composites, polycarbonates, fiberglass reinforced plastics, recycled plastics, etc.) shall have a letter of approval from the Office of Materials and Testing for use as interim construction signs before these materials are allowed to be incorporated into the Work, unless these rigid sign blanks are currently approved as a crashworthy sign blank material under [QPL- 34](#).

Unless specified elsewhere in the Contract, Specifications, Plans, and/or directed by the Engineer, sign sizes are according to the following:

1. All construction signs sizes shall follow the dimensions provided in the MUTCD Table 6F-1 "Temporary Traffic Control Zone Sign and Plaque Sizes" under the column for "Freeway or Expressway".
2. For all other signs used just for staging, the sign sizes shall follow the dimensions provided in the MUTCD Table 2B-1 "Regulatory Sign and Plaque Sizes" for the largest size.
3. Permanent signs used for staging shall be according to Plans.

Plywood blanks or panels will not be permitted.

The use of flexible signs will not be permitted.

For utility work not included in the Contract, the utility Contractor may use flexible signs within the project limits.

## **150.2.08 Pavement Markings**

All temporary traffic striping shall conform to the applicable requirements of Section 652, Section 653, Section 657, Section 658, Section 659, and QPL-46.

### **A. All Traffic Striping for 45 Days or Less ( $\leq 45$ Days)**

All traffic striping that will be in place for 45 days or less shall be 4 inches or greater in width.

### **B. All Temporary Striping Beyond 45 days ( $>45$ Days)**

All traffic striping applied on intermediate surfaces shall be a minimum 5 inches in width or as shown on the Plans. On final surfaces when temporary striping will be overlaid or eradicated, the temporary striping shall be a minimum 5 inches in width.

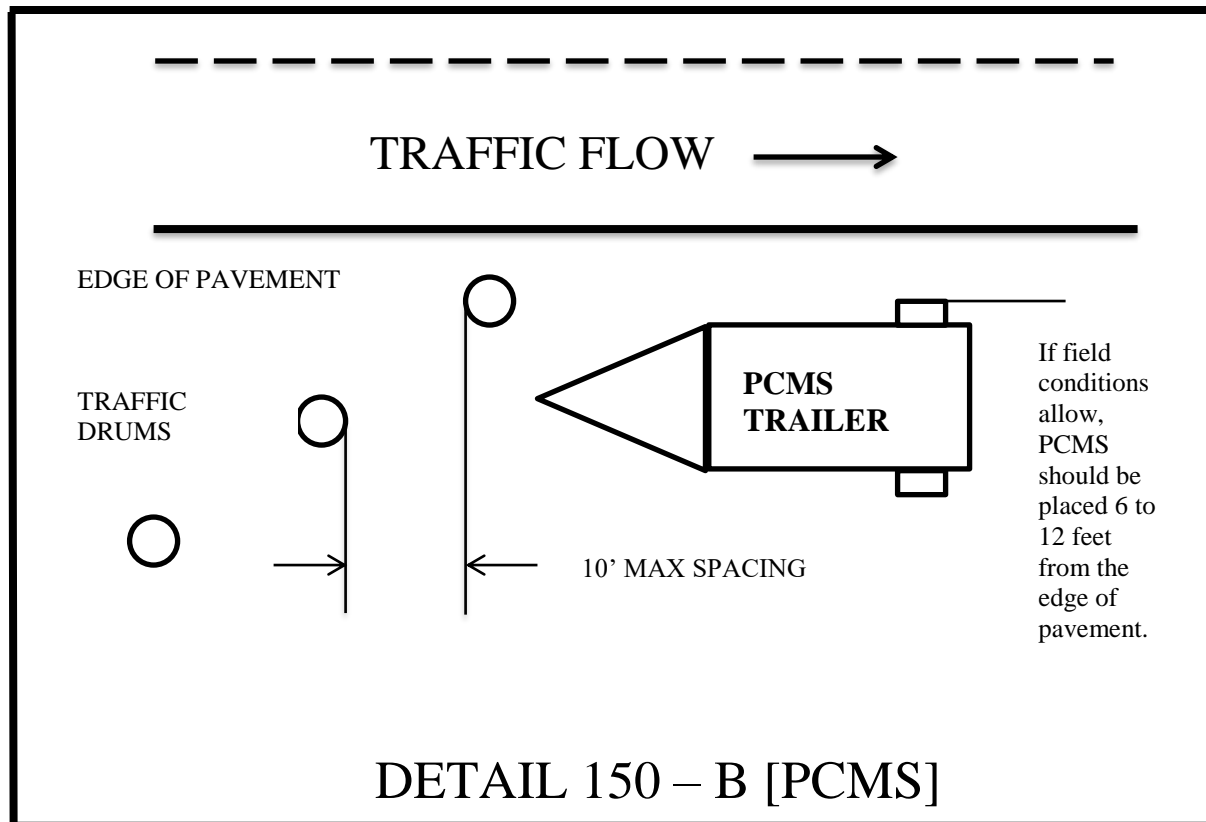
### **C. All Temporary Traffic Striping on Final Surface**

All temporary traffic striping applied to final surfaces which will not be overlaid or grinded may be 4 inches in width or as shown on the Plans.

## **150.2.09 Portable Changeable Message Signs**

When specified, a portable changeable message sign (PCMS) shall meet the minimum requirements of Section 632, MUTCD (6F.60) and be on QPL-82. The maximum amount of messages allowed to be flashed on one PCMS is two phases (flashes). The language and the timing of the messages shall comply with the MUTCD and Section 632. When used as an advanced device, the PCMS should typically be placed ahead of the construction activities. If the PCMS is used as a substitute for another device, then the requirements for the other device apply.

Any PCMS in use, which is not protected by positive barrier protection, shall be delineated by a minimum of three drums that meet the requirement of Subsection 150.2.04.B. The drum spacing shall not exceed a maximum of ten (10') feet as shown in Detail 150-B. When the PCMS is within twenty (20') feet of the opposing traffic flow, the trailing end of the PCMS shall be delineated with a minimum of three drums spaced in the same manner as the approach side of the PCMS.



When not in use, the PCMS shall be removed from the roadway, unless protected by positive barrier protection. If the PCMS is protected by positive barrier protection, the sign panel shall be turned away from traffic when not in use.

### 150.2.10 Portable Impact Attenuators

This work consists of the furnishing (including spare parts), installation, maintenance, relocation, reuse as required, and removal of Portable Impact Attenuator Units/Arrays.

Portable Impact Attenuator Unit/Arrays installation shall conform to the requirements of Section 648, Manufacturer's recommendations and "(Georgia Standard 4960 "Temporary Barrier (End Treatment Options)" and shall be installed at locations designated by the Engineer, and/or as shown on the Plans. When gating attenuators are used, the Contractor shall maintain the appropriate recovery area in accordance with the manufacturers' recommendations.

Generic sand/water loaded modules are prohibited. Manufacturers' sand/water loaded modules with specific arrays that have been NCHRP 350/MASH approved can be used in appropriate locations.

The test level of protection provided shall equal or exceed the speed limit. Test level 3 shall be used for forty-five (45) mph or above.

### 150.2.11 Portable Temporary Traffic Control Signals

The use of Portable Temporary Traffic Control Signals shall meet the following minimum requirements:

Only two-lane, two-way roadways will be allowed to utilize Portable Temporary Traffic Control Signals.



All portable traffic control signals shall meet the physical display and operational requirements of conventional traffic signals described in the MUTCD.

Each signal face shall have at least three lenses. The lenses shall be red, yellow, and green in color and shall give a circular type of indication. All lenses shall be twelve (12") inches nominal in diameter. A minimum of two signal faces shall face each direction of traffic. A minimum of one signal head shall be suspended over the roadway travel lane in a manner that will allow the bottom of the signal head housing to be not less than seventeen (17') feet above and not more than nineteen (19') feet above the pavement grade at the center of the travel lane. The second signal head may be located over the travel lane with the same height requirements or the second signal head may be located on the shoulder. When the signal head is located on the shoulder, the bottom of the signal head housing shall be at least eight (8') feet but not more than (15') feet above the pavement grade at the center of highway.

Advance warning signage and appropriate pavement markings shall be installed as part of the temporary signal operation.

The signals shall be operated in a manner consistent with traffic requirements. The signals may be operated in timed-mode or in a vehicle-actuated mode. The signals shall be interconnected in a manner to ensure that conflicting movements cannot occur. To ensure that the appropriate operating pattern, including timing is displayed to the traveling public, regular inspections, including the use of accurate timing devices shall be made by the WTCS. If, at any time, any part of the system fails to operate within these requirements then the use of the signal shall be suspended, and the appropriate flagging operation shall begin immediately.

The (WTCS) shall continuously monitor the portable traffic control signal to ensure compliance with the requirements for maintenance under the MUTCD. The signal shall be maintained in a manner consistent with the intention of the MUTCD, with emphasis on cleaning of the optical system. Timing changes shall be made only by the WTCS. The WTCS shall keep a written record of all timing changes.

The portable temporary traffic signal shall have two power sources and shall be capable of running for seven calendar days continuously.

The Contractor shall have an alternate temporary traffic control plan in the event of failure of the signal.

### **150.2.12 Raised Pavement Markers**

Raised pavement markers (RPMs) shall meet the requirements of Section 654 and QPL-76 .

### **150.2.13 Rumble Strips**

Rumble strips incorporated into the Work shall meet the requirements of Section 429 and the MUTCD. Existing rumble strips that are positioned in the traveled way to warn traffic of a stop condition shall be reinstalled prior to opening to traffic. Based on the following requirements:

Intermediate surfaces that will be in use for more than forty-five (45) calendar days shall have rumble strips reinstalled on the traveled way in the area of a stop condition. Non-refundable deductions in accordance with Subsection 150.7.01 will be assessed for any intermediate surface in place for greater than 45 days without rumble strips.

Rumble strips shall be installed on the final surface within fourteen (14) calendar days of the placement of the final surface in the area of the stop condition. Failure to install within fourteen (14) calendar days will result in assessment of non-refundable deductions in accordance with Subsection 150.7.01.

Prior to the removal of any rumble strips located in the travel lane, stop ahead (W3-1) warning signs shall be double indicated ahead of the stop condition. These warning signs shall be a minimum of 48 inches by 48 inches. These warning signs shall remain in place until the rumble strips have been reinstalled on the traveled way. Any existing warning signs for the stop ahead condition shall be removed or covered while the 48" X 48" (W3-1) signs are in place. When the

rumble strips have been reinstalled, these warning signs should be promptly removed and any existing signage placed back in service.

## 150.2.14 Temporary Barriers

### A. Design:

Temporary barriers shall meet the requirements of Sections 620. The lengths of advancement should be in accordance with Georgia Standard 4000W “Lengths of Advancement, Clear Zone Distances, and Fill Height Embankment”. The approach end of the taper should have 10:1 or flatter ground slope. Temporary barriers shall not be used as a channelization device. Their use is in accordance with MUTCD (6F.85).

### B. Application:

Temporary barriers shall be placed as required by the Plans, Standards, and as directed by the Engineer. When Temporary barrier is located twenty feet ( $\leq 20'$ ) or less from a travel lane, yellow reflectors shall be fixed to the top of the barrier at intervals not greater than forty feet ( $\leq 40'$ ) in the longitudinal section and twenty feet (20') in the taper section and shall be mounted approximately two inches (2") above the barrier. If both lanes of a two-lane two-way roadway are within twenty feet ( $\leq 20'$ ) or less of the barrier then the reflectors shall be installed for both directions of traffic.

The reflectors shall be one hundred (100) square inches (ASTM Type VII or VIII/ Type XI) reflective sheeting mounted on flat-sheet blanks. The reflectors shall be mounted approximately two inches above the top of the barrier. The reflectors shall be attached to the barrier with adhesive or by a drilled-in anchor type device. The reflectors shall not be attached to a post or board that is placed between the gaps in the barrier sections.

Approach end of Temporary barrier shall be protected according to Georgia Standard 4960 “Temporary Barrier (End Treatment Options)” or by a portable impact attenuator.

On interstates or other controlled access highways where lane shifts or crossovers cause opposing traffic to be separated by less than forty feet ( $<40'$ ), portable barrier should be used as a separator.

## 150.2.15 Temporary Guardrail Anchorage- Type 12

This work consists of the furnishing, installation, maintenance and removal of Temporary Guardrail Anchorage- Type 12 used for Portable Barrier or temporary guardrail end treatment. Materials used in the Temporary Guardrail Anchorage- Type 12 shall meet the requirements of Section 641 of the Specifications and current Georgia Standards and may be new or used. Materials salvaged from the Project, which meet the requirements of Standards, may be utilized if available. The use of any salvaged materials will require prior approval of the Engineer.

Installation of the Temporary Guardrail Anchorage- Type 12 shall conform to the requirements of the Plans, current Georgia Standards and Section 641 of the Specifications. Installation shall also include sufficient additional guardrail and appurtenances to effect the transition and connection to Temporary Concrete Barrier as required by the details in Georgia Standard 4960 “Temporary Barrier (End Treatment Options)”.

## 150.2.16 Temporary Traffic Signals

Temporary traffic signals shall meet the requirements of Section 647 and the MUTCD.

## 150.3 Construction Requirements

### 150.3.01 General

#### A. Implementation Requirements

No work shall be started on any project phase until the appropriate traffic control devices have been placed in accordance with the Project requirements. Changes to traffic flow shall not commence unless all labor, materials, and equipment necessary to make the changes are available on the Project.

When any shift or change is made to the location of traffic or to the flow patterns of traffic, including pedestrian traffic, the permanent safety features shall be installed and fully operational before making the change. If staging or site conditions prevent the installation of permanent features, then the equivalent interim devices shall be utilized. This work shall also include any necessary removal and reinstallation of guardrail panels to achieve the required panel lap to accommodate the appropriate shift and traffic flow including the final traffic flow configuration. The cost of performing this work shall be included in Traffic Control-Lump Sum.

Any section of the Work that is on a new location shall have all permanent safety features installed and fully operational before the Work is opened to traffic. Safety features shall include, but are not limited to the following items:

Guardrails including anchors and delineation with properly lapped panels

- 1) Cable Barrier
- 2) Impact attenuators
- 3) Traffic signals
- 4) Warning devices
- 5) Pavement markings including words, symbols, stop bars, and crosswalks
- 6) Roadway signs including regulatory, warning, and guide

Outdoor lighting shall be considered as a safety feature for welcome centers, rest areas, and weigh station projects. For typical roadway type projects, new street lighting is not considered a safety feature, unless specifically noted in the Plans or in the special conditions.

#### B. Maintenance of Traffic Control Devices

Traffic control devices shall be in acceptable condition when first erected on the Project and shall be maintained in accordance with Section 104 throughout the construction period. All unacceptable traffic control devices shall be replaced within twenty-four (24) hours. When not in use, all traffic control devices shall be removed, placed or covered so as not to be visible to traffic. All construction warning signs shall be removed within seven (7) calendar days after time charges are stopped or pay items are complete. If traffic control devices are left in place for more than ten (10) calendar days after completion of the Work, the Department shall have the right to remove such devices, claim possession thereof, and deduct the cost of such removal from any monies due, or which may become due, from the Contractor.

#### C. Traffic Interruption Restrictions

The Department reserves the right to restrict construction operations when, in the opinion of the Engineer, the continuance of the Work would seriously hinder traffic flow, be needlessly disruptive or unnecessarily inconvenience the traveling public. The Contractor shall suspend and/or reschedule any work when the Engineer deems that conditions are unfavorable for continuing the Work.

Advanced notification requirements to the Contractor to suspend work will be according to the events and the time restrictions outlined below:

Incident management - No advanced notice required

Threatening/Inclement weather - twenty-four (24) hours

Holiday, sporting events, unfavorable conditions - Three (3) calendar days

If the Work is suspended, the Contractor may submit a request for additional Contract time as allowed under Section 108. The Department will review the request and may grant additional Contract time as justified by the impact to the Contractor's schedule. Compensation for loss of productivity, rescheduling of crews, rental of equipment or delays to the Contractor's schedule will not be considered for payment. Additional Contract time will be the only consideration granted to the Contractor.

## **D. Work Zone Restrictions**

### **1. Interstate**

The Contractor should not simultaneously perform work on both the inside shoulder and outside shoulder on either direction of traffic flow when the Work is within 12 feet of the travel-way. Shoulders can be alternated if areas are separated by at least one-half mile of distance.

### **2. Non-Interstate Divided Highways**

The Contractor should not simultaneously perform work on both the inside shoulder and outside shoulder on either direction of traffic flow when the Work is within 12 feet of the travel-way. Shoulders can be alternated if areas are separated by at least one-half mile distance in rural areas or at least 500 feet of distance in urban areas.

### **3. Non-Divided Highways**

- a.** The Contractor should not simultaneously perform work on opposite sides of the roadway when the Work is within 12 feet of the travel-way. Shoulders can be alternated if areas are separated by at least one-half mile of distance in rural areas or at least 500 feet of distance in urban areas.
- b.** On two-lane projects where full width sections of the existing subgrade, base or surfacing are to be removed, and new base, subgrade, or surfacing are to be constructed, the Contractor should maintain one-lane of traffic through the construction area by removing and replacing the undesirable material for half the width of the existing roadway at a time. Replacement should be made such that paving is completed to the level of the existing pavement in the adjacent lane by the end of the workday or before opening all the roadway to traffic.

## **E. Work Zone Geometric Restrictions**

There should be no reduction in the total number of available traffic lanes including turning lanes that existed prior to construction, except as specifically allowed by the Contract and as approved by the Engineer.

Travel lane Clearances: All portions of the Work should maintain the following minimum requirements:

Horizontal: The combined dimensions of the paved shoulder and the roadway surface remaining outside the Work Zone should be no less than sixteen feet ( $\geq 16'$ ) in width at any location.

Vertical: The overhead clearance should not be reduced to less than fifteen feet ( $\geq 15'$ ) at any location.

The restrictions above apply to all shifts, lane closures, on-site detours and off-site detours whether shown in the Contract or proposed by the Contractor. It shall be the responsibility of the Contractor to verify that these minimum requirements have been met before proceeding with any phase of the Work. Two-lane, two-way roadways may have temporary horizontal restrictions of less than sixteen feet ( $\geq 16'$ ) during flagging operations. The minimum horizontal clearance should be restored before the flagging operation is removed.

## **F. Clear Zone**

At the end of the workday, all equipment, materials, and TTC devices not in use should be moved out of the clear zone or behind positive protection. The clear zone is defined by Georgia Standard 4000W “Lengths of Advancement, Clear Zone Distances, Fill Height Embankment”. For urban roadway with curb, the minimum set back is six (6') feet from the curb face. If stored behind positive protection, proper lengths of advancement should be maintained. If stored behind guardrail the items shall be a minimum five feet ( $\geq 5'$ ) from the face of the guardrail and not in the recovery zone of the anchor.

The WTCS shall monitor the Work to ensure that all the rocks, boulders, construction debris, stockpiled materials, equipment, tools and other potential hazards are kept clear of the travel lane.

## **G. Milled Surface Restrictions**

Unless modified by the special conditions, a milled surface on any asphaltic concrete surface shall not be allowed to remain open to traffic for a period of time that exceeds thirty (> 30) calendar days.

## **H. Construction Vehicles**

The Contractor's vehicles shall travel in the direction of normal roadway traffic and shall not reverse direction except at intersections, interchanges, or approved temporary crossings. The Contractor may submit a plan requesting that construction traffic be allowed to travel in the opposite direction of normal traffic when it would be desirable to modify traffic patterns to accommodate specific construction activities.

Prior approval of the Engineer shall be obtained before any construction traffic is allowed to travel in a reverse direction. If the Contractor's submittal is approved, the construction traffic shall be separated from normal traffic by appropriate traffic control devices.

The parking of Contractor's and/or workers' personal vehicles within the work area or adjacent to traffic is prohibited. It shall be the responsibility of the WTCS to ensure that any vehicle present at the worksite is necessary for the completion of the Work.

## **I. Environmental Impacts**

The Contractor shall ensure that dust, mud, and other debris from construction activities do not interfere with normal traffic operations or adjacent properties.

## **J. Existing Street Lights**

Existing street lighting shall remain lighted as long as practical and until removal is approved by the Engineer.

## **K. Nighttime Work Lighting**

Adequate temporary lighting shall be provided at all nighttime work sites where workers will be immediately adjacent to traffic.

## **L. Removal/Reinstallation of Miscellaneous Items**

In the prosecution of the Work, if it becomes necessary to remove any existing signs, markers, guardrail, etc. not covered by specific pay item, they shall be removed, stored and reinstalled, when directed by the Engineer, to line and grade, and in the same condition as when removed.

## 150.3.02 Personnel – Worker Safety Apparel

In accordance with MUTCD (6D.03) all workers, within the right-of-way who are exposed either to traffic or to work vehicles and construction equipment within the TTC zone, shall wear high-visibility safety apparel that meets the Performance Class 2 or better.

## 150.3.03 Signage - General

### A. Signing Requirements of the Temporary Traffic Control (TTC) Plan

When existing regulatory, warning or guide signs are required for proper traffic and pedestrian control, the Contractor shall maintain these signs in accordance with the TTC plan. The Contractor shall review the status of all existing signs, interim signs added to the Work, and permanent sign installations that are part of the work to eliminate any conflicting or non-applicable signage in the TTC Plan. The Contractor's review of all signs in the TTC Plan shall establish compliance with the requirements of the MUTCD and Section 150. Any conflicts shall be reported to the Engineer immediately and the WTCS shall take the necessary measures to eliminate the conflict.

The Contractor shall make every effort to eliminate the use of interim signs as soon as the Work allows for the installation of permanent signs.

All existing illuminated signs shall remain lighted and be maintained by the Contractor.

Existing street name signs shall be maintained at street intersections.

Refer to section **150.2.05.B. Sign Blanks and Panels** for size and material requirements.

### B. Conflicting or Non-Applicable Signs

Any sign(s) or portions of a sign(s) that are not applicable to the TTC plan shall be covered so as not to be visible to traffic or shall be removed from the roadway when not in use. The WTCS shall review all traffic shifts and changes in the traffic patterns to ensure that all conflicting signs have been removed. The review shall confirm that the highest priority signs have been installed and that signs of lesser significance are not interfering with the visibility of the high priority signs. High priority signs include signs for road closures, shifts, detours, lane closures and curves. Any signs, such as speed zones and speed limits, passing zones, littering fines and litter pick up, that reference activities that are not applicable due to the presence of the Work shall be removed, stored and reinstalled when the Work is completed.

Failure to promptly eliminate conflicting or non-applicable signs shall be considered as non-performance under Subsection 150.7.01.

### C. Removal of Existing Signs and Supports

The Contractor shall not remove any existing signs and supports without prior approval from the Engineer. All existing signs and supports which are to be removed shall be stored and protected if this material will be required later in the Work as part of the TTC plan. If the signs are not to be utilized in the Work, then the signs will become the property of the Contractor unless otherwise specified in the Contract documents.

### D. Interim Guide, Warning and Regulatory Signs

Interim guide, warning, or regulatory signs required to direct traffic and pedestrians shall be furnished, installed, reused, and maintained by the Contractor in accordance with the MUTCD, the Plans, Special Provisions, Special Conditions, or as directed by the Engineer. These signs shall remain the property of the Contractor. When the signs are used for long-term stationary operations as defined MUTCD (6G.02), the bottom of all interim signs shall be mounted seven feet (7') to eight feet (8') above the level of the pavement edge or sidewalk. The signs offset should

be six feet (6') to twelve feet (12') from the pavement edge or two feet ( $\geq 2'$ ) minimum for sidewalks according to MUTCD (6F-1). Special Conditions under Subsection 150.6 may modify this requirement.

Portable signs may be used when the duration of the Work is less than three (3) days or as allowed by the special conditions in Subsection 150.6. Portable interim signs shall be mounted a minimum of one foot ( $\leq 1'$ ) above the level of the pavement edge for directional traffic of two (2) lanes or less and at seven feet (7') for directional traffic of three (3) or more lanes according to MUTCD (6F-2). Signs shall be mounted at the height recommended by the manufacturer's crashworthy testing requirements.

All sign blanks shall be rigid whether the sign is mounted as a portable sign, on a Type III barricade or as a permanent mount height sign. Utilities and their subcontractors working in the project limits, and not included in the project Contract, may use non-rigid signs.

## **E. Existing Special Guide Signs**

Existing special guide signs on the Project shall be maintained until conditions require a change in location or legend content. When change is required, existing signs shall be modified and continued in use if the required modification can be made within existing sign borders using design requirements (legend, letter size, spacing, border, etc.) equal to that of the existing signs, or of Subsection 150.3.E.2. Differing legend designs shall not be mixed in the same sign.

### **1. Special Guide Signs**

Special guide signs are those expressway or freeway guide signs that are designed with message content (legend) that applies to a particular roadway location. When an existing special guide sign is in conflict with work to be performed, the Contractor shall remove the conflicting sign and reset it in a new, non-conflicting location which has been approved by the Engineer.

### **2. Interim Special Guide Signs**

When it is not possible to utilize existing signs, either in place or relocated, the Contractor shall furnish, erect, maintain, modify, relocate, and remove new interim special guide signs in accordance with the Plans or as directed by the Engineer. Interim special guide signs that may be required in addition to, or a replacement for, existing expressway and freeway (interstate) signs shall be designed and fabricated in compliance with the minimum requirements for guide signing contained in Part 2E "Guide Signs – Freeway and Expressway" of the MUTCD. All interstate shields on these signs shall be 48 inches and 60 inches for two-numeral and three-numeral routes, respectively.

The road name of the exit or route shield shall be placed on the exit gore sign.

### **3. Interim Overhead Guide Sign Structures**

Interim overhead special guide sign structures are not required to be lighted unless specifically required by the Plans. If lighting is required, the sign shall be lighted as soon as erected and shall remain lighted, during the hours of darkness, until the interim sign is no longer required. The Contractor shall notify the Power Company at least thirty (30) days prior to desire connection to the power source.

### **4. Permanent Special Guide Signs**

The installation of new permanent special guide signs and the permanent modification or resetting of existing special guide signs, when included in the Contract, shall be accomplished as soon as practical to minimize the use of interim special guide signs. If lighting is required by the Plans, all new permanent overhead special guide signs shall be lighted as soon as erected.

## **F. Stop Sign Regulated Intersections**

For intersections that utilize stop sign(s) to control the flow of traffic and to restrict the movement of vehicles, the stop sign(s) shall be maintained for the duration of the Work or until such time that the stop condition is eliminated or until an interim or permanent traffic signal can be installed to provide proper traffic control. The traffic signal shall be installed and properly functioning before the removal of the existing stop sign(s) is permitted. If the existing intersection is enhanced traffic control features, such as stop lines, double indicated stop signs, oversized signs, advanced warning stop ahead signs, rumble strips on the approaches or flashing beacons located overhead or on the shoulders then these features shall be maintained for the duration of the project or until the permanent traffic control plan has been implemented.

Whenever the staging of the Work requires that the traveled way be relocated or realigned the Contractor shall reinstall all enhanced traffic control features noted above on the newly constructed sections of the Work. The cost of relocating the stop lines, stop signs, advanced warning signs, the rumble strips and the flashing beacons shall be included in the price bid for Traffic Control - Lump Sum unless individual pay items are included in the Contract for rumble strips and/or flashing beacons. When pay items are included in the Contract for rumble strips or flashing beacons then these items will be paid per each.

When staging requires the relocation or realignment of an existing stop condition, it may be necessary to consider the addition of enhanced traffic control features even though none existed at the original location. Horizontal and vertical alignment changes at a new location may have decreased or restricted sight distance or the stop condition may occur sooner than in the previous alignment. If these conditions occur, then the Engineer and/or the WTCS should consider additional measures to enhance the motorist's awareness of the changes even though the staging plans may not address enhanced features. Stop signs should be a minimum of 36 inches for interim situations. The use of 48 inch stop signs may be warranted under project specific conditions. Flags may be used on interim/permanent stop signs that are mounted at seven (7') feet in height for a short duration in order to direct additional attention to a new or relocated stop sign(s). Flags should not be used for durations exceeding two weeks unless unusual or site specific conditions warrant a longer period of time. The use of Type "A" flashing red light(s) attached to the stop sign(s) may be appropriate during the same period that the flags are in use to increase attention.

The use of rumble strips and/or PCMS may be considered. The use of new rumble strips, where none previously existed, shall have the prior approval of District Traffic Operations before being included as part of the temporary traffic control plan. The message(s) displayed on any PCMS shall have the prior approval of the Engineer and the message(s) shall be included as part of the TTC plan for the interim staging.

The placement of any additional interim ground mounted signs and posts or stop lines shall be considered as incidental to the price bid for Traffic Control - Lump Sum. The installation of rumble strips, flashing beacons or the use of Portable Changeable Message Signs (PCMS) shall be considered as Extra Work unless pay items are included in the Contract.

## **G. Low Shoulder Signage**

### **1. Low Shoulder for Construction/Reconstruction/Resurfacing Projects**

"Low Shoulder" (W8-9) signs shall be erected when a difference in elevation less than four (< 4') feet from the traveled way, exceeds one inch (> 1") but does not exceed three inches ( $\leq 3$ ") between the travel lane and any type of shoulder.

The spacing of the signs shall not exceed one (1) mile and the signs shall be placed immediately past each crossroad intersection. The "Low Shoulder" signs shall remain in place until the difference in elevation is eliminated and the shoulder has been dressed and permanently grassed for a minimum of thirty (30) calendar days. These signs shall be furnished, installed, maintained and removed by the Contractor as part of Traffic Control-Lump Sum. These signs shall be fluorescent orange with black borders.

### **2. Shoulder Drop-Off for Construction/Reconstruction/Resurfacing Project**



“Shoulder Drop-Off” (W8-17) signs shall be used when a difference in elevation, less than four feet (< 4’) from the traveled way, exceeds three inches (> 3”) and is not protected by positive barrier protection. These warning signs shall be placed in advance of the drop-off.

The spacing of the signs shall not exceed one (1) mile and the signs shall be placed immediately past each crossroad intersection. The “Shoulder Drop-Off” signs shall remain in place until the difference in elevation is eliminated and the shoulder has been dressed and permanently grassed for a minimum of thirty (30) calendar days. These signs shall be furnished, installed, maintained, and removed by the Contractor as part of Traffic Control-Lump Sum. These signs shall be black borders on fluorescent orange background.

## **H. Bump Signage**

A bump sign (W8-1) shall be utilized when a transverse joint in the pavement structure has a vertical difference in elevation of three quarters ( $\geq 3/4$ ) of an inch or greater in depth with no horizontal taper to ramp the traffic from one elevation to the other. This condition typically occurs at approach slabs during pavement milling operations and at transverse joints in asphaltic pavement lifts. Other conditions include utility and storm drainage repairs that require concrete placement for patching and/or steel plating.

The W8-1 sign shall be placed sufficiently in advance to warn the motorist of the condition.

## **I. Sign Visibility**

All existing, interim and new permanent signs shall be installed to be completely visible and legible for an advance distance in compliance with the MUTCD. Any clearing required for maintaining the line of sight to existing, interim or permanent signs shall be done as part of the requirements of the TTC plan. The clearing shall include any advance warning signs, both interim and permanent, that are installed as a part of the Work including advance warning signs that are installed outside the limits of the project. Limbs, brush, construction equipment and materials shall be kept clear of the driver’s line of sight to all signs that are part of the TTC plan.

## **150.3.04 Advance Warning Signs**

### **A. Project Signs - All Type of Highways**

Advance warning signs shall be placed ahead of the work area in accordance with Part 6 of the MUTCD and unless noted below shall include a series of at least three advance road work (W20-1) signs placed at the termini of the project. The series shall have the legend ROAD WORK (1500 FEET, 1000 FEET, AND 500 FEET).

At grade intersecting roadways and on-ramps shall be signed with a minimum of one ROAD WORK AHEAD sign.

When work terminates at a “T” intersection, a minimum of one “ROAD WORK AHEAD” sign shall be placed in advance of the intersection and one “END ROAD WORK” sign shall be placed at the termination end of the intersection. Field conditions may require the use of additional warning signage.

#### **1. State Routes**

Advanced Warning Signs on State Routes shall be a minimum dimension of forty-eight inches by forty-eight inches (48” x 48”). When a State Route intersects a project which consists of adding travel lanes, reconstructing an existing roadway or new location work, the State Route approaches shall have a minimum of three (W20-1) advanced warning signs (1500 ft., 1000 ft., 500 ft.). The termination end of an intersecting State Route shall have END ROAD WORK signage.

The W20-1 signs shall be placed at the termini of the project or sufficiently in advance of the termini to allow for lane shifts, lane closures and other activities which may also require advanced warning signs. The advanced warning signs for the project should not overlap with the advanced warning signs for lane shifts, lane closures, etc.

The length of a work zone should be held to the minimum length required to accomplish the Work. If a project has multiple individual worksites within the overall limits of the project, each site should be signed individually if the advance warning signs for each site can be installed without overlapping an adjacent worksite. As soon as the work is completed at any individual site, the warning signs shall be removed from that site.

Project mileage indicated on the G20-1 sign shall be the actual project mileage rounded up to the nearest whole mile. Projects less than two (< 2) miles in length or individual worksites that are part of a multiple worksite project may delete this sign. The G20-1 sign shall be forty-eight inches by twenty-four inches (48" x 24") and the G20-2 sign shall be forty-eight inches by twenty-four inches (48" x 24").

## 2. Interstate, Limited Access and Multilane Divided Highways

In addition to the W20-1 signs required at 500 ft., 1000 ft. and 1500 ft., multi-lane divided highways shall also have additional advanced warning signs installed with the legend "ROAD WORK (2 MILES, 1 MILE and 1/2 MILE). All construction warning signs on divided highways shall be double indicated (i.e., on the left and right sides of the roadway.) If the use of the half (1/2) mile, one (1) mile and two (2) mile advanced warning signs cause an overlap with other work or do not benefit field conditions then the Engineer may review the use of these signs and eliminate their installation. When the posted speed limit is fifty ( $\leq$  50) mph or less, the one-half (1/2) mile, one (1) mile and two (2) mile signs should be eliminated especially in urban areas.

The W20-1 advance warning signs for ROAD WORK 500 FEET; 1000 FEET; and 1500 FEET shall be temporarily covered when work involving the advanced warning signs for lane shifts and lane closures overlap these signs. The ROAD WORK 1/2 MILE, ROAD WORK 1 MILE, and ROAD WORK 2 MILES shall be in place when the 500, 1000 and 1500 feet signs are temporarily covered.

When the Temporary Traffic Control zone already has advanced warning (W20-1) signs installed the W20-1 signs required for lane closures under Standard 9106 should be eliminated.

## 3. Ramp Work on Limited Access Highways

The work zone shall not be signed for the entire length of the mainline of a limited access highway when only short individual worksites, interchange or ramp work is being performed.

When work is restricted to ramp reconstruction or widening activities, the advance warning signs on the mainline section of the limited access highway shall be limited to the use of portable advance warning signs. These portable advance warning signs shall only be utilized when work activity is within the gore point of the ramp and the mainline traveled way or work is active in the acceleration/deceleration lane adjacent to the mainline traveled way. Portable advance warning signs (W20-1: 1500 ft. /1000 ft. /500 ft.) shall be installed on the traveled way of the limited access highway when the above conditions are present. The advance warning signs shall be installed only in one direction where work is active. All portable signs shall be double indicated. When work is not active, the ramp work shall be advanced warned by the use of a single forty-eight inches by forty-eight inches (48" x 48") "ROAD WORK AHEAD" (W20-1) with an "ON RAMP" plaque (W13-4p) sign along the right shoulder of the mainline traveled way prior to the beginning of the taper for the deceleration lane. Differences in elevation shall be in compliance with the requirements of [Subsection 150.3.11](#) prior to the removal of the portable (W20-1) advanced warning signs from the mainline.

## B. Highway Work Zone

In accordance with Georgia Code, O.C.G.A. § 40-6-188, all sections or segments of the roadway under construction or reconstruction shall be signed as a Highway Work Zone except non-state highway two-lane two-way resurfacing projects. Two conditions can be applied to a Highway Work Zone. Condition 1 is when no reduction in the existing speed limit is required. Condition 2 is when worksite conditions require a reduction of the speed limit through the designated Work Zone. Properly marking a Highway Work Zone shall include the following minimum requirements:

### 1. No Reduction in the Existing Posted Speed Limit in Highway Work Zone

- a. Signage shall be posted at the beginning point of the Highway Work Zone warning the traveling public that increased penalties for speeding violations are in effect. The beginning point of Highway Work Zone is at the project limits, start of work zone, or at the start of the first taper. The HWZ-2 sign shall be placed a minimum of 600 feet in advance of the Highway Work Zone and shall not be placed more than 1000 feet in advance of the Work Zone. If no speed reduction is required, it is recommended that the HWZ-2 be placed at 750 feet from the work area between the ROAD WORK 500 FT. and the ROAD WORK 1000 FT. signs.

HWZ-2 signs shall be placed at intervals not to exceed one mile for the length of the project. HWZ-2 signs should be placed on the mainline after all major intersections except State Routes. State Routes shall be signed as per the requirements for intersecting roadways below.

- b. The existing speed limit shall be posted at the beginning of the Work Zone. Existing Speed Limit signs (R2-1) shall be maintained.
- c. Intersecting state routes shall be signed in advance of each intersection with the Work Zone with an HWZ-2 sign to warn motorists that increased fines are in effect. All other intersecting roadways that enter into a designated Highway Work Zone may be signed in advance of each intersection with the Work Zone. When construction equipment and personnel are present in the intersection on the mainline of a multi-lane roadway, the intersecting side roads shall be signed in advance with HWZ-2 signs. As soon as the work operation clears the intersection, the signage may be removed.
- d. Sign HWZ-3 shall be posted at the end of the Highway Work Zone indicating the end of the zone and indicating that increased penalties for speeding violations are no longer in effect.
- e. When a designated Highway Work Zone is no longer necessary, all signs shall be removed immediately.

## 2. Reducing the Speed Limit in a Highway Work Zone

Highway Work Zone signs shall be posted as required in Condition 1 above and in accordance with Detail 150-C.

A "Reduce Speed Limit Ahead" (W3-5) sign shall be posted 600 feet prior to the reduced speed limit.

Then a "Speed Limit" signage (R2-1) for the reduced speed limit shall be erected at the beginning of the Work Zone. Additional signs shall be placed at whichever is least:

- a. on non-interstate roads after every junction with a numbered (state or U.S.) route.
- b. on interstates entrance ramp 1,500 feet from the end of the entrance taper. Detail 150-D
- c. on non-interstate and interstate, a maximum spacing of no greater than one (1) mile apart.

On multi-lane divided highways, the speed limit signs shall be double indicated when the reduced speed is in use.

Additional signs may be necessary to adjust for actual field conditions.

For limited access (interstate) highways and controlled access multi-lane divided highways, the posted speed limit shall be reduced as required below.

When any one or more of the following conditions exist and the existing speed limit is sixty-five (65) mph or seventy (70) mph, the speed limit shall be reduced by ten (10) mph. If the existing speed limit is sixty (60) mph, the speed limit should be reduced by five (5) mph. If the existing speed limit is fifty-five ( $\leq 55$ ) mph or less, the Contractor can only reduce the speed limit with the prior approval of the Engineer. The reduction in the speed limit shall be no greater than ten (10) mph:

- a) Lane closure(s) of any type and any duration.

- b) The difference in elevation exceeds two inches (> 2") adjacent to a travel lane as shown in Subsection 150.3.11, Detail 150-E, Detail 150-F.
- c) Any areas where equipment or workers are within ten feet (10') of a travel lane.
- d) Temporary portable concrete barriers located less than two feet (2') from the traveled way.
- e) As directed by the Engineer for conditions distinctive to this project.

When the above conditions are not present, the speed limit shall be immediately returned to the existing posted speed limit. A speed reduction shall not be put in place for the entire length of the project unless conditions warranting the speed reduction are present for the entire project length. All existing speed limit signs within the temporary speed reduction zone shall be covered or removed while the temporary reduction in the speed limit is in effect. All signs shall be erected to comply with the minimum requirements of the MUTCD.

At a minimum, the following records shall be kept by the WTCS:

- a) Identify the need for the reduction.
- b) Record the time of the installation and removal of the temporary reduction.
- c) Fully describe the location and limits of the reduced speed zone.
- d) Document any accident that occurs during the time of the reduction.

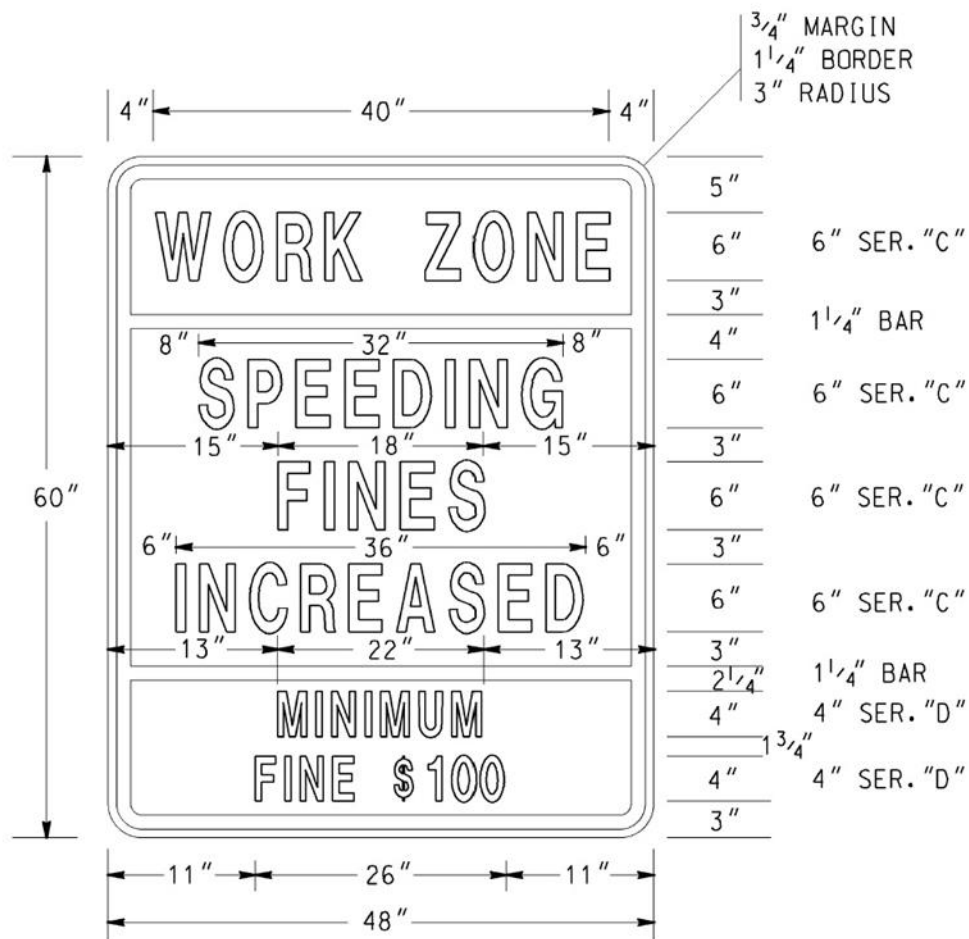
A copy of the weekly records for reduced speed zones shall be submitted to the Engineer.

When a pilot vehicle is used on a two-lane two-way roadway, the speed limit should not be reduced. For special conditions specific to the Work, on two-lane two-way roadways or multi-lane highways, the Contractor may reduce the posted speed limit with the prior approval of the Engineer.

### 3. Variable Speed Limit Zones

Projects that are within or extends into variable speed limit zones shall be posted according to condition 1 with HWZ-1, HWZ-2, and HWZ-3 signs. No additional "speed limit" signs, (R2-1), shall be posted. Any reduction or increase in speed limits will be controlled by the normal operation of the variable speed limit system.

Upon request, a maximum speed limit of fifty-five (55) mph **may** be set for the project limits.



HWZ-2

COLORS

TOP PANEL

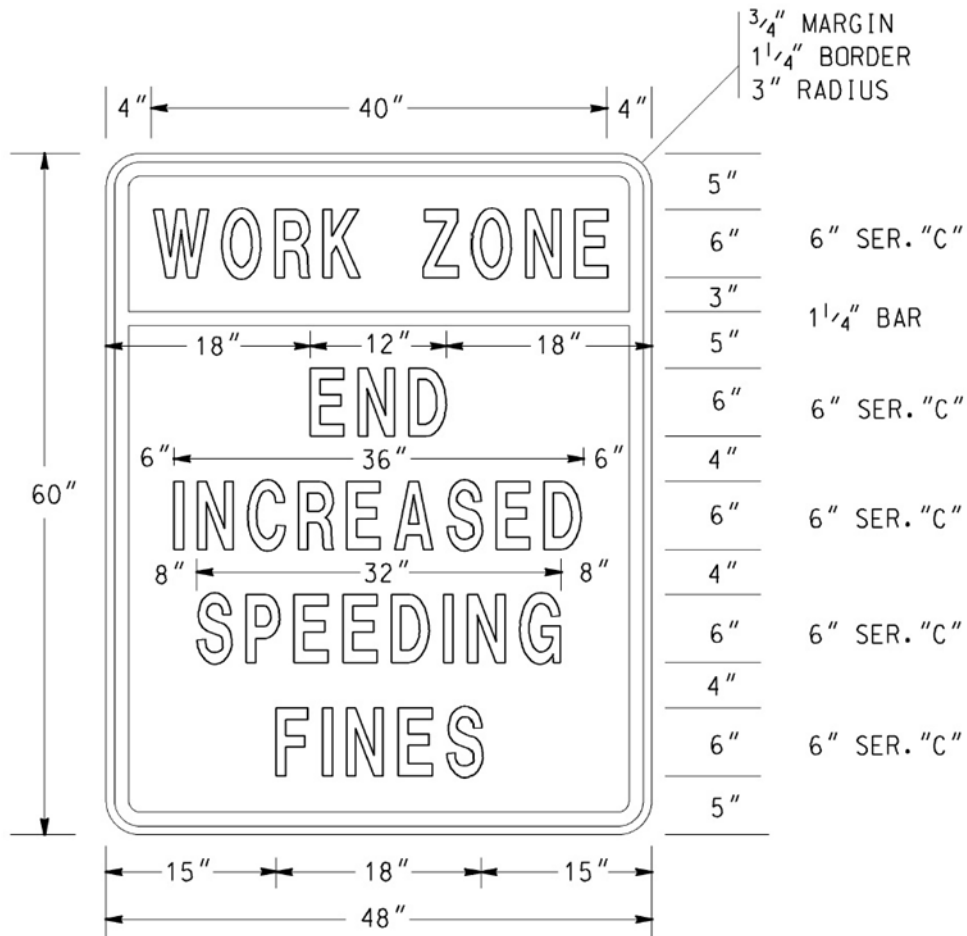
LEGEND & BORDER - BLACK (NON-REFL)  
 BACKGROUND - FLUORESENT ORANGE

MIDDLE & BOTTOM PANELS

LEGEND & BORDER - BLACK  
 BACKGROUND - WHITE

NOTES:

1. ALL HWZ-2 SIGN PANELS SHALL BE RIGID.
2. THE SIZE OF THE HWZ-2 SIGN SHALL NOT BE REDUCED FOR USE ON TWO-LANE ROADWAYS.



HWZ-3

COLORS

TOP PANEL

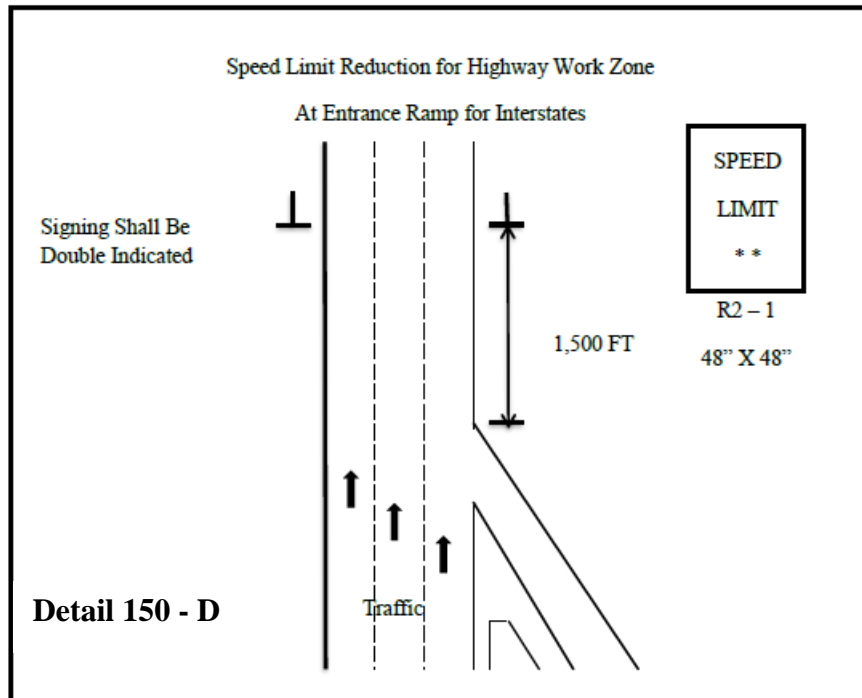
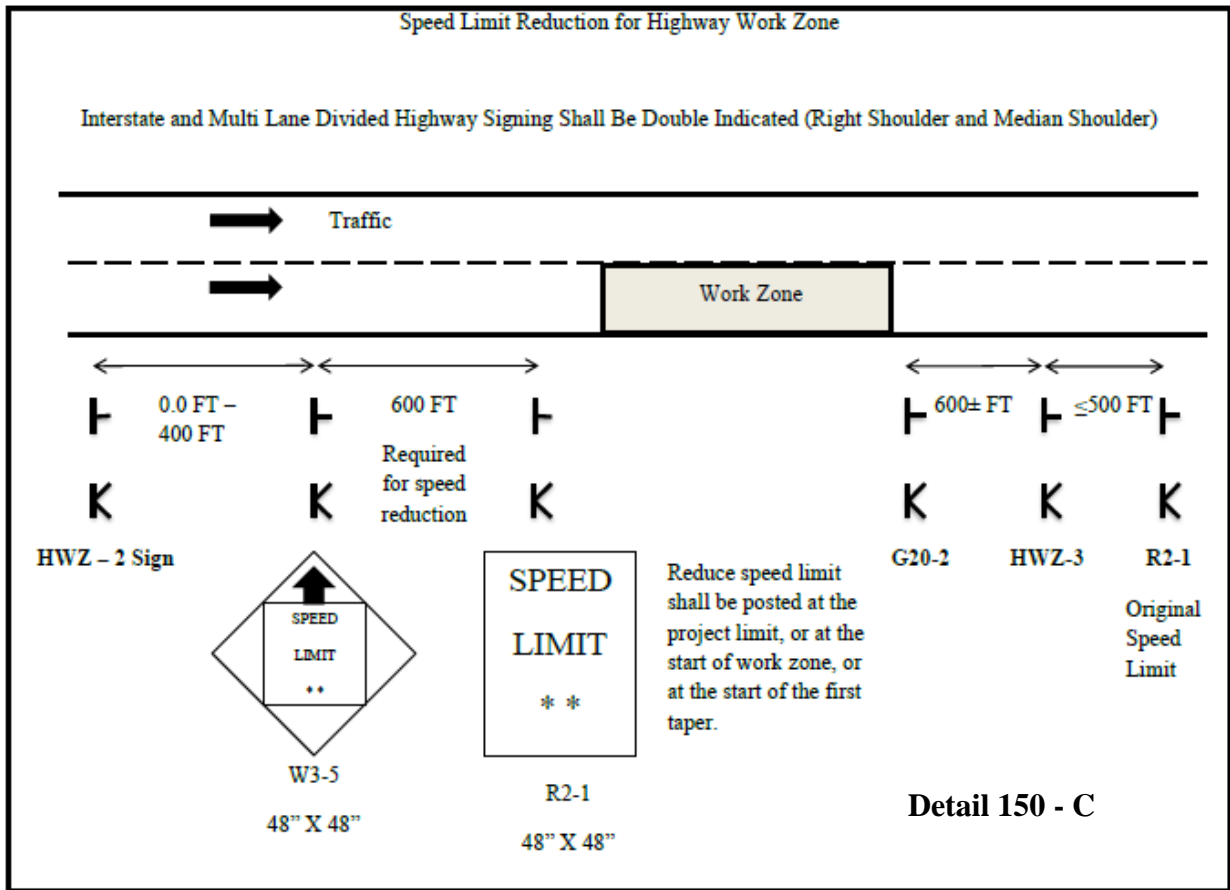
LEGEND & BORDER - BLACK (NON-REFL)  
 BACKGROUND - FLUORESENT ORANGE

BOTTOM PANEL

LEGEND & BORDER - BLACK (NON-REFL)  
 BACKGROUND - WHITE

NOTES:

1. ALL HWZ-3 SIGN PANELS SHALL BE RIGID.
2. THE SIZE OF THE HWZ-3 SIGN SHALL NOT BE REDUCED FOR USE ON TWO-LANE ROADWAYS.



## C. Installation/Removal of Work Area Signage

No payment will be made for Traffic Control-Lump Sum until the Work has actually started on the Project. The installation of traffic control signage does not qualify as the start of work. Advanced warning signs shall not be installed until the actual beginning of work activities. Any permanent mount height signs installed as the work is preparing to start shall be covered until all signs are installed unless all signs are installed within seven ( $\leq 7$ ) calendar days after beginning installation.

All temporary traffic control devices shall be removed as soon as practical when these devices are no longer needed. When work is suspended for short periods of time, temporary traffic control devices that are no longer appropriate, shall be removed or covered.

All construction warning signs shall be removed within seven ( $\leq 7$ ) calendar days after time charges are stopped or pay items are complete. If traffic control devices are left in place for more than ten ( $> 10$ ) calendar days after completion of the Work, the Department shall have the right to remove such devices, claim possession thereof, and deduct the cost of such removal from any monies due, or which may become due, the Contractor.

CORRECTIVE LIST WORK: Portable signs shall be utilized to accomplish the completion of all corrective list items, if the corrective list is the only work being performed. The portable signs shall be removed daily. All permanent mount height signs shall be removed prior to the beginning of the corrective list only work, except "Low/Soft Shoulder" signs and any signs that have the prior written approval of the Engineer to remain in place while the corrective list work is in progress.

Failure to promptly remove the construction warning signs within the seven (7) calendar days after the completion of the Work or failure to remove or cover signs when work is suspended for short periods of time shall be considered as non-performance under Subsection 150.7.01.

## 150.3.05 Shoulder/Lane Closures

### A. Approval/Restrictions

All shoulder closures and lane closures of any type or duration shall have the prior approval of the Engineer.

#### 1. Closure Length

The length of a shoulder closure and a lane closure shall not exceed two (2) miles in length excluding the length of the tapers unless the prior approval of the Engineer has been obtained. The Engineer may extend the length of the closure based upon field conditions; however, the length of a work zone should be held to the minimum length required to accomplish the Work. Shoulder closure and Lane Closures shall not be spaced closer than one mile. The advanced warning signs for the Project should not overlap with the advanced warning signs for lane shifts, lane closures, etc.

#### 2. Duration

The first (7) calendar days in an Urban area and the first three (3) calendar days in a Rural area of any lane closure shall be signed and marked as per Georgia Standard 9106 "Traffic Control Detail for Lane Closure on Multi-Lane Divided Highway" or Georgia Standard 9107 "Traffic Control Detail for Lane Closure on Multi-Lane Undivided Highway". However, lane closures that exist for a duration longer than three ( $> 3$ ) calendar days may be signed and marked as per the details in Georgia Standard 9121 "Tapers, Signs, and Markings for Passing Lanes", provided the prior approval of the Engineer is obtained. The approved lane drop shall utilize a PCMS and only the signs and markings shown for the termination end of the lane drop in Georgia Standard 9121. All warning signs in the lane drop sequence shall be used. Drums may be substituted for the Type I Crystal Delineators at the same spacing.



## B. Shoulder Closures

In accordance with MUTCD 6G.07, when paved shoulders, having a width of eight feet ( $\geq 8'$ ) or more are closed, at least one (1) advance warning sign shall be used. The sign(s) should read SHOULDER CLOSED (W21-5a). The signs are only posted on the side with the shoulder closure. Where the downstream end of the shoulder closure extends beyond the distance that can be perceived by road users, a supplementary plaque bearing the message NEXT XX FEET (W16-4P) or MILES (W7-3aP) should be placed below the SHOULDER CLOSED (W21-5a) sign. These signs shall be placed 500 feet prior to the shoulder closure. For multi-shoulder closures, the Shoulder Closed sign shall be repeated after two (2) miles at 500 feet prior to the next shoulder closure.

A shoulder closure will require a shoulder taper of  $(1/3) L$  ( $L$ =merging taper length). Traffic drums shall be used for the taper. Arrow boards are not required.

If positive barriers are used to close the shoulder, the taper and drums shall be in accordance with Standard 4960, Temporary Barrier (End Treatment Options). The approach end of the barrier taper should be 10:1 or flatter slope.

## C. Lane Closure

### 1. Advance Warning Signs

The Advance Warning signs shall be in accordance with MUTCD and Georgia Standard 9106 "Traffic Control Detail for Lane Closure on Multi-Lane Divided Highway" and Georgia Standard 9107 "Traffic Control Detail for Lane Closure on Multi-Lane Undivided Highway".

When the Temporary Traffic Control zone already has advanced warning (W20-1) signs installed the W20-1 signs required for lane closures under Standard 9106 and 9107 should be eliminated.

For Interstate, Limited Access and Multi-lane Divided Highways, an additional PCMS shall be placed one (1) mile in advance of a lane closure with a message denoting the appropriate lane closure one (1) mile ahead. No other message shall be displayed on this PCMS. The PCMS shall be placed on the outside shoulder in accordance with Detail 150-B [PCMS]. This is in addition to the other traffic control devices required by Standard 9106.

At the discretion of the Engineer, the Contractor may start placing advance warning signs a half-hour (1/2 hr.) prior to the lane closure.

### 2. Transition Area – Taper

Drums shall be used on all transition tapers. If traffic drums with retroreflectivity of less than type VI are used for a merge taper that exists into the night, all drums located in the taper shall have, for the length of the taper only, a six inch (6") fluorescent orange (ASTM Type VI, VII, VIII, IX or X) reflectorized top stripe on each drum. The top six inch (6") stripe may be temporarily attached to the drum while in use in a taper. The Engineer may allow the fluorescent orange reflectorized six inch (6") top stripe on each drum in a merging taper to remain in place during daylight hours provided there is a lane closure(s) with a continuous operation that begins during one nighttime period and ends during another nighttime period. All drums that have the six inch (6") top stripe permanently attached shall not be used for any other conditions.

In accordance with MUTCD (6C.08), the minimum length for a merging taper for a lane closure on the travel way shall be as shown in Table 150-1:

**TABLE 150-1**

Posted Speed Limit, MPH	Lane Width 9 Feet	Lane Width 10 Feet	Lane Width 11 Feet	Lane Width 12 Feet	Maximum Drum Spacing in Tapers, (Feet)
<b>Minimum Taper Length (L) in Feet</b>					
20	60	70	75	80	20
25	95	105	115	125	25
30	135	150	165	180	30
35	185	205	225	245	35
40	240	270	295	320	40
45	405	450	495	540	45
50	450	500	550	600	50
55	495	550	605	660	55
60	540	600	660	720	60
65	585	650	715	780	65
70	630	700	770	840	70
75	675	750	825	900	75

If site conditions require a longer taper, then the taper shall be lengthened to fit particular individual situations.

The length of shifting tapers should be at least one-half (1/2) L.

Multiple Lane Closures:

- a. A maximum of one (1) lane at a time shall be closed with each merging taper.
- b. A minimum tangent length of two ( $\geq 2$ ) L shall be installed between each individual lane closure taper. The tangent length is part of the transition area. Therefore, only traffic drums can be used in the tangent.

**3. Activity Area**

The activity area consists of a buffer and the work space. Georgia Standard 9106 “Traffic Control Detail for Lane Closure on Multi-Lane Divided Highway” states “Buffer zones of 300’ minimum, 500’ desirable are required for tangent sections and shall be increased for horizontal or vertical curves due to sight distance considerations”

Georgia Standard 9107 “Traffic Control Detail for Lane Closure on Multi-Lane Undivided Highway” requires a fifty feet (50’) buffer. The buffer shall be increased for horizontal or vertical curves due to sight distance considerations”

The channelization devices are spaced at a maximum of eighty feet (80’).

**4. Termination Area**

Georgia Standard 9106 “Traffic Control Detail for Lane Closure on Multi-Lane Divided Highway” requires a 150 feet buffer and a minimum 200 feet downstream taper.

Georgia Standard 9107 “Traffic Control Detail for Lane Closure on Multi-Lane Undivided Highway” requires 150 feet downstream taper.

**D. Removal of Lane Closures**

To provide the greatest possible convenience to the public in accordance with Section 10Z, the Contractor shall remove all signs, lane closure markings, and devices immediately when lane closure work is completed or temporarily suspended for any length of time or as directed by the Engineer. All portable signs and portable sign mounting devices shall be removed from the roadway to an area which will not allow the sign to be visible and will not allow the sign or sign mounting device to be impacted by traffic. All devices shall be stored beyond the clear zone or behind positive protection.

## E. Exit and Entrance Ramps

On multi-lane highways, where traffic has been shifted to the inside lanes, the exit and entrance ramps shall have drums placed on both sides of the ramp. This requirement will apply to any situation where traffic is shifted to contra flows or inside staging lanes to facilitate reconstruction work in the vicinity of exit and entrance ramps. The temporary ramp taper length should be greater than, or equal to, the existing taper length. Interim EXIT gore signs shall be placed at the ramp divergence. The "EXIT OPEN" sign shown in Figure TA-42 of the MUTCD shall be utilized. For exit ramps, drums spacing shall be decreased to ten feet (10') for 200 feet in advance of the temporary gore and be decreased to ten feet (10') for the first 100 feet of the temporary gore, and throughout the exit ramp. For on-ramps, drums should be used 200 feet prior to the ramp and end 100 feet past the merge taper. The drum spacing for the on ramp may be decreased but should not obstruct the view of the drivers i.e. for the ramp vehicles.

## 150.3.06 Traffic Pacing Method

### A. Pacing of Traffic

With prior approval from the Engineer, traffic may be paced allowing the Contractor up to twenty (20) minutes maximum to work in or above all lanes of traffic for the following purposes:

1. Placing bridge members or other bridge work.
2. Placing overhead sign structures.
3. Other work items requiring interruption of traffic.

The Contractor shall provide a uniformed law enforcement officer with patrol vehicle and blue flashing light for each direction of pacing. The law enforcement officer, Engineer, and flaggers at ramps shall be provided with a radio which will provide continuous contact with the Contractor.

When ready to start the work activity, the law enforcement vehicle will act as a pilot vehicle slowing the traffic, thereby providing a gap in traffic allowing the Contractor to perform the Work. Any on-ramps between the pace and the work area shall be blocked during pacing of traffic, with a flagger properly dressed and equipped with a Stop/Slow paddle. Each ramp should be opened after the law enforcement vehicle has passed.

Pilot vehicles shall travel at a safe pace speed. The Contractor shall provide a vehicle to proceed in front of the law enforcement vehicle and behind the other traffic in order to inform the Contractor's work force when all vehicles have cleared the area.

Traffic should not be permitted to stop during pacing unless approved by the Engineer.

### B. Methods of Signing for Traffic Pacing

At a point not less than 1,000 feet in advance of the beginning point of the pace, the Contractor shall place a PCMS sign with the message "TRAFFIC SLOWED AHEAD **EXPECT** SHORT DELAY".

## 150.3.07 Flagging Operations

### A. Flaggers

Flaggers shall be provided as required to handle traffic, as specified in the Plans or Special Provisions, and as required by the Engineer.

## **B. Flagger Certification**

All flaggers shall meet the requirements of the MUTCD and shall have received training and a certificate upon completion of the training from one of the following organizations:

National Safety Council

American Traffic Safety Services Association (ATSSA)

On-line classes are not accepted.

Failure to provide certified flaggers as required above shall be reason for the Engineer suspending work involving the flagger(s) until the Contractor provides the certified flagger(s). Flaggers shall have proof of certification and valid identification (photo I.D.) available any time they are performing flagger duties.

## **C. Flagger Appearance and Equipment**

Flaggers shall wear Performance Class 2 or better for day time activities. Flaggers shall wear Performance Class 3 or better high-visibility clothing for night time activities. Flagger stations shall be illuminated at night according to MUTCD (6F.82). They shall use a Stop/Slow paddle meeting the requirements of the MUTCD (6E.03) for controlling traffic. The Stop/Slow paddles shall have a shaft length of seven feet ( $\geq 7'$ ) minimum. The Stop/Slow paddle shall be retroreflectorized for both day and night usage. In addition to the Stop/Slow paddle, a flagger may use a flag as an additional device to attract attention. This flag shall meet the minimum requirements of the MUTCD (6E.03). The flag shall, as a minimum, be twenty-four inches ( $\geq 24"$ ) square and red or red/orange in color.

## **D. Flagger Warning Signs**

Signs for flagger traffic control shall be placed in advance of the flagging operation, in accordance with the MUTCD and Georgia Standard 9102 "Traffic Control Detail for Lane Closure on Two-Lane Highway". In addition, signs at regular intervals, warning of the presence of the flagger shall be placed beyond the point where traffic can reasonably be expected to stop under the most severe conditions for that day's work.

## **E. Pilot Vehicle Requirements**

Pilot vehicles should be required during placement of bituminous surface treatment or asphaltic concrete on two-lane roadways unless otherwise specified. Pilot vehicles shall meet the requirements of the MUTCD (6C.13).

## **F. Automated Flagger Assistance Devices**

The Contractor may request, in writing, the use of Automated Flagger Assistance Devices (AFAD). The equipment shall meet the requirements of MUTCD (6E.04). As a part of this request, the Contractor shall also submit an alternate temporary traffic TTC plan in the event of a failure of the AFAD. Any alternate plan that requires the use of flaggers shall include the use of certified flaggers. The Contractor shall obtain the approval of the Engineer before the use of any AFAD will be permitted.

## **G. Portable Temporary Traffic Control Signals**

The Contractor may request, in writing, the substitution of portable temporary traffic control signals for flaggers on two-lane two-way roadways provided the temporary signals meets the requirements of the MUTCD, Section 647, and subsection 150.2.11. As a part of this request, the Contractor shall also submit an alternate TTC plan in the event of a failure of the signals. Any alternate plan that requires the use of flaggers shall include the use of certified flaggers. The Contractor shall obtain the approval of the Engineer before the use of any portable temporary traffic control signals will be permitted.

## 150.3.08 Traffic Signals

### A. Responsibility/Cost

If the sequence of operations, staging, or the TTC plan requires the relocation or shifting of any components of an existing traffic signal system then any work on these traffic signals will be considered as part of Traffic Control – Lump Sum.

### B. Law Enforcement Officer Requirement

In accordance with Georgia law § 40-6-20, law enforcement officers shall be used to regulate and maintain traffic control at functioning signalized intersections when lane closures or traffic shifts block or restrict movements causing interference with road user flows and will not allow the activated traffic signal to guide the traffic through the signal site.

## 150.3.09 Mobile Operations

A mobile operation is defined by a minimum speed of three (3) mph. When pavement markings (centerlines, lane lines, and edge lines) are applied in a continuous operation by moving vehicles and equipment, the following minimum equipment and warning devices shall be required. These devices and equipment are in addition to the minimum requirements of the MUTCD.

All vehicles shall be equipped with the official slow moving vehicle symbol sign. All vehicles shall have a minimum of two (2) flashing or rotating beacons visible in all directions. All protection vehicles shall have an arrow panel mounted on the rear. All vehicles requiring an arrow panel shall have, as a minimum, a Type B panel. All vehicle mounted signs shall be mounted with the bottom of the sign a minimum height of forty-eight inches (48") above the pavement. All sign legends shall be covered or removed from view when work is not in progress.

The lead vehicle may be a separate vehicle or the work vehicle applying the pavement markings may be used as the lead vehicle. The lead vehicle shall have an arrow panel mounted so that the panel is easily visible to oncoming (approaching) traffic. The arrow panel should operate in the caution mode.

The work vehicle(s) applying markings shall have an arrow panel mounted on the rear. The arrow panel should typically operate in the caution mode. The work vehicle placing cones shall follow directly behind the work vehicle applying the markings.

A protection vehicle shall follow the last work vehicle at all times and shall be equipped with a truck mounted attenuator that shall be certified for impacts not less than sixty-two (62) mph in accordance with MASH/NCHRP350 Test Level Three (3).

## 150.3.10 Pavement Markings

### A. General

Full pattern pavement markings in conformance with Section 3A and 3B, except 3B.02, of the MUTCD are required on all courses before the roadway is opened to traffic, unless noted in this section. No passing zones shall be marked to conform to Subsection 150.3.10.D.1.b. During construction and maintenance activities on all highways open to traffic, both existing markings and markings applied under this Section shall be fully maintained until Final Acceptance. If the pavement markings are, or become, unsatisfactory in the judgment of the Engineer due to wear, weathering, or construction activities, they shall be restored immediately.

Markings on the final surface course, which must be removed, shall be a removable type. The Contractor will be permitted to use paint, thermoplastic, or tape on pavement which is to be overlaid as part of the Project, unless

otherwise directed by the Engineer. Partial (skip) reflectorization (i.e. reflectorizing only a portion of a stripe) will not be allowed.

**1. Resurfacing Projects**

Pavement markings shall be provided on all surfaces that are placed over existing markings. Interim and final markings shall conform in type and location to the markings that existed prior to resurfacing unless changes or additions are noted in the Contract. The replacement of parking spaces will not be required unless a specific item or note has been included in the Contract. Any work to make additions to the markings that existed prior to resurfacing is to be considered as extra work.

**2. Widening and Reconstruction Projects**

If the lane configuration is altered from the preconstruction layout then pavement markings will be as required by the Plans or the Engineer.

**3. New Location Construction Projects**

Pavement marking plans will be provided.

**B. Installation and Removal of Pavement Markings**

**1. Installation**

All pavement markings, both interim and permanent, shall be applied to a clean surface. The Contractor shall furnish the layout and preline the roadway surface for the placement of pavement markings applied as part of the TTC plan. All interim marking tape and RPM's on the final surface shall be removed prior to the placement of the final markings.

The Contractor shall sequence the Work in such a manner as to allow the installation of markings in the final lane configuration at the earliest possible stage of the Work.

**2. Removal**

Markings no longer applicable shall be removed in accordance with Section 656. The elimination of conflicting pavement markings by overpainting with unapproved paint or any type of liquid asphalt is not acceptable.

**3. Intermediate Surface**

Interim markings shall be removed by methods that will cause minimal damage to the pavement surface, while also ensuring that traveling public will not be confused or misdirected by any residual markings remaining on the intermediate surface. The use of approved black-out tape and black-out paint (manufactured for the sole purpose of covering existing pavement markings) may be permitted on some interim surfaces, provided the results are satisfactory to the Engineer.

**4. Final Surface**

No interim paint or thermoplastic markings will be permitted on any final surface unless the interim markings are in alignment with the location of the permanent markings and the interim marking will not interfere or adversely affect placement of the permanent markings. The proposed method of removal for layout errors that require markings to be removed from the final surface shall have the prior approval of the Engineer. Any damage to the final pavement surface caused by the pavement marking removal process shall be repaired at the Contractor's expense by methods acceptable and approved by the Engineer. Section 400 shall apply when corrective measures are required. The use of black-out tape or black-out paint will not be permitted under any circumstance to correct layout errors on any final surface.

Traffic shifts that are done on the final surface shall be accomplished using interim traffic marking tape that can be removed without any blemishing of the final surface. Interim traffic marking tape shall be used on any of the following final surfaces; asphaltic concrete, Portland cement concrete, and bridge deck surfaces. The Contractor may propose alternate traffic markings and removal methods on the final surface. Submitted proposals shall include the type of material, method of removal and a cost comparison to the traffic marking tape method. Prior to any approval, the Contractor shall field demonstrate to the satisfaction of the Engineer that the proposed traffic markings can be removed without any blemishing of the final surface. If the proposal is determined to be acceptable, a supplemental agreement will be executed prior to the installation of the proposed alternate traffic markings. The supplemental agreement shall denote the type of traffic marking materials, method of removal and any cost and/or time savings to the Department. The Department will not consider or participate in any cost increase that may result from implementing the proposed alternate method.

#### **5. Pay Factor Reduction for Asphaltic Concrete Final Surfaces**

When the correction of an error in the layout of the final pavement markings requires the final surface to be grounded, blemished, scarred, or polished the pay factor shall be reduced to 0.95 for the entire surface area of the final topping that has a blemish, polished or a scarred surface. The reduced pay factor shall not be confined to only the width and length of the stripe or the dimensions of the blemished areas, the whole roadway surface shall have the reduced pay factor applied. The area of the reduced pay factor shall be determined by the total length and the total width of the roadway affected. If the affected area is not corrected, the reduction in pay shall be deducted from the final payment for the topping layer of asphaltic concrete. The Engineer shall make the final determination whether correction or a reduced pay factor is acceptable.

The eradication of pavement markings on intermediate and final concrete surfaces shall be accomplished by a method that does not grind, polish, or blemish the surface of the concrete. The method used for the removal of the interim markings shall not spall chip the joints in the concrete and shall not damage the sealant in the joints. Any joint or sealant repairs shall be included in the bid price for Traffic Control-Lump Sum. The proposed method of removal shall have the prior approval of the Engineer.

Failure to promptly remove conflicting or non-applicable pavement markings shall be considered as non-performance under Subsection 150.7.01.

#### **6. Preparation and Planning for Traffic Shifts**

When shifting of traffic necessitates removal of centerline, lane lines, or edge lines, all such lines shall be removed prior to, during, or immediately after any change to present the least interference with traffic. Interim traffic marking tape shall be used as a temporary substitute for the traffic markings being removed.

Before any change in traffic lane(s) alignment, marking removal equipment shall be present on the project for immediate use. If marking removal equipment failures occur, the equipment shall be repaired or replaced (including leasing equipment if necessary), so that the removal can be accomplished without delay.

Except for the final surface, markings on asphaltic concrete may be obliterated by an overlay course, when approved by the Engineer. When an asphaltic concrete overlay is placed for the sole purpose of eliminating conflicting markings and the in place asphaltic concrete section will allow, said overlay will be eligible for payment only if designated in the Plans. Overlays to obliterate lines will be paid for only once and further traffic shifts in the same area shall be accomplished with removable markings. Only the minimum asphaltic concrete thickness required to cover lines will be allowed. Excessive build-up will not be permitted. When an overlay for the sole purpose of eliminating conflicting markings is not allowed, the markings no longer applicable shall be removed in accordance with Section 656.

### **C. Raised Pavement Markers**

Retroreflective raised pavement markers (RPMs) shall be placed as listed below for all asphaltic concrete pavements before the roadway is open to traffic, unless noted this section. On the final surface, RPMs shall be placed according to the timeframes specified in Subsection 150.3.10.D for full pattern pavement markings. When Portland Cement

Concrete is an intermediate or final surface and is open to traffic, one (1) calendar day is allowed for cleaning and drying before the installation of RPMs is required.

Raised pavement markers are not allowed on the right edge lines under any situation.

Retroreflective raised pavement markers (RPMs) shall be placed and/or maintained on intermediate pavements surfaces on all highways that the final ride surface is not completed within 45 calendar days which is open to traffic. This includes all resurfacing projects along with widening and reconstruction projects. The RPMs shall be placed as follows:

**1. Supplementing Lane Lines:**

- a.** Eighty foot (80') center on skip lines with curvature less than three degrees. (Includes tangents)
- b.** Forty foot (40') centers on solid lines and all lines with curvature between three degrees and six degrees.
- c.** Twenty foot (20') centers on curves over six degrees.
- d.** Twenty foot (20') centers on lane transitions or shifts.

**2. Supplementing Ramp Gore Lines:**

- a.** Twenty foot (20') centers, two each, placed side by side.

**3. Other Lines:**

- a.** As shown on the Plans or directed by the Engineer.

**D. Exceptions for Interim Markings**

Some exceptions to the time of placement and pattern of markings are permitted as noted below; however, full pattern pavement markings are required for the completed project.

**1. Two-Lane, Two-Way Roadways**

**a. Skip Lines**

If used, interim temporary tape or paint skip (broken) stripe may only be used for a maximum of three (3) calendar days. The stripes shall be at least two feet (> 2') long with a maximum gap of thirty-eight feet ( $\leq 38'$ ). On curves greater than six degrees (>6°), a one-foot (1') stripe with a maximum gap of nineteen feet ( $\leq 19'$ ) shall be used. In lane shift areas, solid lines will be required.

Interim raised pavement markers may be substituted for the interim skip (broken) stripes. If raised pavement markers are substituted for the two foot (2') interim skip stripe, three (3) markers spaced at equal intervals over a two feet (2') distance will be required. No separate payment will be made if the interim raised pavement markers are substituted for interim skip lines.

Interim raised pavement markers shall be retro-reflective, shall be the same color as the pavement markers for which they are substituted, and shall be visible during daytime.

The type of interim marker and method of attachment to the pavement shall be approved by the Office of Materials and Testing but in no case will the markers be attached by the use of nails. Flexible reflective markers, Type 14 or Type 15, may be used for a maximum of three (3) calendar days as an interim marker. Any flexible reflective markers in use shall be from the QPL-76.



The interim raised pavement markers shall be maintained until the full pattern pavement markings are applied. At the time full pattern markings are applied the interim raised markers shall be removed in a manner that will not interfere with application of the full pattern pavement markings.

**b. No Passing Zones Two-Lane, Two-Way Roadways**

Passing zones shall be re-established in the locations existing prior to resurfacing unless otherwise noted in the Contract. No changes to the location of passing zones shall be done without the written approval of the Engineer. For periods not to exceed three (3) calendar days where interim skip centerlines are in place, no-passing zones shall be identified by using post or portable mounted DO NOT PASS regulatory signs (R4-1) twenty-four inches by thirty inches (24" x 30") at the beginning and at intervals not to exceed one-half ( $\leq 1/2$ ) mile within each no-passing zone. A post or portable mounted PASS WITH CARE regulatory sign (R4-2) twenty-four inches by thirty inches (24" x 30") shall be placed at the end of each no-passing zone. Post mounted signs shall be placed in accordance with the MUTCD. Portable signs shall be secured in such a manner to prevent misalignment and minimize the possibility of being blown over by weather conditions or traffic.

On new location projects and on projects where either horizontal or vertical alignments has been modified, the location of No-Passing Zones will be identified by the Engineer.

**c. Edge lines**

• Bituminous Surface Treatment Paving

Edge lines will not be required on intermediate surfaces (including asphaltic concrete leveling for bituminous surface treatment paving) that are in use for a period of less than sixty (<60) calendar days except at bridge approaches, on lane transitions, lane shifts, and in such other areas as determined by the Engineer. On the final surface, edge lines shall be placed within thirty ( $\leq 30$ ) calendar days of the time that the final surface was placed.

• All Other Types of Pavement

Edge lines will not be required on intermediate surfaces that are in use for a period of less than thirty (<30) calendar days except at bridge approaches, on lane transitions, lane shifts, and in such other areas as determined by the Engineer. On the final surface, edge lines shall be placed within fourteen ( $\leq 14$ ) calendar days of the time that the surface was placed.

**2. Multi-Lane Highways – With No Paved Shoulder(s) or Paved Shoulder(s) Four Feet or Less ( $\leq 4'$ )**

**a. Undivided Highways (Includes Paved Center Turn Lane)**

- Centerlines and No-Passing Barrier-Full Pattern centerlines and no-passing barriers shall be restored before opening to traffic.
- Lane lines- Interim skip (broken) stripe as described in Subsection 150.3.10.D.1.a. may be used for periods not to exceed three ( $\leq 3$ ) calendar days. Skip lines are not permitted in lane shift areas. Solid lines shall be used.
- Edge lines- Edge lines shall be placed on intermediate and final surfaces within three (3) calendar days of obliteration.

**b. Divided Highways (Grass or Raised Median)**

- Lane lines- Full pattern skip stripe shall be restored before opening to traffic. Skip lines are not permitted in lane shift areas. Solid lines shall be required.

- Centerline/Edge line- Solid lines shall be placed on intermediate and final surfaces within three calendar days of obliteration.

**3. Limited Access Roadways and Roadways with Paved Shoulders Greater Than Four Feet (> 4')**

**a.** Same as Subsection 150.3.10.D.2 except as noted in (b) below.

**b.** Edge lines-

- Asphaltic Concrete Pavement- Edge lines shall be placed on intermediate and final surfaces prior to opening to traffic.
- Portland Cement Concrete Pavement- Edge lines shall be placed on any surface open to traffic no later than one calendar day after work is completed on a section of roadway. All water and residue shall be removed prior to daily striping.

**4. Ramps for Multi-Lane Divided Highways**

A minimum of one solid line edge stripe shall be placed on any intermediate surface of a ramp prior to opening the ramp to traffic. The other edge stripe may be omitted for a maximum period of three (3) calendar days on an intermediate surface. Appropriate channelization devices shall be spaced at a maximum of twenty-five feet (25') intervals until the other stripe has been installed.

The final surface shall have both stripes placed prior to opening the ramp to traffic.

**5. Miscellaneous Pavement Markings**

**a.** Final Surface

School zones, railroads, symbols, words and other similar markings shall be placed on final surfaces conforming to Section 652 within fourteen (14) calendar days of completion of the final surface. Final markings shall conform to the type of pay item in the Plans. When no pay item exists in the Plans the final markings shall conform to Section 652 for painted markings.

**b.** Intermediate Surface

Intermediate surfaces that will be in use for more than forty-five (45) calendar days shall have the miscellaneous pavement markings installed to conform to the requirement of Section 652. Under Subsection 150.6, Special Conditions, or as directed by the Engineer these markings may be eliminated.

**c.** Stop Line

All stop signs and traffic signals shall have temporary twelve inch (12") stop lines placed in accordance with MUTCD (3B.16) on all surfaces prior to opening to traffic. Temporary tape **may** be used.

**150.3.11 Differences in Elevations Between Travel Lanes and Shoulders**

All time frames and requirements may be changed with the Engineer's approval.

**A. Differences in Elevations**

Difference in elevations due to construction between travel lanes and/or shoulders within the clear zone should be limited to the following:

1. Difference of two inches ( $\leq 2''$ ) or less between adjacent travel lanes should remain for a maximum period of fourteen (14) calendar days.

2. Difference of two inches ( $\leq 2''$ ) or less between adjacent travel lane and paved shoulder should remain for a maximum of thirty (30) calendar days. Traffic control devices shall be in accordance with Detail 150-G.
3. Difference of greater than two inches ( $> 2''$ ) is permitted for continuous operations. Traffic control devices shall be in accordance with Detail 150-E.
4. Difference of greater than two inches ( $> 2''$ ) between travel lanes and/or shoulders for non-continuous operations will not be allowed for more than a twenty-four (24) hour period. For the first twenty-four (24) hours, traffic control shall be in accordance with Detail 150-E. After twenty-four (24) hours the section should be healed according to Detail 150-H. This condition can exist for a maximum sixty (60) calendar days.
  - a. A single length of area that does not exceed 1000 feet total length may be left open as a startup area for periods not to exceed forty-eight (48) hours provided the Contractor can demonstrate the ability to complete the Work in a proficient manner. Prior approval of the Engineer shall be obtained before any startup area may be allowed.
  - b. For cement stabilized base, work adjacent to the travel lane and/or shoulders shall be healed as per Detail 150-H within forty-eight (48) hours after the seven (7) calendar day curing period is complete for each section placed. During the placement and curing period, traffic control shall be in accordance Detail 150-E.

Failure to meet these requirements shall be considered as non-performance of Work under Subsection 150.7.01.

## **B. Healed Section**

Healed section and traffic control devices should be placed in accordance with Detail 150-H. If crushed stone materials are used to provide a healed section no separate payment will be made for the material used to heal any section. The Contractor may submit a plan to utilize existing pay items for crushed stone provided the plan clearly demonstrates that the materials used to heal an area will be incorporated into the Work with minimal waste. Handling and hauling of any crushed stone used to heal shall be kept to a minimum. The Engineer shall determine if the crushed stone used to heal meets the Specifications for gradation and quality when the material is placed in the final location.

## **C. Emergency Situations**

Inclement weather, traffic accidents, and other events beyond the control of the Contractor may prevent the Work from being completed as required above. The Contractor shall notify the Engineer in writing stating the conditions and reasons that have prevented the Contractor from complying with the time limitations. The Contractor shall also outline a plan detailing immediate steps to complete the Work. Failure to correct these conditions on the first calendar day that conditions will allow corrective work shall be considered as non-performance of Work under Subsection 150.7.01.

## **D. Plating**

Plating for drainage structures, utility facilities, etc. is prohibited on the interstates. Plating on State Routes and secondary roads will require the prior approval of the project Engineer. Steel plates shall not be used on highways with a posted speed greater than forty-five (45) mph. The plate shall completely cover the pavement cut or excavation. The plate shall be adequately secured and shall provide a safe and reasonable transition to the adjoining roadway surface. An asphalt wedge can be used to provide a smooth transition over the plate(s). Temporary traffic control warning signs W8-24 shall be posted in advance warning motorist about plates in roadway in accordance with the MUTCD. Plating should not remain in place for more than four (4) calendar days.

## **E. Asphaltic Concrete Resurfacing Projects**

1. Shoulder Construction Included as a Part of the Contract

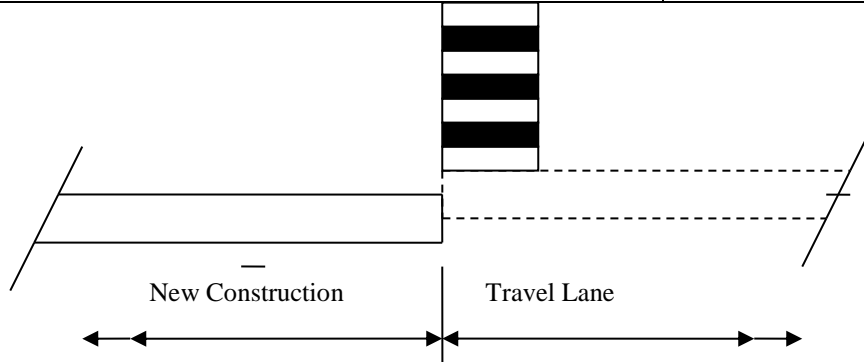
When the placement of asphaltic concrete materials creates a difference in elevation greater than two inches (> 2") between the earth shoulder (grassed or un-grassed) and the edge of travel lane or between the earth shoulder and a paved shoulder that is less than four feet (< 4') in width, the Contractor shall place and maintain drums in accordance with the requirements of Subsection 150.2.04.B.3. When the edge of the paved surface is tapered with a safety edge, drums may be spaced at two (2) times the speed limit in MPH. Drums shall remain in place and be maintained until the difference in elevation has been eliminated by the placement of the appropriate shoulder materials.

**2. Shoulder Construction Not Included as a Part of the Contract**

When the placement of asphaltic concrete materials creates a difference in elevation greater than two inches (> 2") between the earth shoulder (grassed or un-grassed) and the edge of travel lane or between the earth shoulder and a paved shoulder that is less than four feet (< 4') in width, the Contractor shall notify the Engineer, in writing, when the resurfacing work including all corrective list items has been completed.

Drums spaced at twenty foot (20') intervals. **Note:** If the travel way width is reduced to less than ten feet (< 10') by the use of drums, vertical panels shall be used in lieu of drums.

Location of drums when Elevation Difference exceeds four inches (> 4")

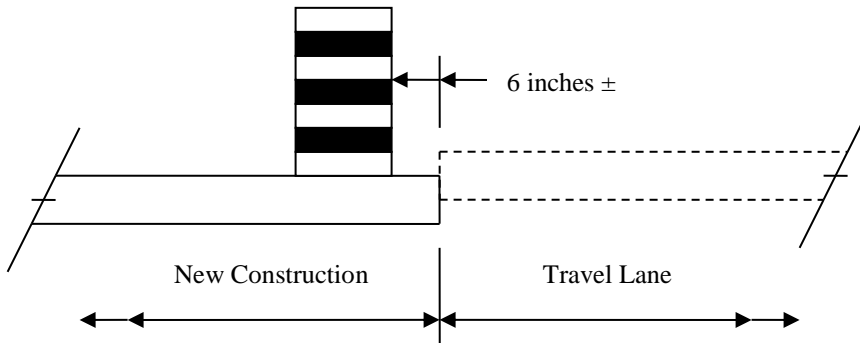


ELEVATION DIFFERENCE GREATER THAN FOUR INCHES (> 4")

DETAIL 150-E

Drums spaced at forty foot (40') intervals.

Location of drums when Elevation Difference is greater than two inches (> 2") to four inches (4")

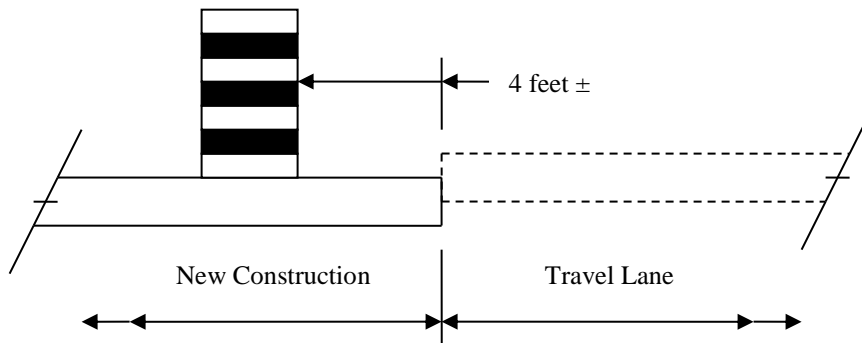


ELEVATION DIFFERENCE GREATER THAN TWO INCHES (> 2") TO FOUR INCHES (4")

DETAIL 150-F

Drums spaced at eighty foot (80') intervals.

Location of drums when Elevation Difference is two inches ( $\leq 2''$ ) or less.



ELEVATION DIFFERENCE OF TWO INCHES ( $\leq 2''$ ) OR LESS

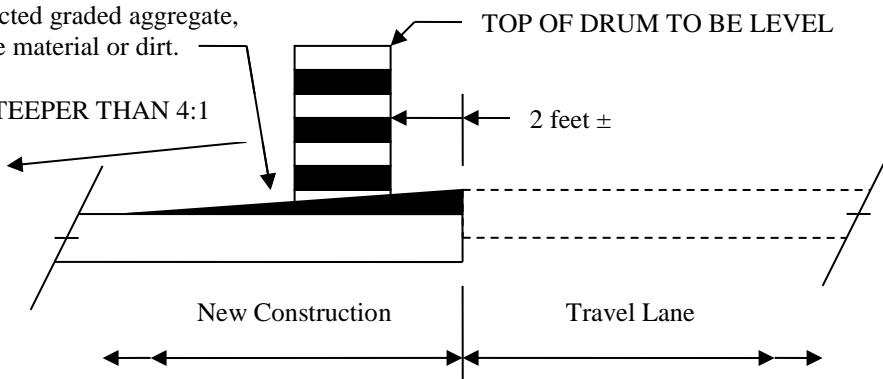
DETAIL 150-G

Location of drums immediately after completion of healed sections spaced at 40 foot (40') intervals

Healed Section

Compacted graded aggregate, subbase material or dirt.

NO STEEPER THAN 4:1



HEALED SECTION

DETAIL 150-H

## 150.3.12 Work Zone Law Enforcement

Work zone law enforcement consists of utilizing a uniformed law enforcement officer equipped with patrol vehicle and blue flashing lights to enforce traffic laws in construction work zones and the administration of this service. Payment for work zone law enforcement will be made only for the utilization in work zones during lane closures, traffic pacing, or other activities that occur within travel lanes. The Contractor will be responsible for negotiating a rate of reimbursement and making reimbursement to that law enforcement agency.

The Contractor will be responsible for coordinating and scheduling the utilization of the work zone law enforcement. The Engineer may require the use of work zone law enforcement at specific times and locations.

Work zone law enforcement will be required in all work zones during lane closures, traffic pacing, or other activities that occur within travel lanes on the interstate.

## 150.4 Measurement

### 150.4.01 Traffic Control Items

#### A. Traffic Control

When listed as a pay item in the Proposal, payment will be made at the lump sum price bid, which will include all traffic control not paid for separately, and will be paid as follows:

When the first Construction Report is submitted, a payment of twenty-five percent (25%) of the lump sum price will be made. For each progress payment thereafter, the total of the Project percent complete shown on the last pay statement plus twenty-five percent (25%) will be paid (less previous payments), not to exceed one hundred percent (100%).

When no payment item for Traffic Control-Lump Sum is shown in the Proposal, all of the requirements of Section 150 and the Temporary Traffic Control Plan shall be in full force and effect. The cost of complying with these requirements will not be paid for separately, but shall be included in the overall bid submittal.

#### B. Changeable Message Sign, Portable

Portable changeable message sign will be measured as specified in Section 632.

#### C. Flashing Beacon Assembly

Flashing beacon assemblies will be measured as specified in Section 647.

#### D. Pavement Markings

Pavement markings will be measured as specified in Section 150.

#### E. Portable Impact Attenuators

Each portable impact attenuator will be measured by the unit/array which shall include all material components, hardware, incidentals, labor, site preparation, and maintenance, including spare parts recommended by the manufacturer for repairing accident damage. Each unit will be measured only once regardless of the number of locations installed, moves required, or number of repairs necessary because of traffic damage. Upon completion of the project, the units shall be removed and retained by the Contractor.

## **F. Signs**

When shown as a pay item in the Contract, interim special guide signs will be paid for as listed below. All other regulatory, warning, and guide signs, as required by the Contract, will be paid for under Traffic Control Lump Sum or included in the overall bid submitted.

1. Interim ground mounted or interim overhead special guide signs will be measured for payment by the square foot. This payment shall be full compensation for furnishing the signs, including supports as required, erecting, illuminating overhead signs, maintaining, removing, re-erecting, and final removal from the Project. Payment will be made only one time regardless of the number of moves required.
2. Remove and reset existing special guide signs, ground mount or overhead, complete, in place, will be measured for payment per each. Payment will be made only one time regardless of the number of moves required.
3. Modify special guide signs, ground mount or overhead, will be measured for payment by the square foot. The area measured shall include only that portion of the sign modified. Payment shall include materials, removal from posts or supports when necessary, and remounting as required.

## **G. Temporary Audible Information Device**

Temporary audible information devices are measured as the actual number furnished and installed in accordance with the manufacturer's recommendations, which shall include all necessary materials, equipment, labor, site preparation, maintenance and removal. Each temporary audible information device will be paid for only one time regardless of the number of times it's reused during the duration of the Work. These devices shall remain the property of the Contractor.

## **H. Temporary Barrier**

Temporary barrier shall be measured as specified in Sections 620.

## **I. Temporary Curb Cut Wheelchair Ramps**

Temporary curb cut wheelchair ramps are measured as the actual number formed and poured, complete and accepted, which shall include all necessary materials, equipment, labor, site preparation, maintenance and removal. No additional payment will be made for sawing existing sidewalk and removal and disposal of removed material for temporary wheelchair ramp construction. No additional payment will be made for constructing the detectable warning surface.

## **J. Temporary Guardrail Anchorage, Type 12**

Temporary guardrail anchorage- Type 12 will be measured by each assembly, complete in place and accepted according to the details shown in the Plans, which shall also include the additional guardrail and appurtenances necessary for transition and connection to temporary concrete barrier. Payment shall include all necessary materials, equipment, labor, site preparation, maintenance and removal.

## **K. Temporary Walkways with Detectable Edging**

Temporary walkways with detectable edging will be measured in linear feet (meters), complete in place and accepted, which shall include all necessary materials, equipment, labor, site preparation, temporary pipes, passing spaces, maintenance and removal. Excavation and backfill are not measured separately for payment. No payment will be made for temporary walkways where existing pavements or existing edging (that meets the requirements of MUTCD) are utilized for the temporary walkway. Payment for temporary detectable edging, including approved barriers and channelizing devices, installed on existing pavement shall be included in Traffic Control-Lump Sum.



## L. Traffic Signal Installation- Temporary

Temporary traffic signal installation will be measured as specified in Section 647.

## M. Work Zone Law Enforcement

When work zone law enforcement is shown as a pay item, work zone law enforcement will be measured for payment by the hour. The Contractor shall provide a daily work record containing the actual number of hours charged by the law enforcement officer. The daily work record shall be compiled on a form provided by the Department, signed by the law enforcement officer, signed by the Contractor's Worksite Traffic Control Supervisor attesting that the law enforcement was utilized during the time recorded, and then submitted to the Engineer.

Work zone law enforcement will be measured for payment by the hour up to the maximum number of hours included in the Contract. The Engineer may at his discretion increase the maximum number of hours.

Payment shall be full compensation for reimbursing the law enforcement agency and for all cost incurred by the Contractor in coordinating, scheduling, and administering the item work zone law enforcement.

If no work zone law enforcement pay item is included in the Contract, then all work zone law enforcement cost shall be included in Traffic Control – Lump Sum.

## 150.5 Reserved

## 150.6 Special Conditions

Special Conditions, if used, will be included elsewhere in the Contract.

## 150.7 Payment

When shown in the Schedule of Items in the Proposal, the following items will be paid for separately. Payment will be made under:

<b>Item No. 150</b>	Traffic control -	Lump Sum
<b>Item No. 150</b>	Traffic control, solid traffic stripe __ inch, (color)	Per linear mile
<b>Item No. 150</b>	Traffic control, skip traffic stripe __ Inch, (color)	Per linear mile
<b>Item No. 150</b>	Traffic control, solid traffic stripe, thermoplastic 24 inch, color	Per linear mile
<b>Item No. 150</b>	Traffic control, raised pavement markers –all types	Per each
<b>Item No. 150</b>	Remove and reset, existing special guide signs, overhead, complete-in-place	Per each
<b>Item No. 150</b>	Temporary walkways with detectable edging	Per linear foot
<b>Item No. 150</b>	Temporary curb cut wheelchair ramps	Per each
<b>Item No. 150</b>	Temporary audible information device	Per each
<b>Item No. 150</b>	Work Zone Law Enforcement	Per hour

## 150.7.01 Enforcement and Adjustments

The safe passage of pedestrians and traffic through and around the temporary traffic control zone, while minimizing confusion and disruption to traffic flow, shall have priority over all other Contractor activities. Continued failure of the Contractor to comply with the requirements of Section 150 - Traffic Control will result in non-refundable deductions of monies from the Contract as shown in this Subsection for non-performance of Work.

Failure of the Contractor to comply with this Specification shall be reason for the Engineer suspending all other work on the Project except erosion control and traffic control, taking corrective action as specified in Section 105, and/or withholding payment of monies due to the Contractor for any work on the Project until traffic control deficiencies are corrected. These other actions shall be in addition to the deductions for non-performance of traffic control.

<b>SCHEDULE OF DEDUCTIONS FOR EACH CALENDAR DAY OF DEFICIENCIES OF TRAFFIC CONTROL INSTALLATION AND/OR MAINTENANCE</b>		
<b>ORIGINAL TOTAL CONTRACT AMOUNT</b>		
<b>From More Than</b>	<b>To and Including</b>	<b>Daily Charge</b>
\$0	\$100,000	\$250
\$100,000	\$1,000,000	\$650
\$1,000,000	\$5,000,000	\$1,300
\$5,000,000	\$20,000,000	\$2,000
\$20,000,000	\$40,000,000	\$2,600
\$40,000,000	\$-----	\$4,000

# DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

## SUPPLEMENTAL SPECIFICATION

### Section 301—Soil-Cement Construction

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#### 301.1 General Description

This work includes constructing a base, subbase, or shoulder course composed of soil, or a mixture of soils, and stabilizing with Portland cement. Construct according to these Specifications and conform to the lines, grades, and typical sections shown on the plans or established by the Engineer.

Requirements for the mix design, quality control and quality acceptance testing will be controlled by Standard Operating Procedures 29 (SOP 29).

The provisions in Section 300 apply to this Item.

#### 301.1.01 Definitions

**Mixed in Place Construction** - This method of construction is used when the Plans and Proposal indicate that the Work will be paid by the square yard (meter). The plans will indicate the method of construction and depth of base unless otherwise directed by the Engineer.

1. For Mixed in Place Construction, the Contractor will be required to submit a mix design for approval prior to construction. Requirements for the submittal will be controlled by SOP 29.
2. The Contractor testing will determine if the materials in the roadbed are suitable for use. If the Engineer approves, use materials in the roadbed without additional payment, except for the payment per square yard (meter) provided in Subsection 301.5.A, *Soil-Cement Material*.
3. If it is found necessary to add other materials to those in the roadbed to meet the desired thickness or to modify the physical properties of the existing materials, these materials will be paid for as soil-cement material.

**Central Plant Mixed Construction** - This method of construction is used when the plans and proposal indicate that the Work will be paid by the ton (megagram). The plans will indicate the method of construction and depth of base unless otherwise directed by the Engineer.

1. For Central Plant Mixed Construction, the Contractor shall be responsible for locating the source of soil material. Borrow pits will be sampled under the authority of the District Materials Engineer.
2. For Central Plant Mixed Construction, the Contractor will be required to submit a mix design for approval prior to construction. Requirements for the submittal will be controlled by SOP 29.
3. The Department testing will determine if the materials in the pit are suitable for use. If the Engineer approves, use materials in the pit without additional payment, except for the payment per square yard (meter) provided in Subsection 301.5.A, *Soil-Cement Material*.

#### Accreditations

1. AASHTO re:source – The American Association of State Highway and Transportation Officials
2. CMEC – Construction Materials Engineering Council

**SOP** – Georgia Department of Transportation Standard Operating Procedures

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## Section 301 — Soil-Cement Construction

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### 301.1.02 Related References

#### A. Standard Specifications

Section 109—Measurement and Payment

Section 205—Roadway Excavation

Section 300—General Specifications for Base and Subbase Courses

Section 412—Bituminous Prime

Section 814—Soil Base Materials

Section 821—Cutback Asphalt

Section 822---Emulsified Asphalt

Section 824—Cationic Asphalt Emulsion

Section 830—Portland Cement

Section 880—Water

#### B. Referenced Documents

GDT 19

GDT 20

GDT 21

GDT 59

GDT 65

GDT 67

GDT 86

GSP 16

SOP 29

AASHTO T 134

AASHTO R18

### 301.1.03 Submittals

#### A. Construction Work Plan

Prior to construction, submit a written Construction Work Plan to the Engineer for approval which shall include the following:

1. Proposed starting date
2. Location of plant (Central Plant Mixed Construction)
3. Plant and or roadway equipment (type and size)

#### B. Mix Design Package

For both Mixed in Place and Central Plant Mixed Construction, the Contractor shall submit a mix design package to the Office of Materials and Testing for approval at least three weeks prior to construction. The Mix Design process shall be completed in accordance with GDOT Test Method 65/GDT 65 by an accredited materials laboratory. The sampling, testing, proportioning and documentation shall be completed by an accredited materials laboratory. The Contractor will be responsible for ensuring that appropriate traffic control measures are in place during the sampling

## Section 301 — Soil-Cement Construction

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operations. The Portland cement used in the design process must be from an approved source listed on GDOT's Qualified Products List/QPL3 and representative of the same material to be used in construction.

(Mixed in Place Construction). In-place samples of the road structure shall be taken at a minimum frequency of 1000 feet (300m) per two lanes; alternating the sample locations to achieve a sample every 500 lane-feet (152m). Additional samples may be needed to represent material changes and/or problem areas. Each sample shall contain at least 20 lbs. (14kg) of proportionally blended material from the roadway.

(Central Plant Mixed Construction) The Contractor shall be responsible for locating the source of soil material. The borrow pit is to be sampled in accordance with Georgia Sampling Procedure 16/GSP 16. Borrow pits will be under the authority of the District Materials Engineer.

The mix design package shall include the following:

1. Approximately 22 lbs. (10,000 grams) of proportionally blended material from all in-place samples taken from the roadway
2. Approximately 2 lbs. (900 grams) of cement that is same type and source that will be used in construction.
3. The water used in construction must be from a potable source

**Note: Since the Mix Design is based on source specific materials, any changes to materials, sources, or types will render the design invalid.**

### 301.2 Materials

Ensure that materials meet the requirements of the following specifications:

Material	Specification
Soil-Cement Material	Subsection 814.2.02
Portland cement (Type I or Type II)	Subsection 830.2.01
Water	Subsection 880.2.01
Cutback asphalt, RC-30, RC-70, RC-250 or MC-30, MC-70, MC-250	Subsection 821.2.01
Emulsified Asphalt, EAP, AEP	Subsection 822.2.01
Cationic Asphalt, CSS-1h, CRS-2	Subsection 824.2.01
Blotter Material (Sand)	Subsection 412.3.05.G.3

#### 301.2.01 Delivery, Storage, and Handling

General Provisions 101 through 150.

### 301.3 Construction Requirements

#### A. General

1. Weather Limitations

## Section 301 — Soil-Cement Construction

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Mix and place cement-treated base or subbase only when the weather permits the course to be finished without interruption in the time specified.

Mix and place materials only when the moisture content of the soil to be used in the mixture meets the limits specified in this Subsection 301.3.05.B.7.c, *Moisture Control*.

Begin mixing only when the air temperature is above 40 °F (4 °C) in the shade and rising.

Ensure that the temperature of the soil to be used in the mixture and the subbase or subgrade is above 50 °F (10 °C).

### 2. Interruption of Work

If the work is interrupted for more than two hours after cement has been added, or if rain increases the cement's moisture content outside the limits specified in Subsection 301.3.05.B.7.c, *Moisture Control*, remove and replace the affected portion at no additional cost to the Department.

### 301.3.01 Personnel

General Provision 101 – 150

### 301.3.02 Equipment

Use equipment that meets the requirements of Subsection 300.3.02 and this subsection. The Engineer will approve equipment type and condition before construction begins.

Provide sufficient equipment in good working condition to do the following:

1. Allow continuous prosecution of the work.
2. In-Place Mixing
  - a. Use a cyclone-type spreader or its equivalent to spread the cement uniformly across the coverage area and capable of metering the spread rate being placed.
  - b. Use a rotary type mixer with sufficient tines which produces a uniform and homogenous blend of materials. The use of disk harrows will not be allowed for the mixed-in-place soil-cement base construction method. Mixer shall be inspected by the Engineer daily and tines with more than 25% wear must be replaced.
3. Central Plant Mixing
  - a. Provide a plant capable of producing a uniform and homogenous blend of material. The mixing chamber should be inspected daily and tines with more than 25 percent wear must be replaced.
4. The type and size of equipment must be sufficient enough to mix, place, and compact within the time limits.
5. Use any applicable equipment specified in Subsection 412.3.02, *Equipment* for bituminous prime.

### 301.3.03 Preparation

#### A. Subgrade or Subbase Preparation

1. Prepare the subgrade or subbase as specified in Subsection 300.3.03.C, *Preparing the Subgrade* or Subsection 300.3.03.D, *Preparing the Subbase* if the base, subbase, or shoulders will be composed entirely of new materials, whether mixed-in-place or central plant mixed. In addition to the above requirements, ensure that the subgrade materials used underneath the soil-cement base meets the sulfates and PH requirements of Subsection 814.2.02.A. Place materials only on dry, thawed subgrade or subbase.
2. For Projects that require Central Plant mixed soil-cement base, the Subgrade or Subbase directly shall be graded with a fine grader as outlined in Subsection 300.3.02.H.

### 301.3.04 Fabrication

General Provisions 101 through 150.

### 301.3.05 Construction

#### A. In-Place Mixing

1. Soil

If additional soil is needed on the roadbed, place and spread the soil uniformly to the proper depth to obtain the specified thickness.

2. Pulverization

Pulverize the roadbed materials as follows:

- a. Loosen and pulverize roadbed materials to the width and depth to be stabilized without disturbing or damaging the underlying subgrade.
- b. Continue pulverizing until 100 percent of roadbed material passes through a 1-1/2 in. (37.5 mm) sieve, and until at least 80 percent of the soil, excluding any stone or gravel, passes through a No. 4 (4.75 mm) sieve.
- c. Add water to assist pulverization if necessary.
- d. Remove all roots, sod, and rocks that exceed 3 in. (75 mm) in diameter.
- e. Remove all other harmful materials.

3. Moisture Adjustments

Immediately before spreading cement, adjust the moisture content of the in-place material so it will stabilize to within 100 to 120 percent of optimum moisture (amount of moisture in the mixture at maximum dry density).

4. Cement

Spread cement as follows:

- a. Uniformly spread the required amount of Portland cement with a cyclone-type mechanical spreader or its equivalent.
- b. Apply the Portland cement at a rate that ensures the pounds spread are within  $\pm 10$  percent of the amount specified. Furnish a square-yard cloth, scales and personnel for checking the spread rate of cement placed.
- c. Apply cement on soils with a moisture content less than 120 percent of optimum.
- d. Apply cement on days when wind will not interfere with spreading.
- e. If the cement content is below the 10 percent limit in the mixing area, add additional cement to bring the affected area within the tolerance specified and recalibrate the mechanical spreader's spread rate. If the cement content is more than the 10 percent limit in the mixing area, the excess quantity will be deducted from the Contractor's pay for cement.
- f. Regulate operations to limit the application of cement to sections small enough so that all of the compacting and finishing operations specified in Subsection 301.3.05.B.7, *Compacting and Finishing* can be completed within the required time limits.
- g. Pass only spreading and mixing equipment over the spread cement. Operate this equipment so that it does not displace cement.
- h. Replace damaged cement at no additional cost the Department when damage is caused by:
  - Hydration due to rain, before or during mixing operations
  - Spreading procedures contrary to the requirements mentioned above
  - Displacement by the Contractor's equipment or other traffic

5. Mixing

Mix the material as follows:

Begin mixing as soon as practical after the cement is spread and continue until a homogeneous and uniform mixture is produced. If the equipment does not produce a homogeneous and uniform mixture meeting these specifications, make any necessary changes to meet the Engineer's requirements.

6. Road Methods

## Section 301 — Soil-Cement Construction

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### i. Multiple Pass Mixing

Perform multiple pass mixing as follows:

- 1) After spreading the cement, mix it with the material to be treated.
- 2) Ensure that the material has been adjusted for moisture as stated in Subsection 301.3.05.B.7.c, *Moisture Control*.
- 3) Continue mixing with successive passes until a uniform mixture of cement and soil, or soil-aggregate is obtained.
- 4) Immediately after the preliminary mixing of cement and soil or soil-aggregate, add water as needed to maintain or bring the mixture to within the moisture requirements of Subsection 301.3.05.B.7.c, *Moisture Control*.
- 5) Uniformly mix the additional water to incorporate it into the full depth of the mixture.

### 7. Compacting and Finishing

Compact and finish according to Subsection 301.3.05.B.7, *Compacting and Finishing*.

## B. Central Plant Mixing

### 1. Soil

Do the following:

- a. Before introducing any soil into the mixer, pulverize it until 100 percent passes a 1-1/2 in. (37.5 mm) sieve.
- b. Ensure that at least 80 percent of the soil, excluding any stone or gravel, passes through a No. 4 (4.75 mm) sieve.
- c. Have enough stockpile material meeting the requirements of Subsection 300.3.05.B, *Mining and Mixing in a Pit* for at least one day of base construction before operations begin.

### 2. Cement

Do the following:

- a. Measure cement by weight.  
Uniformly add cement into the mixture. The cement incorporated, per ton (megagram) of soil, shall be within  $\pm 5$  percent of the amount prescribed by the Engineer.
- b. Perform cement checks that compare the actual percent cement in the mixture with the required percent cement specified in the approved Mix Design for the Project on each of the first two tankers supplying cement to the plant. If these checks are within the specified tolerance, one cement check per day will be required.
- c. Perform and make available to the Engineer a minimum of four daily comparison checks between the certified scales and the plant computer to ensure the proper percentage of cement is being incorporated into the mixture between cement checks.
- d. When a cement check is out of the specified tolerance, at least two, passing one-tanker checks, are required before returning to a one cement check per day basis. When three consecutive cement checks fail to meet the specified tolerance, discontinue soil-cement plant production. Correct the problem, and recalibrate the plant as specified in Subsection 300.3.06.A *Monitoring Quality Control* before resuming the work.
- e. When the cement content exceeds the specified tolerance, the Department will deduct the excess cement from the Contractor's pay for cement. When the cement content does not meet the specified tolerance, the Engineer will evaluate the strength of the affected area after 7 days.
- f. Correct any areas of base with deficient strength as specified in the Strength Correction Chart at no additional cost to the Department, regardless of the percent of compaction. This correction also applies to the test section described in Subsection 301.3.05.B.7.a, *Test Section*.
- g. Quantities of cement used in calibrating the plant will also be deducted from the Contractor's pay for cement.

### 3. Mixing



## Section 301 — Soil-Cement Construction

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Do the following:

- a. Measure proportions of soil, cement, and water separately and accurately before mixing.
- b. Charge all materials into the mixer together. Begin mixing immediately.
- c. Mix until a homogeneous and uniform mixture is produced. If the final blend of materials is not homogeneously mixed or does not meet the moisture range specified in Subsection 301.3.05.B.7.c, *Moisture Control*, cease plant operations until corrections are made in the plant or to the materials.

### 4. Hauling

Do the following:

- a. Deliver soil-cement material to the project.
- b. Spread soil-cement material so that compaction can begin within 45 minutes after the soil, cement, and water have been charged into the mixer.
- c. Protect the mixture in transit by using a securely fastened waterproof cover large enough to extend down over the sides and the end of the bed of each haul vehicle.

### 5. Spreading

Spread the soil-cement mixture as follows:

- a. Use an approved mixture spreader as specified in Subsection 300.3.02.D, *Mixture Spreader* to obtain the specified thickness. Spread the mixture the full width of the area to be covered.
- b. Ensure that trucks and other construction equipment, including motor graders, do not travel over the material until compaction equipment has made initial passes over the mixture.
- c. Ensure that less than 30 minutes elapse between the placement of cement-treated material in adjacent lanes at any location, unless longitudinal joints are specified.

### 6. Thickness of Course

Compact the soil-cement base to a maximum thickness of 10 in. (250 mm). Place the full thickness in one course only and compact as specified in Subsection 301.3.05.B.7, *Compacting and Finishing* below.

### 7. Compacting and Finishing

#### a. Test Section

Construct a test section as follows:

- 1) Use the first section of each constructed soil-cement base course as a test section.
- 2) Use a test section between 350 ft. (100 m) and 500 ft. (150 m) long for the designated width.
- 3) Before constructing a test section, submit a Construction Work Plan to the Engineer for approval. The Construction Work Plan must indicate proposed equipment and compaction procedures.
- 4) If the Construction Work Plan is approved, the Engineer will evaluate the Work Plan during test section construction. The Engineer will evaluate compaction, moisture, homogeneity of mixture, thickness of course, and laminations or compaction planes (scabbing).
- 5) If the Engineer determines that the Work Plan is not satisfactory, revise the compaction procedure and augment or replace equipment, as necessary, to complete work according to the specifications.

#### b. Time Limits

Observe the following time limits:

- 1) Begin compaction within 45 minutes of the time water is added to the soil-cement mixture.
- 2) Complete compaction within 2 hours.
- 3) Complete all operations in four hours, from adding cement to finishing the surface.

#### c. Moisture Control

Control moisture as follows:

- 1) During compaction, ensure a uniform moisture content of the mixture that is between 100 and 120 percent of the optimum moisture content.

## Section 301 — Soil-Cement Construction

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- 2) If the moisture content exceeds the tolerance at any time, cease operations immediately and make the adjustments necessary to bring the moisture content within tolerance.
- 3) Do not use materials that “pump” under construction traffic, regardless of moisture content.
- d. Additional Compaction Requirements  
Perform the following additional compaction requirements:
  - 1) Compact the soil-cement base, subbase, or shoulder course to at least 98 percent of the maximum dry density as determined in this Subsection.
  - 2) Do not perform vibratory compaction on materials more than 1-1/2 hours old, measured from the time the cement was added to the mixture.
  - 3) Uniformly compact the mixture and then fine-grade the surface to the line, grade, and cross-section shown on the Plans.
  - 4) Loosened material accumulated during this process is considered waste and is to be removed from the Project. Do not use additional layers of cement-treated materials in order to conform to cross-sectional or grade requirements.
  - 5) Use a pneumatic-tired roller to roll the finished surface until the surface is smooth, closely knit, free from cracks, and in conformance with the proper line, grade, and cross-section.  
If the Engineer requires, lightly apply water to the finished surface to aid in sealing the completed base and preparing the surface for priming.
  - 6) At any place inaccessible to the roller, secure the required compaction with mechanical tampers approved by the Engineer. The same compaction requirements stated in the above subsection apply.
- e. Additional Finishing Requirements  
Perform the following additional finishing requirements:
  - 1) Use the automatically controlled screed equipment when required by Subsection 300.3.03.H, *Fine Grading Machine* of the Specifications. Control fine-grading for this requirement with sensing wires or a taut string line. Furnish, install, and maintain this operation as a part of this Pay Item. When automatically controlled screed equipment is not required, fine-grading with motor graders is permitted.
  - 2) Fine-grade the surface of the cement-stabilized subbase for Portland cement concrete pavement or the cement-stabilized base for asphaltic concrete pavement.
  - 3) Fine-grade immediately after placement and compaction. Roll the subbase again according to this subsection.
8. Construction Joints  
Form construction joints as follows:
  - a. Form a straight transverse joint at the end of each day’s construction or when the work is interrupted so that the material cannot be compacted within the time limit specified in this subsection.
  - b. Create the straight transverse joint by cutting back into the completed work to form a true vertical face free of loose or shattered material.
  - c. Form the joint at least 2 ft. (600 mm) from the point at which the strike-off plate of the spreader comes to rest at the end of the day’s work, or at the point of interruption.
  - d. Form a longitudinal joint as described above if the soil-cement mixture is placed over a large area where it is impractical to complete the full width during one day’s work. Use the procedure for forming a straight transverse joint. Ensure that waste material is removed from the compacted base.
9. Prime  
Apply bituminous prime to the finished surface of the base course at the end of each day or as soon as the Engineer determines it is practical. Apply prime only to an entirely moist surface.

## Section 301 — Soil-Cement Construction

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If weather delays prime application, apply prime as soon as the surface moisture is adequate. Apply prime according to Section 412.

Apply a single #89 surface treatment layer over the primed base course.

### 10. Opening to Traffic

No traffic or equipment is permitted to operate on the finished base, subbase, or shoulders until the prime has hardened enough so that it does not pick up under traffic. For the first seven days after priming, traffic is restricted to lightweight vehicles such as passenger cars and pickup trucks. Vehicles with an average axle load exceeding 20,000 pounds (9 Mg) will not be allowed on the finished base or subbase at any time.

Correct any failures caused by traffic at no additional cost to the Department.

### 11. Protection of Course

Maintain the base, subbase, or shoulder course constructed under these specifications until the Engineer determines that it has sufficiently cured and is ready to be covered with the next base or pavement course.

Make repairs specified in Subsection 300.3.06.B, *Repairing Defects* whenever defects appear. This preservation action does not relieve the Contractor of his responsibility to maintain the work until final acceptance as specified in Section 105.

## 301.3.06 Quality Acceptance

### A. Compaction Tests

Test compaction as follows:

1. Determine the maximum dry density for central plant mix construction from representative samples of the material to be compacted according to GDT 19.
2. Determine the maximum dry density for mixed-in-place construction according to GDT 19 or GDT 67 .
3. Determine the in-place density of the cement-stabilized base, subbase, or shoulders as soon as possible after compaction, but before the cement sets. Determine in-place density according to GDT 20, GDT 21, or GDT 59.

### B. Finished Surface Tests

Test the finished surface as follows:

1. Check the finished surface of the cement stabilized base, subbase, or shoulder course transversely.
2. Place a 15 ft. (4.5 m) straightedge parallel to the centerline. Additionally, use one of the following tools:
  - A template, cut true to the required cross-section and set with a spirit level on non-super elevated sections
  - A system of ordinates, measured from a string line
  - A surveyor's level
3. Ensure that ordinates measured from the bottom of the template, string line, or straightedge to the surface do not exceed 1/4 in. (6 mm) at any point. Rod readings shall not deviate more than 0.02 ft. (6 mm) from the required readings.
4. Correct any variations from requirements immediately, as specified in Subsection 300.3.05.D.

### C. Tolerances

#### 1. Thickness Measurements

- a. Thickness requirements apply to shoulder construction where the Plans specify a uniform thickness, or where the shoulders will be surfaced. Do the following:
- b. Determine the thickness of the base, subbase, or shoulder course, by making as many checks as necessary to determine the average thickness.

#### 2. Deficient Thickness

- a. If any measurement is deficient in thickness more than 1/2 in. (13 mm), make additional measurements to determine the deficient area.

## Section 301 — Soil-Cement Construction

- b. Correct any area deficient by more than 1/2 in. (13 mm) to the design thickness by using one of the following methods according to these Specifications:

- Apply Asphaltic Concrete 9.5 mm Superpave.
- Remove material to the full depth of the course and reconstruct to the required thickness.

No payment will be made for any 9.5 mm Superpave asphaltic concrete applied to correct deficiencies nor will payment be made for removing and reconstructing the deficient work.

### 3. Average Thickness

Average thickness is measured as follows:

- a. The average thickness per linear mile (kilometer) is determined from all measurements within the mile (kilometer) increments.
- b. The average thickness shall not exceed the specified thickness by more than 1/2 in. (13 mm).
- c. If the unit of payment is by the ton (megagram) or cubic yard (meter), and the average thickness for any mile (kilometer) increment exceeds the allowable 1/2 in. (13 mm) tolerance, payment for the excess quantity in that increment will be deducted.
- d. The excess quantity is calculated by multiplying the average thickness that exceeds the allowable 1/2 in. (13 mm) tolerance by the surface area of the base, subbase, or shoulder, as applicable.

### 4. Strength

Do the following:

- a. Ensure that the strength of the soil-cement base, subbase, or shoulder course is at least 300 psi (2070 kPa), as determined from testing the unconfined compressive strength of cores from the completed course in accordance with GDT 86.
- b. If a strength test falls below 300 psi (2070 kPa), do the following:
  - 1) Isolate the affected area by securing additional cores 75 ft. (22 meters) in each direction until passing strengths are achieved.
  - 2) Average all compressive strengths in the affected area to determine the basis for corrective work according to the table below or the Engineer's directions.

### 5. Compaction

The compaction requirement for soil-cement base, subbase, or shoulder course shall be a minimum of 98 percent of the specified theoretical density.

If any compaction test falls below 98 percent, core and retest the represented area for compressive strength determination after 7 days. If the strength is 300 psi (2070 kPa) or greater, no correction will be required. If the strength is less than 300 psi (2070 kPa), isolate the affected area by obtaining additional cores.

Average all compressive strengths in the affected area to determine the basis for corrective work, according to the following table.

Compressive Strength	Corrective Work
300 psi (2070 kPa) or greater	None
200 psi (11380 kPa) to 299 psi (2062 kPa)	6 in., 8 in., & 10 in. (150 mm, 200 mm, & 250 mm) base - add 135 lbs./yd <sup>2</sup> (75 kg/m <sup>2</sup> ) asphaltic concrete
Less than 200 psi (1379 kPa)	Reconstruct the affected area

Ensure that a corrected area requiring asphaltic concrete is at least 150 ft. (45 m) long.

Perform corrective work requiring asphaltic concrete or reconstruction at no additional cost to the Department.

## Section 301 — Soil-Cement Construction

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### 301.3.07 Contractor Warranty and Maintenance

General Provisions 101 through 150.

## 301.4 Measurement

### A. Soil-Cement Material

Soil-cement material is measured by the cubic yard (meter), loose volume, as specified in Section 109, during mixed-in-place construction if it is necessary to add materials to the roadbed or to build up the base, subbase, or shoulders with new material.

### B. Soil-Cement Stabilized Base, Subbase, and Shoulder Course

Soil-cement stabilized base, subbase, and shoulder course are measured as follows:

1. The surface length is measured along the centerline when payment is specified by the square yard (meter). The width is specified on the plans.
  - a. Irregular areas, such as turnouts and intersections, are measured by the square yard (meter).
  - b. Material is measured in tons (megagrams), as mixed and accepted, when payment is specified by the ton (megagram).

The actual weight is determined by weighing each loaded vehicle on a required motor truck scale as the material is hauled to the roadway. The actual weight will be the pay weight; no deduction will be made for the weight of the cement.

### C. Portland Cement

Portland cement is measured by the ton (megagram).

### D. Prime

Bituminous prime is not measured for separate payment. Include the cost of furnishing and applying bituminous prime according to the provisions of Section 412 in the Unit Price Bid for each individual base item.

### E. Unsuitable Material

Unsuitable materials that have been removed are measured and paid for according to the Earthwork Item in the Contract.

### 301.4.01 Limits

General Provisions 101 through 150.

## 301.5 Payment

### A. Soil-Cement Material

Where in-place mixing is done, and when it is necessary to add other materials to those in the roadbed or to build up the base, subbase, and shoulders entirely with new materials, the added soil-cement material, in place and accepted, will be paid at the Contract Price per cubic yard (meter). Payment will be full compensation for soil-cement material; mixing in the pit; loading, hauling, and unloading; and spreading

### B. Soil-Cement Stabilized Base, Subbase, and Shoulder Course

Where specified, soil-cement stabilized base, subbase, and shoulder course, in place and accepted, will be paid at the Contract Price per square yard (meter). Payment will be full compensation for roadbed preparation, mixing on the road, shaping, pulverizing, watering, compaction, defect repair, and maintenance.

## Section 301 — Soil-Cement Construction

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### C. Pre-mixed Soil-Cement Stabilized Base, Subbase, and Shoulder Course

Where specified, pre-mixed soil-cement stabilized base, subbase, and shoulder course, in place and accepted, will be paid at the Contract Price per ton (megagram) or square yard (meter).

Payment will be full compensation for roadbed preparation; all materials except Portland cement; loading, hauling, and unloading; mixing; spreading; watering; rolling and shaping; and maintenance.

### D. Portland Cement

Portland cement will be paid at the Contract Price per ton (megagram). Payment is full compensation for furnishing, hauling, and applying the material. Only Portland cement incorporated in the finished course will be paid; no payment will be made for cement used to correct defects due to the Contractor's negligence, faulty equipment, or plant calibration error.

Payment will be made under:

<b>Item No. 301</b>	Soil-cement material—including material and haul	per cubic yard (meter)
<b>Item No. 301</b>	Soil-cement stabilized base, subbase, and shoulder course ___in. (mm)	per square yard (meter)
<b>Item No. 301</b>	Pre-mixed soil-cement stabilized base, subbase, and shoulder course—including material and haul	per ton (megagram) or per square yard (meter)
<b>Item No. 301</b>	Pre-mixed soil-cement stabilized base and shoulder course—including material and haul	per ton (megagram) or per square yard (meter)
<b>Item No. 301</b>	Portland cement	per ton (megagram)

### 301.5.01 Adjustments

General Provisions 101 through 150.

# DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

## SUPPLEMENTAL SPECIFICATION

### Section 415—Asphaltic Concrete Open-Graded Crack Relief Interlayer

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*Delete Section 415 and substitute the following:*

#### **415.1 General Description**

The work includes constructing a bituminous plant produced Asphaltic Concrete Open-Graded Crack Relief Interlayer (OGI) over the existing roadway surface. The mixture shall serve as asphaltic concrete leveling over irregular surfaces and provide mitigation for reflective cracking prior to the placement of the final surface pavement. The mixture shall conform to the lines, grades, thicknesses, typical sections and cross sections shown on the plans or established by the Engineer.

This section includes the requirements for Asphaltic Concrete Open-Graded Crack Relief Interlayer mixtures regardless of the gradation of the aggregates, type and amount of bituminous material, or pavement use. Follow the requirements in Section 400, Section 402 and Section 828 for production and placement, materials, equipment, and acceptance plans except as noted or modified in this specification.

Acceptance of the work is on a lot-to-lot basis according to the requirements of this Section, Section 400, Section 402 and Section 106.

#### **415.1.01 Definitions**

Asphaltic Concrete Open-Graded Crack Relief Interlayer: an open graded mixture placed at a lift thickness that yields stone on stone contact that provides in-place air void content of 18 to 22 percent to mitigate existing cracking within asphaltic concrete pavements.

#### **415.1.02 Related References**

##### **A. Standard Specifications**

- Section 106—Control of Materials
  - Section 109—Measurement and Payment
  - Section 152—Field Laboratory Building
  - Section 400 – Hot Mix Asphaltic Concrete Construction
  - Section 402 – Hot Mix Recycled Asphaltic Concrete
  - Section 413—Bituminous Tack Coat
  - Section 800 – Coarse Aggregate
  - Section 802 - Aggregates for Asphaltic Concrete
  - Section 820 – Asphalt Cement
  - Section 828—Hot Mix Asphaltic Concrete Mixtures
  - Section 831 – Admixtures
  - Section 882 – Lime
  - Section 883 – Mineral Filler
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## Section 415 — Asphaltic Concrete Open-Graded Crack Relief Interlayer

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### B. Referenced Documents

AASHTO T 209

AASHTO T 202

AASHTO T 49

AASHTO T 315

Department of Transportation Standard Operating Procedure (SOP) 27

Department of Transportation Standard Operating Procedure (SOP) 15

Department of Transportation Standard Operation Procedure (SOP) 40

GDT 38

GDT 73

GDT 83

GDT 114

GDT 119

GDT 125

GDT 126

GSP 15

GSP 21

QPL 1

QPL 2

QPL 7

QPL 26

QPL 39

QPL 41

QPL 45

### 415.1.03 Submittals

#### A. Invoices

Furnish formal written invoices from a supplier for all materials used in production of HMA when requested by Department. Show the following on the Bill of Lading:

- Date shipped
- Quantity in tons (megagrams)
- Included with or without additives (for asphalt cement)

Purchase asphaltic cement directly from a supplier listed on Qualified Products List 7 and provide copies of Bill of Lading at the Department's request.

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## Section 415 — Asphaltic Concrete Open-Graded Crack Relief Interlayer

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### B. Paving Plan

Before starting asphaltic concrete construction, submit a written paving plan to the Engineer for approval. Include the following on the paving plan:

- Proposed starting date
- Location of plant(s)
- Rate of production
- Average haul distance(s)
- Number of haul trucks
- Paver speed feet (meter)/minute for each placement operation
- Mat width for each placement operation
- Number and type of rollers for each placement operation
- Sketch of the typical section showing the paving sequence for each placement operation
- Electronic controls used for each placement operation
- Temporary pavement marking plan

If staged construction is designated in the plans or contract, provide a paving plan for each construction stage.

If segregation is detected, submit a written plan of measures and actions to prevent segregation. Work will not continue until the plan is submitted to and approved by the Department.

### C. Job Mix Formula

Submit to the Engineer a written job mix formula proposed for each mixture type to be used based on an approved mix design. Furnish the following information for each mix:

- Specific project for which the mixture will be used
- Source and description of the materials to be used
- Mixture I.D. Number
- Proportions of the raw materials to be combined in the paving mixture
- Single percentage of the combined mineral aggregates passing each specified sieve
- Single percentage of asphalt by weight of the total mix to be incorporated in the completed mixture
- Single temperature at which to discharge the mixture from the plant
- Theoretical specific gravity of the mixture at the designated asphalt content
- Name of the person or agency responsible for quality control of the mixture during production

Do the following to have the formulas approved in accordance with SOP 40 *Approval of Contractor Job Mix Formulas* and to ensure their quality:

1. Submit proposed job mix formulas for review at least two weeks before beginning the mixing operations.
2. Do not start hot mix asphaltic concrete work until the Engineer has reviewed and approved a job mix formula for the mixture to be used. No mixture will be accepted until the job mix formula is approved.
3. Provide mix designs for all Asphaltic Concrete Open Graded Crack Relief Interlayer mixtures to be used. PG binder grades PG 64-22 and PG 67-22 may be used interchangeably but separate Job Mix Formulas must be submitted and approved for any PG Grade change.
4. After a job mix formula has been approved, assume responsibility for the quality control of the mixtures supplied to the Department according to Subsection 106.01, *Source of Supply and Quantity of Materials*.

### D. Quality Control Program

Submit a Quality Control Plan to the Office of Materials and Testing for approval. The Quality Control Program will be included as part of the certification in the annual plant inspection report.

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## Section 415 — Asphaltic Concrete Open-Graded Crack Relief Interlayer

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### 415.2 Materials

The requirements established in Section 400 are to be followed for Asphaltic Concrete Open-Graded Crack Relief Interlayer production and placement, materials, equipment, and acceptance plans except as noted or modified in this specification.

Ensure that materials comply with the specifications listed in Table 1.

**TABLE 1—MATERIALS SPECIFICATIONS**

<b>Material</b>	<b>Subsection</b>
Asphalt Cement, Grade Specified	820.2
Coarse Aggregates for Asphaltic Concrete	802.2.02
Fine Aggregates for Asphaltic Concrete	802.2.01
Mineral Filler	883.1
Heat Stable Anti-Stripping Additive	831.2.04
Hydrated Lime	882.2.03
Silicone Fluid (When approved by the Office of Materials and Testing)	831.2.05
Bituminous Tack Coat: PG 58-22, PG 64-22, PG 67-22	820.2
Cationic emulsified asphalt CSS-1h, CRS-1h, CRS-2h,	824.2.01
Hot Mix Asphaltic Concrete Mixtures	828

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## Section 415 — Asphaltic Concrete Open-Graded Crack Relief Interlayer

### 415.2.01 Mix Design Requirements

The Open Graded Crack Relief Interlayer Mixture shall be formulated to contain approximately 18 to 22 percent in-place air voids after compaction. Use approved mixtures that meet the following mixture control tolerances and design criteria:

**TABLE 2 – ASPHALTIC CONCRETE OPEN GRADED CRACK RELIEF INTERLAYER MIXTURE DESIGN AND CONTROL**

Sieve Size	Mixture Control Tolerance, %	Design Gradation Limits, % Passing
		Open Graded Crack Relief Interlayer
3/4 in. (19 mm) sieve	±0.0	100
1/2 in. (12.5 mm) sieve	±6.1	80 - 100
3/8 in. (9.5 mm) sieve	±5.6	40 - 67
No. 4 (4.75 mm) sieve	±5.7	10 - 27
No. 8 (2.36 mm) sieve	±4.6	2 - 12
No. 200 (75 µm) sieve	±2.0	3- 5
Range for % AC	±0.4	4.50 – 5.25
Class of stone		Section 802
Drain-down (AASHTO T305), %		<0.3
Design optimum air voids (%)		20% ± 2%
Control Sieves used in Acceptance Schedule		3/8 in., No. 8 (9.5 mm, 2.36 mm) and Asphalt Cement

#### Notes:

1. Use only PG 64-22 or PG 67-22 asphalt cement (specified in Section 820).
2. Use no less than 1.0% hydrated lime regardless of aggregates group or source(s) used.
3. Ensure no more than 10 percent Recycled Asphalt Pavement (RAP) is used in Asphaltic Concrete Open Graded Interlayer mixtures with the exception that RAP content can be increased to ≤ 15 percent when using fractionated + 4.75 mm sieve RAP.
4. Quality Acceptance Test Results for AC content deviating  $> \pm 0.3\%$  from the approved Job Mix Formula (JMF) consistently over three Lots may subject the mix to a revised AC content on the project JMF at the discretion of the State Materials Engineer based on statistical trend.
5. Range for % AC is Original Optimum AC (OOAC) at 25 blow Marshall prior to the Corrected Optimum AC (COAC) calculation detailed in SOP 2 (Appendix D).

### 415.3 Construction Requirements

The requirements established in Section 400 are to be followed for asphaltic concrete mixture production and placement, materials, equipment, and acceptance plans except as noted or modified in this specification.

#### 415.3.01 Personnel

General Provisions 101 through 150.

## Section 415 — Asphaltic Concrete Open-Graded Crack Relief Interlayer

### 415.3.02 Construction

Asphaltic concrete plants that produce mix for Department use are governed by Quality Assurance for Hot Mix Asphaltic Concrete Plants in Georgia, Laboratory Standard Operating Procedure No. 27.

Follow requirements established in Section 400 for production and placement, materials, equipment, acceptance plans and adjustments except as noted or modified in this specification.

- A. Apply a bituminous tack coat according to Section 413. The Engineer will determine the application rate, which must be within the limits of 0.08 gal/yd<sup>2</sup> to 0.10 gal/yd<sup>2</sup> (0.36 L/m<sup>2</sup> to 0.45 L/m<sup>2</sup>) (residual asphalt cement).
- B. The mix shall be produced and placed at a temperature of 2570°F with a tolerance of ± 20°F.
- C. Place the mix at a spread rate of 100 lb./yd<sup>2</sup>. The spread rate shall be controlled within +15 lbs./yd<sup>2</sup> (8 kg/m<sup>2</sup>) to -10 lbs./yd<sup>2</sup> (6 kg/m<sup>2</sup>).
- D. Do not place mix at air temperatures below 50 °F (10 °C).
- E. The mix shall be compacted in a manner to achieve 18 to 22 percent in-place air voids. Steel wheel rollers operating in static mode **only** will be used to seat the lift of Asphaltic Concrete Open Graded Crack Relief Interlayer mixture. Pneumatic tire rollers shall not be allowed on the Asphaltic Concrete Open Graded Crack Relief Interlayer mat.

### 415.4. Measurement

Asphaltic Concrete Open Graded Crack Relief Interlayer mixture, complete, in place and accepted, is measured in tons (megagrams). If the spread rate exceeds the upper limits outlined in Subsection 415.3.02.C by > 15 lbs./yd<sup>2</sup>, the mix in excess will not be paid for. If the rate of the spread is ≤ 10 lbs./yd<sup>2</sup> than the lower limit, the deficient course is subject to correction by overlaying the entire lot. The mixture used for correcting deficient areas is paid for at the Contract Unit Price of the course being corrected and is subject to mixture control requirements established in Table 2 – Asphaltic Concrete Open Graded Crack Relief Interlayer Mixture Design and Control. After the deficient course has been corrected, the total spread rate for that lot is recalculated, and the mix in excess of the upper limits outlined in Subsection 415.3.02.C will not be paid for.

### 415.5 Payment

Asphaltic Concrete Open Graded Crack Relief-Interlayer mix is paid for at the Contract Unit Price per ton (megagram). Payment is full compensation for furnishing and placing materials including asphalt cement, hydrated lime, approved additives, and for cleaning and repairing, preparing surfaces, hauling, mixing, spreading, rolling, and performing other operations to complete the Contract Item.

Payment will be made under:

Item No. 415	Asphaltic Concrete Open Graded Crack Relief Interlayer, group-blend, Including bituminous materials and hydrated lime	Per ton (megagram)
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#### 415.5.01 Adjustments

##### A. Materials Produced and Placed During the Adjustment Period

Follow requirements established in Section 400 for production and placement, materials, equipment, acceptance plans and adjustments except as noted or modified in this specification.

Asphaltic Concrete Open Graded Crack Relief Interlayer shall be granted an adjustment period for the first Lot or day, whichever is less, produced for the Contract. A new adjustment period shall not be granted for a change of producer, mix design or asphalt plant location. The adjustment period is provided to adjust or correct the mix and to establish the construction procedures and sequence of operations. Test the mixture in accordance with Section 400.3.06. Maintain the asphalt cement content and gradation within the limits provided in Table 2 – Asphaltic Concrete Open Graded Interlayer Mixture Design and Control. The Engineer will not use these test results in the acceptance for payment decision, but production and placement operations shall cease for failure to meet mixture control tolerances established in Table 2 – Asphaltic Concrete Open Graded Interlayer Mixture Design and Control.

## Section 415 — Asphaltic Concrete Open-Graded Crack Relief Interlayer

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### 415.5.02 Determine Lot Acceptance

The Engineer will accept the mixture based on visual inspection. The mixture shall be inspected for texture, segregation, bleeding, fat spots, raveling, delamination, tearing, targeted in-place air void content and slippage areas. Remove and replace any areas determined to be unacceptable to the Engineer.

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