LUMPKIN COUNTY BOARD OF COMMISSIONERS

INVITATION TO BID

ASPHALT PATCHING, LEVELING AND RESURFACING OF VARIOUS COUNTY ROADS

LMIG PROJECT # 2016-002

SUBMISSIONS ARE DUE AT THE ADDRESS SHOWN BELOW NO LATER THAN

TUESDAY FEBRUARY 23, 2016 , 2:00 P.M., EST

ELECTRONIC SUBMISSIONS VIA E-MAIL OR FAX WILL NOT BE ACCEPTED.

LUMPKIN COUNTY BOARD OF COMMISSIONERS
ATTENTION: PATTI JO HOLDER, PURCHASING DIRECTOR
99 COURT HOUSE HILL, SUITE D
DAHLONEGA, GA 30533

THE RESPONSIBILITY FOR SUBMITTING A RESPONSE TO THIS ITB ON OR BEFORE THE STATED DATE AND TIME WILL BE SOLELY AND STRICTLY THE RESPONSIBILITY OF THE OFFEROR.

ISSUE DATE: JANUARY 20, 2016

INVITATION TO BID

LUMPKIN COUNTY BOARD OF COMMISSIONERS IS REQUESTING SEALED BIDS FOR ASPHALT PATCHING, LEVELING, AND RESURFACING OF VARIOUS COUNTY ROADS.

A BID BOND IN THE AMOUNT NOT LESS THAN 5% OF THE TOTAL BID AMOUNT IS REQUIRED.

BIDS WILL BE RECEIVED BY LUMPKIN COUNTY BOARD OF COMMISSIONERS, PURCHASING DEPARTMENT, 99 COURTHOUSE HILL, SUITE D, DAHLONEGA, GEORGIA 30533 UNTIL 2:00 PM, EST .ON TUESDAY, FEBRUARY 23, 2016. LATE BIDS WILL NOT BE CONSIDERED NOR RETURNED. BIDS WILL BE FORMALLY ACCEPTED AND ACKNOWLEDGED AT THE COUNTY ADMINISTRATION BUILDING BY STAFF PERSONNEL.

THE BID DOCUMENTS AND SPECIFICATIONS ARE AVAILABLE FOR INSPECTION AT THE LUMPKIN COUNTY PURCHASING DEPARTMENT, 99 COURTHOUSE HILL, SUITE D, DAHLONEGA, GEORGIA AND AT **WWW.LUMPKINCOUNTY.GOV**.

BIDS MAY NOT BE WITHDRAWN FOR NINETY (90) DAYS AFTER THE TIME AND DATE SET FOR CLOSING, EXCEPT AS ALLOWED BY OCGA. LUMPKIN COUNTY RESERVES THE RIGHT TO REJECT ANY AND ALL BIDS AND TO WAIVE ANY TECHNICALITIES.

BID DOCUMENTS ARE AVAILABLE AT THE LUMPKIN COUNTY, GEORGIA WEBSITE, WWW.LUMPKINCOUNTY.GOV.

1.0 INTRODUCTION

1.1 Purpose of Procurement

The Lumpkin County Board of Commissioners is requesting sealed bids for the asphalt leveling and resurfacing of various county roads.

1.2 Schedule of Events

This Invitation to Bid shall be governed by the following schedule:

DATE	ACTIVITY
Friday, January 20, 2016	Release of Invitation to Bid
Friday, February 5, 2016 10:00 AM	Mandatory Pre-Bid Meeting held at Lumpkin County Administration Building Conference Room, 99 Courthouse Hill, Dahlonega, GA 30533
Tuesday, February 11, 2016 12:00 PM	Deadline for written questions to be submitted to Purchasing Agent
Thursday, February 17,2016 5:00 PM	Answers to written questions posted to website: www.lumpkincounty.gov
Tuesday February 23, 2016 2:00 PM	**Bids Due and Bid Opening. Bids will be accepted until time of opening. No bids will be accepted after the due date and time.**

1.3 Restrictions on Communications

From the issue date of this Invitation to Bid until a contractor is selected and the award is announced, Contractors are not allowed to communicate **for any reason** with any County staff or elected officials except: 1) through the Purchasing Agent named herein, 2) at the Pre-Bid Meeting, if applicable or 3) as provided by existing work agreement(s). The County reserves the right to reject the submittal of any bidder violating this provision.

1.4 Pre-Bid Meeting

A **Mandatory** Pre-Bid meeting will be held Friday, February 5, 2016 at 10:00am. The location of the meeting will be the Lumpkin County Administration Building Downstairs Conference Room, 99 Courthouse Hill, Dahlonega, GA 30533.

1.5 Questions & Addenda

All questions concerning this **bid must be submitted in writing** (email is preferred but fax and mail may be used) to the Purchasing Agent on Tuesday, February 11, no later than 12:00 pm, EST.

The Inquiries must be directed to:

Patti Jo Holder, Purchasing Agent
Lumpkin County Board of Commissioners
99 Courthouse Hill, Suite D
Dahlonega, GA 30533
pattijo.holder@lumpkincounty.gov
Fax (706) 482-2201

No response to inquiries other than written will be binding upon the County. Lumpkin County reserves the right to issue written addenda to any inquiries that alter the scope of the Invitation to Bid. Addenda shall be posted to the county website, www.lumpkincounty.gov on Wednesday, February 17, 2016, no later than 5:00 PM. A signed copy of any addenda shall accompany submitted bids. Bidders are advised to check the website for addenda before submitting their bids.

1.6 Contract Term

The contract between the County and the Contractor shall become effective upon signing and shall be completed no later than 180 calendar days from the day the Notice to Proceed is issued. Lumpkin County reserves the right to terminate contract at any time if successful bidder fails to meet requirements stated in this bid.

The contract shall terminate absolutely and without further obligation at such time as appropriated and otherwise unobligated funds are no longer available to satisfy the obligations of the County under this contract.

1.7 Bonds

Bid Bonds	5% of total bid amount
Performance and Payment Bonds	100% of total contract price (required of awarded vendor only)

Information regarding bonds to be furnished is stated in the General Terms section of this Bid document, Item 3.8 "Bid/Proposal Bonds, Payment Bonds and Performance Bonds".

1.8 Submission of Bids

One (1) original and three (3) copies of the complete signed submittal must be received **TUESDAY, February 23, 2016 AT 2:00PM, EST**. Bids must be submitted in a sealed envelope stating on the outside, the vendor's name, address and **"ITB # 2016– 002 Asphalt Patching, Leveling and Resurfacing "** to:

Patti Jo Holder, Purchasing Agent
Lumpkin County Board of Commissioners
99 Courthouse Hill, Suite D
Dahlonega GA 30533

Bid responses submitted by fax or electronic mail (email) will **NOT** be accepted.

Bidders are advised to allow adequate time for shipping. **Many express mail and delivery services do not guarantee overnight delivery by noon to Lumpkin County.** Any bid received after 2:00 pm on February 23, 2016, will not be opened.

1.9 Withdrawal of Bid Due to Errors

Bidders shall have up to forty-eight (48) hours to notify the Lumpkin County Purchasing Department, in writing, of an obvious clerical error made in the calculation of bid in order to withdraw a bid after bid opening. Bids may be withdrawn from consideration if the price was substantially lower than the other bids due solely to a mistake. The bidder shall provide evidence that the bid was submitted in good faith, and that the mistake was a clerical mistake as opposed to a judgment mistake. The bidder's original work papers shall be the sole acceptable evidence of error or mistake. If a bid is withdrawn under this provision, the lowest remaining responsive bid shall be deemed low bid.

No bidder who is permitted to withdraw a bid shall for compensation, supply any material or labor, perform any subcontract or other work agreement for the person, or firm to whom the contract is awarded.

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

1.10 Award

Any purchase order / contract awarded pursuant to this Invitation to Bid shall be awarded to the lowest responsive and responsible bidder whose bid response meets the requirements and specifications set forth in this Invitation to Bid. A "responsive bidder" is a bidder who has submitted a bid response, which conforms in all material respects to the bid. A "responsible bidder" is a bidder who has the capacity in all respects to perform fully the contract requirements and the integrity and reliability which will assure good faith performance.

2.0 SCOPE OF WORK & SPECIFICATIONS

The scope and procedure for this project shall consist of Patching, Leveling, and Topping with asphalt concrete on various county roads listed in the LMIG Project Report contained in the Bid Documents for this project. All work shall be done in accordance with the 2013 State of Georgia Standard Specifications and by the Special Provision contained in the Bid Documents for this project.

Lumpkin County personnel will be supervising construction of this project and will also be subject to inspections and audits by the Georgia Department of Transportation.

2016 LMIG Bid Item Summary

ROAD NAME	BEGIN	END	LENGTH (Miles)	WIDTH (FEET)	DESCRIPTION OF WORK	
					ASPHALT REQUIREMENTS	STRIPING REQUIREMENTS
Castleberry Bridge Rd.	SR 9	Auraria Road	4.03	22	Patch, Spot level and Overlay with 175 #/syd of 12.5 mm	Centerline, Edge line, rumble strips, and stop bars.
Cavenders Creek Road	Leonard Pruitt Rd.	Rock House Road	1.35	24	Spot level and Overlay with 175 #/syd of 12.5 mm	Centerline, Edge line, rumble strips, and stop bars.
Mileage			**5.38**			**Stop Bars and Rumble Strips to be included in Striping Price**

3.0 TERMS AND CONDITIONS

3.1 Bid Amendments

The County reserves the right to amend this Bid prior to the bid due date. All addenda and additional information will be posted to the County website no later than 5:00 PM on February 17, 2016. It is the Bidder's responsibility to check the website for addenda before submitting a Bid. A signed copy of all issued addenda is to be included with the Original Bid.

3.2 Bid Withdrawal

A submitted bid may be withdrawn prior to the due date by a signed written request to the Purchasing Agent.

3.3 Cost for Preparing Bids

The cost for developing the bid is the sole responsibility of the Bidder. The County will not provide reimbursement for such costs.

3.4 Conflict of Interest

If a Bidder has any existing client relationship that involves Lumpkin County, the Bidder must
Disclose each relationship.

3.5 Contractor Selection

Lumpkin County reserves the exclusive right to determine which Bidder should be awarded the Contract. The County also reserves the right to reject any or all bids at its discretion with or without cause.

3.6 Negotiations with Apparent Winner

Prior to award, the apparent winning Bidder will be required to enter into discussions with the County to resolve any contractual differences. These discussions are to be finalized within one (1) week of notification unless extending the time period is advantageous to the County. Failure to resolve differences will lead to rejection of the Contractor's bid.

The County reserves the right to negotiate modifications and costs with the successful Bidder provided that no such modifications affect the evaluation criteria set forth herein.

The Contractor shall commence work only after the transmittal of a fully executed contract and Notice to Proceed from the County.

3.7 Taxes

Lumpkin County is exempt from taxes; however the Contractor shall pay all taxes required of him by law. Lumpkin County cannot exempt others from tax.

3.8 Bid/Proposal Bonds, Payment Bonds, Performance Bonds (if required)

A five percent (5%) Bid Bond and a one hundred percent (100%) Performance and Payment Bond shall be furnished to Lumpkin County if stated as required in Paragraph 1.7 in the "Introduction" section of this 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 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.

3.9 Compliance with Laws

The Contractor will comply with all State and Federal laws, rules, and regulations.

3.10 Cancellation for Cause

Lumpkin County reserves the right to terminate the contract immediately in the event that the Contractor discontinues or abandons operations; is adjudged bankrupt, or is reorganized under any bankruptcy law; or fails to keep in force any required insurance policies or bonds.

Failure of the successful contractor to comply with any section or part of the contract will be considered grounds for immediate termination of the contract by the County without penalty to Lumpkin County. Lumpkin County shall pay for services rendered up to the point of termination.

Notwithstanding anything to the contrary contained in the contract between the County and the successful contractor, the County may, without prejudice to any other rights it may have, terminate the contract for convenience and without cause, by giving thirty (30) days written notice to the successful contractor.

If the termination clause is used by the County, the successful contractor will be paid by the County for all scheduled work completed satisfactorily by the successful contractor up to the termination date set forth in the written termination notice.

3.11 Condition of Materials

It is understood and agreed that materials delivered shall be new, of latest design, and in first quality condition and must meet all Georgia Department of Transportation specifications.

3.12 Rejection of Submissions/Cancellation of Bids

Lumpkin County reserves the right to reject any or all bids, to waive any irregularity or informality in a bid, and to accept or reject any item or combination of items, when to do so would be to the advantage of Lumpkin County. It is also within the rights of Lumpkin County to reject bids that do not contain all elements and information requested in this document. Lumpkin County reserves the right to cancel this Invitation to Bid at any time. Lumpkin County will not be liable for any cost/losses incurred by the Contractors throughout this process.

3.13 Non-discrimination

Lumpkin County does not discriminate on the basis of race, religion, color, sex, national origin, age, or disability.

3.14 Payment

Contractor shall itemize all invoices in full. The original of the invoice shall be mailed to:

Lumpkin County Board of Commissioners
Attn: Accounts Payable
99 Courthouse Hill, Suite D
Dahlonega, GA 30533

A 10% retainage will be held on each invoice until project is 50% complete. A 5% retainage will be held on each invoice thereafter for remainder of project.

Each invoice must include the following information:

1. Date of Invoice
2. Service Performed
3. Billing Period
4. Terms
5. All billable items must be itemized
6. Appropriate Unit of Measure

Contractor must furnish documentation identifying that this work has been completed in accordance with specifications, quantities, and price as set forth in the contract.

Approved invoices (less retainage) will be paid within 30 days of approval.

Invoices missing any of the information listed above <u>will not</u> be accepted for payment but will be returned to the Contractor for correction.

3.15 Insurance

The Contractor shall be responsible for his work and every part thereof, and for all materials, tools, equipment, appliances, and properties of any and all description used in connection with this project.

The Contractor assumes all risks of direct and indirect damage or injury to the property of persons used or employed on or in connection with the work contracted for, and of all damage or injury to any person or property wherever located, resulting from any action, omission, commission or operation under the Contract, or in connection in any way whatsoever with the contracted work.

The Contractor shall, during the continuance of all work under the Contract, provide the following:

1. Maintain statutory Worker's Compensation and Employer's Liability insurance in an amount of not less than $1,000,000.00 to protect the Contractor from any liability or damages for any injuries (including death and disability) to any of its employees, volunteers, or sub-contractors, including any and all liability or damage which may arise by virtue or any statute or law in force within the State of Georgia, or which may be herein after enacted.

2. The Contractor agrees to maintain Comprehensive General Liability insurance in an amount of not less than $1,000,000.00 per occurrence to protect the Contractor, its sub-contractors, and the interest of the County, against any and all injuries to third parties, including bodily injury and personal injury, wherever located, resulting from any action or operation under the Contract or in connection with the contracted work. The General Liability insurance shall also include the Broad Form Property Damage Liability endorsement, in addition to coverage for explosion, collapse, and underground hazards, where required.

3. The Contractor agrees to maintain Automobile Liability Insurance in an amount of not less than $500,000 per occurrence. Such insurance shall include coverage for owned, hired, and non-owned automobiles.

4. The Contractor further agrees to protect, defend, indemnify, and hold harmless Lumpkin County, its commissioners, officers, agents, and employees from and against any and all liability incurred whatsoever as a result of the work performed pursuant to the terms of this Bid.

5. The Contractor shall notify the County, in writing, sixty (60) days prior to any change in insurance coverage, including cancellation, non-renewal, etc. The Contractor shall furnish a new certificate prior to any change or cancellation date. The failure of the Contractor to deliver a new and valid certificate shall result in suspension of all payments until the new certificate is furnished. Additionally, contract work may be suspended until the new certificate is furnished to the County.

6. Insurance coverage required in these specifications shall be in force throughout the Contract term. Should the Contractor fail to provide acceptable evidence of current insurance within five (5) days of written notice at any time during the Contract term, the Owner shall have the absolute right to terminate the Contract without any further obligation to the Contractor. Further, the Contractor shall be responsible for the cost of procuring the uncompleted portion of the Contract at the time of termination.

7. Contractual and other Liability insurance provided under this Contract shall not contain a supervision, inspection, or engineering services exclusion that would preclude the County from supervising and/or inspecting the project as to the end result. The Contractor shall assume all on-the-job responsibilities as to the control of persons under its direct employment and of the sub Contractors and any persons employed by the sub Contractor.

8. The Contractor and all sub Contractors shall comply with the Occupational Safety and Health Act of 1970, and amendments, as it may apply to this Contract.

9. If the Contractor does not meet the insurance requirements of the specifications, alternate insurance coverage satisfactory to the County may be considered. The Contractor shall be responsible for the costs of any and all alternate insurance coverage so obtained.

A "Certificate of Insurance" showing Lumpkin County Board of Commissioners as the Certificate Holder must be provided prior and incorporated as part of the award contract.

3.16 Project Coordination

The Contractor shall employ and assign only qualified and competent personnel to perform any service or task involved in this project. The Contractor shall designate one such person as a Project Manager, and the Project manager shall be deemed to be the Contractor's authorized representative, who shall be authorized to receive and accept any and all communications from the County. The County shall name a Project Manager who shall be authorized to generate, receive and accept communication as an authorized representative of the County.

The Contractor hereby agrees to replace any personnel or sub-contractor, at no cost or penalty to the County, if the County reasonably determines that the performance of any sub-contractor or personnel is unsatisfactory.

3.17 Accuracy of Work

The Contractor shall be responsible for the accuracy of the work performed and shall promptly correct its errors and omissions without additional compensation. Acceptance of the work by the County will not relieve the Contractor of the responsibility for subsequent correction of errors, the clarification of any ambiguities, or the costs associated with any additional work caused by negligent acts, errors, or omissions by the Contractor or latent defects in the products sold by the Contractor.

At any time during the execution of this project or during any phase of work performed by others based on data secured by the Contractor under this Agreement, the Contractor shall confer with the County for the purpose of interpreting the information supplied by the Contractor and to correct any errors or omissions. The above consultations, clarifications, and/or corrections shall be made without added compensation to the Contractor. The Contractor shall give immediate attention to these changes so there will be minimum delay to others. The Contractor shall be responsible for errors and omissions and save harmless the County and its agents as provided in this Agreement.

3.18 Ownership

Reports, plans, data, statistics, specifications, and other supporting records compiled or prepared in the performance of the Services required by this Contract, shall be the absolute property of the County and shall not be used by the Contractor for purposes unrelated to this Contract without the prior written approval of the County. Such original documents shall be turned over to the County upon completion of the contract except that Contractor shall have the right to retain copies of the same.

3.19 News Releases by Contractor

As a matter of policy, the County does not endorse the products or services of a Contractor. News releases concerning any resultant contract from this solicitation shall not be made by a Contractor without the prior written approval of the County. All proposed news releases shall be routed to the Lumpkin County Purchasing Director for review and approval.

3.20 Severability/Cancellation

It is understood and agreed by the parties hereto that if any part, term, or provision of this Contract is held illegal or in conflict with any law of the State, the validity of the remaining portions or provisions shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if the Contract did not contain the particular part, term, or provisions held to be invalid.

The COUNTY and the Contractor agree to resolve through negotiation or mediation prior to filing any cause of action. The venue for any litigation arising from this contract shall be Lumpkin County, Georgia.

3.21 Drug Free Workplace

By submission of a Bid, the Contractor certifies that the provisions of Code Sections 5024-1 through 50-24-6 of the Official Code of Georgia Annotated, relating to the "Drug-free Workplace Act", have been complied with in full. The Contractor further certifies that:

1. A drug-free workplace will be provided for the Contractor's employees during performance of the contract; and
2. Each Contractor who hires a sub Contractor to work in a drug-free work place shall secure from that sub Contractor the following written certification:

3. As part of the subcontracting agreement with (Contractor's name), (Sub Contractor's name) certifies to the Contractor that a drug-free workplace will be provided for the sub Contractor's employees during the performance of this Contract pursuant to Paragraph (7) of Sub-section (b) of Code Section 50-24-3".

4. The Contractor further certifies that he will not engage in the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana during the performance of the Contract.

3.22 Assignment of Contractual Rights

It is agreed that the Contractor will not assign, transfer, convey, or otherwise dispose of a contract that may result from this bid or his right, title, or interest in or to the same, or any part thereof, without written consent of the County.

3.23 Indemnity

To the fullest extent permitted by law, the Contractor will indemnify, defend, and hold Lumpkin County harmless from and against any and all claims, damages, losses, and expenses, including, but not limited to, fees and charges of attorneys and court and arbitration costs, arising out of or resulting from the negligent acts, negligent omissions, willful misconduct, or reckless misconduct of the Contractor or anyone for whom the Contractor is responsible.

3.24 Non-Collusive Bidding

By submitting a response to this Invitation to Bid, the Bidder represents and warrants that such bid is genuine and not a sham or collusive or made in the interest or on behalf of any person not therein named and that the Bidder has not directly or indirectly induced or solicited any other vendor to put in a sham bid, or any other person or company to refrain from submitting and that the Bidder has not in any manner sought by collusion to secure to that vendor any advantage over any other vendor.

3.25 Georgia Security and Immigration Compliance

To comply with the State of Georgia's Security and Immigration Compliance Act, all contractors must comply with regulations by completing the provided affidavits relative to the Compliance Act. All applicable affidavits have been included with this Invitation to Bid and must be signed and provided with the Bid submission.

3.26 Appropriation of Funds

The initial contract and any continuation contract(s) shall terminate immediately and absolutely at any such time as there are no appropriated and otherwise unencumbered funds available to satisfy the County's obligations under said contract(s).

3.27 Documents Deemed Part of Contract

The entire Invitation to Bid, addenda (if any) and entire Bid submitted by the Bidder shall be deemed part of the contract.

BIDDER'S CERTIFICATION

ASPHALT PATCHING, LEVELING AND RESURFACING OF VARIOUS COUNTY ROADS
ITB PROJECT# 2016-002

Date of Bid_____

I certify that this Bid is submitted without prior understanding, agreement or connection with any corporation, firm or person submitting a Bid for the same goods/services and is in all respects fair and without collusion or fraud. I understand that collusive bidding is a violation of State and Federal law and can result in fines, prison sentences and civil damages awards. I agree to abide by all terms and conditions stated of this bid document and certify that I am authorized to sign this bid for the bidder.

I acknowledge that this Project will be constructed in English units.

I certify that I have carefully examined the Plans for this Project and the Standard Specifications, 2001 Edition, and the Supplemental Specifications and Special Provisions included in and made a part of this Bid, and have also personally examined the site of the work. On the basis of the said Scope of Work and Specifications, I propose to furnish all necessary machinery, tools, apparatus and other means of construction, and do all the work and furnish all the materials in the manner specified.

I understand the quantities mentioned are approximate only and are subject to either increase or decrease and hereby propose to perform any increased or decreased quantities of work or extra work on the basis provided for in the Specifications.

I also hereby agree that Lumpkin County would suffer damages in a sum equal to at least the amount of the enclosed Bid Guaranty, in the event my Bid should be accepted and a Contract tendered me there under and I should refuse to execute same and furnish bond as herein required, in consideration of which I hereby agree that, in the event of such failure on my part to execute said Contract and furnish bond within fifteen (15) days after the date of the letter transmitting the Contract to me, the amount of said Bid Guaranty shall be and is hereby, forfeited to Lumpkin County, as liquidated damages as the result of such failure on my part.

I further agree to execute a Contract prepared by Lumpkin County as soon as the work is awarded to me, and to begin and complete the work within the time limit provided. I also propose to furnish the Bonds as required by the Bid Documents and laws of the State of Georgia. Such bond(s) shall not only serve to guarantee the completion of the work on my part, but also to guarantee the excellence of both workmanship and materials until the work is finally accepted, as well as to fully comply with all the laws of the State of Georgia and Lumpkin County.

Bidder Information
(Type or Print)

_____
Name of Company

_____
Address

_____
City, State, & Zip Code

_____
Phone Number

_____
Fax #

_____
Tax ID Number

OR

Name and Mailing Address
(Payment RemittanceAddress)

_____
Name of Company

_____
Address

_____
City, State, & Zip Code

_____
Phone Number

_____
Email Address

_____
Social Security Number

Name & Title of Person Authorized to Sign

_____
Name

_____
SIGNATURE

_____
Title

Sworn to and signed before me, a Notary Public, this _____ day of _____, in the year _____. Notary Public in and for the county of _____, State of _____.

Notary Public Signature and Seal: _____

My Commissioner Expires: _____

Proposals or Bids not signed shall be declared as "Non-Responsive" and may not be considered for award.

BID PRICING SHEET

Date: January 20, 2016
LUMPKIN COUNTY
CONTRACT SCHEDULE
Castleberry Bridge and Cavender Creek Road
CONTRACT ID:
PROJECT: LMIG-2-(187)-LUMPKIN

LINE NO	ITEM DESCRIPTION	ESTIMATED QUANTITY AND UNITS	UNIT PRICE ---------- DOLLARS / CTS	DOLLARS / CTS
0005	150-3110 TRAFFIC CONTROL FOR LMIG-02	Lump Sum		
0010	402-1812 Recycled Asph Conc. Leveling including Bitum Matl. And H lime	362 Ton		
0015	402-3130 Recycled Asph. Conc 12.5 MM Super Pave Gp 2 only Incl. Bitum Matl and H lime	6900 Ton		
0020	402- Recycled Asph. Conc. 19.5 MM Patching Incl. Bitum. Material and H lime	500 Ton		
0025	413-1000 Bitum. Tack Coat	5084 Gal		
0030	652-Solid Traffic Stripe, 5" White	11 LM		
0035	652-Solid Traffic Stripe, 5" Yellow	11 LM		
0040	652-Skip Traffic Stripe, 5" White	0.5 GLM		
0045	652-Skip Traffic Stripe, 5" Yellow	0.5 GLM		
		Total Bid		

CONTRACT FOR
ASPHALT PATCHING, LEVELING AND RESURFACING OF VARIOUS COUNTY ROADS
PROJECT # ITB 2016-002 LMIG-02-(187)LUMP

This agreement is made and entered into between the governing authorities of Lumpkin County, hereinafter referred to as "Lumpkin County", a political subdivision of the State of Georgia, and, hereinafter referred to as "Contractor".

Whereas, in consideration of the mutual benefits accruing to each party, the parties hereby agree as follows:

A. Summary of Work and Payment:

1. Contractor shall perform patching, leveling and resurfacing with asphalt concrete on the county roads listed in the LMIG Project Report contained in the Bid Documents for this project. All work shall be done in accordance with the 2013 State of Georgia Standard Specifications and by the Special Provisions contained in the Bid Documents for this project.

   Lumpkin County personnel will be supervising construction of this project but will also be subject to inspections and audits by the Georgia Department of Transportation.

2. Contractor shall be authorized to begin work upon the issuance of a Notice to Proceed from Lumpkin County. All work shall be completed no later than 180 calendar days from the day the Notice to Proceed is issued.

3. The Contractor shall employ and assign only qualified and competent personnel to perform any service or task involved in this project. The Contractor shall designate one such person as a Project Manager, and the Project Manager shall be deemed to be the Contractor's authorized representative, who shall be authorized to receive and accept any and all communications from the County. The County shall name a Project Manager who shall be authorized to generate, receive and accept communication as an authorized representative of the County.

4. The Contractor hereby agrees to replace any personnel or sub-contractor, at no cost or penalty to the County, if the County reasonably determines that the performance of any sub- contractor or personnel is unsatisfactory.

5. Contractor shall be paid for work performed under this Contract on a unit price

0005	150-3110 TRAFFICECONTROL FOR LMIG -02	LUMP SUM
0010	402-1812 RECYCLED ASPH CONC LEVELING INCLUDING BITUM MATL AND H LIME	362/TON
0015	402-3130 RECYCLED ASPH CONC 12.5 MM SUPER PAVE GP 2 ONLY INCL BITUM MATL AND H LIME	6900/TON
0020	402 RECYCLED ASPH CONC 19.5 MM PATCHING IN19.5 MM PATCHING INCL BITUM MATERIAL ND H LIME	500/TON

0025	413-1000 BITUM TACK COAT	5084/GALLON
0030	652 SOLID TRAFFIC STRIPE 5” WHITE	11/LM
0035	652 SOLID TRAFFIC STRIPE 5” YELLOW	11/LM
0040	652 SKIP TRAFFIC STRIPE 5” WHITE	0.5/GLM
0045	652 SKIP TRAFFIC STRIPE 5” YELLOW	0.5/GLM

Payment shall be made according to the terms contained in the Invitation to Bid.

B. Bonds:

Contractor shall, prior to commencing work, provide and shall maintain, during the continuance of all work under the Contract, all Bonds required in the Invitation to Bid.

C. Liability:

Contractor shall be responsible for his work and every part thereof, and for all materials, tools, equipment, appliances, and properties of any and all description used in connection with this Contract.

Contractor assumes all risks of direct and indirect damage or injury to the property of persons used or employed on or in connection with the work contracted for, and of all damage or injury to any person or property wherever located, resulting from any action, omission, commission or operation under the Contract, or in connection in anyway whatsoever with the contracted work.

Contractor shall be liable for any collateral damage (such as broken curbs, crushed sidewalks, broken water meters, etc.) caused as a result of its work under this Contract. Contractor shall restore and/or repair, at Contractor's cost, any and all collateral damage, including, but not limited to, damage to infrastructure, back to its pre-existing condition if the damage was caused by Contractor’s activities.

D. Insurance:

The Contractor shall, during the continuance of all work under the Contract, provide and maintain all insurance policies required by the Invitation to Bid.

E. Assignment of Contractual Rights and Subcontracting:

It is agreed that the Contractor will not assign, transfer, convey, or otherwise dispose of this contract or its right, title, or interest in or to the same, or any part thereof, without written consent of the County.

Contractor shall not subcontract any work without the express written consent of the County. The County must approve all subcontractors.

F. Indemnity:

To the fullest extent permitted by law, the Contractor will indemnify, defend, and hold Lumpkin County harmless from and against any and all claims, damages, losses, and expenses, including, but not limited to, fees and charges of attorneys and court and arbitration costs, arising out of or resulting from the negligent acts, negligent omissions, willful misconduct, or reckless misconduct of the Contractor or anyone for whom the Contractor isresponsible.

G. Documents Deemed Part of Contract:

Unless otherwise modified by this Contract, Lumpkin County's Invitation to Bid issued January 20, 2016, and any addendums issued thereto, and the Project Manual containing Specifications and Special Provisions shall be deemed part of the contract. No documentation or information provided by the Contractor shall be deemed part of the contract unless expressly incorporated herein.

H. Severability:

It is understood and agreed by the parties hereto that if any part, term, or provision of this Contract is held illegal or in conflict with any law of the State or Georgia, the validity of the remaining portions or provisions shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if the Contract did not contain the particular part, term, or provisions held to be invalid.

I. Dispute Resolution:

Lumpkin County and the Contractor agree to resolve through negotiation or mediation prior to filing any cause of action. The venue for any litigation arising from this contract shall be Lumpkin County, Georgia.

J. Cancellation:

Lumpkin County reserves the right to terminate the contract immediately in the event that the Contractor discontinues or abandons operations, is adjudged bankrupt, or is reorganized under any bankruptcy law; or fails to keep in force any required insurance policies or bonds.

Failure of the Contractor to comply with any section or part of the contract will be considered grounds for immediate termination of the contract by the County without penalty to Lumpkin County. Lumpkin County shall pay for services rendered up to the point of termination.

Notwithstanding anything to the contrary contained herein, the County may, without prejudice to any other rights it may have, terminate the contract for convenience and without cause, by giving thirty (30) days written notice to the Contractor.

If the termination clause is used by the County, the Contractor will be paid by the County for all scheduled work completed satisfactorily by the Contractor up to the termination date set forth in the written termination notice.

K. Safe Working Environment and Drug Free Workplace

Contractor shall provide a safe working environment.

Contractor certifies that the provisions of Code Sections 5024-1 through 50-24-6 of the official Code of Georgia Annotated, relating to the "Drug-free Workplace Act", have been complied with in full. The Contractor further certifies that:

1. A drug-free workplace will be provided for the Contractor's employees during performance of the contract; and

2. If Contractor hires a Subcontractor to work in a drug-free work place, Contractor shall secure from that Sub Contractor the following written certification:

As part of the subcontracting agreement with (Contractor's name), (Sub Contractor's name) certifies to the Contractor that a drug-free workplace will be provided for the Sub Contractor's employees during the performance of this Contract pursuant to Paragraph (7) of Sub-section (b) of Code Section 50-24-3”.

The Contractor further certifies that it will not engage in the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana during the performance of the Contract.

L. Amendments or Modifications:

All contract amendments or modifications must be in writing and signed by all parties.

M. Notices:

Any notice, order, instruction, claim, or other written communication required or permitted under this contract shall be deemed to have been delivered or received.

1. Upon personal delivery to the Contractor or his authorized representative, which delivery may be accomplished by in person hand delivery, via bona fide overnight express service, fax transmission, or,

2. Three (3) days after depositing in the United States mail a letter which is either certified or registered, with return receipt requested, addressed to the Contractor at the following address:

_____

_____

_____

and to Lumpkin County at the following address:

Lumpkin County Board of Commissioners
Attn: Stan Kelly, County Manager
99 Courthouse Hill, Suite H
Dahlonega, GA 30533

This Contract is made and entered into this____day of_____, 2016.

Lumpkin County:

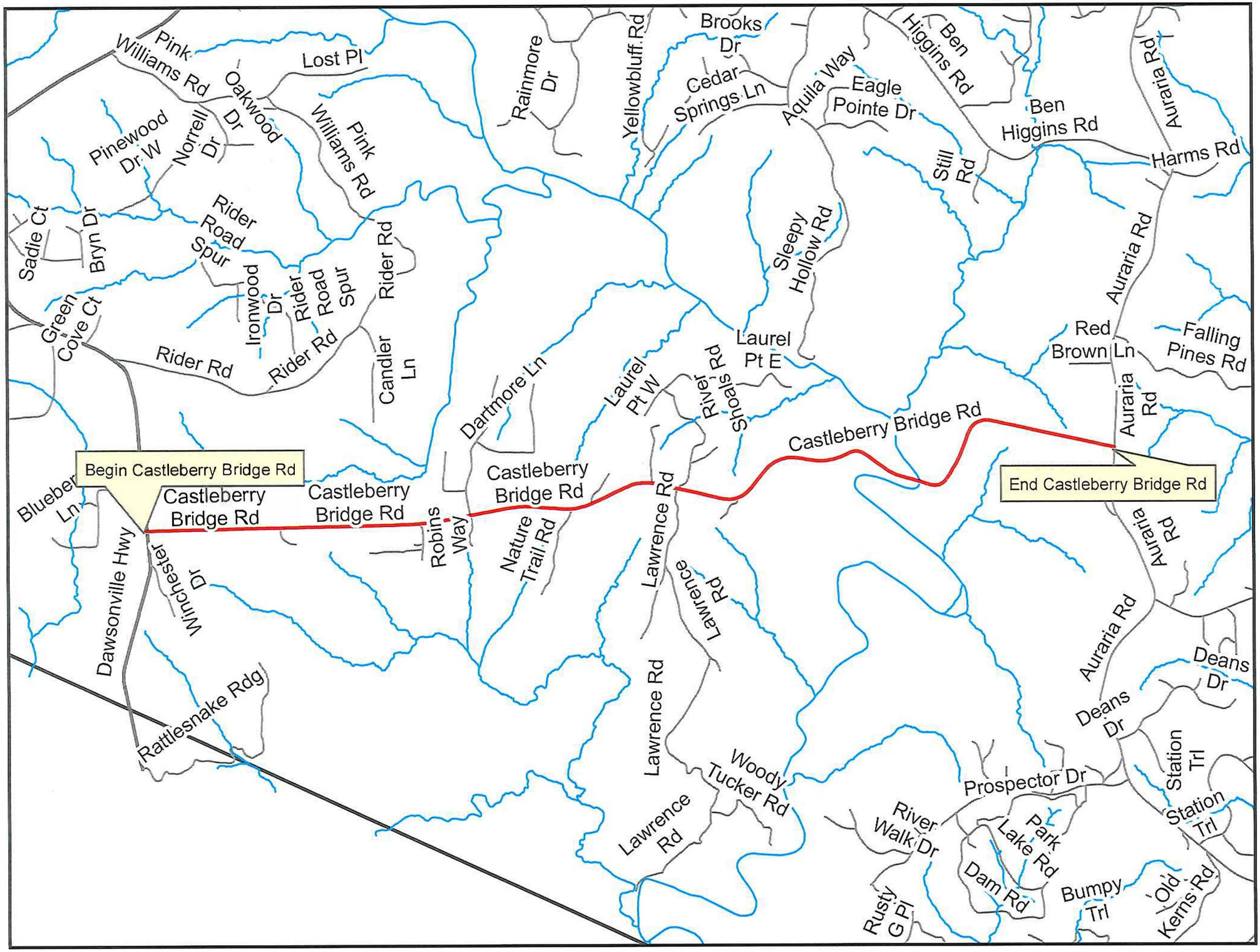
_____
Chris Dockery, Chairman
Lumpkin County Board of Commissioners

Contractor:

_____

Attest:

_____
Kathleen Walker Lumpkin
County Clerk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End Castleberry Bridge Rd
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Castleberry Bridge Rd
Castleberry Bridge Rd
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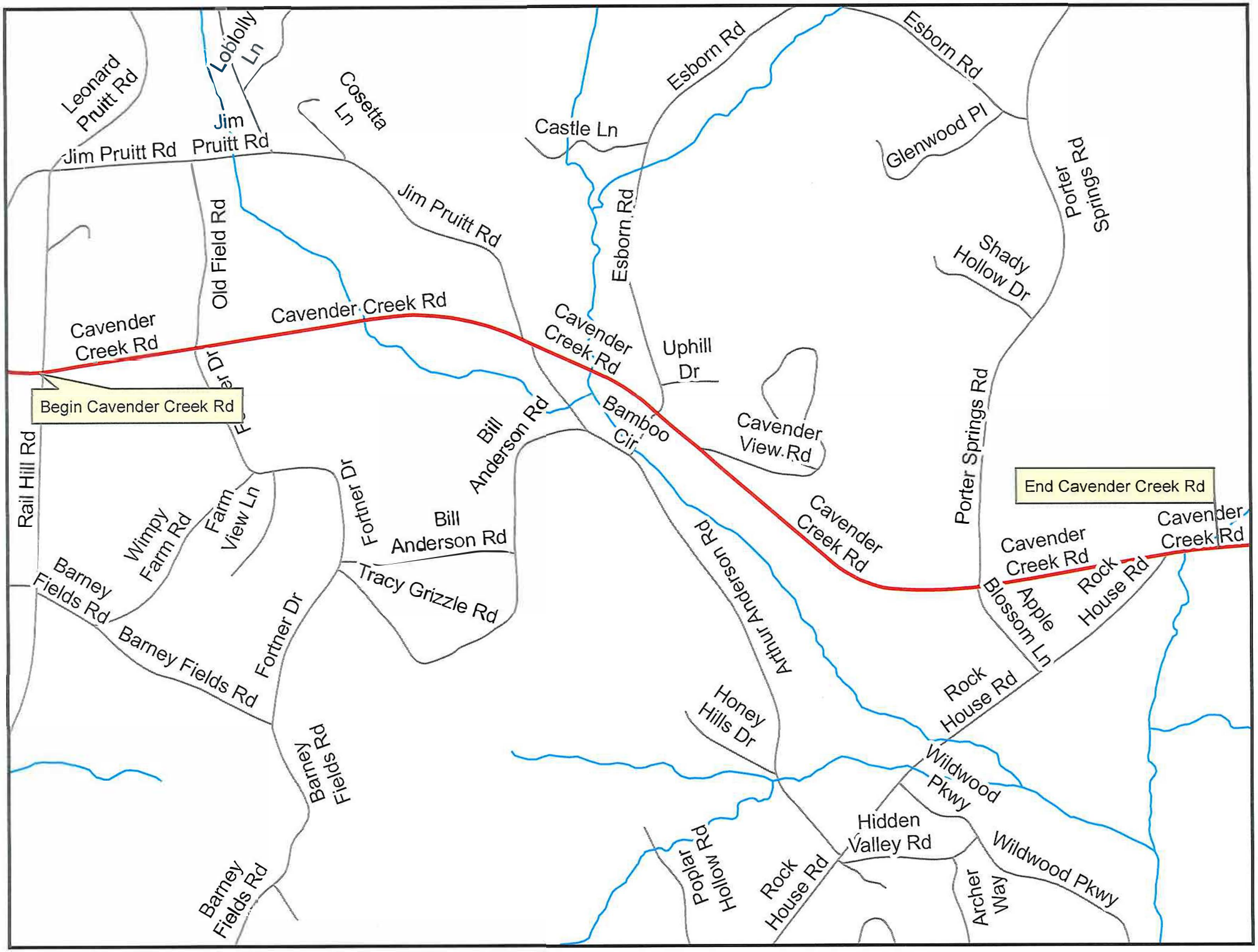
Lost Pl
Oakwood Dr
Pink Williams Rd
Pinewood Dr W
Norrell Dr
Rider Road Spur
Sadie Ct
Bryn Dr
Green Cove Ct
Ironwood Dr
Rider Road Spur
Rider Rd
Rider Rd
Rider Rd
Candler Ln
Rainmore Dr
Yellowbluff Rd
Brooks Dr
Cedar Springs Ln
Aquila Way
Eagle Pointe Dr
Ben Higgins Rd
Ben Higgins Rd
Auraria Rd
Harms Rd
Still Rd
Sleepy Hollow Rd
Auraria Rd
Red Brown Ln
Falling Pines Rd
Auraria Rd
Laurel Pt E
Laurel Pt W
River Rd
Shoals
Dartmore Ln
Robins Way
Nature Trail Rd
Lawrence Rd
Lawrence Rd
Lawrence Rd
Lawrence Rd
Woody Tucker Rd
Auraria Rd
Auraria Rd
Auraria Rd
Deans Dr
Deans Dr
Station Trl
Station Trl
Prospector Dr
Park Lake Rd
River Walk Dr
Dam Rd
Bumpy Trl
Old Kerns Rd
Rusty G Pl
Blueber Ln
Dawsonville Hwy
Winchester Dr
Rattlesnake Rdg


Leonard Pruitt Rd
Loblolly Ln
Jim Pruitt Rd
Jim Pruitt Rd
Cosetta Ln
Castle Ln
Esborn Rd
Esborn Rd
Glenwood Pl
Porter Springs Rd
Jim Pruitt Rd
Esborn Rd
Shady Hollow Dr
Old Field Rd
Cavender Creek Rd
Cavender Creek Rd
Cavender Creek Rd
Uphill Dr
Begin Cavender Creek Rd
Bill Anderson Rd
Bamboo Cir
Cavender View Rd
Porter Springs Rd
End Cavender Creek Rd
Rail Hill Rd
Farm View Ln
Fortner Dr
Bill Anderson Rd
Cavender Creek Rd
Cavender Creek Rd
Cavender Creek Rd
Wimpy Farm Rd
Barney Fields Rd
Tracy Grizzle Rd
Arthur Anderson Rd
Apple Blossom Ln
Rock House Rd
Barney Fields Rd
Fortner Dr
Rock House Rd
Honey Hills Dr
Wildwood Pkwy
Barney Fields Rd
Hidden Valley Rd
Wildwood Pkwy
Poplar Hollow Rd
Rock House Rd
Archer Way
Barney Fields Rd

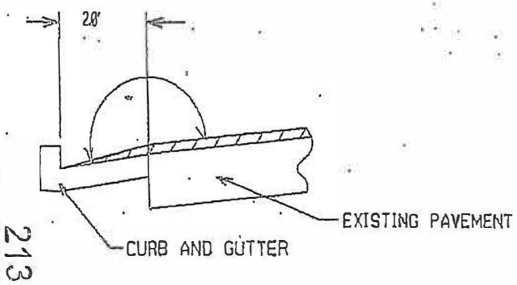
(LET)

LMIG TYPICAL RESURFACING SECTION

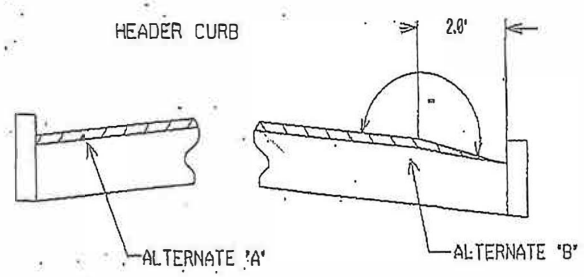
CURB AND GUTTER DETAIL

DETAIL FOR FEATHERING SURFACING

CURB AND GUTTER



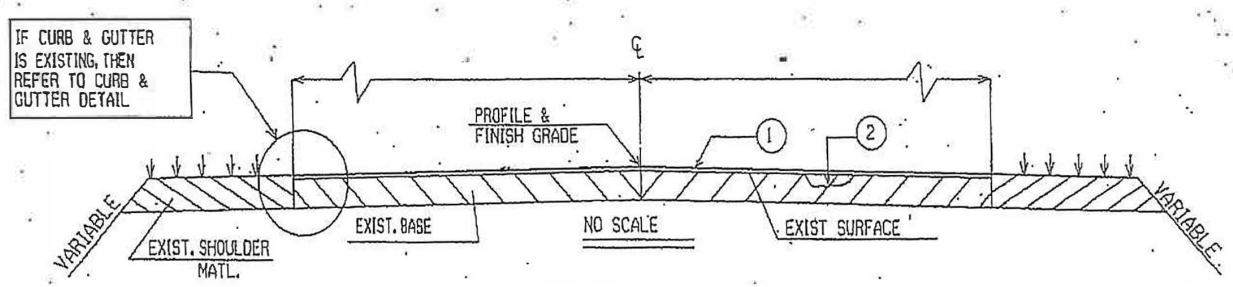
HEADER CURB



NOTE: METHOD OF FEATHERING AT PAVEMENT EDGE ALTERNATE A OR ALTERNATE B) SHALL BE DETERMINED BY THE ENGINEER. UNDER NORMAL CONDITIONS, ALTERNATE A SHALL BE USED FOR FEATHERING UNLESS RESURFACING HAS REDUCED THE "EFFECTIVE HEIGHT" OF THE EXISTING CURB TYPE FACILITY. IN THIS EVENT, ALTERNATE "B" SHALL BE USED.

NOTE: ▫ THE ALGEBRAIC DIFFERENCE BETWEEN THE NEW RIDING SURFACE AND THE FEATHERING IN THE CURB AND GUTTER SHALL NOT EXCEED 7 %.

7/04



▫ SEE PROJECT REPORT SHEET(S) FOR PAVEMENT WIDTHS

REQ'D (1) _ __ LBS PER SY ASPH CONC 12.5 MM SUPERPAVE, TP I, GP1 OR BLEND 1, INCL BITUM MATL & H. LIME

REQ'D (2) ASPH. CONC LEVELING, INCL BITUM MATL & H. LIME. TO BE PLACED AS DIRECTED BY THE ENGINEER.

NOTE: THE LOCAL GOVERNMENT WILL CERTIFY ALL NECESSARY R/W, REMOVE OR ADJUST ALL UTILITIES, AND DO THE NECESSARY PATCHING, AS DIRECTED BY THE ENGINEER, AT NO COST TO THE DEPARTMENT OF TRANSPORTATION.

NOTE: THE WIDTH OF PAVING OF TURNOUTS FOR SIDEROADS AND DRIVES SHALL BE AS REQUIRED TO PROVIDE A SMOOTH AND WELL DRAINED TRANSITION TO AND FROM PUBLIC ROADS AND DRIVEWAYS, AS APPROVED BY THE ENGINEER.

THIS TYPICAL SECTION APPLIES TO PRIORITY #('S) Cavender Creek Rd.

AS SHOWN ON THE LMIG PROJECT REPORT SHEET(S).

PROJECT NO. LMIG-2016-002 (187)

COUNTY Lumpkin

CITY

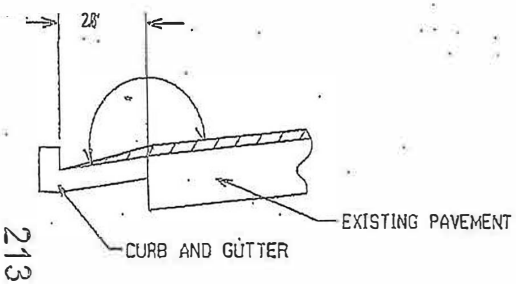
(LET)

LMIG TYPICAL RESURFACING SECTION

CURB AND GUTTER DETAIL

DETAIL FOR FEATHERING SURFACING

CURB AND GUTTER



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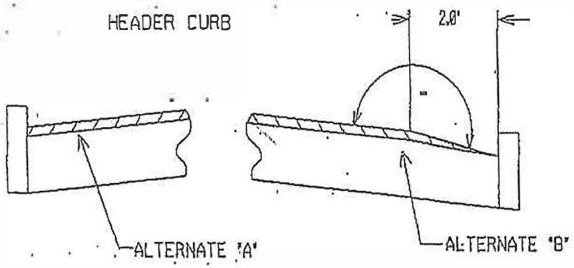
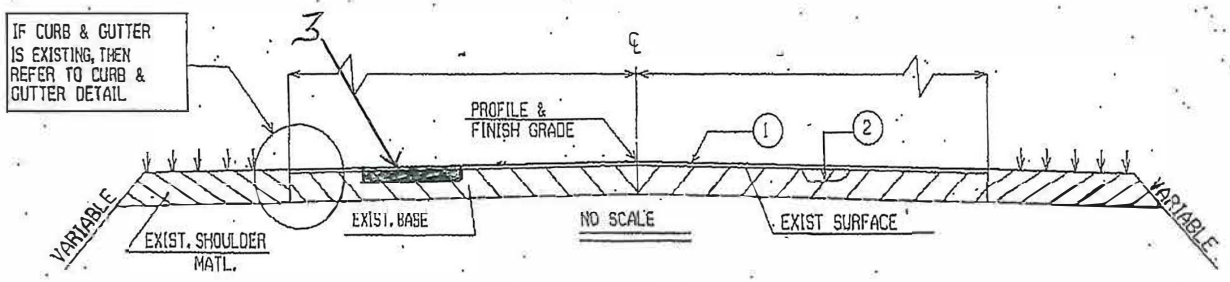


NOTE: METHOD OF FEATHERING AT PAVEMENT EDGE ALTERNATE A OR ALTERNATE B) SHALL BE DETERMINED BY THE ENGINEER. UNDER NORMAL CONDITIONS, ALTERNATE A SHALL BE USED FOR FEATHERING UNLESS RESURFACING HAS REDUCED THE "EFFECTIVE HEIGHT" OF THE EXISTING CURB TYPE FACILITY. IN THIS EVENT, ALTERNATE "B" SHALL BE USED.

NOTE: ◦ THE ALGEBRAIC DIFFERENCE BETWEEN THE NEW RIDING SURFACE AND THE FEATHERING IN THE CURB AND GUTTER SHALL NOT EXCEED 7.%.

7/04



◦ SEE PROJECT REPORT SHEET(S) FOR PAVEMENT WIDTHS

REQ'D (1) 175 LBS PER SY ASPH CONC 12.5 MM SUPERPAVE, TP I, GP1 OR BLEND 1, INCL BITUM MATL & H. LIME

REQ'D (2) ASPH. CONC LEVELING, INCL BITUM MATL & H. LIME. TO BE PLACED AS DIRECTED BY THE ENGINEER.

NOTE: THE LOCAL GOVERNMENT WILL CERTIFY ALL NECESSARY R/W, REMOVE OR ADJUST ALL UTILITIES, AND DO THE NECESSARY PATCHING, AS DIRECTED BY THE ENGINEER, AT NO COST TO THE DEPARTMENT OF TRANSPORTATION.

NOTE: THE WIDTH OF PAVING OF TURNOUTS FOR SIDEROADS AND DRIVES SHALL BE AS REQUIRED TO PROVIDE A SMOOTH AND WELL DRAINED TRANSITION TO AND FROM PUBLIC ROADS AND DRIVEWAYS, AS APPROVED BY THE ENGINEER.

Reqd. (3) Deep Patch with 330 Lbs - 440 Lbs per sq. yd. of 19.5 M.M. Incl. Bitum material + H. Lime.

THIS TYPICAL SECTION APPLIES TO PRIORITY #('S) AS SHOWN ON THE LMIG PROJECT REPORT SHEET(S).

Castleberry Bridge Rd.

PROJECT NO.	LMIG-2016-002 (187)
COUNTY	Lumpkin
CITY	

VENDOR'S CHECKLIST AND BID SUBMITTAL PACKET

Company Name: _____

Please indicate you have completed the following documentation; and submit them in the following order

☐ Information Form

☐ Execution of Proposal Form

☐ Price Proposal Form

☐ Certification and Non-Collusion Form

☐ Drug-Free Workplace Form

☐ Addenda Acknowledgment Form

☐ Georgia's Security and Immigration Compliance Act Affidavit

☐ SAVE Affidavit

☐ Completed W9

_____ _____

Authorized Signature Title

_____ _____

Print Name Date

THIS PAGE MUST BE COMPLETED AND SUBMITTED WITH BID

INFORMATION FORM

1. Legal Business Name_____

2. Street Address _____

3. City, State & Zip_____

4. Type of Business: State of Registration: _____
(Association, Corporation, Partnership, Limited Liability Company, etc.)

5. Name & Title of Authorized Signer: _____

6. Primary Contact _____

7. Phone Fax_____

8. E-mail _____

9. Company Website_____

10. Has your company ever been debarred from doing business with any federal, state or local agency?

Yes _____ No _____

If yes, please state the agency name, dates and reason for debarment.

_____

_____

_____

THIS PAGE MUST BE COMPLETED AND SUBMITTED WITH BID

EXECUTION OF PROPOSAL FORM

DATE: _____

The potential Contractor certifies the following by placing an "X" in all blank spaces:

_____ That this proposal was signed by an authorized representative of the firm.

_____That the potential Contractor has determined the cost and availability of all materials and supplies associated with performing the services outlined herein.

_____ That all labor costs associated with this project have been determined, including all direct and indirect costs.

_____That the potential Contractor agrees to the conditions as set forth in this Invitation to Bid with no exceptions.

Therefore, in compliance with the foregoing **Invitation for Bids**, and subject to all terms and conditions thereof, the undersigned offers and agrees, if this proposal is accepted within sixty (60) days from the date of the opening, to furnish the services for the prices quoted within the timeframe required.

_____

Business Name

_____

Authorized Signature Date

_____

Typed Name & Title

THIS PAGE MUST BE COMPLETED AND SUBMITTED AS A PART OF YOUR BID

PRICE PROPOSAL FORM

Company Name:_____

Total Bid:_____

I certify the above bid as all inclusive and final per document specifications.

_____

Authorized Signature **Title**

_____

Print Name **Title**

THIS PAGE MUST BE COMPLETED AND SUBMITTED AS A PART OF YOUR BID

CERTIFICATION AND NON-COLLUSION FORM

I _____ certify that this proposal is made without prior understanding, agreement or connection with any corporation, firm or person submitting a proposal for the same services and is in all respects fair and without collusion or fraud. I understand that collusive bidding is a violation of state and Federal law and can result in fines, prison sentences and civil damages awards.

I certify that this proposal has been prepared independently and the price submitted will not be disclosed to another person.

I certify that there has been no contact or communication by the proposer or the proposer's associates with any County staff, or elected officials since the date this **BID #2016-002 ITB ASPHALTPATCHING, LEVELING AND RESURFACING OF VARIOUS COUNTY ROADS** was issued except: 1) through the Purchasing Department 2) at the Pre-Bid Conference (if applicable) or 3) as provided by existing work agreement(s). **The County reserves the right to reject the bid submitted by any proposer violating this provision.**

I agree to abide by all conditions of this bid and certify that I am authorized to sign this proposal.

COMPANY NAME: _____

_____

Authorized Representative (Signature) Date

_____

Authorized Representative/Title

_____

(Print or Type)

THIS PAGE MUST BE COMPLETED AND SUBMITTED AS A PART OF YOUR BID

DRUG- FREE WORKPLACE FORM

I hereby certify that I am a principle and duly authorized representative of: _____

_____

Whose address is: _____

And it is also that:

1. The provisions of Section § 50.24.1 through § 50.24.6 of the Official Code of Georgia Annotated relating to the "Drug Free Workplace Act" and have been complied with in full, and

2. A drug free workplace will be provided for the CONTRACTOR'S employees during the performance of the contract; and,

3. Each subcontractor hired by the CONTRACTOR shall be required to ensure that the subcontractor's employees are provided a drug free workplace. The CONTRACTOR shall secure from that subcontractor the following written certification: "As part of the subcontracting agreement with

   _____

   certifies to the CONTRACTOR that a drug free workplace will be provided for the subcontractor's employees during the performance of this contract pursuant to paragraph (7) of subsection (b) of the Official Code of Georgia Annotated Section § 50.24.3"; and,

4. It is certified that the undersigned will not engage in unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana during the performance of the contract.

_____

Signature Date

THIS PAGE MUST BE COMPLETED AND SUBMITTED AS A PART OF YOUR BID

ADDENDA ACKNOWLEDGEMENT FORM

The vendor has examined and carefully studied the Invitation for Bid and the following Addenda, receipt of all of which is hereby acknowledged:

Addendum No. _____

Addendum No. _____

Addendum No. _____

Addendum No. _____

_____ _____

Authorized Representative (Signature) Date

_____

Authorized Representative/Title
(Print or Type)

<u>Vendors must acknowledge any issued addenda. Proposals which fail to acknowledge the vendor' s receipt of any addendum will result in the rejection of the offer if the addendum contained information which substantively changes the Owner' s requirements.</u>

THIS PAGE MUST BE COMPLETED AND SUBMITTED AS A PART OF YOUR BID

Georgia Security & Immigration Compliance (GSIC) Act Affidavit

As per the Georgia Senate Bill 529 and Senate Bill 447, the Georgia Department of Labor has promulgated new rules for the implementation of Section 2. O.C.G.A. §13-10-91 and Chapter
300-10-01-.02 state that no Georgia Public Employer shall enter into a contract for *the physical performance of services within the State of Georgia* unless the Contractor registers and participates in a federal work authorization program to verify the work eligibility information of all of its new employees.

The Employment Eligibility Verification "E-Verify" site operated by the U.S. Citizenship and Immigration Services Bureau of the U.S. Department of Homeland Security is the electronic federal work authorization program to be utilized for these purposes.

The website is https://e-verify.uscis.gov/enroll/

By executing the attached Contractor Affidavit, Contractor verifies its compliance with O.C.G.A. §13-10-91 stating affirmatively that the individual, firm or corporation which is contracting with the Lumpkin County Board of Commissioners has registered and is participating in this federal work authorization program in accordance with the applicability provisions and deadlines established in this Statute.

Contractor further agrees that should it employ or contract with any Sub-Contractor(s) for the physical performance of services pursuant to the contract with the Lumpkin County Board of Commissioners, Contractor will secure from the Sub-Contractor(s) verification of compliance with O.C.G.A. §13-10-91 on a Sub-Contractor Affidavit and shall provide a copy of each such verification to the Lumpkin County Board of Commissioners at the time the Sub-Contractor(s) is retained to perform such services.

PLEASE COMPLETE THE ATTACHED AFFIDAVIT AND RETURN IT TO:

Patti Jo Holder
Lumpkin County Purchasing Agent
99 Courthouse Hill, Suite D
Dahlonega, GA 30533
Fax: (706) 482-2201
Email: pattijo.holder@lumpkincounty.gov

LUMPKIN COUNTY BOARD OF COMMISSIONERS
SAVE Affidavit
(Systematic Alien Verification for Entitlements)

Affidavit for a Public Benefit as required by the Georgia Immigration Reform and Enforcement Act of 2011

By executing this affidavit under oath, as an applicant for a public benefit as referenced in the Georgia Illegal Immigration Reform and Enforcement Act of 2011 [O.C.G.A. § 50-36-1(e)(2)], I am stating the following:

_____ I am a United States citizen; or

_____ I am a legal permanent resident of the United States*; or

_____ I am an otherwise qualified alien or non-immigrant under the Federal Immigration and Nationality Act 18 years of age or older and lawfully present in the United States.*

*****Alien registration number for non-citizens issued by the Department of Homeland Security or other federal immigration agency is: _____

At least one secure and verifiable document for identification purposes must be provided as required by O.C.G.A. § 50-36-1 (e) (1). See list on page 2 of this document.

****

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 Code Section 16-10-20 of the Official Code of Georgia and face criminal penalties as allowed by such criminal statute.

_____

Applying on behalf/Name of associated business

_____

Signature of Applicant Date

_____

Printed Name

SUBSCRIBED AND SWORN BEFORE ME ON THIS
THE _____ DAY OF _____ 20___

_____ [NOTARY SEAL]

Notary Public

My Commission Expires: _____

***NOTE:** O.C.G.A. 50-36-1(e)(2) requires that aliens under the Federal Immigration and Nationality Act, Title 8 U.S.C., as amended, provide their alien registration number. Because legal permanent residents are included in the federal definition of "alien", legal permanent residents must also provide their alien registration number.

THIS PAGE MUST BE COMPLETED AND SUBMITTED AS A PART OF YOUR BID

SECURE AND VERIFIABLE DOCUMENTS UNDER O.C.G.A. §50-36-2
[Issued August 1, 2011 by the Office of the Attorney General, Georgia]

The following list of secure and verifiable documents, published under the authority of O.C.G.A. §50-36-2, contains documents that are verifiable for identification purposes, and documents on this list may not necessarily be indicative of residency or immigration status.

INDICATE AND ATTACH A COPY OF THE DOCUMENT (front and back)

☐ United States passport or passport card
☐ United States military identification card
☐ Merchant Mariner Document or Merchant Mariner Credential issued by the United States Coast Guard
☐ Secure Electronic Network for Travelers Rapid Inspection (SENTRI) card
☐ Driver's license issued by one of the United States, the District of Columbia, the Commonwealth of the Northern Marianas Islands, the United States Virgin Island, American Samoa, or the Swain Islands, provided that it contains a photograph of the bearer or lists sufficient identifying information regarding the bearer, such as name, date of birth gender, height, eye color, and address to enable the identification of the bearer.

☐ Identification card issued by one of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, the Commonwealth of the Northern Marianas Islands, the United States Virgin Island, American Samoa, or the Swain Islands, provided that it contains a photograph of the bearer or lists sufficient identifying information regarding the bearer, such as name, date of birth gender, height, eye color, and address to enable the identification of the bearer.

☐ Tribal identification card issued by one of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, the Commonwealth of the Northern Marianas Islands, the United States Virgin Island, American Samoa, or the Swain Islands, provided that it contains a photograph of the bearer or lists sufficient identifying information regarding the bearer, such as name, date of birth gender, height, eye color, and address to enable the identification of the bearer.

☐ Passport issued by a foreign government
☐ Free and Secure Trade (FAST) card
☐ NEXUS card
☐ United States Permanent Resident Card or Alien Registration Receipt Card
☐ Employment Authorization Document that contains a photograph of the bearer.
☐ Certificate of Citizenship issued by the United States Department of Citizenship and Immigration Services (USCIS) [Form N-560 or Form N-561]
☐ Certificate of Naturalization issued by the United States Department of Citizenship and Immigration Services (USCIS) [Form N-550 or Form N-570]

THIS PAGE MUST BE COMPLETED AND SUBMITTED AS A PART OF YOUR BID

IMMIGRATION AND SECURITY FORM
(GEORGIA SECURITY AND IMMIGRATION COMPLIANCE ACT AFFIDAVIT

CONTRACTOR AFFIDAVIT

By executing this affidavit, the undersigned Contractor verifies its compliance with O.C.G.A. §13-10-91, stating affirmatively that the Contractor identified above has registered with and is participating in a federal work authorization program*, in accordance with the applicability provisions and deadlines established in O.C.G.A. 13-10-91.

The undersigned further agrees that, should it employ or contract with any subcontractor(s) in connection with the physical performance of services pursuant to this contract with the County, Contractor will secure from such subcontractor(s) similar verification of compliance with O.C.G.A. § 13-10-91 on the attached Subcontractor Affidavit. Contractor further agrees to maintain records of such compliance and provide a copy of each such verification to the County at the time the subcontractor(s) is retained to perform such service.

_____
EEV / E-Verify™ Company Identification Number

_____ _____
BY: Authorized Officer or Agent Date
(Contractor Name)

_____
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 SEAL)
Notary Public

My Commission Expires: _____

*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 of 1986 (IRCA), P.L. 99-

THIS PAGE MUST BE COMPLETED AND SUBMITTED AS A PART OF YOUR BID

IMMIGRATION AND SECURITY FORM
(GEORGIA SECURITY AND IMMIGRATION COMPLIANCE ACT AFFIDAVIT)

SUBCONTRACTOR AFFIDAVIT

By executing this affidavit, the undersigned Subcontractor verifies its compliance with O.C.G.A. §13-10-91, stating affirmatively that the Subcontractor which is engaged in the physical performance of services under a contract with the Contractor identified above on behalf of the County identified above has registered with and is participating in a federal work authorization program*, in accordance with the applicability provisions and deadlines established in O.C.G.A. 13-10-91.

_____
EEV / E-Verify™ Company Identification Number

_____
BY: Authorized Officer or Agent Date
(Subcontractor Name)

_____
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:
*****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 of 1986 (IRCA), P.L. 99-603

THIS PAGE MUST BE COMPLETED AND SUBMITTED AS A PART OF YOUR BID

Private Employer Exemption Affidavit Pursuant to O.C.G.A § 36-60-6(d)

By executing this affidavit, the undersigned private employer verifies that it is exempt from compliance with O.C.G.A §36-60-6, stating affirmatively that the individual, firm or corporation employs fewer than eleven employees and therefore, is not required to register with and/or utilize the federal work authorization program commonly known as E-Verify, or any subsequent program in accordance with the applicable provisions and deadlines established in O.C.G.A § 13-10-90.

_____
Signature of Exempt Private Employer

_____
Printed Name of Exempt Private Employer

I hereby declare under penalty of perjury that the foregoing is true and correct.

_____
Signature of Authorized Officer or Agent

_____
Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME ON THIS THE _____ DAY OF _____, 201____.

_____
NOTARY PUBLIC

My Commission Expires: _____

THIS PAGE MUST BE COMPLETED AND SUBMITTED AS A PART OF YOUR BID

Form **W-9**
(Rev. August 2013)
Department of the Treasury Internal Revenue Service

Request for Taxpayer Identification Number and Certification

Give Form to the requester. Do not send to the IRS.

Print or type
See **Specific Instructions** on page 2.

Name (as shown on your income tax return)

Business name/disregarded entity name, if different from above

Check appropriate box for federal tax classification:
Individual/sole proprietor | C Corporation | S Corporation | Partnership
Trust/estate | Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ▸
Other (see instructions) ▸

Exemptions (see instructions):
Exempt payee code (if any)
Exemption from FATCA reporting code (if any)

Address (number, street, and apt. or suite no.)

Requester's name and address (optional)

City, state, and ZIP code

List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on the "Name" line to avoid backup withholding. For individuals, this is your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Note. If the account is in more than one name, see the chart on page 4 for guidelines on whose number to enter.

Social security number
[redacted]

Employer identification number
–

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and
3. I am a U.S. citizen or other U.S. person (defined below), and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 3.

Sign Here | **Signature of U.S. person** | **Date** ▸

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. The IRS has created a page on IRS.gov for information about Form W-9, at *www.irs.gov/w9*. Information about any future developments affecting Form W-9 (such as legislation enacted after we release it) will be posted on that page.

Purpose of Form

A person who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, payments made to you in settlement of payment card and third party network transactions, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA.

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN to the person requesting it (the requester) and, when applicable, to:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct.

Note. If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien,
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States,
- An estate (other than a foreign estate), or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business.
Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

Project Manual

Specifications

Lumpkin County

Asphalt Patching
Leveling and Resurfacing
of Various County Roads

Project# 2016-002-ITB
LMIG-01-(187) Lump

<u>Modifications & Additions to the Specifications</u>

Project# 2016-002-ITB / LMIG-01-(187) Lump

Listed below are modifications and additions to the 2013 State of Georgia Standard Specifications for Construction of Transportation Systems.

Prompt Payment
Utility Conflicts
LMIG Projects - General
Construction Details (Resurfacing & Widening) (State)
Sec. 104- Scope of Work
Sec. 107 - Legal Regulations and Responsibility to the Public
Sec. 108- Prosecution and Progress (4) (failure or Delay in Completing Work on Time)
Sec. 109 – Measurement and Payment (2)
Sec. 149-Construction Layout Eliminated
Sec. 150 - Traffic Control
Sec. 400- Hot Mix Asphaltic Concrete Construction (Off System)
Sec. 402- Hot MixRecycled Asphaltic Concrete (Off System)
Sec. 413 - Bituminous tack Coat
Sec. 652 - Painting Traffic Stripe
Sec. 802 - Aggregate for Asphaltic Concrete
Sec. 819- Fiber Stabilizing Additives
Sec. 820 - Asphaltic Cement
Sec. 883 - Mineral Filler

Special Provisions

Prompt Payment:

Prime Contractors, who sublet a portion of their work, shall pay their subcontractors for satisfactory performance of their contracts no later than 10 calendar days from receipt of each payment made to them.

Any delay or postponement of payment among the parties may take place only for good cause with prior written approval from the County.

If the contractor is found to be in noncompliance with these provisions, it shall constitute a breach of contract and further payments for any work performed may be withheld until corrective action is taken. If correction action is not taken, it may result in termination of the contract.

All subcontract agreements shall contain this requirement.

Utility Conflicts:

Utility companies having known facilities that conflict with the construction of this project will be directed by the County to adjust or relocate their facilities and will be notified of the contract award.

Conform to all the requirements of the Specifications as they relate to cooperation with utility owners and the protection of utility installations that exist on the project. Refer to the requirements of Section 107, Legal Regulations and Responsibility to the Public, with particular attention to Subsection 107.21.

Coordinate the work with any work to be performed by other in any right of way clearance and arrange a schedule of operations that will allow for completion of the Project within the specified contract time. Where stage construction is required, notify the utility worker when each stage of work is completed and the site is available for utility work to proceed.

Information concerning utility facilities known to exist within the project limits, including the list of owners, is available for reference.

Under Georgia Code Section 32-6-171, utilities are required to remove or relocate their facilities. The County is required to give the utility at least 60 days written notice directing the removal, relocation or adjustment and the utility owner is required to begin work within the time specified in the utility's work plan or revised work plan.

Upon request, copies of all agreements with utility companies having facilities on this project will be made available for examination by the Contractor at the Georgia D.O.T. District Office. Utility Adjustment Schedules, when submitted to the County by the utilities, will be made available to the Contractor after the Notice to Contractors has been posted by the Office of Construction Bidding Administration. The Utility Adjustment Schedules are available on the Office of Construction Bidding Administration's web site. Utility Adjustment Schedules may be included with the Utility Special Provision in the Contract Proposal on select projects. The Contractor is responsible for considering in its bid all existing and proposed utility locations and the removals, relocations, and adjustments specified in the Utility's Work Plan.

For this Project, Utility Owners that are required to remove, relocate, or adjust their facility to accommodate the construction of this Project may be liable to the Contractor for damages or delay costs resulting from the Utility Owner's failure to clear conflicts within the time specified in the approved Utility Work Plan. If the Utility Owner is unable to submit and obtain County approval of a revised Work Plan or fails to complete the removal, relocation, or adjustment of its facilities in accordance with the approved Work Plan, the Utility Owner may be liable to the County, or the Contractor, for damages or delay costs.

In accordance with Subsection 105.06 of the Specifications, the County is not liable for payment of any claims due to utility delays, inconvenience or damage sustained by the Contractor due to interference of any utilities or appurtenances, or the operation of moving them.

Whenever the Contractor considers that it is or will be entitled to damages or delay costs from the Utility Owner in accordance with O.C.G.A. 32-6-171, the Contractor shall provide written notice to the Utility Owner and the County within ten (10) days from the time of the dispute or potential dispute is identified. The Contractor shall follow the Procedures for Utility Damages or Delay Costs outlined in the latest edition of The Utility Accommodation Policy and Standards Manual. Failure to follow the above will result in waiver of the Contractor's claim against the Utility Owner for damages or delay costs.

In accordance with Subsection 107.2l.G delays by utilities will continue to be considered by the County in charging Contract Time. For purposes of applying provisions of this paragraph, railroads and the Metropolitan Atlanta Rapid Transit Authority (MARTA) are considered utilities.

LMIG Projects – General

The County will be responsible for lowering the shoulders and ditches to an elevation, that will provide an adequate drainage, and for completing all necessary patching.

The Contractor will be responsible for all necessary cleaning of the existing pavement including clipping of shoulders required prior to cleaning and resurfacing. Remove or spread the material displaced over the shoulders as directed by the Lumpkin County Public Works Department. Include the cost of this work in priced bid for other items.

Lumpkin County will not participate in the cost of any utility facility removal and relocations necessary in connection with the construction of this project.

Others will perform re-grading and grassing of shoulders after paving work is completed.

Construction Details for Resurfacing and Widening Projects

A. General

Perform according to Specifications, Special Provisions, Plan details and the applicable portions of Section 400.

The provisions of Sections 104 and 105 apply when patching operations necessitate traffic control in construction areas.

B. Spot Patching and Replacement of Existing Base

1. Complete all removal and patching operations at any one site within the same day.
2. Hand spreading and compaction using mechanical tampers will be required in areas inaccessible to conventional equipment.
3. Patching is paid for according to the Plans and Proposal. Payment includes all removal and replacement work necessary to complete the Item.

C. Shoulders

No shoulder construction will be required on Projects that have no widening or new shoulder paving, except where additional shoulder work is shown on the Plans.

For Projects involving pavement widening or paved shoulder construction, the cost of trenching and shoulder construction or reconstruction of the existing shoulders is included in the overall bid submitted.

Ensure trenching and shoulder construction conforms to the following requirements:

1. Trenching consists of the removal, satisfactory disposal and replacement of existing shoulder materials. Ensure trench dimensions are according with Plan details.

Remove and dispose of all materials excavated from the trench widening operation. Excess materials are to be disposed of at an approved soil disposal site. Compact subgrade under widening sections to 95% of the theoretical density as determined by GDT7, GDT67, or GDT24.

2. Where trenching is necessary for widening or paved shoulder construction, complete all operations at any one site to the level of the existing pavement in the same working day.

3. Perform widening operations on only one side of the existing traveled roadway at a time within any one-half-mile (800m) stretch.

D. Other Work

The County reserves the right to perform, with its own forces, any maintenance or construction work as may be necessary on or near The Work covered by the Contract.

E. Enforcement

If the requirements of this Specification are not achieved, the Lumpkin County Public Works Department will cease all Work being performed and may withhold any monies due, or which may become due until the above requirements have been met.

SECTION 104 – SCOPE OF WORK

Delete Subsection 104.08 and Substitute the following:

104.08 Value Engineering Proposals

A. Applicability

This Section applies to those cost reduction proposals initiated and developed by the Contractor for changing the Plans, Specifications, or other requirements of the Contract. These provisions do not apply unless the proposal submitted by the Contractor is specifically identified as being presented as a Value Engineering Proposal (VEP) and the Contract amount is in excess of $50,000.

The cost-reduction Proposals contemplated are those discretionary changes which would require a Supplemental Agreement modifying the Contract and would produce a savings to the County by providing less costly items or methods than those specified in the Contract without impairing essential functions and characteristics including, but not limited to: service life, reliability, economy of operations, ease of maintenance, and safety, both during and after construction. Proposals must provide a product comparable to the original design at a lower cost or improved quality, or both. No proposals will be accepted that lower the quality of the project.

These provisions are applicable to the prime Contract and include all subcontracts.

B. Documentation

Value Engineering Proposals (VEP) will be processed in the same manner as prescribed for any other alterations of the Contract requiring a Supplemental Agreement.

As a minimum, the following information shall be submitted by the Contractor with each Value Engineering Proposal:

1. A description of the difference between the existing Contract requirement and the proposed change and the comparative advantages and disadvantages of each.
2. An itemization of the requirements of the Contract which must be changed and a recommendation of how to make such change (e.g., a suggested revision).
3. A detailed estimate of the cost of performing the work under the contract and under the proposed change.

4. A prediction of any effects the proposed changes would have on other costs to the County, including cost of related items and costs of maintenance and operation.
5. A statement of the time showing the last date by which an agreement for adoption of the proposed changes must be executed in order to obtain the maximum cost reduction during the remainder of the Contract, noting any effect on the Contract completion time or delivery schedule.
6. The dates of any previous or concurrent submissions of the Proposal, the Contract number(s) under which submitted, and the outcome or the result of the proposal in previous projects and any previous actions by the County, if known.
7. A life-cycle cost analysis.

NOTE: If a VEP is similar to a change in the Plans or Specifications for the Project that is under consideration by the County at the time said VEP is submitted, or if such VEP is based upon or similar to Standard Specifications, Special Provisions, or Standard Plans adopted by the County after the advertisement of the Contract, the Lumpkin County Public Works Department will not accept such proposal and the County reserves the right to make such changes without compensation to the Contractor under the provisions of this Section.

Proposed changes in the basic design of a pavement type (e.g., rigid to flexible or vice versa) or pavement thickness will not be considered as an acceptable VEP. Proposed changes to base/subbase courses may be considered as an acceptable VEP. If design alternates are shown in the plans, the County will not consider a VEP substituting a design alternate on which the Contractor could have bid for one on which the Contractor has bid. The County reserves the right to reject any VEP submitted requiring additional Right-of-Way.

C. Submission

Value Engineering Proposals submitted by the Contractor will be processed as expeditiously as possible; however, the County will not be liable for any delay in acting upon proposals submitted. The Contractor may withdraw, wholly or in part, any VEP not accepted by the County within the time specified in Subsection 104.08.B.5.

D. Acceptance

The decision of the Lumpkin County Public Works Department as to the acceptance or rejection of a VEP shall be final and shall not be subject to the provisions of Subsection 105.13, "Claims for Adjustments and Disputes."

The Lumpkin County Public Works Department may accept, in whole or in part, before work has been completed, any VEP submitted pursuant to this Subsection and not withdrawn by the Contractor by giving the Contractor written notice thereof reciting acceptance under this Subsection.

E. Notification

The Contractor will be notified in writing of the County's decision or rejection of each VEP submitted under these provisions. If a proposal is accepted, the necessary Contract modifications will be affected by execution of a Supplemental Agreement. Unless and until a VEP is affected by such Supplemental Agreement, the Contractor shall remain obligated to perform The Work in accordance with the terms of the existing Contract.

Supplemental Agreements made as a result of this Subsection will state that they are made pursuant to it.

F. Sharing

In the event a VEP submitted by the Contractor under this Subsection is accepted, the Supplemental Agreement effecting the necessary modifications will establish the net savings agreed upon and will provide for an adjustment in Contract Prices that will divide the net savings between the Contractor and the County in accordance with the following provisions:

1. Division of net savings in Contract Price Adjustment:
   - 50 percent of the net savings to the Contractor.
   - 50 percent of the net savings to the County.
2. The County reserves the right to include in the agreement any conditions it deems appropriate for consideration, approval, and implementation of the VEP. The Contractor's 50 percent of the net savings shall constitute the full compensation for effecting all changes pursuant to the agreement.

   Development costs incurred by the Contractor and review costs incurred by the County shall not be considered in computing the net savings of the VEP.

Restrictions and Disclosures: Upon acceptance and implementation of any VEP, any restrictions imposed by the Contractor on its use or disclosure of the information submitted shall be void.
The County shall thereafter have the right to use, duplicate, and disclose, in whole or in any part, all data necessary in the utilization of the proposal.

SECTION 107 – LEGAL REGULATIONS AND RESPONSIBILITY TO THE PUBLIC

Delete Subsection 107.23 and Substitute the following:

107.23 Environmental Considerations

A. Construction

Erosion control measures shall be installed, to the greatest practical extent, prior to clearing and grubbing. Particular care shall be exercised along stream buffers, wetlands, open waters and other sensitive areas to ensure that these areas are not adversely affected.

Construction equipment shall not cross streams, rivers, or other waterways except at temporary stream crossing structures approved by the Lumpkin County Public Works Department.

Construction activities within wetland areas are prohibited except for those within the construction limits as shown on the Plans and as specified in Subsection 107.23.E.

All sediment control devices (except sediment basins) installed on a project shall, as a minimum, be cleaned of sediment when one half the capacity, by height, depth or volume, has been reached. Sediment basins shall be cleaned of sediment when one-third the capacity by volume has been reached.

B. Bridge Construction Over Waterways

Construction waste or debris, from bridge construction or demolition, shall be prevented from being allowed to fall or be placed into wetlands, streams, rivers or lakes.

Excavation, dewatering, and cleaning of cofferdams shall be performed in such a manner as to prevent siltation. Pumping from cofferdams to a settling basin or a containment unit will be required if deemed necessary by the Lumpkin County Public Works Department.

Operations required within rivers or streams, i.e. jetting or spudding, shall be performed within silt containment areas, cofferdams, silt fence, sediment barriers or other devices to minimize migration of silt off the project.

C. Borrow and Excess Material Pits

Specific written environmental clearance from the Lumpkin County Public Works Department will be required for any sites not included in the Plans as excess material or borrow areas. No work other than testing shall be started at any potential excess material or borrow site not shown on the plans prior to receiving said environmental clearance from the Lumpkin County Public Works Department.

The Lumpkin County Public Works Department will require a written notice from the Contractor requesting environmental clearance studies and written permission from the property owner at least six weeks prior to intended use of the site. The County will not begin studies on such sites before a Notice to Proceed is issued.

The Lumpkin County Public Works Department will inform the Contractor in writing as to the granting or denial of environmental clearance. If denied, the Contractor may, at no expense to the County, seek to obtain permits or pursue other remedies that might otherwise render the site(s) acceptable.

Sites included in the Plans have environmental clearance and shall be used only for the purpose(s) specified in the Plans or other contract documents. Should the Contractor wish to expand or utilize said sites for any purpose other than that provided for in the Plans or other contract documents, specific written environmental clearance as noted above shall be obtained.

D. Control of Pollutants

Pollutants or potentially hazardous materials, such as fuels, lubricants, lead paint, chemicals or batteries, shall be transported, stored, and used in a manner to prevent leakage or spillage into the environment. The Contractor shall also be responsible for proper and legal disposal of all such materials.

Equipment, especially concrete or asphalt trucks, shall not be washed or cleaned-out on the Project except in areas where unused product contaminants can be prevented from entering waterways.

E. Temporary Work in Wetlands Outside of the Construction Limits within the Right-of-Way and Easement Areas

Temporary work in wetlands (that are not delineated with orange barrier fence) will be subject to the following requirements:

1. Temporary work in wetlands shall be accomplished by using temporary structures, timber, concrete, soil with geotextile fabric, or other suitable matting. The area shall not be grubbed.

2. Soil matting shall be protected from erosion in accordance with the Specifications.

3. Whenever temporary work is required in Saltwater Marsh Wetlands, all temporary structures and/or matting shall be removed in their entirety prior to Final Acceptance of the Project. Matted and compressed soils shall be backfilled to their original ground elevation with material meeting the requirements of Section 212 – Granular Embankment.

4. Whenever temporary work is required in Freshwater Wetlands, all temporary structures and/or matting (exclusive of soil matting to be retained in the final roadway section) shall be removed in their entirety prior to Final Acceptance of the Project.

   Once the temporary materials have been removed, the area shall be covered by Excelsior or Straw blankets according to Section 713 of the Specifications. The grassing and ground preparation referenced in Subsection 713.3.03. "Preparation", will not be applicable to this Work.

5. The Lumpkin County Public Works Department shall be notified so that a field inspection may be conducted to certify that the temporary materials were properly removed and that the area was properly restored. The Contractor shall be responsible for any corrective action required to complete this Work.

6. There will be no separate measurement or payment for this Work. The cost associated with this work shall be included in the overall Bid submitted.

F. Environmentally Sensitive Areas

Some archaeological sites, historic sites, wetlands, streams, open waters and protected animal and plant species habitats within the Right-of-Way and easement areas may be designated as ENVIRONMENTALLY SENSITIVE AREAs (ESAs). These areas are shown on the Plan sheets and labeled "ESA" (e.g. ESA-Historical Boundary, ESA-Wetland Boundary). The Contractor shall install orange barrier fence as delineated in the Plans.

The Contractor shall not perform any construction related activities within areas delineated in the Plans with orange barrier fence, unless specifically stated otherwise in the Plans. This includes but is not limited to construction activities such as clearing and grubbing, borrowing, wasting, grading, filling, staging, parking, sediment basins, and equipment storage. Also, all archaeological sites, historic sites, wetlands, streams and protected habitats beyond the Right-of-Way and easement areas are deemed to be ENVIRONMENTALLY SENSITIVE AREAS and shall not be disturbed in any way.

The orange barrier fence shall remain in place until such time the Lumpkin County Public Works Department directs the fence to be removed. The cost of this work shall be included in the Bid price submitted for barrier fence which will be paid for in accordance with Specification 643.

SECTION 108 – PROSECUTION AND PROGRESS

Delete the fifth paragraph from Subsection 108.01 and substitute the following:

No Subcontracts, or transfers 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 County. Except for certain items exempted by the governing authority of Lumpkin County, each Subcontractor shall be prequalified or registered with the Department of Transportation. Each Subcontract for a Registered Subcontractor shall not exceed $1,000,000.00 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.

SECTION 108 – PROSECUTION AND PROGRESS
(Contractor Performs 70% of Work)

Delete paragraphs one through four of Subsection 108.01 and substitute the following:

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 Lumpkin County Public Works Department. For Subcontracts, consent of the Lumpkin County Public Works Department will not be considered until after award of the Contract.

Incase 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 seventy percent (70%) of the total Contract cost, including materials, equipment, and labor.

As a 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 70% requirement.

SECTION 108 – PROSECTION AND PROGRESS

Retain Subsection 108.03 except as modified below:

For this project, the Progress Schedule required by Subsection 108.03 need not be submitted.

Delete subsection 108.08 in its entirety and substitute the following:

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	Calendar Day, Completion Date or Available
$0	$500,000	$84
$500,00	$1,000,000	$151
$1,000,000	$2,000,000	$247
$2,000,000	$5,000,000	$391
$5,000,000	$10,000,000	$713
$10,000,000	$20,000,000	$1191
$20,000,000	$40,000,000	$1869
$40,000,000	—	$5089

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 County 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 County 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 p a y m e n t .

These fixed liquidated damages are not established as a penalty but are calculated and agreed upon in advance by the County and the Contractor due the uncertainty and impossibility of making a determination as to the actual and consequential damages which are incurred by the County 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 his Surety.
3. No Liquidated Damages Charged for Delay by the County: In case of default of the Contract and the subsequent completion of The Work by the County 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 due to any unreasonable action, negligence, omission, or delay of the County. In any suit for the collection of or involving the assessment of liquidated damages, the reasonablenessof 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 Lumpkin County 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 County under the Contract.

SECTION 109 – MEASUREMENT AND PAYMENT

109.1 Measurement and Quantities

The method of measurement and computations to be used in determination of quantities of material furnished and of work performed under the Contract will be those methods generally recognized as conforming to good engineering practice.

Unless otherwise specified, longitudinal measurements for area computations will be made along the surface, and no deductions will be made for individual fixtures having an area of 9 ft2 (1m2) or less. Unless otherwise specified, transverse measurements for area computations will be the neat dimensions shown on the Plans or ordered in writing by the Lumpkin County Public Works Department.

Where payment is to be made by the square yard (square meter) for a specified thickness, the length will be measured on the surface along the centerline and the pay width shall be that width specified on the plans for the Final surface of the completed section. Intermediate courses shall be placed at a width sufficient to support successive courses with no detriment to the stability of the successive courses. The width of material required beyond the pay width will not be eligible for payment and shall be considered incidental to the work.

Structures will be measured according to neat lines shown on the Plans or as altered to fit field conditions.

All items which are measured by the linear foot (linear meter), such as pipe culverts, guard rail, underdrains, etc., will be measured parallel to the base or foundation upon which such structures are placed, unless otherwise shown on the Plans.

In computing volumes of excavation, the average end area method or other acceptable methods will be used. The term "gage," when used in connection with the measurement of steel plates, will mean the U.S. Standard Gage. When the term "gage" refers to the measurement of electrical wire it will mean the wire gage specified in the National Electrical Code.

The term "ton" will mean the short ton consisting of 2,000 pounds avoirdupois. The term "mega gram" will mean one metric ton, equivalent to 1,000 kg. Any commodity paid for by weight shall be weighed on scales that have been approved as specified below and which are furnished at the expense of the Contractor or Supplier. Weighing and measuring systems including remote controls shall be subject to type-approval by the Department of Transportation. The manufacture, installation, performance, and operation of such devices located in Georgia shall conform to, and be governed by, the Official Code of Georgia, Annotated, Section 10-2-5 of the Georgia Weights and Measures Act, the

Georgia Weights and Measures Regulations, as amended and adopted, the current edition of the National Bureau of Standards Handbook 44, and these Specifications. Weighing and measuring systems located outside Georgia which are utilized for weighing materials to be used in County work shall be manufactured, installed, approved, and operated in accordance with applicable laws and regulations for the state in which the scales are located.

All weighing, measuring, and metering devices used to measure quantities for payment shall be suitable for the purpose intended and will be considered to be "commercial devices." Commodity scales located in Georgia shall be certified before use for accuracy, condition, etc., by the Weights and Measures Division of the Georgia Department of Agriculture, its authorized representative, or the Georgia Department of Transportation Office of Materials and Research. Scales located outside Georgia shall be certified in accordance with applicable laws and regulations for the state in which the scales are located. The Georgia Department of Transportation Office of Materials and Research may certify the scales. This certification shall have been made within a period of not more than one year prior to date of use for weighing commodity.

All equipment and all mechanisms and devices attached thereto or used in connection therewith shall be constructed, assembled, and installed for use so that they do not facilitate the perpetration of fraud. Any scale component or mechanism, which if manipulated would alter true scale values (including manual zero setting mechanisms) shall not be accessible to the scale operator. Such components and mechanisms that would otherwise be accessible to the scale operator shall be enclosed.

Provisions shall be made for security seals where appropriate on equipment and accessories. A security seal shall be affixed to any adjustment mechanism designed to be sealed. Scale or accessory devices shall not be used if security seals have been broken or removed.

Any certified scale or scale component which has been repaired, dismantled, or moved to another location shall again be tested and certified before it is eligible for weighing.

Whenever materials that are paid for based on weight are from a source within the State, the scales shall be operated by and the weights attested to by signature and seal of a duly authorized Certified Public Weigher in accordance with Standard Operating Procedure 15 and the Official Code of Georgia, Annotated, Section 10-2-5 of the Georgia Weights and Measures Act as amended and adopted. When such materials originate from another state that has a certified or licensed weigher program, the scales shall be operated by a weigher who is certified by that state in accordance with applicable laws, and weight ticket recordation shall be in accordance with Standard Operating Procedure 15.

When materials are paid for based on weight and originate from another state which has no program for certifying or licensing weighers, the materials shall be weighed on scales located in the State of Georgia by a Certified Public Weigher in accordance with Standard Operating Procedure 15 and the Official Code of Georgia, Annotated, Section 10-2-5 of the Georgia Weights and Measures Act as amended and adopted.

No scale shall be used to measure weights greater than the scale manufacturer's rated capacity. A digital recorder shall be installed as part of any commodity scale. The recorder shall produce a printed digital record on a ticket with the gross, tare, and net weights of the delivery trucks, along with the date and time printed for each ticket. Provisions shall be made so that the scales or recorders may not be manually manipulated during the printing process. The system shall be so interlocked as to allow printing only when the scale has come to rest. Either the gross or net weight shall be a direct scale reading. Printing and recording systems that are capable of accepting keyboard entries shall clearly and automatically differentiate a direct scale weight value from any other weight values printed on the load ticket.

All scales used to determine pay quantities shall be provided to attain a zero balance indication with no load on the load receiving element by the use of semi-automatic zero (push-button zero) or automatic zero maintenance.

Vehicle scales shall have a platform of sufficient size to accommodate the entire length of any vehicle weighed and shall have sufficient capacity to weigh the largest load. Adequate drainage shall be provided to prevent saturation of the ground under the scale foundation.

The Lumpkin County Public Works Department, at his discretion, may require the platform scales to be checked for accuracy. For this purpose the Contractor shall load a truck with material of his choosing, weigh the loaded truck on his scales, and then weigh it on another set of certified vehicle scales. When the difference exceeds 0.4 percent of load, the scales shall be corrected and certified by a registered scale serviceman registered in the appropriate class as outlined in the Georgia Weights and Measures Regulations or in accordance with applicable requirements of the state in which the scales are located. A test report shall be submitted to the appropriate representative of the Department of Agriculture.

Materials to be measured by volume in the hauling vehicle shall be hauled in approved vehicles and measured therein at the point of delivery. Vehicles for this purpose may be of any size or type acceptable to the Lumpkin County Public Works Department, provided that the body is of such shape that the actual contents may be readily and accurately determined. All vehicles shall be loaded to their water level capacity as determined by the Lumpkin County Public Works Department, provided that the body is of such shape that the actual contents may be readily and accurately determined.

Cement and lime will be measured by the ton (megagram). Whenever cement or lime is delivered to the Project in tank trucks, a certified weight shall be made at the shipping point by an authorized Certified Public Weigher who is not an employee of the County. Whenever cement and lime are from a source within the State, the scales shall be operated by the weights attested to by signature and seal of a duly authorized Certified Public Weigher in accordance with Standard Operating Procedure 15 and the Official Code of Georgia, Annotated, Section 10-2-5 of the Georgia Weights and Measures Act as amended and adopted. When such materials originate from another state that has a certified or licensed weigher program, the scales shall be operated by a weigher who is certified by that state in accordance with applicable laws, and the weight ticket recordation shall be in accordance with Standard Operating Procedure 15. When cement and lime originate from another state that has no program for certifying or licensing weighers, the materials shall be weighed on scales located in the State of Georgia by a Certified Public Weigher in accordance with Standard Operating Procedure 15 and the Official Code of Georgia, Annotated, Section 10-2-5 of the Georgia Weights and Measures Act as amended and adopted. ·

The shipping invoice shall contain the certified weights and the signature and seal of the Certified Public Weigher. A security seal shall also be affixed to the discharge pipe cap on the tank truck before leaving the shipping point. The number on the security seal shall also be recorded on the shipping invoice. The shipping invoice for quicklime shall also contain a certified lime purity percentage. Unsealed tank trucks will require reweighing by a Certified Public Weigher.

Timber will be measured by the thousand feet board measure (MFBM) (cubic meter) actually incorporated in the structure. Measurements will be based on nominal widths and thickness and the actual length in place. No additional measurement will be made for splices except as noted for overlaps as shown on the Plans.

The term "Lump Sum" when used as an item of payment will mean complete payment for the Work described in the Contract.

When a complete structure or structural unit (in effect, "Lump Sum" work) is specified as the unit of the measurement, the unit will be construed to include all necessary fittings and accessories.

Rental of equipment will be measured as defined in Subsection 109.05.B.4.

When standard manufactured items are specified as fence, wire, plates, rolled shapes, pipe conduits, ek, and these items are identified by gage, unit weight, section dimensions, etc., such identification will be considered to be nominal weights or dimensions. Unless more stringently controlled by tolerance in cited Specifications, manufacturing tolerances established by the industries involved will be accepted.

109.2 Measurement of Bituminous Materials

A. **By Weighing the Material**

The County prefers this method whenever it is practicable. This method will be considered acceptable under the following conditions:

1. **Weighed On Project**: If the weights of the bituminous materials delivered by tank trucks are to bedetermined on the Project, weights shall be determined on scales that have been previously checked by the Department with standard weights for accuracy. The scale platform shall be large enough to accommodate the entire vehicle at one time. Under no conditions will truck scales be used to measure weights greater than their rated capacity. All weights not determined in the presence of an authorized representative of t h e County shall be made by a Certified Public Weigher who is not an employee of Lumpkin County and who is in good standing with the Georgia Department of Agriculture. The weight tickets shall carry both the signature and seal of the Certified Public Weigher.
2. **Weighed At Shipping Point**: A certified weight made at the shipping point by an authorized Certified Public Weigher who is not an employee of Lumpkin County and who is registered with the Georgia Department of Agriculture, will be acceptable provided all openings in the tank have been sealed by the producer and when, upon inspection on the Project, there is no evidence of any leakage. The shipping ticket in this case must carry the signature and seal of the Certified Public Weigher. If the tank is not completely emptied the amount of material remaining in the tank truck will be measured by either weight or volume and the amount so determined, as verified by the Lumpkin County Public Works Department, will be deducted from the certified weight.
3. **By Extraction Analysis**: The weight of bituminous material used will be determined by extraction tests made by the field laboratory. The average asphalt content for each Lot will be used to compute the weight of the Asphalt Cement to be paid for in accordance with the following formula:

   <u>English:</u>

   P =%ACxT

   Where:

   P =Pay Tons of Asphalt Cement
   %AC =Lot average of% Asphalt Cement by weight of total mix as determined by extraction
   T =Actual accepted tons of mixture as weighed

   <u>Metric:</u>

   P =%ACxT

   Where:

   P =Pay megagrams of Asphalt Cement
   %AC =Lot average of% Asphalt Cement by weight of total mix as determined by extraction
   T =Actual accepted megagrams of mixture as weighed

4. **By Digital Recording Device**: The amount of bituminous material as shown on the printed tickets will be the Pay Quantity.

B. By Volume

The volume will be measured and corrected for the difference between actual temperature and 60 °F (15 °C). Containers shall be level when measured, and one of the following methods shall be used, whichever is best suited to the circumstances:

1. **Tank Car Measurement:** If the material is shipped to the Project in railroad tank cars, the Contractor shall furnish the Lumpkin County Public Works Department a certified chart showing the dimensions and volume for each inch (25 mm) of depth for each tank. The Lumpkin County Public Works Department will m a k e outage and temperature measurements before unloading is begun and after it is finished. The measurements will be taken when the bituminous material is at a uniform temperature and free from air bubbles. The Contractor shall not remove any bituminous material from any tank until necessary measurements have been made nor shall he release the car until final outage has been measured. The total number of gallons (liters) allowed for any tank car shall not be more than the U.S. Interstate Commerce Commission rating for that car, converted to gallons at 60 °F (15 °C).

2. **Truck Measurement:** If bituminous materials are delivered to the Project in tank trucks, distributor tanks, or drums, the Contractor shall not remove any bituminous material from the transporting vehicle or container until necessary measurements have been made, nor shall the transporting vehicle or container be released until final outage has been measured. If weighing is not convenient, the Contractor shall furnish the Lumpkin County Public Works Department with a certified chart showing the dimensions and volume of each container together with a gauge or calibrated measuring rod which will permit the volume of thematerial to be determined by vertical measurement.
3. **Metering:** The volume may be determined by metering, in which case the metering device used and the method of using it shall be subject to the approval of the Lumpkin County Public Works Department.
4. **Time of Deliveries:** The arrival and departure of vehicles delivering bituminous materials to the Project site shall be so scheduled that the Lumpkin County Public Works Department is afforded proper time for the measurements of delivered volume and final outage. The Lumpkin County Public Works Department will make the necessary measurements only during the Contractor's normal daily working hours.

C. Production for Multiple Projects

When a Contractor is producing Asphaltic Concrete from one plant, which is being placed on two or more jobs, public or private, the amount of bituminous material used may be determined by extraction tests in accordance with Subsection 109.02.A.3 or digital recording device in accordance with Subsection 109.02.A.4.

D. Tack Coat

When the same storage facility is utilized for Bituminous Materials to be used in Hot Mix Asphaltic Concrete, Bituminous Tack Coat, and/or Surface Treatment, the quantity used for Tack Coat shall be converted to tons (megagrams) and deducted from the quantities for the Bituminous Material used in the Hot Mix Asphaltic Concrete and Surface Treatment.

E. Corrections

When the volume and temperature have been determined as defined above, the volume will be corrected by the use of the following formula:

$$V_{English} = \frac{V1}{K(t-60)+1} \qquad V_{metric} = \frac{V1}{K(t-15)+1}$$

V =Volume of bituminous material at 60 °F (15 C)

V1= Volume of hot bituminous material

t =Temperature of hot bituminous material in degrees Fahrenheit (Celsius) K= Coefficient of Expansion of bituminous material (correction factor)

The correction factors K for various materials are given below:

- 0.00035 (0.00063) per °F (C) for petroleum oils having a specific gravity of 60 °F/60 °F (15 °C/15 °C) above 0.966
- 0.00040 (0.00072) per °F (C) for petroleum oils having a specific gravity of 60 °F/60 °F (15 °C/15 °C) between 0.850-0.966
- 0.00030 (0.00054) per °F (^{0}C) for Tar
- 0.00025 (0.00045) per °F (^{0}C) for Emulsified Asphalt
- 0.00040 (0.00072) per °F (^{0}C) for Creosote Oil

109.3 Scope of Payment

The Contractor shall receive and accept the compensation provided for in the Contract as full payment for furnishing all materials, labor, tools, equipment, superintendence and incidentals, and for performing all work contemplated and embraced under the Contract in a complete and acceptable manner, for any infringement of patent, trademark or copyright, for all loss or damage arising from the nature of The Work, or from the action of the elements, for all expenses incurred by or in consequence of the suspension or discontinuance of The Work, or from any unforeseen difficulties which may be encountered during the prosecution of The Work and for all risks of every description connected with the prosecution of The Work until its Final Acceptance by the Lumpkin County Public Works Department, except as provided in Subsection 107.16.

The payment of any partial estimate prior to Final Acceptance of the Project as provided in Subsection 105.16 shall in no way affect the obligation of the Contractor to repair or renew any defective parts of the construction or to be responsible for all damages due to such defects.

109.4 Payment and Compensation for Altered Quantities

When alteration in Plans or quantities of work not requiring Supplemental Agreements as herein before provided for are ordered and performed, the Contractor shall accept payment in full at the Contract Unit Bid Prices for the actual quantities of work done, and no allowance will be made for increased expense, loss of expected reimbursement, or loss of anticipated profits· suffered or claimed by the Contractor, resulting either directly from such alterations, or indirectly from unbalanced allocation among the Contract Items of overhead expense on the part of the Bidder and subsequent loss of expected reimbursement therefore, or from any other cause.

Compensation for alterations in Plans or quantities of work requiring Supplemental Agreements shall be as stipulated in such agreement, except that when the Contractor proceeds with the Work without change of price being agreed upon, he shall be paid for such increased or decreased quantities at the Contract Unit Prices Bid in the Proposal for the Items of the Work.

109.5 Extra Work

Extra work, as defined in Subsection 101.27, when ordered in accordance with Subsection 104.04, will be authorized in writing by the Lumpkin County Public Works Department. The authorization will be in the form of a Supplemental Agreement or a Force Account.

A. Supplemental Agreement

In the case of a Supplemental Agreement, the work to be done will be stipulated and agreed upon by both parties prior to any extra work being performed.

Payment based on Supplemental Agreements shall constitute full payment and settlement of all additional costs and expenses including delay and impact damages caused by, arising from or associated with The Work performed.

B. Force Account

When no agreement is reached for Extra Work to be done at Lump Sum or Unit Prices, such work may be authorized by the Department to be done on a Force Account basis. A Force Account estimate that identifies all anticipated costs shall be prepared by the Contractor on forms provided by the Lumpkin County Public Works Department. Work shall not begin until the Force Account is approved. Payment for Force Account work will be in accordance with the following:

1. **Labor:** For all labor, equipment operators and supervisors, excluding superintendents, in direct charge of thespecific operations, the Contractor shall receive the rate of wage agreed upon in writing before beginning work for each and every hour that said labor, equipment operators and supervisors are actually engaged in such work.

   The Contractor shall receive the actual costs paid to, or in behalf of, workers by reason of subsistence and travel allowances, health and welfare benefits, pension fund benefits, or other benefits, when such amounts are required by collective bargaining agreement or other employment contract generally applicable to the classes of labor employed on The Work.

   An amount equal to 15% of the sum of the above items will also be paid the Contractor.

2. **Bond, Insurance, and Tax**: For property damage, liability, and worker's compensation insurance premiums, unemployment insurance contributions, and Social Security taxes on the Force Account work, the Contractor shall receive the actual cost, to which cost no percentage will be added. The Contractor shall furnish satisfactory evidence of the rate or rates paid for such bond, insurance, and tax.
3. **Materials:** For materials accepted by the Lumpkin County Public Works Department and used, the Contractor shall receive the actual cost of such material incorporated into The Work, including Contractor paid transportation charges (exclusive of machinery rentals as hereinafter set forth), to which cost 10% will be added.
4. **Equipment:** For any machinery or special equipment (other than small tools) including fuel and lubricant, plus transportation costs, the use of which has been authorized by the Lumpkin County Public Works Department, the Contractor shall receive the rental rates indicated below for the actual time that such equipment is in operation on The Work or the time, as indicated below, the equipment is directed to stand by.

   Equipment rates shall be based on the latest edition of the *Rental Rate Blue Book for Construction Equipment* or *Rental Rate Blue Book for Older Construction Equipment,* whichever applies, as published by Equipment Watch using all instructions and adjustments contained therein and as modified below.

   Allowable Equipment Rates shall be established as defined below:

   - Allowable Hourly Equipment Rate= Monthly Rate/176 x Adjustment Factors.
   - Allowable Hourly Operating Cost= Hourly Operating Cost.
   - Allowable Rate per Hour= Allowable Hourly Equipment Rate + Allowable Hourly Operating Cost.
   - Standby Rate= Allowable Hourly Equipment Rate x 35%

NOTE: The monthly rate is the basic machine plus any attachments.

Standby rates shall apply when equipment is not in operation and is directed by the Lumpkin County Public Works Department to standby for later use. In general, Standby rates shall apply when equipment is not in use, but will be needed again to complete The Work and the cost of moving the equipment will exceed the accumulated standby cost. Payment for standby time will not be made on any day the equipment operates for 8 or more hours. For equipment accumulating less than 8 hours operating time on any normal workday, standby payment will be limited to only that number of hours which, when added to the operating time for that day equals 8 hours. Standby payment will not be made on days that are not normally considered workdays.

The County will not approve any rates in excess of the rates as outlined above unless such excess rates are supported by an acceptable breakdown of cost.

Payable time periods will not include:

- Time elapsed while equipment is broken down
- Time spent in repairing equipment, or
- Time elapsed after the Lumpkin County Public Works Department has advised the Contractor the equipment is no longer needed

If a piece of equipment is needed which is not included in the above *Blue Book* rental rates, reasonable rates shall be · agreed upon in writing before the equipment is used. All equipment charges by persons or firms other than the Contractor shall be supported by invoices.

Transportation charges for each piece of equipment to and from the site of the Work will be paid provided:

- The equipment is obtained from the nearest approved source
- The return charges do not exceed the delivery charges
- Haul rates do not exceed the established rates of licensed haulers, and
- Such charges are restricted to those units of equipment not already available and not on or near the Project

No additional compensation will be made for equipment repair.

5. **Miscellaneous:** No additional allowance will be made for general superintendence, the use of small tools, or other costs for which no specific allowance is herein provided.

6. **Compensation:** The Contractor's representative and The Lumpkin County Public Works Department shall compare records and agree on the cost of work done as ordered on a Force Account basis at the end of each day on forms provided by the County.

7. **Subcontract Force Account Work:** For work performed by an approved Subcontractor or Second-tier Subcontractor, all provisions of this Section (109.05) that apply to the Prime Contractor in respect to labor, materials and equipment shall govern. The prime Contractor shall coordinate the work of his Subcontractor. The prime Contractor will be allowed an amount to cover administrative cost equal to 5% of the Subcontractor's amount earned but not to exceed $5,000.00 per Subcontractor. Markup for Second-tier Subcontract work will not be allowed.

   Should it become necessary for the Contractor or Subcontractor to hire a firm to perform a specialized type of work or service which the prime Contractor or Subcontractor is not qualified to perform, payment will be made at reasonable invoice cost. To each invoice cost a markup to cover administrative cost equal to 5% of the total invoice but not to exceed $5,000.00 will be allowed the Contractor or Subcontractor but not both.

8. **Statements:** No payment will be made for work performed on a Force Account basis until the Contractor has furnished the Lumpkin County Public Works Department with duplicate itemized statements of the cost of such Force Account work detailed as follows:

   a. Name, classification, date, daily hours, total hours, rate, and extension for each laborer, equipment operator, and supervisor, excluding superintendents.

b. Designation, dates, daily hours, total hours, rental rate, and extension for each unit of machinery and equipment.

c. Quantities of materials, prices, and extensions.

d. Transportation of materials.

e. Cost of property damage, liability, and worker's compensation insurance premiums, unemployment insurance contributions, and Social Security tax.

Statements shall be accompanied and supported by invoices for all materials used and transportation charges. However, if materials used on the Force Account work are not purchased specifically for such workbut are taken from the Contractor's stock, then, in lieu of the invoices, the Contractor shall furnish an affidavit certifying that such materials were taken from his stock, that the quantity claimed was actually used, and that the price and transportation claimed represent the actual cost to the Contractor.

Payment based on Force Account records shall constitute full payment and settlement of all additional costs and expenses including delay and impact damages caused by, arising from or associated with The Work performed.

109.6 Eliminated Items

Should any Items contained in the Proposal be found unnecessary for the proper completion of The Work, the Lumpkin County Public Works Department may, upon written order to the Contractor, eliminate such Items from the Contract, and such action shall in no way invalidate the Contract? When a Contractor is notified of the elimination of Items, he will be reimbursed for actual work done and all costs incurred, including mobilization of materials prior to said notifications.

109.7 Partial Payments

A. General

At the end of each calendar month, the total value of Items complete in place will be estimated by the Lumpkin County Public Works Department and certified for payment. Such estimate is approximate only and may not necessarily be based on detailed measurements. Value will be computed on the basis of Contract Item Unit Prices or on percentage of completion of Lump Sum I t e m s .

When so requested by the Contractor and approved by the Lumpkin County Public Works Department, Gross Earnings of $500,000.00 or more for work completed within the first 15 days of any month will be certified for payment on a semi-monthly basis subject to the conditions and provisions of Subsection 109.07.A, Subsection 109.07.B.6, Subsection 109.07.C, Subsection 109.07.D, Subsection 109.07.E, and Subsection1109.07.F.

B. Materials Allowance

Payments will be made on delivered costs, or percentage of bid price if otherwise noted, with copies of paid invoices provided to the County for the materials listed below which are to be incorporated into the Project provided the materials:

- Conform to all Specification requirements.
- Are stored on the Project Right-of-Way or, upon written request by the Contractor and written approval of the Lumpkin County Public Works Department, they may be stored off the Right-of-Way, but local to the Project, provided such storage is necessary due to lack of storage area on the Right-of-Way, need for security, or need for protection from weather.

As a further exception to on-Project storage, upon written request by the Contractor, the Lumpkin County Public Works Department may approve off-the• Project storage items uniquely fabricated or precast for a specific Project, such as structural steel and precast concrete, which will be properly marked with the Project number and stored at the fabrication or precast facility.

The Lumpkin County Public Works Department may approve out-of-state storage for structural steel and prestressed concrete beams uniquely fabricated for a specific Project stored at the fabrication facility. .

1. Paid invoices should accompany the materials allowance request, but in no case be submitted to the Lumpkin County Public Works Department later than 30 calendar days following the date of the progress payment report on which the materials allowance was paid.

   Incase such paid invoices are not furnished within the established time; the materials allowance payment will be removed from the next progress statement and no further materials allowance will be made for that item on that Project.

2. Materials allowances will be paid for those items which are not readily available, and which can be easily identified and secured for a specific project and for which lengthy stockpiling periods would not be detrimental. Some exclusions are as follows:

   a. No payments will be made on living or perishable plant materials until planted.

   b. No payments will be made on Portland cement, Liquid Asphalt, or Grassing Materials.

   c. No payment will be made for aggregate stockpiled in a quarry. Payment for stockpiled aggregate will be made only if the aggregate is stockpiled on or in the immediate vicinity of the project and is held for the exclusive use on that project. The aggregate must be properly secured. If the aggregate stockpiled is to be paid for per-ton (megagram) it must be reweighed on approved scales at the time it is incorporated into the Project.

   d. No payments will be made on minor material items, hardware, etc.

3. No materials allowance will be made for materials when it is anticipated that those materials will be incorporated into the Work within 30 calendar days. ·

4. No materials allowance will be made for a material when the requested allowance for such material is less than $50,000.

5. Where a storage area is used for more than one project, material for each project shall be segregated from material for other projects, identified, and secured. Adequate access for auditing shall be provided. All units shall be stored in a manner so that they are clearly visible for counting and/or inspection of the individual units.

6. The County Manager may, at his discretion, grant waiver to the requirements of this· Section when, in his opinion, such waiver would be in the public interest.

   Subsequently, in the event the material is not on-hand and in the quantities for which the materials allowance was granted, the materials allowance payment will be removed from the next progress statement and no further materials allowance will be made for those items on that Project. If sufficient earnings are not available on the next progress statement, the Contractor agrees to allow the County to recover the monies from any other Contract he may have with the County, or to otherwise reimburse the County.

   Payments for materials on hand shall not exceed the invoice price or 75 percent of the bid prices for the pay items into which the materials are to be incorporated, whichever is less.

C. Minimum Payment

No partial payment will be made unless the amount of payment is at least $1000.00.

D. Liquidated Damages

Accrued liquidated damages will be deducted in accordance with Subsection 108.08.

E. Other Deductions

In addition to the deductions provided for above, the County has the right to withhold any payments due the Contractor for items unpaid by the Contractor for which the County is directly responsible, including, but not limited to, royalties (see Section 106).

F. Amount of Payment

The balance remaining after all deductions provided for herein have been made will be paid to the Contractor. Partial estimates are approximate and are subject to correction on subsequent progress statements. If sufficient earnings are not available on the subsequent progress statement, the Contractor agrees to allow the County to recover the monies from any other Contract he may have with the County, or to otherwise reimburse the County. The Lumpkin County Public Works Department is responsible for computing the amounts of all deductions herein specified, for determining the progress of the Work and for the items and amounts due to the Contractor during the progress of the Work and for the final statement when all Work has been completed.

G. Interest

Under no circumstances will any interest accrue or be payable on any sums withheld or deducted by the Department as authorized by Subsection 109.07.A, Subsection 109.07.B.6. Subsection 109.07.C, Subsection 109.07.D. Subsection 109.07.E, and Subsection 109.07.F.

H. Insert the Following in Each Subcontract

The Contractor shall insert the following in each Subcontract entered into for work under this Contract:

"The Contractor shall not withhold any retainage on Subcontractors. The Contractor shall pay the Subcontractor 100% percent of the gross value of the Completed Work by the Subcontractor as indicated by the current estimate certified by the Lumpkin County Public Works Department for payment."

Neither the inclusion of this Specification in the Contract between the County and the Prime Contractor nor the inclusion of the provisions of this Specification in any Contract between the Prime Contractor and any of his. Subcontractors nor any other Specification or Provision in the Contract between the County and the Prime Contractor shall create, or be deemed to create, any relationship, contractual or otherwise, between the County and any Subcontractor.

109.8 Final Payment

When Final Inspection and Final Acceptance have been made by the Lumpkin County Public Works Department, final payment will be made. Final Payment will be for all work placed and completed in a satisfactory manner minus any previous payments.

A. Termination of County's Liability

Final payment will be in the amount determined by the statement as due and unpaid. The acceptance of the final payment shall operate as and be a release to the County from all claims of liability under this contract and for any act or neglect of the County.

109.9 Termination Clause

A. General

The County may, by written notice, terminate the Contract or a portion thereof for the County's convenience when the County determines that the termination is in their best interest, or when the Contractor is prevented from proceeding with the Contract as a direct result of one of the following conditions:

1. An Executive Order of the President of the United States with respect to the prosecution of war or in the interest of national defense.
2. The Lumpkin County Public Works Department and Contractor each make a determination, that, due to a shortage of critical materials required to complete the Work which is caused by allocation of these materials to work of a higher priority by the Federal Government or any agency thereof, it will be impossible to obtain these materials within a practical time limit and that it would be in the public interest to discontinue construction.
3. An injunction is imposed by a court of competent jurisdiction which stops the Contractor from proceeding with the Work and causes a delay of such duration that it is in the public interest to terminate the Contract and the Contractor was not at fault in creating the condition which led to the court's injunction.

   The decision of the Lumpkin County Public Works Department as to what is in the public interest and as to the Contractor's fault, for the purpose of Termination, shall be final.
4. Orders from duly constituted authority relating to energy conservation.

B. Implementation

When, under any of the conditions set out in Subsection A of this Section, the Contract, or any portion thereof, is terminated before completion of all Items of Work in the Contract, the Contractor shall be eligible to receive some or all of the following items of payment:

1. For the actual number of units of items of Work completed, payment will be made at the Contract Unit Price.
2. Reimbursement for organization of the Work and moving equipment to and from the job will be considered where the volume of work completed is too small to compensate the Contractor for these expenses under the Contract Unit Prices. However, the Engineer's decision as whether or not to reimburse for organization of the Work and moving equipment to and from the job, and in what amount, shall be final.
3. Acceptable materials, obtained by the Contractor for the Work, that have been inspected, tested, and accepted by the Lumpkin County Public Works Department, and that are not incorporated in the Work will, at the request of the Contractor, be purchased from the Contractor at actual cost as shown by receipted bills and actual cost records at such points of delivery as may be designated by the Lumpkin County Public Works Department. This will include any materials that have been delivered to the project site or that have been specifically fabricated for the project and are not readily usable on other projects. It will not include materials that may have been ordered, but not delivered to the project site and that are readily usable on other projects (e.g., guard rail, stone, lumber, etc.).
4. For Items of Work-partially completed; payment adjustments including payments to afford the Contractor a reasonable profit on work performed, may be made as determined by the Lumpkin County Public Works Department based upon a consideration of costs actually incurred by the Contractor in attempting to perform the Contract.
5. No payment will be made, and the County will have no liability, for lost profits on Work not performed. In particular, the County will not be liable to the Contractor for all profits the Contractor expected to realize had the Project been completed, nor for any loss of business opportunities, nor for any other consequential damages.
6. In order that the County may make a determination of what sums are payable hereunder, the Contractor

agrees that, upon termination of the Contract, it will make all of its books and records available for inspection and auditing by the County.

To be eligible for payment, costs must have been actually incurred, .and must have been recorded and accounted for according to generally accepted accounting principles, and must be items properly payable under County policies. Where actual equipment costs cannot be established by the auditors, payment for unreimbursed equipment costs will be made in the same manner as is provided in Subsection 109.05 for Force Account Work. Idle time for equipment shall be reimbursed at standby 'rates. In no case will the Contractor be reimbursed for idle equipment after the Lumpkin County Public Works Department has advised the Contractor the equipment is no longer needed on the job. Refusal of the Contractor to allow the County to inspect and audit all of the Contractor's books and records shall conclusively establish that the County has no liability to the Contractor for any payment under this provision, and shall constitute a waiver by the Contractor of any claim for damages allegedly caused by breach or termination of the Contract. The amount payable under this provision, if any, is to be determined by the Lumpkin County Public Works Department, whose determination will be final and binding.

7. The sums payable under this Subsection shall be the Contractor's sole and exclusive remedy for termination of the Contract.

C. Termination of a Contract

Termination of a Contract or a portion thereof shall not relieve the Contractor of his responsibilities for any completed portion of the Work, nor shall it relieve his Surety of its obligation for and concerning any just claims arising out of the Work performed.

109.10 Interest

In the event any lawsuit is filed against the County alleging the Contractor is due additional money because of claims or for any breach of contract, the Contractor hereby waives and renounces any right it may have under O.C.G.A. Section 13-6-13 to prejudgment interest. Also, the Contractor agrees that notwithstanding any provision or provisions of Chapter 11 of Title 13 of the Official Code of Georgia that the provisions of this contract control as to when and how the Contractor shall be paid for The Work. Further, the Contractor waives and renounces any and all rights it may have under Chapter 11 of Title 13 of the Official Code of Georgia.

SECTION 109 – MEASUREMENT & PAYMENT (LMIG Projects)

Delete the first sentence of Subsection 109.07.A, paragraph one, and substitute the following:

A. General: 'On the tenth day of each calendar month, the total value of Items complete in place will be estimated by the Lumpkin County Public Works Department and certified for payment.

SECTION 149 – CONSTRUCTION LAYOUT

Retain Section 149 except as modified below:

Construction layout is not required for this Project.

SECTION 150 – TRAFFIC CONTROL

150.1 GENERAL

This section as supplemented by the Plans, Specifications, and Manual on Uniform traffic Control Devices (MUTCD) shall be considered the Temporary Traffic Control (TIC) Plan. 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.

When any provisions of this Specification or the Plans do not meet the minimum requirements of the MUTCD, the MUTCD shall control. The 2013 Edition of the MUTCD shall be in effect for the duration of the project.

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 (TIC) zone shall be an essential part of highway construction, utility work, maintenance operations and management of traffic incidents.

The Worksite Traffic Control Supervisor (WTCS) shall have a copy of Part VIof 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.

A. WORKER SAFETY APPAREL

All workers, including emergency responders, within the right-of-way who are exposed either to traffic (vehicles using the highway for purpose of travel) or to work vehicles and construction equipment within the TIC zone shall wear high-visibility safety apparel that meets the Performance Class 2 or 3 requirements of the ANSI/ISEA 107-2004 publication entitled "American National Standard for High-Visibility Safety Apparel and Headwear", or equivalent revisions, and labeled as meeting the ANSI107-2004 standard performance for Class 2 or 3 risk exposure. Emergency and incident responders and law enforcement personnel within the TIC zone may wear high-visibility safety apparel that meets the performance requirements of the ANSI/ISEA 207-2006 publication entitled "American National Standard for High-Visibility Public Safety Vests", or equivalent revisions, and labeled as ANSI207-2006, in lieu of ANSI/ISEA 107-2004 apparel. Firefighters or other

emergency responders working within the right-of-way and engaged in emergency operations that directly expose them to flame, fire, heat, and/or hazardous material may wear retroreflective turn-out gear that is specified and regulated by other organizations, such as the National Fire Protection Association.

B. WORKSITE TRAFFIC CONTROL SUPERVISOR

ALL HIGHWAYS (ADDITIONAL REQUIREMENTS BELOW FOR · INTERSTATES): The Contractor shall designate a qualified individual as the Worksite Traffic Control Supervisor (WTCS) who shall be responsible for selecting, installing and maintaining all traffic control devices in accordance with the Plans, Specifications, Special Provisions and the MUTCD. A written resume documenting the experience and credentials of the WTCS shall be submitted and accepted by the Lumpkin County Public Works Department prior to beginning any work that involves traffic control. 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 Lumpkin County Public Works Department 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 VI of the MUTCD. In addition to the WTCS all other individuals making decisions regarding traffic control shall meet the training requirements of the Part VI of the MUTCD.
The WTCS shall supervise the initial installation of traffic control devices. The Lumpkin County Public Works Department 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.

The 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 regularly perform inspections to ensure that traffic control is maintained. Unless modified by the special conditions or by the Lumpkin County Public Works Department, 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 150.08.

The Lumpkin County Public Works Department will periodically review the work for compliance with the requirements of the TTCplan.

On projects where traffic control duties will not require full time supervision, the Lumpkin County Public Works Department may allow the Contractor's Project Superintendent to serve as the WTCS as long as satisfactory results are obtained.

C. TRAFFIC CONTROL DEVICES

All traffic control devices used during the construction of a project shall meet the Standards utilized in the MUTCD, and shall comply with the requirements of these Specifications, Project Plans, and Special Provisions. All devices shall be tested at NCHRP Test Level III. Reference is made to Subsections 104.05, 107.07, and 107.09.

D. REFLECTORIZATION REQUIREMENTS

All rigid fluorescent orange construction warning signs (black on fluorescent orange) shall meet the reflectorization and color requirements of ASTM Type VII, VIII,IX or X regardless of the mounting height.

Portable signs which have flexible sign blanks shall meet the reflectorization and color requirements of ASTM Type VI.

Warning signs (W3-1a) for stop conditions that have rumble strips located in the travel way shall be reflectorized with ASTM Type IX fluorescent yellow sheeting.

All other signs shall meet the requirements of ASTM Type III or IV except for "Pass With Care" and "Do Not Pass" signs which may be ASTM Type 1 unless otherwise specified.

CHANNELIZATION DEVICES: Channelization devices shall meet the requirements of ASTM Type III or IV high intensity sheeting.

E. 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 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 i t e m s :

1. Guardrail including anchors and delineation with properly lapped panels
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.

F. 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 Subsection 104.05 throughout the construction period. All unacceptable traffic control devices shall be replaced within 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 calendar days after time charges are stopped or pay items are complete. If traffic control devices are left in place for more than ten days after completion of the Work, the County 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.

G. TRAFFIC INTERRUPTION RESTRICTIONS

The County reserves the right to restrict construction operations when, in the opinion of the Lumpkin County Public Works Department, 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 Lumpkin County Public Works Department 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	24 hours
Holidays 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 County 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, and 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.

H. 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 Lumpkin County Public Works Department 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 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 County, temporary on-site bypasses or detours in order to expedite the work. Plans for such temporary bypasses or detours shall be submitted to the Lumpkin County Public Works Department for review and approval 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 Section 150.02.B.4.

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 County may consider the Contractor's alternate Sequence of Operations as a Value Engineering Proposal as defined by Section 104.08. A twenty calendar days lead time for the County's review shall be given to this submission so that a decision on its acceptability can be made and presented at the Preconstruction Conference. Insufficient lead time or no submission by the Contractor shall be construed as acceptance of the Sequence of Operations outlined in the Contract and the willingness of the Contractor to execute this as-bid plan.

The County 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 laneage 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 super-elevation 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.

A minimum of three copies of the above details shall be submitted to the Lumpkin County Public Works Department for approval at least 14 days prior to the anticipated traffic shift. The Contractor shall have traffic control details for a traffic shift which has been approved by the Lumpkin County Public Works Department 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 Lumpkin County Public Works Department and the Contractor's representative will verify that all conditions have been met prior to the Contractor obtaining materials for the actual traffic shift.

150.2 TEMPORARY TRAFFIC CONTROL (TTC) ZONES:

A. DEVICES AND MATERIALS:

In addition to the other provisions contained herein, work zone traffic control shall be accomplished using the following means and materials:

1. Portable Advance Warning Signs

Portable advance warning signs shall be utilized as per the requirements of the temporary traffic control plans. All signs shall meet the requirements of the MUTCD and shall be NCHRP 350 crashworthy compliant.

2. Arrow Panels

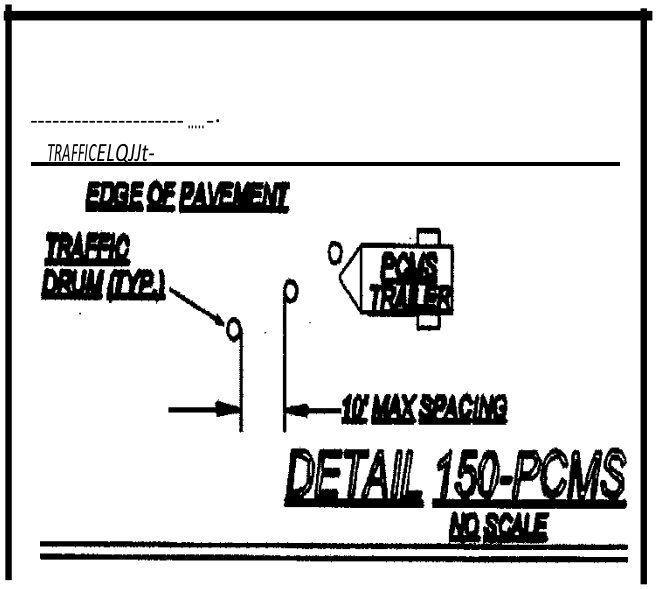
Portable sequential or flashing arrow panels as shown in the Plans or Specifications for use on Interstate or multi-lane highway lane closure only, shall be a minimum size of 48" high by 96" wide with not less than 15 lamps used for the arrow. The arrow shall occupy virtually the entire size of the arrow panel and shall have a minimum legibility distance of one mile. The minimum legibility distance is that 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. 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 sequential or flashing 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 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 Lumpkin County Public Works Department shall determine when conditions and circumstances are considered to be emergencies. The Contractor shall notify the Lumpkin County Public Works Department, in writing, when any non-specification arrow display panel(s) is being used in the work.

3. Portable Changeable Message Signs

Portable changeable message signs meeting the requirements of Section 632 and the MUTCD. Any PCMS in use that is not protected by positive barrier protection shall be delineated by a minimum of three drums that meet the requirement of Section 150.05.A.1. The drum spacing shall not exceed a maximum of ten (10') feet as shown in Detail150-PCMS. 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 bypositive barrier protection. If the PCMS is protected by positive barrier protection the sign panel shall be turned away from traffic when not in use.

4. Channelization Devices

Channelization devices shall meet the standards of the MUTCD and Subsection 150.05.

5. Temporary Barrier

Temporary barrier shall meet the requirements of Sections 620.

6. Temporary Traffic Signals

Temporary traffic signals shall meet the requirements of Section 647 and the M U T C D .

7. Pavement Marking

Pavement marking incorporated into the work shall comply with Subsections 150.04.A and 150.04.B.

8. 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, or 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 assure 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 Worksite Traffic Control Supervisor. Ifat 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 Worksite Traffic Control Supervisor (WTCS) shall continuously monitor the portable traffic control signal to insure 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 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.

9. 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 based on the following requirements:

INTERMEDIATE SURFACES: 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 150.08 will be assessed for any intermediate surface in place for greater than 45 days without rumble strips.

FINAL SURFACES: 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 150.08.

Prior to the removal of any rumble strips located in the travel-way, stop ahead (W3-1a) warning signs shall be double indicated ahead of the stop condition. These warning signs shall be a minimum of 48 inches by 48 inches. The reflectorization of the warning signs shall be as required by Subsection 150.0l.C. 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- 1a) 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.

10. **GUARDRAIL:** 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:

MULTI-LANE HIGHWAYS: From the time that the existing guardrail or temporary positive barrier protection is removed the Contractor has fourteen (14) calendar 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 (20') feet. 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.

ALL OTHER HIGHWAYS: From the time that the existing guardrail is removed or from the time that temporary positive barrier protection is removed the Contractor has thirty (30) calendar 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 (20') feet. The maximum length of rail that can be removed at any time without being replaced with positive barrier protection is a total of 1000 linear feet of existing rail or the total length of one run of existing rail, whichever is less.

Based on existing field conditions, the Lumpkin County Public Works Department may review the work and require that the guardrail be installed earlier than the maximum time allowed above by giving written notification to the Contractor via the TC-1traffic control report.

ALL HIGHWAYS: The contractor shall install new guardrail such that traffic exposure to fixed objects is minimized. Within the same work day, temporary attenuators, as defined in 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 forty-eight (48) hours. No separate payment will be made for truck mounted attenuators.

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.

Failure to comply with the above time and quantity restrictions shall be considered as non-compliance under Section 150.08.

11. **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 bars, 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 bars, stop signs, advanced warning signs,the rumble strips and the flashing beacons shall be included in the -price bid for Lump-Sum-Traffic Control 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 Lumpkin County Public Works Department 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 specify 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 portable changeable message signs 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 Lumpkin County Public Works Department and the message(s) shall be included as part of the TIC plan for the interim staging.

The placement of any additional interim ground-mounted signs and posts or stop bars shall be considered as incidental to the price bid for Lump Sum-Traffic Control. 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.

B. WORK ZONE RESTRICTIONS:

1. Interstate

The Contractor shall 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, unless such areas are separated by at least one-half mile of distance.

2. Non-Interstate Divided Highways

The Contractor shall 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, unless such 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 shall not simultaneously perform work on opposite sides of the roadway when the work is within 12 feet of the travel-way, unless such 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 shall maintain one-lane traffic through the construction area by removing and replacing the undesirable material for half the width of the existing roadway at a time. Replacement shall 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.

4. All Highways:

a. There shall be no reduction in the total number of available traffic lanes that existed prior to construction except as specifically allowed by the Contract and as approved by the Lumpkin County Public Works Department.

b. Travel-way Clearances: All portions of the work shall maintain the following minimum requirements:

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

Vertical: The overhead clearance shall not be reduced to less than fifteen (15) feet 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 (16) feet provided a flagger operation for one-way traffic is utilized to restrict access to the work area by over- width loads. The minimum horizontal clearance shall be restored before the flagging operation is removed.

c. Highway Work Zone: 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 (Detail 150-Hwz-2) 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 HWZ-2 sign shall be placed a minimum of six hundred (600') feet in advance of the Highway Work Zone and shall not be placed more than one thousand (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 500FT. 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 ROADWAYS: Intersecting state routes shall be signed in advance of each intersection with the Work Zone with a 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) Signage (Detail 150-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 1above.

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

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 to ensure that the maximum spacing of the reduced speed limit signs shall be no greater than one (1) mile apart. Existing speed limit signs shall be covered or removed. On multi-lane divided highways the speed limit signs shall be double indicated when the reduced speed is in use.

When any one or more of the following conditions exist and the existing speed limit is 65 mph or 70 mph, the speed limit shall be reduced by 10 mph. If the existing speed limit is 60 mph, the speed limit should be reduced by 5 mph. If the existing speed limit is 55 mph or less, the Contractor can only reduce the speed limit with the prior approval of the Lumpkin County Public Works Department. The reduction in the speed limit shall be no greater than 10 mph:

a) Lane closure(s) of any type and any duration.
b) The difference in elevation exceeds two inches adjacent to a travel lane as shown in Subsection 150.06, Detail150-B, 150-C.
c) Any areas where equipment or workers are within ten feet of a travel lane.
d) Temporary portable concrete barriers located less than two (2') feet from the traveled way.
e) As directed by the Lumpkin County Public Works Department 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.

As 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 Lumpkin County Public Works Department.

Reduced speed zones shall, as a minimum, be signed as per Detail150-HWZ-1. Interim signs shall meet the requirements of 150.03 D. Additional signs may be necessary to adjust for actual field conditions.

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 Lumpkin County Public Works Department.

5. 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.

6. 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 (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 (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 County 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.

PUNCHLIST WORK: Portable signs shall be utilized to accomplish the completion of all punch-list items. The portable signs shall be removed daily. All permanent mount height signs shall be removed prior to the beginning of the punch-list work except "Low/Soft Shoulder" signs and any signs that have the prior written approval of the Lumpkin County Public Works Department to remain in place while the punch-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 nonperformance under Section 150.08.

SPEED L IMI T REDUCT I ON FOR H IGHWAY WORK ZONE
INTERSTATE AND MULTI-LANE DIVIDED HIGHWAY SIGNING SHALL BE
DOUBLE INCICATED <RIGHT SHOULDER AND MEDIAN SHOULDER>

600' 600' 600' 600'

600' -1 00' MAX...,

J2ZY//1

WORK ZONE__/

OR K

HWZ![

SIGNS

REDUCED SPEED AHEAD

R2-5o
4aux 60"

THIS SIGN SHALL BE INSTALLED ONLY WHEN THE SPEED REOUCITION IS GREATER- THAN 10 M.P.H. FROM THE EXISTING POSTED SPEED LIMIT.

SPEED LIMJT **

R2-1
48" X 60"

SPEED LIMIT **

R2-1
48"X 60"

REDUCED SPEED LIMIT SHALL HAVE THE PRIOR APPROVAL OF THE ENGINEER.

HWZ-VK SIGNS

SPEED LIMIT **

R2-1
48" X 60"

REDUCED CONSTRUCTION SPEED LIMIT SHALL BE SPACED A MAXIMUM OF ONE MILE APART.

POST EXISTING SPEED LIMIT PRIOR TO CONSTRUCTION SPEED ZONE REDUCTION

DOUBLE INDICATER

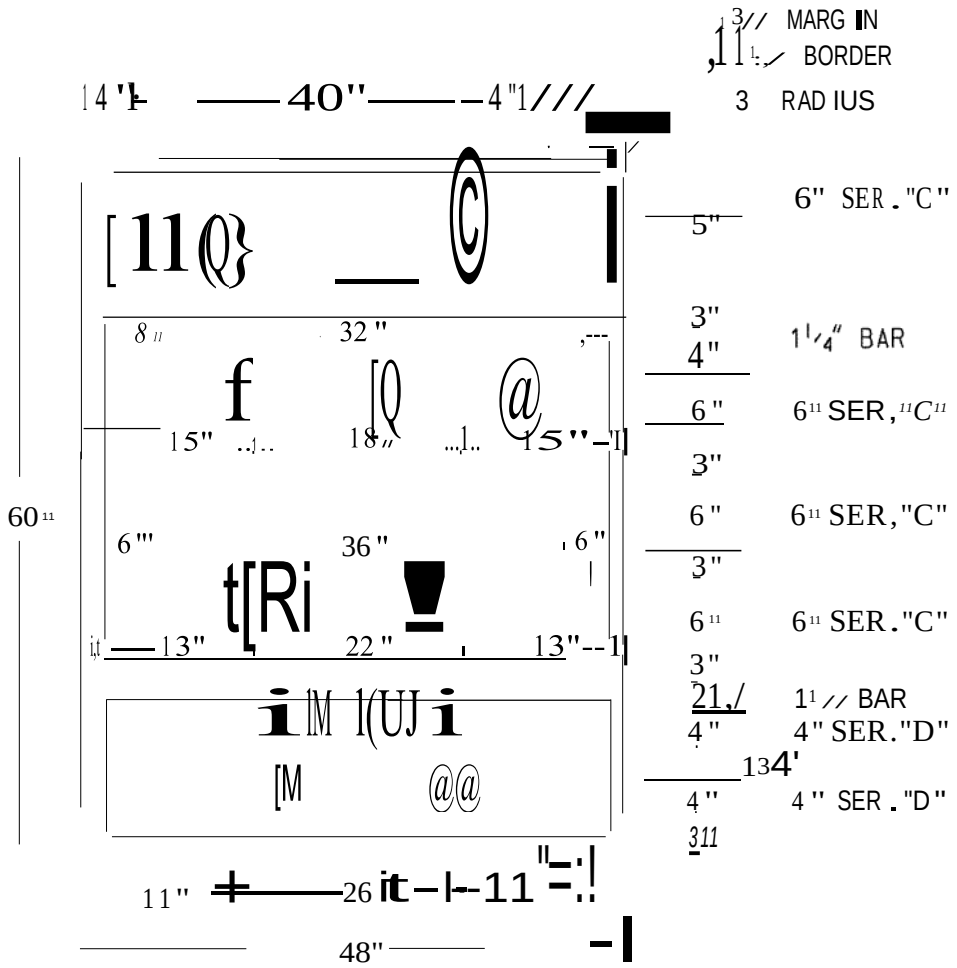
48,, X 60,, NOT REOUIREO FOR THI.S SIGN

ALL INTERSECTING ROADWAYS SHALL BE SIGNED WITH A HWZ-2 SIGN TO WARN MOTORIST ENTERING THE HIGHWAY WORK ZONE.

INTERSTATE ANO MULTI-LANE HIGHWAY SIGNING SHALL BE DOUBLE INDICATED <RIGHT SHOULDER ANO MEDIAN SHOULDER).

SIGN SIZES SHOWN ARE FOR INTERSTATE ANO MULTI-LANE DIVIDED HIGHWAY. FOR OTHER HIGHWAYS USE STANDARD SIZE SIGNS AS PER THE M.U.T.c.o. EXCEPT HWZ-2 ANO HWZ-3 SIGNS.

DETAIL 150-HWZ-I



HWZ-2

COLORS

TOP PANEL

LEGEND & BORDER - BLACK (NON-REFL>

BACK GROUND - FLUORESENT ORANGE (ASTM TYPE VII, VIII, IX or X)

MIDDLE & BOTTOM PANELS

LEGEND & BORDER - BLACK (NON-REFL>

BACKGROUND - WHITE (ASTM TYPE III OR IV REFL SHEETING)

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.

C. LANE CLOSURES:

1. Approval/Restrictions

All lane closures of any type or duration shall have the prior approval of the Lumpkin County Public Works Department.

a. The length of a lane closure shall not exceed two (2) miles in length excluding the length of the tapers unless the prior approval of the Lumpkin County Public Works Department has been obtained. The Lumpkin County Public Works Department may extend the length of a lane closure based upon field conditions however the length of a work-zone should be h e l d to the minimum length required to accomplish the Work. 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.

b. Lane closures that require same direction traffic to be split around the Work Area will not be approved for roadways with posted speeds of 35 mph or greater, excluding turn lanes.

c. For Interstate, Limited Access and Multi-lane Divided Highways, a Portable Changeable Message Sign (PCMS) shall be placed one (1) mile in advance of a lane closure with a message denoting the appropriate lane closure one mile ahead. The Portable Changeable Message Sign (PCMS) shall be placed on the outside shoulder in accordance with Detail 150-PCMS. This is in addition to the other traffic control devices required by Standard 9106. ·

2. Removal of Lane Closures

To provide the greatest possible convenience to the public in accordance with Sub• Subsection 107.07, 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 Lumpkin County Public Works Department. 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.

3. Exit and Entrance Ramps

On multilane highways where traffic has been shifted to the inside lanes, the exit and entrance ramps shall have channelization devices 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 shall 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, channelization device spacing shall be decreased to 10 feet for 200 feet in advance of the temporary gore, and be decreased to 10 feet for the first 100 feet of the temporary gore.

4. Lane Drop/Lane Closure

The first seven (7) calendar days of any lane closure shall be signed and marked as per Standard 9106 or 9107. However, lane closures that exist for a duration longer than seven (7) calendar days may be signed and marked as per the details in Standard 9121, provided the prior approval of the Lumpkin County Public Works Department is obtained. The approved lane drop shall utilize only the signs and markings shown for the termination end of the lane drop in Standard 9121. All warning signs in the lane drop sequence shall be used. Drums may be substituted for the Type 1Crystal Delineators at the same spacing.

5. Termination Area

The transition to normal or full width highway at the end of a lane closure shall be a maximum of 150 feet.

D. TRAFFIC PACING METHOD:

1. Pacing Of Traffic

With prior approval from the Lumpkin County Public Works Department, traffic may be paced allowing the Contractor up to ten (10) minutes maximum to work in or above all lanes of traffic for the following purposes:

a. Placing bridge members or other bridge work.

b. Placing overhead sign structures.

c. Other work items requiring interruption of traffic.

The Contractor shall provide a uniformed police officer with patrol vehicle and blue flashing light for each direction of pacing. The police officer, Lumpkin County Public Works Department, and flaggers at ramps shall be provided with a radio which will provide continuous contact with the Contractor.

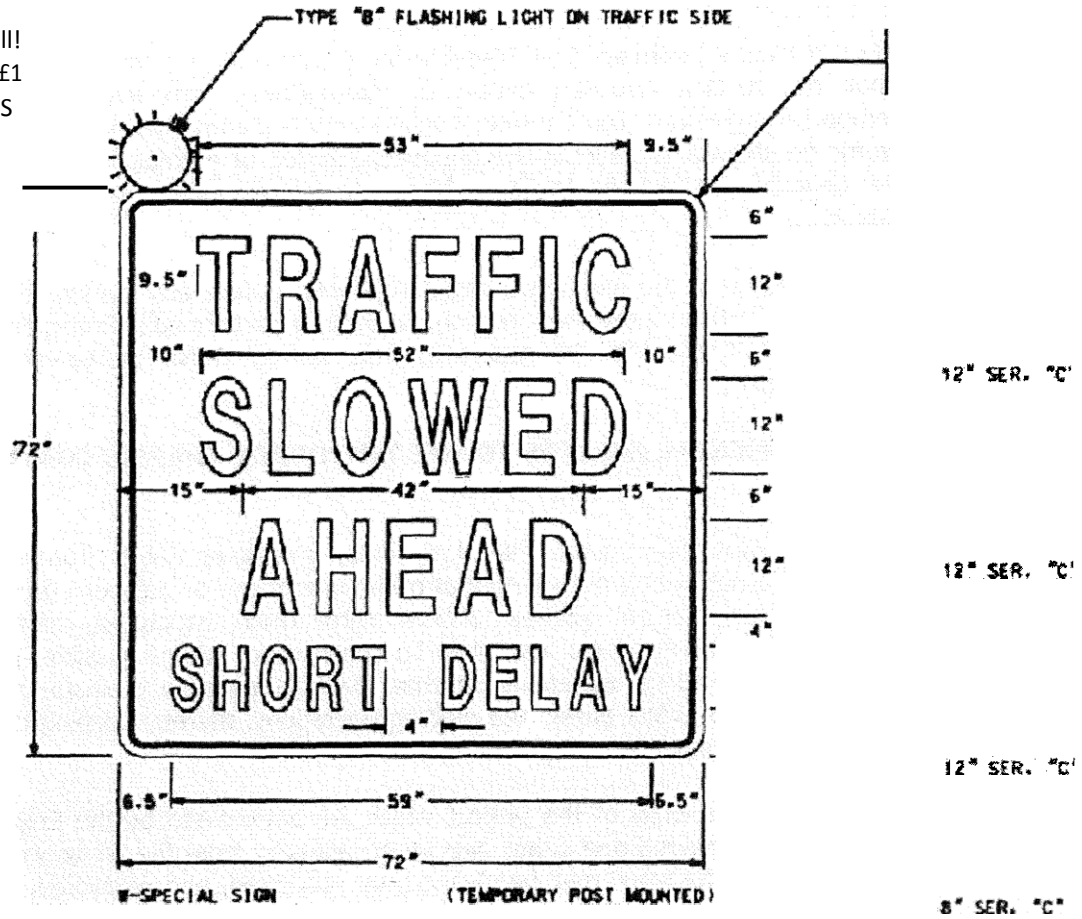
When ready to start the work activity, the ·police vehicle will act as a pilot vehicle slowing the traffic thereby providing a gap in traffic allowing the Contractor to perform the Work. Any on-ramps between the pace and the work area shall be blocked during pacing of traffic, with a flagger properly dressed and equipped with a Stop/Slow paddle. Each ramp should be opened after the police vehicle has passed.
Pilot vehicles shall travel at a safe pace speed, desirably not less than 20 mph interstate and 10 mph non-interstate. The Contractor shall provide a vehicle to proceed in front of the police vehicle and behind the other traffic in order to inform the Contractor's work force when all vehicles have cleared the area.

Traffic will not be permitted to stop during pacing except in extreme cases as approved by the Lumpkin County Public Works Department.

2. 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 erect and cover a W-special sign (72 inch x 72 inch) with a Type "B" flashing light, with the legend "TRAFFIC SLOWED AHEAD SHORT DELAY" (See Detail 150-A). A portable changeable message sign may be used in lieu of the W-special sign.· On divided highways this sign shall be double indicated. A worker with a two• way radio shall be posted at the sign, and upon notice that the traffic is to be paced shall turn on the flashing light and reveal the sign. When traffic is not being paced, the flashing light shall be turned off and the sign covered or removed. W-special signs are reflectorized black on orange, Series "C" letter and border of the size specified.

1''' MADill!
,,,.,. BCJt0£1
3''' tiDlUS



SIGN SHALL HAVE BLACK LEGEND AND BORDER
ON ORANGE REFLECTORIZED BACKGROUND

DETAIL150-A

E. CONSTRUCTION VEHICLE TRAFFIC

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 Lumpkin County Public Works Department 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.

F. ENVIRONMENTAL IMPACTS TO THE TEMPORARY TRAFFIC.CONTROL (TTC) PLAN

The Contractor shall ensure that dust, mud, and other debris from construction activities do not interfere with normal traffic operations or adjacent properties. All outfall ditches, special ditches, critical storm drain structures, erosion control structures, retention basins, etc. shall be constructed, where possible, prior to the beginning of grading operations so that the best possible drainage and erosion control will be in effect during the grading operations, thereby keeping the roadway areas as dry as possible.

Areas within the limits of the project which are determined by the Lumpkin County Public Works Department to be disturbed or damaged due either directly or indirectly from the progress or the lack of progress of the work shall be cleaned up, redressed, and re-grassed. All surplus materials shall be removed and disposed of as required. Surplus materials shall be disposed of in accordance with Subsection 201.02.E.3 of the Specifications.

G. EXISTING STREET LIGHTS

Existing street lighting shall remain lighted as long as practical and until removal is approved by the Lumpkin County Public Works Department.

H. NIGHTWORK

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

I. **CONSTRUCTION VEHICLES IN THE WORKZONE**

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 Worksite Traffic Control Supervisor to ensure that any vehicle present at the worksite is necessary for the completion of the work.

J. ENCROACHMENTS ON THE TRAVELED-WAY

The Worksite Traffic Control Supervisor (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-way. These items shall be stored in a location, in so far as practical, where they will not be subject to a vehicle running off the road and striking them.

K. 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 Lumpkin County Public Works Department. 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 Lumpkin County Public Works Department 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 150.01.C. 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 48 inches.

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 night-time 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.

1. **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 of 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 (1-1/2'1thick. Temporary walkways constructed across unimproved streets and drives shall be a minimum thickness of four inches (4'1for concrete and three inches (3'1 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 (3/4'1thick pressure treated and supported with pressure treated longitudinal joists spaced a maximum of sixteen inches (16'1on 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 Lumpkin County Public Works Department.

The contractor may propose alternate types of Temporary Walkways provided 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 Lumpkin County Public Works Department.

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 (1/4'') of an inch and that the horizontal joints have gaps no greater than one half (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 2°/o.

A width of sixty (60'') inches, 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 (200Ft.),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 441and Detail A-3. Ramps shall also include a detectable warning surface in accordance with Detail A-4. 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 Lumpkin County Public Works Department 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.

L. TRAFFIC SIGNALS

If the sequence of operations, staging, or the temporary traffic control 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 Lump Sum- Traffic Control. The contractor becomes responsible for the maintenance of these traffic signals from the time that the system is modified until final acceptance. The maintenance of traffic signals that are not a part of the work and are not in conflict with any portion of the work shall not be the responsibility of the contractor.

When construction operations necessitate an existing traffic signal to be out of service, the Contractor shall furnish off-duty police officers to regulate and maintain traffic control at the site. Off-duty police officers should be used to regulate and maintain traffic control at signal sites when lane closures or traffic shifts block or restrict movements causing interference with normal road user flows and will not allow the activated traffic signal to guide the traffic through the signal site.

M. 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 Lumpkin County Public Works Department, to line and grade, and in the same condition as when removed.

150.3 SIGNS:

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 temporary traffic control (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 Lumpkin County Public Works Department 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.

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 Section 150.08.

C. REMOVAL OF EXISTING SIGNS AND SUPPORTS

The Contractor shall not remove any existing signs and supports without prior approval from the Lumpkin County Public Works Department. 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 Lumpkin County Public Works Department. These signs shall remain the ·property of the Contractor. The bottom of all interim signs shall be mounted at least seven (7') feet above the level of the pavement edge when the signs are used for long-term stationary operations as defined by Section 6G.02 of the MUTCD. Special Conditions under Subsection 150.11 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 150.11. Portable signs shall be used for all punch-list work. All portable signs and sign mounting devices utilized in work shall be NCHRP 350 compliant. Portable interim signs shall be mounted a minimum of one (1')foot above the level of the pavement edge for directional traffic of two (2) lanes or less and a minimum of seven (7') feet for directional traffic of three (3) or more lanes. Signs shall be mounted at the height recommended by the manufacturer's crashworthy testing requirements. Portable interim signs which are mounted at less than seven (7') feet in height may have two 18 inch x 18 inch fluorescent red-orange or orange-red warning flags mounted on each sign.

All regulatory 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.

Any permanent mount height interim sign that is designed to fold in half to cover a non-applicable message on the sign shall have reflectorized material on the folded over portion of the sign. The reflectorized material shall be orange in color with a minimum of ASTM Type I engineering grade sheeting with a minimum area of six inches by six inches (6" x 6") facing the direction of traffic at all times when the sign is folded.

Interim signs may be either English or metric dimensions.

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 Sub-Section 150.03.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 a message content (legend) that applies to a particular roadway location. When an e xisting 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 Lumpkin County Public Works Department.

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 Lumpkin County Public Works Department. 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 Expressway" and Part 2F "Guide Signs Freeways" of the MUTCD, except that the minimum size of all letters and numerals in the names and places, streets and highways on all signs shall be 16 inches Series "E" initial upper-case and 12 inches lower-case. 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 desired 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. MATERIALS- INTERIM SIGNS:

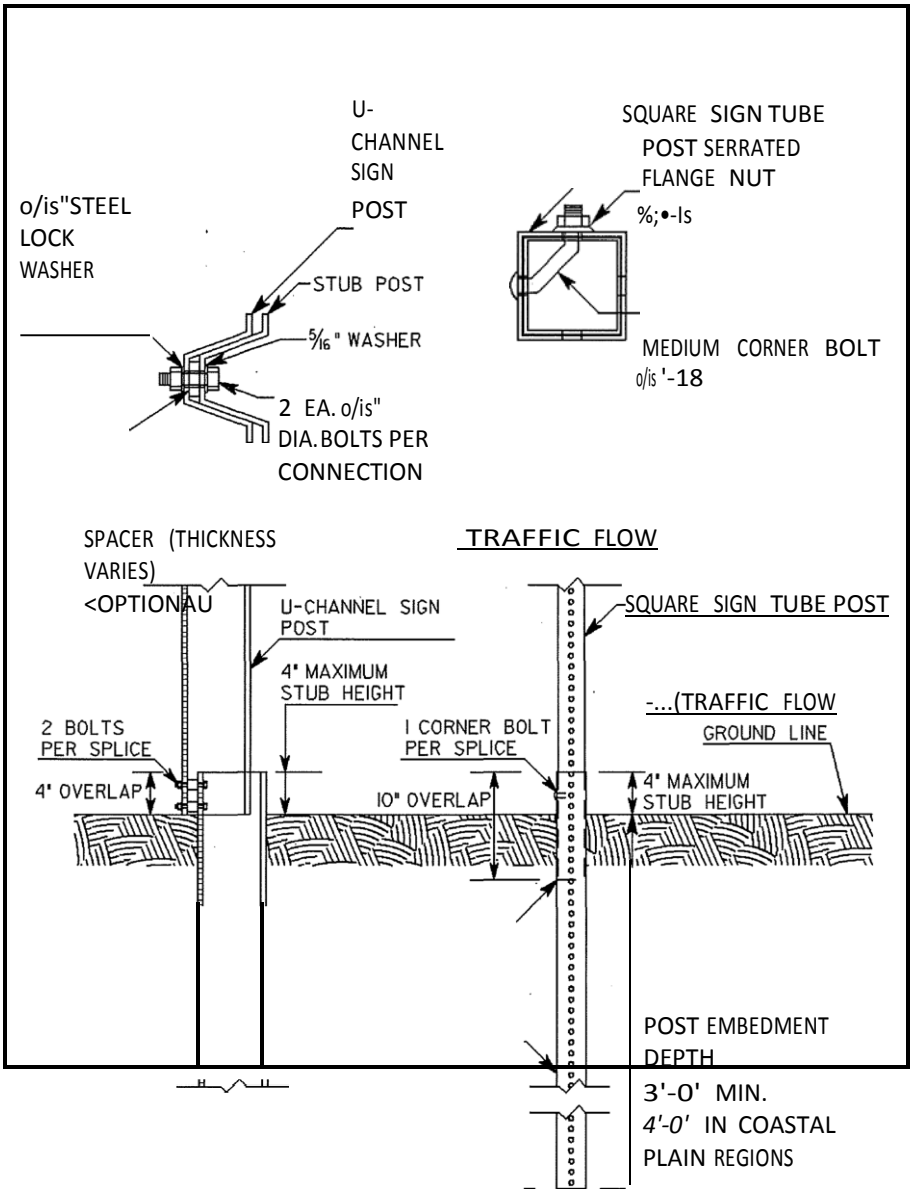
1. **Posts**

Permanent mounting height of seven (7') feet- Posts for all interim signs shall meet the requirements of Section 911 except that green or silver paint may be used in lieu of galvanization for steel posts or structural shape posts. Within the limits of a single project, all metal posts shall be the same color. Wood posts are not required to be pressure treated. Ground mounted sign(s) greater than nine (9) square feet shall be mounted on two posts.

Interim posts may be either metric or English in dimensions.

Posts for all interim signs shall be constructed to yield upon impact unless the posts are protected by guardrail, portable barrier, impact attenuator or other type of positive barrier protection. Unprotected posts shall meet the breakaway requirements of the "1994 AASHTO Standard Specifications for Structural Support for Highway Signs, Luminaries and Traffic Signals". Unprotected interim posts shall be spliced as shown in Detail150-F unless full length un-spliced 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.



POST SHALL EXTEND
6" MINIMUM BELOW
GROUND LEVEL

SQUARE SIGN TUBE
STUB POST
U-CHANNEL SIGN

u: :

DETAIL 150-F

2. **Sign Blanks And Panels- Permanent mounting height of seven (7') feet•** All sign blanks and panels shall conform to Section 912 of the Specifications except that blanks and panels may be ferrous based or other metal alloys. Type 1 and Type 2 sign blanks shall have a minimum thickness of 0.08 inches regardless of the sign type used. Alternative sign blank materials (composites, poly carbonates, fiberglass reinforced plastics, recycled plastics, etc.) shall have a letter of approval from the Office of Materials and Research 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.The back side of sign panels shall be painted orange to prevent rust if other metals are used in lieu of aluminum. Plywood blanks or panels will not be permitted. The use of flexible signs will not be permitted for permanent mount height signs.

   Interim blanks and panels may be either metric or English in dimensions.

3. **Portable Sign Mounting Devices, Portable Sign Blanks-**
   All portable sign mounting devices and sign blanks utilized in the work shall be NCHRP 350 Test Level III compliant. All portable sign mounting devices and sign blanks shall be from the Qualified Products List. Any sign or sign mounting device shall have an identifying decal, logo, or manufacturer's stamping that clearly identifies the device as NCHRP 350 compliant. The required decal, logo or manufacturer's stamping shall not be displayed on the message face of the sign. The Contractor may be required to provide certification from the Manufacturer as proof of NCHRP 350 compliance. All portable signs shall be mounted according to height requirements of Subsection 150.03.D.

G. SIGN VISIBILITY AND OFFSETS

All existing, interim and new permanent signs shall be installed so as to be completely visible 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. Any sign installed behind W-beam or T-beam guardrail with non-breakaway posts shall be installed with the leading edge of the sign a minimum of four feet and three inches (4'3'') behind the face of the guardrail with five feet (5') of clearance being desirable. 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.

H. ADVANCE WARNING SIGNS:

1. **All Type Of Highways**
   Advance warning signs shall be placed ahead of the work area in accordance with Part VI of the MUTCD and 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.

Advanced Warning Signs on State Routes shall be a minimum dimension of 48 inches x 48 inches. 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. Clean-up work and punch-list work shall be performed with portable signage.

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 60" X 36" and the G20-2 sign shall be 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,1MILE 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 1/2 mile, 1 mile and 2 mile advanced warning signs cause an overlap with other work or do not benefit field conditions then the Lumpkin County Public Works Department may review the use of these signs and eliminate their installation. When the posted speed limit is 50 MPH or less, the V2 mile, 1 mile and 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 V2 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.

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 accel/decel lane adjacent to the mainline traveled way. Portable advance warning signs (W20-1; 1500ft.
/1000 ft. /500ft.) 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\"'here 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 48 inch X 48 inch "RAMP WORK AHEAD" sign along the right shoulder of the mainline traveled way prior to the beginning of the taper for the decel lane. The "RAMP WORK AHEAD" sign shall be mounted at seven (7') feet in height. Differences in elevation shall be in compliance with the requirements of Subsection 150.06 prior to the removal of the portable (W20-1) advanced warning signs from the mainline.

The G20-1 sign shall be eliminated on limited access highways when the work involves only ramp work, bridge reconstruction, bridge painting, bridge joint repairs, guardrail and anchor replacement or other site specific work which is confined to a short section of limited access highway.

I. PORTABLE CHANGEABLE MESSAGE SIGN

Unless specified as a paid item in the contract the use of a portable changeable message sign will not be required. When specified, a portable changeable message sign (PCMS) shall meet the minimum requirements of Section 632 and the MUTCD. 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.

J. 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.

K. RUMBLE STRIP SIGNAGE

Signage for rumble strips located in the travel-way shall be as required in Subsection 150.0l.C and Subsection 150.02.A.9.

L. LOW/SOFT SHOULDER SIGNAGE

Low or soft shoulder signs shall be utilized in accordance with the following conditions:

CONSTRUCTION/RECONSTRUCTION PROJECTS:

"LOW/SOFT SHOULDER" signs shall be erected when a difference in elevation exceeds one (1'') inch but does not exceed three (3'') inches between the travel-way and any type of shoulder unless the difference in elevation is four (4') feet or greater from the edge of the traveled way.

The spacing of the signs shall not exceed one (1) mile and the signs shall be placed immediately past each crossroad intersection. The "Low/Soft" 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 orange with black borders and meet the reflectorization requirements of Subsection 150.0l.C.

"SHOULDER DROP-OFF'' (W8-9a) signs shall be used when a difference in elevation, less than four (4') feet from the traveled way, exceeds three (3'') inches and is not protected by positive barrier protection. These warning signs shall be placed in advance of the drop off.
For a continuous drop-off condition, the W8-9a) signs shall, as a minimum, be spaced in accordance with the above requirements for "Low/soft shoulder" signs.

PROJECTS CONSISTING PRIMARILY OF ASPHALTIC CONCRETE RESURFACING ITEMS:

"LOW/SOFT SHOULDER" signs shall be erected when a difference in elevation exceeds one (1'') inch but does not exceed three (3'') inches between the travel-way and any type of shoulder unless· the difference in elevation is four (4') feet or greater from the edge of the traveled way.

SHOULDER BUILDING INCLUDED IN THE CONTRACT: "Low/Soft Shoulder" signs shall be erected as per the requirement of Standards 9102, 9106, and 9107. "Shoulder Drop-off" signs (W8-9a) shall be erected as per the requirements of the MUTCD. These signs shall be maintained until the conditions requiring their installation have been eliminated. The Contractor shall remove all interim warning signs before final acceptance.

SHOULDER BUILDING NOT INCLUDED IN THE CONTRACT: The Contractor will furnish the "Low/Soft Shoulder" signs, "Shoulder Drop-off" signs and the posts. The signs shall be erected to meet the minimum requirements of Subsection 150.03. The Contractor shall include the cost of furnishing installation hardware (bolts, nuts, and washers), erection and maintenance of the signs in the bid price for Traffic Control• Lump Sum. The Contractor shall maintain the signs until final acceptance. The County will remove the signs.

LAU/LAR/LMIG PROJECTS SHOULDER BUILDING NOT INCLUDED IN THE CONTRACT: The Contractor will furnish, install and maintain LOW/SOFT SHOULDER signs (yellow with black borders, ASTM Type III or IV) at the appropriate spacing, until Final Acceptance of the project by the County. After Final Acceptance by the County the signs will become the property and responsibility of the county.

M. BUMP SIGNAGE:

MULTI-LANE DIVIDED HIGHWAYS: 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 (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.

TWO-LANE TWO-WAY HIGHWAYS: A bump sign (W8-1) shall be utilized when a transverse joint in the pavement structure has a vertical difference in elevation that exceeds one and three quarters (1-3/4'') inches in depth with no horizontal taper to ramp the traffic from one elevation to the other. This includes 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.

N. PEDESTRIAN SIGNAGE:

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. Signs and other devices mounted lower than seven (7) feet above the temporary pedestrian walkway shall not project more than four (4) inches into the accessible pedestrian facilities. Signs and other devices shall be placed such that they do not narrow any pedestrian passage to less than 48 inches.

150.4 PAVEMENT MARKINGS

A. GENERAL

Full pattern pavement markings in accordance with Section 652 and in conformance with Section 3A and 38, except 38.02, of the MUTCD are required on all courses before the roadway is opened to traffic. No passing zones shall be marked to conform to Subsection 150.04.E. 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 Lumpkin County Public Works Department due to wear, weathering, or construction activities, they shall be restored immediately.

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 Lumpkin County Public Works Department.

3. New Location Construction Projects

Pavement marking plans will be provided.

B. MATERIALS

All traffic striping applied under this Section shall be a minimum four inches in width or as shown in plans and shall conform to the requirements of Section 652, except as modified herein. Raised

pavement markers (RPMs) shall meet the requirements of Section 654. 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 Lumpkin County Public Works Department. Partial (skip) reflectorization (i.e. reflectorizing only a portion of a stripe) will not be allowed.

C. INSTALLATION AND REMOVAL OF PAVEMENT MARKINGS:

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 temporary traffic control 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.

REMOVAL: Markings no longer applicable shall be removed in accordance with Subsection 656.3.05.

THE ELIMINATION OF CONFLICTING PAVEMENT MARKINGS BY OVERPAINTING WITH UNAPPROVED PAINT OR ANY TYPE OF LIQUID ASPHALT IS NOT ACCEPTABLE.

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 Lumpkin County Public Works Department.

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 Lumpkin County Public Works Department. 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 Lumpkin County Public Works Department. Subsection 400.3.06.C 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 Lumpkin County Public Works Department 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 County . The County will not consider or participate in any cost increase that may result from implementing the proposed alternate method.

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 Lumpkin County Public Works Department 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 Lumpkin County Public Works Department.

Failure to promptly remove conflicting or non-applicable pavement markings shall be considered as non-performance under Subsection 150.08.

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 so as 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 Lumpkin County Public Works Department. 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 Subsection 656.3.05.

D. RAISED PAVEMENT MARKERS

Raised pavement markers (RPMs) are required as listed below for all asphaltic concrete pavements before the roadway is open to traffic. On the final surface, RPM's shall be placed according to the timeframes specified in 150.04 E. for full pattern pavement markings except Interstate Highways where RPM's shall be placed and/or maintained when the roadway is open to traffic. When Portland Cement Concrete is an intermediate or final surface and is open to traffic, one 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:

1. Interstate Highways

Retro-reflective raised pavement markers (RPM's) shall be placed and/or maintained on intermediate pavements surfaces on all interstate highways that are open to traffic. This includes all resurfacing projects along with widening and reconstruction projects. The spacing and placement shall be as required for MULTI-LANE DIVIDED HIGHWAYS.

2. Multi-Lane Divided Highways

Retro-reflective raised pavement markers (RPMs) shall be placed and/or maintained on intermediate pavement surfaces on all multi-lane divided highways that are opened to traffic when these roadways are being widened or reconstructed. Two lane-two way roadways that are being widened to a multi• lane facility, whether divided or undivided, are included in this provision. Projects consisting primarily of asphalt resurfacing items or shoulder widening items are excluded from this requirement. The RPMs shall be placed as follows:

a. SUPPLEMENTING LANE LINES

80 foot center on skip lines with curvature less than three degrees. (Includes tangents)

40 foot centers on solid lines and all lines with curvature between three degrees and six degrees.

20 foot centers on curves over six degrees.

20 foot centers on lane transitions or shifts.

b. SUPPLEMENTING RAMP GORE LINES

20 foot centers, two each, placed side by side.

c. OTHER LINES

As shown on the plans or directed by the Lumpkin County Public Works Department.

3. Other Highways

On other highways under construction RPMs shall be used and/or maintained on intermediate pavement surfaces as follows:

a. SUPPLEMENTING LANELINES AND SOLID LINES

40 foot centers except on lane shifts. (When required in the Plans or Contract.)

20 foot centers on lane shifts. (Required in all cases.)

b. SUPPLEMENTING DOUBLE SOLID LINES

40 foot centers (one each beside each line) except on lane shifts.(When required in the Plans or Contract.)

20 foot centers on lane shifts. (Required in all cases.)

E. 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

All interim skip (broken) stripe shall conform to Section 652 except that stripes shall be at least two feet long with a maximum gap of 38 feet. On curves greater than six degrees, a one-foot stripe with a maximum gap of 19 feet shall be used. In lane shift areas solid lines will be required. Interim skip lines shall be replaced with markings in full compliance with Section 652 prior to expiration of the 14 calendar day period.

Interim raised pavement markers may be substituted for the interim skip (broken) stripes. If raised pavement markers are substituted for the two foot interim skip stripe, three markers spaced at equal intervals over a two feet 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 Research 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 fourteen (14) calendar days as an interim marker. Any flexible reflective markers in use shall be from the qualified products list (QPL).

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. No changes to the location of passing zones shall be done without the written approval of the Lumpkin County Public Works Department. For periods not to exceed three 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 24" x 30'') at the beginning and at intervals not to exceed V2 mile within each no-passing zone. A post or portable mounted PASS WITH CARE regulatory sign (R4-1 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 conform to the requirements of the MUTCD and shall be NCHRP 350 compliant. 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 have been modified, the location of No-Passing Zones will be identified by the Lumpkin County Public Works Department.

c. EDGELINES

1) Bituminous Surface Treatment Paving

Edgelines 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 60 calendar days except at bridge approaches, on lane transitions, lane shifts, and in such other areas as determined by the Lumpkin County Public Works Department. On the final surface, edgelines shall be placed within 30 calendar days of the time that the final surface was placed.

2) All Other Types of Pavement

Edgelines will not be required on intermediate surfaces that are in use for a period of less than 30 calendar days except at bridge approaches, on lane transitions, lane shifts, and in such other areas as determined by the Lumpkin County Public Works Department. On the final surface, edgelines shall be placed within 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

a. UNDIVIDED HIGHWAYS (INCLUDES PAVED CENTER TURN LANE)

1) Centerlines and No-Passing Barrier-Full Pattern centerlines and no passing barriers shall be restored before opening to traffic.

2) Lanelines- Interim skip (broken) stripe as described in Subsection 150.04E.l.a. may be used for periods not to exceed three calendar days. Skiplines are not permitted in lane shift areas. Solid lines shall be used.

3) Edgelines- Edgelines shall be placed on intermediate and final surfaces within three calendar days of obliteration.

b. DIVIDED HIGHWAYS (GRASS OR RAISED MEDIAN)

1) Lanelines- 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.

2) Centerline/Edgeline- 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

a. Same as Subsection 150.04.E.2 except as noted in (b) below.

b. EDGELINES-

1) Asphaltic Concrete Pavement- Edgelines shall be placed on intermediate and final surfaces prior to opening to traffic.

2) Portland Cement Concrete Pavement- Edgelines 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 (25') feet 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:

FINAL SURFACE: School zones, railroads, stop bars, 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.

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 150.11, Special Conditions, or as directed by the Lumpkin County Public Works Department these markings may be eliminated.

F. MOBILE OPERATIONS

When pavement markings (centerlines, lane lines, and edgelines) 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.

1. All Roadways

All vehicles shall be equipped with the official slow moving vehicle symbol sign. All vehicles shall have a minimum of two 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.

2. Two-Lane Two-Way Roadways

a. Lead Vehicles

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 typically operate in the caution mode.

b. Work Vehicles

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.

c. Protection Vehicles

A protection vehicle may follow the cone work vehicle when the cones are being placed and may follow when the cones are being removed.

3. MULTI-LANE ROADWAYS

A lead vehicle may be used but is not required. The work vehicle placing cones shall follow directly behind the work vehicle applying the markings. A protection vehicle that does not function as a work vehicle should follow the cone work vehicle when traffic cones are being placed. A protection vehicle should follow the cone work vehicle when the cones are being removed from the roadway. Protection vehicles shall display a sign on the rear of the vehicle with the legend PASS ON LEFT (RIGHT).

INTERSTATES AND LIMITED ACCESS ROADWAYS: A protection vehicle shall follow the last work vehicle at all times and shall be equipped with a truck mounted attenuator that is ·certified for impacts not less than 62 mph in accordance with NCHRP350 Test Level Three (3).

150.5 CHANNELIZATION

A. GENERAL

Channelization shall clearly delineate the travelway through the work zone and alert drivers and pedestrians to conditions created by work activities in or near the travelway. Channelization shall be done in accordance with the plans and specifications, the MUTCD,and the following requirements.
All Channelization Devices utilized on any project shall be NCHRP 350 compliant. Any device used on the Work shall be from the Qualified Products List. All devices utilized on the work shall have a decal, logo, or manufacturer's stamping that clearly identifies the device as NCHRP 350 compliant. The Contractor may be required to furnish certification from the Manufacturer for any device to prove NCHRP 350 compliance.

1. Types of Devices Permitted for Channelization in Construction Work Zones:

a. DRUMS:

1) DESIGN: Drums shall meet the minimum requirement of the MUTCD and shall be reflectorized as required in Subsection 150.0l.C. The upper edge of the top reflectorized stripe on the drum shall be located a minimum of 33 inches above the surface of the roadway. A minimum drum diameter of 18 inches shall be maintained for a minimum of 34 inches above the roadway.

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) TRANSITION TAPERS FOR LANE CLOSURES: Drums shall be used on all transition tapers. The minimum length for a merging taper for a lane closure on the travelway 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)

	Minimum Taper Length (L) in Feet				
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 112 L.

The length of a closed lane or lanes, excluding the transition taper(s), shall be limited to a total of two (2) miles. Prior approval must be obtained from the Lumpkin County Public Works Department before this length can be increased.

Night time conditions: When a merge taper exists into the night all drums located in the taper shall have, for the length of the taper only, a six (6'') inch fluorescent orange (ASTM Type VI, VII, VIII, IX or X) reflectorized top stripe on each drum. The top six-inch stripe may be temporarily attached to the drum while in use in a taper. The Lumpkin County Public Works Department may allow the fluorescent orange reflectorized six (6'') inch 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 top stripe permanently attached shall not be used for any other conditions.

Multiple Lane Closures:

(a) A maximum of one lane at a time shall be closed with each merge taper.

(b) A minimum tangent length of 2 L shall be installed between each individual lane closure taper.

4) LONGITUDINAL CHANNELIZATION: Drums shall be spaced as listed below for various roadside work conditions except as modified by Subsection 150.06. Spacing shall be used for situations meeting any of the conditions listed.as follows:

(a) 40 FOOT SPACING MAXIMUM

(1) For difference in elevation exceeding two inches.

(2) For healed sections no steeper than 4:1 as shown in Subsection 150.06, Detai1150-E.

(b) 80 FOOT SPACING MAXIMUM

(1) For difference in elevation of two inches or less.

(2) Flush areas where equipment or workers are within ten feet of the travel lane.

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

(1) For paved areas eight feet or greater in width that are paved flush with a standard width travel lane.

(2) For disturbed shoulder areas not completed to typical section that are flush to the travel lane and considered a usable shoulder.

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.

b. VERTICAL PANELS

1) DESGN: All vertical panels shall meet the minimum requirements of the MUTCD. All vertical panels shall have a minimum of 270 square inches of retro-reflective area facing the traffic and shall be mounted with the top of the reflective panel a minimum of 36" above the roadway.

2) APPLICATION: Lane encroachment by the drum on the travelway should permit a remaining lane width of ten feet. When encroachment reduces the travelway to less than ten feet, vertical panels shall be used to restore the travelway to ten feet or greater. No other application of vertical panels will be permitted.

c. CONES

1) DESIGN: All cones shall be a minimum of 28 inches in height regardless of application and shall meet the requirement of the MUTCD. Reflectorization may be deleted from all cones.

2) APPLICATION: For longitudinal channelizing only, cones will be permitted for daylight closures or minor shifts. (Drums are required for all 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 hours.

d. BARRICADES

DESIGN: Type III barricades shall meet the minimum requirements of the MUTCD and shall be reflectorized as required in Subsection 150.01.C. The Contractor has the option of choosing Type III barricades from the Qualified Products List 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 signs are attached to generic barricades or to barricades from the Qualified Products List (QPL) that have not been crash tested with signs attached then the responsibility for crashworthiness and the liability for mounting these signs to the barricades. are assumed by the Contractor and the Contractor shall certify that the barricades are crashworthy under FHWA workzone guidelines for NCHRP 350 crashworthy compliance. Any generic barricades used in the work shall be stamped or stenciled to show compliance with NCHRP 350. The use of Type I and Type I barricades will not be permitted.

1) APPLICATION: Type III barricades shall be placed as required by the plans, the Standards, and as directed by the Lumpkin County Public Works Department. All signs mounted on barricades shall be mounted to comply with the requirements of the MUTCD and NCHRP 350 Test Level III. NCHRP 350 crashworthy

compliance may require that rigid signs be mounted separate from the Type III barricade.

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.

e. WARNING LIGHTS:

1) DESIGN: All warning lights shall meet the requirements of the MUTCD.

2) APPLICATION

(a) Type A low-intensity flashing lights shall be used as shown in the Plans, the Standards, and as directed by the Lumpkin County Public Works Department. Flashing lights are not required for advance warning signs in Subsection 150.03.H.

(b) Type C Steady-Burn lights shall be used as shown in the Plans, the Standards, and as directed by the Lumpkin County Public Works Department. Steady-burn lights are not required on drums for merging tapers that exist into the night.

f. TEMPORARY BARRIERS

1) DESIGN: Temporary barriers shall meet the requirements of Sections 620.

2) APPLICATION: Temporary barriers shall be placed as required by the plans, standards, and as directed by the Lumpkin County Public Works Department. When Temporary barrier is located 20 feet or less from a travel lane, yellow reflectors shall be fixed to the top of the barrier at intervals not greater than 40 feet in the longitudinal section and 20 feet in the taper section and shall be mounted approximately two inches above the barrier. If both lanes of a two-lane two-way roadway are within 20 feet or less of the barrier then the reflectors shall be installed for both directions of traffic.

The reflectors shall be 100 square inches (ASTM Type VII or VIII) 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 gap in the barrier sections.

Approach end of Temporary barrier shall be flared or protected by an impact attenuator (crash cushion) or other approved treatment in accordance with Construction Details/Standards and Standard Specifications.

On interstate or other controlled access highways where lane shifts or crossovers cause opposing traffic to be separated by less than 40 ft., portable barrier shall be used as a separator.

B. PORTABLE IMPACT ATTENUATORS:

1. DESCRIPTION

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

2. MATERIALS

Materials used in the Attenuator shall meet the requirements of Section 648 for Portable Impact Attenuators.

3. CONSTRUCTION

Portable Impact Attenuator Unit/Arrays installation shall conform to the requirements of Section 648, Manufacturer's recommendations and Georgia Standard 4960 and shall be installed at locations designated by the Lumpkin County Public Works Department, and/or as shown on the plans.

C. TEMPORARY GUARDRAIL ANCHORAGE- Type 12:

1. DESCRIPTION

This work consists of the furnishing, installation, maintenance and removal or Temporary Guardrail Anchorage- Type 12 used for Portable Barrier or temporary guardrail end treatment.

2. MATERIALS

Materials used in the Temporary Guardrail Anchorage- Type 12 shall meet the requirements of Subsection 641.2 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 Lumpkin County Public Works Department.

3. CONSTRUCTION

Installation of the Temporary Guardrail Anchorage- Type 12 shall conform to the requirements of the Plans, current Georgia Standards and Subsection 641.3 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.

150.6 DIFFERENCES IN ELEVATION BETWEEN TRAVEL LANES AND SHOULDERS (SEE SUBSECTION 150.06.G FOR PROJECTS CONSISTING PRIMARILY OF ASPHALTIC CONCRETE RESURFACING ITEMS)

Any type of work such as paving, grinding, trenching, or excavation that creates a difference in elevation between travel lanes or between the travelway and the shoulder shall not begin until the Contractor is prepared and able to continuously place the required typical section to within two inches (2'') of the existing pavement elevation. For any areas that the two inches minimum difference in elevation cannot be accomplished the section shall be healed as shown inDetail 150-E. 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 Lumpkin County Public Works Department 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.

A maximum of sixty (60) calendar days shall be allowed for conditions to exist that require any section or segment of the roadway or ramp to continue to require a healed section as described by Detail 150-E. Failure to meet this requirement shall be considered as non-performance of Work under Subsection 150.08.

When trenching or excavation for minor roadway or shoulder widening is required, all operations at one site shall be completed to the level of the existing pavement in the same work day.

Any channelization devices utilized in the work shall conform to the requirements of Subsection 150.05 and to the placement and spacing requirements in Details 150-B, 150-C, 150-D, and 150-E shown in this section.

Any construction activity that reduces the width of a travel lane shall require the use of a W-20 sign with the legend "LEFT/RIGHT LANE NARROWS". Two 24" x 24" red or red/orange flags may be mounted above the W-20 sign. The W-20 sign shall be located on the side of the travelway that has been reduced in width just off the travelway edge of pavement. The W-20 sign shall be a minimum of 500 feet in advance of any channelization devices that encroach on the surface of

travelway. A portable changeable message sign may be used in lieu of the W-20 sign.

GENERAL/TIME RESTRICTIONS:

A. STONE BASES, SOIL AGGREGATE BASE AND SOIL BASES

1. All Highways

Differences in elevation of more than two inches between surfaces carrying or adjacent to traffic will not be allowed for more than a 24-hour period. A single length of excavated area that does not exceed 1000 feet in total length may be left open as a startup area for periods not to exceed 48 hours provided the Contractor can demonstrate the ability to continuously excavate and backfill in a proficient manner. Prior approval of the Lumpkin County Public Works Department shall be obtained before any startup area may be allowed.

2. LIMITED ACCESS HIGHWAY RAMPS (INTERSTATES):

On projects that include ramp rehabilitation work, one ramp at a time may be excavated for the entire length of the ramp from the gore point of the ramp with the interstate mainline to the intersection with the crossing highway. This single ramp may remain excavated with a vertical difference in elevation greater than two (2'') inches for a maximum of fourteen (14) calendar days with drums spaced at twenty (20') feet intervals as shown in Detail 150-B and a buffer space accepted under Section 150.06.F. After fourteen (14) calendar days the section shall be healed as required for all other highways. This area will be allowed in addition to the 1000 feet allowed for all other highways.

B. ASPHALT BASES, BINDERS AND TOPPINGS

1. DIFFERENCES IN ELEVATION BETWEEN THE SURFACES OF ADJACENT TRAVELWAYS

Travel lanes shall be paved with a plan that minimizes any difference in elevation between adjacent travel lanes. The following limitations will be required on all work:

a. Differences of two inches (2'') or less may remain for a maximum period of fourteen (14) calendar days.

b. Differences of greater than two Inches (2'') shall be permitted for continuous operations only.

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 Lumpkin County Public Works Department 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 150.08.

2. Differences in Elevation Between Asphalt Travelway and Paved Shoulders

Differences in elevation between the asphalt travelway and asphalt paved shoulders shall not be allowed to exist beyond the maximum durations outlined below for the conditions shown in Details 150-B, 150-C, 150-D, and 150- E:

Detail 150-B conditions shall not be allowed for more than 24 hours. A single length that does not exceed 1000 feet in total length may be left open for periods not to exceed 48 hours provided the Contractor can demonstrate the ability to continuously pave in a proficient manner. Prior approval of the Lumpkin County Public Works Department shall be obtained before any section is allowed to exceed 24 hours. Any other disturbed shoulder areas shall be healed as in Detail150-E.

Detail 150-C conditions will not be allowed for more than 48 hours. Detail150-D conditions will not be allowed for more than 30 calendar days. Detai1150-E conditions will not be allowed for more than 60 calendar days.

Failure to meet these requirements shall be considered as non-performance of Work under Subsection 150.08.

C. PORTLAND CEMENT CONCRETE

Work adjacent to a Portland Cement Concrete traveled way which involves the following types of base and shoulders shall be accomplished according to the time restrictions outlined for each type of base or shoulder. Traffic control devices shall be in accordance with Subsection 150.05.

1. Cement Stabilized Base

Work adjacent to the traveled way shall be healed as per Detail 150-E 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 Detail150-B.

2. **Asphaltic Concrete Base**

When an asphaltic concrete base is utilized in lieu of a cement stabilized base the asphaltic concrete base shall be healed as per Detail150-E within forty-eight (48) hours after the placement of each section of asphaltic concrete base. For the first forty eight hours traffic control shall be in compliance with Detai1150-B.

3. **Concrete Paved Shoulders**

Concrete paved shoulders shall be placed within sixty (60) calendar days after the removal of each section of existing shoulder regardless of the type of base materials being placed on the shoulders. During the placement period, traffic control devices shall be in accordance with the appropriate detail based on the depth of the change in elevation. Differences in elevation of more than two inches between the travel way and the shoulder will not be allowed for more than a 24- hour period. A single length of excavated area that does not exceed 1000 feet in total length may be left open as a startup area for periods not to exceed 48 hours provided the Contractor can demonstrate the ability to continuously excavate and backfill in a proficient manner. Prior approval of the Lumpkin County Public Works Department shall be obtained before any startup area may be allowed. Any other disturbed shoulder areas shall be healed as in Detail150-E.

4. **Asphaltic Concrete Shoulders**

A difference in elevation that meets the requirements of Detail 150-B shall not be allowed to exist for a period greater than forty-eight (48) hours. After the removal of the existing shoulder the section or segment of travelway may be healed with stone as per Detail150-E for a maximum of fourteen (14) calendar days. Asphaltic concrete shoulders shall be placed within two (2'') inches or less of the traveled way surface within fourteen (14) calendar days after the removal of the stone healed section or the removal of each section of the existing shoulder. The two (2'') inches or less difference in elevation shall not remain in existence for a period that exceeds thirty (30) calendar days unless the paved shoulder is utilized as a detour for the traveled way. During the placement period, traffic control shall be in accordance with the appropriate detail based on the depth of the change in elevation.

The Contractor may propose an alternate plan based on Subsection 150.06.F. Failure to meet the above requirements and time restrictions shall be considered as non-performance of Work under Subsection 150.08.

D. MISCELLANEOUS ELEVATION DIFFERENTIALS FOR EXCAVATIONS ADJACENT TO THE TRAVELWAY

Drainage structures, utility facilities, or any other work which results in a difference in elevation adjacent to the travelway shall be planned and coordinated to be performed in such a manner to minimize the time traffic is exposed to this condition. The excavation should be back filled to the minimum requirements of Detail 150-E as soon as practical. Stage construction such as plating or backfilling the incomplete work may be required. The difference· in elevation shall not be allowed to exist for more than five (5) calendar days under any circumstances. Failure to correct this condition shall be considered as nonperformance of Work under Subsection 150.08.

E. CONDUIT INSTALLATION IN PAVED AND DIRT SHOULDERS

The installation of conduit and conduit systems along the shoulders of a traveled way shall be planned and installed in a manner to minimize the length of time that traffic is exposed to a difference in elevation condition. The following restrictions and limitations shall apply:

1. **Differences in Elevation of Two (2") Inches or Less**

The shoulder may remain open when workers are not present. When workers are present the shoulder shall be closed and the channelization devices shall meet the requirements of Subsection 150.05. The difference in elevation on the shoulder shall remain for a maximum period of fourteen (14) calendar days.

2. **Differences in Elevation Greater Than Two (2") Inches**

The shoulder shall be closed. The shoulder closure shall not exceed twenty-four (24) hours in duration unless the Special Conditions in Subsection 150.11 modifies this restriction or the

Lumpkin County Public Works Department allows the work to be considered as a continuous operation.

Failure to meet these requirements shall be considered as non-performance of Work under Subsection 150.08.

F. MODIFICATIONS TO TIME RESTRICTIONS

The Contractor may propose any alternate temporary traffic control plan that utilizes a portion of the travel lane as a "buffer space". This buffer space may allow for an enhanced work area that will allow for the placement of materials to proceed at a pace that could not be achieved with the time restriction requirements outlined in Section 150.06.A, 150.06.B, and150.06.C. The Contractor may propose modified time restrictions based on the use of the buffer space. Any proposed modifications in the time duration allowed for the differences in elevations to exist shall be reviewed by the Lumpkin County Public Works Department as a component of the overall TTC plan. No modifications shall be made until the proposed plan is accepted by the Lumpkin County Public Works Department. The Lumpkin County Public Works Department shall have no obligation to consider any proposal which results in an increase in cost to the County.

For the travella.ne described in each of the details 150-B, 150-C, 150-D and 150-E it is presumed that the pavement marking edgeline (yellow or white solid stripe) is located at the very edge of the travel lane surface. A buffer space (temporary paved shoulder) that utilizes a portion of the travel lane should be six (6') feet in width desirable but shall not be less than four (4') feet in width. Any remaining travel lane(s) shall not be less than ten (10') feet in width. Modifications to drum spacing shown in the details above will not be allowed.

If the proposed shifting of the traffic to obtain a buffer space and maintain a minimum travel lane(s) of ten (10') feet requires the use of any existing paved shoulders then the cost of maintenance and repair of the existing paved shoulder(s) shall be the responsibility of the Contractor. The Contractor is responsible for the costs of maintenance and repairs even if the existing paved shoulder(s) is to be removed in a later stage of the work. Existing shoulders that have rumble strips shall have the rumble strips removed before the shoulder can be utilized as part of the travel lane. The cost of the removal of the rumble strips shall be done at no cost to the County even if the shoulder is to be removed in a later stage of the work.

Any modifications to the staging and time restrictions that are approved as part of the TIC plan shall be agreed to in writing. Failure to meet these modifications shall be considered as non-performance of the Work under Subsection 150.08.

G. ASPHALTIC CONCRETE RESURFACING PROJECTS

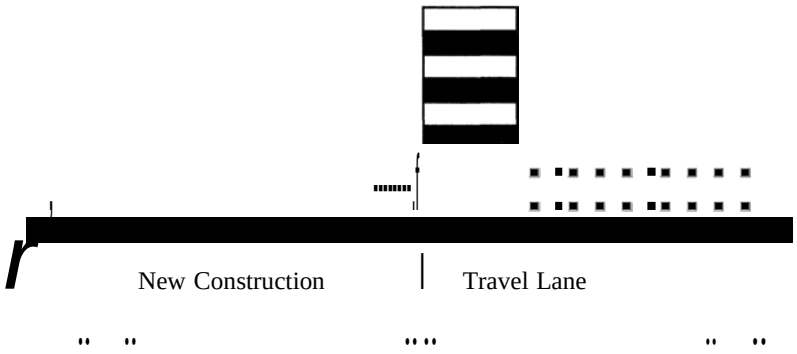
SHOULDER"CONSTRUCTION INCLUDED AS A PART OF THE CONTRACT: When the placement of asphaltic concrete materials creates a difference in elevation greater than two (2'') inches between the earth shoulder (grassed. or un-grassed) and the edge of travelway or between the earth shoulder and a paved shoulder that is less than four (4') feet in width, the Contractor shall place and maintain drums in accordance with the requirements of Subsection 150.05A.l.a.4). When the edge of the paved surface is tapered with a 30-45 degree wedge, drums may be spaced at 2.0 times the speed limit in MPH. Drums shall remain in place and be maintained until the difference in elevation has beenliminated by the placement of the appropriate shoulder materials.

SHOULDER CONSTRUCTION NOTINCLUDED AS A PART OF THE CONTRACT: When the placement of asphaltic concrete materials creates a difference in elevation greater than two (2'') inches between the earth shoulder (grassed or un-grassed) and the edge of travelway or between the earth shoulder and a paved shoulder that is less than four (4') feet in width, the Contractor shall notify the Lumpkin County Public Works Department, in writing, when the resurfacing work including

all punch list items has been completed.

See Subsection 150.03.L for the requirements for "LOW/SOFT SHOULDERS" and "SHOULDER DROP-OFF' 'signage.

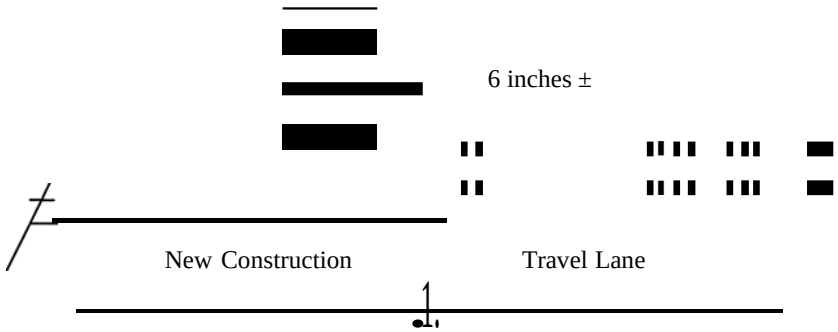
Location of drums when Elevation Difference exceeds 4 inches. Drums spaced at 20 foot intervals. Note: If the travel way width is reduced to less than 10 feet by the use of drums, vertical panels shall be used in lieu of drums.	



ELEVATION DIFFERENCE GREATER THAN 4 INCHES

DETAIL 150-B

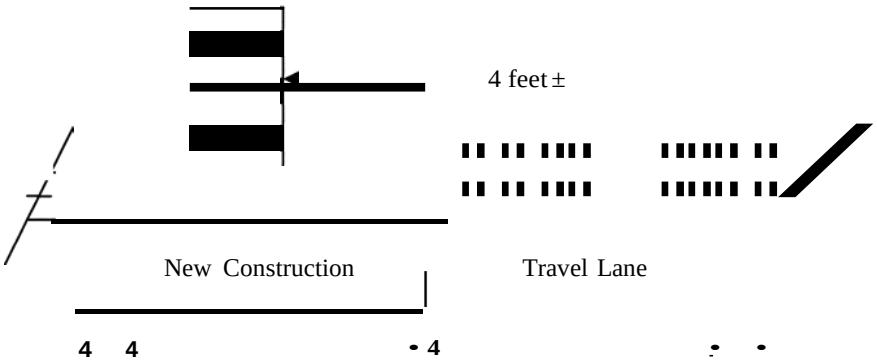
Drums spaced at 40 foot intervals.	Location of drums when Elevation Difference is 2+ inches to 4 inches.



ELEVATION DIFFERENCE 2+ to 4 inches

DETAIL 150-C

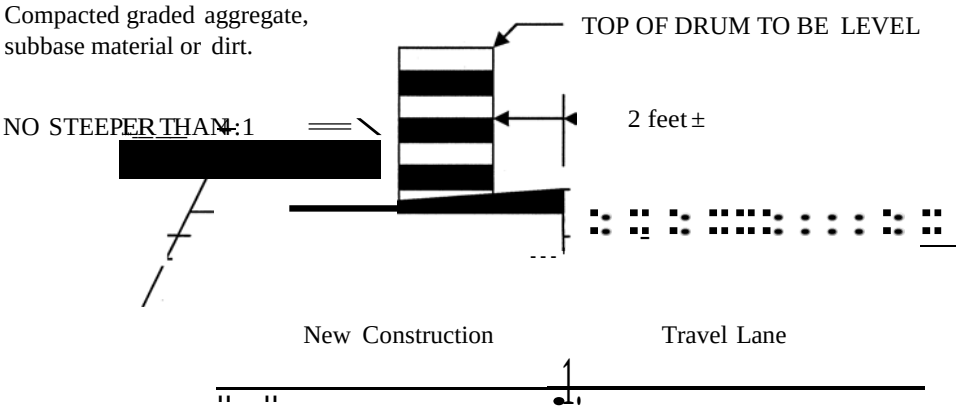
Drums spaced at 80 foot intervals.	Location of drums when Elevation Difference is 2 inches or less.



ELEVATION DIFFERENCE-OF 2 INCHES OR LESS

DETAIL 150-D

	Location of drums immediately after completion of healed sections spaced at 40 foot intervals.



HEALED SECTION

DETAIL 150-E

150.7 FLAGGING AND PILOT CARS:

A. FLAGGERS

Flaggers shall be provided as required to handle traffic, as specified in the Plans or Special Provisions, and as required by the Lumpkin County Public Works Department.

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 Southern Safety Services
Construction Safety Consultants Ivey Consultants
American Traffic Safety Services Association (ATSSA)

Certifications from other agencies will be accepted only if their training program has been approved by any one of the organizations listed above.

Failure to provide certified flaggers as required above shall be reason for the Lumpkin County Public Works Department 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 high-visibility clothing in compliance with Subsection 150.01.A. The apparel background (outer) material color shall be fluorescent orange-red, fluorescent yellow-green, or a combination of the two as defined in the ANSI standard. The retroreflective material shall be orange, yellow, white, silver, yellow• green, or a fluorescent version of these colors, and shall be visible at a minimum distance of one thousand (1000) feet. The retroreflective safety apparel shall be designed to clearly identify the wearer as a person. They shall use a Stop/Slow paddle meeting the requirements of the MUTCD for controlling traffic. The Stop/Slow paddles shall have a shaft length of seven (7) feet minimum. The Stop/Slow paddle shall be retro-reflectorized 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. The flag shall, as a minimum, be 24" inches square and red or red/orange in color. For night work, the vest shall have reflectorized stripes which meet the requirements of the MUTCD.

D. FLAGGER WARNING SIGNS

Signs for flagger traffic control shall be placed in advance of the flagging operation in accordance with the MUTCD. In addition to the signs required by the MUTCD, 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 will 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.

F. 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 150.02.A.8. As a part of this request, the Contractor shall also submit an alternate temporary traffic control 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 Lumpkin County Public Works Department before the use of any portable temporary traffic control signals will be permitted.

150.8 ENFORCEMENT

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 Lumpkin County Public Works Department suspending all other work on the Project, except erosion control and traffic control, taking corrective action as specified in Subsection 105.15, 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.

SCHEDULE OF DEDUCTIONS FOR EACH CALENDAR DAY OF DEFICIENCIES OF TRAFFIC CONTROL INSTALLATION AND/OR MAINTENANCE		
ORIGINAL TOTAL CONTRACT AMOUNT		
From More Than	**To and Including**	**Daily Charge**
$0	$100,000	$200
$100,000	$1,000,000	$500
$1,000,000	$5,000,000	$1,000
$5,000,000	$20,000,000	$1,500
$20,000,000	$40,000,000	$2,000
$40,000,000	$----------	$3,000

150.9 MEASUREMENT

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 25 (twenty-five) percent 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 25 (twenty-five) percent will be paid (less previous payments), not to exceed one hundred (100) percent.

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. 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.

C. TEMPORARY BARRIER

Temporary Barrier shall be measured as specified in Sections 620.

D. CHANGEABLE MESSAGE SIGN, PORTABLE

Changeable Message Sign, Portable will be measured as specified in Section 632.

E. TEMPORARY GUARDRAIL ANCHORAGE, Type 12

Temporary Guardrail Anchora9.e- 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.

F. TRAFFIC SIGNAL INSTALLATION- TEMPORARY

Traffic Signal Installation- Temporary will be measured as specified in Section 647.

G. FLASHING BEACON ASSEMBLY

Flashing Beacon Assemblies will be measured as specified in Section 647.

H. 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.

I. PAVEMENT MARKINGS

Pavement markings will be measured as specified in Section 150.

J. 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.

K. 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 addition-al payment will be made for constructing the detectable warning surface.

L. 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.

150.10 PAYMENT:

When shown in the Schedule of Items in the Proposal, the following items will be paid for separately.

Item No. 150 – Traffic Control…….Lump Sum
Item No. 150 – Traffic Control, Solid Traffic Stripe Inch, (Color)……..per Linear Mile

Item No. 150 – Traffic Control, Skip Traffic Stripe _ Inch, (Color)……..per Linear Mile

Item No. 150 – Traffic Control, Solid Traffic Stripe, Thermoplastic _Inch, (Color)…..per Linear Mile
Item No. 150 – Traffic Control, Skip Traffic Stripe, Thermoplastic _ Inch, (Color)……per Linear Mile

Item No. 150 – Traffic Control, Pavement Arrow with Raised Reflectors……per Each
Item No. 150 – Traffic Control, Raised Pavement Markers – All Types…….per Each
Item No. 150 – Interim Ground Mounted Special Guide Signs……per Square Foot
Item No. 150 – Interim Overhead Special Guide Signs……..per Square Foot
Item No. 150 – Remove & Reset Existing Special Guide Signs, Ground Mount, In Place. Per Each
Item No. 150 – Remove & Reset Existing Special Guide Signs, Overhead, In Place……..per Each
Item No. 150 – Traffic Control, Portable Impact Attenuator……per Each
Item No. 150 – Traffic Control, Pavement Markers, Words and Symbols……..per Square Foot
Item No. 150 – Traffic Control, Pavement Arrow (Painted) with Raised Reflectors…….per Each
Item No. 150 – Traffic Control, Workzone Law Enforcement……per Hour
Item No. 150 – Modify Special Guide Sign, Ground Mount……..per Square Foot
Item No. 150 – Modify Special Guide Sign, Overhead……per Square Foot
Item No. 150 – Temporary Walkways With Detectable Edging……per Linear Foot
Item No. 150 – Temporary Curb Cut Wheelchair Ramps……..per Each
Item No. 150 – Temporary Audible Information Device……per Each
Item No. 620 - Temporary Barrier……per Linear Foot
Item No. 632 – Changeable Message Sign, Portable……per Each
Item No. 641 – Temporary Guardrail Anchorage, Type 12……per Each
Item No. 647 – Traffic Signal Installation, Temp……Lump Sum
Item No. 647 – Flashing Beacon Assembly, Structure Mounted……..per Each
Item No. 647 – Flashing Beacon Assembly, Cable Supported……per Each

SECTION 400 – HOT MIX ASPHALTIC CONCRETE CONSTRUCTION

Delete Section 400 and Substitute the following:

400.1 General Description

This work includes constructing one or more courses of bituminous plant mixture on the prepared foundation or existing roadway surface. The mixture shall conform with lines, grades, thicknesses, and typical cross sections shown on the Plans or established by the Lumpkin County Public Works Department.

This section includes the requirements for all bituminous plant mixtures regardless of the gradation of the aggregates, type and amount of bituminous material, or pavement use.

Work will be accepted on a lot-to-lot basis according to the requirements of this Section and Section 106.

400.1.1 Definitions

Segregated Mixture: Mixture lacking homogeneity in HMA constituents of such a magnitude that there is a reasonable expectation of accelerated pavement distress or performance problems. May be quantified by measurable changes · temperature, gradation, asphalt content, air voids, or surface texture.

New Construction: A roadway section more than 0.5 mile (800 m) long that is not longitudinally adjacent to the existing roadway. If one or more lanes is added longitudinally adjacent to the existing lane, the lane or lanes shall be tested under the criteria for a resurfacing project.

Trench Widening: Widening no more than 4 ft. (1.2 m) in width.

Comparison sample: Opposite quarter of material sampled by the Contractor.

Referee sample: A sample of the material retained during the quartering process which is used for evaluation if a comparison of Contractor and County test results is outside allowable tolerances.

Quality assurance sample: Independent sample taken by the County to verify quality of mix or acceptance decision.

400.1.2 Related References

A. **Standard Specifications**

Section 106--Control of Materials
Section 109-Measurement and Payment
Section 152-Field Laboratory Building Section
413-Bituminous Tack Coat
Section 424-Bituminous Surface Treatment
Section 828-Hot Mix Asphaltic Concrete Mixtures

B. Referenced Documents

AASHTOT209
AASHTOT 202
AASHTOT49
Laboratory Standard Operating Procedure (SOP) 27, "Quality Assurance for Hot Mix Asphaltic Concrete Plants in Georgia"
Department of Transportation Standard Operating Procedure (SOP) 15
Georgia Department of Transportation Standard Operation Procedure (SOP) 40
GDT38
GDT73
GDT78
GDT83
GDT93
GDT 119
GDT 125
GDT 134
GSP 15
GSP 21
QPL 1
QPL2
QPL7
QPL26
QPL30
QPL39
QPL41
QPL45
QPL65
QPL67
QPL70
OPL77

400.1.3 Submittals

A. Invoices

When the County requests, furnish formal written invoices from a supplier for all materials used in production of HMA. 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 from a supplier who will provide copies of Bill of Lading upon the County's request.

B. Paving Plan

Before starting asphaltic concrete construction, submit a written paving plan to the Lumpkin County Public Works Department 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 County.

C. Job Mix Formula

After the Contract has been awarded, submit to the Lumpkin County Public Works Department 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 Lumpkin County Public Works Department has approved a job mix formula for the mixture to be used. No mixture will be accepted until the Lumpkin County Public Works Department has given approval.
3. Provide mix designs for all Superpave and 4.75 mm mixes to be used. The County will provide mix design results for other mixes to be used.

4. After a job mix formula has been approved, assume responsibility for the quality control of the mixtures supplied to the County 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 Research for approval. The Quality Control Program will be included as part of the certification in the annual plant inspection report.

400.2 Materials

Ensure that materials comply with the specifications listed in Table 1.

Table 1-Materials Specifications

Material	Subsection
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	831.2.05
Bituminous Tack Coat: PG 58-22, PG 64-22, PG 67-22	820.2
Hot Mix Asphaltic Concrete Mixtures	828

400.2.01 Delivery, Storage, and Handling

Storage of material is allowed in a properly sealed and insulated system for up to 24 hours except that Stone Matrix Asphalt (SMA), Open-Graded Friction Course (OGFC), or Porous European Mix (PEM) mixtures shall not be stored more than 12 hours. Mixtures other than SMA, OGFC, or PEM may be stored up to 72 hours in a sealed and insulated system, equipped with an auxiliary inert gas system, with the Engineer's approval. Segregation, lumpiness, drain-down, or stiffness of stored mixture is cause for rejection of the mixture. The Lumpkin County Public Works Department will not approve using a storage or surge bin if the mixture segregates, loses excessive heat, or oxidizes during storage.

The Lumpkin County Public Works Department may obtain mixture samples or recover asphalt cement according to GDT 119. AASHTO T 202 and T 49 will be used to perform viscosity and penetration tests to determine how much asphalt hardening has occurred.

A. Vehicles for Transporting and Delivering Mixtures

Ensure that trucks used for hauling bituminous mixtures have tight, clean, smooth beds. Follow these guidelines when preparing vehicles to transport bituminous mixtures:

1. Use an approved releasing agent from QPL 39 in the transporting vehicle beds, if necessary, to prevent the mixture from sticking to the bed. Ensure that the releasing agent is not detrimental to the mixture. When applying the agent, drain the excess agent from the bed before loading. Remove from the project any transporting vehicles determined to contain unapproved releasing agents.
2. Protect the mixture with a waterproof cover large enough to extend over the sides and ends of the bed. Securely fasten the waterproof cover before the vehicle begins moving.
3. Insulate the front end and sides of each bed with an insulating material with the following specifications:
   - Consists of builders insulating board or equivalent
   - Has a minimum "R" value of 4.0
   - Can withstand approximately 400 °F (200 °C) temperatures

Install the insulating material so it is protected from loss and contamination. A "Heat Dump Body" may be used in lieu of insulation of the bed. "Heat Dump Body" refers to any approved transport vehicle that is capable of diverting engine exhaust and transmitting heat evenly throughout the dump body to keep asphalt at required temperature. Mark the "Heat Dump Body" clearly with "OPEN" and "CLOSE" position at the exhaust diverter. Install a padlock and lock it in the "OPEN" position when the "Heat Dump Body" is used to transport bituminous mixtures

4. Mark each transporting vehicle with a clearly visible identification number.
5. Create a hole in each side of the bed so that the temperature of the loaded mixture can be checked. The placement of these holes shall be located to assure that the thermometer is being placed in the hot mix asphaltic concrete.

Ensure that the mixture is delivered to the roadway at a temperature within± 20 °F (± 11 °C) of the temperature on the job mix formula.

If the Lumpkin County Public Works Department determines that a truck may be hazardous to the Project or adversely affect the quality of the work, remove the truck from the project.

B. Containers for Transporting, Conveying, and Storing Bituminous Material

To transport, convey, and store bituminous material, use containers free of foreign material and equipped with sample valves. Bituminous material will not be accepted from conveying vehicles if material has leaked or spilled from the containers.

400.3 Construction Requirements

400.3. 01 Personnel

General Provisions 101 through 150.

400.3.2 Equipment

Hot mix asphaltic concrete plants that produce mix for County use are governed by Quality Assurance for Hot Mix Asphaltic Concrete Plants in Georgia, Laboratory Standard Operating Procedure No. 27.

The Lumpkin County Public Works Department will approve the equipment used to transport and construct hot mix asphaltic concrete. Ensure that the equipment is in satisfactory mechanical condition and can function properly during production and placement operations. Place the following equipment at the plant or project site:

A. Field Laboratory

Provide a field laboratory according to Section 152.

B. Plant Equipment

1. Scales

   Provide scales as follows:

   a. Furnish (at the Contractor's expense) scales to weigh bituminous plant mixtures, regardless of the measurement method for payment.

   b. Ensure that the weight measuring devices that provide documentation comply with Subsection 109.01. "Measurement and Quantities."

   c. When not using platform scales, provide weight devices that record the mixture net weights delivered to the truck. A net weight system will include, but is not limited to:

      - Hopper or hatcher-type weight systems that deliver asphaltic mixture directly to the truck
      - Fully automatic hatching equipment with a digital recording device

   d. Use a net weight printing system only with automatic hatching and mixing systems approved by the Lumpkin County Public Works Department.

e. Ensure that the net weight scale mechanism or device manufacturer, installation, performance, and operation meets the requirements in Subsection 109.01, "Measurement and Quantities"

f. Provide information on the Project tickets according to Department of Transportation SOP-15.

2. Time-Locking Devices

Furnish batch type asphalt plants with automatic time-locking devices that control the mixing time automatically. Construct these devices so that the operator cannot shorten or eliminate any portion of the mixing cycle.

3. Surge- and Storage-Systems

Provide surge and storage bins as follows:

a. Ensure that bins for mixture storage are insulated and have a working seal, top and bottom, to prevent outside air infiltration and to maintain an inert atmosphere during storage. Bins not intended as storage bins may be used as surge bins to hold hot mixtures for part of the working day. However, empty these surge bins completely at the end of the working day.

b. Ensure that surge and storage bins can retain a predetermined minimum level of mixture in the bin when the trucks are loaded.

c. Ensure that surge and storage systems do not contribute to mix segregation, lumpiness, drain-down, or stiffness.

4. Controls for Dust Collector Fines

Control dust collection as follows:

a. When collecting airborne aggregate particles and returning them to the mixture, have the return system meter all or part of the collected dust uniformly into the aggregate mixture and waste the excess. The collected dust percentage returned to the mixture is subject to the Engineer's approval.

b. When the collected dust is returned directly to the hot aggregate flow, interlock the dust feeder with the hot aggregate flow and meter the flow to maintain a flow that is constant, proportioned, and uniform.

5. Hydrated Lime Treatment System

When hydrated lime is required as a mixture ingredient:

a. Use a separate bin and feed system to store and proportion the required quantity into the mixture.

b. Ensure that the aggregate is uniformly coated with hydrated lime aggregate before adding the bituminous material to the mixture. Add the hydrated lime so that it will not become entrained in the exhaust system of the drier or plant.

c. Control the feeder system with a proportioning device that meets these specifications:

- Is accurate to within ± 10 percent of the amount required
- Has a convenient and accurate means of calibration
- Interlocks with the aggregate feed or weigh system to maintain the correct proportions for all rates of production and batch sizes and to ensure that mixture produced is properly treated with lime

Provide flow indicators or sensing devices for the hydrated lime system and interlock them with the plant controls to interrupt mixture production if hydrated lime introduction fails to meet the required target value after no longer than 60 seconds.

6. Net Weight Weighing Mechanisms

Certify the accuracy of the net weight weighing mechanisms by an approved registered scale serviceperson at least once every 6 months. Check the accuracy of net weight weighing mechanisms at the beginning of Project production and thereafter as directed by the Lumpkin County Public Works Department. Check mechanism accuracy as follows:

a. Weigh a load on a set of certified commercial truck scales. Ensure that the difference between the printed total net weight and that obtained from the commercial scales is no greater than 4 lbs/1,000 lbs (4 kg/Mg) of load.

Check the accuracy of the bitumen scales as follows:

- Use standard test weights.

- If the checks indicate that printed weights are out of tolerance, have a registered scale serviceperson check the batch scales and certify the accuracy of the printer.
- While the printer system is out of tolerance and before its adjustment, continue production only if using a set of certified truck scales to determine the truck weights.

b. Have plants that use batch scales maintain ten 50 lb (25 kg) standard test weights at the plant site to check hatching scale accuracy.

Ensure that plant scales that are used only to proportion mixture ingredients, not to determine pay quantities, are within two percent throughout the range.

C. Equipment at Project Site

1. Cleaning Equipment

Provide sufficient hand tools and power equipment to clean the roadway surface before placing the bituminous tack coat. Use power equipment that complies with Subsection 424.3.02.F, "Power Broom and Power Blower."

2. Pressure Distributor

To apply the bituminous tack coat, use a pressure distributor that complies with Subsection 424.3.02.B, "Pressure Distributor."

3. Bituminous Pavers

To place hot mix asphaltic concrete, use bituminous pavers that can spread and finish courses that are:

- As wide and deep as indicated on the Plans
- True to line, grade, and cross section
- Smooth
- Uniform in density and texture

a. Continuous Line and Grade Reference Control. Furnish, place, and maintain the supports, wires, devices, and materials required to provide continuous line and grade reference control to the automatic paver control system.

b. Automatic Screed Control System. Equip the bituminous pavers with an automatic screed control system actuated from sensor-directed mechanisms or devices that will maintain the paver screed at a pre-determined transverse slope and elevation to obtain the required surface.

c. Transverse Slope Controller. Use a transverse slope controller capable of maintaining the screed at the desired slope within± 0.1 percent. Do not use continuous paving set-ups that result in unbalanced screed widths or off• center breaks in the main screed cross section unless approved by the Lumpkin County Public Works Department.

d. Screed Control. Equip the paver to permit the following four modes of screed control. The method used shall be approved by the Lumpkin County Public Works Department.

- Automatic grade sensing and slope control
- Automatic dual grade sensing
- Combination automatic and manual control
- Total manual control

Ensure that the controls are referenced with a taut string or wire set to grade, or with a ski-type device or mobile reference at least 30ft (9 m) long when using a conventional ski. A non-contacting laser or sonar-type ski with at least four referencing mobile stations may be used with a reference at least 24 ft. (7.3 m) long. Under limited conditions, a short ski or shoe may be substituted for a long ski on the second paver operating in tandem, or when the reference phone is a newly placed adjacent lane.

Automatic screed control is required on all Projects; however, when the Lumpkin County Public Works Department determines that Project conditions prohibit the use of such controls, the

Lumpkin County Public Works Department may waive the grade control, or slope control requirements, or both.

e. Paver Screed Extension. When the laydown width requires a paver screed extension, use bolt-on screed extensions to extend the screeds, or use an approved mechanical screed extension device. When the screed is extended, add auger extensions to assure a length of no more than 18 inches from the auger to the end gate of the paver. Auger extensions may be omitted when paving variable widths. Ensure the paver is equipped with tunnel extensions when the screed and augers are extended.

f. 30 - 45 Degree Wedge. When shown on/required by the plans, equip the paver to ensure a 30 degree minimum up to a 45 degree maximum wedge along the outside edge of the roadway (measured from the horizontal plane) is in place after final compaction on the final surface course. Use an approved mechanical device that will:

- Apply compactive effort to the asphalt mixture to eliminate objectionable voids as the mixture passes through the wedge device
- Produce a wedge with a uniform texture, shape, and density while automatically adjusting to varying heights encountered along the roadway shoulder.

NOTE: Do not use extendible strike-off devices instead of approved screed extensions. Only use a strike-off device in areas that would normally be luted in by hand labor.

4. Compaction Equipment

Ensure that the compaction equipment is in good mechanical condition and can compact the mixture to the required density. The compaction equipment number, type, size, operation, and condition is subject to the Engineer's approval.

5. Material Transfer Vehicle (MTV)

Material Transfer Vehicle is required for this project.

400.3.3 Preparation

A. Prepare Existing Surface

Prepare the existing surface as follows:

1. Clean the Existing Surface. Before applying hot mix asphaltic concrete pavement, clean the existing surface to the Engineer's satisfaction.

2. Patch and Repair Minor Defects

Before placing leveling course:

a. Correct potholes and broken areas that require patching in the existing surface and base as directed by the Lumpkin County Public Works Department.

b. Cut out, trim to vertical sides, and remove loose material from the areas to be patched.

c. Prime or tack coat the area after it has been cleaned. Compact patches to the Engineer's satisfaction. Material for patches does not require a job mix formula, but shall meet the gradation range shown in Section 828. The Lumpkin County Public Works Department must approve the asphalt content to be used.

3. Apply Bituminous Tack Coat

Apply the tack coat according to Section 413. The Lumpkin County Public Works Department will determine the application rate, which must be within the limitations Table 2.

Table 2-Application Rates for Bituminous Tack, gal/yd^2 (L/m^2)

	Minimum	Maximum
All Mixes*	0.04 (0.180)	0.06(0.270)
*On thin leveling courses and freshly placed asphaltic concrete mixes, reduce the application rate to 0.02 to		

B. Place Patching and Leveling Course

1. When the existing surface is irregular, bring it to the proper cross section and grade with a leveling course of hot mix asphaltic concrete materials.
2. Place leveling at the locations and in the amounts directed by the Lumpkin County Public Works Department.
3. Use leveling course mixtures that meet the requirements of the job mix formulas defined in:
   - Subsection 400.3.05.A, "Observe Composition of Mixtures"
   - Section 828
4. Ifthe leveling and patching mix type is undesignated, determine the mix type by the thickness or spread rateaccording to Table 3.

Table 3-Leveling and Patching Mix Types

Thickness	Rate of Spread	Type of Mix
Up to 0.75 in (19	Up to 85 lbs/yd^2 (45	4.75 mm Mix
0.75 to 1.5 in (19 to	85 to 165 lbs/yd^2(45 to	9.5 mm Superpave
1.5 to 2 in (38 to 50	165 to 220 lbs/yd^2 (90	12.5 mm
2 to 2.5 in (50 to 64	220 to 275 lbs/yd^2 (120	19 mm Superpave
Over 2.5 in (64 mm)	Over 275 lbs/yd^2 (150	25 mm Superpave

* These mixtures may be used for isolated patches no more than 6 in. (150 mm) deep and no more than 4ft. (1.2 m) in diameter or length.

400.3.4 Fabrication

General Provisions 101 through 150.

400.3.5 Construction

Provide the Lumpkin County Public Works Department at least one day's notice prior to beginning construction, or prior to resuming production if operations have been temporarily suspended.

A. Observe Composition of Mixtures

1. Calibration of plant equipment

   If the material changes, or if a component affecting the ingredient proportions has been repaired, replaced, or adjusted, check and recalibrate the proportions.

Calibrate as follows:

a. Before producing mixture for the Project, calibrate by scale weight the electronic sensors or settings for proportioning mixture ingredients.
b. Calibrate ingredient proportioning for all rates of production.

2. Mixture control

Compose hot mix asphaltic concrete from a uniform mixture of aggregates, bituminous material, and if required, hydrated lime, mineral filler, or other approved additive.

Make the constituents proportional to produce mixtures that meet the requirements in Section 828. The general composition limits prescribed are extreme ranges within which the job mix formula must be established. Base mixtures on a design analysis that meets the requirements of Section 828. Ensure that the field performance of the in-place mixtures meet the requirements of Section 828.2.B for Permeability, Moisture Susceptibility, Rutting Susceptibility and Fatigue. The in-place mixtures will be subject to testing for compliance with requirements of Section 828.2.B under the following conditions:

- Deviates greater than"10 percent on gradation on the mixture control sieves from the approved job mix formula based on acceptance or assurance samples.

- Deviates greater than 0.7 percent in asphalt content from the job mix formula based on acceptance or assurance samples.

- The calculated mean pavement air voids result in an adjusted pay factor greater than 0.80 or any single sub-lot results in mean pavement air voids exceeding 10.5 %.

- Mix produced using an unapproved mix design or job mix formula.

Remove and replace (at the Contractor's expense) any areas determined to not meet the requirements of Section 828.2.B

If control test results show that the characteristic tested does not conform to the job mix formula control tolerances given in Section 828, take immediate action to ensure that the quality control methods are effective.

Control the materials to ensure that extreme variations do not occur. Maintain the gradation within the composition limits in Section 828.

B. Prepare Bituminous Material

Uniformly heat the bituminous material to the temperature specified in the job mix formula with a tolerance of± 20F(± 10 °C).

C. Prepare the Aggregate

Prepare the aggregate as follows:

1. Heat the aggregate for the mixture, and ensure a mix temperature within the limits of the job mix formula.
2. Do not contaminate the aggregate with fuel during heating.
3. Reduce the absorbed moisture in the aggregate until the asphalt does not separate from the aggregate in the prepared mixture. If this problem occurs, the Lumpkin County Public Works Department will establish a maximum limit for moisture content in the aggregates. When this limit is established, maintain the moisture content below this limit.

D. **Prepare the Mixture**

Proportion the mixture ingredients as necessary to meet the required job mix formula. Mix until a homogenous mixture is produced.

1. Add Hydrated Lime

   When hydrated lime is included in the mixture, add it at a rate specified in Section 828 and the job mix formula. Use methods and equipment for adding hydrated lime according to Subsection 400.3.02.B.6, "Hydrated Lime Treatment System."

   Add hydrated lime to the aggregate by using Method A or B as follows:

   Method A-Dry Form-Add hydrated lime in its dry form to the mixture as follows, according to the type of plant:

   a. Batch Type Asphalt Plant: Add hydrated lime to the mixture in the weigh hopper or as approved and directed by the Lumpkin County Public Works Department.
   b. Continuous Plant Using Pugmill Mixer: Feed hydrated lime into the hot aggregate before it is introduced into the mixer so that dry mixing is complete before the bituminous material is added.
   c. Continuous Plant Using Drier-Drum Mixer: Add hydrated lime so that the lime will not become entrained into the air stream of the drier and so that thorough dry mixing will be complete before the bituminous material is added.

   Method B-Lime/Water Slurry-Add the required quantity of hydrated lime (based on dry weight) in lime/water slurry form to the aggregate. This solution consists of lime and water in concentrations as directed by the Lumpkin County Public Works Department.

   Equip the plant to blend and maintain the hydrated lime in suspension and to mix it with the aggregates uniformly in the proportions specified.

2. Add Gilsonite Modifier

   When required, add the Gilsonite modifier to the mixture at a rate such that eight percent by weight of the· asphalt cement is replaced by Gilsonite. Use either PG 64-22 or PG 67-22 asphalt cement as specified in Subsection 820.2.01. Provide suitable means to calibrate and check the rate of Gilsonite being added. Introduce Gilsonite modifier by either of the following methods.

   a. For batch type plants, incorporate Gilsonite into the pug mill at the beginning of the dry mixing cycle. Increase the dry mix cycle by a minimum of 10 seconds after the Gilsonite is added and prior to introduction of the asphalt cement. For this method, supply Gilsonite in

plastic bags to protect the material during shipment and handling and store the modifier in a waterproof environment. The bags shall be capable of being completely melted and uniformly blended into the combined mixture.

Gilsonite may also be added through a mineral filler supply system as described in Subsection 400.3.02.B.5, "Mineral Filler Supply System." The system shall be capable of injecting the modifier into the weigh hopper near the center of the aggregate hatching cycle so the material can be accurately weighed.

b. For drum drier plants, add Gilsonite through the recycle ring or through an acceptable means which will introduce the Gilsonite prior to the asphalt cement injection point. The modifier shall be proportionately fed into the drum mixer at the required rate by a proportioning device which shall be accurate within ± 10 percent of the amount required. The entry point shall be away from flames and ensure the Gilsonite will not be caught up in the air stream and exhaust system.

3. Materials from Different Sources

Do not use mixtures prepared from aggregates from different sources intermittently. This will cause the color of the finished pavement to vary.

E. Observe Weather Limitations

Do not mix and place asphaltic concrete if the existing surface is wet or frozen. Follow the temperature guidelines in the following table:

Table 4-Lift Thickness Table

Lift Thickness	Minimum Temperature
1 in (25 mm) or less	55°F(13°C)
1.1 to 2 in (26 mm to 50	45 OF (8 °C)
2.1 to 3 in (51 mm to 75	40 **°F** (4 °C)
3.1 to 4 in (76'mm to 100	35 OF (2 °C)
4.1 to 8 in (101 mm to 200	32 OF (0 °C) and rising. Base Material

F. **Perform Spreading and Finishing**

Spread and finish the course as follows:

1. Determine the course's maximum compacted layer thickness by the type mix being used according to Table 5.

Table 5-Maximum Layer Thickness

Mix Type	Minimum Layer	Maximum Layer	Maximum Total
25 mm Superpave	2 1/2 in (64 mm)	4 in (100 mm) *	–
19 mm Superpave	1 3/4 in (44 mm)	3 in (75 mm) *	–
12.5 mm	1 3/8 in (35 mm)	2 1/2 in (64 mm)*	8 in (200 mm)
9.5 mm	1 1/8 in.(28 mm)	1 1/2 in (38 mm)	4 in (100 mm)
9.5 mm	7/8 in (22 mm)	1 1/4 in (32 mm)	4 in (100 mm)
4.75 mm Mix	3/4 in (19 mm)	1 1/8 in (28 mm)	2 in (50 mm)
*Allow up to 6 in (150 mm) per lift on trench widening. Place 9.5 mm			

2. Unload the mixture into the paver hopper or into a device designed to receive the mixture from delivery vehicles.
3. Except for leveling courses, spread the mixture to the loose depth for the compacted thickness or the spread rate. Use a mechanical spreader true to the line, grade, and cross section specified.
4. For leveling courses, use a motor grader equipped with a spreader box and smooth

tires to spread the material or use a mechanical spreader meeting the requirements in Subsection 400.3.02.C, "Equipment at Project Site."

5. Obtain the Engineer's approval for the sequence of paving operations, including paving the adjoining lanes. Minimize tracking tack onto surrounding surfaces.
6. Ensure that the outside edges of the pavement being laid are aligned and parallel to the roadway center line.
7. For New Construction or Resurfacing Contracts that contain multiple lifts or courses, arrange the width of the individual lifts so that the longitudinal joints of each successive lift are offset from the previous lift at least 1 ft (300 mm). This requirement does not apply to the lift immediately over thin lift leveling courses.

   Ensure that the longitudinal joint(s) in the surface course and the mix immediately underneath asphaltic concrete OGFC or PEM are at the lane line(s).

NOTE: Perform night work with artificial light provided by the Contractor and approved by the Lumpkin County Public Works Department.

8. Where mechanical equipment cannot be used, spread and rake the mixture by hand. Obtain the Engineer's approval of the operation sequence, including compactive methods, in these areas.
9. Keep small hand raking tools clean and free from asphalt build up. Do not use fuel oil or other harmful solvents to clean tools during the work
10. Do not use mixture with any of these characteristics:
    - Segregated
    - Nonconforming temperature
    - Deficient or excessive asphalt cement content
    - Otherwise unsuitable to place on the roadway in the work
11. Remove and replace mixture placed on the roadway that the Lumpkin County Public Works Department determines has unacceptable blemish levels from segregation, streaking, pulling and tearing, or other characteristics. Replace with acceptable mixture at the Contractor's expense. Do not continually place mixtures with deficiencies.

    Do not place subsequent course lifts over another lift or courses placed on the same day while the temperature of the previously placed mix is 140 op (60 °C) or greater.
12. Obtain the Engineer's approval of the material compaction equipment. Perform the rolling as follows:
    a. Begin the rolling as close behind the spreader as possible without causing excessive distortion of the asphaltic concrete surface.
    b. Continue rolling until roller marks are no longer visible.
    c. Use pneumatic-tired rollers with breakdown rollers on all courses except asphaltic concrete OGFC, PEM and SMA or other mixes designated by the Lumpkin County Public Works Department.
13. If applicable, taper or "feather" asphaltic concrete from full depth to a depth no greater than 0.5 in (13 mm) along curbs, gutters, raised pavement edges, and areas where drainage characteristics of the road must be retained. The Lumpkin County Public Works Department will determine the location and extent of tapering.

G. **Maintain Continuity of Operations**

Coordinate plant production, transportation, and paving operations to maintain a continuous operation. If the spreading operations are interrupted, construct a transverse joint if the mixture immediately behind the paver screed cools to less than 250 °F (120 °C).

H. Construct the Joints

1. Construct Transverse Joints
   a. Construct transverse joints to facilitate full depth exposure of the course before resuming placement of the affected course.
   b. Properly clean and tack the vertical face of the transverse joint before placing additional material. NOTE: Never burn or heat the joint by applying fuel oil or other volatile materials.
   c. Straightedge transverse joints immediately after forming the joint.
   d. Immediately correct any irregularity that exceeds 3/16 in. in 10ft (5 mm in 3m).
2. Construct Longitudinal Joints

   Clean and tack the vertical face of the longitudinal joint before placing adjoining material. Construct longitudinal joints so that the joint is smooth, well- sealed, and bonded.

I. Protect the Pavement

Protect sections of the newly finished pavement from traffic until the traffic will not mar the surface or alter the surface texture. If directed by the Lumpkin County Public Works Department, use artificial methods to cool the newly finished pavement to open the pavement to traffic more quickly.

J. Modify the Job Mix Formula

If the Lumpkin County Public Works Department determines that undesirable mixture or mat characteristics are being obtained, the job mix formula may require immediate adjustment.

400.3.6 Quality Acceptance

A. Acceptance Plans for Gradation and Asphalt Cement Content

The Contractor will randomly sample and test mixtures on a lot basis. The County will monitor the Contractor testing program and perform comparison and quality assurance testing.

1. Determine Lot Amount

   A lot consists of the tons (megagrams) of asphaltic concrete produced and placed each production day. If this production is less than 500 tons (500 Mg), or its square yard (meter) equivalent, production may be incorporated into the next working day. The Lumpkin County Public Works Department may terminate a lot when a pay adjustment is imminent if a plant or materials adjustment resulting in a probable correction has been made. Terminate all open lots at the end of the month, except for materials produced and placed during the adjustment period. If the final day's production does not constitute a lot, the production may be included in the lot for the previous day's run; or, the Lumpkin County Public Works Department may treat the production as a separate lot with a corresponding lower number of tests.

2. Determine Lot Acceptance

   Ifthe Lumpkin County Public Works Department determines that the material is not acceptable to leave in place, the materials shall be removed and replaced at the Contractor's expense.

3. Provide Quality Control Program

   Provide a Quality Control Program as established in SOP 27 which includes:

   - Assignment of quality control responsibilities to specifically named individuals who have been certified by the Office of Materials and Research
   - Provisions for prompt implementation of control and corrective measures
   - Provisions for communication with Project Manager, Bituminous Technical Services Lumpkin County Public Works Department, and Testing Management Operations Supervisor at all times
   - Provisions for reporting all test results daily through the Office of Materials and Research computerized Field Data Collection System; other checks, calibrations and records will be reported on a form developed by the Contractor and will be included as part of the project records
   - Notification in writing of any change in quality control personnel

   a. Certification Requirements:
      - Use laboratory and testing equipment certified by the Department. (Laboratories which participate in and maintain AASHTO accreditation for testing asphaltic concrete mixtures will be acceptable in lieu of Departmental certification.)
      - Provide certified quality control personnel to perform the sampling and testing. A Quality Control Technician (QCT) may be certified at three levels:

        1) Temporary Certification-must be a technician trainee who shall be given direct oversight by a certified Level 1 or Level 2 QCT while performing acceptance testing duties during the first 5 days of training. The trainee must complete qualification requirements within 30 production days after being granted temporary certification. A trainee who does not become qualified within 30 production days will not be re-eligible for temporary certification. A certified Level 1 or Level 2

QCT shall be at the plant at all times during production and shipment of mixture to monitor work of the temporarily certified technician.

2) Level 1 -must demonstrate they are competent in performing the process control and acceptance tests and procedures related to hot mix asphalt production and successfully pass a written exam.

3) Level 2-must meet Level 1 requirements and must be capable of and responsible for making process control adjustments, and successfully pass a written exam.

- Technician certification is valid for 3 years from the date on the technician's certificate unless revoked or suspended. Eligible technicians may become certified through special training and testing approved by the Office of Materials and Research. Technicians who lose their certification due to falsification of test data will not be eligible for recertification in the future unless approved by the State Materials and Research Lumpkin County Public Works Department.

b. Quality Control Management

1) Designate at least one Level 2 QCT as manager of the quality control operation. The Quality Control Manager shall meet the following requirements:

- Be accountable for actions of other QCT personnel
- Ensure that all applicable sampling requirements and frequencies, test procedures, and Standard Operating Procedures are adhered to
- Ensure that all reports, charts, and other documentation is completed as required

2) Provide QCT personnel at the plant as follows:

- If daily production for all mix types is to be greater than 250 tons (megagrams), have a QCT person at the plant at all times during production and shipment of mixture until all required acceptance tests have been completed
- If daily production for all mix types will not be greater than 250 tons (megagrams) a QCT may be responsible for conducting tests at up to two plants, subject to random number sample selection
- Have available at the plant or within immediate contact by phone or radio a Level2 QCT responsible for making prompt process control adjustments as necessary to correct the mix

3) Sampling, Testing, and Inspection Requirements.

Provide all sample containers, extractants, forms, diaries, and other supplies subject to approval of the Lumpkin County Public Works Department.

Perform daily sampling, testing, and inspection of mixture production that meets the following requirements:

(a) Randomly sample mixtures according to GSP 15, and GDT 73 (Method C) and test on a lot basis. In the event less than the specified number of samples are taken, obtain representative 6 in (150 mm) cores from the roadway at a location where the load not sampled was placed. Take enough cores to ensure minimum sample size requirements are met for each sample needed.

(b) Maintain a printed copy of the computer generated random sampling data as a part of the project records.

(c) Perform sampling, testing, and inspection duties of GSP 21.

(d) Perform extraction or ignition test (GDT 83 or GDT 125) and extraction analysis (GDT 38). If the ignition oven is used, a printout of sample data including weights shall become a part of the project records. For asphalt cement content only, digital printouts of liquid asphalt cement weights may be substituted in lieu of an extraction test for plants with digital recorders. Calculate the asphalt content from the ticket representing the mixture tested for gradation.

(e) Save extracted aggregate, opposite quarters, and remaining material (for possible referee testing) of each sample as follows:

- Store in properly labeled, suitable containers
- Secure in a protected environment

- Store for three working days. If not obtained by the County, within three days they may be discarded.

(f) Add the following information on load tickets from which a sample or temperature check is taken:

- Mixture temperature
- Signature of the QCT person performing the testing

(g) Calibrate the lime system when hydrated lime is included in the mixture:

- Perform a minimum of twice weekly during production
- Post results at the plant for review
- Provide records of materials invoices upon request (including asphalt cement, aggregate, hydrated lime, etc.)

(h) Take action if acceptance test results are outside Mixture Control Tolerances of Section 828.

- One sample out of tolerance
  (1) Contact Level2 - QCT to determine if a plant adjustment is needed
  (2) Immediately run a process control sample. Make immediate plant adjustments if this sample is also out of tolerance
  (3) Test additional process control samples as needed to ensure corrective action taken appropriately controls the mixture
- Two consecutive acceptance samples of the same mix type out of tolerance regardless of Lot or mix design level, or three consecutive acceptance samples out of tolerance regardless of mix type
  (1) Stop plant production immediately
  (2) Reject any mixture already in storage that:
    - Deviates more than 10 percent in gradation from the job mix formula based on the acceptance sample
    - Deviates more than 0.7 percent in asphalt content from the job mix formula based on the acceptance sample
  (3) Make a plant correction to any mix type out of tolerance prior to resuming production
    - Do not send any mixture to the project before test results of a process control sample meets Mixture Control Tolerances
    - Reject any mixture produced at initial restarting that does not meet Mixture Control Tolerances

4) Comparison Testing and Quality Assurance Program

Periodic comparison testing by the County will be required of each QCT to monitor consistency of equipment and test procedures. The County will take independent samples to monitor the Contractor's quality control program.

a) Comparison Sampling and Testing

Retain samples for comparison testing and referee testing if needed as described in Subsection 400.3.06.A.3.b.3. Discard these samples only if the Contractor's acceptance test results meet a 1.00 pay factor and the County does not procure the samples within three working days.

The County will test comparison samples on a random basis. Results will be compared to the respective contractor acceptance tests and the maximum difference shall be as follows:

Table 6-AIlowable Percent Difference Between C o u n t y and Contractor Acceptance Tests

SIEVE	SURFACE	SUB-SURFACE
1/2 in.		4.0%
3/8 in. (9.5 mm)	3.5%	4.0%
No.4 (4.75 mm)	3.5%	3.5%
No. 8 (2.36 mm)	2.5%	3.0%
No. 200 (75 mm)	2.0	2.0%
A.C.	0.4	0.5%

(1) If test comparisons are within these tolerances:

- Continue production
- Use the Contractor's tests for acceptance of the lot

(2) If test comparisons are not within these tolerances:

- Another County technician will test the corresponding referee sample
- Results of the referee sample will be compared to the respective contractor and County tests using the tolerance for comparison samples given above.
  - (a) If referee test results are within the above tolerances when compared to the Contractor acceptance test, use the Contractor's test for acceptance of the effected lot.
  - (b) If referee test results are not within the above tolerances when compared to the Contractor acceptance test, the County will review the Contractor's quality control methods and determine if a thorough investigation is needed.

b) Quality Assurance Sampling and Testing

(1) Randomly take a minimum of two quality assurance samples from the lesser of five days or five lots of production regardless of mix type or number of projects.

(2) Compare test deviation from job mix formula to Mixture Control Tolerances in Section 828. If results are outside these tolerances, another sample from the respective mix may be taken.

NOTE: For leveling courses less than 110 lb/yd^2 (60 kg/m^2) that have quality assurance test results outside the Mixture Control Tolerances of Section 828, use the County's test results only.

If test results of the additional sample are not within Mixture Control Tolerances, the County will take the following action:

- Take random samples from throughout the lot as in Subsection 400.3.06.A.3.b.3 and use these test results for acceptance and in calculations for the monthly plant rating. Determine if the Contractor's quality control program is satisfactory and require prompt corrective action by the Contractor if specification requirements are not being met.

- Determine if the QCT has not followed County procedures or has provided erroneous information.

- Take samples of any in-place mixture represented by unacceptable QCT tests and use the additional sample results for acceptance and in calculations for the monthly plant rating. The Contractor QCT tests will not be included in the monthly plant rating.

B. Compaction

Determine the mixture compaction using either GDT 39 or GDT 59. The compaction is accepted in lots defined in Subsection 400.3.06. A "Acceptance Plans for Gradation and Asphalt Cement Content" and is within the same lot boundaries the mixture acceptance.

1. Calculate Pavement Mean Air Voids

   The County will calculate the pavement air voids placed within each lot as follows:

   a. One test per sub-lot.
      - Lots 2: 500 tons of mix should be divided into 5 sub-lots of equal distance.
      - Lots< 500 tons of mix should be comprised of a sub-lot or sub-lots consisting of up to 100 tons of mix each. There may be less than 5 sub-lots.

   b. Average the results of all tests run on randomly selected sites in that lot.

   c. Select the random sites using GDT 73.

   Density tests are not required for asphaltic concrete placed at 125 lbs/yd2 (68kg/m2) or less, 4.75mm mix and mixes placed as variable depth or width leveling. Compact these courses to the Engineer's satisfaction. Density tests will not be performed on tum-outs and driveways.

   The targeted maximum Pavement Mean Air Void content for all Superpave mixture 5.0 percent. Ensure that the maximum Pavement Mean Air Voids for all Superpave mixtures does not exceed 7.8 percent. The maximum Pavement Mean Air Voids for 2 foot shoulder widening is 9.0 percent. The adjustment period for density shall be three lots or three production days, whichever is less, in order for the contractor to ensure maximum compactive effort has been achieved which will yield no more than the specified maximum allowed Mean Air Voids. If the contractor needs 'to adjust the mixture to improve density results, a change in the job mix formula may be requested for approval during the adjustment period so long as the following values are not exceeded:

   - Coarse pay sieve ± 4%
   - No. 8 (2.36 mm) sieve ± 2%
   - No. 200 (75 m) sieve ± 1%
   - Asphalt Content ±0.2%
   - All value changes must still be within specification limits

   If the Office of Materials and Research is satisfied that the contractor has exerted the maximum compactive effort and is not able to maintain Pavement Mean Air Voids at no more than 7.8%, the Lumpkin County Public Works Department may establish a maximum target for Pavement Mean Air Voids.

   If the Pavement Mean Air Voids within a Lot exceeds 7.8 (or 100% of the maximum target air voids, if established is not maintained); the Lumpkin County Public Works Department may stop the paving operation until appropriate steps are taken by the Contractor to correct the deficiency. Upon approval of the Lumpkin County Public Works Department, the paving operation may be restarted but will be limited to a 1000 ft (300 m) test section to verify that the corrective action taken will result in satisfactory density. Continued operation may not be permitted if the Pavement Mean Air Voids fail to meet the specified density requirements.

2. Obtain Uniform Compaction

For a lot to be accepted for compaction, the air void range cannot exceed 4 percent for new construction or 5 percent for resurfacing projects. The range is the difference between the highest and lowest acceptance test results within the affected lot.

C. Surface Tolerance

In this Specification, pavement courses to be overlaid with an Open-Graded Friction Course or PEM are considered

surface courses. Other asphalt paving is subject to straightedge and visual inspection and irregularity correction as shown below:

1. Visual and Straightedge Inspection

   Paving is subject to visual and straightedge inspection during and after construction operations until Final Acceptance. Locate surface irregularities as follows:

   a. Keep a 10 ft (3 m) straightedge near the paving operation to measure surface irregularities on courses. Provide the straightedge and the labor for its use.
   b. Inspect the base, intermediate, and surface course surfaces with the straightedge to detect irregularities.
   c. Correct irregularities that exceed 3/16 in. in 10ft (5 mm in 3m) for base and intermediate courses, and 1/8 in. in 10 ft (3 mm in 3 m) for surface courses.

   Mixture or operating techniques will be stopped if irregularities such as rippling, tearing, or pulling occur and the Lumpkin County Public Works Department suspects a continuing equipment problem. Stop the paving operation and correct the problem.

D. Re-Evaluation of Lots

Re-evaluation of Lots and acceptance will be based on County evaluations. The County will be reimbursed by the Contractor for all costs of these evaluations. Request for reevaluation shall be made within 5 working days of notification of the lot results.

E. Segregated Mixture

Prevent mixture placement that yields a segregated mat by following production, storage, loading, placing, and handling procedures. Also, make needed plant modifications and provide necessary auxiliary equipment. (See Subsection 400.1.01. "Definitions.")

If the mixture is segregated in the finished mat, the County will take actions based on the degree of segregation. The actions are described below.

1. Unquestionably Unacceptable Segregation

   When the Lumpkin County Public Works Department determines that the segregation in the finished mat is unquestionably unacceptable, follow these measures:

   a. Suspend Work and require the Contractor to take positive corrective action. The County will evaluate the segregated areas to determine the extent of the corrective work to the in-place mat as follows:
      - Perform extraction and gradation analysis by taking 6 in (150 mm) cores from typical, visually unacceptable segregated areas.
      - Determine the corrective work according to <u>Subsection 400.3.06.E.3.</u>
   b. Require the Contractor to submit a written plan of measures and actions to prevent further segregation. Work will not continue until the plan is submitted to and approved by the County.
   c. When work resumes, place a test section not to exceed 500 tons (500 Mg) of the affected mixture for the County to evaluate. If a few loads show that corrective actions were not adequate, follow the measures above beginning with step 1.a. above. If the problem is solved, Work may continue.

2. Unacceptable Segregation Suspected

   When the Lumpkin County Public Works Department observes segregation in the finished mat and suspects that it may be unacceptable, follow these measures:

   a. Allow work to continue at Contractor's risk.
   b. Require Contractor to immediately and continually adjust operation until the visually apparent segregated areas are eliminated from the finished mat. The County will immediately investigate to determine the severity of the apparent segregation as follows:

- Take 6 in (150 mm) cores from typical areas of suspect segregation.
- Test the cores for compliance with the mixture control tolerances in Section 828.

When these tolerances are exceeded, suspend work for corrective action as outlined in Subsection 400.3.06.E.3.

3. Corrective Work

a. Remove and replace (at the Contractor's expense) any segregated area where the gradation on the control sieves is found to vary 10 percent or more from the approved job mix formula, the asphalt cement varies 1.0% or more from the approved job mix formula, or if in-place air voids exceed 12.5% based on GDT 39. The control sieves for each mix type are shown in Subsection 400.5.0l.B "Determine Lot Acceptance."

b. Subsurface mixes. For subsurface mixes, limit removal and replacement to the full lane width and no less than 10ft. (3m) long and as approved by the Lumpkin County Public Works Department.

c. Surface Mixes. For surface mixes, ensure that removal and replacement is not less than the full width of the affected lane and no less than the length of the affected areas as determined by the Lumpkin County Public Works Department.

Surface tolerance requirements apply to the corrected areas for both subsurface and surface mixes.

400.3.7 Contractor Warranty and Maintenance

A. Contractor's Record

Maintain a dated, written record of the most recent plant calibration. Keep this record available for the Engineer's inspection at all times. Maintain records in the form of:

- Graphs
- Tables
- Charts
- Mechanically prepared data

400.4 Measurement

Thickness and spread rate tolerances for the various mixtures are specified in Subsection 400.4.A.2.b, Table 11, Thickness and Spread Rate Tolerance at Any Given Location. These tolerances are applied as outlined below:

A. **Hot Mix Asphaltic Concrete Paid for by Weight**

1. Plans Designate a Spread Rate

a. Thickness Determinations. Thickness determinations are not required when the Plans designate a spread rate per square yard (meter).

If the spread rate exceeds the upper limits outlined in the Subsection 400.4.A.2.b, Table 11, "Thickness and Spread Rate Tolerance at Any Given Location", the mix in excess will not be paid for.

If the rate of spread is less than the lower limit, correct the deficient course 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 the Mixture Acceptance Schedule-Table 9 or 10.

b. Recalculate the Total Spread Rate. After the deficient hot mix course has been corrected, the total spread rate for that lot is recalculated, and mix in excess of the upper tolerance limit as outlined in the Subsection 400.4.A.2.b. Table 11, "Thickness and Spread Rate Tolerance at Any Given Location" is not paid for.

The quantity of material placed on irregular areas such as driveways, turnouts, intersections, feather edge section, etc., is deducted from the final spread determination for each lot.

2. Plans Designate Thickness

If the average thickness exceeds the tolerances specified in the Subsection 400.4.A.2.b, Table 11, "Thickness and Spread Rate Tolerance at Any Given Location", the Lumpkin County Public Works Department shall take cores to determine the area of excess thickness. Excess quantity will not be paid for.

If the average thickness is deficient by more than the tolerances specified in the Thickness and Spread Rate Tolerance at Any Given Location table below, the Lumpkin County Public Works Department shall take additional cores to determine the area of deficient thickness. Correct areas with thickness deficiencies as follows:

a. Overlay the deficient area with the same mixture type being corrected or with an approved surface mixture. The overlay shall extend for a minimum of 300 ft (90 m) for the full width of the course.

b. Ensure that the corrected surface course complies with Subsection 400.3.06.C.l, "Visual and Straightedge Inspection." The mixture required to correct a deficient area is paid for at the Contract Unit Price of the course being corrected.

The quantity of the additional mixture shall not exceed the required calculated quantity used to increase the average thickness of the overlaid section to the maximum tolerance allowed under the following table.

Table 11-Thickness and Spread Rate Tolerance at Any Given Location

Course	Thickness Specified	Spread Rate Specified
Asphaltic concrete base course	± 0.5 in (±13 mm)	+40 lbs, -50 lbs (+20 kg, -30 kg)
Intermediate and/or wearing course	± 0.25 in (± 6 mm)	+20 lbs, -25 lbs (+10 kg, -15 kg)
Overall of any combination of 1 and 2	± 0.5 in (±13 mm)	+40 lbs, -50 lbs (+20 kg, -30 kg)

Note 1: Thickness and spread rate tolerances are provided to allow normal variations within a given lot. Do not continuously operate at a thickness of spread rate not specified.

When the Plans specify a thickness, the Lumpkin County Public Works Department may take as many cores as necessary to determine the average thickness of the intermediate or surface course. The Lumpkin County Public Works Department shall take a minimum of one core per 1,000 ft (300m) per two lanes of roadway. Thickness will be determined by average measurements of each core according to GDT 42.

If the average exceeds the tolerances specified in the Subsection 400.4.A.2.b, Table 11, "Thickness and Spread Rate Tolerance at Any Given Location", additional cores will be taken to determine the area of excess thickness and excess tonnage will not be paid for.

B. Hot Mix Asphaltic Concrete Paid for by Square Yard (Meter)

1. The thickness of the base course or the intermediate or surface course will be determined by the County by cutting cores and the thickness will be determined by averaging the measurements of each core.
2. If any measurement is deficient in thickness more than the tolerances given in the table above, additional cores will be taken by the County to determine the area of thickness deficiency. Correct thickness deficiency areas as follows:
   a. Overlay the deficient area with the same type mixtures being corrected or with surface mixture. Extend the overlay at least 300 ft (90 m) for the full width of the course.

b. Ensure that the corrected surface course complies with Subsection 400.3.06.C. Visual and Straightedge Inspection.".

c. The mixture is subject to the Mixture Acceptance Schedule-Table 9 or 10.

3. No extra payment is made for mixtures used for correction.

4. No extra payment is made for thickness in excess of that specified.

NOTE: Thickness tolerances are provided to allow normal variations within a given lot. Do not continuously operate at a thickness not specified.

C. Asphaltic Concrete

Hot mix asphaltic concrete, complete in place and accepted, is measured in tons (megarams) or square yards (meters) as indicated in the Proposal. If payment is by the ton (megagram), the actual weifi$ht is determined by weighing each loaded vehicle on the required motor truck scale as the material is hauled to the roadway, or by using recorded weights if a digital recording device is used.

The weight measured includes all materials. No deductions are made for the weight of the individual ingredients. The actual weight is the pay weight except when the aggregates used have a combined bulk specific gravity greater than 2.75; In this case the pay weight is determined according to the following formula:

$$Tl = T \times \left| \frac{\% AC + \left| \frac{\% \text{ Aggregate} \times 2.75}{\text{combined bulk Specific Gravity}} \right| + \% Y}{100} \right|$$

Where:

T1	Pay weight, tonnage (Mg)
T=	Actual weight
%AC=	Percent asphalt cement by weight of total mixture
%Aggregate	Percent aggregate by weight of total mixture
Combine d Bulk Sp.	Calculated combined bulk specific gravity of various mineral aggregates used in the mixture
%Y=	Percent hydrated lime by weight of mineral aggregate

D. Bituminous Material

Bituminous material is not measured for separate payment.

E. Hydrated Lime

When hydrated lime is used as an anti-stripping additive, it is not measured for separate payment.

F. Field Laboratory

The field laboratory required in this Specification is not measured for separate payment.

G. Asphaltic Concrete Leveling

Payment of hot mix asphaltic concrete leveling, regardless of the type mix, is full compensation for furnishing materials, bituminous materials, and hydrated lime (when required) for patching and repair of minor defects, surface preparation, cleaning, hauling, mixing, spreading, and rolling.

Mixture for leveling courses is subject to the acceptance schedule as stated in Subsection 400.3.06.A and Subsection 400.3.06.B.

H. Asphaltic Concrete Patching

Hot mix asphaltic concrete regardless of the type mix, is paid for at the Contract Unit Price per ton (Megagram), complete in place and accepted. Payment is full compensation for:

- Furnishing materials such as bituminous material and hydrated lime (when required)
- Preparing surface to be patched
- Cutting areas to be patched, trimmed, and cleaned
- Hauling, mixing, placing, and compacting the materials

400.4.01 Limits

When the asphaltic concrete is paid for by the square yard (meter) and multiple lifts are used, the number and thickness of the lifts are subject to the Engineer's approval and are used to prorate the pay factor for the affected roadway section.

400.5 Payment

Hot mix asphaltic concrete of the various types are paid for at the Contract Unit Price per ton (megagram) or per square yard (meter). Payment is full compensation for furnishing and placing materials including asphalt cement, hydrated lime when required, 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. 400	Asphaltic concrete Suprpave, group-blend, Including polymer-modified bituminous materials and hydrated	Per ton (megagram)
Item No. 400	Asphaltic concrete. Superpave, group-blend, including bituminous materials and hydrated lime	. Per ton (megagram)
Item No. 400	Asphaltic concrete Superpave, group-blend, Including bituminous materials, Gilsonite modifier, and	Per ton (megagram)

Item No. 400	_____inches asphaltic concrete, Superpave, group-blend including bituminous materials, Gilsonite	Per square yard (meter)
Item No. 400	Asphaltic concrete Stone Matrix Asphalt, group-blend, including polymer- modified bituminous	Per ton (megagram)
Item No. 400	. Asphaltic concrete OGFC, group 2 only, including bituminous materials and hydrated lime	Per ton (megagram)
Item No. 400	Asphaltic concrete OGFC, group 2 only, including polymer-modified bituminous materials and hydrated	Per ton (megagram)
Item No. 400	Asphaltic concrete ~~Porous~~ European Mix, .9IQ!J.Q.2. only, including polymer-modified bituminous materials	Per ton (megagram)

400.5.01 Adjustments

A. Determine Lot Acceptance

The control sieves used in the mixture acceptance schedule for the various types of mix are indicated below:

Control Sieves Used in the Mixture Acceptance Schedule	
Asphaltic concrete 25 mm	1/2 in., No. 8 (12.5 mm, 2.36 mm) sieves and asphalt
Asphaltic concrete 19 mm	3/8 in., No. 8 (9.5 mm, 2.36 mm) sieves and asphalt
Asphaltic concrete 12.5	3/8 in., No. 8 (9.5 mm, 2.36 mm) sieves and asphalt
Asphaltic concrete 9.5	No.4, No.8 (4.75 mm, 2.36 mm) sieves and asphalt
Asphaltic concrete 4.75	No. 8 (2.36 mm) sieve and asphalt cement

The County will perform the following tasks:

1. Determine the mean of the deviations from the job mix formula per test results per lot.

2. Determine this mean by averaging the actual numeric value of the individual deviations from the job mix formula; disregard whether the deviations are positive or negative amounts.

C. Calculate Pavement Mean Air Voids

The County will determine the percent of maximum air voids for each lot by dividing the pavement mean air voids by the maximum pavement mean air voids acceptable.

D. Asphaltic Concrete For Temporary Detours

Hot mix asphaltic concrete placed on temporary detours that will not remain in place as part of the permanent pavement does not require hydrated lime. Hot mix used for this purpose is paid for at an adjusted Contract Price.

Where the Contract Price of the asphaltic concrete for permanent pavement is let by the ton (megagram), the Contract Price for the asphaltic concrete placed on temporary detours is adjusted by subtracting $0.75/ton ($0.85/mg) of mix used.

Where the Contract price of the mix in the permanent pavement is based on the square yard (meter), obtain the adjusted price for the same mix used on the temporary detour by subtracting $0.04/yd2 ($0.05/m2) per 1-in (25-mm) plan depth.

Further price adjustments required in Subsection 400.3.06, "Quality Acceptance," are based on the appropriate adjusted Contract Price for mix used in the temporary detour work.

E. Determine Lot Payment

If the Lumpkin County Public Works Department determines that the material is not acceptable to leave in place, remove and replace the materials at the Contractor's expense.

Section 402-Hot Mix Recycled Asphaltic Concrete

Delete Section 402 and substitute the following:

402.1 General Description

This work includes producing and placing hot mix recycled asphaltic concrete that incorporates reclaimed asphalt pavement (RAP), reclaimed asphalt shingles (RAS), virgin aggregate, hydrated lime, and neat asphalt cement.

402.1.1 Definitions

General Provisions 101 through 150.

402.1.2 Related References

A. Standard Specifications

Section 400-Hot Mix Asphaltic Concrete Construction

Section 800-Coarse Aggregate

Section 828-Hot Mix Asphaltic Concrete Mixtures

B. Referenced Documents

SOP 41 "Guidelines for RAP Stockpile Approval"

402.1.3 Submittals

A. Certified Weight Tickets

Notify the Lumpkin County Public Works Department before removing RAP from a stockpile that belongs to the County. Submit to the Lumpkin County Public Works Department the certified weight tickets of materials removed from the stockpile.

B. Affidavit

Submit to the laboratory an affidavit stating the sources of stockpiled materials to be used on a State project. Include the following information inthe letter:

- State project number
- Location from which the material was removed
- Approximate removal dates

- Mix types removed and the estimated quantity of each type in the stockpiles

- Other available information about the stockpiled material such as percentage of local sand in the RAP Obtain specific approval from the laboratory to use RAP or RAS stockpiles.

Adhere to Guidelines for RAP Stockpile Approval.

402.2 Materials

A. RAP Material Composition

Use RAP materials from any of the following:

- Existing roadway

- Contractor's RAP stockpile that has been approved by the County

- County stockpile

NOTE: The location of County RAP material stockpiles will be given on the Plans.

Do not use RAP materials that contain alluvial gravel or local sand in any mixture placed on interstate projects except for mixtures used in shoulder construction. When used in shoulder construction, limit RAP containing local sand or alluvial gravel so that the sand or gravel contributes no more than 20% of the total aggregate portion of the mix.

1. RAP Percentage

For non-interstate projects, limit the percentage of RAP allowed in recycled mixes so that the overall amount of alluvial gravel does not exceed 5 percent of the total mix. The percentage of alluvial gravel, local sand, and Group I material in the RAP will be determined through petrographic analysis or available records.

RAP furnished to the Contractor but not used in the work remains the Contractor's property.

RAP used in the recycled mixtures for mainline or ramps (if applicable) may make up from 0 to 40 percent of the mixture depending on the amount of RAP available, the production facilities, and whether the mixture meets the requirements in Section 828.

The maximum ratio of RAP material to the recycled mixture is 40 percent for continuous mix type plants and 25 percent for batch type plants.

2. Process RAP Material

Process RAP material to be used in the recycled mixture so that 100 percent will pass the 2 in (50 mm) sieve. Additional crushing and sizing may be required if the RAP aggregate exceeds the maximum sieve size for the mix type as shown in Section 828. Obtain representative materials from the RAP stockpile for the mix design.

B. RAS Material

RAS materials are produced as a by-product of manufacturing roofing shingles and/or discarded shingle scrap from the reroofing of buildings.

1. Limit the amount of RAS material used in the recycled mixture to no greater than 5 percent of the total mixture weight.
2. Shred the RAS material before incorporating it into the mix to ensure that 100 percent of the shredded pieces are less than 1/2 in (12.5 mm) in any dimension.
3. Remove all foreign materials such as paper, roofing nails, wood, or metal flashing.

4. Provide test results for Bulk Sample Analysis, known as Polarized Light Microscopy, if post-consumer shingles are used to certify the RAS material is free of asbestos. Test stockpiles at the rate of one test per 1000 tons (megagrams) prior to processing.

   Other than as specifically stated in this Subsection, ensure that RAS material is used according to the same requirements as described for RAP material.

C. Asphaltic Concrete Removed from an Existing Roadway

All millings removed during patching operations shall be delivered to 1646 Red Oak Flats Road, Dahlonega, GA 30533 and become property of Lumpkin County.

D. Local Sand and Group I Material in RAP

Use of local sand in recycled mixes is restricted as stipulated in Section 828 for the Project. However, RAP which contains local sand may be used in surface and intermediate layers of non-interstate projects so long as the RAP percentage used does not contribute more than 5% local sand to the total aggregate portion of the mix. The amount of local sand in the RAP material shall be considered when determining the percentage of local sand in the total mix.

Where Pay Items specify that Group II only aggregate is to be used, RAP which consists primarily of Group II aggregate, but contains some Group I aggregate, shall be limited such that the Group I aggregate makes up no more than 5% of the total aggregate portion of the mix. When a Blend I mix is specified, any Group I materials in the RAP will be considered when determining the Group I portion allowed in the total mix as specified in Subsection 828.2.A.2.

E. Asphalt Cement

Using laboratory evaluations, the County will determine the asphalt cement grade to be used in the recycled mixture. The asphalt cement shall meet the requirements of Section 820:

When the asphalt cement is blended with asphalt cement recovered from the RAP material and after tests on residue from thin film oven tests, the asphalt cement shall have a viscosity of 6,000 to 16,000 poises (600 to 1600 Pa) or as approved by the Lumpkin County Public Works Department. Recover asphalt cement from the recycled mixture to verify that the specified viscosity is being met.

If the Lumpkin County Public Works Department determines during construction that the selected asphalt cement grade is not performing satisfactorily, the County may change the asphalt cement grade in the mixture, with no change in the Contract Unit Price.

F. Recycled Mixture

The recycled mixture shall be a homogenous mixture of RAP or RAS material, virgin aggregate, hydrated lime, and neat asphalt cement. Ensure that the mixture conforms to an approved mixture design outlined in Section 828.

402.2.01 Delivery, Storage, and Handling

Separate the stockpiles by Project sources and by Group I and Group II aggregate types. Erect a sign on each stockpile to identify the source(s).

If RAP material from different project sources becomes intermixed in a stockpile, only use those materials when approved by the laboratory.

The County may reject by visual inspection stockpiles that are not clean and free of foreign materials.

402.3 Construction Requirements

402.3.1 Personnel

General Provisions 101 through 150.

402.3.2 Equipment

A. Hot Mix Plant

Use a hot mix plant for the recycling process with necessary modifications approved by the Lumpkin County Public Works Department to process recycled material. Design, equip, and operate the plant so that the proportioning, heating, and mixing yields a uniform final mixture within the job mix formula tolerances.

B. Cold Feed Bin

Proportion the RAP or RAS material using a separate cold feed bin. Ensure that the material meets the size requirements in Subsection 402.2, "Materials." The ratio of the RAP or RAS to virgin aggregate shall be controlled gravimetrically.

C. Electronic Belt Weighing Devices

Use electronic belt weighing devices to monitor the flow of RAP or RAS and the flow of virgin aggregate. For batch• type plants, the RAP or RAS portion of the mix may be weighed in a weigh hopper before incorporating it into the pugmill. The RAP shall be screened through a 2-inch maximum sized screen prior to crossing the cold feed weigh.

Ensure the amount of RAP material incorporated into the asphalt plant does not change after this final measurement is processed by the asphalt plant computer.

D. Feeders and Conveyors

Equip plants with an interlocking system of feeders and conveyors that synchronize the RAP or RAS material flow with the virgin aggregate flow. Ensure that the electronic controls track the flow rates indicated by the belt weighing devices and develop the signal to automatically maintain the desired ratio at varying production rates. Design the RAP or RAS feeder bins, conveyor system, and auxiliary bins (if used) to prevent RAP material from segregating and sticking.

402.3.3 Preparation

General Provisions 101 through 150.

402.3.4 Fabrication

General Provisions 101 through 150.

402.3.5 Construction

Follow the requirements in Section 400 for hot mix recycled asphaltic concrete production and placement, materials, equipment, and acceptance plans except as noted or modified in this Specification.

402.3.6 Quality Acceptance

The County may require additional quality control tests to determine the RAP stockpile consistency and the RAP aggregate quality. In this case, conduct at least three extraction/gradation tests from each individual source. Ensure that aggregate meets the quality standards in Section 800.

402.3.7 Contractor Warranty and Maintenance

General Provisions 101 through 150.

402.4 Measurement

Recycled asphaltic concrete mixture, complete in place and accepted, is measured in tons (megagrams). The weight is determined by recorded weights if an approved recording device is used. Or, the weight is determined by weighing each loaded vehicle on an approved motor truck scale as the material is hauled to the roadway.

402.4.01 Limits

General Provisions 101 through 150.

402.5 Payment

The work performed and the materials furnished as described in this Specification will be paid for at the Contract Unit Price per ton (megagram). Payment is full compensation for providing materials, hauling and necessary crushing, processing, placing, rolling and fnishing the recycled mixture, and providing labor, tools, equipment, and incidentals necessary to complete the work, including hauling and stockpiling RAP or RAS material.

Payment will be made under:

Item No. 402	Recycled asphaltic concrete_ mm Superpave, group-blend, including bituminous materials	Per ton (megagram)
Item No. 402	Recycled asphaltic concrete_ mm Superpave, group-blend, including bituminous materials and hydrated lime	Per ton (megagram)
Item No. 402	Recycled asphaltic concrete_ mm Superpave, group-blend, including polymer-modified bituminous materials and	Per ton (megagram)
Item No. 402	Recycled asphaltic concrete_ mm Superpave, Type_, group- blend, including bituminous materials and hydrated	Per ton (megagram)
Item No. 402	Recycled asphaltic concrete mm mix, group-blend, including bituminous materials and hydrated lime	Per ton (megagram)
Item No. 402.	in (mm) recycled asphaltic concreteSuperpave, group-blend, including bituminous	Per square yard (meter)
Item No. 402	in (mm) recycled asphaltic concreteSuperpave, group-blend, including bituminous	Per square yard (meter)
Item No. 402	in (mm) recycled asphaltic concreteSuperpave, group-blend, including polymer-modified bituminous materials and hydrated lime	Per square yard (meter)
Item No. 402	in (mm) recycled asphaltic concrete mm mix, group-blend, including bituminous materials and hydrated	Per square yard (meter)
Item No. 402	Recycled asphaltic concrete patching including bituminous materials	Per ton (megagram)
Item No. 402	Recycled asphaltic concrete patching including bituminous materials and hydrated lime	Per ton (megagram)
Item No. 402	Recycled asphaltic concrete leveling including bituminous materials	Per ton (megagram)
Item No. 402	Recycled asphaltic concrete leveling including bituminous materials and hydrated lime	Per ton (megagram)

402.5.01 Adjustments

A. Determine Lot Acceptance

The control sieves used in the mixture acceptance schedule for the various types of mix are indicated below:

Control Sieves Used in the Mixture Acceptance Schedule	
Asphaltic concrete 25 mm Superpave	1/2 in., No.8 (12.5 mm, 2.36 mm) sieves and asphalt cement
Asphaltic concrete 19 mm Superpave	3/8 in., No.8 (9.5 mm, 2.36 mm) sieves and asphalt cement
Asphaltic concrete 12.5 mm Superpave	3/8 in., No.8 (9.5 mm, 2.36 mm) sieves and asphalt cement
Asphaltic concrete 9.5 mm Superpave	No.4, No.8 (4.75 mm, 2.36 mm) sieves and asphalt cement
Asphaltic concrete 4.75 mm Mix	No.8 (2.36 mm) sieve and asphalt cement

The County will perform the following tasks:

5. Determine the mean of the deviations from the job mix formula per test results per lot.

2. Determine this mean by averaging the actual numeric value of the individual deviations from the job mix formula;
disregard whether the deviations are positive or negative amounts.

B. Calculate Pavement Mean Air Voids

The County will determine the percent of maximum air voids for each lot by dividing the pavement mean air voids by the maximum pavement mean air voids acceptable.

C. Asphaltic Concrete for Temporary Detours

Hot mix asphaltic concrete placed on temporary detours that will not remain in place as part of the permanent pavement does not require hydrated lime. Hot mix used for this purpose is paid for at an adjusted Contract Price. The payment for this item shall cover all cost of construction, maintenance and removal of all temporary mix. Hot mix asphaltic concrete placed as temporary mix shall meet requirements established in Subsection 400.3.05.F.

Where the Contract Price of the asphaltic concrete for permanent pavement is let by the ton (megagram), the Contract
Price for the asphaltic concrete placed on temporary detours is adjusted by subtracting $0.75/ton ($0.85/mg) of mix used.

Where the Contract price of the mix in the permanent pavement is based on the square yard (meter), obtain the adjusted price for the same mix used on the temporary detour by subtracting $0.04/yd^2 ($0.05/ ro2) per l-in (25-mm) plan depth.

Further price adjustments required in Subsection 400.3.06, "Quality Acceptance," are based on the appropriate adjusted Contract Price for mix used in the temporary detour work. Hot mix asphalt produced as temporary mix containing no hydrated lime, when required in the permanent mix, shall be removed and replaced with permanent mix containing hydrated lime.

D. Determine Lot Payment

If the Lumpkin County Public Works Department determines that the material is not acceptable to leave

in place, remove and replace the materials at the Contractor's expense.

SECTION 413 – BITUMINOUS TACK COAT – OFF SYSTEM

Delete Section 413 and substitute the following:

413.1 General Description

This work includes furnishing and applying a bituminous tack coat on a prepared road surface including cleaning the road surface.

413.1.1 Definitions

General Provisions 101 through 150.

413.1.2 Related References

A. **Standard Specifications**

Section 109-Measurement and Payment
Section 400-Hot Mix Asphaltic Concrete Construction Section 424-Bitmninous Surface Treatment
Section 427-Emulsified Asphalt Slurry Seal Section 820-Asphalt Cement
Section 822 – Emulsified Asphalt Section 824-Cationic Asphalt Emulsion

B. Referenced Documents

General Provisions 101 through 150.

41.3.1.03 Submittals

General Provisions 101 through 150.

413.2 Materials

Ensure that materials meet the following Specifications:

Material	Section
Asphalt cement, performance-grade PG 58-22, PG 64-22, or PG 67-22	820.2.01
Anionic emulsified asphalt NTSS-1HM	822.2.01

Cationic emulsified asphalt CRS-2h or CRS-3	824.2.01

Asphalt cement of performance grade PG 58 22, PG 64-22 or PG 67-22 is used for bituminous tack coat in work performed in Section 400.

413.2.01 Delivery, Storage, and Handling

General Provisions 101 through 150.

Emulsified Asphalt

Maintain all equipment used for the delivery, storage, and handling of anionic emulsified asphalt or cationic emulsified asphalt to prevent contamination of the emulsion. Transfer anionic emulsified asphalt or cationic emulsified asphalt directly to the pressure distributor from the transport tanker.

Provide and maintain temperature measuring devices to continuously monitor the temperature of anionic emulsified asphalt or cationic emulsified asphalt in storage and in the pressure distributor. Do not allow anionic emulsified asphalt or cationic emulsified asphalt to freeze.

Note 1: Do not store anionic emulsified asphalt or cationic emulsified asphalt for a period longer than 30 days from the time of initial loading.

Note 2: Do not use anionic emulsified asphalt or cationic emulsified asphalt on GDOT funded Off System Projects after 30 days of initial loading.

413.3 Construction Requirements

413.3.01 Personnel

General Provisions 101 through 150.

413.3.2 Equipment

Provide equipment in good repair, including the following units that meet the requirements of Subsection 424.3.02, Equipment."

- Power broom and blower
- Pressure distributor

Provide a dedicated pressure distributor for anionic emulsified asphalt NTSS-1HM to avoid contamination with incompatible materials.

413.3.3 Preparation

General Provisions 101 through 150.

413.3.4 Fabrication

General Provisions 101 through 150.

413.3.5 Construction

A. Seasonal and Weather Limitation

Do not apply tack coat if the existing surface is wet or frozen. Do not place emulsified asphalt if the air temperature in the shade is less than 40 °F (4 °C).

B. Application

Coat the entire areas to be paved with the tack coat unless directed otherwise by the Lumpkin County Public Works Department. Apply tack coat with distributor spray bars instead of hand hoses, except in small areas that are inaccessible to spray bars.

The Lumpkin County Public Works Department will determine the application rate for anionic emulsified asphalt or cationic emulsified asphalt which must be within the following limitations:

Application Rates for Anionic Emulsified Asphalt or Cationic Emulsified Asphalt, gal/yd^2 (Um^2)		
Type Mix	Minimum	Maximum
All Mixes except OGFC and PEM	0.06 (0.270)	0.10 (0.450)
• On thin leveling courses and freshly placed asphaltic concrete mixes, reduce the application rate to 0.04 to 0.06 gal/yd^2 (0.180 to 0.270 Um2). • Allow anionic emulsified asphalt or cationic emulsified asphalt to cure for a minimum of 30 minutes after initial application. Proceed with paving only after the anionic emulsified asphalt NTSS-1HM has cured to the satisfaction of the Lumpkin County Public Works Department. • Do not use anionic emulsified asphalt or cationic emulsified asphalt under OGFC or PEM.		

NOTE: ONLY ASPHALT CEMENT WILL BE USED ON THIS PROJECT. NO ANIONIC EMULSIFIED OR CATIONIC EMULSIFIED ASPHALT ALLOWED.

c. **Temperature of Material**

Apply bituminous materials within the temperature ranges specified below.

Bituminous Materials	Temperature of Application °F (°C)
Asphalt cement	350- 400 (175- 205)

~~CRS 2h~~	~~140 – 180 (60-80)~~
Anionic Emulsified Asphalt NTSS-1HM	140-180 (60- 80)
Cationic Emulsified Asphalt CRS-2h or CRS-3	140-180 (60- 80)

D. Cleaning

Immediately before applying the tack coat, clean the entire area free of loose dirt, clay, and other foreign materials.

E. Application Rate

The Lumpkin County Public Works Department will determine the application rate of the bituminous tack coat.

F. Limitations and areas Coated

Apply only enough tack coat to the prepared road surface that can be covered with the new pavement course the same working day the tack coat is applied

G. Maintenance and Protection

After applying the tack coat material, allow it to break until it is tacky enough to receive the surface course. Do not allow traffic on the tack.

413.3.6 Quality

Acceptance General

Provisions 101 through
150.

413.3.7 Contractor Warranty and
Maintenance General Provisions
101through 150.

413.4 Measurement

Bituminous materials for tack coat applied and accepted are measured as outlined in Subsection 109.02, "Measurement of Bituminous Materials."

Diluting emulsified tack coat is not ordinarily allowed except when used underneath slurry seal. The composition of diluted emulsified tack coat defined in Subsection 427.3.05, "Construction" is measured by the gallon (liter) of diluted mix.

413.4.01 Limits

General Provisions 101 through lSO.

413.5 Payment

The accepted volume of bituminous material will be paid for at the Contract Unit Price per gallon (liter) for bituminous tack coat of the type and grade approved by the Lumpkin County Public Works Department, complete in place. Payment is full
compensation for preparing, cleaning, furnishing, hauling, applying material, and providing incidentals to complete the work.

Payment will be made under:

Item No.	Bituminous tack coat	Per gallon (liter)
Item No.	Diluted emulsified asphalt tack	Per gallon (liter)

Section 652—Painting Traffic Stripe

652.1 General Description

This work includes furnishing and applying reflectorized high build standard and high build wet weather traffic line paint according to the Plans and these Specifications. This Item also includes applying words and symbols according to Plan details, Specifications, and the current Manual on Uniform Traffic Control Devices.

652.1.01 Definitions

Painted Stripes: Solid or broken (skip) lines. The location and color are designated on the Plans. Skip Traffic Stripes: Painted segments with unpainted gaps as specified on the Plans. The location and color are designated on the Plans.

652.1.02 Related References

A. Standard Specifications

General Provisions 101 through 150.
Section 656—Removal of Pavement Markings
Section 870 – Paint
EPA Method 3052
EPA Method 6010

B. Referenced Documents

ASTM	ASTM	Other
D711	E4941	AASHTO M 247
D3335	E1710	QPL 46, QPL 71
D3718	E2177	SOP 39
D4144		TT-P-1952E

652.1.03 Submittals

General Provisions 101 through 150.

652.2 Materials

Ensure that materials for painting traffic stripe, words, and symbols meet the following requirements:

A. Traffic Line Paint

Material	Section
Traffic Line Paint 6A and 6B	870.2.02.A.4 and 870.2.02.A.5

Glass Spheres and Reflective Composite Optics

Use glass spheres and/or reflective composite optics for the reflective media system that ensures the high build paint pavement markings meet the reflectance performance requirements in Subsection 652.3.06. Do not use glass spheres and/or reflective composite optics containing greater then 200 ppm total arsenic, 200 ppm total antimony, or 200 ppm total lead when tested according to the most recent US EPA Methods 3052 and 6010, or other approved methods.
Ensure glass spheres meet the requirements of AAHTO M 247. Use glass spheres produced from an approved source listed on QPL 71. Glass beads conforming to an alternative gradation may be used provided all other requirements of AASHTO M 247 and this specification are met. Obtain approval from the Office of Materials to use alternate gradations.

652.2.01 Delivery, Storage, and Handling

A. Storage
Ensure the paint does not cake, liver, thicken, curdle, gel, or show any other objectionable properties after storage for six months above 32 °F (0 °C).

B. Handling
Mix thoroughly before use.

652.3 Construction Requirements

652.3.01 Personnel
General Provisions 101 through 150.

652.3.02 Equipment

A. Traveling Traffic Stripe Painter
Use a traffic stripe painter that can travel at a predetermined speed both uphill and downhill, applying paint uniformly.
Ensure that the painter feeds paint under pressure through nozzles spraying directly onto the pavement.
Use a paint machine equipped with the following:

1. Three adjacent spray nozzles capable of simultaneously applying separate stripes, either solid or skip, in any pattern.

2. Nozzles equipped with the following:

- Cutoff valves for automatically applying broken or skip lines

- A mechanical bead dispenser that operates simultaneously with the spray nozzle to uniformly distribute glass spheres and/or reflective composite optics at an application rate to meet the reflectance performance requirements in Subsection 652.3.06.
- Line-guides consisting of metallic shrouds or air blasts

3. Tanks with mechanical agitators

4. Small, portable applicators or other special equipment as needed

B. Hand Painting Equipment
Use brushes, templates, and guides when hand painting.

C. Cleaning Equipment
Use brushes, brooms, scrapers, grinders, high-pressure water jets, or air blasters to remove dirt, dust, grease, oil, and other foreign matter from painting surfaces without damaging the underlying pavement.

652.3.03 Preparation
Locate approved paint manufacturers on QPL 46.

Before starting each day's work, thoroughly clean paint machine tanks, connections, and spray nozzles, using the appropriate solvent.

Thoroughly mix traffic stripe paint in the shipping container before putting it into machine tanks.

Before painting, thoroughly clean pavement surfaces of dust, dirt, grease, oil, and all other foreign matter.

652.3.04 Fabrication
General Provisions 101 through 150.

652.3.05 Construction

A. Alignment
Ensure that the traffic stripe is the specified length, width, and placement. On sections where no previously applied markings are present, ensure accurate stripe location by establishing control points at spaced intervals. The Engineer will approve control points.

B. Application

Apply traffic stripe paint by machine. If areas or markings are not adaptable to machine application, use hand equipment.

1. Application Rate

Paint will be subject to application rate checks.
Apply 5 in (125 mm) wide traffic stripe at the following minimum rates:

a. Solid Traffic Stripe Paint: At least 34 gal/mile (80 L/km)
b. Skip Traffic Stripe Paint: At least 10 gal/mile (24 L/km)

NOTE: Change minimum rate proportionately for varying stripe widths.

2. Thickness
Maintain a 25 mils (0.58mm) minimum wet average thickness above the surface of the pavement.

3. Do not apply paint to areas of pavement when:

- The surface is moist or covered with foreign matter.
- Air temperature in the shade is below 50 °F (10 °C)
- Wind causes dust to land on prepared areas or blows paint and glass spheres and/or reflective composite optics around during application

4. Apply a layer of glass spheres and/or reflective composite optics immediately after laying the paint. Apply glass spheres and/or reflective composite optics at a rate to meet the reflectance performance requirements in Subsection 652.3.06.

C. Protective Measures
Protect newly applied paint as follows:
1. Traffic

Control and protect traffic with warning and directional signs during painting. Set up warning signs before beginning each operation and place signs well ahead of the painting equipment. When necessary, use a pilot car to protect both the traffic and the painting operation.

2. Fresh Paint

Protect the freshly painted stripe using cones or drums. Repair stripe damage or pavement smudges caused by traffic according to Subsection 652.3.06.

D. Appearance and Tolerance of Variance
Continually deviating from stated dimensions is cause for stopping the work and removing the nonconforming stripe.
(See Section 656—Removal of Pavement Markings.) Adhere to the following measurements:

1. Width

Do not lay stripe less than the specified width. Do not lay stripe more than 1/2 in (13 mm) over the specified width.

2. Length

Ensure that the 10 ft (3 m) painted skip stripe and the 30 ft (10 m) gap between painted segments vary no more than ± 1 ft (300 mm) each.

3. Alignment

a. Ensure that the stripe does not deviate from the intended alignment by more than 1 in (25 m) on straight lines or curves of 1 degree or less.

b. Ensure that the stripe does not deviate by more than 2 in (50 mm) on curves exceeding 1 degree.

652.3.06 Quality Acceptance

A. General

For a minimum of 30 days from the time of placement, ensure the high build traffic paint pavement marking material shows no signs of failure due to blistering, excessive cracking, shipping, bleeding, staining, discoloration, oil content of the pavement materials, smearing or spreading under heat, deterioration due to contact with grease deposits, oil, diesel fuel, or gasoline drippings, spilling, poor adhesion to the pavement material, vehicular damage, and normal wear. In the event that failures mentioned above occur, ensure corrective work is completed at no additional cost to the Department. Obtain pavement marking retroreflectivity values with a 30 meter geometry retroreflectometer.

B. Initial Retroreflectivity

1. Longitudinal Lines

Within 30 days of installation, ensure the in-place markings meet the following minimum reflectance values:

a. High Build Wet Weather Traffic Paint

	White	**Yellow**
Dry (ASTM E 1710)	300 mcd/lux/m^2	250 mcd/lux/m^2
Wet recovery (ASTM E 2177)	150 mcd/lux/m^2	100 mcd/lux/m^2

b. High Build Standard Traffic Paint

	White	**Yellow**
Dry (ASTM E 1710)	300 mcd/lux/m^2	250 mcd/lux/m^2

For each center line, edge line, and skip line, measure retroreflectivity 9 times for each mile; 3 times within the first 500 feet, 3 times in the middle, and 3 times within

the last 500 feet. For projects less than one mile in length, measure retroreflectivity 9 times as above. Record all retro reflectivity measurements on the form OMR CVP 66 in SOP 39.

2. Messages, Symbols, and Transverse Lines

Within 30 days of installation, ensure the in-place markings when tested according to ASTM E 1710 meet the following minimum reflectance value of 275 mcd/lux/m2. Perform at a minimum, one retroreflectivity measurement at one message, one symbol and one transverse line per intersection. Take one measurement per mile for locations other than intersections (i.e. school messages, railroad messages, bike symbols etc.)

C. Six Month Retroreflectivity (Longitudinal Lines)

Maintain the following minimum reflectance values for 180 days after installation:

a. High Build Wet Weather Traffic Paint

	White	**Yellow**
Dry (ASTM E 1710)	300 mcd/lux/m^2	250 mcd/lux/m^2
Wet recovery (ASTM E 2177)	150 mcd/lux/m^2	100 mcd/lux/m^2

b. High Build Standard Traffic Paint

	White	**Yellow**
Dry (ASTM E 1710)	300 mcd/lux/m^2	250 mcd/lux/m^2

Retest the in-place markings according to Subsection 652.3.06.B.1, 180 days after installation to ensure these minimum retroreflectance values are maintained.

NOTE: The Contractor is responsible for retroreflectivity testing. Furnish initial test results to the Engineer within 30 days of application. Furnish 6 month test results to the Engineer within 180 days of application or prior to final acceptance, whichever comes first.

D. Thickness

At the time of installation, check the thicknesses on all skip lines, edge lines and center lines according to ASTM D 4114. For each center line, edge line, and skip line, measure thickness above the pavement 3 times for each mile; once within the first 500 feet, once in the middle, and once within the last 500 feet. For projects less than one mile in length, measure the thickness above the pavement 3 times.

Record thickness measurements on the form OMR CVP 66 in SOP 39.

Submit results to the Engineer.

E. Corrective Work

For each mile section, if paint stripe fails to meet Plan details or Specifications or deviates from stated dimensions, correct it at no additional cost to the Department. If removal of pavement markings is necessary, perform it according to Section 656 and place it according to this Specification. No additional payment will be made for removal and replacement of unsatisfactory striping. Ensure corrective work is completed at no additional cost to the Department. Perform testing according to this Specification. Any retest due to failures will be performed at no additional cost to the Department. Furnish all test reports to the Department.

Retroreflectivity and Thickness Longitudinal Line Deficiency: A deficiency will ensure when two or more Location Average results as recorded on form OMR CVP 66 within a One-Mile Section do not meet the performance criteria herein. The entire line within this one mile section will be determined to be deficient. If the evaluated section is less than 1.0 mile, a single Location Average result not meeting the performance criteria herein will result in the entire line to be determined to be deficient.

Retroreflectivity Transverse Markings and Symbol Deficiency: A single Location Average result on the marking or symbol not meeting the performance criteria herein will result in the marking or symbol to be determined to be deficient.

F. Acceptance Criteria

Ensure that stripes and segments of stripes are clean-cut and uniform. Markings that do not appear uniform or satisfactory, either during the day or night, or do not meet Specifications, will be corrected at the Contractor's expense.
Paint will be subject to application rate checks.

1. When correcting a deviation that exceeds the permissible tolerance in alignment, do the following:
    a. Remove the affected portion of stripe, plus an additional 25 ft (8 m) in each direction according to Section 656—Removal of Pavement Markings.
    b. Paint a new stripe according to these Specifications.

2. Removal of Excess Paint
    Remove misted, dripped, or spattered paint to the Engineer's satisfaction. Do not damage the underlying pavement during removal.

    Refer to the applicable portions of Section 656—Removal of Pavement Markings.

652.3.07 Contractor Warranty and Maintenance
General Provisions 101 through 150.

652.4 Measurement
When traffic stripe is paid for by the square yard (meter), the number of square yards (meters) painted is measured and the space between stripes is included in the overall measurement.

Linear measurements are made on the painted surface by an electronic measuring device attached to a vehicle. On curves, chord measurements, not exceeding 100 linear feet (30 linear meters), are used.

Traffic stripe and markings, complete in place, are measured and accepted for payment as follows:
A. Solid Traffic Stripe
Solid traffic stripe is measured by the linear foot (meter), linear mile (kilometer), or square yard (meter). Breaks or omissions in solid lines or stripes at street or road intersections are not measured.
B. Skip Traffic Stripe
Skip traffic stripe is measured by the gross linear foot (meter) or gross linear mile (kilometer). Unpainted spaces between the stripes are included in the overall measurements if the Plan ratio of 1 to 3 remains uninterrupted. Measurement begins and ends on a stripe.
C. Pavement Markings
Markings are words and symbols completed according to Plan dimensions. Markings are measured by the unit.

652.4.01 Limits
General Provisions 101 through 150.

652.5 Payment
Payment will be full compensation for the work under this Section, including the following:

- Cleaning and preparing surfaces
- Furnishing materials, including paints, beads, and thinners
- Applying, curing, and protecting paints
- Protecting traffic, including providing and placing necessary warning signs
- Furnishing tools, machines, and other equipment necessary to complete the Item

Payment will be made under:

Item No. 652	Solid traffic stripe, _____ in (mm), (color)	Per linear mile (kilometer)
Item No. 652	Solid traffic stripe, _____ in (mm), (color)	Per gross linear mile (kilometer)
Item No. 652	Solid traffic stripe, _____ in (mm), (color)	Per linear foot (meter)
Item No. 652	Solid traffic stripe, _____ in (mm), (color)	Per gross linear foot (meter)
Item No. 652	Pavement markings, words, and symbols, (color)	Per each
Item No. 652	Traffic stripe, _____in (mm), (color)	Per square yard (meter)
Item No. 652	Solid traffic stripe, High Build Wet Weather, _____ in (mm), (color)	Per linear mile (kilometer)
Item No. 652	Skip traffic stripe, _____in (mm), (color)	Per gross linear mile (kilometer)
Item No. 652	Solid traffic stripe, High Build Wet Weather, _____ in (mm), (color)	Per linear foot (meter)
Item No. 652	Skip traffic stripe, _____in (mm), (color)	Per gross linear foot (meter)
Item No. 652	Pavement markings, words, and symbols, (color)	Per each
Item No. 652	Traffic stripe, High Build Wet Weather, _____in (mm), (color)	Per square yard (meter)

652.4.01 Adjustments
General Provisions 101 through 150.

SECTION 802 – AGGREGATES FOR ASPHALTIC CONCRETE

Delete Subsection 802.2.01.A.5.

SECTION 819 – FIBER STABILIZING ADDITIVES

Delete Section 819.

SECTION 820 – ASPHALT CEMENT

Delete Section 820 and substitute the following:

820.1 General Description

This section includes the requirements for asphalt cements prepared from crude petroleum.

820.1.1 Related References

A. Standard Specifications

General Provisions 101 through 150.

B. Referenced Documents

Standard Operating Procedure (SOP 4) AASHTOR28 AASHTOT48
AASHTOT 179
AASHTOT240
AASHTO T313
AASHTO T 314
AASHTO T 315
AASHTO T 316
AASHTO TP70 (proposed) / ASTM D7405

820.2 Materials

820.2.1 Asphalt Cement

A. Requirements

l. Type

Use a material homogenous and water-free and will not foam when heated to 347 op (175 °C).

Ensure that a blend used to produce a specified performance grade meets the following requirements:

- Is uniform and homogeneous without separation
- Uses PG 64-22 or PG 67-22 described below for the base asphalt
- Consists of production materials not being "air-blown or acid modified" to achieve the performance grade

2. Grade

Use the various grades of asphalt cement meeting the requirements shown in the test requirements for Petroleum Asphalt Cements

Add only Styrene-Butadiene-Styrene (SBS) or Styrene-Butadiene (SB) to neat asphalt to produce a binder meeting requirements for PG 76-22.

For non Stone Matrix Asphalt Mixtures (SMA) and porous (PEM or OGFC) mixes, SBR or Crumb rubber modified PG 76-22 is an acceptable alternative to SBS or SB modified asphalt cement at contractor's discretion, provided the SBR or crumb rubber modified asphalt cement meets the tests' requirements ofPG 76-22. For SBR modified PG 67-22 to meet PG 76-22, use only SBR currently approved on QPL-65 "Georgia's List of Approved Latex Suppliers". For crumb rubber modified PG 67-22 to meet PG 76-22, use 30 mesh size ambient or cryogenic ground tire rubber at minimum 10% of weight of total asphalt cement content. Percentage of ambient or cryogenic ground tire rubber is neat asphalt source dependent to meet specification requirements for PG76-22. Ensure Trans-Polyoctenamer be added at 4.5% of the weight of the crumb rubber to achieve better particle distribution. The maximum Phase A n g l e requirement is not applicable to the crumb rubber modified PG 76-22 (see notes f and g).

Test Requirements for Petroleum Asphalt Cements

Test And Method	Test Temperature				Original Binder	Residue Of Binder After:	
	PG 58-22	PG 64-22	PG 67-22	PG 76-22		Rolling Thin Film Oven, AASHTO:T240	Pressure Aging AASHTO: R28
Flash Point, Min., AASHTOT48					446°F (230 °C)		
Vi"scosity, Max., AASHTO T 316, (Note a)	275 OF (135 °C)				3Pa-S (3000CP)		
Mass Loss (%), Max., AASHTO T 240, (Note b)						0.5	
Dynamic Shear, G*/sin .AASHTO T315, 1QRad/Sec	136 °F (58 °C)	147 °F (64 °C)	153OF(67 °C)	169_°F (76 °C)	1.0 kPa	2.2kPa	
Dissipated Energy, Dynamic Shear, G*sin . AASHTO T 315, 10 Rad/Sec	72 OF(22 °C)	77 OF(25 °C)	80 OF(26.5 °C)	88 OF .(31°C)			_::5000kPa
Creep Stiffness, 60 sec., AASHTO T 313, (Note c)	10 oF(- 12 °C)						S _:: 300 000 kPa m > 0.300
Direct Tension, 1.0 mm/min., AASHTO · T314, Failure Strain	10 ° F (- 12 °C)						Report
Multiple Stress Creep & Recovery (MSCR) test, ASTM D7405, AASHTO TP70 (proposed), Jnr3.2 kPa, (Note f)(Note g)				64 oc		.:::_1.0	

Notes:

a. The County may waive this requirement if the supplier warrants the asphalt binder can be adequately pumped and mixed at temperatures meeting all applicable safety standards.
b. Heat loss by AASHTO: T 179 may be accepted in lieu of mass loss by AASHTO: T 240.
c. If the creep stiffness is below 300 000 kPa, the direct tension test is not required. If the creep stiffness is $\geq$300 000 kPa, report the Direct Tension Failure Strain value. Satisfy the m-value requirement in either case.
d. The maximum Phase Angle measured by DSR shall be $\leq$ 75 degrees.
e. The maximum Mass Loss shall be $\leq$ 1%, when used in conjunction with Bituminous Surface Treatment (Section 424).
f. MSCR requirement is applicable to the SBR, Crumb Rubber & TOR combination modified PG PG76-22 asphalt cement. Additionally, they shall meet all PG 76-22 requirements except for phase angle.
g. Percent recovery at 3.2 kPa shall be $\geq$ 35%.

Thoroughly blend the composite materials at the supply facility prior to being loaded into the transport vehicle if modification is required. Ensure all blending procedures, formulation, and operations are approved by the Office of Materials and Research.

3. Certification:

Provide certified test results from an approved, certified laboratory of blends for proposed PG asphalt for each specification characteristic of the asphalt cement proposed for shipment. Provide the certified results to the State Materials and Research Lumpkin County Public Works Department as required in Standard Operating Procedure (SOP 4).

The State Materials and Research Lumpkin County Public Works Department may interrupt production until test results are known in the event there is reason to suspect a sample will be outside specification limits.

B. Materials Warranty

General Provisions 101 through 150.

SECTION 883 – MINERAL FILLER

Delete Section 883 and substitute the following:

883.1 General Description

This section covers mineral filler used as an ingredient in bituminous paving mixtures. Use mineral filler listed in the approved Asphalt Mix Design and Job Mix Formula and in Qualified Products List (QPL) 81. Use an approved mineral filler that meets the requirements below and consist of finely divided rock dust, slag dust, hydrated lime, hydraulic cement, or fly ash. Other fine, inert, non-toxic materials produced as by-products of industrial processes and meeting the requirements below may be approved as mineral filler based on satisfactory performance in the asphalt mix design procedure. Ensure mineral filler is sufficiently dry, flows freely, and is free from lumps.

883.1.1 Related References

A. Standard Specifications

General Provisions 101 through 150.

B. Referenced Documents

QPL81

AASHTOR28

AASHTOT240

AASHTOT313

AASHTOT315

GDT-22

GDT 123

883.2 Materials

883.2.1 Mineral Filler

A. Requirements

Use mineral filler meeting the following gradation limits:

Sieve Size	Percent Passing
No.30(6001-1m)	100
No.50(3001-1m)	95-100
No.200(751-1m)	55-100

Ensure that the mineral filler is free from impurities.

Subject mineral filler for use in Stone Matrix Asphalt (SMA) to mortar property testing according to AASHTO T-240, AASHTO R-28, AASHTO T-313, and AASHTO T-315. Mineral filler may be rejected and removed from QPL-81 for unsatisfactory performance as an ingredient in an asphalt mixture, as determined in these procedures or in the SMA Mix design procedure, GDT-123. Ensure the total fine mortar meets the following r e q u i r e m e n t s :

Test	Specification
Unaged DSR, G*/sino (kPa)	5
RTFO Aged DSR, G*/sino (kPa)	11
PAV Aged BBR, Stiffness (MPa)	1500 maximum

B. Fabrication

General J:>rovisions 101 through 150.

C. Acceptance

Test gradation according to GDT-22.

D. Materials Warranty

General Provisions 101 through 150.

SECTION 108 – PROSECUTION AND PROGRESS

Add the following to Subsection 108.08:

C. Intermediate Completion Schedule

An overall Completion Date is established for this Project However, it is necessary to complete certain portions of The Work at an earlier time.

For this Project, the following items of work and corresponding intermediate completion times are required:

1. Complete Paving Operations

   All work with the exception of Permanent Pavement Markings shall be completed by no later than November 1, 2014.

   Failure to complete all paving operations will result in the assessment of Liquidated Damages at a rate of $200 per calendar day.

These rates are in addition to Liquidated Damages that may be assessed in accordance with Subsection 108.08 for failure to complete the overall project.