# INVITATION TO BID

**CITY OF RINGGOLD**
**PURCHASING**
**P.O. BOX 579**
**150 TENNESSEE ST.**
**RINGGOLD, GA. 30736**

## ITB# 19-014

**FOR: TENNESSEE STREET PUBLIC PARKING REPAIR**

**BID OPENING DATE: July 10th, 2019**

**TIME: 2:00 P.M. EST**

**PLACE: Ringgold City Hall**
**150 Tennessee Street**
**Ringgold, Georgia 30736**

## BID SPECIFICATIONS

Awards will be made to the best responsible bidder as determined by the City of Ringgold. The quality of the articles to be supplied, their conformity with the specifications, their suitability to requirements, experience and delivery terms shall be taken into consideration.

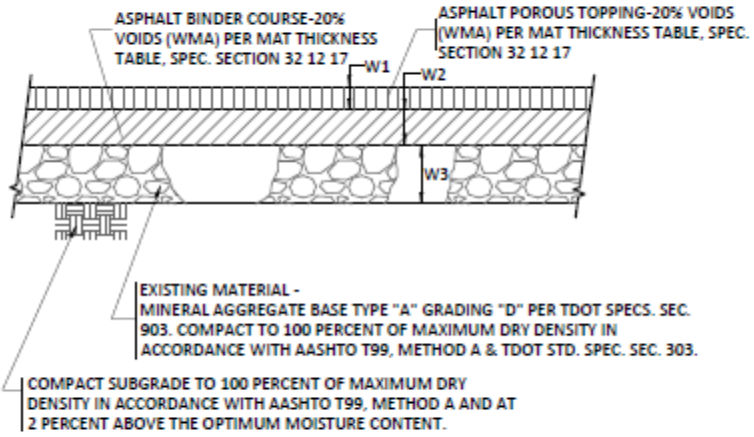
The City may consider Award of the Contract to other than the low Bidder.

The City of Ringgold hereby solicits and requests sealed bids for the repair and resurfacing of Tennessee Street and Mountain Street Public Parking lot, including milling or demo of existing pavement, leveling and topping:

- Pervious Pavement
- Repair an area 15’ wide by 100’ long
- Parking lot can be closed during repair
- Milling or demo of asphalt down to stone **BY CITY**
- Insure stone is compacted and designed thickness per Detail below
- 4” of Asphalt Binder 20% void
- 1” of Asphalt Surface Course 20% void
- No striping

DETAILS

| | THICKNESS |
|---|---|
| ASPH. SURFACE COURSE THICKNESS "W1" | 1" |
| ASPH. BINDER COURSE THICKNESS "W2" | 4" |
| AGGREGATE BASE THICKNESS "W3" | 2" |




1 PAVEMENT - PERVIOUS ASPHALT
NTS

# 32 12 17
# ASPHALT PAVING (HOT & WARM MIX)

PART 1 – GENERAL

1.01 DESCRIPTION

These Specifications include general requirements that are applicable to all types of asphalt pavements of the plant mix type irrespective of type and gradation of aggregate, type and amount of asphalt cement, and/or pavement use. Deviations from these general requirements shall be indicated in the specific requirements for each mix type.

This work shall consist of one or more courses of asphalt mixture constructed on the prepared foundation in accordance with these Specifications and the specific requirements of the mix type under contract, and in reasonably close conformity with the lines, grades, typical cross-sections, and application rate or thickness shown on the Plans or established by the Engineer.

WMA supplied for this project shall comply with the most current Tennessee Department of Transportation (TDOT) WMA specifications as described in the Section 400 and 900 series of specifications and applicable supplemental specifications. WMA may be produced by one or a combination of several technologies involving HMA plant foaming processes and equipment, mineral additives, or chemicals that allow the reduction of mix production temperatures to within 185°F to 275°F. (Note: The upper temperature range is appropriate for modified asphalt cements and WMA mixtures that include higher percentages of recycled asphalt pavement).

1.02 MEASUREMENT AND PAYMENT

A. METHOD OF MEASUREMENT

Asphalt concrete plant mixes shall be measured by the unit(s) specified in the bid schedule. The transporting vehicles shall be numbered, and a record shall be maintained showing the mixture accepted and used each day. This record shall also show: rejected mixture; mixture used otherwise than indicated or directed; mixture used to replace defective or condemned construction; and mixture wasted after having been weighed.

No allowance will be made for unaccepted material, for material furnished or used in excess of the amount indicated or directed, for materials used in replacing defective or condemned construction, or for materials wasted in handling, hauling, or otherwise.

No allowance will be made for the partial or total removal and replacement of shoulder material as may be deemed necessary during construction to facilitate temporary drainage, etc.

B. BASIS OF PAYMENT

Asphalt concrete plant mixes shall be paid for at the contract unit price specified in the bid schedule for the respective Items, complete-in-place, which price shall be full compensation for the construction of asphalt-concrete plant mixes including all aggregates, asphaltic cements, mineral fillers, chemical additives as directed, in accordance with the conditions, stipulations, provisions, and requirements contained herein; for completing all incidentals thereto; and for furnishing all materials, equipment, tools, labor and incidentals required to complete the item.

PART 2 – PRODUCTS

2.01 MATERIALS

The individual materials shall meet the applicable requirements in the following table, Item Required Contract Provision, or as described in these Specifications:

| Material | TDOT Section |
|---|---|
| Prime Coat | 402 |
| Tack Coat | 403 |
| Aggregates | 903 |
| Mineral Filler | 903 |
| Asphalt Cement | 904 |

The mineral aggregates [virgin and Recycled Asphalt Pavement (RAP)] shall be accepted for quality at the paving plant stockpile. The aggregates shall be accepted for gradation immediately preceding addition of asphalt cement at the plant. This acceptance shall be based on periodic sampling of:

1. Aggregate taken as they are weighed from the bins,
2. Combined aggregate as it is fed to the plant, and/or
3. Batches to which the asphalt cement has not been added.

Performance Graded Asphalt Cement shall be approved from the source by submission of a Certification Letter that confirms the type and quality properties for each asphalt cement supplied for the project meet the minimum requirements set forth in ASTM D6373. The plant mixed material shall be accepted after blending and mixing at the plant.

2.02 COMPOSITION OF MIXTURES

The asphalt plant mix shall be composed of a mixture of aggregate (virgin and RAP), filler (if required), and asphalt cement. Prior to blending, RAP shall be fractionated in order to ensure proper asphalt mix gradation control and shall be limited to less than or equal to 40-percent (≤ 40%) of the aggregate blend. The aggregate fractions shall be sized, uniformly graded, and blended in such proportions that the resulting mixture meets the grading requirements of the Job- Mix Formula (JMF). The asphalt cement shall meet the specifications for PG 64-22 (ASTM D6373) unless otherwise specified by the Engineer.

The Contractor shall submit for the Engineer's approval a JMF for each asphalt mixture to be supplied for the project. The asphalt mixtures shall be proportioned to meet the following:

| **Asphalt Mix Property** | **Compacted Asphalt Mat Thickness (inches)** | | | | | | |
|---|---|---|---|---|---|---|---|
| | **0.5** | **1.0** | **1.5** | **2.0** | **2.5** | **3.0** | **>3.0”** |
| Design Method | 50-Blow Marshall Mix Design @ 4% Air Voids | | | | | | |
| Maximum Nominal Aggregate Size (inches)* | 3/8 | 3/8 | 1/2 | 1 | 1¼ | 1½ | 1½ |
| Minimum Voids in the Mineral Aggregate (%) | 15 | 15 | 14 | 12 | 12 | 11 | 11 |
| For Pervious Pvmts: Minimum Voids in the Mineral Aggregate (%) | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Marshall Stability (lbs) | 2,000 | 2,100 | 2,100 | 2,100 | 2,100 | 2,100 | 2,100 |

* - Nominal Aggregate Size as "**one sieve size larger than the first sieve to retain more than 10 percent of the material**"

The JMF shall establish the following target values for each:

1. Aggregate percentage passing each required sieve size, including fractionated RAP, if used.
2. Residual asphalt percentage contributed by RAP, if used.
3. Asphalt cement percentage to be added to the aggregate.
4. Optimum temperature at which the mixture is to be discharged from the plant.

Once approved, JMFs shall be in effect until modified in writing by the Engineer.

After the JMF is established, all mixtures furnished for the project shall conform within the following tolerance ranges:

- Aggregate passing 3/8-inch sieve and larger +/- 7 percent
- Aggregate passing No. 4 sieve +/- 5 percent
- Aggregate passing No. 8 to No. 50 sieves inclusive +/- 4 percent
- Aggregate passing No. 100 and No. 200 sieve +/- 2 percent
- Asphalt Cement +/- 0.4 percent
- Mix Temperature +/- 20 degrees F

Should a change in materials source be made, a new JMF shall be established before the new material is used. When unsatisfactory results or other conditions make it necessary, the JMF shall be adjusted to the satisfaction of the Engineer.

2.03 EQUIPMENT

A. ASPHALT MIXING PLANT

Sufficient storage space shall be provided for each aggregate size. The different sizes shall be kept separated until they have been delivered to the cold elevator or belt feeding the dryer. The storage yard shall be maintained neat and orderly, and the separate stockpiles shall be readily accessible for sampling.

Plants used for the preparation of asphalt mixtures shall conform to all requirements under 2.03-2. In addition, batch mixing plants shall conform to the requirements under 2.03-2, and continuous mixing plants shall conform to the requirements under 2.03-3.

1. REQUIREMENTS FOR ALL PLANTS

Mixing plants shall be of sufficient capacity and so coordinated to adequately handle the proposed asphalt construction.

a. Equipment For Preparation Of Asphalt Material

Tanks for the storage of asphalt materials shall be equipped to heat and hold the material at the required temperatures. The heating shall be accomplished by approved means so that no flame shall be in contact with the tank. The circulating system for the asphalt material shall be designed to assure proper and continuous circulation during the operating period. Provisions shall be made for measuring and sampling the contents of storage tanks.

b. Feeders For Dryer

Separate feeders shall be provided for each size aggregate, and each size shall be fed onto the belt going to the dryer by mechanical feeders with separate adjustable gates. The feeders shall be capable of delivering the separate aggregates onto the belt in proper proportions and shall be provided with adjustment for total feed and proportional feed and be capable of being locked.

Adequate means shall be provided to assure a constant and uniform flow of material from each bin.

The Contractor shall not be permitted to blend or mix different aggregates or different sizes of the same aggregate with clam shells, bulldozers, high lifts or similar equipment.

The aggregate shall be fed uniformly into the dryer so that a uniform production and uniform temperature may be obtained.

c. Dryer

The plant shall include a dryer or dryers which agitate the aggregate continuously during the heating and drying process. It shall be capable of heating and drying all aggregates to the temperature required and shall be capable of supplying the mixing unit continuously at its operating capacity. Dryers shall be constructed and operated so that aggregates are not contaminated with unburned fuel.

d. Screens

Plant screens, capable of screening all aggregates to the specified sizes and proportions and having normal capacities in excess of full capacity of the mixer, shall be provided.

A consistent carry-over, but not to exceed 30 percent, shall be allowed on any screen. If any bin contains more than 20 percent of material which is undersized for that bin, the bin shall be drawn and correction of the cause for such condition shall be made.

e. Bins

The plant shall include storage bins of sufficient capacity to supply the mixer when it is operating at full capacity. Bins shall be arranged to assure separate and adequate storage of appropriate fractions of the mineral aggregates. Each bin shall be provided with overflow pipes of such size and at such location as to prevent backing up of material into other compartments or bins. Each compartment shall be provided with an outlet gate constructed so that when closed, there shall be no leakage. The gates shall cut off quickly and completely. The bins shall be constructed to provide adequate and convenient approved facilities for obtaining representative samples of aggregate from the full flow of each compartment. When mineral filler is used, separate dry storage shall be provided, and the plant shall be equipped to feed the filler into the mixer.

f. Asphalt Control Unit

Satisfactory means, either by weighing or metering, shall be provided to obtain the proper amount of asphalt material in the mix within the tolerance specified. Means shall be provided for checking the quantity or rate of flow of asphalt material into the mixer.

g. Thermometric Equipment

An armored thermometer of adequate range in temperature reading shall be fixed in the asphalt feed line at a suitable location near the charging valve at the mixer unit. The plant shall also be equipped with an approved thermometric instrument so placed at the discharge chute of the dryer, as to register automatically or indicate the temperature of the heated aggregates.

If temperatures are not regulated satisfactorily, the Engineer may require the installation of an approved temperature recording and regulating apparatus for better control of the temperature of the aggregates.

h. Dust Collector

The plant shall be equipped with a dust collector constructed to waste or return uniformly to the hot elevator all or any part of the material collected, as directed.

i. Safety Requirements

Adequate and safe stairways to the mixer platform and sampling points shall be provided, and guarded ladders to other plant units shall be placed at all points where accessibility to plant operations is required. Accessibility to the top of truck bodies shall be provided

by a platform or other suitable device to enable the Engineer to obtain samples and mixture temperature data. A hoist or pulley system shall be provided to raise scale calibration equipment, sampling equipment and other similar equipment from the ground to the mixer platform and return. All gears, pulleys, chains, sprockets, and other dangerous moving parts shall be thoroughly guarded and protected. Ample and unobstructed space shall be provided on the mixing platform. A clear and unobstructed passage shall be maintained at all times in and around the truck loading area. This area shall be kept free from drippings from the mixing platform.

2. REQUIREMENTS FOR BATCHING PLANTS

a. Plant Scales

Dial scales shall be provided for weighing of all aggregates and mineral filler, in the suspended weigh box. Dial scales shall be of a standard make and of sufficient size that the numerals on the dial can be read at a distance of 25 feet. The dials shall be of the compounding type having a full complement of index pointers. The value of the gradation of scales used in weighing amounts of aggregates of less than 5,000 pounds shall not be greater than five pounds; amounts of aggregates from 5,000 to 10,000 pounds, not greater than 10 pounds; amounts of aggregates in excess of 10,000 pounds, not greater than 0.1 percent of the capacity of the scales. Pointers which give excessive parallax errors shall not be used. All dial scales shall be so located that they will be in plain view of the operator at all times. When asphalt material is measured by weight, the asphalt weigh bucket shall be equipped with a separate dial scale with a minimum gradation not greater than two pounds. All dial scales shall be accurate within a tolerance of 0.5 percent. Vibration shall be eliminated by setting the scales on a separate foundation, if required. Each installation of scales shall be provided with 10 standard 50-pound weights meeting the requirements of the U.S. Bureau of Standards for calibrating and testing weighing equipment. Scales shall be inspected as often as the Engineer may deem necessary to assure their continued accuracy.

The Contractor may provide an approved automatic printer system which will print the weights of the material delivered, provided the system is used in conjunction with an approved automatic batching and mixing control system. Such weights shall be evidenced by a weigh ticket for each load.

b. Weigh Box Or Hopper

The equipment shall include a means for accurately weighing each size of aggregate and mineral filler in a weigh box or hopper suspended on scales and of ample size to hold a full batch without hand raking or running over. The gate shall close tightly so that no material is allowed to leak into the mixer while a batch is being weighed.

c. Asphalt Control

The asphalt material bucket shall be a non-tilting type. The length of the discharge opening, or spray bar shall be not less than three-fourths the length of the mixer. The asphalt material bucket, its discharge valve or valves, and spray bar shall be adequately heated. Steam jackets, if used, shall be efficiently drainable and all connections shall be so constructed that they will not interfere with the efficient operation of the asphalt scales. The capacity of the asphalt material bucket shall be at least 15 percent in excess of the weight of asphalt material required in any batch. The plant shall have an adequately heated quick-acting, non-drip, charging valve located directly over the asphalt material bucket. When the asphalt material is metered, the indicator dial shall have a capacity of at least 15 percent in excess of the quantity of asphalt material used in a batch. The meter indicator dial shall have a scale with divisions measuring in gallons equivalent to a weight sensitivity of 0.04 percent of the total batch weight. The meter shall be accurate within a tolerance of 0.5 percent. The controls shall be so constructed that they may be locked at any dial setting and will automatically reset to that reading after the addition of asphalt material to each batch. The dial shall be in full view of the mixer operator. The

flow of asphalt material shall be automatically controlled so that it will begin when the dry-mixing period is over. All of the asphalt material required for one batch shall be discharged in not more than 15 seconds after the flow has started. The size and spacing of the spray bar openings shall provide a uniform application of asphalt material the full length of the mixer. The section of the asphalt line between the charging valve, and the spray bar shall be provided with a valve and outlet for checking the meter when a metering device is substituted for an asphalt material bucket.

d. Mixer

The batch mixer shall be an approved twin pugmill type, steam or hot oil jacketed, and shall be capable of producing a uniform mixture within the JMF tolerances. The mixer shall be so constructed as to prevent leakage of its contents. It shall be equipped with a sufficient number of paddles or blades set in the "run around" order and operated at such speed as to produce a properly and uniformly mixed batch. The depth of the material in the pugmill shall not be above the tops of the paddles. If not enclosed, the mixer box shall be equipped with a dust hood to prevent loss of dust.

The clearance of blades from all fixed and moving parts shall not exceed one inch unless the maximum diameter of the aggregate in the mix exceeds 1¼ inches, in which case the clearance shall not exceed 1½ inches.

e. Control of Mixing Time

The mixer shall be equipped with an accurate time lock to control the operations of a complete mixing cycle. It shall lock the weigh box gate after the charging of the mixer until the closing of the mixer gate at the completion of the cycle. It shall lock the asphalt material bucket throughout the dry-mixing period and shall lock the mixer gate through the dry- and wet-mixing periods. The dry-mixing period is defined as the interval of time between the opening of the weigh box gate and the start of introduction of asphalt material. The wet-mixing period is the interval of time between the start of introduction of asphalt material and the opening of the mixer gate. The control of the timing shall be flexible and capable of being set at intervals of five seconds or less throughout a total cycle of up to three minutes. A mechanical batch counter shall be installed as a part of the timing device and shall be so designed as to register only batches that have been mixed for the full-time interval. The setting of time intervals shall be performed in the presence of and at the direction of the Engineer, who shall then lock the case covering the timing device until such time as a change is to be made in the timing periods.

3. REQUIREMENTS FOR CONTINUOUS MIXING PLANTS

a. Aggregate Proportioning

The plant shall include means for accurately proportioning each size of aggregate.

The plant shall have a feeder mounted under each compartment bin. Each compartment bin shall have an accurately controlled individual gate to form an orifice for measuring volumetrically the material drawn from each compartment. Bins shall be equipped with adequate tell-tale devices to indicate the position of the aggregates in the bins at the lower quarter points.

The feeding orifice shall be rectangular with one dimension adjustable by positive mechanical means provided with a lock. Indicators shall be provided for each gate to show the respective gate opening in inches.

Mineral filler shall be fed into the mixer continuously and uniformly in the proportion set out in the JMF, and in a manner satisfactory to the Engineer.

b. Weight Calibration Of Aggregate Feed

The plant shall be equipped with an approved revolution counter in satisfactory working condition. The plant shall include a means for calibration of gate openings by weighing

test samples. Provision shall be made so that materials fed out of individual orifices may be bypassed to individual test boxes. The plants shall be equipped to handle conveniently individual test samples weighing not less than 200 pounds. Accurate scales shall be provided by the Contractor to weigh such test samples.

c. Synchronization Of Aggregate Feed And Asphalt Material Feed

Satisfactory means shall be provided to afford positive interlocking control between the flow of aggregate from the bins and the flow of asphalt material from the meter or other proportioning device. This control shall be accomplished by interlocking mechanical means or by any other positive method satisfactory to the Engineer.

d. Mixer

The plant shall include a continuous mixer of an approved twin pugmill type, adequately heated and capable of producing a uniform mixture within the JMF tolerances. The paddles shall be adjustable for angular position on the shafts and reversible to retard the flow of the mix. The mixer shall have a manufacturer's plate giving the net volumetric contents of the mixer at the several heights inscribed on a permanent gauge. Charts shall be provided showing the rate of feed of aggregate per minute for the aggregate being used. Mixing time shall be sufficient to ensure complete aggregate coating and shall be specified in the JMF.

e. Surge Hopper

The mixer shall be equipped with a discharge hopper with dump gates which will permit rapid and complete discharge of the mixture and of such size and design that no segregation of the mixture occurs.

f. Platform Truck Scales

Platform truck scales shall have a standard brand of scales and shall have a manufacturer's rated capacity equal to or greater than the maximum gross load being weighed. The scale shall be accurate within a tolerance of 0.5 percent, and the value of the minimum gradation on the scale shall not be greater than 50 pounds. When weighing a truck and trailer combination on a scale with a platform not large enough to weigh the entire hauling unit at one time, the approaches at both ends of the scale shall have a level grade at the same elevation as the scale platform for a distance of not less than 50 feet on each end of the scale. The truck and trailer shall be weighed with no brakes set on any wheel. The scale shall be set on concrete or other approved foundations. The recording mechanism of the platform scale shall be housed in a suitable shelter that shall be furnished with adequate light and heat for the convenience of the weigh man. The scale shall be provided, maintained, and repaired at the Contractor's expense.

Scale equipment shall be approved by submission and acceptance of a Certification Letter that documents the date and successful calibration for each applicable scale component to be used on this project. Equipment calibration shall be conducted annually.

B. HAULING EQUIPMENT

Trucks used for hauling asphalt mixtures shall have tight, clean, smooth metal beds which have been thinly coated with a minimum amount of paraffin oil lime solution or other approved material to prevent the mixture from adhering to the beds. Each truck shall have a cover of canvas or other suitable material of such size as to protect the mixture from the weather. When necessary, so that the mixture will be delivered on the road at the specified temperature, truck beds shall be insulated and covers shall be securely fastened.

C. ASPHALT PAVERS

Asphalt pavers shall be self-contained, power-propelled units, provided with an activated screed or strike-off assembly, equipped to be heated, and capable of spreading and finishing courses of

asphalt plant mix material in land widths applicable to the specified typical section and thicknesses shown on the Plans. Materials for shoulders and similar construction shall be placed by means of approved mechanical spreading equipment.

The paver shall be equipped with a receiving hopper having sufficient capacity for a uniform spreading operation. The hopper shall be equipped with a distribution system to place the mixture uniformly in front of the screed.

The screed or strike-off assembly shall produce effectively a finished surface of the required evenness and texture without tearing, shoving or gouging the mixture. The paver shall be equipped with adjustable hydraulic screed extensions.

When placing mixtures, the paver shall be capable of being operated at forward speeds consistent with satisfactory placement of the mixture.

All asphalt paving machines shall be equipped with automatic grade and slope controls. Both the grade and slope controls shall be in working order at all times, except that in the event of mechanical failure of the automatic controls, the Contractor shall be permitted to finish the day's work using manual controls but will not be allowed to resume work the following day until both the grade and slope controls are in first class working order.

D. ROLLERS

Rollers shall be of self-propelled steel-wheel and pneumatic-tire types and shall be in good condition, capable of reversing without backlash, and shall be operated at speeds slow enough to avoid displacement of the asphalt mixture. The rollers shall be of the number and weights required to compact the mixture to the specified density while it is still in a compactable condition. The use of equipment which results in excessive crushing of the aggregate will not be permitted.

E. SMALL TOOLS

The Contractor shall provide all necessary small tools and suitable means for keeping them clean and free from accumulations of asphalt materials.

## PART 3 – EXECUTION

A. CONSTRUCTION REQUIREMENTS

1. WEATHER LIMITATIONS

The subgrade and the surface upon which the asphalt plant mix is placed shall be free of excessive moisture and/or frost.

B. TEMPERATURE LIMITATIONS

Asphalt mixtures shall be placed only between March 1st and December 1st, unless otherwise permitted by the Engineer in writing.

The asphalt plant mix shall be placed in accordance with temperature limitations as set forth by the Engineer in writing.

Cool/cold weather paving may be authorized provided the Contractor can show that an adjustment to paving operation timing can be made to facilitate the required compaction. Computer modeling tools such as the following should be used to show the compaction time adjustment due to low air and substrate temperatures:

MultiCool
(http://www.hotmix.org/index.php?option=com_content&task=view&id=178&Itemid=273)

PaveCool
(http://www.dot.state.mn.us/app/pavecool/index.html)

C. CONDITIONING OF EXISTING SURFACE

Conditioning of an existing surface shall consist of minor grading, clipping edges of roadways, and other minor incidental construction, not itemized in these Specifications, and not involving hauling of excavated materials for the purpose of bringing the roadway to a uniform width and cross-section and blending the new pavement to the existing surface as directed by the Engineer.

D. PREPARATION OF ASPHALT CEMENT

The asphalt cement for asphalt mixes shall be heated to a temperature between 275° F and 325° F, in a manner that will avoid local overheating and provide a continuous supply of the asphalt material to the mixer at a uniform temperature at all times.

E. PREPARATION OF AGGREGATES

The aggregates for asphalt mixes shall be dried and heated to a uniform temperature between 225° F and 325° F. Flames used for drying and heating shall be properly adjusted to avoid damage to the aggregate and to avoid soot on the aggregate.

Immediately after heating and drying, the aggregates shall be screened into two or more fractions as specified and conveyed into separate compartments ready for batching and mixing with asphalt material.

F. MIXING

The dried aggregates shall be combined within the mixer in the amount of each fraction of aggregates required to meet the JMF. The asphalt cement shall be measured or gauged and introduced into the mixer in the amount specified by the JMF.

After the required amounts of aggregate and asphalt cement have been introduced into the mixer, the materials shall be mixed until a complete and uniform coating of the particles, and a thorough distribution of the asphalt cement throughout the aggregate is achieved. Wet-mixing time shall be included in the JMF and approved by the Engineer for each plant and for each JMF, but in no case shall the wet-mixing time be less than 25-seconds for batch mix plants and 40-seconds for continuous mix plants.

WMA may be produced by one or a combination of several technologies involving HMA plant foaming processes and equipment, mineral additives, or chemicals that allow the reduction of mix production temperatures to within 185°F to 275°F. (Note: The upper temperature range is appropriate for modified asphalt cements and WMA mixtures that include higher percentages of recycled asphalt pavement).

For HMA, the temperature of the completed mixture shall be not less than 275° F, except that the temperature of mixtures made with aggregates containing absorbed moisture that causes foaming or boiling in the completed mixtures at these higher temperatures shall be not less than 225° F.

The aggregate shall be introduced into the mixer within the temperature range specific to the asphalt mix process.

G. SPREADING AND FINISHING

Unless otherwise specified or permitted, asphalt mixtures shall be delivered and spread on the roadway in ample time to secure thorough compaction during daylight hours. Its temperature at the time of depositing in the paver hopper shall be not more than 25° F less than the temperature at which it is discharged from the mixer. The mixture shall be laid upon an approved surface, spread and struck off to the established line, grade, and elevation by means of approved asphalt paving machines in echelon or by one paver equipped with an approved type joint heater. Echelon paving shall not be permitted on two-lane projects where traffic is being maintained. Alignment of the outside edges of the pavement shall be controlled by present control string lines. Where multi-course pavements are placed, the longitudinal joint in one layer shall offset that in the preceding layer by approximately one foot; however, the joint in the top layer shall be at the center line of the pavement if the roadway is more than two lanes in width.

Grade reference systems for automatic screed controls may be either the string line or ski type on all work. Pavement lanes previously placed with automatic controls or to form grade may serve as longitudinal control reference for laying adjacent lanes by utilizing a ski or joint matching shoe.

The Contractor shall furnish all materials, equipment, labor, and incidentals required to construct the pavement to the lines and grades as described in these contract documents and shall maintain same until its use is no longer required.

Automatic screed controls shall not be required on sections of projects where service connections and other conditions interfere with their efficient operation.

The cost of erecting and maintaining a string line reference system shall be included in the unit price bid for other Items of Construction. The Contractor shall be required to utilize a string line reference system only as directed on Plans or ordered in writing by the Engineer.

On areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impracticable, the mixture shall be taken from the hopper of the spreading machine or dumped on approved steel dump sheets outside of the area on which it is to be spread and shall be distributed immediately into place by means of suitable shovels and other tools and spread with rakes and lutes in a uniformly loose layer as such depth as will result in a completed course having the weight per square yard required.

Driveways, parking areas, and other such facilities shall be blended to the new surface within the right-of-way as directed by the Engineer. The price per ton for asphalt plant mix shall include this work. No extra payment shall be made for blending said facilities to the new surface.

H. COMPACTION

After the asphalt mixture has been spread, struck off and surface irregularities adjusted, it shall be thoroughly and uniformly compacted by rolling.

The surface shall be rolled immediately when the mixture is in the proper condition and when the rolling does not cause undue displacement, cracking or shoving.

Unless otherwise directed, rolling shall begin at the sides and proceed longitudinally parallel to the road center-line, each trip overlapping one-half the roller width, gradually progressing to the crown of the road. When paving in echelon or abutting a previously placed lane, the longitudinal joint shall be rolled first, followed by the regular rolling procedure. On super-elevated curves or tilted pavements, the rolling shall begin at the low side and progress to the high side by overlapping of longitudinal trips parallel to the center-line.

Alternate trips of the roller shall be terminated in stops approximately 2-feet distant from any preceding stop. When paving in echelon, rollers shall not compact within 6-inches of an edge where an adjacent lane is to be placed.

Rollers shall move at a slow, but uniform speed with the drive wheels nearest the paver and shall be kept as nearly as practicable in continuous operation. Rolling shall continue until all roller marks are eliminated and until each of the placements have been compacted to a **minimum 91- percent of maximum theoretical density (MTD)**.

When surface courses are placed at a rate of ≤ 60 pounds per square yard, **the density requirements shall be waived**.

Any displacement occurring as the result of the reversing of the direction of a roller, or from other causes, shall be corrected at once by the use of rakes and addition of fresh mixture when required. Care shall be exercised in rolling so as not to displace the line and grade of the edges of the asphalt mixture.

To prevent adhesion of the mixture to the rollers, the wheels shall be kept properly moistened with water or water mixed with very small quantities of detergent or other approved material. Excessive liquid shall not be permitted.

Along forms, curbs, headers, walls and other places not accessible to the rollers, the mixture shall be compacted thoroughly with hot hand tampers, smoothing irons or with mechanical tampers. On depressed areas, a trench roller may be used or cleated compression strips may be used under the roller to transmit compression to the depressed areas.

Any mixture that becomes loose and broken, mixed with dirt, or is in any way defective shall be removed and replaced with fresh hot mixture, which shall be compacted to conform to the surrounding area. Any area showing an excess or deficiency of asphalt material shall be removed and replaced.

I. JOINTS

Placing of asphalt pavement shall be as continuous as possible. Rollers shall not pass over the unprotected end of a freshly laid mixture unless authorized by the Engineer. Transverse joints shall be formed by cutting back a vertical face on the previous run to expose the full depth of the course. When directed by the Engineer, a tack coat shall be used on contact surfaces of transverse joints just before additional mixture is placed against the previously rolled material.

J. PAVEMENT SAMPLES

When directed, the Contractor shall cut samples from the compacted pavement for testing by the Engineer. Samples of the mixture shall be taken for the full depth of the course locations selected by the Engineer. The samples shall be cut with a power saw or core drill and shall have a top surface area of at least ten square inches.

Holes formed by taking samples shall be filled with a functionally equivalent or superior material to the asphalt mixture that was used to construct the sampled course and compacted/cured to conform to the surrounding pavement. Cutting samples and repairing sample holes shall be at the Contractor's expense. Materials used to repair sample holes shall be measured for payment in accordance with the provisions of the Tennessee Department of Transportation Standard Specifications, Item 407.19.

K. SURFACE REQUIREMENTS

The surface shall be tested with a 12-foot straight edge applied parallel to the center-line of the pavement. The deviation of the surface from the testing edge of the straight edge shall not exceed that specified for the respective types of asphalt construction under the applicable Subsection of these Specifications.

The transverse slope of tilted pavements shall be tested with a string line and string level applied at right angles to the center-line of the pavement, and the percent of slope, when computed for the full width of the pavement, shall not deviate more than five-tenths of one percentage point from that specified on the plans.

The crown in crowned pavements shall be tested with a string line applied at right angles to the center-line of the pavement, and the crown shall not deviate more than one-half inch from that specified on the Plans. Deviations greater than the specified tolerances shall be corrected by methods best suited for the purpose. Pavement that cannot be corrected to comply with the specified tolerances shall be removed and replaced at the Contractor's expense.

## SPECIAL NOTES

Contractors are also urged to contact Mike Cagle, PW Director at mike.cagle@yahoo.com and set up a meeting to look at the site.

## WARRANTY

All workmanship must be guaranteed for a minimum of 12 months from the date the City accepts the project.

**PROPOSAL**

**We have examined the specifications and agree to furnish the City of Ringgold with the repair and resurfacing of Tennessee Street and Mountain Street Public Parking accordingly. Any deviations from the specifications will be marked exception on the bid sheet.**

**BASE BID ------- Detailed Estimate/Bid Form**

| Item # | Description | Units | Est. Bid Quantity | Unit Price Bid | Total Price Bid |
|---|---|---|---|---|---|
| 1 | 1" of Asphalt Surface Course 20% void | TN | 10 | | |
| 2 | 4" of Asphalt Binder 20% void | TN | 38 | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | **TOTAL** | |

Construction Period in days: _____ Days

Completion Date: ____/____/2019
Penalty - $200.00 per day thereafter

INSURANCE REQUIREMENTS:

1. Statutory Workers' Compensation Insurance
    a. Employees Liability
        i. Bodily Injury by Accident - $500,000 Each Accident
        ii. Bodily Injury by Disease - $500,000 Policy Limit
        iii. Bodily Injury by Disease - $500,000 Each Employee
2. Comprehensive General Liability Insurance
    a. $1,000,000 Limit of Liability per Occurrence for Bodily Injury and Property Damage, $2,000,000 in Aggregate
    b. Owner's and Contractor's Protective
    c. Blanket Contractual Liability
    d. Products/Completed Operations Insurance
    e. Personal Injury Coverage
3. Automobile Liability
    a. $1,000,000 Limit of Liability per Occurrence for Bodily Injury and Property Damage
    b. Comprehensive Form covering all Owned, Non-owned and hired Vehicles
4. Umbrella Liability Insurance
    a. $4,000,000 Limit of Liability
    b. Coverage at least as Broad as Primary Coverage as outlined under Items 1, 2, 3 above

**Certificate Holder Should Read:** **City of Ringgold**

NAME OF WORKERS COMPENSATION INSURANCE AND GENERAL LIABILITY CARRIER AND AGENT:

_____

_____

_____

(ATTACH COPY OF PROOF TO THE BID)

**Bids shall be submitted in a sealed opaque envelope and shall be marked on the outside with the name of the submitting company, and the words "Sealed Bid – repair and resurfacing of Tennessee Street and Mountain Street Public Parking".** Any deviation from the requirements set forth for the labeling of the bid envelopes shall result in said bid being returned to the bidder unopened and any such bid shall not be considered.

Sealed bids shall be addressed to the **attention of Dan Wright** and mailed to the City of Ringgold, P.O. Box 579, Ringgold, Ga. 30736 or hand delivered to the City Hall at 150 Tennessee St., Ringgold, Ga. All bids shall be received on or before the above designated date and time. Any bid received after this date and time shall not be accepted. Bids shall be typed or submitted in ink. Bids will be opened and read publicly. Bids are legal and binding upon the bidder when submitted.

It is understood that this contract, if accepted by the City of Ringgold, is entered into solely for the convenience of the City and in no way precludes the City from obtaining like goods from other suppliers upon prior approval of the City Manager. Such approval shall be made at the sole discretion of the City of Ringgold and shall be conclusive.

The City of Ringgold reserves the right to accept or reject any or all bids for any reason, to waive technicalities, and to make an award deemed in its best interest. The City of Ringgold shall have the right to delete a unit item from the bid if necessary or proper in the sole determination of the City of Ringgold.

We certify that our bid meets the minimum requirements as specified in bid documents,
This_____ day of_____.

| | |
|---|---|
| _____ | _____ |
| AUTHORIZED SIGNATURE | TITLE |
| _____ | _____ |
| PRINTED NAME OF SIGNATURE | COMPANY |
| _____ | _____ |
| ADDRESS | CITY/STATE/ZIP CODE |
| _____ | _____ |
| TELEPHONE NUMBER | FAX NUMBER |

EMAIL ADDRESS: _____

**Contractor Affidavit under O.C.G.A. §13-10-91(b)(1)**

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

_____
Federal Work Authorization User Identification Number

_____
Date of Authorization

_____
Name of Contractor

_____
Name of Project

_____
Name of Public Employer

I hereby declare under penalty of perjury that the foregoing is true and correct.
Executed on _____, ___, 201___ in _____ (city), _____ (state).

_____
Signature of Authorized Officer or Agent

_____
Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME
ON THIS THE ____ DAY OF_____, 201___.

_____
NOTARY PUBLIC
My Commission Expires: _____