Dunwoody
Smart people – Smart city

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MEMORANDUM

To: Mayor and City Council

From: Michael Smith, Public Works Director

Date: 10/10/2011

Subject: **Approval of Contract for Local Maintenance and Improvement Grant**

ITEM DESCRIPTION

Approval of a contract with the Georgia Department of Transportation to receive up to $194,988 for road resurfacing through the Local Maintenance and Improvement Grant (LMIG)

BACKGROUND

The City has requested and received a Local Maintenance and Improvement Grant (LMIG) for road resurfacing from the Georgia Department of Transportation (GDOT). Funding for the LMIG program is set each year by the Georgia General Assembly using revenue from the state motor fuel tax. The total funding is proportioned among cities and counties based on population and road mileage. The amount designated for Dunwoody in 2011 is $194,988.

The attached agreement provides for reimbursement to the City on a unit price basis up to the grant award amount. The agreement stipulates that the funds will be used for milling, patching and paving on the following streets:

Fleur De Lis Court
Holliston Court
Ralston Court
Trowbridge Drive
Hensley Drive
Manhasset Farm Court
Strasburg Court

These streets are included in the City's current contract with Allied Paving. Paving can commence once the contract is executed and notice to proceed is received from GDOT.

RECOMMENDED ACTION

Staff recommends approval of the contract with GDOT so that the City is eligible to receive the reimbursement for paving of the streets listed above.

ORIGINAL

CITY CONTRACT

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

CONTRACT

DO NOT UNSTAPLE THIS BOOKLET....ENTER ALL REQUIRED INFORMATION
EITHER BY HAND OR BY STAMP.

DATE OF OPENING : NONE

CALL ORDER : NONE

CONTRACT ID : C38782-11-000-0

PCN	PROJECTS AND CONTRACT NO.
S013665.C1000	S013665-PRC

COUNTY : DEKALB

CODE: 5DU300

1. CITY OF DUNWOODY

LIMITED PARTICIPATION

THIS AGREEMENT made and entered into this _____ day of _____, 201___ by and between the Department of Transportation, an agency of the State of Georgia ("Department") and the City of Dunwoody, Georgia who have been duly authorized to execute this Agreement:

WITNESSETH:

WHEREAS, the Department and City/County desire the improvements and construction of a certain facility and the City/County desires and agrees to furnish and deliver all the material and to do and perform all the work and labor for said purpose.

NOW THEREFORE, for and in consideration of the premises, the mutual covenants herein contained it is agreed by and between the Department and the City/County that:

A. **BASIC AGREEMENT:**

1. The City/County shall contract for 1.370 miles of patching and plant mix resurfacing on various streets in Dunwoody, Contract ID No. C38782-11-000-0, hereinafter referred to as the "Project". It is understood that the quantities shown are approximates only and subject either to increase or decrease and any increases or decreases are to be paid for at the contract unit price given, labeled Exhibit A, attached hereto and incorporated herein by reference. The maximum allowable costs for the Project shall be $194,988.46.

2. The work and materials shall be in strict and entire conformity with the provisions of this Agreement and the plans prepared by the City/County and approved by the Chief Engineer or his authorized representative the originals of which are on file at the Department and which said plans are hereby made a part of this Agreement as if fully set forth herein. The Project will be constructed in accordance with the standard specifications, 2001 edition, as further amended, and the Supplemental Specifications and Special Provisions, attached hereto as Exhibit B and incorporated herein by reference.

3. The work can be performed by the local government or can be subcontracted out to a private contractor. If the work is performed by a private contractor the local government is responsible for preparing the bid contract documents and letting the work out for bid in accordance with the express limitations as provided in Part 2 of Article 3 of Title 32 or any other provision of law. The local government shall ensure that the project is constructed in accordance with GDOT specifications regardless of whether the contract is performed by the local government or a private contractor. The local government will also be responsible for notifying the GDOT Area Construction Office prior to work starting on the project regardless of who performs the work. The Department will have Inspectors on the project to perform routine construction inspections and material testing.

4. It is understood that the material pits are to be furnished by the City/County at no cost to the Department.

5. It is understood that the Department will not participate in the cost of any utility facility removal and relocations necessary in connection with the construction of this Project, unless otherwise specified in the Agreement. The City/County shall be responsible for handling the arrangements with the utility owners for any removal and relocation necessary. The City/County shall give the utility owners ample notice, of the impending construction to allow time for engineering and material orders required for any removal and relocations as may be necessary. Also, the City/County agrees to clear right-of-way obstructions without expense to the Department. For purposes of applying provisions of this paragraph, railroads are considered utilities. In addition to the foregoing, the City/County shall obtain approval of plans and acquire easements or other property rights from the railroad for construction within railroad property/right-of-way and shall provide for the protection of railroad interests, including flagging and inspection, as may be required by the railroad.

6. The work shall begin after the issuance of a notification to proceed by the Department to the City/County and shall be carried through to completion without unreasonable delay and without suspension of work unless authorized in writing by the Department. The City/County shall perform its responsibilities for the Project until the maximum allowable cost to the Department has been reached or until August 31, 2012, whichever comes first.

7. The work shall be done in accordance with the laws of the State of Georgia under the direct supervision and to the entire satisfaction of the Department. The decision of the Chief Engineer upon any question connected with the execution or fulfillment of this Agreement and interpretation of the specifications or upon any failure or delay in the prosecution of the work by the City/County shall be final and conclusive.

8. The City/County agrees to perform all extra work that may be required of them on the basis of actual cost.

9. The financing of this Project shall be as follows:
   Payments will be made on monthly statements as the work progresses.

B. **GENERAL PROVISIONS**:

1. Covenants Against Contingent Fees. The City/County shall comply with the relevant requirements of all federal, state and local laws in effect as of the date hereof. The City/County warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for the City/County, to solicit or secure this Agreement, and that it has not paid or agreed to pay any company or person, other than a bona fide employee working solely for the City/County, any fee, commission, percentage, brokerage fee, gifts, or any consideration, contingent upon or resulting from the award or making of this Agreement. For breach or violation of this warranty, the DEPARTMENT shall have the right to annul this Agreement without liability or, in its discretion to deduct from the Agreement price or consideration, or otherwise recover, the full amount of such fee, commission, percentage, brokerage fee, gift or contingent fee.

2. No Third Party Beneficiaries. Nothing herein shall be construed as conferring upon or giving to any person, other than the parties hereto, any rights or benefit under or by reason of this Agreement.

3. Entire Agreement. This Contract instrument, including all incorporated documents, contains the entire Contract between the parties with regard to the subject matter hereof, and supersedes any and all other prior and contemporaneous agreements and understandings between the parties, whether oral or written.

4. Severability. If any provision of this Agreement is determined to be invalid or unenforceable, the remaining provisions shall remain in force and unaffected to the fullest extent permitted by law and regulation.

5. Compliance with Applicable Laws.

   A. The undersigned certify that the provisions of Section 45-10-20 through 45-10-28 of the Official Code of Georgia Annotated relating to Conflict of Interest and State employees and officials trading with the State have been complied with in full.

   B. IT IS FURTHER AGREED that the City/County shall comply and shall require its subcontractors to comply with the regulations for COMPLIANCE WITH TITLE VI OF THE CIVIL RIGHTS ACT OF 1964, as amended, and 23 CFR 200.

   C. IT IS FURTHER CERTIFIED that the provisions of Sections 50-24-1 through 50-24-6 of the Official Code of Georgia annotated, relating to the "Drug-Free Workplace Act" have been complied with in full. Including compliance by prime contractors and sub-contractors performing work under this Agreement.

   D. By execution of this contract, I certify under penalty of law that the City/County is in compliance with the service delivery strategy law (House Bill 489) and is not debarred from receiving financial assistance from the State of Georgia.

   E. By execution of this contract, I certify under penalty of law that the City/County is in compliance State Audit Requirements as provided for in O.C.G.A. § 36-81-7.

   F. IT IS FURTHER CERTIFIED that pursuant to O.C.G.A. § 13-10-91 I and all contractor and sub-contractors performing work under this Agreement are in compliance with the Federal Work Authorization Program. Prime contractors and sub-contractors may participate in 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").

6. Effective Date. This Agreement shall become effective upon the date above first written.

7. Governing Law. This Agreement is made and entered into in Fulton County, Georgia, and shall be governed and construed under the laws of the State of Georgia.

The covenants herein contained shall, except as otherwise provided, accrue to the benefit of and be binding upon the successors and assigns of the parties hereto.

IN WITNESS WHEREOF, said parties have hereunto set their seals the day and year above first written.

DEPARTMENT OF TRANSPORTATION

_____
Commissioner

ATTEST:

_____
Treasurer

CITY/COUNTY

_____
Mayor/Commissioner

_____
Witness

This contract approved by the City/County at a meeting held at

_____

_____
Date

_____
Fed ID No. /IRS No.

#L.1.

EXHIBIT A

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
CONTRACT SCHEDULE

CONTRACT ID: C38782-11-000-0

PROJECT(S) : S013665.C1000 S013665-PRC

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
SECTION 0001 ROADWAY					194,988.46	
0005	001-9998 LIMITED PARTICIPATION PROJECT, THE AMOUNT SHALL NOT EXCEED - $194,988.46	1.000 *	0.00000		0.00	
0010	402-1802 RECYCLED ASPH CONC PATCHING, INCL BITUM MATL & H LIME	677.000 TN	94.52000		63,990.04	
0015	402-3100 RECYCLED ASPH CONC 9.5 MM SUPERPAVE, TYPE I, GP 1 OR BLEND 1, INCL BITUM MATL & H LIME	1,724.000 TN	69.41000		119,662.84	
0025	413-1000 BITUM TACK COAT	1,046.000 GL	2.49000		2,604.54	
0030	432-5010 MILL ASPH CONC PVMT, VARIABLE DEPTH	3,152.000 SY	2.77000		8,731.04	
	TOTAL BID				194,988.46	

EXHIBIT B

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

SPECIAL PROVISIONS

CONTRACT ID : C38782-11-000-0
1.370 MILES OF PACHING AND PLANT MIX RESURFACING ON VARIOUS STREETS IN DUNWOODY.

S.P. CODE	SPECIAL PROVISIONS DESCRIPTION
107-1-01-SP	LEGAL REGULATIONS AND RESPONSIBILITIES TO THE PUBLIC
108-1-01-SP	PROSECUTION AND PROGRESS
109-1-02-SP	MEASUREMENT & PAYMENT
152-1-01-SP	FIELD LABORATORY BUILDING (OFF/SYSTEM 400/402)
400-1-01-SP	ASPHALTIC CONCRETE (OFF SYSTEM - 400/402)
402-1-01-SP	RECYCLED ASPH CONCRETE (OFF SYSTEM - 400/402)
802-1-01-SP	AGGR FOR ASPH CONC (Off System 400/402)
819-1-01-SP	FIBER STAB ADDITIVES (Off System 400/402)
828-1-01-SP	HOT MIX ASPH CONC MIXTURES (Off System 400/402)
883-1-01-SP	MINERAL FILLER (Off System 400/402)
A99-0-00-	PLANS (4)

Date: May 21, 2010
September 24, 2002
First Use Date 2001 Specifications: November 1, 2002

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

SPECIAL PROVISION

(For State Aid Contracts Only)

Section 107—Legal Regulations and Responsibility to the Public

Delete Subsection 107.23.A and substitute the following:

107.23 Environmental Considerations

All environmental considerations and clearances shall be the responsibility of the County or municipality to meet, including the requirements of Section 404 of the Clean Water Act (33 USC 1344).

After July 1, 1991, State funded projects must comply with the requirements of Chapter 16 of Title 12 of the Official Code of Georgia Annotated, the Georgia Environmental Policy Act (GEPA), of 1991. In compliance with GEPA, those projects for which Federal funding is sought, and NEPA compliance is accomplished, are exempt from the requirements of GEPA.

GEPA requires that environmental documentation be accomplished for County or City projects if more than 50 percent of the total project cost is funded by a grant of a State Agency or a grant of more that $250,000.00 is made by the State Agency to the municipality or County. The "responsible official of the government agency shall determine if a proposed governmental action is a proposed governmental action which may significantly adversely affect the quality of the environment."

A. The Following Projects Would Not Significantly Adversely Affect The Quality Of The Environment:

Non-land disturbing activities and minor land disturbing activities that would not be anticipated to significantly affect the quality of the environment include the following list. These types of projects funded with state money would not be subject to environmental assessment of any kind. Hearing procedures outline in GEPA would not be applicable.

1. Minor roadway and non-historic bridge projects.
   a. Modernization of an existing highway by resurfacing, restoration, rehabilitation, adding shoulders, widening a single lane or less in each direction and the addition of a median within previously disturbed existing right-of-way.
   b. Adding auxiliary lanes for localized purposes (weaving, climbing, speed changes, etc.) and correcting substandard curves and intersections within previously disturbed existing right-or-way.
   c. Non-historic bridge replacement projects in existing alignment with no detour bridge.
2. Lighting, signing, pavement marking, signalization, freeway surveillance and control systems, and railroad protective devices.
3. Safety projects such as grooving, glared screen, safety barriers, energy attenuators, median barriers, etc.
4. Highway landscaping and landscaping modification, rest area projects and truck weigh stations within previously disturbed existing right-of-way.
5. Construction of bus shelters and bays within existing right-of-way.
6. Temporary replacement of a highway facility that is commenced immediately after the occurrence of a natural disaster of catastrophic failure to restore the highway for the health, welfare, and safety of the public.

Section 107--Legal Regulations and Responsibility to the Public

B. The Following Projects May Not Significantly Adversely Affect The Quality Of The Environment:

For projects that will cause land disturbance and for which there is no anticipation that the project may significantly adversely affect the quality of the environment, certain studies will be undertaken. These studies would serve to document whether or not the County or municipality should anticipate that a project might significantly adversely affect the quality of the environment. Documentation of the studies will be accomplished through the use of the "GEPA Investigation Studies" checklist.

The types of projects that would fall under the category, would include:

1. Bridge replacement projects on new location or with a detour bridge, where there are no significant adverse impacts to historic or archaeological resources, no involvement with Federally listed threatened and endangered species and no significant adverse impact to wetlands.
2. Passing lanes, median additions and widening projects, where there are no significant adverse impacts to historic or archaeological resources, no involvement with Federally listed threatened and endangered species and no significant adverse impact to wetlands.
3. Safety and intersection improvements where there are no significant adverse impacts to historic or archaeological resources, no involvement with Federally listed threatened and endangered species and no significant adverse impact to wetlands.
4. Rest area projects and truck weigh stations with no purchase of additional right-of-way.
5. New location projects where there are no significant adverse impacts to historic or archaeological resources, no involvement with Federally listed threatened and endangered species and no significant adverse impact to wetlands.

If studies demonstrate that the project will not significantly adversely affect the quality of the environment, project files will be documented. If studies demonstrate that the project may significantly adversely affect the quality of the environment, development of an environmental effects report (EER) will be undertaken along with full GEPA compliance.

C. The Following Projects May Significantly Adversely Affect The Quality Of The Environment:

This category of projects may include major widening and new location projects. If such projects result in a significant adverse effect, an EER shall be prepared.

D. EER Procedure:

GEPA calls for consideration of the "cumulative effect of the proposed government actions on the environment.....if a series of proposed government actions are related either geographically or as logical parts in a chain of contemplated actions." Therefore, EER's for sections of roadways to be widened or built as new location facilities will include all projects that are connected geographically or as logical parts in a chain of contemplated actions.

1. During preparation of an environmental effect report, the County or Municipality will consult with and solicit comments from agencies that have jurisdiction by law, special expertise, or other interest with respect to environmental impacts.
2. In compliance with GEPA the following shall be contained in the EER, at a minimum:
    a. Cover sheet;
    b. Executive summary;
    c. Alternatives, including the no-build;
    d. Relevant environmental setting; Geology, soils, water supply and wetlands, floral fauna, archaeology/history, economic environment, energy, cultural resources;
    e. The environmental impact of the proposed action of the relevant setting and mitigation measures proposed to avoid or minimize adverse impact;
    f. Unavoidable adverse environmental effects;
    g. Value of short-term uses of the environment and maintenance and enhancement of its long-term value;
    h. Beneficial aspects, both long term and short term and its economic advantages and disadvantages;
    i. Comments of agencies which have jurisdiction by law, special expertise, or other interest with respect to any environmental impact or resource;

Section 107--Legal Regulations and Responsibility to the Public

3. At least 45 days prior to making a decision as to whether to proceed with the undertaking, publish in the "legal organ of each County in which the proposed governmental action or any part thereof is to occur, notice that an environmental effects report has been prepared".
4. The County or Municipality shall send a copy of the EER and all other comments to the Director, EPD.
5. The County or municipality shall make the document available to the public and agencies, upon request.
6. A public hearing will be held in each affected county if at least 100 residents of the State of Georgia request on within 30 days of publication in the legal organ of an affected County. The responsible official or his designee may hold a public hearing if less than 100 requests are received. (The county or municipality is not relieved of other State legal requirements of public hearings, however.)
7. Following the public notice period and/or public hearing, a summary of the document, comments received and recommendation as to whether to proceed with the action as originally prepared, to proceed with changes, or not to proceed will be prepared (Notice of Decision).
8. This decision document, when signed by the responsible official, will be sent to the director, EPD, and an abbreviated notice of the decision will be published in the legal organ of each County in which the proposed governmental action or any part thereof is to occur.

Any mitigation measures identified in the EER will be incorporated into the final project plans.

Date: May 29, 2001
First Use Date 2001 Specifications: November 1, 2002

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

SPECIAL PROVISION

Section 108—Prosecution and Progress

Retain Subsection 108.03 except as modified below:

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

#L.1.

Date: July 3, 2001
First Use Date 2001 Specifications: November 1, 2002

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

SPECIAL PROVISION

Section 109—Measurement & Payment
(City /County Contracts)

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

A. General: On the tenth day of each calendar month, the total value of Items complete in place will be estimated by the Engineer and certified for payment.

Date: August 8, 2002
First Use Date 2001 Specifications: November 1, 2002

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

SPECIAL PROVISION

Section 152—Field Laboratory Building

Delete Subsection 152.1.02.B and substitute the following:

B. Referenced Documents

GDT 38

GDT 83

NFPA–10A

Delete Subsection 152.3.05.D.5.e throuth h.

#L.1.

First Use: February 3, 2006
Revised: February 6, 2006
Revised: May 1, 2006
Revised: July 17, 2006
Revised: September 29, 2006
Revised: December 7, 2006
Off System Revised: February 22, 2007
Off System Revised :December 4, 2007

Georgia Department of Transportation

State of Georgia

Special Provision

Section 400—Hot Mix Asphaltic Concrete Construction

Delete Section 400 and Substitute the following:

400.1 General Description

This work includes constructing one or more courses of bituminous plant mixtureon 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 lacking homogeneity in HMA constituents of such a magnitude that there is a reasonable expectation of accelerated pavement distress or performance problems. May bequantified 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 one or more lanes is added longitudinally adjacent to the existing lane, the lane or lanes shall be tested under the criteria for a resurfacing project.

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

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

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

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

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

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

Department of Transportation Standard Operating Procedure (SOP) 15

Georgia Department of Transportation Standard Operation Procedure (SOP) 40

GDT 38

GDT 73

GDT 78

GDT 83

GDT 93

GDT 119

GDT 125

GDT 134

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.

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 toprevent 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 fromthe 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 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.

400.2 Materials

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

Table 1—Materials Specifications

Material	Subsection
Asphalt Cement, Grade Specified	820.2
Coarse Aggregates for Asphaltic Concrete	802.2.02
Fine Aggregates for Asphaltic Concrete	802.2.01
Mineral Filler	883.1
Heat Stable Anti-Stripping Additive	831.2.04
Hydrated Lime	882.2.03
Silicone Fluid	831.2.05
Bituminous Tack Coat: PG 58-22, PG 64-22, PG 67-22	820.2
Hot Mix Asphaltic Concrete Mixtures	828

400.2.01 Delivery, Storage, and Handling

Storage of material is allowed in a properly sealed and insulated system for up to 24 hours except that Stone Matrix Asphalt (SMA), Open-Graded Friction Course (OGFC), or Porous European Mix (PEM) mixtures shall not be stored more than 12 hours. Mixtures other than SMA, OGFC, or PEM may be stored up to 72 hours in a sealed and insulated system, equipped with an auxiliary inert gas system, with the Engineer's approval. Segregation, lumpiness, drain-down, or stiffness of stored mixture is cause for rejection of the mixture. The 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. Remove from the project any transporting vehicles determined to contain unapproved releasing agents.
2. Protect the mixture with a waterproof cover large enough to extend over the sides and ends of the bed. Securely fasten the waterproof cover before the vehicle begins moving.
3. Insulate the front end and sides of each bed with an insulating material with the following specifications:
    - Consists of builders insulating board or equivalent
    - Has a minimum "R" value of 4.0
    - Can withstand approximately 400 °F (200 °C) temperatures

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

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

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

If the 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 caked or spilled from the containers.

400.3 Construction Requirements

400.3. 01 Personnel

General Provisions 101 through 150.

400.3.02 Equipment

Hot mix asphaltic concrete plants that produce mix for Department use are governed by Quality Assurance for HotMix 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 mixturenet 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.

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

4. Controls for Dust Collector Fines

Control dust collection as follows:

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

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

5. Hydrated Lime Treatment System

When hydrated lime is required as a mixture ingredient:

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

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

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

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

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

6. Net Weight Weighing Mechanisms

Certify the accuracy of the net weight weighing mechanisms by an approved registered scale serviceperson at least once every 6 months. Check the accuracy of net weight weighing mechanisms at the beginning of Project production and thereafter as directed by the 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) ofload.

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 atthe 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.

C. Equipment at Project Site

1. Cleaning Equipment

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

2. Pressure Distributor

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

3. Bituminous Pavers

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

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

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

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

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

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

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

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

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

4. Compaction Equipment

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

400.3.03 Preparation

A. Prepare Existing Surface

Prepare the existing surface as follows:

1. Clean the Existing Surface. Before applying hotmix 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 directedby 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 inSection 828. The Engineer must approve the asphalt content to be used.
3. Apply Bituminous Tack Coat

   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/yd² (L/m²)

	Minimum	Maximum
All Mixes *	0.04 (0.180)	0.06(0.270)
*On thin leveling courses and freshly placed asphaltic concrete mixes, reduce the application rate to 0.02 to 0.04 gal/yd² (0.09 to 0.18 L/m²).		

B. Place Patching and Leveling Course

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

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/yd² (45 kg/m²)	4.75 mm Mix or 9.5 mm Superpave Type I
0.75 to 1.5 in (19 to 38 mm)	85 to 165 lbs/yd²(45 to 90 kg/m²)	9.5 mm Superpave Type II
1.5 to 2 in (38 to 50 mm)	165 to 220 lbs/yd² (90 to 120 kg/m²)	12.5 mm Superpave *
2 to 2.5 in (50 to 64 mm)	220 to 275 lbs/yd² (120 to 150 kg/m²)	19 mm Superpave *
Over 2.5 in (64 mm)	Over 275 lbs/yd² (150 kg/m²)	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.

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. Ensure that the field performance of the in-place mixtures meet the requirements of Section 828.2.B for Permeability, Moisture Susceptibility, Rutting Susceptibility and Fatigue. The in-place mixtures will be subject to testing for compliance with requirements of Section 828.2.B under the following conditions:

   - Deviates greater than 10 percent on gradation on the mixture control sieves from the approved job mix formula based on acceptance or assurance samples.
   - Deviates greater than 0.7 percent in asphalt content from the job mix formula based on acceptance or assurance samples.
   - The calculated mean pavement air voids result in an adjusted pay factor greater than 0.80 or any single sub-lot results in mean pavement air voids exceeding 10.5 %.
   - Mix produced using an unapproved mix design or job mix formula.

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

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

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

B. Prepare Bituminous Material

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

D. Prepare the Mixture

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

1. Add Hydrated Lime

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

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

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

a. Batch Type Asphalt Plant: Add hydrated lime to the mixture in the weigh hopper or as approved and directed by the 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.

2. Add Gilsonite Modifier

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

a. For batch type plants, incorporate Gilsonite into the 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.

   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 ± 10 percent of the amount required. The entry point shall be away from flames and ensure the Gilsonite will not be caught up in the air stream and exhaust system.

3. Materials from Different Sources

Do not use mixtures prepared from aggregates from different sources intermittently. This will cause the color of the finished pavement to vary.

E. Observe Weather Limitations

Do not mix and place asphaltic concrete if the existing surface is wet or frozen. Follow the temperature guidelines in the following table:

Table 4—Lift Thickness Table

Lift Thickness	Minimum Temperature
1 in (25 mm) or less	55 °F (13 °C)
1.1 to 2 in (26 mm to 50 mm)	45 °F (8 °C)
2.1 to 3 in (51 mm to 75 mm)	40 °F (4 °C)
3.1 to 4 in (76 mm to 100 mm)	35 °F (2 °C)
4.1 to 8 in (101 mm to 200 mm)	32 °F (0 °C) and rising. Base Material must not be frozen

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	2 1/2 in (64 mm)	4 in (100 mm) *	—
19 mm Superpave	1 3/4 in (44 mm)	3 in (75 mm) *	—
12.5 mm Superpave	1 3/8 in (35 mm)	2 1/2 in (64 mm)*	8 in (200 mm)
9.5 mm Superpave Type II	1 1/8 in.(28 mm)	1 1/2 in (38 mm)	4 in (100 mm)
9.5 mm Superpave Type I	7/8 in (22 mm)	1 1/4 in (32 mm)	4 in (100 mm)
4.75 mm Mix	3/4 in (19 mm)	1 1/8 in (28 mm)	2 in (50 mm)
* Allow up to 6 in (150 mm) per lift on trench widening. Place 9.5 mm 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 New Construction or Resurfacing Contracts that contain multiple lifts or courses, arrange the width of the individual lifts so that the longitudinal joints of each successive lift are offset from theprevious lift at least 1 ft (300 mm). This requirement does not apply to the lift immediately over thin lift leveling courses.

   Ensure that the longitudinal joint(s) in the surface course and the mix immediately underneath asphaltic concrete OGFC or PEM are at the lane line(s).

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

- 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 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.

    NOTE: Never burn or heat the joint by applying fuel oil or other volatile materials.

    c. Straightedge transverse joints immediately after forming the joint.
    d. Immediately correct any irregularity that exceeds 3/16 in. in 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.

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 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. 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.

2. Determine Lot Acceptance

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 computerized Field Data Collection System; other checks, calibrations and records will be reported on a form developed by the Contractor and will be included as part of the project records
- Notification in writing of any change in quality control personnel

a. Certification Requirements:

- Use laboratory and testing equipment certified by the Department. (Laboratories which participate in and maintain AASHTO accreditation for testing asphaltic concrete mixtures will be acceptable in lieu of Departmental certification.)
- Provide certified quality control personnel to perform the sampling and testing. A Quality Control Technician (QCT) may be certified at three levels:

1) Temporary Certification – must be a technician trainee who shall be given direct oversight by a certified Level 1 or Level 2 QCT while performing acceptance testing duties during the first 5 days of training. The trainee must complete qualification requirements within 30 production days after being granted temporary certification. A trainee who does not become qualified within 30 production days will not be re-eligible for temporary certification. A certified Level 1 or Level 2 QCT shall be at the plant at all times during production and shipment of mixture to monitor work of the temporarily certified technician.

2) Level 1 – must demonstrate they are competent in performing the process control and acceptance tests and procedures related to hot mix asphalt production and successfully pass a written exam.

3) Level 2 – must meet Level 1 requirements and must be capable of and responsible for making process control adjustments, and successfully pass a written exam.

- Technician certification is valid for 3 years from the date on the technician's certificate unless revoked or suspended. Eligible technicians may become certified through special training and testing approved by the Office of Materials and Research. Technicians who lose their certification due to falsification of test data will not be eligible for recertification in the future unless approved by the State Materials and Research 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.

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) Add the following information on load tickets from which a sample or temperature check is taken:

- Mixture temperature
- Signature of the QCT person performing the testing

(g) Calibrate the lime system when hydrated lime is included in the mixture:

- Perform a minimum of twice weekly during production
- Post results at the plant for review
- Provide records of materials invoices upon request (including asphalt cement, aggregate, hydrated lime, etc.)

(h) Take action if acceptance test results are outside Mixture Control Tolerances of Section 828.

- One sample out of tolerance
  (1) Contact 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

SIEVE SIZE	SURFACE	SUB-SURFACE
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%

(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/yd² (60 kg/m²) that have quality assurance test results outside the Mixture Control Tolerances of Section 828, use the Department's test results only.

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. 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. The Contractor QCT tests will not be included in the monthly plant rating.

B. Compaction

Determine the mixture compaction using either GDT 39 or GDT 59. The compaction is accepted in lots defined in Subsection 400.3.06. A "Acceptance Plans for Gradation and Asphalt Cement Content" and is within the same lot boundaries 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. One test per sub-lot.
   - Lots ≥ 500 tons of mix should be divided into 5 sub-lots of equal distance.
   - Lots < 500 tons of mix should be comprised of a sub-lot or sub-lots consisting of up to 100 tons of mix each. There may be less than 5 sub-lots.

b. Average the results of all tests run on randomly selected sites in that lot.

c. Select the random sites using GDT 73.

Density tests are not required for asphaltic concrete placed at 125 lbs/yd² (68 kg/m²) or less, 4.75 mm mix and mixes placed as variable depth or width leveling. Compact these courses to the Engineer's satisfaction. Density tests will not be performed on turn-outs and driveways.

The targeted maximum Pavement Mean Air Void content for all Superpave mixtures is 5.0 percent. Ensure that the maximum Pavement Mean Air Voids for all Superpave mixtures does not exceed 78 percent. The maximum Pavement Mean Air Voids for 2 foot shoulder widening is 9.0 percent. The adjustment period for density shall be three lots or three production days, whichever is less, in order for the contractor to ensure maximum compactive effort has been achieved which will yield no more than the specified maximum allowed Mean Air Voids. If the contractor needs to adjust the mixture to improve density results, a change in the job mix formula may be requested for approval during the adjustment period so long as the following values are not exceeded:

- Coarse pay sieve ± 4%
- No. 8 (2.36 mm) sieve ± 2%
- No. 200 (75 µm) sieve ± 1%
- Asphalt Content ± 0.2%
- All value changes must still be within specification limits

If the Office of Materials and Research is satisfied that the contractor has exerted the maximum compactive effort and is not able to maintain Pavement Mean Air Voids at no more than 7.8%, the Engineer may establish a maximum target for Pavement Mean Air Voids.

If the Pavement Mean Air Voids within a Lot exceeds 7.8 (or 100% of the maximum target air voids, if established is not maintained); the Engineer may stop the paving operation until appropriate steps are taken by the Contractor to correct the deficiency. Upon approval of the Engineer, the paving operation may be restated but will be limited to a 1000 ft (300 m) test section to verify that the corrective action taken will result in satisfactory density. Continued operation may not be permitted if the Pavement Mean Air Voids fail to meet the specified density requirements.

2. Obtain Uniform Compaction

For a lot to be accepted for compaction, the air void range cannot exceed 4 percent for new construction or 5 percent for resurfacing projects. The range is the difference between the highest and lowest acceptance test resuls within the affected lot.

C. Surface Tolerance

In this Specification, pavement courses to be overlaid with an Open-Graded Friction Course or PEM are considered surface courses. Other asphalt paving is subject to straightedge and visual inspection and irregularity correction as shown below:

1. Visual and Straightedge Inspection

Paving is subject to visual and straightedge inspection during and after construction operations until Final Acceptance. Locate surface irregularities as follows:

a. Keep a 10 ft (3 m) straightedge near the paving operation to measure surface irregularities on courses. Provide the straightedge and the labor for its use.

b. Inspect the base, intermediate, and surface course surfaces with the straightedge to detect irregularities.

c. Correct irregularities that exceed 3/16 in. in 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.

D. Reevaluation of Lots

Reevaluation of Lots and acceptance will be based on Department evaluations. The Department will be reimbursed by the Contractor for all costs of these evaluations. Request for reevaluation shall be made within 5 working days of notification of the lot results.

E. Segregated Mixture

Prevent mixture placement that yields a segregated mat by following production, storage, bading, 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 thatit 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.
- Test the cores for compliance with the mixture control tolerances in Section 828.

When these tolerances are exceeded, suspend work for corrective action as outlined in Subsection 400.3.06.E.3.

3. Corrective Work

a. Remove and replace (at the Contractor's expense) any segregated area where the gradation on the control sieves is found to vary 10 percent or more from the approved job mix formula, the asphalt cement varies 1.0% or more from the approved job mix formula, or if in-place air voids exceed 12.5% based on GDT 39. The control sieves for each mix type are shown in Subsection 400.5.01.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 theEngineer.

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 byoverlaying the entire lot.

The mixture used for correcting deficient areas is paid for at the Contract Unit Price of the course being corrected and is subject to the Mixture Acceptance Schedule—Table 9 or 10.

b. Recalculate the Total Spread Rate. After the deficient hot mix course has been corrected, the total spread rate for that lot is recalculated, and mix in excess of the upper tolerance limit as outlined in the Subsection 400.4.A.2.b, Table 11, "Thickness and Spread Rate Tolerance at Any Given Location" is not paid for.

The quantity of material placed on irregular areas such as driveways, turnouts, intersections, feather edge section, etc., is deducted from the final spread determination for each lot.

2. Plans Designate Thickness

If the average thickness exceeds the tolerances specified in the Subsection 400.4.A.2.b, Table 11, "Thickness and Spread Rate Tolerance at Any Given Location", the 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 (90m) 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 quantity of the additional mixture shall not exceed the required calculated quantity used to increase the average thickness of the overlaid section to the maximum tolerance allowed under the following table.

Table 11—Thickness and Spread Rate Tolerance at Any Given Location

Course	Thickness Specified	Spread Rate Specified
Asphaltic concrete base course	± 0.5 in (±13 mm)	+40 lbs, -50 lbs (+20 kg, -30 kg)
Intermediate and/or wearing course	± 0.25 in (± 6 mm)	+20 lbs, -25 lbs (+10 kg, -15 kg)
Overall of any combination of 1 and 2	± 0.5 in (±13 mm)	+40 lbs, -50 lbs (+20 kg, -30 kg)

Note 1: Thickness and spread rate tolerances are provided to allow normal variations within a given lot. Do not continuously operate at a thickness of spread rate not specified.

When the Plans specify a thickness, the 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 corected 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.

NOTE: Thickness tolerances are provided to allow normal variations within a given lot. Do not continuously operate at a thickness not specified.

C. Asphaltic Concrete

Hot mix asphaltic concrete, complete in place and accepted, is measured in tons (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 greaterthan 2.75. In this case the pay weight is determined according to the following formula:

$$T1 = T \times \left\{ \frac{\%\,AC + \left(\frac{\%\ \text{Aggregate} \times 2.75}{\text{combined bulk Specific Gravity}} \right) + \%\,Y}{100} \right\}$$

Where:

T1	Pay weight, tonnage (Mg)
T=	Actual weight
% AC=	Percent asphalt cement by weight of total mixture
% Aggregate =	Percent aggregate by weight of total mixture
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

400.4.01 Limits

When the asphaltic concrete is paid for by the square yard (meter) andmultiple lifts are used, the number and thickness of the lifts are subject to the Engineer's approval and are used to prorate the pay factor for the affected roadway section.

400.5 Payment

Hot mix asphaltic concrete of the various types are paid for at the Contract Unit Price per ton (megagram) or per square yard (meter). Payment is full compensation for furnishing and placing materials including asphalt cement, hydrated lime when required, approved additives, and for cleaning and repairing, preparing surfaces, hauling, mixing, spreading, rolling, and performing other operations to complete the Contract Item.

Payment will be made under:

Item No. 400	Asphaltic concrete type Suprpave, group-blend, Including polymer-modified bituminous materials and hydrated lime	Per ton (megagram)
Item No. 400	Asphaltic concrete type, Superpave, group-blend, including bituminous materials and hydrated lime	Per ton (megagram)
Item No. 400	Asphaltic concrete type Superpave, group-blend, Including bituminous materials, Gilsonite modifier, and hydrated lime	Per ton (megagram)

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

400.5.01 Adjustments

A. Determine Lot Acceptance

. The control sieves used in the mixture acceptance schedule for the various types of mix are indicated below:

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

The Department will perform the following tasks:

1. Determine the mean of the deviations from the job mix formula per test results per lot.

2. Determine this mean by averaging the actual numeric value of the individual deviations from the job mix formula; disregard whether the deviations are positive or negative amounts.

C. Calculate Pavement Mean Air Voids

The 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.

D. Asphaltic Concrete For Temporary Detours

Hot mix asphaltic concrete placed on temporary detours that will not remain in place as part of the permanent pavement does not require hydrated lime. Hot mix used for this purpose is paid for at an adjusted Contract Price.

Where the Contract Price of the asphaltic concrete for permanent pavement is let by the ton (megagram), the Contract Price for the asphaltic concrete placed on temporary detours is adjusted by subtracting $0.75/ton ($0.85/mg) of mix used.

Where the Contract price of the mix in the permanent pavement is based on the square yard (meter), obtain the adjusted price for the same mix used on the temporary detour by subtracting $0.04/yd² ($0.05/ m²) per 1-in (25-mm) plan depth.

Further price adjustments required in Subsection 400.3.06, "Quality Acceptance," are based on the appropriate adjusted Contract Price for mix used in the temporary detour work.

E. Determine Lot Payment

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

#L.1.

First Use Date 2001 Specification: November 18, 2005
Revised: August 9, 2006
Revised September 27, 2006
Revised: December 7, 2006
(Off System) Revised: February 22, 2007
(Off System) Revised: November 2, 2007
(Off System) Revised: December 4, 2007

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

SPECIAL PROVISION

Section 402—Hot Mix Recycled Asphaltic Concrete

Delete Subsection 402.5 and substitute the following:

402.5 Payment

The work performed and the materials furnished as described in this Specification will be paid for at the Contract Unit Price per ton (megagram). Payment is full compensation for providing materials, hauling and necessary crushing, processing, placing, rolling and finishing the recycled mixture, and providing labor, tools, equipment, and incidentals necessary to complete the work, including hauling and stockpiling RAP or RAS material.

Payment will be made under:

Item No. 402	Recycled asphaltic concrete ___ mm Superpave, group-blend, including bituminous materials	Per ton (megagram)
Item No. 402	Recycled asphaltic concrete ___ mm Superpave, group-blend, including bituminous materials and hydrated lime	Per ton (megagram)
Item No. 402	Recycled asphaltic concrete ___ mm Superpave, group-blend, including polymer-modified bituminous materials and hydrated lime	Per ton (megagram)
Item No. 402	Recycled asphaltic concrete ___ mm Superpave, Type__, group-blend, including bituminous materials and hydrated lime	Per ton (megagram)
Item No. 402	Recycled asphaltic concrete _____ mm mix, group-blend, including bituminous materials and hydrated lime	Per ton (megagram)
Item No. 402	_____in (mm) recycled asphaltic concrete type Superpave, group-blend, including bituminous materials	Per square yard (meter)
Item No. 402	_____in (mm) recycled asphaltic concrete type Superpave, group-blend, including bituminous materials and hydrated lime	Per square yard (meter)
Item No. 402	_____in (mm) recycled asphaltic concrete type Superpave, group-blend, including polymer-modified bituminous materials and hydrated lime	Per square yard (meter)
Item No. 402	_____in (mm) recycled asphaltic concrete _____ mm mix, group-blend, including bituminous materials and hydrated lime	Per square yard (meter)
Item No. 402	Recycled asphaltic concrete patching including bituminous materials	Per ton (megagram)
Item No.	Recycled asphaltic concrete patching including bituminous	Per ton (megagram)

402	materials and hydrated lime	
Item No. 402	Recycled asphaltic concrete leveling including bituminous materials	Per ton (megagram)
Item No. 402	Recycled asphaltic concrete leveling including bituminous materials and hydrated lime	Per ton (megagram)

402.5.01 Adjustments

A. Determine Lot Acceptance

The control sieves used in the mixture acceptance schedule for the various types of mix are indicated below:

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

The Department will perform the following tasks:

1. Determine the mean of the deviations from the job mix formula per test results per lot.
2. Determine this mean by averaging the actual numeric value of the individual deviations from the job mix formula; disregard whether the deviations are positive or negative amounts.

B. 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.

C. Asphaltic Concrete for Temporary Detours

Hot mix asphaltic concrete placed on temporary detours that will not remain in place as part of the permanent pavement does not require hydrated lime. Hot mix used for this purpose is paid for at an adjusted Contract Price.

Where the Contract Price of the asphaltic concrete for permanent pavement is let by the ton (megagram), the Contract Price for the asphaltic concrete placed on temporary detours is adjusted by subtracting $0.75/ton ($0.85/mg) of mix used.

Where the Contract price of the mix in the permanent pavement is based on the square yard (meter), obtain the adjusted price for the same mix used on the temporary detour by subtracting $0.04/yd² ($0.05/ m²) per 1-in (25-mm) plan depth.

Further price adjustments required in Subsection 400.3.06, "Quality Acceptance," are based on the appropriate adjusted Contract Price for mix used in the temporary detour work.

D. Determine Lot Payment

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

#L.1.

Date: August 8, 2002
First Use Date 2001 Specifications: November 1, 2002

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

SPECIAL PROVISION

Section 802—Aggregates for Asphaltic Concrete

Delete Subsection 802.2.01.A.5.

Date August 8, 2002
First Use Date 2001 Specifications: November 1, 2002

GEORGIA DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
SPECIAL PROVISION

Section 819—Fiber Stabilizing Additives

Delete Section 819.

#L.1.

First Use: February 03, 2006
Revised February 24, 2006

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

Special Provision

Section 828—Hot Mix Asphaltic Concrete Mixtures

Delete Section 828 and substitute the following:

828.1 General Description

This specification includes the requirements for hot mix asphaltic concrete mixtures, including:

- Open-graded surface mixtures (OGFC and PEM)
- Stone Matrix Asphalt mixtures (SMA)
- Superpave mixtures
- Fine-graded (4.75 mm) mixtures

828.1.01 Definitions

The Nominal Maximum Sieve Size is one standard sieve size larger than the first sieve to retain more than ten percent of the aggregate, per AASHTO PP28. Mixture types in this section are identified according to Nominal Maximum Sieve Size.

828.1.02 Related References

A. Standard Specifications

Section 400-Hot Mix Asphaltic Concrete Construction

Section 800–Coarse Aggregate

Section 802–Aggregates for Asphaltic Concrete

Section 819–Fiber Stabilizing Additives

Section 820–Asphalt Cement

Section 831–Admixtures

Section 882–Lime

Section 883–Mineral Filler

B. Referenced Documents

PP 2

PP28

TP 8-94

T 112

T 209

T 305

T 312

T-245

PS-129

SOP-36
SOP-2 SP
GDT 56
GDT 66
GDT 114
GDT 115
GDT 123
QPL 1
QPL 2
QPL 7
QPL 26
QPL 41
QPL 77
QPL 81

828.2 Materials

A. Requirements

Use approved hot mix asphalt concrete mixtures that meet the following requirements:

1. Produce each asphalt mixture according to a Job Mix Formula and Asphalt Mix Design approved by the Department. For submittal and approval of Job Mix Formulas, see Subsection 400.1.
2. Ensure that individual acceptance test results meet the Mixture Control Tolerances specified in the appropriate table below, Subsections 828.2.01 through 828.2.04.
3. Ensure that the Engineer approves all materials used to prepare and place the mixtures before incorporating them into the Work. Use only the ingredients listed in the approved Asphalt Mix Design and Job Mix Formula. For virgin aggregates use sources which meet the requirements of Section 802 and are listed in QPL 1 or QPL 2; for mixes in which local sand is permitted, use the approved sand source identified in the mix design. For mixtures containing Reclaimed Asphalt Pavement (RAP), use only RAP from the approved stockpile identified in the mix design. Use asphalt cement meeting the requirements of Section 820, from a source listed in QPL 7.
4. Obtain approved Superpave mix designs and 4.75 mm mix designs from a mix design laboratory certified by the Department. Obtain approved mix designs for types PEM, OGFC, and SMA mixtures from the Department's Office of Materials and Research, which produces and furnishes these mix designs.
5. Ensure that Superpave and 4.75 mm mix designs are designed in accordance with SOP-2SP ("Control of Superpave Bituminous Mixture Designs") and are approved by the Department as provided therein. Ensure that these mixes are designed by a laboratory and technician certified in accordance with SOP-36, ("Certification of Laboratories and Personnel for Design of Superpave Asphalt Mixtures").
6. Use only mixtures composed of the aggregate groups and blends indicated in the Proposal and Plans by their pay item designations, defined as follows:

Pay Item Designation	Allowable Aggregate Groups
Group I or II	Group I, Group II, or Blend I
Group II only	Group II only
Blend I	Either 100% Group II material or a blend of Group I and Group II. Do not use Group I material for more than 60%, by weight, of the total aggregate nor more than 50%, by weight, of the coarse aggregate fraction.

7. For patching or leveling use Group I, Group II, or Blend I. Mix types for patching and leveling are specified in Subsection 400.3.03.B.

8. Include lime (hydrated lime) from an approved source and meeting the requirements of Subsection 882.2.03 in all paving courses except as otherwise provided in the Contract. For a list of approved sources of lime, see QPL 41.
   a. Add lime to each mixture at the rate prescribed in the approved mix design.
   b. Mix designs using only virgin aggregate shall include lime at a minimum rate of 1.00 % of the total dry aggregate weight. Mix designs using RAP shall include lime at a minimum rate equal to 1.00 % of the virgin aggregate fraction plus 0.50 % of the aggregate in the RAP fraction.
   c. If necessary to meet requirements for mixture properties, and pursuant to an approved mix design, add more lime or add lime plus an approved Heat-Stable Anti-Stripping Additive that meets the requirements of Subsection 831.2.04. However, the Department will not make additional payment for these materials. For a list of sources of Heat-Stable Anti-Stripping Additives, see QPL 26.
   d. Where specifically allowed in the contract on LARP, airport, and parking lot projects, an approved Heat-Stable Anti-Stripping Additive that meets the requirements of Subsection 831.2.04 may be substituted for hydrated lime. In this case the mix gradation shall be adjusted as necessary to replace the lime with an equivalent volume of fines passing the 0.075 mm sieve. Add Heat-Stable Anti-stripping Additive at a minimum rate of 0.5 percent of the asphalt cement portion.
9. Use performance grade PG 67-22 asphalt cement in all mix designs and mixtures except as follows:
   a. For mixtures containing 25% or greater RAP, the Engineer will determine the performance grade to be used.
   b. On PR, LARP, airport, and parking lot projects, PG 64-22 may be substituted for PG 67-22, with approval of the Office of Materials and Research, on roads having current ADT less than 2,000.
   c. Use only grade PG 76-22 in the following mixes: SMA, 12.5 mm PEM, 12.5 mm and 9.5 mm OGFC, 12.5 mm Superpave, excluding shoulder construction, on projects with ADT greater than 25,000; and in all mixtures for which polymer-modified asphalt is specified in the pay item.
10. Use of local sand is restricted as follows:
   a. Do not place mixtures containing local sand on the traveled way of the mainline or ramps of the Interstate System. Mixtures with local sand may be used for shoulder construction on these facilities.
   b. Local sand shall not constitute more than 20 % of the total aggregate weight of any mix design or production mix.
   c. Subject to the above limits, 19 mm, 12.5 mm, and 9.5 mm Superpave mix designs and 4.75 mm mix designs containing local sand may be used on projects with a current ADT not exceeding 2,000.
   d. 25 mm Superpave mix designs containing not more than 20 % local sand may be used on all facilities except the main line and ramps of the Interstate System.
   e. Obtain local sand for use in asphalt mixtures from a source approved by the Department.
   f. Approval of local sand sources: The Department will sample, test, and approve sources of local sand. Local sand shall not contain more than 7.0 % clay by weight and shall be free of foreign substances, roots, twigs, and other organic matter. It shall be free of clay lumps, as determined by AASHTO T 112, and shall have a sand equivalent value exceeding 25%, as determined by GDT 63.

B. Design requirements and limits – all mix types

1. Design procedures: For all Superpave and 4.75 mm mixes, designers shall adhere to the Superpave System for Volumetric Design (AASHTO T 312 and AASHTO PP 2), as adapted in SOP-2SP. The Department will design open-graded mixes and Stone Matrix Asphalt (SMA) mixes according to GDT 114 and GDT 123, respectively. In all cases, the procedure for measuring Maximum Specific Gravity (G_{mm}) shall be AASHTO T 209. In addition to gradation and volumetric analysis, mix designs shall include the following performance tests, as applicable.

   - **9.5 mm Superpave**

     9.5mm Superpave mixes should specify "Type I" or "Type II" mix design in the plans or contract documents. If "Mix Design Level A" is specified, ensure the Asphaltic Concrete meets the requirements of a "Type I" mix. If a "Mix Design Level B, C or D" is specified, ensure the Asphaltic Concrete meets the requirements of a "Type II" mix.

   - **Other Superpave mixes**

No "Type" is required for other Superpave Asphaltic Concrete mixes (12.5 mm, 19 mm, or 25 mm). Any "Mix Design Levels A, B, C or D" specified in the plans or contract documents do not affect the current asphalt mix designs.

2. Permeability test: Superpave and Stone Matrix mix designs shall include testing according to ASTM PS-129. Specimen air voids for this test shall be 6.0 ±1.0 %. The average permeability of three specimens may not exceed 3.60 ft per day (125×10^{-5} cm per sec).
3. Moisture susceptibility test: Mix designs of all types except open-graded surface mixes shall include testing for moisture susceptibility according to GDT 66. Specimen air voids for this test shall be 7.0 ±1.0%. The minimum tensile splitting ratio is 0.80, except that a tensile splitting ratio of no less than 0.70 may be acceptable if all individual strength values exceed 100 psi (690 kPa). Average splitting strength of the three conditioned and three controlled samples shall be not less than 60 psi (415 kPa) for either group. Retention of coating as determined by GDT 56 shall be not less than 95%.
4. Rutting susceptibility test. Mix designs of all types except Open-graded Surface Mixes (OGFC and PEM), and mixtures designed exclusively for trench widening shall include testing according to GDT 115. Design limits for this test are as follows: Specimen air voids for this test shall be 5.0 ± 1.0% for all mix types. Testing temperature shall be 64°C (147°F) for all mix types except 25 mm Superpave mixes, which shall be tested at 49°C (120°F). Maximum deformation shall be 5.0 mm for all mixes except 4.75 mm mix and 9.5 mm Type I Superpave mix. Maximum deformation for these mix types shall be 8.0 mm at 64°C.
5. Fatigue testing: The Department may verify Superpave designs by fatigue testing according to AASHTO TP 8-94 or other procedure approved by the Department.

828.2.01 Open-Graded Surface Mixtures

A. Requirements

Use approved mixtures that meet the following mixture control tolerances and design criteria:

Sieve Size	Mixture Control Tolerance, %	Design Gradation Limits, % Passing		
		9.5 mm OGFC	12.5 mm OGFC	12.5 mm PEM
3/4 in (19 mm) sieve	±0.0		100	100
1/2 in (12.5 mm) sieve	±6.1	100*	85-100	80-100
3/8 in (9.5 mm) sieve	±5.6	85-100	55-75	35-60
No. 4 (4.75 mm) sieve	±5.7	20-40	15-25	10-25
No. 8 (2.36 mm) sieve	±4.6	5-10	5-10	5-10
No. 200 (75 µm) sieve	±2.0	2-4	2-4	1-4
Range for % AC	±0.4	6.0-7.25	5.75-7.25	5.5-7.0
Class of stone (Section 800)		"A" only	"A" only	"A" only
Drain-down (AASHTO T305), %		<0.3	<0.3	<0.3

* Mixture control tolerance is not applicable to this sieve for this mix.

1. In 12.5 mm and 9.5 mm OGFC and 12.5 mm PEM mixes, use only PG 76-22 asphalt cement (specified in Section 820).
2. All OGFC and PEM mixes shall include a stabilizing fiber of the type (cellulose or mineral) specified in the mix design and meeting the requirements of Section 819. The dosage rate shall be as specified in the mix design and shall be sufficient to prevent drain-down exceeding the above tolerance.

828.2.02 Stone Matrix Asphalt Mixtures

A. Requirements

Use approved mixtures that meet the following mixture control tolerances and design criteria:

Sieve Size	Mixture Control Tolerance	Design Gradation Limits, Percent Passing		
		9.5 mm SMA	12.5 mm SMA	19 mm SMA
1- in (25 mm) sieve	±0.0			100
3/4 in (19 mm) sieve	±7.0	100*	100*	90-100
1/2 in (12.5 mm) sieve	±6.1	98-100**	85-100	44-70
3/8 in (9.5 mm) sieve	±5.6	70-100	50-75	25-60
No. 4 (4.75 mm) sieve	±5.7	28-50	20-28	20-28
No. 8 (2.36) mm sieve	±4.6	15-30	16-24	15-22
No. 50 (300 µm) sieve	±3.8	10-17	10-20	10-20
No. 200 (75 µm) sieve	±2.0	8-13	8-12	8-12
Range for % AC	±0.4	6.0-7.5	5.8-7.5	5.5-7.5
Design optimum air voids (%)		3.5 ±0.5	3.5 ±0.5	3.5 ±0.5
% aggregate voids filled with AC (VFA)		70-90	70-90	70-90
Tensile splitting ratio after freeze-thaw cycle GDT-66		80%	80%	80%
Drain-down (AASHTO T305), %		<0.3	<0.3	<0.3

*Mixture control tolerance is not applicable to this sieve for this mix.

**Mixture control tolerance shall be ± 2.0% for this sieve for 9.5 mm SMA mixes placed at spread rates greater than 135 lb/yd^2. For 9.5 mm SMA mixes placed at spread rates of 135 lb/yd^2 or less, 100 % passing is required on this sieve.

1. SMA mixtures shall be compacted at 50 gyrations with the Superpave Gyratory compactor or 50 blows with the Marshall compactor.
2. All SMA mixtures shall contain mineral filler and fiber stabilizing additives and shall meet the following requirements:
   a. Asphalt cement grade PG-76-22 (specified in Section 820) is required in all SMA mixtures.
   b. Aggregates for SMA shall meet the requirements of Subsection 802.2.02.A.3.
   c. Use mineral filler that meets requirements of Section 883 and is approved by the Department. Approved sources of mineral filler are listed in QPL 81.
   d. Do not use local sand in lieu of mineral filler.
   e. Use an approved Fiber Stabilizing Additive of the type (cellulose or mineral) specified in the mix design and meeting the requirements of Section 819. Approved sources of Fiber Stabilizing Additive are listed in QPL 77. The dosage rate will be as specified in the mix design and shall be sufficient to prevent drain-down exceeding the above tolerance.

828.2.03 Superpave Asphalt Concrete Mixtures

A. Requirements

Ensure that Superpave mixtures meet the following mixture control tolerances and design limits:

1. All mixes are to be designed at a design gyration number (N_{des}) of 65 gyrations and an initial gyration number (N_{ini}) of 6 gyrations.
2. Gradation limits for Superpave mixtures are as follows:

Sieve Size	Mixture Control Tolerance	Design Gradation Limits, Percent Passing				
		9.5 mm Superpave Type I	9.5 mm Superpave Type II	12.5 mm Superpave Note 1	19 mm Superpave	25 mm Superpave
1-1/2 in (37.5 mm) sieve						100
1- in (25.0 mm) sieve	± 8.0			100*	100*	90-100
3/4 in (19.0 mm) sieve	±8.0**	100*	100*	98-100****	90-100	55-89**
1/2 in (12.5 mm) sieve	±6.0***	98-100****	98-100****	90-100	60-89	50-70
3/8 in (9.5 mm) sieve	±5.6	90-100	90-100	70-89	55-75	
No. 4 (4.75 mm) sieve	±5.6	65-85	55-75			
No. 8 (2.36 mm) sieve	±4.6	48-55	42-47	38-46	32-36	30-36
No. 200 (75 µm) sieve	±2.0	5.0-7.0	5.0-7.0	4.5-7.0	4.0-6.0	3.5-6.0

* Mixture control tolerance is not applicable to this sieve for this mix.

** Mixture control tolerance shall be ± 10.0% for this sieve for 25 mm Superpave.

***Mixture control tolerance shall be ± 8.0% for this sieve for 19 mm Superpave.

****Mixture control tolerance shall be ± 2.0% for this sieve for 12.5 mm and 9.5 mm mixes.

Note 1: Use PG 76-22 in 12.5 mm Superpave, excluding shoulder construction, on all projects with ADT greater than 25,000.

3. The Mixture Control Tolerance for asphalt cement shall be ± 0.4% for all mix types.

4. Volumetric limits are as follows:

Design Parameter	Mix Type	Limits
% of Maximum Specific Gravity (G_{mm}) @ design gyrations, N_{des})	All	96%
% G_{mm} at the initial number of gyrations, N_i	All	91.5% maximum
% voids filled with asphalt (VFA) at N_{des}	9.5 mm Type I	Min. 72; Max. 80
	all other types	Min 72; Max. 76
Fines to effective asphalt binder ratio (F/P_{be})	9.5 mm Type I	0.6 to 1.4
	all other types	0.8 to 1.6
Minimum % Voids in Mineral Aggregate (VMA)*	25 mm	13.0
	19 mm	14.0
	12.5 mm	15.0
	9.5 Type I	16.0
	9.5 Type II	16.0

* VMA shall be calculated using the effective specific gravity of the aggregate (G_{se}). See SOP-2SP.

828.2.04 Fine-Graded Mixtures

A. Requirements

Design gyrations (N_{des}) for fine-graded mixes shall be 50 gyrations. Ensure that fine-graded mixtures meet the following mixture control tolerances and design limits:

ASPHALTIC CONCRETE - 4.75 mm Mix		
Sieve Size	**Mixture Control Tolerance**	**Design Gradation Limits, % passing**
1/2 in (12.5 mm) sieve*	±0.0	100*
3/8 in (9.5 mm) sieve	±5.6	90-100
No. 4 (4.75 mm) sieve	±5.7	75-95
No. 8 (2.36 mm) sieve	±4.6	60-65
No. 50 (300 µm) sieve	±3.8	20-50
No. 200 (75 µm) sieve	±2.0	4-12
Range for % AC	±0.4	6.00 – 7.50
Design optimum air voids (%)		4.0 – 7.0
% Aggregate voids filled with AC		60 - 80

* Mixture control tolerance is not applicable to this sieve for this mix.

B. Fabrication

See Section 400.

C. Acceptance

See Subsection 106.03 and Section 400. Ensure that individual test results meet the Mixture Control Tolerances listed in Subsections 828.2.01, 828.2.02, 828.2.03, or 828.04, whichever applies.

D. Materials Warranty

See General Provisions 101 through 150.

Date: August 8, 2002
First Use Date 2001 Specifications: November 1, 2002

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

SPECIAL PROVISION

Section 883—Mineral Filler

Delete Section 883.

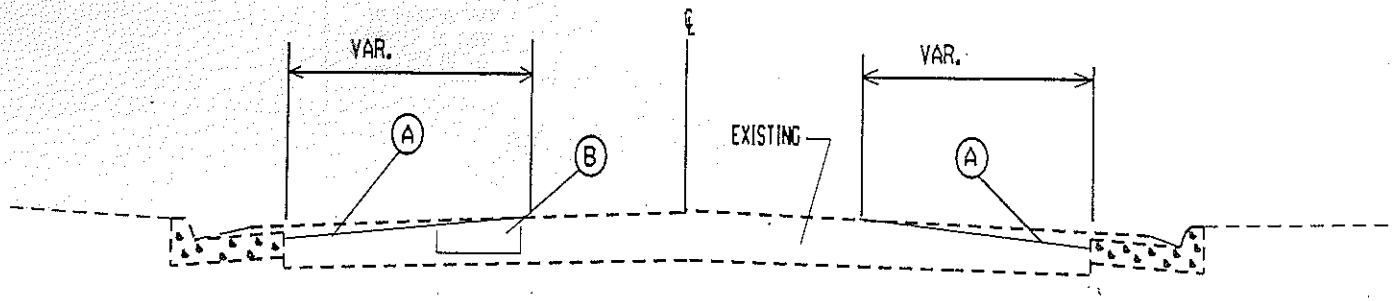
LARP Project Report

Roads/Streets in: DEKALB City: DUNWOODY Project Number: S013665-PRC

1	Road Name: FLEUR DE LIS CT Co. Rd. No: Beginning At: FONTAINEBLEAU DR Ending At: END	Length (MI): 0.200 Width (FT): 24.000 Required Striping:	Proposed Construction: ASP LEV, INCL LIME SPE 9.5MM, TP I, GP1 OR BL1 &L	125.0	MILLING & PATCHING
2	Road Name: HENSLEY DR Co. Rd. No: Beginning At: VANDERLYN DR Ending At: TRUMBULL DR	Length (MI): 0.330 Width (FT): 24.000 Required Striping:	Proposed Construction: ASP LEV, INCL LIME SPE 9.5MM, TP I, GP1 OR BL1 &L	125.0	MILLING & PATCHING
3	Road Name: HOLLISTON CT Co. Rd. No: Beginning At: HOLLISTON DR Ending At: END	Length (MI): 0.040 Width (FT): 26.000 Required Striping:	Proposed Construction: ASP LEV, INCL LIME SPE 9.5MM, TP I, GP1 OR BL1 &L	125.0	MILLING & PATCHING
4	Road Name: MANHASSET FARM CT Co. Rd. No: Beginning At: EAST END Ending At: WEST END	Length (MI): 0.140 Width (FT): 24.000 Required Striping:	Proposed Construction: ASP LEV, INCL LIME SPE 9.5MM, TP I, GP1 OR BL1 &L	125.0	MILLING & PATCHING
5	Road Name: RALSTON CT Co. Rd. No: Beginning At: WITHMERE WAY Ending At: END	Length (MI): 0.060 Width (FT): 24.000 Required Striping:	Proposed Construction: ASP LEV, INCL LIME SPE 9.5MM, TP I, GP1 OR BL1 &L	125.0	MILLING & PATCHING
6	Road Name: STRASBURG CT Co. Rd. No: Beginning At: LURAY DR Ending At: END	Length (MI): 0.100 Width (FT): 24.000 Required Striping:	Proposed Construction: ASP LEV, INCL LIME SPE 9.5MM, TP I, GP1 OR BL1 &L	125.0	MILLING & PATCHING
7	Road Name: TROWBRIDGE DR Co. Rd. No: Beginning At: BALL MILL DR Ending At: VERNON LAKE DR	Length (MI): 0.500 Width (FT): 24.000 Required Striping:	Proposed Construction: ASP LEV, INCL LIME SPE 9.5MM, TP I, GP1 OR BL1 &L	125.0	MILLING & PATCHING

TYPICAL SECTION FOR MILLING AND PATCHING

PROJECT NO: 5013665-PRC COUNTY: DEKALB / DUNW0004



NO SCALE

Ⓐ MILL ASPH CONC PVMT, VARIABLE DEPTH, AVERAGE DEPTH = 1/2"

Ⓑ ASPH CONC PATCHING 4"

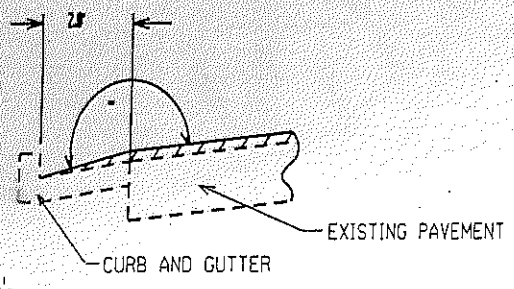
THIS TYPICAL SECTION APPLIES TO: #1 THRU #7

LARP TYPICAL RESURFACING SECTION

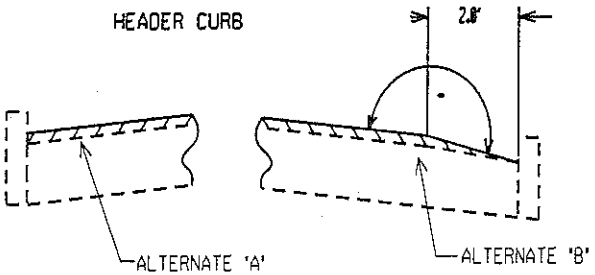
CURB AND GUTTER DETAIL

DETAIL FOR FEATHERING SURFACING

CURB AND GUTTER



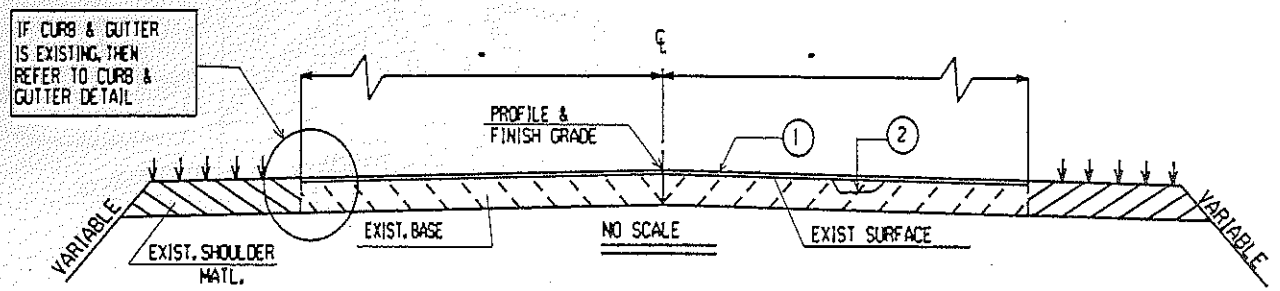
HEADER CURB



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

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

7/04



* SEE LARP PROJECT REPORT SHEET(S) FOR PAVEMENT WIDTHS

REQ'D: (1) 125 LBS/SY ASPH CONC 9.5 MM SUPERPAVE, TP 1, GP 1 OR BL 1, INCL BITUM MATL & H LIME

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

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

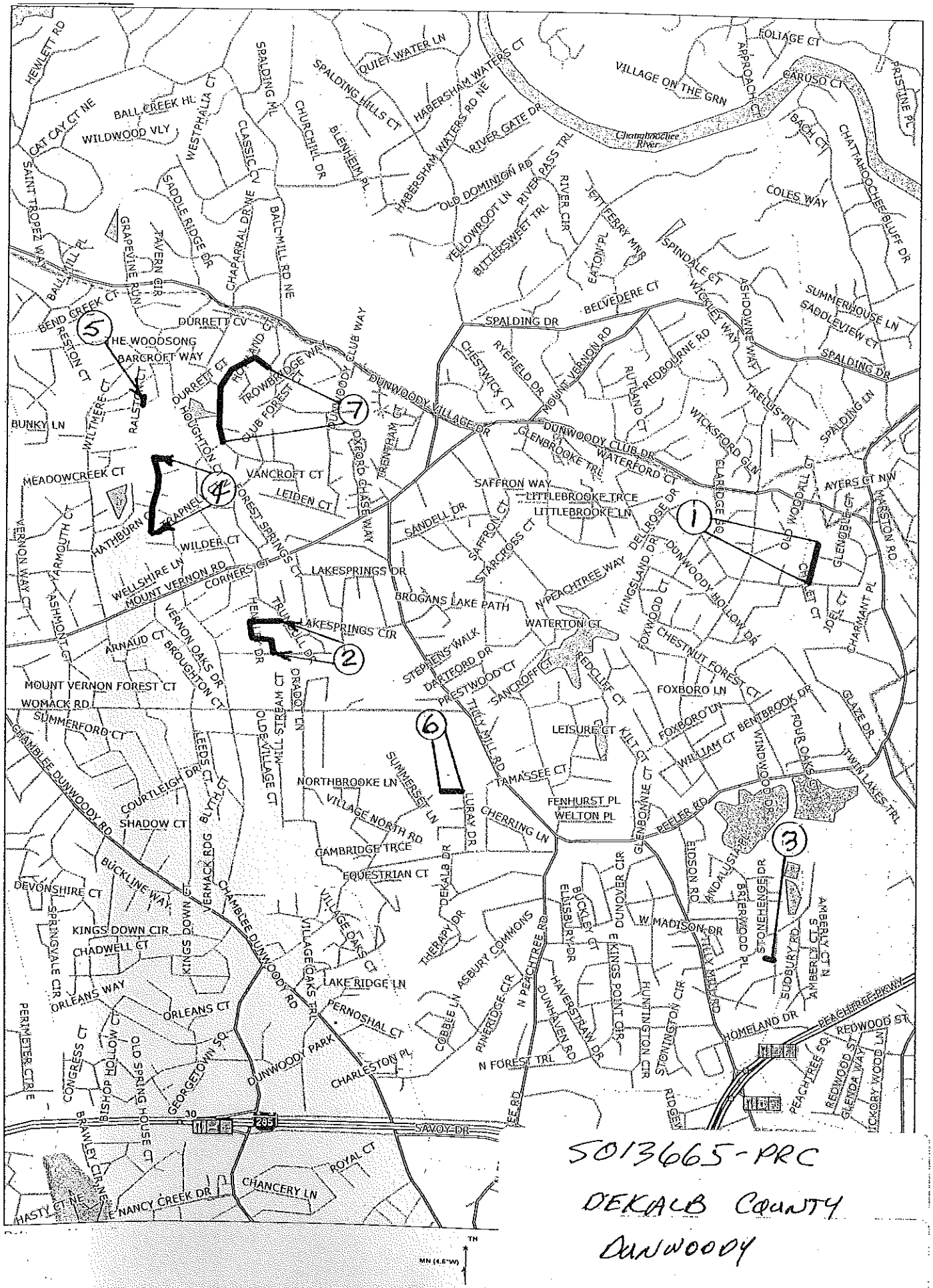
NOTE: THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PLACEMENT MAINTENANCE, AND INSPECTION OF TRAFFIC CONTROL DEVICES AND TEMPORARY EROSION CONTROL ITEMS.

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

THIS TYPICAL SECTION APPLIES TO PRIORITY #('S) #1 THRU #7

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

PROJECT NO.	5013665-PRC
COUNTY	DEKALB
CITY	DUNWOODY



5013665-PRC

DEKALB COUNTY

DUNWOODY