



City of Tuscaloosa
2018 Citywide Resurfacing Project
SPECIFICATIONS

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SECTION 1 – PROJECT SUMMARY

1.0 GENERAL

1.01 Scope

This Project consists of resurfacing and other associated work of the various City Streets as described in these Specifications.

1.02 Project Engineering and Inspection

The City of Tuscaloosa Office of City Engineer will provide all Project Engineering and Inspection.

1.03 Materials

The Contractor will provide all materials unless otherwise stated in these Specifications or the accompanying Contract.

1.04 Measurement and Payment

All work directed in these Specifications shall be paid for in accordance with the Items listed in the Bid Schedule. No separate payment shall be made for any Item not shown in the Bid Schedule.

SECTION 2 – SUBMITTALS

2.0 GENERAL

2.01 Description and Requirements

This Project consists of resurfacing and other associated work of the various City Streets as described in these Specifications.

2.02 Type of Submittals

This section of the specifications describes the procedures for submittals such as shop drawings, product data, samples and miscellaneous work-related submittals. It does not include the submissions required for administrative work which are described elsewhere in the Contract Documents.

2.03 Submittal Contents.

The submittal contents required are specified in each section.

2.04 Definitions

2.04.01 Shop Drawings:

Show Drawings shall include technical data, drawings, diagrams, performance curves, schedules, templates, patterns, reports, calculations, instructions, measurements and similar information as applicable to specific item for which the Shop Drawings is prepared.

Provide newly-prepared information on reproducible sheets, with graphic information at accurate scale (except as otherwise indicated) or appropriate number of prints hereof, with name or preparer (firm name) indicated. The Contract Drawings shall not be traced or reproduced by any method for use as or in lieu of detail shop drawings. Show dimensions and indicate compliance with standards and special coordination requirements. Do not allow shop drawing copies without appropriated final “Action” markings by the OWNER to be used in connection with the Work.

2.04.02 Product Data:

Product data includes standard printed information on materials, products and systems, not specially prepared for this Project, other than the designation of selections from among available choices printed therein.

Collect required data into one submittal for each unit of work or system, and mark each copy to show which choices and options are applicable to this project. Include manufacturer’s standard printed recommendations for application and use, compliance with standards, application of labels and seals, notation of field measurements which have been checked, and special coordination requirements.

2.04.03 Samples:

Samples include both fabricated and un-fabricated physical examples of materials, products and units of work, both as complete units and as smaller portions of units of work, either for limited visual inspection or (where indicated) for more detailed testing and analysis.

Provide units identical with final condition of proposed materials or product for the work. Include "range" samples (not less than 3 units) where unavoidable variations must be expected, and describe or identify variations between units of each set. Provide full set of optional samples where the OWNER's selection is required. Prepare samples to match the OWNER's sample where indicated. Include information with each sample to show generic description, source or product name and manufacturer, limitations, and compliance with standards. Samples are submitted for review and confirmation of "kind" by the OWNER. OWNER will not "test" samples (except as otherwise indicated) for other requirements, which are the exclusive responsibility of the CONTRACTOR.

Miscellaneous submittals related directly to the work (non-Administrative) include warranties, maintenance agreements, workmanship bonds, project photographs, survey data and reports, physical work records, statements of applicability, quality testing and certifying reports, copies of industry standards, record drawings, field measurement data, operating and maintenance materials, and similar information, devices and materials applicable to the Work but not processed as Shop Drawings, product data or samples.

2.05 General Submittal Requirements

2.05.01 Scheduling

Where appropriate in various required administrative submittals (listings of products, manufacturers, Supplier and subcontractors, and in job progress schedule), show principle work-related submittal requirements and time schedules for coordination and integration of submittal activity with related work in each instance.

2.05.02 Coordination of Submittal Times

Prepare and transmit each submittal to the OWNER sufficiently in advance of performing related work or other applicable activities, so the installation will not be delayed or improperly sequenced by processing times, including non-approval and resubmittal (if required). Coordinate with other submittals, testing, purchasing, delivery and similar sequenced activities. No extension of time will be authorized because of CONTRACTOR's failure to transmit submittals to the OWNER sufficiently in advance of the Work.

2.05.03 Sequencing Requirements

As applicable in each instance, do not proceed with a unit of Work until submittal procedures have been sequenced with related units of work, in a manner which will ensure that the action will not need to be later modified or rescinded by reason of a subsequent submittal which should have been processed earlier or concurrently for coordination.

2.05.04 Preparation of Submittals

Provide permanent marking on each submittal to identify project, date, CONTRACTOR, subcontractor, submittal name and similar information to distinguish it from other submittals. Show CONTRACTOR's executed review and approval marking and provide space for the OWNER's "Action" marking. Package each submittal appropriately for transmittal and handling. Submittals which are received from sources other than through the CONTRACTOR's office will be returned "without action."

2.05.05 Transmittal Identification

Number transmittals in sequence for each Division of the Specifications. The number before the dash indicates the Section of the Specifications, and the number after the dash is the sequence number of the transmittal (15140-1 would be the first transmittal applicable to Section 15140 of the Specifications. 15140-02 would be the second transmittal for Section 15140).

Identify resubmittals with a letter of the alphabet following the original number, using A for the first resubmittal, B for the second resubmittal, etc. A resubmittal affecting transmittal 15140-01 would then be numbered 15140-01A. The 15140-01 would then be entered in the space "Previous Transmittal Number", which is left blank except on resubmittals.

2.06 Specific Category Requirements

General. Except as otherwise indicated in the individual work sections, comply with general requirements specified herein for each indicated category of submittal.

Submittals shall be accompanied by a cover sheet which shall contain:

The date of submission and the dates of any previous submissions.

CONTRACTOR.

Supplier, manufacturer.

Subcontractor.

Identification of the product, with the Specification Section number.

Field dimensions, clearly identified as such.

Relation to adjacent or critical features of the work or materials.

Applicable standards, such as ASTM or Federal Specification numbers.

Notification to the OWNER in writing, at the time of submission, of any deviations on the submittals from requirements of the Contract Documents.

Identification of revisions on resubmittals.

An 8" x 3" blank space for CONTRACTOR and OWNER stamps.

CONTRACTOR's stamp, initialed or signed, certifying to review of submittal, verification of products, field measurements and field construction criteria, and coordination of the information within the submittal with requirements of the Work and of Contract Documents.

Submittal sheets or drawings showing more than the particular item under consideration shall have all but the pertinent description of the item for which review is requested crossed out.

Previous transmittal number (for resubmittals only).

2.07 CONTRACTOR Responsibilities

In addition to any other requirements of this section, the CONTRACTOR shall be responsible to:

Review Shop Drawings, product data and samples prior to submission.

Determine and verify:

- Field measurements
- Field construction criteria and required clearances.
- Catalog numbers and similar data.
- Conformance with specifications.

Coordinate each submittal with requirements of the work and of the Contract Documents. Notify the OWNER in writing, at time of submission, of any deviations in the submittals from requirements of the Contract Documents.

Begin no fabrication or work which requires submittals until return of submittals with OWNER approval.

2.08 Routing of Submittals

Submittals and routine correspondence shall be routed as follows:

Supplier to CONTRACTOR (through representative if applicable) for preliminary check.

CONTRACTOR to OWNER for general review or comment.

OWNER to CONTRACTOR.

CONTRACTOR to Supplier.

2.09 Submittal Copies Required

2.09.01 Shop Drawings, Product Data, and Miscellaneous Submittals

All submittals marked "Approved" or "Approved as Noted" will be distributed as follows:

- | | |
|-------------------|-----------------|
| 1. For CONTRACTOR | 2 copies |
| 2. For OWNER | <u>3 copies</u> |
| TOTAL | 5 copies |

To the above number may be added additional copies as required by the CONTRACTOR. The OWNER will mark all copies of each shop drawing. For non-approval items, such as parts lists and operation or maintenance manuals, 3 copies are required, unless specified otherwise.

2.09.02 Samples

Copies: Two, unless otherwise specified in individual specifications.
Preparation: Mount, display, or package Samples in manner specified to facilitate review of quality. Attach label that includes the following:

- Manufacturer name
- Model number
- Material
- Sample source
- Full-size Samples
- Size as indicated in individual specification section. Prepared from same materials to be used for Work. Cured and finished in manner specified. Physically identical with product proposed for use.

2.10 Review of Submittals

Review time: Allow a minimum of two (2) weeks for the OWNER's initial processing of each submittal requiring review and response, except allow longer periods where processing must be delayed for coordination with subsequent submittals. The OWNER will advise the CONTRACTOR promptly when it is determined that a submittal being processed must be delayed for coordination. Allow two (2) weeks for reprocessing each submittal. Advise the OWNER on each submittal as to whether processing time is critical to progress of the Work, and therefore the Work would be expedited if processing time could be foreshortened.

OWNER's Action:

Final Unrestricted Release. Work may proceed, provided it complies with contract documents, when submittal is returned with the following:

Marking: "Approved" – No Exceptions Taken.

Final-But-Restricted Release. Work may proceed, provided it complies with notations and corrections on submittal and with contract documents, when submittal is returned with the following:

Marking: "Approved as Noted" – Exceptions Taken as Noted.

Returned for Resubmittal. Do not proceed with Work. Revise submittal in accordance with notations thereon, and resubmit without delay to obtain a different action marking. Do not allow submittals with the following marking (or unmarked submittals where a marking is required) to be used in connection with performance of the Work.

Marking: "Revise and Resubmit" – Revise and resubmit. Only two copies of items marked "Revise and Resubmit: will be reviewed and marked. One copy will be retained in the OWNER's office and the other copy with all remaining unmarked copies will be returned to CONTRACTOR for resubmittal.

SECTION 3 – CONSTRUCTION, MATERIALS AND EQUIPMENT SPECIFICATIONS

3.0 GENERAL

2.01 Scope

All construction, materials and equipment shall conform to the State of Alabama Department of Transportation's latest Edition of Standards Specification for Highways Construction and all Supplements thereto and are hereby referred to and by reference incorporated herein and made a part of these specifications as fully as if the same were set out at length herein. A copy of these Specifications for Highway Construction above referred to is on file in the Office of the City Engineer for examination and copies may be obtained from the Alabama Department of Transportation. The Alabama Department of Transportation Specifications shall be adhered to unless otherwise set out in these Specifications or as directed by the City of Tuscaloosa Office of the City Engineer.

Compaction – In place density requirements for Asphalt shall be waived; density shall be to the satisfaction of the Office of the City Engineer.

Where “ALDOT” appear in the Specifications, it refers to the Alabama Department of Transportation, Standard Specification for Highways Construction, Latest Edition and all supplements thereto.

Where “AASHTO” appears in these Specifications, it refers to the American Society of Testing and Materials.

Where “Engineer” is referenced in these Specifications, it refers to the City of Tuscaloosa, Office of the City Engineer.

Material and Construction for Detectable/Tactile Warnings shall meet the requirements for Detectable Warnings where required by the ADA Accessibility Guidelines as set out in these Specifications.

SECTION 4 – ASPHALT MATERIALS

4.0 BITUMINOUS PLANT MIX

3.01 Scope

The work required under this Section consists of furnishing and placing all materials and other items necessary for repairing and resurfacing all asphalt surfaces as shown on the plans, specified herein, or as directed by the Engineer. All materials used in the work shall be new, unused material that will meet the requirements described in Division 400 of ALDOT.

NOTE: A job mix formula shall be submitted by the Contractor for approval by the Engineer prior to starting work under the Contract.

3.02 Surface Preparation

All potholes, weak, failed or disturbed areas shall be repaired with the proper patches throughout the extent of the potholed, weak, failed or disturbed area, as determined by the Engineer. The failed areas shall be properly tacked and repaired using full depth asphalt concrete to ensure strength equal to or exceeding that of the surrounding pavement structure. All patches shall be carefully placed and adequately compacted to produce a uniform layer of the overlay. All grass and vegetation shall be removed and herbicide applied to retard growth where required by the Engineer. All areas that are to be resurfaced shall be thoroughly swept with a power broom or other approved equipment to remove to the greatest extent practical any dirt, dust, or debris, prior to the placement of any asphalt overly. All curb and gutter and sidewalks shall be cleaned both before and after the resurfacing operation.

3.03 Tack Coat

This includes the placing of Emulsified Asphalt Tack Coat treatment on all surfaces and edges to be patched or resurfaced, or as directed by the Engineer. Surface treatments called for by these Specifications in Section 24 or as directed by the Engineer shall meet the requirements of Division 400 and 800, and Section 401 of ALDOT.

3.04 Leveling

Any distortions in the exiting surface such as knots and depressions shall be corrected. The surface shall be brought to the proper elevation using the #424 Superpave Bituminous Concrete Plant Mix Wearing Surface. The area to be leveled shall be prepared as per the Specifications concerning bituminous plant mix surface. The finished surface of the leveling shall comply Section 410 with special reference to Sub-section 410.03 (c), paragraph 3, Leveling and Sub-section 410.05, Surface Edge Requirements, of the A.L.D.O.T Standard Specifications.

3.05 Superpave Bituminous Concrete Wearing Surface

The Superpave Bituminous Concrete Wearing Surface Layer for Leveling and Resurfacing shall conform to Division 400, Section 424 Superpave Bituminous Concrete Wearing Surface of the A.L.D.O.T Standard Specification, Latest Edition and as shown in Section 28 of these Specifications and as required in the Notice to Bidder Section of these Specifications.

3.06 Superpave Bituminous Concrete Binder Layer

The Superpave Bituminous Concrete Binder for Full Depth Patching shall conform to Section 424 Superpave Bituminous Concrete Binder Layer of the ALDOT Standard Specifications and as shown in Section 27 of these specifications.

3.07 Measurement for 424 Superpave Bituminous Concrete Binder and Wearing Surface Layers

The accepted quantity of Hot Mixed Asphalt used as directed will be measured in U.S. Customary units of 2,000 pounds per ton.

3.08 Payment for 424 Superpave Bituminous Concrete Wearing Surface Layers

Payment for 424 Superpave Bituminous Concrete Wearing Surface Layer shall be made at the unit price bid respectively and shall be compensation in full for cleaning and preparation of the existing pavement, tack coat, equipment, labor and tools necessary to furnish and install the bituminous paving complete.

Bituminous Material Price Index/Asphalt Index: The Asphalt Index Price for 424 Superpave Bituminous Concrete Binder, Leveling, and Wearing Surface Layers shall not apply to this Contract.

3.09 Payment for 424 Superpave Bituminous Concrete Binder Layer (Full Depth Patching)

Payment for 424 Superpave Bituminous Concrete Binder Layer (Full Depth Patching) used to patch weak or broken up areas shall be paid for at the unit price bid and shall be compensation in full for materials, tack coat, equipment, labor and tools necessary to furnish and install the bituminous concrete binder complete. This shall include any milling or sawing and all excavation and removal from the job site of all unsuitable material including excavation and removal of concrete from existing streets if required under this Contract and/or as directed by the Engineer. Pay Factors for all asphalt required in ALDOT, Section 410 (Hot Mix Asphalt Pavement) shall not apply to this Contract. Concrete removed from any roadway that is to be replaced with concrete shall be paid for at the unit price bid for the respective item of work.

SECTION 5 – Concrete Curb & Gutter, Sidewalk, Driveways, Valley Curb, Type “N” Curb, and Valley Gutters

4.01 Description

This section shall cover the removal and replacement and the installation of the Concrete Driveways, Combination Curb and Gutter, Type “N” Curb, Type “C” (Modified, 2’-0”), Sidewalk, Valley Curb, and Concrete Valley Gutters as directed by the Engineer. All concrete from the demolition of any of the aforementioned items shall be removed from the site and disposed of by the Contractor as directed by the Engineer. All grassed areas adjacent to the concrete work that are disturbed during construction shall be repaired using grass, sod, or a material of the type matching the surrounding lawn or area. Concrete forms shall be removed and all voids filled and tamped using the appropriate materials (topsoil or asphalt) around new concrete work and the voids left by any forms no later than seven (7) calendar days after placing of new concrete.

4.02 Material

All materials used in this work shall be new, unused materials that will meet the requirements describe in Divisions 200, 400, 500, and 800 of ALDOT. Materials used for the aforementioned items shall conform to the special reference in Sections 501 and 623 of the ALDOT. All concrete used for the aforementioned items shall be Class “C”, 3000 psi concrete mix. The forms used shall be metal forms (except in radial sections) straight, and free from wraps and of sufficient strength to hold the concrete true to line and grade without distortion. Forms shall be cleaned and oiled with suitable oil immediately before concrete is placed against them.

When directed by the Engineer, Mail Boxes shall be moved and stored in a safe location or moved to a new location until construction has been completed.

4.03 Finish

All concrete surfaces for the aforementioned items shall receive a Broom Finish.

Measurement for Combination Curb & Gutter (Modified 2’-0”) and Type “N” Curb remove and replace shall be measured in Linear Feet to the nearest 1/10 foot along the base of the curb face or along the flow line of the gutter continuing on such line across driveways, alley ways, and other entrances. Measurements for Combination Curb & Gutter Type “C” (Modified 2’-0”) shall be measured in Linear Feet to the nearest 1/10 foot along the base of the curb as set out above. Measurement for Concrete Valley shall be measured both longitudinally and transversely and computed to the nearest 0.1 Square Yard.

4.05 Payment

Payment for the items in this section shall be made at the unit price for the item of work, respectively and shall be compensation in full for all materials, equipment, labor and tools necessary to remove broken concrete and unsuitable materials, furnish, install and finish new concrete complete. The removal and disposal from the job site of all broken concrete and unsuitable materials shall be the responsibility of the Contractor, and is considered incidental to the Contract and no extra compensation will be made for this item of work. The repairs to the existing lawns or any irrigation system damaged during construction shall be considered as incidental to the concrete work and no additional compensation will be made for this item of work. All sanitary sewers damaged by the construction shall be paid for at the contract unit price bid for the item of work and shall be compensation in full for all labor, materials, tools, and equipment including any crushed aggregate used to bed and backfill around the sanitary sewer pipe. Payment for Mail Box removal, relocation, and replacement shall be at the Contract unit price bid and shall be payment in full for removal, relocation, and replacement of the Mail Box. Damage to any Mail Box during the removal, relocation and replacement shall be the responsibility of the Contractor and no extra compensation will be made for the repair or replacement of the Mail Box.

SECTION 6 – MANHOLE RING & COVERS AND WATER VALVE BOXES RESET

5.01 Scope

This shall consist of adjusting to grade all existing manhole covers and water valve boxes belonging to the City of Tuscaloosa that are located within the roadways to be resurfaced under this Contract. The Manhole Rings & Covers and the Water Valve Boxes shall be reset, adjusted to a grade that will match the grade of the newly resurfaced streets. They shall be adjusted well in advance of the resurfacing operation.

The reset, adjustment to grade of any structures interfering with or in conflict with the proposed resurfacing project other than those mentioned above shall be the responsibility of the individual utility companies.

All work shall be done in a workmanlike manner by competent workmen and the unit re-established in proper working order at its new elevation. Any manhole cover, water valve box or other material broken, destroyed, lost or rendered unfit for re-use through carelessness, negligence, or improper handling of the work shall be replaced by the Contractor without extra compensation.

Manhole Rings & Covers or Water Valve Boxes that appear to be damaged or in bad repair prior to the reset or adjustment to grade operation, shall be called to the attention of the City Inspector and a replacement will be furnished by the City at no charge to the Contractor.

Manhole covers shall be raised using only brick and 1:3 cement mortar. At no time shall adjusting the rings be used to adjust manholes to grade without prior written approval from the Engineer.

Manhole covers and water valve boxes shall not be adjusted to grade more than seventy-two (72) hours prior to resurfacing of the street. If for any reason the street cannot be resurfaced with seventy-two (72) hours after the manhole covers or water valve boxes have been raised, the Contractor shall re-adjust the manhole covers and water valve boxes back to grade until resurfacing can be accomplished.

The use of Precast Manhole Riser Rings and Water Valve adjusting rings shall be by approval of the Engineer. Samples of the type Riser Ring proposed for use shall be furnished for inspection and shall be approved in writing by the Engineer.

5.02 Measurement

The number of acceptable Manhole Covers and Water Valve covers measured for payment will be the actual number of accepted Manhole Covers and Water Valve covers reset (adjusted to grade), complete in place.

5.03 Payment

Manhole Cover and Water Valve cover reset shall be paid for at the respective Contract unit price bid for the respective item of work, which shall be payment in full for all materials, equipment, tools, labor, and incidentals necessary to complete the work.

SECTION 7 – ASPHALT SHOULDER REPAIRS AND RESTORATION (Widening)

6.01 Scope

This will include restoration and repair to road shoulders and shall consist of the following: clipping, grading, scratching, and compacting road shoulders without curb and gutter to insure proper drainage off and away from the asphalt roadway.

At no time during the clipping or grading operation shall any dirt or debris be allowed to spill over into the existing drainage ditches. Excess dirt and debris shall be graded or pulled back onto the existing roadway, then picked up and removed by the Contractor immediately.

Clipping, blading of grass and excess soil from the shoulder, as directed by the Engineer, shall be completed in advance of the resurfacing operations. The removal of excess material shall be carried out in such a manner as not to pose a safety hazard to the motoring public.

The sub-grade or underlying layer of Shoulder material shall be prepared by scratching lightly of the existing surface to aid the bonding effect.

Where directed by the Engineer, the Shoulders shall be graded to a depth of approximately one (1) inch below the existing wearing surface of the street, or if the Shoulder already exceeds a depth of two (2) inches, then it shall be scarified and Soil Aggregate Base, Type “A” or Crushed Aggregate Base Course, Type “B” shall be used to bring the Shoulder to the proper grade. The Shoulder shall then be shaped and compacted to the satisfaction of the Engineer. Water shall be applied as directed by the Engineer to aid in the compaction of any loose or dry Shoulder material. The machine grading shall continue until the Shoulder is completed and conforms to the lines and grades as directed by the Engineer. Unless otherwise directed by the Engineer, slopes for Shoulders shall match the existing Shoulder Slopes.

The existing street surface shall be swept with a power broom or other approved equipment as needed, then the edges of the existing asphalt pavement shall be trued, cleaned, and tacked and 424 Superpave Bituminous Concrete Wearing Surface placed at a rate of approximately Two Hundred and Twenty (220) pounds per Square Yard, or two (2) inches thickness after compaction. Shoulders shall be approximately Four (4) feet wide unless otherwise directed by the Engineer.

Bituminous Treatment “A J G” may be used on Shoulders when directed by the Engineer. Where Bituminous Treatment “A J G” is used, the existing Shoulders shall be prepared as follows. The Shoulder shall be graded or clipped to remove all vegetation to a width and depth determined by the Engineer, scarified and Soil Aggregate Base Type “A” shall be used as needed to restore the Shoulder to the proper elevation and grade. The Shoulder shall then be shape, watered and compacted to the satisfaction of the Engineer. Water may be applied as directed by the Engineer to aid in the compaction of any loose or dry shoulder material. The machine grading shall continue until the Shoulder is compacted and conforms to the lines and grades as directed by the Engineer. Pre-Emergent Herbicide Treatment (see Section 21) shall be applied when and as directed by the Engineer. The slopes for the Shoulder shall match the existing Shoulder slopes unless otherwise directed by the Engineer.

All Shoulders shall be scored as directed by the Engineer. The scoring shall consist of creating impressions, or grooves, at regular intervals in the Shoulder pavement surface. The creation of the grooves shall be made by roller or cutter as directed by the Engineer. All grooves shall be

made perpendicular to the pavement edge and produce a pavement surface having uniform grooves of the dimension and spacing as specified in Division 400, Section 428 of ALDOT.

6.02 Material

The material used for Shoulder restoration shall be 424 Superpave Bituminous Concrete Wearing Surface. When directed by the Engineer, Bituminous Treatment "A J G" meeting the requirements of Division 400, of ALDOT, may be used. Borrow Excavation and Soil Aggregate Base, Type "A" or Crushed Aggregate Base, Type "B", all as described in these Specifications and according to Division 300 and 800 of ALDOT. The type of material used to repair Shoulder shall be determined by the Engineer in the field.

6.03 Payment

Payment for Shoulder restoration will be made at the Contract unit price for the respective items for work such as 424 Superpave Bituminous Concrete Wearing Surface Layer, Bituminous Treatment Type "A", Bituminous Treatment "J" or Bituminous Treatment "G", Borrow Excavation or Soil Aggregate Base Type "A" or Crushed Aggregate Base Type "B". Items such as grading, shaping, compacting and watering of the existing material, and scoring of the new asphalt shoulders shall be considered as incidental to the Contract and no extra compensation shall be made for these items of work.

SECTION 8 - TRAFFIC CONTROL

7.01 Scope

The Traffic Control Plan and all traffic control devices shall conform to the Federal Manual on Uniform Traffic Control Devices for Streets and Highways, Latest Edition. A copy of which is on file in the Office of the City Engineer for examination. The Traffic Control Plan must be submitted to the Office of the City Engineer for approval before any construction begins on the project.

7.02 Payment

Traffic control is considered as incidental to the project at no extra compensation will be made for this item.

SECTION 9 – REMOVAL OF DEBRIS, CLEANING, ETC

8.01 Scope

The Contractor shall periodically(weekly) or as directed by the Engineer during the progress of the work, remove and legally dispose of all surplus excavated materials and debris and keep the project area and the right-of-way reasonable clear. Upon completion of the work, he shall remove all temporary construction facilities, debris, and unused materials provided for the work and put the entire work site and public right-of-way in a neat and clean condition. Trash burning on the site of the work will be subject to prior approval of the Engineer, and existing State and Local Regulations. This shall include removing from the gutters any debris caused by sweeping the streets and placing of the plant mix seal.

All streets, curbs & gutters, and sidewalks shall be cleaned both before and after the placement of the Bituminous Plant Mix Material.

8.02 Payment

The removal of debris and cleaning of streets and of the work sites is considered, as incidental to the Contract and no extra compensation shall be made for this work. The removal of concrete pavement and curb shall be paid for under the unit price bid for that item of work.

SECTION 10 – RUBBER TIRED ROLLER REQUIRED

9.01 Scope

The use of a self-propelled pneumatic tired roller in conjunction with a steel wheel roller shall be required on all resurfaced areas. Resurfacing operations SHALL NOT commence without the pneumatic tired roller being on site and in good working order.

9.02 Payment

The use of the rubber tired roller is considered as incidental to the Contract and no additional payment will be made for this work.

SECTION 11 – TRAFFIC STRIPES, TRAFFIC CONTROL MARKINGS AND LEGENDS

10.01 Description

This section shall cover the work of furnishing all materials and the application of the materials to form either temporary or permanent traffic stripes, or traffic control markings and legends in the substantial conformity with the Plan details and these Specifications at the locations shown on the Plans as directed by the Engineer. All traffic striping and control markings and legends shall meet the requirements set out in Division 700 and 800 of the ALDOT and as called for and/or otherwise noted in these Specifications.

A roadway shall not be opened to traffic without a traffic strip unless otherwise approved by the Engineer. Existing lane lines covered by paving operations shall be replaced with temporary stripes. Temporary edge lines will not be required unless directed by the Engineer.

10.02 Materials

The materials for the temporary stripes and markings and legends shall be reflective Permanent Traffic Marking Materials (Class 1, List V-4) or Removable Tape (List 3) complying with the provision of Division 700 and 800 with special reference to Sections 856 and 857 of ALDOT.

The materials for standard or permanent traffic stripes and markings and legends shall be (Thermoplastic) Class 2, Type “A”, complying with Division 800 with special reference to Section 856 and 857 of ALDOT. Thermoplastic shall not be placed during rain or mist or if the pavement surface is wet. The pavement surface temperature shall be at least 50 degrees F and rising before application will be allowed.

All construction shall meet the requirements set out in Division 700, and all materials shall meet the requirements set out in Division 800 with special reference to Sections 856 and 857 of ALDOT.

10.03 Method of Measurement

The method of measurement shall be as set out in Division 700, Section 701.04 of ALDOT. All work acceptably completed under this Contract will be measured by the Engineer according to the U.S. Standard Measures and Weights.

10.04 Payment

Payment for Traffic Stripes and Traffic Control Markings and Legends both temporary and permanent shall be paid for at the respective Contract unit price bid for each class and type specified by the Plans or s directed by the Engineer. The Contract unit price bid for the respective items of work shall be full compensation for furnishing and installing the striping, traffic control legends, traffic control markings, removing striping and pavement markings (if required) and for all materials, equipment, labor, and incidentals necessary to complete the work.

SECTION 12 – AGGREGATE

11.01 Course Aggregate for Bituminous Pavement

Course Aggregate for bituminous paving mixtures shall meet the requirements of Section 429.02 and Division 800, Section 801 of ALDOT.

Maximum aggregate size 1/2" (9.5 mm) mix design

11.02 Fine Aggregate for Bituminous Pavement

Fine Aggregate for bituminous paving mixtures shall meet the requirements of Section 429.02 and Division 800, Section 802 ALDOT.

11.03 Bituminous Materials

All Bituminous materials used in this project shall meet the requirements of Section 429.02 and Division 800, Section 804 ALDOT.

Binder grade shall be PG 64-22.

NOTE: Where RAP is used in the mix design, gradation of the aggregates in the RAP and compensation for the binder content shall be made in order to meet the requirements of the specifications.

SECTION 13 – OVERLAY OF CONCRETE STREETS

12.01 Description

This covers the preparation required when concrete streets are to be overlaid using superpave bituminous concrete wearing surface layer.

All existing asphalt shall be removed by milling or other approved methods, unless otherwise directed by the Engineer.

Any failed areas in the street shall be repaired using full depth asphalt patching. Any area of the concrete that protrudes above the normal profile of the street shall be removed and patched with full depth asphalt.

All joints and cracks in concrete streets shall be prepared by cleaning and be filled using approved materials according to the following:

All joints and cracks ¼” wide or wider in the existing streets shall be cleaned of all loose debris, joint material, vegetation and dirt. Blow out joints and cracks with compressed air with a minimum of 90 psi. The surface around the joints and cracks shall be clean and dry prior to filling. After joints and cracks are cleaned using hand squeegee and a broom, fill (do not overfill) with Emulsion Slurry or Liquid Asphalt (SS-1, SS01h) mixed with sand. When cured, seal with liquid asphalt using a pouring pot and a hand squeegee, and sprinkle with dry sand.

12.02 Payment

Milling of the existing asphalt on concrete streets as described in Section 26 of these Specifications for Planing (Milling) of Existing Pavements, shall be paid for at the unit price bid for that respective item of work.

Repairs to failed areas using full depth patching will be as described in Section 27, Bituminous Concrete Binder Layer (Full Depth Patching) and shall be paid for at the unit price bid for the respective item of work. When the milling machine is used in the process of full depth patching, no payment will be made for milling for 424 superpave bituminous concrete binder layer used to patch the street.

The joint and crack preparation, sealing, clean up and removal of RAP material and or other debris shall be considered as incidental to the Contract and no extra compensation will be awarded for these items of work.

SECTION 14 – SOIL AGGREGATE and CRUSHED AGGREGATE BASE COURSES

13.01 Base Course

The Soil Aggregate and Crushed Aggregate Base shall meet the requirements described in Division 300, Bases, Section 301 of ALDOT. When thoroughly compacted the base course shall have a thickness as directed by the Engineer and be compacted to 100% Standard Density unless otherwise directed by the Engineer. Tests will be made in the pit and after the base is in place. On sections of the base that fail to meet the specifications, additional materials may be added and thoroughly mixed to bring the base within allowable limits. Excess materials over and above the cross section shall be removed from the work. The type of base material used shall be as designated by the Engineer.

13.02 Materials

All base materials shall meet the requirements of Division 300, Bases, and Division 800, Materials with special attention to Section 824, Soil Aggregate Base Materials, (Type “A”) Road Mixed, and Section 825, Crushed Aggregate Base Course Type “B” Plant mixed of ALDOT.

Areas that are to receive a Soil Aggregate Base Course shall be brought to sub-grade elevation and sub-grade compacted to 98% Standard Density before base material is placed. Areas where a Base course is used to repair Shoulders the sub-grade shall be prepared and compacted as directed to the satisfaction of the Engineer.

13.03 Method of Measure

Measurement for soil aggregate base, Type “A” shall be by the cubic yard, loose volume of the material measured in the hauling vehicle at the point of use. Measurement for crushed aggregate base shall be per ticketed ton.

13.04 Payment

The unit measurement is denoted “Complete in Place”, which is an end result requirement. The Contract unit price bid shall be full compensation for furnishing all component material in whatever proportion necessary to produce and place the base material, in accordance with the requirements specified, complete in place.

The Soil Aggregate Base Course Type “A”, and Crushed Aggregate Base, Type “B” placed and compacted will be paid for at the unit price for the respective items and shall be compensation in full for hauling, placing, shaping, watering and compacting.

SECTION 15 – BORROW EXCAVATION

14.01 Description

The work under this Section shall cover the excavation, hauling, disposal or compaction of all materials not being removed under some other item which is encountered within the limits of the work and is necessary for all construction in accordance with these Specifications and in reasonably close conformity with the lines, grades, thickness and typical cross sections shown on the plans or established by the Engineer. All excavation covered in this section will be classified as “Borrow Excavation”, as herein described. This borrow excavation is to be used to establish the required shoulder elevations and slopes as called for on the plans or as directed by the Engineer.

14.02 Material

Prior approval of all borrow sources must be given; however, this does not relieve the Contractor from the full responsibility for the quality and quantity of the material used. Materials for borrow shall be in accordance with the following.

Only suitable, approved material shall be used in this work. The Engineer shall be the sole judge of the suitability of materials and may require such selection of material as may be necessary to insure a satisfactory slope.

After the clearing and grubbing of the sloped area has been complete, all cavities or low places in the slope shall be backfilled and compacted.

Layers of material used to form the slope shall be compacted to 95% Standard Density or as directed by the Engineer. Strict moisture control will not be required; however, it will be the Contractor’s responsibility to maintain the moisture content necessary to satisfactorily compact the material. Compaction in a semi-dry condition will not be permitted.

14.03 Finishing and Dressing

All completed work shall be dressed and maintained substantially to lines, grade, and cross sections shown on the plans or as directed by the Engineer. Slopes shall be shaped, rounded, finished or trimmed in a neat workmanlike manner to conform to the slope lines on the Plans or as directed by the Engineer. Care shall be exercised that no material be loosened beyond the required slopes.

Compensation for all items such as finishing, grading, dressing, disposal and compaction shall be included in the Contract unit prices and no direct payment will be made for this work.

14.04 Method of Measurement

Measurement for all accepted borrow excavation will be by the cubic yard, loose volume, of the material in the hauling vehicle at the point of use as specified by the unit measure of the pay item.

14.05 Payment

Payment for Borrow Excavation shall be made at the Contract unit price bid for Borrow Excavation (A-3 or Better), per cubic yard, loose measured in the hauling vehicle, at the point of use, placed, compacted and finished to a reasonably smooth and uniform surface and to the satisfaction of the Engineer.

SECTION 16 – TOPSOIL

15.01 Scope

This Section shall cover the work of furnishing topsoil material, and incorporation of topsoil material into the work as planting material on slopes, shoulders, and any areas disturbed while removing and replacing concrete curbs and gutters or other uses. A three (3) inch thick layer (average) shall be placed on disturbed areas, or as directed by the Engineer.

The use of the item “Topsoil” requires the Contractor provide the material from sources he has obtained.

Basic work consists of loading, hauling, spreading, manipulation, and compacting the Topsoil material, all in accordance with these Specifications, to line, grade and cross section indicated on the Plans or as directed by the Engineer.

15.02 Material

Topsoil is defined as a natural, workable, friable, loamy soil with admixture of subsoil, refuse, or foreign materials, reasonably free from hard lumps, stiff clay, hardpan, gravel, noxious weeds, brush, or other undesirable materials, and suitable for growing grass, legumes, or other vegetative ground cover.

Acceptable Topsoil shall have demonstrated by the occurrence upon it of healthy vegetative growth that is well drained, and that does not contain toxic amounts of acid, alkaline, or other phototoxic elements. The area from which the topsoil is secured shall possess such uniformity of soil depth, color, texture, drainage and other characteristics as to offer assurance that, when removed in quantity, the product will be homogeneous in nature and of acceptable quality.

15.03 Construction Requirements

All construction including furnishing, hauling, conditioning of the area, placing, compacting, and maintenance of topsoil shall be as called for in Section 650.03 of ALDOT.

15.04 Payment

Payment for Topsoil used to repair damaged areas shall be paid for at the unit price bid for Topsoil, per cubic yard, loose measured in the hauling vehicle at the point of use and shall be payment in full for furnishing, hauling, ground preparation, placement, finished to a reasonably smooth and uniform surface, labor, equipment, tools, and any incidentals necessary to complete the project to the satisfaction of the Engineer.

SECTION 17 – TEMPORARY EROSION CONTROL

16.01 Scope

The scope of the work is to provide, establish, and maintain BMP's for temporary erosion control as determined by the Contractor and approved by the Engineer. The Contractor shall submit to the Engineer a copy of the erosion control plan for his approval, in writing. This shall be a detailed plan for accomplishment of acceptable erosion control on the project prior to the pre-construction conference.

The Contractor shall be responsible for obtaining and complying with all storm water permits, where required, on all Contractor selected material pits, waste areas, plant sites, haul roads and other off site areas selected by the Contractor to construct the project.

16.02 Materials

Silt Fence consist of a woven wire fabric, mounted on a post with geotextile filter attached to the fence fabric, or a geotextile filter attached to post by means of adjustable belts or loops or other means that will securely hold the geotextile filter in an upright position. The construction method shall produce an acceptable fence with the fabric securely attached to the post. The Silt Fence shall be installed as per Section 665.03 (k) of ALDOT, at the locations shown on the erosion control plan or as directed by the Engineer.

Hay Bales shall be securely anchored by the use of stakes and wire or other approved methods. Hay Bales shall be placed as shown on the erosion control plan or as directed by the Engineer.

16.03 Payment

Temporary erosion control shall be considered as incidental to the Contract and no additional payment will be made for this item of work.

SECTION 18 – SOLID SODDING

17.01 Scope

This shall consist of furnishing, placing, planting, or otherwise establishing solid grass sodding in various locations throughout the construction limits of the work where any area of established sod has been disturbed by any construction on this project. Areas to be seeded or sodded shall be determined by the Engineer. This shall include ground preparation, fertilizer, placing, watering as per Section 651 and 654.03 of ALDOT.

17.02 Materials

All Materials shall meet the requirements of Division 800, Materials of ALDOT, with specific reference to Section 860. Type of sod to be used shall be determined based on the type of existing sod or grass in the surrounding area or as directed by the Engineer. The Contractor shall be responsible for watering and maintaining the sodded areas until the project is accepted by the Engineer.

17.03 Payment

Repairs to damaged areas of sod or grass shall be paid for at the Contract unit bid price for the respective item of work and shall be compensation in full for furnishing the sod, ground preparation, fertilizing, placing, watering and maintaining the sodded areas.

SECTION 19 – SEEDING

18.01 Scope

Seeding shall cover the work of furnishing, planting, and establishing an acceptable stand of grass from a species of approved seeds for protection of the project. Basic work shall consist of ground preparation, fertilizing, furnishing, and inoculations, and planting of seeds during the designed planting season, and the covering, compacting, watering and maintaining of the seeded areas as per Section 651 and 652 of ALDOT.

18.02 Materials

All materials furnished for use shall comply with the requirements of Division 800, Materials of ALDOT, with special reference made to Section 860. The Engineer shall determine seed Mix used to repair areas disturbed by the construction. The Contractor shall be responsible for watering and maintaining all seeded areas until the Engineer accepts the project.

18.03 Payment

Seeding used to repair damaged areas shall be considered as incidental to the Contract and no extra compensation shall be made for this item of work. This includes furnishing of the seed, ground preparation, fertilizing, planting, watering and maintaining the seed areas.

SECTION 20 – PRE-EMERGENT HERBICIDE TREATMENT

19.01 Scope

Pre-emergent herbicide treatment shall cover the work of furnishing and applying soil active herbicide(s) on City right-of-way in accordance with the Plans, Specifications, and Materials label instructions or as directed by the Engineer.

19.02 Materials

Materials furnished for use in this vegetation control shall be produced by reputable, recognized manufacturers and registered by the U.S. Environmental Protection Agency. Materials shall be licensed for use in the State of Alabama. All herbicides shall be labeled for right-of-way use. Only potable water shall be used for dispensing the herbicide. The use of herbicides other than those dispensed with a water carrier, such as granules, pellets, powders, capsules, etc. shall be placed as indicated on the product label at locations as directed by the Engineer.

19.03 Construction Requirements

The Contractor shall utilize equipment in this Contract that is good working condition and is suitable and safe for accurately dispensing the herbicide and performing the work required.

Spot spraying by means of handguns, backpack sprayers, portable tanks, etc. shall be capable of applying the herbicide solution at the designated rate or as directed by the Engineer. The herbicide solution shall contain the correct herbicide to carrier ratio and shall be applied at a uniform rate in accordance with the label instruction and as directed by the Engineer. Spraying will not be permitted when, in the opinion of the Engineer, soil, vegetation, and/or weather conditions are such that the vegetation would be damaged or spraying would be ineffective.

The Contractor shall be responsible for any damage to public or private property, which may occur as a result of the spraying operation.

Two copies of the product label and material safety data sheets shall be furnished. One copy of each will be furnished to the Engineer and one copy will be kept with the vehicle applying the herbicide at all times.

No spraying shall be undertaken when the wind velocity is 5 mph or greater, during rain, when rain is imminent, or when foliage is wet.

The Contractor shall take extreme caution to insure that herbicide does not enter any lakes, streams, ponds, or wetlands.

The Contractor shall assume all liability for any damage resulting from the application of the herbicide for this project and shall hold the City harmless for any claims arising from the damage. It is illegal to place herbicide in a manner that is not consistent with the requirements shown on the herbicide container labeling.

19.04 Method of Measurement

Measurement will be by the square yard of dispensed solution.

19.05 Basis of Payment

Payment for all satisfactorily completed work of pre-emergent herbicide application as specified, and measured as provide above, will be paid for at the Contract bid price which shall be full compensation for furnishing all labor, equipment, herbicide, carrier, and incidentals necessary to complete the work.

SECTION 21 - SIDEWALKS

20.01 Description

This Section shall cover the work of constructing a Portland cement concrete sidewalk or driveway, all in accordance with the plans and as directed by the Engineer. The sidewalk shall be placed in one course on a prepared subgrade in accordance with these Specifications, and of the thickness and typical cross-section shown on the Plans or as directed by the Engineer. Lines and grades shall be established in the field. "Subgrade" in this Section shall mean the prepared foundation on which the sidewalk or driveway is constructed.

20.01 Materials

All materials shall meet the requirements of ALDOT, Division 800, Materials, and the following Concrete shall meet the requirements for a Class 2 Mix (3,000 psi) as described in Section 501, ALDOT.

20.03 Construction Requirements

The requirements for equipment, subgrade, foundation, material, setting forms, handling, measuring, proportioning, mixing materials, placing concrete, joints, curing, protecting, and backfilling, shall meet the requirements of ALDOT Section 618. Sidewalks shall be 6" thick and marked at 5' intervals using an approved marking tool.

ADA approved detectable warnings shall be placed in the sidewalk as directed by the Engineer and as called for in Section 22 of these Specifications.

20.04 Method of Measurement

The quantity of accepted sidewalk or drive way will be measured, complete in place, and the area computed in square yards.

20.05 Payment

The accepted quantity of 6" thick sidewalk or 6" thick driveway shall be paid for at the Contract unit price bid for the respective item of work, complete in place, which shall be payment in full for furnishing all materials (including joints), for hauling, preparation, and placing all materials, for the preparation of the subgrade backfilling and for all labor, equipment, tools, and incidentals necessary to complete the work.

SECTION 22 – ADA DETECTABLE/TACTILE WARNING SURFACES

21.01 Description

Cast in place Detectable/Tactile Warning Surfaces on walking surfaces shall consist of raised truncated domes meeting the requirements of Section 4.29 of the American Disabilities Act, and as shown on the Plans or as directed by the Engineer.

21.02 Materials

Detectable Warning Surfaces shall consist of raised truncated domes with a diameter of nominal 2.35 inches (60 mm) and shall contrast visually with the adjoining surfaces, either light on dark or dark on light. The material used to provide contrast shall be an integral part of the walking surface and provides a 70% contrast in light reflectance between the detectable warning and the adjoining surface. Color of the Detectable Warning Tiles is to be RED, and the shade or color shall be approved by the City Engineer.

The Detectable Warnings shall be Cast-In-Place/Tactile Warning Surfaces, as manufactured red by Armor-Tile, or approved equal. All materials shall meet the requirements of the detectable warning on walking surfaces section under the American with Disabilities Act (ADA) (Title III Regulations, 28 CFR Part 36 ADA Standards for Accessible Design, Appendix A, Section 4.29.2 Detectable Warnings on Walking Surfaces).

21.03 Construction Requirements

Cast in place detectable warnings shall be placed at locations as determined by the Engineer. The detectable warnings shall be 24" X 36", running in the direction of travel. The cast in place detectable warning tiles shall be installed as per the manufacturer recommendation.

21.04 Payment

Payment for the acceptable Detectable/Tactile Warnings installed shall be at the Contract unit price bid for the item of work. This price shall be compensation in full for the furnishing of all materials and the installation and construction thereof, and for all labor, tools, equipment and incidental necessary to complete the work.

SECTION 23 - SPEED TABLES REMOVAL AND REPLACEMENT

22.01 Scope

This Section shall cover the work of removing and replacing Speed Tables on the street to be resurfaced. All speed tables required to be removed and replaced shall be done in a workmanlike manor and constructed as per the standard detail in the Contract Drawings.

22.02 Materials

The materials used to replace any broken or damaged speed tables shall meet the requirements of the City of Tuscaloosa and be of a size and type of material matching the type currently in service, or as approved by the Engineer. Rubberized speed tables removed and discarded under this contract shall be replaced with asphalt speed tables as per the standard detail in the Contract Drawings.

22.03 Construction Requirements

The speed tables shall be removed and replaced in a neat and workmanlike manner. Replacement speed tables shall be constructed as per the standard detail in the Contract Drawings.

22.04 Payment

Payment for the accepted Speed Tables removed and replaced shall be at the Contract unit price bid for the item of work, and shall be compensation in full for the furnishing of all materials and the installation and construction thereof, and for all labor, tools, equipment and incidentals necessary to complete the work. Payment for construction of the speed table shall include associated striping as per the standard detail in the Contract Drawings.

SECTION 24 – BITUMINOUS TREATMENTS “G”, “JG”, AND “AJG”

23.01 Description

The work covered by this Section shall consist primarily of placing a Bituminous Treatment “A”, “G”, and “J” or any combination of these treatments. These treatments are to be placed on portions of various streets and road shoulders located throughout the project, where shown on the Plans or in the Specifications, or where directed by the Engineer.

The Bituminous Treatment “G” may be placed over failed areas of existing asphalt streets as directed by the Engineer.

The Bituminous Treatment “A” shall be placed over based areas that are to receive Superpave Bituminous Asphalt Treatments or as directed by the Engineer. Areas receiving the Type “A” Treatment (Prime Coat) shall meet the requirements of Division 400 and 800 of ALDOT both for material and workmanship.

The Bituminous Treatments, “AJG” shall be placed on road shoulder after they have been properly prepared and approved by the Engineer. The shoulders shall be clipped or filled, brought to proper grade, rolled and compacted as required. The Bituminous Treatment “AJG” shall be approximately feet (4’) wide, and placed where and as directed by the Engineer.

The Bituminous Treatments, “AJG” shall be placed on unpaved areas where shown on the Plans, in the Specifications or where directed by the Engineer. It shall include shaping and compacting the existing surface, addition of base material if necessary, (base material to be paid for under respective Contract Bid Item for Base Material) and applications of the “AJG” surface treatments may also receive a layer of 424 Superpave Bituminous Plant Mix Wearing Surface. The Superpave Bituminous Plant Mix Wearing Layer shall be paid for at the respective Contract Bid Item.

23.02 Materials and Construction Requirements

All materials and construction requirements shall conform to Division 400, Section 401 (Bituminous Surface Treatments) and the Bituminous Treatment Table of the ALDOT.

23.03 Payment

Payment for this item shall be made at the contract unit price bid for the respective item or items of work and shall be compensation in full for all labor, materials, equipment and tools necessary to furnish and install these items complete. The Asphalt Price Index SHALL NOT apply to this item of work.

SECTION 25 - TACK COAT

24.01 Description

The work under this Section shall cover the furnishing and placing of a bituminous tack coat on an existing surface which is to be covered by a bituminous plant mix material in accordance with these Specifications and in reasonably close conformity with the lines shown on the Plans or as directed by the Engineer.

The work shall include the cleaning of the existing surface prior to application of the tack coat. The area of treatment and the rate of application of a tack coat shall be based on the Plans and Specifications after evaluating the actual surface condition on which the plant mix overlay is to be placed.

24.02 Materials

Bituminous material for tack coat shall be Emulsified Asphalt Type NTSS-1HM **OR** Performance Graded Asphalt Binders meeting the requirements of ALDOT Special Provision 06-0175(2). The cationic grades CRS-2, CRS-2h, CSS-1, CSS-1, CSS-1h, CQS-1h, CQS-1hp shall be used. If Emulsified Asphalt is used, the emulsion shall not be diluted prior to application. Unless shown otherwise on the Plans (See Notes on the Plans and in the Notice to Bidders, in the Technical Specifications), the Contractor shall have the option of using any of the allowable bituminous materials, subject to other limitations of these Specifications. In making the selection of materials, the Contractor shall take into consideration seasonal, weather, temperature, and other placement conditions, while keeping in mind that SS stands for slow setting, RS stands for rapid setting, and QS stands for quick setting (QS is the faster setting or breaking emulsion). Low temperature and humid or damp conditions will retard the breaking or setting of all emulsions. The mixing of a cationic and an anionic emulsion will result in failure of emulsion materials. All materials shall meet the requirement of Section 804, ALDOT.

24.03 Construction Requirements

1) EQUIPMENT

In general, it shall be the Contractor's responsibility to select the proper size and amount of equipment to provide the desired results. Equipment furnished shall meet the requirements of Sub-article 401.03(a) of the ALDOT Specifications.

2) SEASONAL, NIGHTTIME, WEATHER, AND TEMPERATURE LIMITATIONS

The bituminous tack material shall be applied in conformity with the following:

- a. SEASONAL – Grades NTSS-1HM, CSS-1 and CSS-1h Emulsified Asphalts shall not be placed between the dates of October 1st and April 1st regardless of weather conditions. These seasonal conditions shall not apply to the placement of other bituminous materials for tack allowed by article 24.02.
- b. NIGHTTIME – Grade CSS-1 and CSS-1h Emulsified Asphalts shall not be used for tack during night time paving operations.
- c. WEATHER – Tack material shall not be applied on a wet surface or when, in the Engineer's opinion, conditions are not suitable. NTSS-1H may become slippery when wet.
- d. TEMPERATURE – Temperature requirements for placement for tack coat material shall be the same as specified in Section(s) _____ for plant mixed pavements. NTSS-1HM shall not be used for cold applied asphalt pavement.

3) PREPARATION OF EXISTING SURFACE

Loose material, dust, dirt, and all foreign matter shall be removed from the surface to be treated. Approval, by the Engineer, of the surface before application of the tack material is required.

4) APPLICATION

Tack coat cationic materials shall be applied in an amount from 0.08 gallons per square yard up to a maximum of 0.10 gallons per square yard for emulsified asphalt and from 0.05 gallons per square yard up to a maximum of 0.08 gallons per square yard for asphalt binder. Tack coat anionic materials shall be applied in an amount from 0.06 gallons per square yard up to a maximum of 0.10 gallons per square yard. When tacking new, freshly laid pavement, the Engineer may approve reducing the above minimum requirements. Unless approved otherwise by the Engineer, the application temperature shall be 120°F – 170°F for cationic emulsified asphalts, 150°F – 180°F for anionic emulsified asphalts; and 275°F – 350°F for Performance Graded Asphalt Binders. The NTSS-1HM asphalt emulsion shall be covered as soon as practical. An asphalt distributor shall be provided for use on all accessible areas; inaccessible areas such as around manholes, etc. may be coated by other approved methods. When applying tack coat, it shall be applied to all contact surfaces of curbs, gutters, manholes, and adjacent pavement edges, whenever and to the extent directed. Adjacent surfaces, such as gutters and the like, that are not to be in contact with the mix, shall be adequately protected from the spray by means of heavy paper securely fastened in place or other satisfactory means. Any such surface soiled by tack coat material shall be cleaned and restored to its previous condition without additional compensation. Tack coat material shall be spread only for far enough in advance to permit the construction to progress consistently, uniformly, and continuously after the curing period and shall not be applied so far in advance that the viscous quality will be reduced by traffic prior to construction thereon. Tack coat that loses its viscous quality before being covered shall be renewed and any which has been damaged shall be replaced without extra compensation.

24.04 Method of Measurement

Measurement for the purpose of checking coverage of the tack coat during placement shall be measured in gallons on the distributor at the site.

24.05 Payment

The work in this section shall be considered as incidental to the contract and no extra compensation shall be made for this item of work. The Asphalt Price Index shall not apply to this item of work.

SECTION 26 – PLANING (MILLING) OF EXISTING PAVEMENT

25.01 Description

All Planing (milling) of existing pavement and the payment for planing shall conform to Division 400, Section 408 of ALDOT.

All surplus materials and grinding residue shall become the property of the Contractor and shall be removed from the job site and disposed of in a manner satisfactory to/or as directed by the Engineer. Removal of surplus material from job site and stockpiling of the material shall be considered as incidental to the milling and no extra compensation shall be awarded for these items.

Milling of existing asphalt pavement shall be to a depth of 0.00” to 4.00” and shall include milling of existing asphalt overlay on concrete pavements where required. The existing pavement shall be removed in a manner that will restore the pavement surface to a uniform longitudinal profile and cross section as directed by the Engineer.

Any street that receives milling shall be resurfaced with plant mix within five (5) days after milling operation, or as directed by the Engineer. In the event of inclement weather, milling operations shall not take place unless it is to be covered immediately with plant mix and prior to exposure.

Any area of a street in which the milling operation extends below the existing asphalt layer into the base material shall be repaired immediately by covering the exposed areas using Bituminous Treatment “G”, Bituminous Plant Mix 424 Wearing Surface overlay, or as directed by the Engineer.

25.02 Payment

The milling 0” thru 4” thick of pavement ordered and accepted will be paid for at the Contract unit price bid which shall be full compensation for the milling, the transporting and stockpiling of the removed surplus material, the removal of grinding residue, and the satisfactory disposal thereof, the cleaning of the pavement, curb & gutter, driveways, yards and for all materials, equipment, tools, labor and incidentals necessary to complete the work. All planed material shall become the property of the Contractor.

SECTION 27 – 424 SUPERPAVE BITUMINOUS CONCRETE BINDER LAYER (PATCHING)

26.01 Description

The work covered by this section shall consist of a hot bituminous plant mixed wearing layer placed prepared surface and to be covered by a bituminous wearing surface in accordance with these Specifications and in reasonable close conformity with the lines, grades, typical cross section and the approximate number of pounds per square yards as called for in the Specifications or as directed by the Engineer. This material will be used primarily in the full depth patching operation.

26.02 Materials

The materials furnished for use shall conform to the requirements of Division 400, Section 410 and 424, and Division 800 of ALDOT. All mixes in this section shall meet the requirements set out in Section 424.02 and 424.03 of ALDOT, $\frac{3}{4}$ " maximum size aggregate designed on the fine side of the restricted zone. A maximum of 40% RAP is allowed for substitution in the mix design. The Contractor is required to furnish a mix design and have it approved by the Engineer prior to performing any work under this Contract.

26.03 Payment

Payment for this item shall be made at the Contract unit price bid for Superpave Bituminous Concrete Wearing Surface Layer (Binder) and Section 109.03(e) of ALDOT. The Contract unit prices for bituminous materials shall be based on the asphalt prices at the time of the bid opening. The monthly "Asphalt Index" furnished by ALDOT will be used to address fluctuations in the cost of the bituminous materials during the life of the project. Where a milling machine is used to remove the failed or weak portion of the street, no extra payment will be made for the milling operation. Milling will be considered as incidental to the patching operation.

SECTION 28- 424 SUPERPAVE BITUMINOUS CONCRETE WEARING SURFACE LAYER

27.01 Description

The work covered by this section shall consist of constructing a hot bituminous concrete wearing surface layer on a prepared surface in accordance with these Specifications and in reasonable close conformity with the lines, grades, typical cross section and the approximate pounds per square yard shown on the plans or as directed by the Engineer.

27.02 Materials

The materials furnished for use shall conform to the requirement of Section 410, and 424 and Division 800 of ALDOT and Section 12 of these Specifications, gradation from 3/8" (9.5 mm) nominal maximum size mix. All mixes in this section shall be designed on the fine side (dense-graded mix) of the restricted zone. The job mix shall be designed meeting the requirements set out in sub-section 424.02.e.2 Voids in Mineral Aggregate and sub-section 424.02.e.3 Liquid Asphalt Binder Content. Mix shall have a minimum VMA of 16, and be designed on the fine side of the restricted zone as shown in sub-section 424.02e.2. **Mix shall have a PG 64-22 binder grade with a V_a of 6%.** Mix shall be designed using the 50 gyrations Superpave Design Method, unless noted otherwise on the Plans or directed by the Engineer. A maximum of 25% RAP is allowed for substitution in the mix design. Adjustments for gradation of RAP aggregate and binder content shall be made in the mix design in order to meet the requirements of these specifications.

All aggregates shall meet the requirements of Sub-section 424.02, Materials, and Division 800 with specific attention to Sections 801 and 802, ALDOT.

A job mix formula shall be submitted by the Contractor and be approved by the Engineer prior to any work under this Contract.

27.03 Payment

Payment for this item shall be made at the Contract unit price bid for Superpave Bituminous Concrete Wearing Surface Layer and Section 109.03(e) of ALDOT. The Contract unit prices for bituminous materials shall be based on the asphalt prices at the time of the bid opening. The monthly "Asphalt Index" furnished by ALDOT will be used to address fluctuations in the cost of the bituminous materials during the life of the project.

SECTION 29 – DUAL WALL CORRUGATED HDPE PIPE (PERFORATED)

29.01 Description

HDPE dual wall corrugated pipe shall have smooth interior and annular exterior corrugations.

- 4” through 10” shall meet AASHTO M252, Type S or SP
- 12” through 60” shall meet AASHTO M294, Type S or SP or ASTM F2306
- Manning’s “n” value for use in design shall be 0.012.

Pipe shall be joined using a bell & spigot meeting AASHTO M252, AASHTO M294 or ASTM F2306. The joint shall be soil-tight and gaskets, when applicable, shall meet the requirements of ASTM F477. Gaskets shall be installed by the pipe manufacturer and covered with a removable wrap to ensure the gasket is free from debris. A joint lubricant supplied by the manufacturer shall be used on the gasket and bell during assembly.

Fittings shall conform to AASHTO M252, AASHTO M294 or ASTM F2306. Bell and spigot connections shall utilize a spun-on or welded bell and valley or saddle gasket meeting the soil-tight joint performance requirements of AASHTO M252, AASHTO M294 or ASTM F2306.

29.02 Materials

Virgin material for pipe and fitting production shall be high density polyethylene conforming with the minimum requirements of cell classification 424420C for 4- through 10-inch diameters, or 435400C for 12- through 60-inch diameters, as defined and described in the latest version of ASTM ED3350, except that carbon black content should not exceed 4%. The 12- through 60-inch diameter virgin pipe material shall comply with the notched constant ligament-stress (NCLS) test as specified in Sections 9.5 and 5.1 of AASHTO M294 and ASTM F2306, respectively.

29.03 Installation

Installation shall be in accordance with ASTM D2321 and manufacturer recommended guidelines, with the exception that minimum cover in trafficked areas for 4- through 48-inch diameters shall be one foot, and for 54- through 60-inch diameters, the minimum cover shall be 2 feet in single run applications. Backfill for minimum cover situations shall consist of Class 1, Class 2 (minimum 90% SPD) or Class 3 (minimum 90% SPD) material. Maximum fill heights depend on embedment material and compaction level; please refer to manufacturer's guidelines.

29.04 Payment

Payment for this item shall be made at the contract unit price bid for the respective item or items of work and shall be compensation in full for all labor, materials, equipment and tools necessary to furnish and install these items complete.

NOTICE TO BIDDERS

Some of the items of work required in this contract consist of the restoration of and placing of Bituminous Treatment “J-G” and/or #424A Superpave Bituminous Concrete Wearing layer on road shoulders, scoring road shoulders, repairing weak areas of the road with full depth asphalt patch or Bituminous Treatment “G”, shaping and compacting of existing road bed and application of Bituminous Treatment “AJG”, concrete curb & gutter, planning (milling), grassing, erosion control, and resurfacing with #424A Superpave Bituminous Concrete Wearing Layer, certain streets for the City of Tuscaloosa as called for in these plans and specifications and as directed by the Engineer.

The City of Tuscaloosa reserves the right to add or delete all or any part of any street indicated to be resurfaced and to specify the order in which the various streets are to be resurfaced. The order or sequence of the work shall be submitted to and approved by the Engineer well in advance of the work. **If the Contractor does not perform any work under this contract for more than 14 consecutive calendar days without written approval by the Office of the City Engineer, it may constitute termination of the contract or back charges to the contract by the City of Tuscaloosa for work performed by the City of Tuscaloosa or its authorized representatives to complete all or portions of the work under this contract.**

The Contractor shall meet all requirements of the City of Tuscaloosa Department of Transportation and the requirements specified in the MUTCD, with regard to signs, flagmen, detours, permits, etc.

It shall be the responsibility of the Contractor to clean all streets and curbs of any dirt, debris, gravel, planed (milled) residue, etc.: other than piles of leaves and trash. This shall be done both before and after the resurfacing, and all debris shall be removed and disposed of by the Contractor. This shall include all dirt and debris caused by the road shoulder restoration.

On streets where curb and gutter are not present, the shoulders shall be clipped or built up when necessary, prior to resurfacing, and Bituminous Treatment “J-G”, “AJG” or #424 Superpave Bituminous Wearing Surface placed as directed by the Engineer.

All irregularities in the street surfaces, such as potholes, cracks, etc., shall be repaired well in advance of the paving operation, as called for in these specifications.

All surface areas not receiving the Type “G” Treatment shall be prepared and a tack coat applied in accordance with Section 25 of the Specifications.

All construction, materials, batching plant and equipment used to produce and place the 424 Superpave Bituminous Concrete Binder, and Wearing Surface Layers shall conform to the Alabama Department of Transportation’s Standard Specifications for Highway Construction latest edition and all Supplements thereto and are hereby referred to and by reference incorporated herein and made a part of these specifications as fully as if the same were set out at length herein. A copy of the Alabama Department of Transportation’s Standard Specifications for Highway Construction above referred to are on file in the Office of the City Engineer for examination, and copies may be obtained for the Alabama Department of Transportation.

Existing asphalt at bridge ends shall be removed by Planning (Milling) to a minimum depth of 1", for a distance of 75' or as directed by the Engineer, to insure full depth of Bituminous Concrete Wearing Surface. Before the new layer of Bituminous Concrete Binder or Wearing Surface is placed, the sub-grade shall be inspected by the Engineer. If the sub-grade is found to be unsuitable to receive the new Bituminous Concrete Surface, repairs to sub-grade shall then be made as directed by the Engineer.

All work required to produce acceptable transverse joints and joints at bridge ends shall be considered as incidental to the Work and no extra compensation shall be awarded.

The unit price bid shall include all labor, material and tools necessary for cleaning and preparing the existing surfaces, patching, filling cracks, preparing bridge ends, leveling, restoring road shoulders, placing of Bituminous Treatment "A", "J" and "G", planning (milling), resurfacing and final clean-up as called for in these specifications and as directed by the Engineer.

The resurfacing work around school sites shall be carried out when schools are not in session. The order of work at these sites shall be submitted in writing to and approved by the Engineer. Work in these areas shall be performed from May 31st, 2016 to August 11th, 2016 for City and County Schools, and between May 9th, 2016 and August 5th, 2016 for the University of Alabama.

A job mix formula shall be submitted by the CONTRACTOR and approved by the Engineer prior to laying any Asphalt Plant Mix for this Contract.

All joints and cracks in concrete streets shall be cleaned and filled with approved crack filler. In areas designated by the Engineer, broken or raised concrete slabs shall be removed and replaced using #424 Superpave Bituminous Concrete Binder Layer (to be paid for at the unit price bid, before overlaying with #424 Superpave Bituminous Concrete Wearing Surface Layer. Planning (milling) of raised joints may be required as well as planning (milling) of the asphalt overlay over portions of the concrete pavement. It will also be necessary to remove and replace some concrete curb and gutter and some concrete valley gutter (these items to be paid for at the unit price bid for respective items of work).

Where ALDOT or ADOT appears in the Specifications, it refers to the Alabama Department of Transportation, Standard Specifications for Highway Construction, Latest Edition and all supplements thereto.

The bidders should give special attention to Article III, Time, in the Contract Documents, especially Time of Completion and Liquidated Damages. This Section will be strictly enforced and no extension of time will be considered unless it is requested and documented as required under Article III. Liquidated Damages will be deducted by the owner from the partial and/or final payments to the contractor for all days over the contract time as stated in the Contract Documents or as extended by an approved Change Order.

When Bituminous Surface Treatment is to be placed (types "G", "JG", or "AJG" treatment), the following requirements will apply:

- a) No Bituminous Surface Treatment shall be placed unless the air temperature is 40°F and rising.
- b) When the air temperature is between 40°F and 60°F, the use of CRS-2, emulsified asphalt liquid shall be used, regardless of seasonal restrictions.

- c) Where Bituminous Treatment Type “A” is required Emulsified Petroleum Resin (E.P.R.) meeting the requirements of Division 400, Section 401 of ALDOT Standard Specifications will be acceptable.
- d) Crushed Limestone Aggregate shall be used for Bituminous Surface Treatment “G” and “J”.
- e) All work acceptably completed under this contract will be measured by the Engineer according to United States Standard Measures and Weights, unless otherwise provided.
- f) Pay Factors for Asphalt shall not apply to the contract. Payment for Hot Mix Asphalt Pavement shall be made at the contract unit prices bid for the respective item or items of work and shall be considered compensation in full for all materials, equipment, labor and tools necessary to produce a complete and satisfactory project.
- g) The Density requirements for asphalt specified in Division 400 (Surfacing and Pavements), Section 410 (Hot Mix Asphalt Pavements) of ALDOT, shall be waived for this contract, except in the case where a road has been labeled for reconstruction. Density requirements for asphalt pavements shall be to the satisfaction of the Engineer. Roller pattern (number and/or frequency of passes and/or vibration) shall be established in the field and approved by the Engineer at the beginning of the project and shall become the standard for the entirety of the project, unless specific conditions arise that warrant a change.

2018 City Wide Streets Resurfacing List
City of Tuscaloosa

No.	Sheet No.	STREET NAME or AREA	FROM	TO
1	1 - 2	New Watermelon Rd.	Lake Nichol Rd.	Spillway
2	7	Palisades Drive	Hargrove Rd. E	Skyland Blvd
3	3	23rd Street	Herman Ave.	35th Ave.
4	3	Washington Square	All	All
5	10 - 11	Old Greensboro Rd.	AL Hwy. 69 S	Plantation Rd.
6	10	18th Ave.	Mimosa Park Rd.	City Limits
7	4	13th St.	Hackberry Ln.	Queen City Ave.
8	4	Queen City Ave.	15th St.	University Blvd.
9	6	16th Ave. E	Veterans Pkwy.	18th St. E
10	5	Green Grove Dr. N.E.	Green Grove Ln	To End
11	9	Creekwood Place	Creekwood Dr.	End
12	3	29th Ave.	15th St.	26th St.
13	8	Jug Factory Rd.	McFarland Blvd	13th Ave. E
14	8	Overhill Dr.	Skyland Blvd	Southmont Dr.
15	5	30th Ave. E	University Blvd.	3rd Place E
16	5	24th Ave. E	University Blvd.	End
17	6B	24th Street	Harrison St.	Prince Ave.
18	6B	Harrison St.	Hargrove Rd.	27th St.
19	6B	Hickory Forrest	Prince Ave.	End