



**Office of County Commissioners**  
130 Jacob's Way, Suite 337, Clarkesville, GA 30523  
706-839-0200 Fax: 706-839-0219  
[www.habershamga.com](http://www.habershamga.com)

---

---

## **REQUEST FOR BIDS**

**PROJECT NO. LMIG 2023-1 (137)**  
**10.34 MILES OF:**  
**MILLING, PATCHING, LEVELING, & RESURFACING**  
**ON 17 VARIOUS ROADS IN HABERSHAM COUNTY**

### **PROPOSALS DUE:**

Wednesday, June 7, 2023  
2:00 pm EST

### **SUBMIT BIDS TO:**

Purchasing-Finance Department  
Habersham County  
130 Jacob's Way  
Suite, 302  
Clarkesville, GA 30523  
[purchasing@habershamga.com](mailto:purchasing@habershamga.com)  
(706) 839-0200



**Office of County Commissioners**  
**Project No. LMIG 2023-1 (137)**  
**Proposal Due Wednesday June 7, 2022**  
**2:00 PM EST**

**Table of Contents**

**Request for Bids**

Project Description and General Notes.....	1
RFP Timetable, Submittal Requirements.....	2
Special Provisions.....	3
Insurance Requirements.....	6
Questions and Interpretations.....	7
Georgia DOT LMIG Project List.....	8
Summary of Quantities.....	9
Schedule of Items.....	10
Maps.....	11
Typical Section.....	25
Signature Sheet.....	27
Bidders Declaration.....	28
Certification of Non-Discrimination.....	29
Contractor's Certification/Drug-Free Workplace.....	30
Non-Collusion Affidavit.....	31
E-Verify Affidavit and Agreement.....	32
W-9.....	33
Section 400.....	34
Section 415.....	75

**PROJECT DESCRIPTION AND GENERAL NOTES**

PROJECT NO.: **LMIG 2023-1 (137)** Habersham County

**PROJECT SCOPE:** Asphaltic Concrete Milling, Patching, Leveling, Resurfacing, and Striping of 10.34 miles of seventeen (17) various county roads located throughout Habersham County.

**PROPOSAL GUARANTY:** Not less than five (5) percent of the total bid.

Performance and Payment Bonds each in a sum equal to the full amount of the bid will be required for this project.

No proposal shall be withdrawn for a period of sixty (60) days from the date of bid opening.

Bidder shall enter all unit prices, make all extensions, and total bid.

PROJECT COMPLETION DATE: Friday, October 20, 2023.

**NOTE:** All work on this project shall be in accordance with Plans, if any, Special Provisions and the 2021 edition of the Georgia Department of Transportation Standard Specifications and current edition of any applicable Supplemental Specifications.

**SAMPLING AND TESTING:** The Contractor will be responsible for testing and furnishing Certified Test Reports, including compaction to the County. The sampling and testing shall be in accordance with Section 400 – Hot Mix Asphaltic Concrete Construction, Special Provision and the Current Edition of the Georgia Department of Transportation Sampling, Testing and Construction Manual. No separate payment will be made for this work but will be included in the bid price for related items.

<b>Addendums</b>	<b>Signature</b>
Addendum 1	
Addendum 2	
Addendum 3	
Addendum 4	
Addendum 5	

**RFP Timetable**

<b>Description</b>	<b>Date</b>
RFP Released	Wednesday, May 11, 2023
Pre-Bid Meeting	Wednesday, May 31, 2023, at 10:00 am, EST
Deadline for Proposal Questions	Friday, June 2, 2023, at 2:00 pm, EST
<b>Submittal deadline</b>	<b>Wednesday, June 7, 2023, at 2:00 pm, EST</b>
Tentative award date	Monday, June 19, 2023
Project Completion Date	Friday, October 20, 2023 (14 weeks)

**Bid Submittal Requirements**

The pre-bid meeting will be held on Wednesday, May 31, 2023, at 10:00 am, EST, in the Board of Commissioner’s Meeting Room, Room No. 211 located on the main level at 130 Jacob’s Way, Clarksville, GA 30523.

Each bidder must submit their proposal, in a sealed envelope or box, and marked with the bidders’ name and address labeled: **“LMIG 2023-1 (137)”**, and addressed to:

Habersham County Purchasing,  
Finance Department  
130 Jacob’s Way, Suite 302  
Clarkeville, GA 30523

Proposals shall be received no later than **Wednesday, June 7, 2023, at 2:00 pm, EST** at Habersham County’s Administration Building, Board of Commissioners Meeting Room, Room No. 211 located on the main level at 130 Jacob’s Way, Clarksville, GA 30523 at which time and place all proposals will be publicly opened and acknowledged.

Hand delivered copies may be delivered to the above address ONLY between the hours of 8:00 am and 5:00 pm, EST, Monday through Friday, excluding holidays observed by the Habersham County Government. For a complete listing of holidays please visit [www.habershamga.com](http://www.habershamga.com).

## **SPECIAL PROVISIONS**

**PROPOSAL GUARANTY:** No proposal will be considered unless accompanied by a Proposal Guaranty consisting of a bid bond, certified check, or negotiable instrument in the amount of **Five (5) Percent** of the total bid received with each bid submitted as assurance that the bidder, upon acceptance of his/her bid, can execute such contractual documents as may be required within a specified period of time.

**DELIVERY OF PROPOSAL:** Each proposal together with the Proposal Guaranty shall be in a sealed envelope so marked as to identify the contents without being opened. Proposals will be received until the time and date set in the Notice to Contractors for opening and must be in the hands of the officials indicated by that time. Proposals received after the time established for opening of bids will be returned unopened to the Bidder.

**AWARDS OF CONTRACT:** If a contract is awarded, it will be awarded to the lowest responsible bidder whose Proposal shall have met all prescribed requirements. The Contract will be awarded, if at all, within 60 calendar days after opening of Proposals.

**CANCELLATION OF AWARD:** The County reserves the right to cancel the Award of any Contract at any time before the execution of said Contract by all parties without any liability against the County.

**RETURN OF PROPOSAL GUARANTY:** All Proposal Guaranties except that of the lowest responsible Bidder will be returned immediately following the Award of the Contract. The Guaranty of the successful Bidder to whom the Award is made will be retained until the Contract Performance and Payment Bonds have been approved.

**REQUIREMENTS OF PERFORMANCE AND PAYMENT BONDS:** At the time of the execution of the Contract, and as part thereof, the successful Bidder shall furnish Performance and Payment Bonds each in the sum equal to 100 percent of the Contract. The Bonds shall be executed by the Contractor and a Surety Company acceptable to the County and authorized to do business in the State of Georgia. In the event the bond is furnished by an out-of-state agent, it shall be countersigned by a Georgia resident agent in accordance with laws of Georgia.

**ALL BIDDERS MUST FURNISH PROOF OF LIABILITY INSURANCE AS WELL AS WORKER'S COMPENSATION AS REQUIRED BY STATE STATUTES.**

**PAYMENTS:** Payment will be made to the contractor each calendar month based on the estimated amount of work complete in place as prescribed by the current edition of the Georgia Department of Transportation (GDOT) Standard Specifications.

**NOTICE TO PROCEED:** The work shall begin within 10 days after notification to begin work by the County and shall be carried through to completion without unreasonable delays and without suspension of the work unless authorized in writing by the County. If there are unreasonable delays or unauthorized suspensions of the work, The County reserves the right to charge the Contractor, not as a penalty, but as liquidated damages as prescribed by the current edition of the Georgia Department of Transportation (GDOT) Standard Specifications.

**RETAINAGE:** Retainage will be withheld at the rate of five (5) percent of the monetary value of the work completed until the project has reached Fifty (50) percent complete. At that time the retainage may be reduced to two and one half (2 ½) percent if the status of the work is satisfactory and approved by the Director. Retainage will not accrue interest. Final Payment of the amounts withheld will not be made until the project has been satisfactorily completed and accepted by the Georgia Department of Transportation (GDOT) and/or Habersham County.

### **GDOT STANDARD SPECIFICATIONS**

#### **SECTION 107 LEGAL REGULATIONS AND RESPONSIBILITY TO THE PUBLIC:**

Delete Sub-Section 107.15 and substitute the following:

107.15 RESPONSIBILITY FOR CLAIMS: The contractor shall indemnify and save harmless the County, its officers and employees, from all suits, actions, or claims of any character brought because of any injuries or damage received or sustained by any person, persons, or property on account of the operations of the said Contractor; or on account of or in consequence of any neglect in safe-guarding THE WORK; or through use of unacceptable materials in constructing THE WORK; or because of any act or omission, neglect or misconduct of said Contractor; or because of any claims or amount recovered from any infringements or patent, trademark, or copyright; or from any claims or amounts arising or recovered under the "Workmen's Compensation Act," or any other law, ordinance, order, or decree; and so much of the money due the said Contractor under and by virtue of his Contract as may be considered necessary by the County for such purpose may be withheld for use of the County; or, in case no money is due, his surety may be held until such suit or suits, action or actions, claim or claims for injuries or damages as aforesaid shall have been settled and suitable evidence to that effect furnished to the County; except that money due the Contractor will not be withheld when the Contractor produces satisfactory evidence that he is adequately protected by public liability and property damage insurance.

#### **SECTION 108.08 FAILURE OR DELAY IN COMPLETING THE WORK ON TIME:**

Any Liquidated Damages Assessed by the County for failure or delay in completing the Work on time shall be in accordance with Section 108.08 of the latest edition of the Georgia Department of Transportation Standard Specifications.

Temporary centerline striping shall be complete within three days of temporary tape being placed on roadways. According to **Section 108.08 Failure or Delay in Completing Work on Time**, the Contractor shall be backcharged \$450/workday until completed and inspected. Temporary and permanent centerline striping shall be placed in the center of the roadway and not the paving joint. Failure to perform correctly will result in milling and restriping. Delays in project will apply to milling and restriping.

**SECTION 150 – TRAFFIC CONTROL DURING CONSTRUCTION:**

Traffic Control during Construction shall be the sole responsibility of the Contractor. Reference GDOT Standard Traffic Control Detail for Lane Closure on Two-Lane Highway, Number 9102, for minimum acceptable Traffic Control. All traffic control devices used during construction shall be in full compliance with the current edition of the Manual on Uniform Traffic Control Devices (MUTCD). Pilot vehicles or reliable means of communication shall be used to control traffic through the construction area at all times unless other methods are approved by the Director. If directed, restrictive hours may be applied to the project to accommodate school bus travel through the project.

The first application of Centerline and Edge Stripe (Paint) shall be applied at the end of each work day unless otherwise approved by the Director. Temporary marking and striping shall be incidental. The final application of the Centerline and Edge Stripe shall be applied no sooner than 30 days after the surface course is completed.

**SECTION 161 – CONTROL OF EROSION AND SEDIMENTATION:**

Modification of the current edition of the Georgia Department of Transportation Standard Specifications. Retain as written and add the following:

All erosion control items not covered elsewhere in the contract shall be the responsibility of the contractor to meet the requirements of Chapter 7 of Title 12 of the Official Code of Georgia Annotated, the Erosion and Sediment Control Act of 1975, as amended.

**INSURANCE REQUIREMENTS:**

The Limits of Liability for the insurance by the General Conditions shall not be less than the following amounts:

A. WORKERS COMPENSATION:

- |  |                    |
|--|--------------------|
| (1) State                                    | <u>Statutory</u>   |
| (2) Applicable Federal (e.g. Longshoreman's) | <u>Statutory</u>   |
| (3) Employer's Liability                     | <u>\$1 Million</u> |

B. Comprehensive General Liability (including Contractual Liability, Premises-Operations; Independent Contractor's Protective; Products Liability - Completed Operations; Broad Form Property Damages):

- |  |                    |
|--|--------------------|
| (1) General Aggregate (Except Products – Completed Operations) | <u>\$2 Million</u> |
| (2) Products – Completed Operations Aggregate                  | <u>\$1 Million</u> |
| (3) Personal and Advertising Injury (per Person/Organization)  | <u>\$1 Million</u> |
| (4) Each Occurrence (Bodily Injury)                            | <u>\$25,000</u>    |
| (5) Each Occurrence (Property Damage)                          | <u>\$50,000</u>    |
| (6) Excess or Umbrella Liability                               | <u>\$3 Million</u> |
| a. General Aggregate   | <u>\$3 Million</u> |
| b. Each Occurrence   | <u>\$3 Million</u> |

NOTICE TO ALL BIDDERS: Certificates of Insurance must be available at the time the contract is signed by the Board of Commissioners.



## **INSURANCE**

ALL BIDDERS MUST FURNISH PROOF OF LIABILITY INSURANCE, WORKER'S COMPENSATION LIABILITY INSURANCE, AND ANY OTHER INSURANCE REQUIRED BY APPLICABLE STATE, FEDERAL, AND ADMINISTRATIVE LAW.

Such proof shall be submitted with the bid/proposal and show evidence of insurability satisfactory to Habersham County as to form and content. If the bid is selected by the County, the Bidder must maintain, at a minimum, the insurance policies and minimums indicated in the selected bid. If the Bidder maintains broader coverage and/or higher limits than shown in the bid, Habersham County shall be entitled to coverage for the higher limits maintained by the Bidder.

Any and all Insurance Coverage(s) and Bonds required under the terms and conditions of the contract shall be maintained during the entire length of the contract, including any extensions or renewals thereto, and until all work has been completed to the satisfaction of Habersham County. Evidence of said insurance coverages shall be provided on or before the inception date of the Contract.

Bidder shall provide written notice to Habersham County immediately if it becomes aware of or receives notice from any insurance company that coverage afforded under such policy or policies shall expire, be cancelled or altered.

Certificates of Insurance are to list Habersham County Government, its' Officers, Officials and Employees as an Additional Insured (except for Workers' Compensation and Professional Liability). This insurance shall apply as Primary Insurance before any other insurance or self-insurance, including any deductible, non-contributory, and Waiver of Subrogation provided in favor of Habersham County. If Habersham County shall so request, the Bidder will furnish the County for its inspection and approval such policies of insurance with all endorsements, or confirmed specimens thereof certified by the insurance company to be true and correct copies.

The obligations for the Bidder to procure and maintain insurance shall not be constructed to waive or restrict other obligations. It is understood that neither failure to comply nor full compliance with the foregoing insurance requirements shall limit or relieve the Bidder from any liability incurred as a result of their activities/operations in conjunction with the Contract and/or Scope of Work.

### **Questions, Interpretations and Addenda**

No inquiries or interpretation of meaning concerning this Request for Bids will be made to any interested party orally. Every inquiry or request for interpretation should be made in writing via e-mail. All inquiries and requests for interpretation should be sent via e-mail to Purchasing at [purchasing@habershamga.com](mailto:purchasing@habershamga.com) all questions and all answers will be posted on the website [www.habershamga.com](http://www.habershamga.com). **It will be the responsibility of interested parties to periodically check the website for any new information and/or addenda.**

**GEORGIA DOT LMIG PROGRAM**  
**Habersham County 2023 Paving List**

Co. Rd. No.	Road Name	Beginning	Ending	Length (Miles)	Description of Work
321	Blue Ridge St	Old Cornelia Hwy	Wright St	0.50	OGI, Resurface
27	Herring Mill Rd	Crane Mill Rd	Dead End	0.75	Mill, Level, Resurface
571	Pine Grove Rd	Mud Creek Rd	Dead End	0.51	Mill, Level, Resurface
49	Jud Tench Rd	Double Springs Rd	Dead End (Gate)	0.66	Mill, Level, Resurface
596	S. Cobb Rd	SR 17	Dead End	0.73	OGI, Resurface
188	Chitwood Rd	SR 105	Cool Springs Rd	1.10	Mill, Level, Resurface
190	Cool Springs Rd*	SR 17	SR 17	1.73	Mill, Level, Resurface
670	Riverwilde Rd	Tech School Rd	Dead End	1.08	Mill, Level, Resurface
124	Gibson Rd	Tom Born Rd	Gravel	0.84	Mill, Level, Resurface
669	Camelot Way	SR 17/SR 115	Dead End	0.12	OGI, Resurface
442	Old Camp Creek Rd	Camp Creek Rd	Oakdale Dr	0.63	Mill, Level, Resurface
443	Oakdale Dr	Camp Creek Rd	Old Camp Creek Rd	0.25	Mill, Level, Resurface
1017	Mountain Legend Dr	SR 197 (brick paver strip)	Cul-de-sac	0.36	Mill, Level, Resurface
1018	Spring Field Dr	Mountain Legend Dr	Cul-de-sac	0.33	Mill, Level, Resurface
1019	Plainview Dr	Mountain Legend Dr	Country Meadow Dr	0.17	Mill, Level, Resurface
1020	Country Meadow Dr	Cul-de-sac	Cul-de-sac	0.11	Mill, Level, Resurface
83	Railroad Ave	US 441 Bus/SR 385	SR 197	0.47	OGI, Resurface
				<b>10.34</b>	

\*Note: does not include gravel surface from 1571 - 1935 Cool Springs Rd

**Summary of Quantities**

Project No. LMIG-2023-1 (137) Habersham County

I.D No.	County Road Name	Traffic Control (LS)	2 In. Asph Conc. Patching (TN)	Mill Asph. Conc. Variable Depth (SY)	Asph. Conc. Lev. (#60) (TN)	Asph. Conc. Open Graded Interlayer (#100) (TN)	Asph. Conc. 9.5 MM (#140) (TN)	Bitum Tack Coat (GAL)	Traffic Stripe, 5" White (LM)	Traffic Stripe, 5" Yellow (LM)	24" Thermo. PVT. Markings White (LF)	Thermo PVMT. Marking, Arrow, TP 2 (EA)	Thermo PVMT. Marking Arrow TP 1 (EA)	Thermo PVMT. Marking Word, TP 3A (EA)
1	Blue Ridge St	1	0.0	0	0	262	367	420	0.00	0.99	30	0	0	0
2	Herring Mill Rd	1	126.0	0	264	0	615	703	0.00	1.50	15	0	0	0
3	Pine Grove Rd	1	158.0	0	162	0	379	433	0.00	1.03	15	0	0	0
4	Jud Tench Rd	1	102.0	0	221	0	516	590	0.00	1.32	15	0	0	0
5	S. Cobb Rd	1	0.0	0	0	429	600	686	1.46	1.46	15	0	0	0
6	Chitwood Rd	1	26.0	0	387	0	904	1,033	2.20	2.20	30	0	0	0
7	Cool Springs Rd	1	108.0	175	610	0	1,423	1,626	3.46	3.46	30	0	0	0
8	Riverwilde Rd	1	48.0	175	330	0	769	878	0.00	2.16	15	0	0	0
9	Gibson Rd	1	188.0	0	267	0	624	713	0.00	1.69	15	0	0	0
10	Camelot Way	1	0.0	0	0	65	90	103	0.00	0.24	15	0	0	0
11	Old Camp Creek Rd	1	165.0	200	242	0	565	645	1.25	1.25	15	0	0	0
12	Oakdale Dr	1	98.0	125	79	0	183	210	0.00	0.50	15	0	0	0
13	Mountain Legend Dr	1	104.0	0	122	0	286	327	0.72	0.72	0	0	0	0
14	Spring Field Dr	1	11.0	0	113	0	264	302	0.67	0.67	0	0	0	0
15	Plainview Dr	1	16.0	0	58	0	136	156	0.34	0.34	0	0	0	0
16	Country Meadow Dr	1	6.0	0	38	0	87	99	0.22	0.22	0	0	0	0
17	Railroad Ave	1	0.0	200	0	303	425	485	0.94	0.94	30	0	0	0
<b>Total</b>		<b>1</b>	<b>1156.0</b>	<b>875</b>	<b>2,893</b>	<b>1,059</b>	<b>8,233</b>	<b>9,409</b>	<b>11.26</b>	<b>20.69</b>	<b>255</b>	<b>0</b>	<b>0</b>	<b>0</b>

**Schedule of Items**

Item No.	Item Description	Unit	Approx. Qty.	Unit Price	Extended Item Cost
150	Traffic Control	LS	1	\$ -	\$ -
402-1802	Recycled Asph. Conc. Patching, Incl. Bitum Matl. & Hydrated Lime	TN	1,156	\$ -	\$ -
432-5010	Mill Asph. Conc. Pvmt, Variable Depth	SY	875	\$ -	\$ -
402-1812	Recycled Asph. Conc. Leveling, Incl. Bitum Matl. & Hydrated Lime, TP 1	TN	2,893	\$ -	\$ -
415	Open Graded Interlayer (OGI)	TN	1,059	\$ -	\$ -
402-3103	Recycled Asph. Conc. 9.5 Superpave, Type II, GP 2 Only, Incl. Bitum. Matl. & H Lime	TN	8,233	\$ -	\$ -
413-1000	Bituminous Tack Coat	GAL	9,409	\$ -	\$ -
652-2501	Solid Traffic Stripe, 5 IN. White	LM	11.26	\$ -	\$ -
652-2502	Solid Traffic Stripe, 5 IN. Yellow	LM	20.69	\$ -	\$ -
653-1704	Thermoplastic Solid Traffic Stripe, 24 IN. White	LF	255	\$ -	\$ -
					\$ -

TOTAL BASE BID \_\_\_\_\_

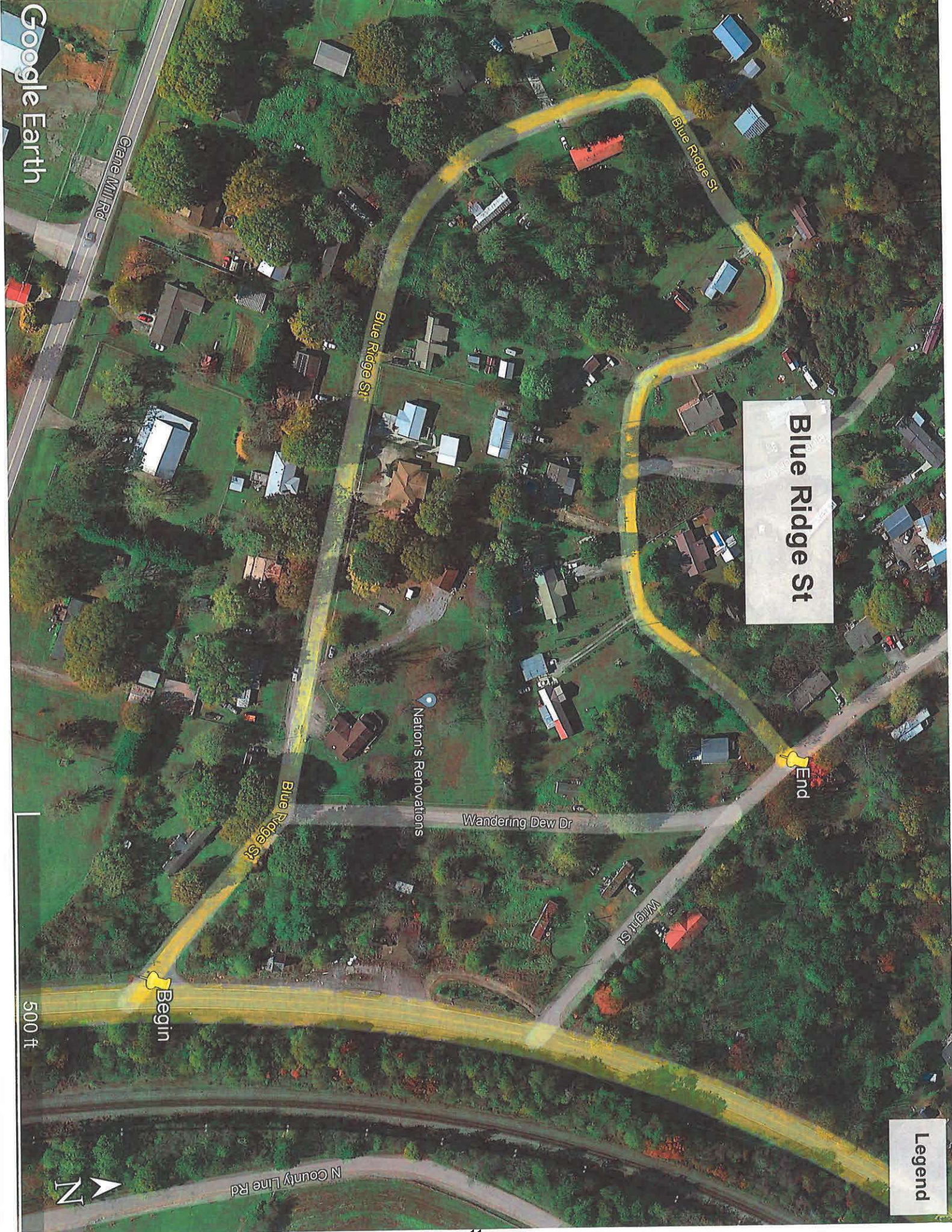
Submitted By: \_\_\_\_\_

*Name of Corporation, Partnership, Individual*

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_  
*Signature of Duly Authorized Representative*



Blue Ridge St

End

Begin

Nation's Renovations

Wandering Dew Dr

Mairght St

N County Line Rd

Legend

500 ft



# Camelot Way

## Legend



Habersham County Animal Care & Control

Chattahoochee Moun

Sharing & Caring Place

Habitat for Humanity

Piedmont Automotive Products

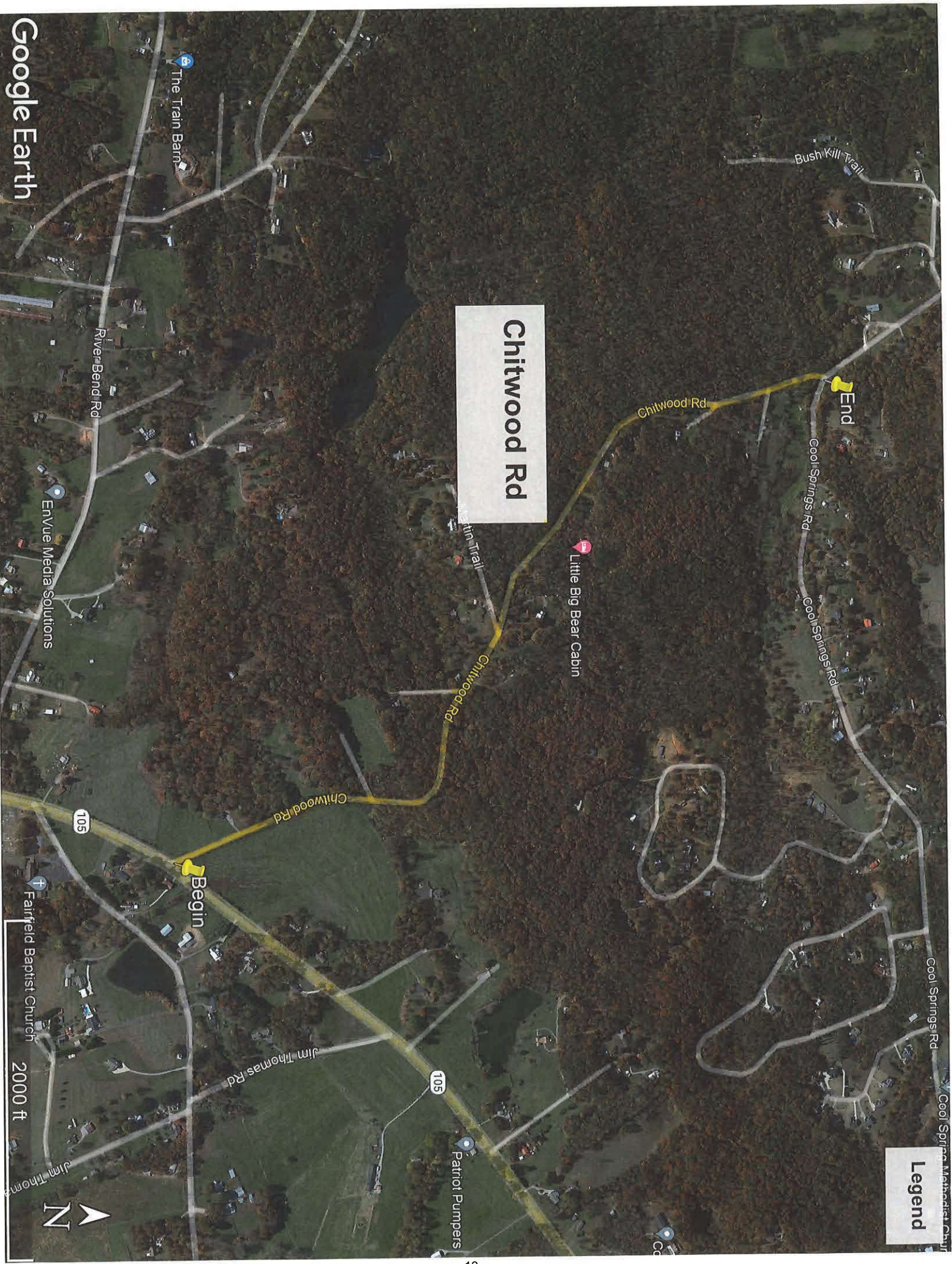
Ruby C. Fulbright Aquatic Center

Google Earth

600 ft



Legend



Chitwood Rd

End

Begin

Little Big Bear Cabin

Patriot Pumpers

Fairfield Baptist Church

EnVue Media Solutions

The Train Barn

2000 ft



Google Earth

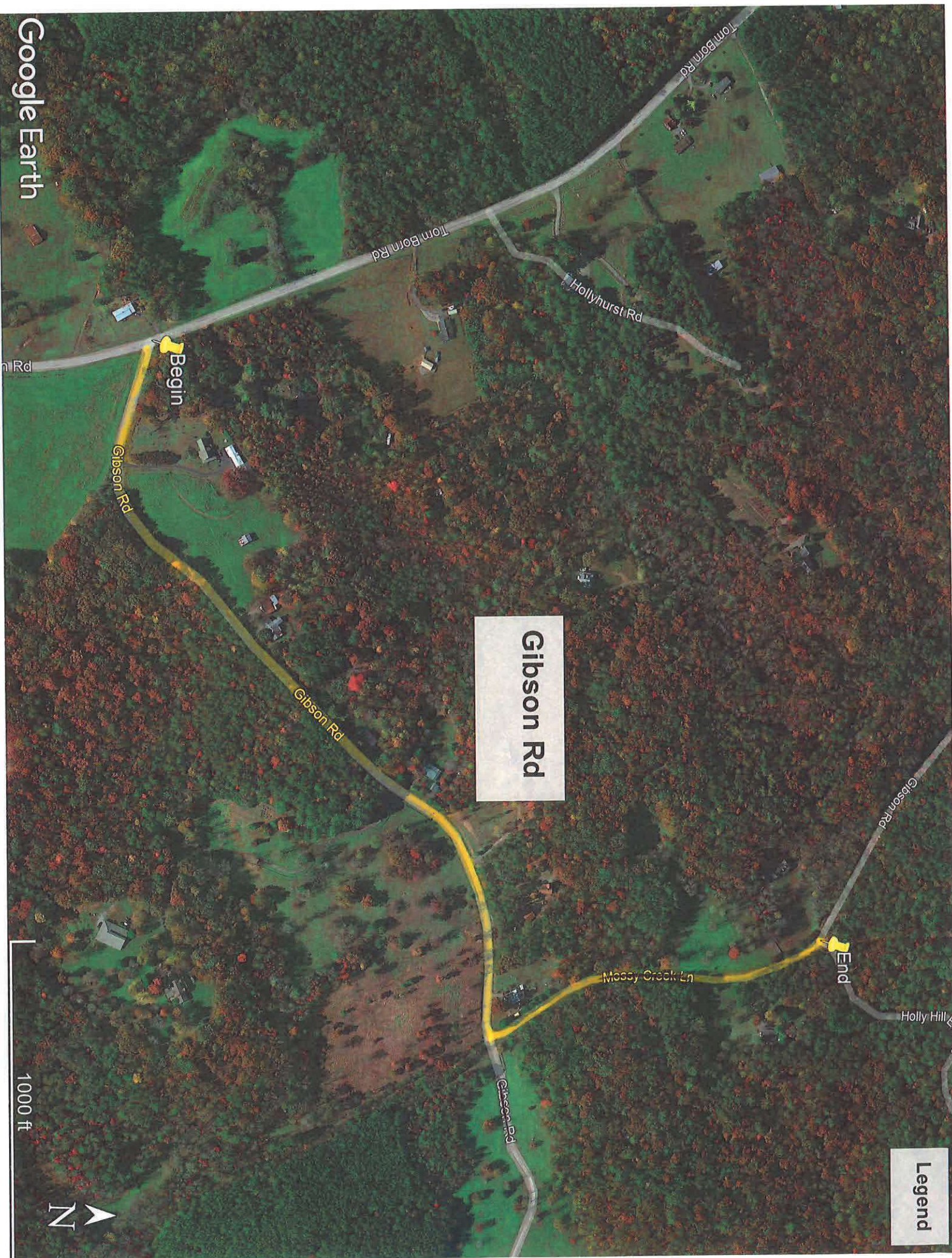
# Cool Springs Road

Legend

This section is gravel







Gibson Rd

Legend



Legend

# Herring Mill Rd

End

Begin

Gier Peach Orchard

Crane Mill Rd

Windercrest

Herring Mill Rd

Herring Mill Rd

Herring Mill Rd

Herring Mill Rd

Yonah Post Rd

Yonah Post Rd

A To Z

1000 ft



W Elementary School

Google Earth

Jud Tench Rd

End

Begin

Jud Tench Rd

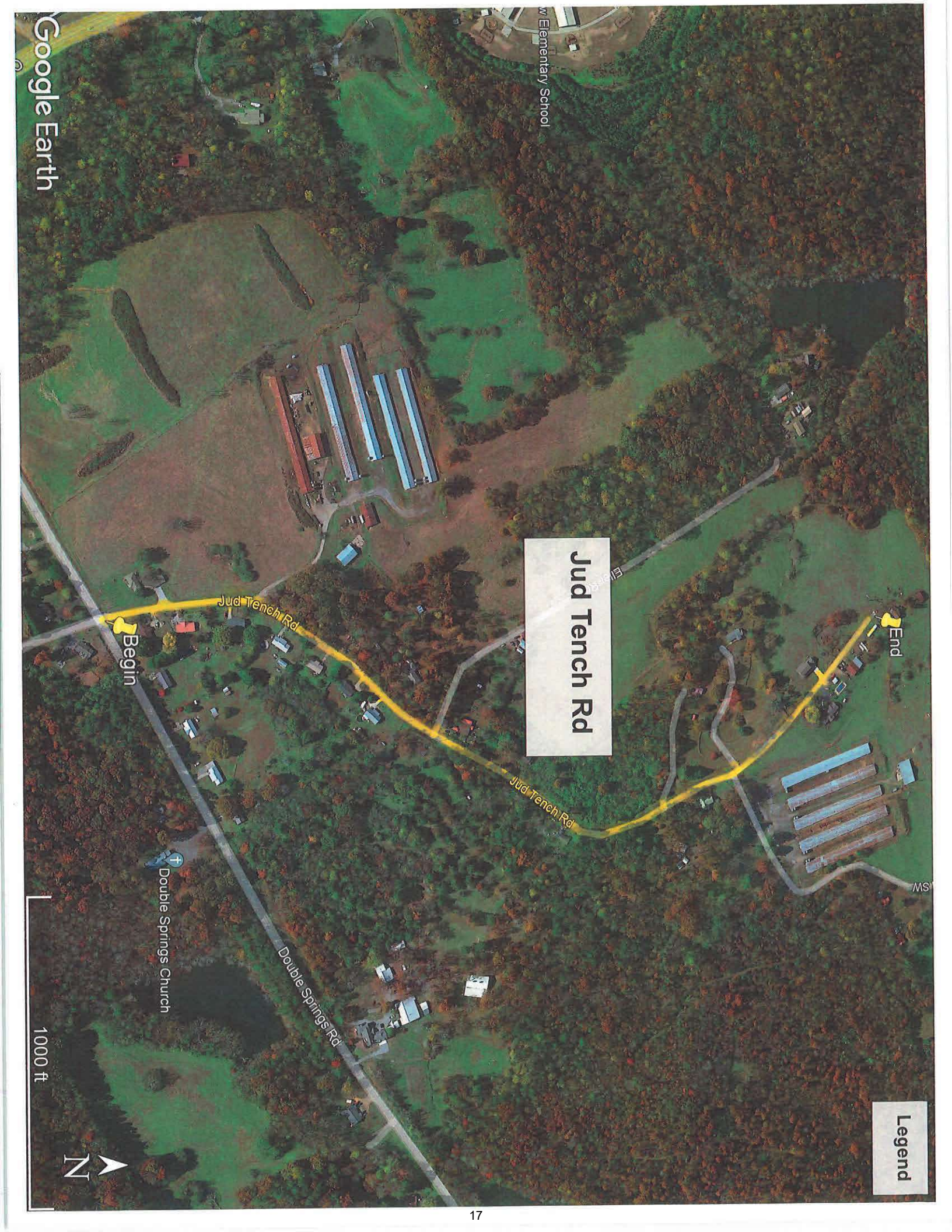
Jud Tench Rd

Double Springs Church

Double Springs Rd

Legend

1000 ft



# Mountain Legend Subdivision

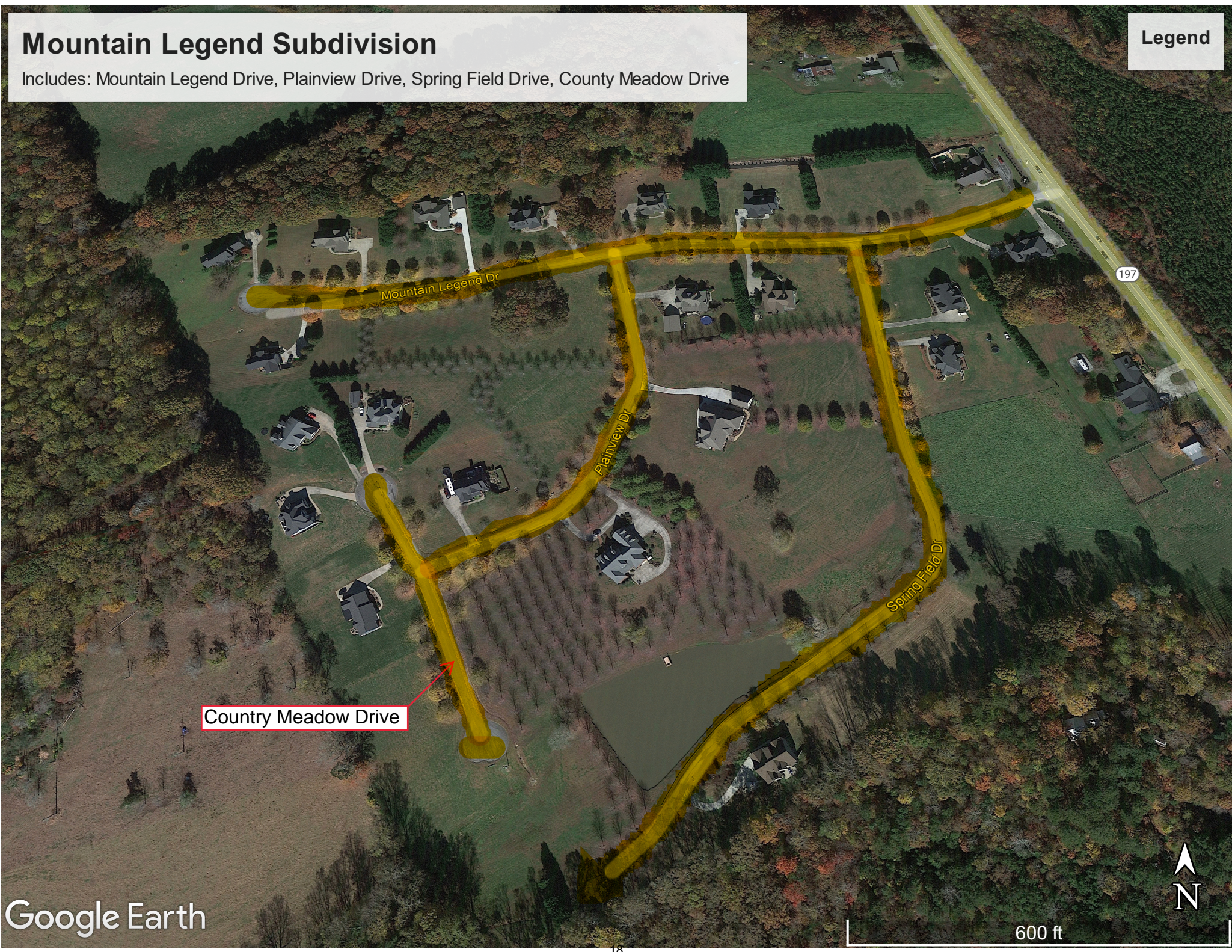
Includes: Mountain Legend Drive, Plainview Drive, Spring Field Drive, County Meadow Drive

Legend

Country Meadow Drive






Google Earth

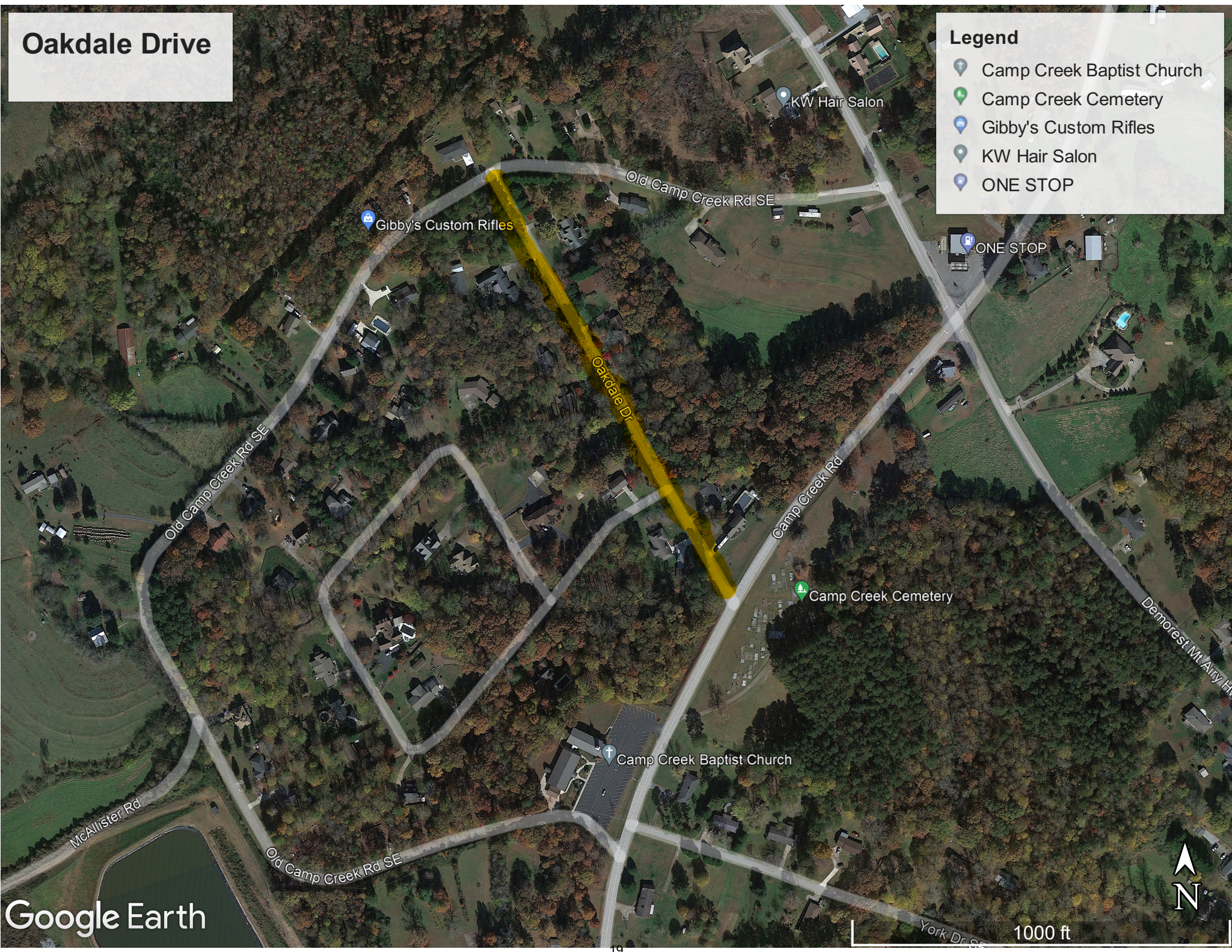
600 ft



# Oakdale Drive



**Legend**

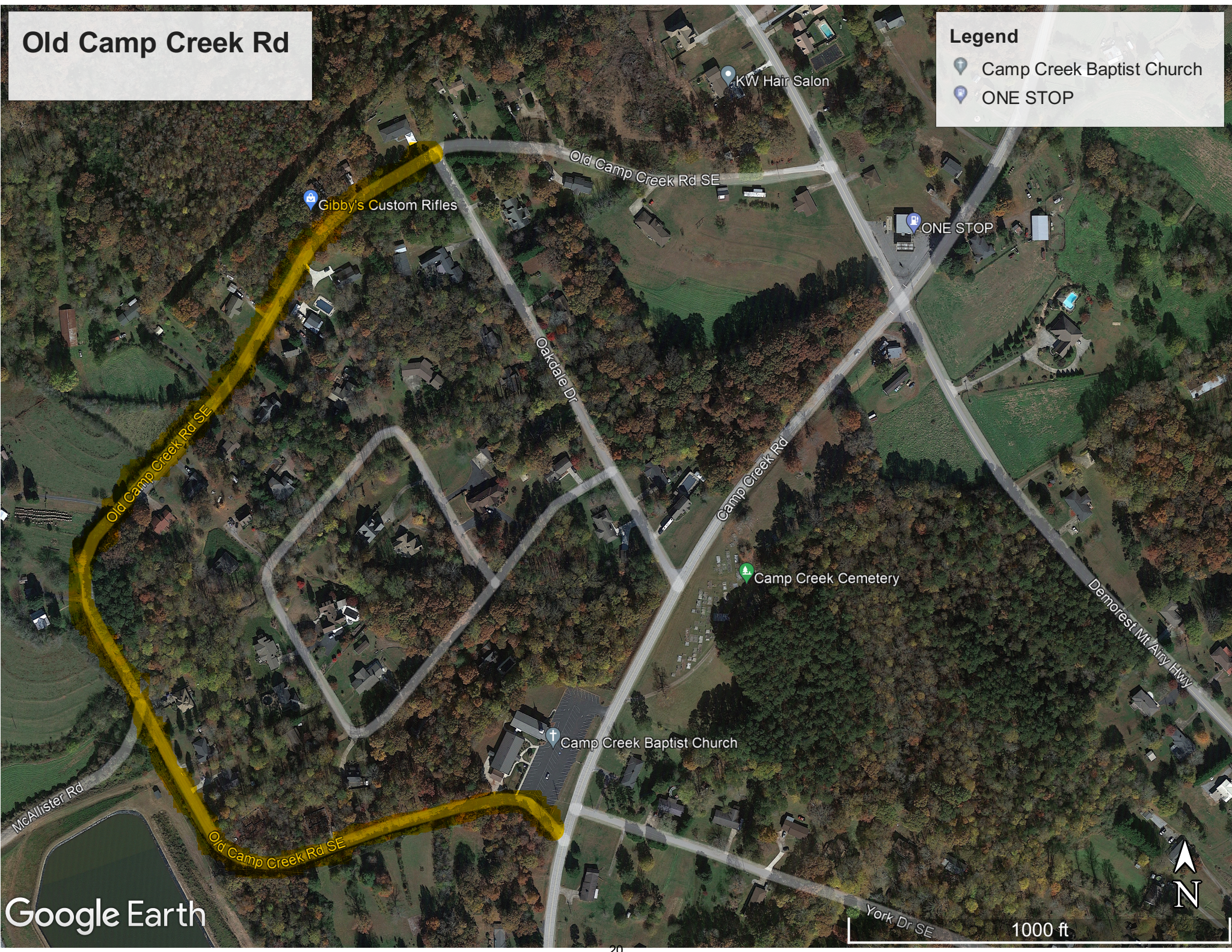
-  Camp Creek Baptist Church
-  Camp Creek Cemetery
-  Gibby's Custom Rifles
-  KW Hair Salon
-  ONE STOP



# Old Camp Creek Rd

**Legend**

-  Camp Creek Baptist Church
-  ONE STOP



Gibby's Custom Rifles

KW Hair Salon

ONE STOP

Old Camp Creek Rd SE

Oakdale Dr

Camp Creek Rd

Camp Creek Cemetery

Camp Creek Baptist Church

Demorest Mt Airy Hwy

McAllister Rd

Old Camp Creek Rd SE

York Dr SE

Google Earth



1000 ft

# Railroad Ave

## Legend





Pine Grove Rd

Untitled Placemark

Begin

Anarchy Wrestling

New Image Refinishing

Level Grove Rd

Level Grove Rd

Pine Grove Rd

Pine Grove Rd

Pine Grove Rd

Dunean Bridge Ln

Dunean Bridge Ln

Legend

800 ft





# Riverwilde Road

Legend



Google Earth



1000 ft

Toccoa Hwy

S. Cobb Rd

End

S Cobb Rd

S Cobb Rd

S Cobb Rd

Sister Cir

23

owridge Dr

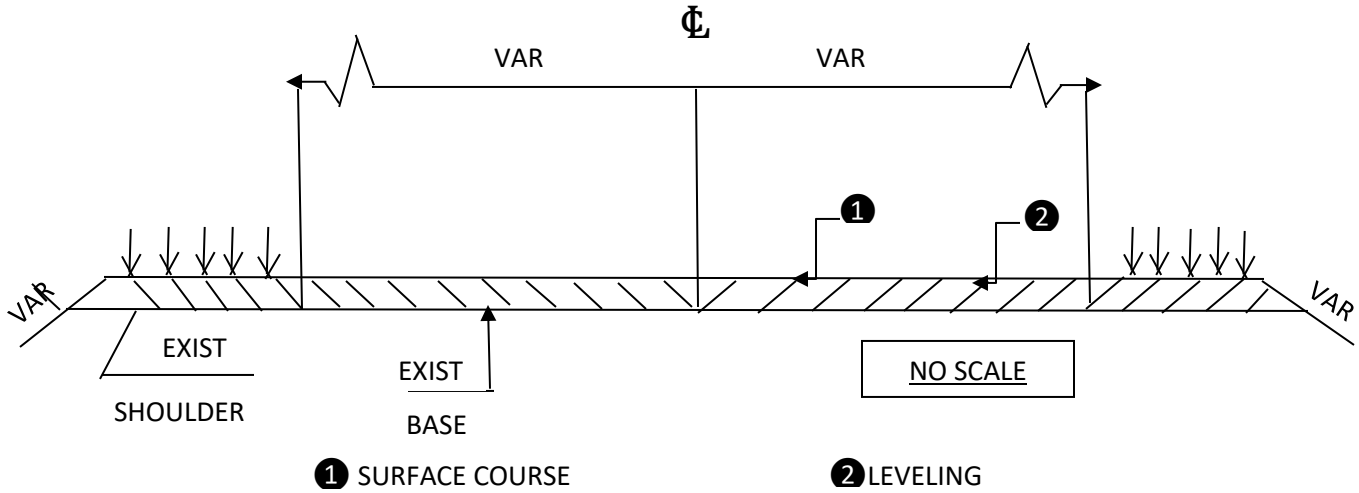
Legend

1000 ft



Sleepy Hollow

**TYPICAL SECTION**  
**PROJECT NO. LMIG-2023-1(137) HABERSHAM COUNTY**



\*\*\* SEE PROJECT SUMMARY SHEET FOR PAVEMENT WIDTHS \*\*\*

**NOTE 1:** LEVELING ON ALL ROADS TO BE 9.5 MM, TYPE I, OR OGI. ALL 9.5 MM SURFACE COURSE SHALL BE TYPE II. ALL LEVELING SHALL BE PLACED AS DIRECTED. PATCHING DEPTHS/RATES WILL GENERALLY BE 2 IN. PATCHING LOCATIONS WILL BE AS DIRECTED. CUTTING/MILLING HEAD TO BE NO GREATER THAN 7 FEET IN WIDTH FOR PATCHING OR VARIABLE MILLING.

**NOTE 2:** THE CONTRACTOR SHALL BE RESPONSIBLE FOR PULLING LOOSE SOIL BACK UP TO THE EDGE OF NEW PAVING IN AREAS WHERE SOIL IS CUT BACK TO EXPOSE THE EDGE OF EXISTING PAVEMENT. NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK BUT SHALL BE INCLUDED IN THE OVERALL BID PRICE FOR RELATED ITEMS.

**NOTE 3:** THE WIDTH OF PAVED APRONS AT TURN-OUTS, AT SIDE ROADS, AND DRIVES WILL BE AS REQUIRED TO PROVIDE A SMOOTH AND WELL DRAINED TRANSITION TO AND FROM THE PUBLIC ROADS AND DRIVEWAYS AS APPROVED. AT EACH AND EVERY TERMINI, MILLING OF THE ENTIRE ROADWAY WIDTH SHALL BE REQUIRED PRIOR TO RESURFACING TO AVOID FEATHERING OF INTERSECTIONS. TERMINI MILLING (BUTT JOINTS) ARE INCIDENTAL. SIDE ROADS AND DRIVEWAYS WILL BE MILLED OR SAWED, ONLY AS DIRECTED, TO PROVIDE A BUTT JOINT FOR TIE-IN'S. WHEN DIRECTED, THE WORK WILL BE PAID FOR AS VARIABLE MILLING.

**NOTE 4:** CONTRACTOR TO PROVIDE MILLING AT ANY LOCATIONS CONTAINING CURB & GUTTER, INLET GRATES, MANHOLES, OR ANY OTHER ITEMS AS DIRECTED, IN ORDER TO PROVIDE A SMOOTH TRANSITION. ASPHALT PAVEMENT WILL NOT BE ALLOWED ON TOP OF THESE ITEMS. WHEN DIRECTED, THE WORK WILL BE PAID FOR AS VARIABLE MILLING.

**NOTE 5:** THE CONTRACTOR WILL BE RESPONSIBLE FOR TESTING AND FURNISHING CERTIFIED TEST REPORTS, INCLUDING COMPACTION TO THE COUNTY. THE TESTING SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE GEORGIA DEPARTMENT OF TRANSPORTATION (GDOT) STANDARD SPECIFICATIONS SECTION 400 HOT MIX ASPHALTIC CONCRETE CONSTRUCTION AND SECTION 828 HOT MIX ASPHALTIC CONCRETE MIXTURES, SPECIAL PROVISIONS, AND THE CURRENT EDITION OF GDOT'S SAMPLING, TESTING AND CONSTRUCTION MANUAL. NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK BUT WILL BE INCLUDED IN THE OVERALL BID PRICE FOR RELATED ITEMS.

**NOTE 6:** THE CONTRACTOR'S ATTENTION IS DIRECTED TO SECTION 400 ASPHALTIC CONCRETE CONSTRUCTION AND SECTION 828 HOT MIX ASPHALTIC CONCRETE MIXTURES OF THE CURRENT EDITION OF GDOT STANDARD SPECIFICATIONS. ONLY GDOT APPROVED MIX DESIGNS AND MATERIALS SHALL BE USED.

**NOTE 7:** THE BITUMINOUS TACK COAT SHALL BE AS SPECIFIED IN SECTION 413 BITUMINOUS TACK COAT OF THE CURRENT EDITION OF GDOT STANDARD SPECIFICATIONS.

**SIGNATURE SHEET**

PROJECT NO.: **LMIG 2023-1 (137)**  
HABERSHAM COUNTY

BID SUBMITTED BY: \_\_\_\_\_  
(Print Name of Firm)

CONTRACT EXECUTED ON BEHALF OF THE CONTRACTOR:

This the \_\_\_\_\_ Day of \_\_\_\_\_, 2023

BY: \_\_\_\_\_ TITLE \_\_\_\_\_  
Printed Name of Official Signing Contract

WITNESS FOR THE  
CONTRACTOR \_\_\_\_\_

.....  
CONTRACT EXECUTED ON BEHALF OF HABERSHAM COUNTY:

This the \_\_\_\_\_ Day of \_\_\_\_\_, 2023

BY: \_\_\_\_\_  
Habersham County Commission Chairman

WITNESS FOR THE  
COUNTY \_\_\_\_\_

CONTRACT ACCEPTED BY THE COUNTY ON \_\_\_\_\_, 2023

ATTEST: \_\_\_\_\_ COUNTY COMMISSION CLERK

**BIDDERS DECLARATION**

The bidder understands, agrees and warrants:

That the bidder has carefully read and fully understands the full scope of the requirements.

That the bidder has the capability to successfully undertake and complete the responsibilities and obligations in said specifications.

That the bidder has liability insurance and a declaration of insurance form will be provided before the commencement of any work.

That this bid may be withdrawn by requesting such withdrawal in writing at any time prior to **June 7, 2023** at 10:00 a.m. but may not be withdrawn after such date and time.

That Habersham County reserves the right to reject any or all bids and to accept that bid which will, in its opinion, best serve the public interest. Habersham County reserves the right to waive any technicalities and formalities in the bidding.

That by submission of this bid the bidder acknowledges that Habersham County has the right to make any inquiry or investigation it deems appropriate to substantiate or supplement information supplied by the bidder.

If a partnership, a general partner must sign.

If a corporation, the authorized corporate officer(s) must sign and the corporate seal must be affixed to this bid.

**BIDDER:**

\_\_\_\_\_

Name	Title
------	-------

\_\_\_\_\_

Name	Title
------	-------

**AFFIX CORPORATE SEAL (If Applicable)**

**CERTIFICATE OF NON-DISCRIMINATION**

STATE OF GEORGIA  
HABERSHAM COUNTY

PROJECT NO. LMIG 2023-1 (137)

In connection with the performance of work under this contract, the bidder agrees as follows:

The bidder agrees not to discriminate against any employee or applicant for employment because of race, creed, color, sex, national origin, ancestry or disability. The vendor shall take affirmative action to insure that employees are treated without regard to their race, creed, color, sex, national origin, ancestry or disability. Such action shall include, but not be limited to the following: employment, upgrading, demotion, transfer, recruiting or recruitment, advertising, lay-off or termination, rates of pay or other compensation and selection for training, including apprenticeship.

In the event of the bidder's non-compliance with this non-discrimination clause, the contract may be canceled or terminated by Habersham County. The bidders may be declared, by Habersham County, ineligible for further contracts with Habersham County until satisfactory proof of intent to comply shall be made by the vendor. The bidder agrees to include this non-discrimination clause in any sub-contracts connected with the performance of this agreement.

---

**BIDDER**

---

**SIGNATURE**

---

**TITLE**

CONTRACTOR'S CERTIFICATON

**DRUG- FREE WORKPLACE**

STATE OF GEORGIA  
HABERSHAM COUNTY

PROJECT NO. LMIG 2023-1 (137)

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

\_\_\_\_\_

Whose address is \_\_\_\_\_

And that:

1. The provisions of Section 50-24-1 of the Official Code of Georgia Annotated, relating to the "Drug Free Workplace Act" have been complied with in full; and,
2. A drug-free workplace will be provided for the contractor's employee's during the performance of the contract; and,
3. Each subcontractor hired by the Prime Contractor shall be required to ensure that the subcontractor's employees are provided a drug-free workplace. The Prime Contractor shall secure from the subcontractor the following written certification: "As a part of the subcontracting agreement with \_\_\_\_\_ certifies to the Prime 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, possession, or use of an uncontrolled substance or marijuana during the performance of the contract.

Date: \_\_\_\_\_

\_\_\_\_\_  
Signature



NON-COLLUSION AFFIDAVIT

STATE OF GEORGIA  
HABERSHAM COUNTY

PROJECT NO. LMIG 2023-1 (137)

The bidder, by its officers and agents or representatives present at the time of filing this bid, being duly sworn, on their oaths say that neither they nor any member of their firm, have in any way, directly or indirectly, entered into any arrangement or agreements with any other bidder, or with any public officer of the County whereby such affiant or affiants or either of them, has paid or is to pay to such bidder or public officer any sum of money, or has given, or is to give to such other bidder or public officer anything of value whatever; or such affiant or affiants or either of them has not, directly or indirectly; entered into any arrangement or agreement with any other bidder(s), which tends to, or does lessen or destroy free competition in the letter of the contract sought for by the attached bids; that no inducement of any form or character other than that which appears upon the face of the bid will be suggested, offered, paid or delivered to any person whomsoever to influence the acceptance of the bid or awarding of the contract, nor has this bidder any understanding or agreement of any kind whatsoever, with any person whomsoever to pay, deliver to, or share with any other person in any way or manner, any of the proceeds of the contract sought by this bid.

Contractor: \_\_\_\_\_

By: \_\_\_\_\_  
Authorized Contractor Representative

This the \_\_\_\_\_ Day of \_\_\_\_\_, 2023

Notary Public: \_\_\_\_\_

My Commission Expires: \_\_\_\_\_, 20\_\_ \_\_



**Office of County Commissioners**  
130 Jacob's Way, Suite 301, Clarkesville, GA 30523  
706-839-0200 Fax: 706-839-0219  
[www.habershamga.com](http://www.habershamga.com)

**STATE OF GEORGIA**

**E-Verify PROGRAM VENDOR/CONTRACTOR AFFIDAVIT AND AGREEMENT**

**COMES NOW** before me, the undersigned officer duly authorized to administer oaths, the undersigned contractor, who, after being duly sworn, states as follows:

By executing this affidavit, the undersigned contractor verifies it's compliance with O.C.G.A 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services on behalf of Habersham County has registered with, is authorized to use, and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. 13-10-91. Furthermore, the undersigned contractor will continue to use the federal work authorization program throughout the contract period and the undersigned contractor will contract for the physical performance of services in satisfaction of such contract only with subcontractors who present an affidavit to the contractor with the information required by O.C.G.A. 13-10-91 (b). Contractor hereby attests that its federal work authorization user identification number and date are as follows:

\_\_\_\_\_  
EEV / Basic Pilot Program User ID Number (E-Verify)

**FURTHER AFFIANT SAYETH NOT.**

\_\_\_\_\_  
BY: Authorized Officer or Agent Signature

\_\_\_\_\_  
Contractor Address

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

\_\_\_\_\_  
Company / Contractor Name

\_\_\_\_\_  
Contractor City, State, Zip Code

\_\_\_\_\_  
Date of Contract between Contractor and Habersham County

**Sworn to and subscribed before me**

This \_\_\_\_\_ 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. As of the effective date of O.C.G.A. § 13-10-91, the applicable federal work authorization program is the "EEV I Basic Pilot Program" operated by the U.S. Citizenship and Immigration Services Bureau of the U.S. Department of Homeland Security in conjunction with the Social Security Administration (SSA).

## Request for Taxpayer Identification Number and Certification

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

<b>Print or type See Specific Instructions on page 2.</b>	Name (as shown on your income tax return)	
	Business name/disregarded entity name, if different from above	
	Check appropriate box for federal tax classification: <input type="checkbox"/> Individual/sole proprietor <input type="checkbox"/> C Corporation <input type="checkbox"/> S Corporation <input type="checkbox"/> Partnership <input type="checkbox"/> Trust/estate  <input type="checkbox"/> Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ▶ _____  <input type="checkbox"/> 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 entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Social security number									

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

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.

<b>Sign Here</b>	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](http://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.

## Section 400—Hot Mix Asphaltic Concrete Construction

---

### 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 Engineer.

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](#).

#### 400.1.01 Definitions

Segregated Mixture: Mixture which lacks 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 in 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 more than one lane is added, and any of the lanes are longitudinally adjacent to the existing lane, each lane 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.

Quality assurance sample: Independent sample taken by the Department.

Referee sample: A sample of the material remaining after quartering which is used for evaluation if a comparison of Contractor and Departmental test results is outside allowable tolerances.

#### 400.1.02 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 802—Coarse Aggregate for Asphaltic Concrete](#)

[Section 828—Hot Mix Asphaltic Concrete Mixtures](#)

##### B. Referenced Documents

AASHTO T 209

AASHTO T 202

AASHTO T 49

## Section 400—Hot Mix Asphaltic Concrete Construction

---

Laboratory Standard Operating Procedure (SOP) 27, “Quality Assurance for Hot Mix Asphaltic Concrete Plants in Georgia”

Department of Transportation Standard Operating Procedure (SOP) 15

[GDT 38](#)

[GDT 73](#)

[GDT 78](#)

[GDT 83](#)

[GDT 93](#)

[GDT 119](#)

[GDT 125](#)

[GSP 15](#)

[GSP 21](#)

[QPL 1](#)

[QPL 2](#)

[QPL 7](#)

[QPL 26](#)

[QPL 30](#)

[QPL 39](#)

[QPL 41](#)

[QPL 45](#)

[QPL 65](#)

[QPL 67](#)

[QPL 70](#)

[QPL 77](#)

### 400.1.03 Submittals

#### A. Invoices

When the Department 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 Department’s request.

## Section 400—Hot Mix Asphaltic Concrete Construction

---

### B. Paving Plan

Before starting asphaltic concrete construction, submit a written paving plan to the Engineer for approval. Include the following on the paving plan:

- Proposed starting date
- Location of plant(s)
- Rate of production
- Average haul distance(s)
- Number of haul trucks
- Paver speed feet (meter)/minute for each placement operation
- Mat width for each placement operation
- Number and type of rollers for each placement operation
- Sketch of the typical section showing the paving sequence for each placement operation
- Electronic controls used for each placement operation
- Temporary pavement marking plan

If staged construction is designated in the Plans or contract, provide a paving plan for each construction stage.

If segregation is detected, submit a written plan of measures and actions to prevent segregation. Work will not continue until the plan is submitted to and approved by the Department.

### C. Job Mix Formula

After the Contract has been awarded, submit to the Engineer a written job mix formula proposed for each mixture type to be used based on an approved mix design. Furnish the following information for each mix:

- Specific project for which the mixture will be used
- Source and description of the materials to be used
- Mixture I.D. Number
- Proportions of the raw materials to be combined in the paving mixture
- Single percentage of the combined mineral aggregates passing each specified sieve
- Single percentage of asphalt by weight of the total mix to be incorporated in the completed mixture
- Single temperature at which to discharge the mixture from the plant
- Theoretical specific gravity of the mixture at the designated asphalt content
- Name of the person or agency responsible for quality control of the mixture during production

Do the following to have the formulas approved and to ensure their quality:

1. Submit proposed job mix formulas for review at least two weeks before beginning the mixing operations.

## Section 400—Hot Mix Asphaltic Concrete Construction

2. Do not start hot mix asphaltic concrete work until the Engineer has approved a job mix formula for the mixture to be used. No mixture will be accepted until the Engineer has given approval.
3. Provide mix designs for all Superpave and 4.75 mm mixes to be used. The Department 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 Department according to [Subsection 106.01, “Source of Supply and Quantity of Materials.”](#)

### D. Quality Control Program

Submit a Quality Control Plan to the Office of Materials and Research for approval. The Quality Control Program will be included as part of the certification in the semiannual 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	<a href="#">820.2</a>
Coarse Aggregates for Asphaltic Concrete	<a href="#">802.2.02</a>
Fine Aggregates for Asphaltic Concrete	<a href="#">802.2.01</a>
Mineral Filler	<a href="#">883.1</a>
Heat Stable Anti-Stripping Additive	<a href="#">831.2.04</a>
Hydrated Lime	<a href="#">882.2.03</a>
Silicone Fluid	<a href="#">831.2.05</a>
Bituminous Tack Coat: PG 58-22, PG 64-22, PG 67-22	<a href="#">820.2</a>
Hot Mix Asphaltic Concrete Mixtures	<a href="#">828</a>
Fiber Stabilizing Additives	<a href="#">819</a>

When required, provide Uintaite material, hereafter referred to by the common trade name Gilsonite, as a reinforcing agent for bituminous mixtures. Supply a manufacturer’s certification that the Gilsonite is a granular solid which meets the following requirements:

Softening Point (AASHTO: T-53)	300-350 °F (150-175 °C)
Specific Gravity, 77 °F (25 °C) (AASHTO: T-228)	1.04 ± 0.02
Flash Point, COC (AASHTO: T-48)	550 °F (290 °C) Min.
Ash Content (AASHTO: T-111)	1.0% Max.
Penetration, 77 °F (25 °C), 100 gm., 5 sec. (AASHTO: T-49)	0

## Section 400—Hot Mix Asphaltic Concrete Construction

---

### 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, or stiffness of stored mixture is cause for rejection of the mixture. The Engineer will not approve using a storage or surge bin if the mixture segregates, loses excessive heat, or oxidizes during storage. The Engineer 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.
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.

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.

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

If the Engineer 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.



## Section 400—Hot Mix Asphaltic Concrete Construction

---

### 400.3.02 Equipment

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

The Engineer 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 batcher-type weight systems that deliver asphaltic mixture directly to the truck
  - Fully automatic batching equipment with a digital recording device
- d. Use a net weight printing system only with automatic batching and mixing systems approved by the Engineer.
- 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.

## Section 400—Hot Mix Asphaltic Concrete Construction

---

c. Ensure that surge and storage systems do not contribute to mix segregation, lumpiness, 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. Mineral Filler Supply System

When mineral filler is required as a mixture ingredient:

- a. Use a separate bin and feed system to store and proportion the required quantity into the mixture with uniform distribution.
- b. Control the feeder system with a proportioning device that meets these specifications:
  - Is accurate to within  $\pm 10$  percent of the filler 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
- c. Provide flow indicators or sensing devices for the mineral filler system and interlock them with the plant controls to interrupt the mixture production if mineral filler introduction fails.
- d. Add mineral filler to the mixture as follows, according to the plant type:
  - Batch Type Asphalt Plant. Add mineral filler to the mixture in the weigh hopper.
  - Continuous Plant Using Pugmill Mixers. Feed the mineral filler into the hot aggregate before it is introduced into the mixer so that dry mixing is accomplished before the bituminous material is added.
  - Continuous Plants Using the Drier-Drum Mixers. Add the mineral filler so that dry mixing is accomplished before the bituminous material is added and ensure that the filler does not become entrained into the air stream of the drier.

### 6. 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  $\pm 10$  percent of the amount required
  - Has a convenient and accurate means of calibration

## Section 400—Hot Mix Asphaltic Concrete Construction

---

- 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
  - d. 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.
7. 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 Engineer. 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 batching 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.

8. Fiber Supply System

When stabilizing fiber is required as a mixture ingredient:

- a. Use a separate feed system to store and proportion by weight the required quantity into the mixture with uniform distribution.
- b. Control the feeder system with a proportioning device that meets these Specifications:
- Is accurate to within  $\pm 10$  percent of the amount required. Automatically adjusts the feed rate to maintain the material within this tolerance at all times
  - Has a convenient and accurate means of calibration
  - Provide in-process monitoring, consisting of either a digital display of output or a printout of feed rate, in pounds (kg) per minute, to verify feed rate
  - Interlocks with the aggregate feed or weigh system to maintain the correct proportions for all rates of production and batch sizes
- c. Provide flow indicators or sensing devices for the fiber system and interlock them with the plant controls to interrupt the mixture production if fiber introduction fails or if the output rate is not within the tolerances given above.

## Section 400—Hot Mix Asphaltic Concrete Construction

---

- d. Introduce the fiber as follows:
  - When a batch type plant is used, add the fiber to the aggregate in the weigh hopper. Increase the batch dry mixing time by 8 to 12 seconds from the time the aggregate is completely emptied into the mixer to ensure the fibers are uniformly distributed prior to the injection of asphalt cement into the mixer.
  - When a continuous or drier-drum type plant is used, add the fiber to the aggregate and uniformly disperse prior to the injection of asphalt cement. Ensure the fibers will not become entrained in the exhaust system of the drier or plant.

### 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  $\pm 0.1$  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 Engineer.
  - d. Screed Control. Equip the paver to permit the following four modes of screed control. The method used shall be approved by the Engineer.
    - Automatic grade sensing and slope control
    - Automatic dual grade sensing
    - Combination automatic and manual control

## Section 400—Hot Mix Asphaltic Concrete Construction

---

- 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 30 ft (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 plane is a newly placed adjacent lane.

Automatic screed control is required on all Projects; however, when the Engineer determines that Project conditions prohibit the use of such controls, the Engineer 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 according to the paver manufacturer's recommendations.

**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. Materials Transfer Vehicle (MTV)

- a. Use a Materials Transfer Vehicle (MTV) when placing asphaltic concrete mixtures on Projects on the state route system with the following conditions:
  - 1) When to use:
    - The ADT is equal to or greater than 6000,
    - The project length is equal to or greater than 3000 linear feet (915 linear meters),
    - The total tonnage (megagrams) of all asphaltic concrete mixtures is greater than 2000 tons (1815 Mg).
  - 2) Where to use:
    - Mainline of the traveled way
    - Collector/distributor (C/D) lanes on Interstates and limited access roadways
    - Leveling courses at the Engineer's discretion
- b. Ensure the MTV and conventional paving equipment meet the following requirements:
  - 1) MTV

## Section 400—Hot Mix Asphaltic Concrete Construction

---

- Has a truck unloading system which receives mixture from the hauling equipment and independently deliver mixtures from the hauling equipment to the paving equipment.
  - Has mixture remixing capability by either a storage bin in the MTV with a minimum capacity of 14 tons (13 megagrams) of mixture and a remixing system in the bottom of MTV storage bin, or a dual pugmill system located in the paver hopper insert with two full length transversely mounted paddle mixers to continuously blend the mixture as it discharges to a conveyor system.
  - Provides to the paver a homogeneous, non-segregated mixture of uniform temperature with no more than 20 °F(18 °C) difference between the highest and lowest temperatures when measured transversely across the width of the mat in a straight line at a distance of one foot to three feet from the screed while the paver is operating.
- 2) Conventional Paving Equipment
- Has a paver hopper insert with a minimum capacity of 14 tons (13 Mg) installed in the hopper of conventional paving equipment when an MTV is used.
- c. If the MTV malfunctions during spreading operations, discontinue placement of hot mix asphaltic concrete after there is sufficient hot mix placed to maintain traffic in a safe manner. However, placement of hot mix asphaltic concrete in a lift not exceeding 2 in. (50 mm) may continue until any additional hot mix in transit at the time of the malfunction has been placed. Cease spreading operations thereafter until the MTV is operational.
- d. Ensure the MTV is empty when crossing a bridge and is moved across without any other Contractor vehicles or equipment on the bridge. Move the MTV across a bridge in a travel lane and not on the shoulder. Ensure the speed of the MTV is no greater than 5 mph (8 kph) without any acceleration or deceleration while crossing a bridge.

### 400.3.03 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 Engineer.
  - 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 Engineer must approve the asphalt content to be used.
3. Apply Bituminous Tack Coat

## Section 400—Hot Mix Asphaltic Concrete Construction

Apply the tack coat according to [Section 413](#). The Engineer will determine the application rate, which must be within the limitations Table 2.

**Table 2—Application Rates for Bituminous Tack, gal/yd<sup>2</sup> (L/m<sup>2</sup>)**

	Minimum	Maximum
Under OGFC and PEM Mixes	0.06 (0.270)	0.08 (0.360)
All Other 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 0.04 gal/yd <sup>2</sup> (0.09 to 0.18 L/m <sup>2</sup> ).		

### B. Place Patching and Leveling Course

- 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.
- Use leveling at the same Superpave Mix Design Level specified for the surface course except when leveling is no greater than 0.75 inch (19 mm).
- Place leveling at the locations and in the amounts directed by the Engineer.
- 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](#)
  - Leveling acceptance schedules in [Subsection 400.3.06.A, “Acceptance Plans for Gradation and Asphalt Cement Content”](#)
- If the leveling and patching mix type is undesignated, determine the mix type by the thickness or spread rate according to Table 3, but do not use 4.75 mm mix on interstate projects.

**Table 3—Leveling and Patching Mix Types**

Thickness	Rate of Spread	Type of Mix
Up to 0.75 in (19 mm)	Up to 85 lbs/yd <sup>2</sup> (45 kg/m <sup>2</sup> )	4.75 mm Mix or 9.5 mm Superpave (Level A)
0.75 to 1.5 in (19 to 38 mm)	85 to 165 lbs/yd <sup>2</sup> (45 to 90 kg/m <sup>2</sup> )	9.5 mm Superpave (Level B)
1.5 to 2 in (38 to 50 mm)	165 to 220 lbs/yd <sup>2</sup> (90 to 120 kg/m <sup>2</sup> )	12.5 mm Superpave *
2 to 3 in (50 to 75 mm)	220 to 330 lbs/yd <sup>2</sup> (120 to 180 kg/m <sup>2</sup> )	19 mm Superpave *
Over 3 in (75 mm)	Over 330 lbs/yd <sup>2</sup> (180 kg/m <sup>2</sup> )	25 mm Superpave

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

### 400.3.04 Fabrication

General Provisions 101 through 150.

## Section 400—Hot Mix Asphaltic Concrete Construction

---

### 400.3.05 Construction

Provide the Engineer 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](#).

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  $\pm 20$  °F ( $\pm 10$  °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 Engineer will establish a maximum limit for moisture content in the aggregates. When this limit is established, maintain the moisture content below this limit.



## Section 400—Hot Mix Asphaltic Concrete Construction

---

### 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 Mineral Filler

When mineral filler is used, introduce it in the proper proportions and as specified in [Subsection 400.3.02.B.5, “Mineral Filler Supply System.”](#)

#### 2. 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 Engineer.
- 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 Engineer.

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

#### 3. Add Stabilizing Fiber

When stabilizing fiber is included in the mixture, add it at a rate specified in [Section 819](#) and the Job Mix Formula. Introduce it as specified in [Subsection 400.3.02.B.8, “Fiber Supply System.”](#)

#### 4. 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 pugmill 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.

## Section 400—Hot Mix Asphaltic Concrete Construction

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 batching 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  $\pm 10$  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.

### 5. Avoid 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. Do not lay asphaltic concrete OGFC mix or PEM at air temperatures below 55 °F (13 °C). For other courses, 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 mm)	45 °F (8 °C)
2.1 to 3 in (51 mm to 75 mm)	35 °F (2 °C)
3.1 to 4 in (76 mm to 100 mm)	30 °F (0 °C)
4.1 to 8 in (101 mm to 200 mm)	Contractor’s discretion

### 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 Thickness	Maximum Layer Thickness	Maximum Total Thickness
25 mm Superpave	3 in (75 mm)	5 in (125 mm) *	—
19 mm Superpave	1 3/4 in (44 mm)	3 in (75 mm) *	—
12.5 mm Superpave	1 3/8 in (35 mm)	2 1/2 in (62 mm)*	8 in (200 mm)
9.5 mm Superpave Levels	1 1/8 in.(28 mm)	2 in (50 mm)	4 in (100 mm)

## Section 400—Hot Mix Asphaltic Concrete Construction

Mix Type	Minimum Layer Thickness	Maximum Layer Thickness	Maximum Total Thickness
B, C, or D)			
9.5 mm Superpave Level A)	3/4 in (19 mm)	1 3/8 in (35 mm)	4 in (100 mm)
4.75 mm Mix	7/8 in (22) mm)	1 1/8 in (30 mm)	2 in (50 mm)
9.5 mm OGFC	55 lbs/yd <sup>2</sup> (30 kg/m <sup>2</sup> )	65 lbs/yd <sup>2</sup> (36 kg/m <sup>2</sup> )	—
12.5 mm OGFC	85 lbs/yd <sup>2</sup> (47 kg/m <sup>2</sup> )	95 lbs/yd <sup>2</sup> (53 kg/m <sup>2</sup> )	—
12.5 mm PEM	110 lbs/yd <sup>2</sup> (80 kg/m <sup>2</sup> )	165 lbs/yd <sup>2</sup> (90 kg/m <sup>2</sup> )	—
9.5 mm SMA	1 1/8 in (28 mm)	1 1/2 in (40 mm)	4 in (100 mm)
12.5 mm SMA	1 1/4 in (32 mm)	3 in (75 mm)	6 in (150 mm)
19 mm SMA	1 3/4 in (44 mm)	3 in (75 mm)	—
* Allow up to 6 in (150 mm) per lift on trench widening. Place 9.5 mm Superpave and 12.5 mm Superpave up to 4 in (100 mm) thick for driveway and side road transition.			

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 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 are at the lane line(s).

**NOTE: Perform night work with artificial light provided by the Contractor and approved by the Engineer.**

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:

## Section 400—Hot Mix Asphaltic Concrete Construction

---

- 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 Engineer 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 °F (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 surface and subsurface courses except asphaltic concrete OGFC, PEM and SMA or other mixes designated by the Engineer.
  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 Engineer 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.

<b>NOTE: Never burn or heat the joint by applying fuel oil or other volatile materials.</b>
---

- c. Straightedge transverse joints immediately after forming the joint.
    - d. Immediately correct any irregularity that exceeds 3/16 in. in 10 ft (5 mm in 3 m).
  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.
  3. Construction Joint Detail for OGFC and PEM Mixtures

In addition to meeting joint requirements described above, construct joints and transition areas for 12.5 mm OGFC and 12.5 mm PEM mixtures as follows:

## Section 400—Hot Mix Asphaltic Concrete Construction

---

- a. For projects which do not have milling included as a pay item:
  - 1) Place OGFC mixture meeting gradation requirements of 9.5 mm OGFC as specified in [Section 828](#) on entrance and exit ramp gore areas and end of project construction joints.
    - Taper mixture from 3/8 in (10 mm) at end of project to full plan depth within maximum distance of spread for one load of mixture
    - Taper mixture placed on gore areas from thickness of the edge of the mainline to 3/8 in (10 mm) at the point of the ramp transverse joint.
  - 2) Construct the ramp transverse joint at the point specified in the plans or as directed by the Engineer.
  - 3) Mixture placed in the transition and gore areas will be paid for at the contract unit price for 12.5 mm OGFC or 12.5 mm PEM as applicable.
- b. For projects which have milling included as a pay item:
  - 1) Taper milling for a distance of no less than 50 ft (15 m) to a depth of 2 1/4 in (59 mm) at the point of the transverse joint
  - 2) Taper thickness, if needed, of the dense-graded surface mix within the 50 ft (15 m) distance to 1 1/2 in (40 mm) at the point of the transverse joint
  - 3) Taper thickness of the 12.5 mm OGFC or 12.5 mm PEM to 3/4 in (19 mm) so that it ties in at grade level with the existing surface at the point of the transverse joint

### 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 Engineer, 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 Engineer determines that undesirable mixture or mat characteristics are being obtained, the job mix formula may require immediate adjustment.

## 400.3.06 Quality Acceptance

### A. Acceptance Plans for Gradation and Asphalt Cement Content

The Contractor will randomly sample and test mixtures for acceptance on a lot basis. The Department 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 Engineer 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. The lot will be terminated as described in [Subsection 400.5.01, "Adjustments"](#).

## Section 400—Hot Mix Asphaltic Concrete Construction

---

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 Engineer may treat the production as a separate lot with a corresponding lower number of tests.

### 1. Determine Lot Acceptance

Determine lot acceptance as found in [Subsection 400.5.01, "Adjustments."](#)

The Department will perform the following task:

Determine the pay factor by using the mean of the deviations from the job mix formula of the tests in each lot and apply it to Table 9—Mixture Acceptance Schedule for Surface Mixes or Table 10—Mixture Acceptance Schedule for Subsurface Mixes, whichever is appropriate. This mean will be determined by averaging the actual numeric value of the individual deviations from the job mix formula, disregarding whether the deviations are positive or negative amounts. Do not calculate lot acceptance using test results for materials not used in the Work. Determine the pay factor for each lot by multiplying the contract unit price by the appropriate pay factor from the Mixture Acceptance Schedule - Table 9 or Table 10. When two or more pay factors for a specific lot are less than 1.0, determine the adjusted payment by multiplying the contract unit price by the lowest pay factor.

If the mean of the deviations from the job mix formula of the lot acceptance tests for a control sieve or for asphalt cement content exceeds the tolerances established in the appropriate Mixture Acceptance Schedule, and if the Engineer determines that the material need not be removed and replaced, the lot may be accepted at an adjusted unit price as determined by the Engineer. If the Engineer 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 Engineer, and Testing Management Operations Supervisor at all times
- Provisions for reporting all test results daily through the Office of Materials and Research computer Bulletin Board Service; 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:

## Section 400—Hot Mix Asphaltic Concrete Construction

---

- 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 Engineer.
- 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 Level 2 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 Engineer.

## Section 400—Hot Mix Asphaltic Concrete Construction

---

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 Department, within three days they may be discarded.
- (f) Maintain a process control flow chart daily for each sieve specified on the job mix formula and including the percent asphalt cement. The flow chart shall include:
  - Allowable ranges based on the Mixture Control Tolerance in [Section 828](#)
  - A graph plot of the deviations from the job mix formula for each test per mix type
- (g) 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

<p><b>Note: Determine mixture temperature at least once per hour of production for OGFC and PEM mixes.</b></p>
--

- (h) 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



## Section 400—Hot Mix Asphaltic Concrete Construction

---

- Provide records of materials invoices upon request (including asphalt cement, aggregate, hydrated lime, etc.)
- (i) Take action if acceptance test results are outside Mixture Control Tolerances of [Section 828](#).
  - One sample out of tolerance
    - (1) Contact Level 2 - 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 Department will be required of each QCT to monitor consistency of equipment and test procedures. The Department 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 Department does not procure the samples within three working days.

The Department 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—Allowable Percent Difference Between Department and Contractor Acceptance Tests**

<u>SIEVE SIZE</u>	<u>SURFACE</u>	<u>SUB-SURFACE</u>
1/2 in. (12.5 mm)		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 μm)	2.0%	2.0%
A.C.	0.4%	0.5%

**NOTE: Pavement courses to be overlaid with OGFC or PEM mixes are considered surface mixes.**

(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 Departmental technician will test the corresponding referee sample
- Results of the referee sample will be compared to the respective contractor and Departmental 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 Department 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<sup>2</sup> (60 kg/m<sup>2</sup>) that have quality assurance test results outside the Mixture Control Tolerances of [Section 828](#), use the Department's test results only and applicable pay factors will apply.**

If test results of the additional sample are not within Mixture Control Tolerances, the Department 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. Applicable pay factors will apply and the contractor QCT test results will not be included in pay factor calculations nor in 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 Departmental 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 and apply applicable pay factors. The Contractor QCT tests will not be included in the pay factor calculations nor 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 as the mixture acceptance.

#### 1. Calculate Pavement Mean Air Voids

The Department will calculate the pavement air voids placed within each lot as follows:

- a. Average the results of 5 tests run on randomly selected sites in that lot.
- b. Select the random sites using [GDT 73](#).

Density tests are not required for asphaltic concrete placed at 90 lbs/yd<sup>2</sup> (50 kg/m<sup>2</sup>) or less, 4.75 mm mix, and asphaltic concrete OGFC and PEM. Compact these courses to the Engineer's satisfaction.

The maximum Pavement Mean Air Voids for all Superpave and Stone Matrix Asphalt mixtures shall be 7.8 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 7.8 percent 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 µm) sieve   ± 1%
- Asphalt Content           ± 0.2%

## Section 400—Hot Mix Asphaltic Concrete Construction

---

- 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 Engineer may establish a maximum target for Pavement Mean Air Voids.

Mixture placed during the adjustment period for density shall meet the requirements for a 0.90 pay factor in Table 12 of [Subsection 400.5.01.C, “Calculate Mean Pavement Air Voids.”](#) Mixture which does not meet these density requirements shall be paid for using the applicable pay factor.

If the mean air voids of the pavement placed within a lot exceeds 7.8% (or 100% of the maximum target air voids, if established) and the Engineer determines that the material need not be removed and replaced, the lot may be accepted at an adjusted unit price as determined by the Engineer.

### 2. Obtain Uniform Compaction

For a lot to receive a pay factor of 1.00 for compaction acceptance, 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. If the air void range exceeds these tolerances, apply a Pay Factor of 95%.

The 5% reduced pay factor for the compaction range does not apply in these instances:

- The mixture is placed during the adjustment period as defined in [Subsection 400.5.01.A, “Materials Produced and Placed During the Adjustment Period.”](#)
- All air void results within a given lot are less than 7.8%.

## C. Surface Tolerance

In this Specification, pavement courses to be overlaid with a friction course 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 10 ft (5 mm in 3 m) 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 Engineer suspects a continuing equipment problem. Stop the paving operation and correct the problem. Correct surface course evaluations on individual Laser Road Profiler test sections, normally 1 mile (1 km) long.

### 2. Target Surface Smoothness

## Section 400—Hot Mix Asphaltic Concrete Construction

The Department will use the Laser Road Profiler method to conduct acceptance testing for surface course tolerance according to [GDT 126](#). This testing will be performed only on:

- Surface courses
- Mainline traveled way
- Ramps more than 0.5 mile (800 m) long

Achieve the smoothest possible ride during construction. Do not exceed the target Laser Road Profiler smoothness index as shown below:

**Table 7—Pavement Smoothness Requirements—New Construction**

Construction Description	Smoothness Index
Asphaltic concrete OGFC and PEM on interstates and asphaltic concrete OGFC and PEM on new construction	750
Other resurfacing on interstates, asphaltic concrete OGFC and PEM resurfacing on state routes, and new construction	825
All other resurfacing on state routes (excluding LARP, PR, airports, etc.)	900

If the target values are not achieved, immediately adjust the operations to meet the target values.

Corrective work is required if the surface smoothness exceeds the Laser Road Profiler smoothness index shown below:

**Table 8—Pavement Smoothness Requirements—Corrective Work**

Construction Description	Smoothness Index
Asphaltic concrete OGFC and PEM on interstates and asphaltic concrete OGFC and PEM on new construction	825
Other resurfacing on interstates, asphaltic concrete OGFC and PEM resurfacing on state routes, and new construction	900
All other resurfacing on state routes (excluding LARP, PR, airports, etc.)	1025

If surface tolerance deficiencies need correction, obtain the Engineer’s approval of the methods and type mix used.

### 3. Bridge Approach Ride Quality

The following are subject to a ride quality test by the Department for 100 ft. (30 m) of roadway approaching each end of a bridge using the Rainhart Profilograph:

- A state road with 4 lanes or more
- A 2-lane state road with a current traffic count of 2,000 vpd or more
- Locations designated on the Plans

All other bridge approaches shall meet the 1/8 in. in 10 ft (3 mm in 3 m) straightedge requirement. Test ride quality as follows:

## Section 400—Hot Mix Asphaltic Concrete Construction

---

- a. The Department will determine a profile index value according to test method [GDT 78](#).
- b. The Department will average the profile index value from the right and left wheelpath for each 100 ft (30 m) section for each lane. Keep the profile index value under 30.
- c. Meet the profile index value for the 100 ft (30 m) section of roadway up to the joint with the approach slab.
- d. Schedule the profilograph testing 5 days before needed. Clean and clear obstructions from the test area.
- e. Correct the sections that do not meet the ride quality criteria of this Specification. After correction, these sections are subject to retesting with the Rainhart Profilograph. The Engineer shall direct the type of correction method, which may include:
  - Milling
  - Grinding
  - Removing and replacing the roadway

No additional compensation will be made.

The Department will perform Profilograph testing up to two times on the bridge approaches at no cost to the Contractor. Additional profilograph testing will cost the Contractor \$500 per test.

### D. Reevaluation of Lots

When lots are reevaluated as shown in [Subsection 106.03, “Samples, Tests, Cited Specifications.”](#) sampling and testing is according to [GDT 73](#). Request shall be made for reevaluation immediately upon notification of the lot results. The following procedures apply:

#### 1. Mixture Acceptance

The Department will take the same number of new tests on cores taken at a location where the load sampled was placed and will use only those core results for acceptance.

The Department will use the mean of the deviations from the job mix formula for these tests to determine acceptance based on the appropriate column in the Asphalt Cement Content and Aggregate Gradation of Asphalt Concrete [Mixture Acceptance Schedule—Table 9 or 10](#).

#### 2. Compaction Acceptance

The Department will reevaluate the lot through additional testing by cutting 5 cores and averaging these results with the results of the original 5 compaction tests. The Department will use the average to determine acceptance according to the Compaction Acceptance Schedule in [Subsection 400.5.01.C, “Calculate Pavement Mean Air Voids”](#).

**Table 9—Mixture Acceptance Schedule—Surface Mixes**

Mixture Characteristics	Pay Factor	Mean of the Deviations from the Job Mix Formula							
		1 Test	2 Tests	3 Tests	4 Tests	5 Tests	6 Tests	7 Tests	8 Tests
Asphalt Cement Content (Extraction, Ignition)	1.00	0.00 - 0.70	0.00 - 0.54	0.00 - 0.46	0.00 - 0.41	0.00 - 0.38	0.00 - 0.35	0.00 - 0.32	0.00 - 0.30
	0.95	0.71 - 0.80	0.55 - 0.61	0.47 - 0.52	0.42 - 0.46	0.39 - 0.43	0.36 - 0.39	0.33 - 0.36	0.31 - 0.34
	0.90	0.81 - 0.90	0.62 - 0.68	0.53 - 0.58	0.47 - 0.51	0.44 - 0.47	0.40 - 0.45	0.37 - 0.40	0.35 - 0.37
	0.80	0.91 - 1.00	0.69 - 0.75	0.59 - 0.64	0.52 - 0.56	0.48 - 0.52	0.44 - 0.47	0.41 - 0.44	0.38 - 0.41
	0.70	1.01 - 1.19	0.76 - 0.82	0.65 - 0.69	0.57 - 0.61	0.53 - 0.56	0.48 - 0.51	0.45 - 0.47	0.42 - 0.44
	0.50	1.20 - 1.40	0.83 - 0.85	0.70 - 0.72	0.62 - 0.64	0.57 - 0.59	0.52 - 0.55	0.48 - 0.51	0.45 - 0.48
3/8 in. (9.5 mm) Sieve (12.5 mm OGFC, 12.5 mm PEM, 12.5 mm Superpave)	1.00	0.00 - 0.9	0.00 - 6.6	0.00 - 5.6	0.00 - 5.0	0.00 - 4.6	0.00 - 4.2	0.00 - 3.9	0.00 - 3.6
	0.98	9.1 - 10.0	6.7 - 7.5	5.7 - 6.3	5.1 - 5.6	4.7 - 5.2	4.3 - 4.7	4.0 - 4.4	3.7 - 4.1
	0.95	10.1 - 11.9	7.6 - 8.4	6.4 - 7.0	5.7 - 6.3	5.3 - 5.8	4.8 - 5.3	4.5 - 5.0	4.2 - 4.6
	0.90	12.0 - 13.0	8.5 - 9.3	7.1 - 7.7	6.4 - 6.9	5.9 - 6.3	5.4 - 5.8	5.1 - 5.4	4.7 - 5.0
	0.85	13.1 - 14.0	9.4 - 10.2	7.8 - 8.6	7.0 - 7.6	6.4 - 6.9	5.9 - 6.3	5.5 - 5.9	5.1 - 5.5
	0.80	14.1 - 14.5	10.3 - 10.5	8.7 - 8.9	7.7 - 8.0	7.0 - 7.5	6.4 - 6.8	6.0 - 6.4	5.6 - 6.0
3/8 in. (9.5 mm) Sieve (12.5 mm SMA)	1.00	0.0 - 6.8	0.00 - 5.0	0.00 - 4.2	0.00 - 3.8	0.00 - 3.4	0.00 - 3.2	0.00 - 2.9	0.00 - 2.7
	0.98	6.9 - 7.5	5.1 - 5.6	4.6 - 4.7	3.9 - 4.2	3.5 - 3.9	3.3 - 3.5	3.0 - 3.3	2.8 - 3.1
	0.95	7.6 - 8.9	5.7 - 6.3	4.8 - 5.2	4.3 - 4.7	4.0 - 4.4	3.6 - 4.0	3.4 - 3.8	3.2 - 3.4
	0.90	9.0 - 9.8	6.4 - 7.0	5.3 - 5.8	4.8 - 5.2	4.5 - 4.8	4.1 - 4.4	3.9 - 4.1	3.5 - 3.8
	0.85	9.9 - 10.5	7.1 - 7.6	5.9 - 6.4	5.3 - 5.7	4.9 - 5.2	4.5 - 4.7	4.2 - 4.4	3.9 - 4.1
	0.80	10.6 - 10.9	7.7 - 7.9	6.5 - 6.7	5.8 - 6.0	5.3 - 5.6	4.8 - 5.1	4.5 - 4.8	4.2 - 4.5
No. 4 (4.75 mm) Sieve (9.5 mm OGFC, 9.5 mm Superpave)	1.00	0.00 - 9.0	0.00 - 6.7	0.00 - 5.7	0.00 - 5.2	0.00 - 4.8	0.00 - 4.4	0.00 - 4.1	0.00 - 3.8
	0.98	9.1 - 10.0	6.8 - 7.6	5.8 - 6.3	5.3 - 5.8	4.9 - 5.4	4.5 - 4.9	4.2 - 4.6	3.9 - 4.3
	0.95	10.1 - 11.9	7.7 - 8.5	6.4 - 6.9	5.9 - 6.4	5.5 - 5.9	5.0 - 5.4	4.7 - 5.0	4.4 - 4.7

**Section 400—Hot Mix Asphaltic Concrete Construction**

Mixture Characteristics	Pay Factor	Mean of the Deviations from the Job Mix Formula							
		1 Test	2 Tests	3 Tests	4 Tests	5 Tests	6 Tests	7 Tests	8 Tests
	0.90	12.0 - 13.0	8.6 - 9.4	7.0 - 7.5	6.5 - 7.0	6.0 - 6.5	5.5 - 5.9	5.1 - 5.5	4.8 - 5.1
	0.85	13.1 - 14.0	9.5 - 10.2	7.6 - 8.0	7.1 - 7.6	6.6 - 7.0	6.0 - 6.4	5.6 - 5.9	5.2 - 5.5
	0.80	14.1 - 14.5	10.3 - 10.5	8.1 - 8.3	7.7 - 8.0	7.1 - 7.5	6.5 - 6.9	6.0 - 6.4	5.6 - 5.9
No. 4 (4.75 mm) Sieve (9.5 mm SMA)	1.00	0.00 - 6.8	0.00 - 5.0	0.00 - 4.3	0.00 - 3.9	0.00 - 3.6	0.00 - 3.3	0.00 - 3.1	0.00 - 2.8
	0.98	6.9 - 7.5	5.1 - 5.7	4.4 - 4.7	4.0 - 4.4	3.7 - 4.0	3.4 - 3.7	3.2 - 3.4	2.9 - 3.2
	0.95	7.6 - 8.9	5.8 - 6.4	4.8 - 5.2	4.5 - 4.8	4.1 - 4.4	3.8 - 4.0	3.5 - 3.8	3.3 - 3.5
	0.90	9.0 - 9.8	6.5 - 7.0	5.3 - 5.6	4.9 - 5.2	4.5 - 4.9	4.1 - 4.4	3.9 - 4.1	3.6 - 3.8
	0.85	9.9 - 10.5	7.1 - 7.7	5.7 - 6.0	5.3 - 5.7	5.0 - 5.2	4.3 - 4.8	4.2 - 4.4	3.9 - 4.1
	0.80	10.6 - 10.9	7.8 - 7.9	6.1 - 6.2	5.8 - 6.0	5.3 - 5.6	4.9 - 5.2	4.5 - 4.8	4.2 - 4.4
No. 8 (2.36 mm) Sieve (Superpave and 4.75 mm mixes)	1.00	0.00 - 7.0	0.00 - 5.6	0.00 - 4.8	0.00 - 4.3	0.00 - 4.0	0.00 - 3.6	0.00 - 3.4	0.00 - 3.2
	0.98	7.1 - 8.0	5.7 - 6.3	4.9 - 5.4	4.4 - 4.8	4.1 - 4.5	3.7 - 4.1	3.5 - 3.8	3.3 - 3.6
	0.95	8.1 - 9.0	6.4 - 7.0	5.5 - 6.0	4.9 - 5.3	4.6 - 4.9	4.2 - 4.5	3.9 - 4.2	3.7 - 3.9
	0.90	9.1 - 10.9	7.1 - 7.7	6.1 - 6.6	5.4 - 5.8	5.0 - 5.4	4.6 - 4.9	4.3 - 4.6	4.0 - 4.3
	0.85	11.0 - 12.0	7.8 - 8.5	6.7 - 7.2	5.9 - 6.4	5.5 - 5.8	5.0 - 5.3	4.7 - 5.0	4.4 - 4.6
	0.75	12.1 - 12.5	8.6 - 8.8	7.3 - 7.5	6.5 - 6.8	5.9 - 6.3	5.4 - 5.7	5.1 - 5.3	4.7 - 4.9
No. 8 (2.36 mm) Sieve (12.5 mm SMA, 9.5 mm SMA)	1.00	0.00 - 5.3	0.00 - 4.2	0.00 - 3.6	0.00 - 3.2	0.00 - 3.0	0.00 - 2.7	0.00 - 2.6	0.00 - 2.4
	0.98	5.4 - 6.0	4.3 - 4.7	3.7 - 4.0	3.3 - 3.6	3.1 - 3.4	2.8 - 3.1	2.7 - 2.9	2.5 - 2.7
	0.95	6.1 - 6.8	4.8 - 5.3	4.1 - 4.5	3.7 - 4.0	3.5 - 3.7	3.2 - 3.4	3.0 - 3.2	2.8 - 2.9
	0.90	6.9 - 8.2	5.4 - 5.8	5.6 - 5.0	4.1 - 4.5	3.8 - 4.0	3.5 - 3.7	3.3 - 3.5	3.0 - 3.2
	0.85	8.3 - 9.0	5.9 - 6.4	5.1 - 5.4	4.6 - 4.8	4.1 - 4.4	3.8 - 4.0	3.6 - 3.8	3.3 - 3.4



**Section 400—Hot Mix Asphaltic Concrete Construction**

Mixture Characteristics	Pay Factor	Mean of the Deviations from the Job Mix Formula							
		1 Test	2 Tests	3 Tests	4 Tests	5 Tests	6 Tests	7 Tests	8 Tests
	0.75	9.1 - 9.4	6.5 - 6.6	5.5 - 5.0	4.9 - 5.1	4.5 - 4.7	4.1 - 4.3	3.9 - 4.0	3.5 - 3.7
No. 8 (2.36 mm) Sieve for OGFC and PEM mixes: When the mean of the deviations from the Job Mix Formula for a particular lot exceeds the tolerance for a 1.00 pay factor in the appropriate column, the lot will be paid for at 0.50 of the Contract Price.									

**Table 10—Mixture Acceptance Schedule—Subsurface Mixes**

Mixture Characteristics	Pay Factor	Mean of the Deviations from the Job Mix Formula							
		1 Test	2 Tests	3 Tests	4 Tests	5 Tests	6 Tests	7 Tests	8 Tests
Asphalt Cement Content (Extraction, Ignition)	1.00	0.00 - 0.80	0.00 - 0.61	0.00 - 0.52	0.00 - 0.46	0.00 - 0.43	0.00 - 0.39	0.00 - 0.36	0.00 - 0.34
	0.95	0.81 - 0.90	0.62 - 0.68	0.53 - 0.58	0.47 - 0.51	0.44 - 0.47	0.40 - 0.43	0.37 - 0.40	0.35 - 0.37
	0.90	0.91 - 1.00	0.69 - 0.75	0.59 - 0.64	0.52 - 0.56	0.48 - 0.52	0.44 - 0.47	0.41 - 0.44	0.38 - 0.41
	0.80	1.01 - 1.19	0.76 - 0.82	0.65 - 0.69	0.57 - 0.61	0.53 - 0.56	0.48 - 0.51	0.45 - 0.47	0.42 - 0.44
	0.70	1.20 - 1.40	0.83 - 0.85	0.70 - 0.72	0.62 - 0.64	0.57 - 0.59	0.52 - 0.55	0.48 - 0.51	0.45 - 0.48
	0.50	1.41 - 1.60	0.86 - 0.88	0.73 - 0.75	0.65 - 0.67	0.60 - 0.63	0.56 - 0.60	0.52 - 0.56	0.49 - 0.52
1/2 in. (12.5 mm) Sieve (25 mm Superpave)	1.00	0.00 - 12.9	0.00 - 8.1	0.00 - 6.9	0.00 - 6.1	0.00 - 5.5	0.00 - 5.0	0.00 - 4.7	0.00 - 4.4
	0.98	13.0 - 14.0	8.2 - 9.1	7.0 - 7.7	6.2 - 6.8	5.6 - 6.1	5.1 - 5.6	4.8 - 5.2	4.5 - 4.9
	0.95	14.1 - 15.0	9.2 - 10.1	7.8 - 8.5	6.9 - 7.5	6.2 - 6.7	5.7 - 6.1	5.3 - 5.7	5.0 - 5.4
	0.90	15.1 - 16.0	10.2 - 11.1	8.6 - 9.3	7.6 - 8.2	6.8 - 7.4	6.2 - 6.7	5.8 - 6.3	5.5 - 5.9
	0.85	16.1 - 17.0	11.2 - 11.5	9.4 - 9.6	8.3 - 8.6	7.5 - 7.8	6.8 - 7.0	6.4 - 6.5	6.0 - 6.1
	0.80	17.1 - 18.0	11.6 - 11.9	9.7 - 9.9	8.7 - 9.0	7.9 - 8.1	7.1 - 7.3	6.6 - 6.8	6.2 - 6.4
1/2 in. (12.5 mm) Sieve (19 mm SMA)	1.00	0.00 - 9.7	0.00 - 6.0	0.00 - 5.2	0.00 - 4.6	0.00 - 4.1	0.00 - 3.8	0.00 - 3.5	0.00 - 3.3
	0.98	9.8 - 10.5	6.2 - 6.8	5.3 - 5.8	4.7 - 5.1	4.2 - 4.6	3.9 - 4.2	3.6 - 3.9	3.4 - 3.7
	0.95	10.6 - 11.2	6.9 - 7.8	5.9 - 6.4	5.2 - 5.6	4.7 - 5.0	4.3 - 4.6	4.0 - 4.3	3.8 - 4.0
	0.90	11.3 - 12.0	7.9 - 8.3	6.5 - 7.0	5.7 - 6.1	5.1 - 5.6	4.7 - 5.0	4.4 - 4.7	4.1 - 4.4
	0.85	12.1 - 12.8	8.4 - 8.6	7.1 - 7.2	6.2 - 6.5	5.7 - 5.9	5.1 - 5.3	4.8 - 4.9	4.5 - 5.6
	0.80	12.9 - 13.5	8.7 - 8.9	7.3 - 7.4	6.6 - 6.8	6.0 - 6.1	5.4 - 5.5	5.0 - 5.1	4.7 - 4.8
3/8 in. (9.5 mm)	1.00	0.00 - 10.0	0.00 - 7.5	0.00 - 6.3	0.00 - 5.6	0.00 - 5.2	0.00 - 4.7	0.00 - 4.4	0.00 - 4.1

**Section 400—Hot Mix Asphaltic Concrete Construction**

Mixture Characteristics	Pay Factor	Mean of the Deviations from the Job Mix Formula							
		1 Test	2 Tests	3 Tests	4 Tests	5 Tests	6 Tests	7 Tests	8 Tests
Sieve (19 mm Superpave, 12.5 mm Superpave)	0.98	10.1 - 11.9	7.6 - 8.4	6.4 - 7.0	5.7 - 6.3	5.3 - 5.8	4.8 - 5.3	4.5 - 5.0	4.2 - 4.6
	0.95	12.0 - 13.0	8.5 - 9.3	7.1 - 7.7	6.4 - 6.9	5.9 - 6.3	5.4 - 5.8	5.1 - 5.4	4.7 - 5.0
	0.90	13.1 - 14.0	9.4 - 10.2	7.8 - 8.6	7.0 - 7.6	6.4 - 6.9	5.9 - 6.3	5.5 - 5.9	5.1 - 5.5
	0.85	14.1 - 14.5	10.3 - 10.5	8.7 - 8.9	7.7 - 8.0	7.0 - 7.5	6.4 - 6.8	6.0 - 6.4	5.6 - 6.0
	0.80	14.6 - 15.0	10.6 - 10.8	9.0 - 9.2	8.1 - 8.4	7.6 - 7.8	6.9 - 7.3	6.5 - 6.8	6.1 - 6.5
No. 4 (4.75 mm) Sieve (9.5 mm Superpave)	1.00	0.00 - 10.0	0.00 - 7.6	0.00 - 6.3	0.00 - 5.8	0.00 - 5.4	0.00 - 4.9	0.00 - 4.6	0.00 - 4.3
	0.98	10.1 - 11.9	7.7 - 8.5	6.4 - 6.9	5.9 - 6.4	5.5 - 5.9	5.0 - 5.4	4.7 - 5.0	4.4 - 4.7
	0.95	12.0 - 13.0	8.6 - 9.4	7.0 - 7.5	6.5 - 7.0	6.0 - 6.5	5.5 - 5.9	5.1 - 5.5	4.8 - 5.1
	0.90	13.1 - 14.0	9.5 - 10.2	7.6 - 8.0	7.1 - 7.6	6.6 - 7.0	6.0 - 6.4	5.6 - 5.9	5.2 - 5.5
	0.85	14.1 - 14.5	10.3 - 10.5	8.1 - 8.3	7.7 - 8.0	7.1 - 7.5	6.5 - 6.9	6.0 - 6.4	5.6 - 5.9
	0.80	14.6 - 15.0	10.6 - 10.8	8.4 - 8.6	8.1 - 8.4	7.6 - 8.0	7.0 - 7.4	6.5 - 6.8	6.0 - 6.3
No. 8 (2.36 mm) Sieve (All mixes except SMA)	1.00	0.00 - 8.0	0.00 - 6.3	0.00 - 5.4	0.00 - 4.8	0.00 - 4.5	0.00 - 4.1	0.00 - 3.8	0.00 - 3.6
	0.98	8.1 - 9.0	6.4 - 7.0	5.5 - 6.0	4.9 - 5.3	4.6 - 4.9	4.2 - 4.5	3.9 - 4.2	3.7 - 3.9
	0.95	9.1 - 10.0	7.1 - 7.7	6.1 - 6.6	5.4 - 5.8	5.0 - 5.4	4.6 - 4.9	4.3 - 4.6	4.0 - 4.3
	0.90	10.1 - 11.9	7.8 - 8.5	6.7 - 7.2	5.9 - 6.4	5.5 - 5.8	5.0 - 5.3	4.7 - 5.0	4.4 - 4.6
	0.85	12.0 - 13.0	8.6 - 8.8	7.3 - 7.5	6.5 - 6.8	5.9 - 6.3	5.4 - 5.7	5.1 - 5.3	4.7 - 4.9
	0.75	13.1 - 14.0	8.9 - 9.1	7.6 - 7.8	6.9 - 7.2	6.4 - 6.6	5.8 - 6.1	5.4 - 5.7	5.0 - 5.3
No. 8 (2.36 mm) Sieve (19 mm SMA)	1.00	0.00 - 6.0	0.00 - 4.7	0.00 - 4.1	0.00 - 3.6	0.00 - 3.4	0.00 - 3.1	0.00 - 2.9	0.00 - 2.4
	0.98	6.1 - 6.8	4.8 - 5.2	4.2 - 4.5	3.7 - 4.0	3.5 - 3.7	3.2 - 3.4	3.0 - 3.2	2.8 - 2.9
	0.95	6.9 - 7.5	5.3 - 5.8	4.6 - 5.0	4.1 - 4.4	3.8 - 4.0	3.5 - 3.7	3.3 - 3.5	3.0 - 3.2

## Section 400—Hot Mix Asphaltic Concrete Construction

Mixture Characteristics	Pay Factor	Mean of the Deviations from the Job Mix Formula							
		1 Test	2 Tests	3 Tests	4 Tests	5 Tests	6 Tests	7 Tests	8 Tests
	0.90	7.6 - 8.9	5.9 - 6.4	5.1 - 5.4	4.5 - 4.8	4.1 - 4.4	3.8 - 4.0	3.6 - 3.8	3.3 - 3.5
	0.85	9.0 - 9.8	6.5 - 6.6	5.5 - 5.6	4.9 - 5.1	4.5 - 4.7	4.1 - 4.3	3.9 - 4.0	3.6 - 3.7
	0.75	9.9 - 10.5	6.7 - 6.8	5.7 - 5.9	5.2 - 5.4	4.8 - 5.0	4.4 - 4.6	4.1 - 4.3	3.8 - 4.0

### 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 Department will take actions based on the degree of segregation. The actions are described below.

#### 1. Unquestionably Unacceptable Segregation

When the Engineer 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 Department 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 [Subsection 400.3.06.E.3.](#)
- 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 Department.
- c. When work resumes, place a test section not to exceed 500 tons (500 Mg) of the affected mixture for the Department 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 Engineer 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 Department 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.

## Section 400—Hot Mix Asphaltic Concrete Construction

---

- 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 13.5% based on [GDT 39](#). The control sieves for each mix type are shown in [Subsection 400.5.01.B "Determine Lot Acceptance."](#)
- b. Subsurface mixes. For subsurface mixes, limit removal and replacement to the full lane width and no less than 10 ft. (3 m) long and as approved by the Engineer.
- 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 engineer.

Surface tolerance requirements apply to the corrected areas for both subsurface and surface mixes.

### 400.3.07 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](#).

## Section 400—Hot Mix Asphaltic Concrete Construction

- 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 Engineer 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 Engineer 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.1, “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 mixture is subject to the [Mixture Acceptance Schedule—Table 9 or 10](#). 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:** For asphaltic concrete 9.5 mm OGFC and 12.5 mm OGFC, control the spread rate per lot within 5 lbs/yd<sup>2</sup> (3 kg/m<sup>2</sup>) of the designated spread rate. For asphaltic concrete 12.5 mm PEM, control the spread rate per lot within 10 lbs/yd<sup>2</sup> (6 kg/m<sup>2</sup>) of the designated spread rate.

**Note 2:** Thickness and spread rate tolerances are provided to allow normal variations within a given lot. Do not continuously operate at a thickness or spread rate not specified.

## Section 400—Hot Mix Asphaltic Concrete Construction

---

When the Plans specify a thickness, the Engineer may take as many cores as necessary to determine the average thickness of the intermediate or surface course. The Engineer shall take a minimum of one core per 1,000 ft (300 m) 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 Department 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 Department 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.1, 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.

<p><b>NOTE: Thickness tolerances are provided to allow normal variations within a given lot. Do not continuously operate at a thickness not specified.</b></p>
--

### C. Asphaltic Concrete

Hot mix asphaltic concrete, complete in place and accepted, is measured in tons (megagrams) or square yards (meters) as indicated in the Proposal. If payment is by the ton (megagram), the actual weight 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:

**Section 400—Hot Mix Asphaltic Concrete Construction**

---

$$T1 = T x \frac{\% AC + \frac{\% Aggregate \times 2.75}{combined\ bulk\ Sp.\ Gr.} + \% Y}{100}$$

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
Combined Bulk Sp. Gr.=	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 patching, 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



## Section 400—Hot Mix Asphaltic Concrete Construction

### 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

When materials or construction are not within the tolerances in this Specification, the Contract Price will be adjusted according to [Subsection 106.03, “Samples, Tests, Cited Specifications”](#) and [Subsection 400.3.06, “Quality Acceptance.”](#)

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 <u>type</u> Superpave, <u>group-blend</u> , Including bituminous materials, Gilsonite modifier, and hydrated lime	Per ton (megagram)
Item No. 400	_____ inches asphaltic concrete, <u>type</u> Superpave, <u>group-blend</u> including bituminous materials, Gilsonite modifier and hydrated lime	Per square yard (meter)
Item No. 400	Asphaltic concrete <u>type</u> Stone Matrix Asphalt, <u>group-blend</u> , including polymer-modified bituminous materials and hydrated lime	Per ton (megagram)
Item No. 400	Asphaltic concrete <u>type</u> OGFC, <u>group 2</u> only, including bituminous materials and hydrated lime	Per ton (megagram)
Item No. 400	Asphaltic concrete <u>type</u> OGFC, <u>group 2</u> only, including polymer-modified bituminous materials and hydrated lime	Per ton (megagram)
Item No. 400	Asphaltic concrete <u>type</u> Porous European Mix, <u>group 2</u> only, including polymer-modified bituminous materials and hydrated lime	Per ton (megagram)

### 400.5.01 Adjustments

#### A. Materials Produced and Placed During the Adjustment Period

An adjustment period is allowed at the start of mixing operations for each type of mix placed on the Contract except for Asphaltic Concrete OGFC or PEM. The adjustment period is provided to adjust or correct the mix and to establish the construction procedures and sequence of operations.

The adjustment period consists of the tons (megagrams) of the affected mix produced and placed on the first day of operation. If this quantity is less than 500 tons (500 Mg), the Engineer may combine the tons (megagrams) produced and placed on the first day of operation with the tons (megagrams) produced and placed on the next production day of the affected mix for the adjustment period.

The material produced and placed during the mixture adjustment period is one lot. If the mix is adjusted during this period, a new lot may be necessary, but a new adjustment period will not be permitted.

## Section 400—Hot Mix Asphaltic Concrete Construction

This material shall be paid for at 100 percent of the Contract Unit Price provided it meets the minimum requirements for a 1.00 pay factor for asphalt cement content and a 0.90 pay factor for gradation in the [Mixture Acceptance Schedule—Table 9 or 10](#).

If the material placed during the adjustment period fails to meet the above requirements, it will be paid for using the applicable acceptance schedule. When the same type Superpave mixture is placed at different mix design levels and a different blend of materials is specified in the job mix formula, a new adjustment period shall be granted. However, when a Superpave mixture with the same blend of materials specified in the job mix formula is placed at different mix design levels or when a mixture used for leveling at a spread rate of 90 lbs/yd<sup>2</sup> (50 kg/m<sup>2</sup>) or less is also used for the surface mix at a spread rate greater than 90 lbs/yd<sup>2</sup> (50 kg/m<sup>2</sup>), an additional adjustment period will be allowed for compaction only. This material will be paid for at a 1.00 pay factor provided it:

- Meets the minimum requirements for a 1.00 pay factor in the Mixture Acceptance Schedule—Table 9 or 10 for both asphalt content and gradation.
- Meets the minimum requirements for a 0.90 pay factor in Table 12 of [Subsection 400.5.01C](#), [“Calculate Mean Pavement Air Voids](#).

Mixture which does not meet these requirements shall be paid for using the applicable acceptance schedule.

### B. Determine Lot Acceptance

Pay factor adjustments are based on control sieves and asphalt cement content. The control sieves used in the mixture acceptance schedule for the various types of mix are indicated below:

<b>Control Sieves Used in the Mixture Acceptance Schedule</b>	
Asphaltic concrete 25 mm Superpave	1/2 in., No. 8 (12.5 mm, 2.36 mm) sieves and asphalt cement
Asphaltic concrete 19 mm SMA	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 12.5 mm SMA	3/8 in., No. 8 (9.5 mm, 2.36 mm) sieves and asphalt cement
Asphaltic concrete 12.5 mm PEM	3/8 in., No. 8 (9.5 mm, 2.36 mm) sieves and asphalt cement
Asphaltic concrete 12.5 mm OGFC	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 9.5 mm SMA	No. 4, No. 8 (4.75 mm, 2.36 mm) sieves and asphalt cement
Asphaltic concrete 9.5 mm OGFC	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

For projects which do not have milling quantities established as a Pay Item, the Department will pay for 12.5 mm OGFC and PEM placed on ramps and end of project transitions under the appropriate mixture pay item, but the mix shall be subject to the same gradation and control sieve requirements as asphaltic concrete 9.5 mm OGFC. Add polymer-modified bituminous material, hydrated lime, and stabilizing fiber to this mix.

## Section 400—Hot Mix Asphaltic Concrete Construction

The Department will perform the following tasks:

1. Using the [Mixture Acceptance Schedule—Table 9 or 10](#), 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.
3. Use the Asphalt Cement Content and Aggregate Gradation of Asphalt Concrete [Mixture Acceptance Schedule—Table 9](#) to determine acceptance of surface mixes and the [Mixture Acceptance Schedule—Table 10](#) to determine acceptance of subsurface mixes.

On Contracts involving 1,000 tons (1000 Mg) or less of asphaltic concrete, the mixture is accepted for 100 percent payment of the asphaltic concrete Unit Price provided it meets the following:

1. Minimum requirements for a 1.00 pay factor for asphalt cement content and a 0.90 pay factor for gradation in the applicable [Mixture Acceptance Schedule—Table 9 or 10](#).
2. Minimum requirements for a 0.90 pay factor in Table 12 of [Subsection 400.5.01C, “Calculate Pavement Mean Air Voids.”](#)

If the material placed on Contracts involving 1,000 tons (1000 Mg) or less of asphaltic concrete does not meet the above requirements, the material will be paid for using the applicable acceptance schedule.

### C. Calculate Pavement Mean Air Voids

The Department 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.

The Department will determine the payment for each lot by multiplying the Contract Unit Price by the adjusted pay factor shown in the following Air Voids Acceptance schedule:

**Table 12 - Air Voids Acceptance Schedule**

Pay Factor	Percent of Maximum Air Voids (Lot Average-5 Tests)	Percent of Maximum Air Voids (Lot Average-10 Tests) (for Reevaluations)
1.00	≤100	≤100
0.97	100.1 — 105	100.1 — 104
0.95	105.1 — 112	104.1 — 109
0.90	112.1 — 124	109.1 — 118
0.80	124.1 — 149	118.1 — 136
0.70	149.1 — 172	136.1 — 153
0.50	172.1 — 191	153.1 — 166

When the range tolerance is exceeded, the Department will apply a pay factor of 0.95 as described in [Subsection 400.3.06.B.2.](#)

## Section 400—Hot Mix Asphaltic Concrete Construction

---

### 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/yd<sup>2</sup> (\$0.05/ m<sup>2</sup>) 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

Determine the lot payment as follows:

1. When one of the pay factors for a specific acceptance lot is less than 1.0, determine the payment for the lot by multiplying the Contract Unit Price by the adjusted pay factor.
2. When two or more pay factors for a specific acceptance lot are less than 1.0, determine the adjusted payment by multiplying the Contract Unit Price by the lowest pay factor.

If the mean of the deviations from the job mix formula of the tests for a sieve or asphalt cement content exceeds the tolerances established in the [Mixture Acceptance Schedule—Table 9 or 10](#) and if the Engineer determines that the material need not be removed and replaced, the lot may be accepted at an adjusted unit price as determined by the Engineer. If the pavement mean air voids exceed the tolerances established in the [Air Voids Acceptance Schedule – Table 12](#), remove and replace the materials at the Contractor’s expense.

If the Engineer determines that the material is not acceptable to leave in place, remove and replace the materials at the Contractor’s expense.

**DEPARTMENT OF TRANSPORTATION**

**STATE OF GEORGIA**

**SPECIAL PROVISION**

**PROJECT NO.:**

**COUNTY:**

**PI NO.:**

**SECTION 415—ASPHALTIC CONCRETE OPEN GRADED INTERLAYER**

---

*Add the following:*

**415.1 General Description**

This work includes constructing a bituminous plant produced Asphaltic Concrete Open Graded Interlayer over the existing roadway surface. The mixture shall serve as asphaltic concrete leveling over irregular surfaces and provide mitigation for reflective cracking prior to the placement of the final surface pavement. The mixture shall conform to the lines, grades, thicknesses, typical sections and cross sections shown on the Plans or established by the Engineer.

This section includes the requirements for Asphaltic Concrete Open Graded Interlayer mixtures regardless of the gradation of the aggregates, type and amount of bituminous material, or pavement use. Follow the requirements in [Section 400](#), and [Section 828](#) for production and placement, materials, equipment, and acceptance plans except as noted or modified in this Specification.

Acceptance of work is on a lot-to-lot basis according to the requirements of this Section, [Section 400](#) and [Section 106](#).

**415.1.01 Definitions**

Asphaltic Concrete Open Graded Interlayer: an open graded mixture placed at a lift thickness that yields stone on stone contact that provides in-place air void content in excess of 20% to mitigate existing cracking within asphaltic concrete pavements.

**415.1.02 Related References**

**A. Standard Specifications**

[Section 106—Control of Materials](#)

[Section 109—Measurement and Payment](#)

[Section 152—Field Laboratory Building](#)

[Section 400 - Hot Mix Asphaltic Concrete Construction](#)

[Section 413—Bituminous Tack Coat](#)

[Section 800 - Course Aggregate](#)

[Section 802 - Aggregates for Asphaltic Concrete](#)

[Section 820 - Asphalt Cement](#)

[Section 828 - Hot Mix Asphaltic Concrete Mixtures](#)

[Section 831 - Admixtures](#)

[Section 882 - Lime](#)

[Section 883 – Mineral Filler](#)

**B. Referenced Documents**

AASHTO T 209

AASHTO T 202

AASHTO T 49

AASHTO T 315

[Department of Transportation Standard Operating Procedure \(SOP\) 27](#)

[Department of Transportation Standard Operating Procedure \(SOP\) 15](#)

[Department of Transportation Standard Operation Procedure \(SOP\) 40](#)

[GDT 38](#)

[GDT 73](#)

[GDT 83](#)

[GDT 119](#)

[GDT 125](#)

[GDT 126](#)

[GSP 15](#)

[GSP 21](#)

[QPL 1](#)

[QPL 2](#)

[QPL 7](#)

[QPL 26](#)

[QPL 39](#)

[QPL 41](#)

[QPL 45](#)

### **415.1.03 Submittals**

#### **A. Invoices**

Furnish formal written invoices from a supplier for all materials used in production of HMA when requested by Department. Show the following on the Bill of Lading:

- Date shipped
- Quantity in tons (megagrams)
- Included with or without additives (for asphalt cement)

Purchase asphaltic cement directly from a supplier listed on [Qualified Products List 7](#) and provide copies of Bill of Lading at the Department's request.

#### **B. Paving Plan**

Before starting asphaltic concrete construction, submit a written paving plan to the Engineer for approval. Include the following on the paving plan:

- Proposed starting date
- Location of plant(s)
- Rate of production
- Average haul distance(s)
- Number of haul trucks
- Paver speed feet (meter)/minute for each placement operation
- Mat width for each placement operation
- Number and type of rollers for each placement operation
- Sketch of the typical section showing the paving sequence for each placement operation
- Electronic controls used for each placement operation
- Temporary pavement marking plan

If staged construction is designated in the Plans or contract, provide a paving plan for each construction stage.

If segregation is detected, submit a written plan of measures and actions to prevent segregation. Work will not continue until the plan is submitted to and approved by the Department.

#### **C. Job Mix Formula**

Submit to the Engineer a written job mix formula proposed for each mixture type to be used based on an approved mix design. Furnish the following information for each mix:

- Specific project for which the mixture will be used
- Source and description of the materials to be used
- Mixture I.D. Number

- Proportions of the raw materials to be combined in the paving mixture
- Single percentage of the combined mineral aggregates passing each specified sieve
- Single percentage of asphalt by weight of the total mix to be incorporated in the completed mixture
- Single temperature at which to discharge the mixture from the plant
- Theoretical specific gravity of the mixture at the designated asphalt content
- Name of the person or agency responsible for quality control of the mixture during production

Do the following to have the formulas approved in accordance with [SOP 40 “Approval of Contractor Job Mix Formulas”](#) and to ensure their quality:

1. Submit proposed job mix formulas for review at least two weeks before beginning the mixing operations.
2. Do not start hot mix asphaltic concrete work until the Engineer has approved a job mix formula for the mixture to be used. No mixture will be accepted until the Engineer has given approval.
3. Provide mix designs for all SMA, Superpave and 4.75 mm mixes to be used. The Department 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 Department according to [Subsection 106.01, “Source of Supply and Quantity of Materials.”](#)

**D. Quality Control Program**

Submit a Quality Control Plan to the Office of Materials and Research for approval. The Quality Control Program will be included as part of the certification in the annual plant inspection report.

**415.2 Materials**

The requirements established in [Section 400](#) are to be followed for Asphaltic Concrete Open Graded Interlayer production and placement, materials, equipment, and acceptance plans except as noted or modified in this Specification.

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

**Table 1—Materials Specifications**

Material	Subsection
Asphalt Cement, Grade Specified	<a href="#">820.2</a>
Coarse Aggregates for Asphaltic Concrete	<a href="#">802.2.02</a>
Fine Aggregates for Asphaltic Concrete	<a href="#">802.2.01</a>
Mineral Filler	<a href="#">883.1</a>
Heat Stable Anti-Stripping Additive	<a href="#">831.2.04</a>
Hydrated Lime	<a href="#">882.2.03</a>
Silicone Fluid (When approved by the Office of Materials and Research)	<a href="#">831.2.05</a>
Bituminous Tack Coat: PG 58-22, PG 64-22, PG 67-22	<a href="#">820.2</a>
Hot Mix Asphaltic Concrete Mixtures	<a href="#">828</a>



### 415.2.01 Mix Design Requirements

The Open Graded Interlayer Mixture shall be formulated to contain approximately 20 to 25 percent in-place air voids after compaction. Use approved mixtures that meet the following mixture control tolerances and design criteria:

**Table 2 – Asphaltic Concrete Open Graded Interlayer Mixture Design and Control**

Sieve Size	Mixture Control Tolerance, %	Design Gradation Limits, % Passing
		Open Graded Interlayer
3/4 in (19 mm) sieve	±0.0	100
1/2 in (12.5 mm) sieve	±6.1	80 - 100
3/8 in (9.5 mm) sieve	±5.6	40 - 65
No. 4 (4.75 mm) sieve	±5.7	10 - 25
No. 8 (2.36 mm) sieve	±4.6	2 - 8
No. 200 (75 µm) sieve	±2.0	1 - 4
Range for % AC	±0.4	4.00 – 5.00
Class of stone ( <a href="#">Section 800</a> )		"A" only
Drain-down (AASHTO T305), %		<0.3
Design optimum air voids (%)		22% ±1
Control Sieves used in Acceptance Schedule		3/8 in., No. 8 (9.5 mm, 2.36 mm ) and Asphalt Cement

Notes:

1. Use only PG 67-22 asphalt cement (specified in [Section 820](#)).
2. Use no less than 1.0% hydrated lime regardless of aggregates group or source(s) used.

The Department will design the Open Graded Interlayer mixture. All materials and appropriate related information (material sources, gradation and project for use) shall be furnished to the Office of Materials and Research. Once the materials and related information has been provided, the Department shall have four weeks to design the mixture. The Department will establish the mix design Asphalt Cement content for the mix.

### 415.3 Construction Requirements

The requirements established in [Section 400](#) are to be followed for hot mix asphaltic concrete production and placement, materials, equipment, and acceptance plans except as noted or modified in this Specification.

#### 415.3.01 Personnel

General Provisions 101 through 150.

#### 415.3.02 Construction

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

Follow requirements established in [Section 400](#) for production and placement, materials, equipment, acceptance plans and adjustments except as noted or modified in this Specification.

- A. Apply the bituminous tack coat according to [Section 413](#). The Engineer will determine the application rate, which must be within the limits of 0.03 gal/yd<sup>2</sup> to 0.05 gal/yd<sup>2</sup> (0.14 L/m<sup>2</sup> to 0.23 L/m<sup>2</sup>).
- B. The mix shall be produced and placed at a temperature of 250°F (120°C) with a tolerance of ± 20°F (± 10°C).
- C. Place the mix to a compacted lift thickness of 1-inch (25 mm). For construction purposes, the target thickness will be converted to spread rate based on the bulk specific gravity of the asphaltic concrete mixture being used as shown in the following equation:

$$\text{Spread rate (lbs/yd}^2\text{)} = t * G_{mb} * 46.8$$

Where: t = Compacted lift thickness (inches)  
 G<sub>mb</sub> = bulk specific gravity of the mix from the approved mix design

$$\text{Spread rate (kgs/m}^2\text{)} = t * G_{mb} * 0.9995$$

Where: t = Compacted lift thickness (millimeters)  
 G<sub>mb</sub> = bulk specific gravity of the mix from the approved mix design

The spread rate shall be controlled within 10 lbs/yd<sup>2</sup> (6 kg/m<sup>2</sup>).

- D. Do not place mix at air temperatures below 50°F (10°C).
- E. The mix shall be compacted in a manner to achieve 20% - 25% in-place air voids. Steel wheel rollers operating in static mode *only* will be used to seat the lift of Asphaltic Concrete Open Graded mixture. Pneumatic tire rollers shall not be allowed on the Asphaltic Concrete Open Graded mat.

#### 415.4 Measurement

If the spread rate exceeds the upper limits outlined in Subsection 415.3.02.C, the mix in excess will not be paid for. If the rate of the spread is less than the lower limit, the deficient course is subject to correction by overlaying the entire lot. The mixture used for correcting deficient areas is paid for at the Contract Unit Price of the course being corrected and is subject to mixture control requirements established in Table 2 – Asphaltic Concrete Open Graded Crack Relief Interlayer Mixture Design and Control. After the deficient course has been corrected, the total spread rate for that lot is recalculated, and mix in excess of the upper limits outlined in Subsection 415.3.02.C will not be paid for.

#### 415.5 Payment

Asphaltic Concrete Open Graded Crack Relief Layer mix is paid for at the Contract Unit Price per ton (megagram). Payment is full compensation for furnishing and placing materials including asphalt cement, hydrated lime, approved additives, and for cleaning and repairing, preparing surfaces, hauling, mixing, spreading, rolling, and performing other operations to complete the Contract Item.

Payment will be made under:

Item No. 415	Asphaltic Concrete Open Graded Crack Relief Interlayer, group-blend, including bituminous materials and hydrated lime	Per ton (megagram)
--------------	---	--------------------

##### 415.5.01 Adjustments

###### A. Materials Produced and Placed During the Adjustment Period

Follow requirements established in [Section 400](#) for production and placement, materials, equipment, acceptance plans and adjustments except as noted or modified in this Specification.

Asphaltic Concrete Open Graded Crack Relief Interlayer shall be granted an adjustment period for the first Lot or day, whichever is less, produced for the Contract. A new adjustment period shall not be granted for a change of producer, mix design or asphalt plant location. The adjustment period is provided to adjust or correct the mix and to establish the

construction procedures and sequence of operations. Test the mixture in accordance with Section 400.3.06. Maintain the asphalt cement content and gradation within the limits provided in Table 2 – Asphaltic Concrete Open Graded Interlayer Mixture Design and Control. The Engineer will not use these test results in the acceptance for payment decision but production and placement operations shall cease for failure to meet mixture control tolerances established in Table 2 – Asphaltic Concrete Open Graded Interlayer Mixture Design and Control.

#### **415.5.02 Determine Lot Acceptance**

The Engineer will accept the mixture based on visual inspection. The mixture shall be inspected for texture, segregation, bleeding, fat spots, raveling, delamination, tearing, targeted in-place air void content and slippage areas. Remove and replace areas determined to be unacceptable to the Engineer.

Office of Materials and Research