REQUEST FOR BID
FOR
2019
PAVEMENT IMPROVEMENT

Madison, Wisconsin

June, 2019
REQUEST FOR BID

MADISON METROPOLITAN SEWERAGE DISTRICT
2019 PAVEMENT IMPROVEMENT

The Madison Metropolitan Sewerage District will receive sealed bids for 2019 Pavement Improvement. Bids will be received at the office of the District, 1610 Moorland Road, Madison, Wisconsin 53713 until 11:30 a.m. local time on Monday, July 22, 2019 at which time and place all bids will be publicly opened and read aloud.

Qualifications

All Contractors seeking to become pre-qualified for this type of work must provide written documentation that their personnel have adequate experience and training in asphalt pavement removal and replacement. For the Contractor to be qualified, they must have at least 5 years of active experience in asphalt removal and replacement. All prequalification documentation shall be submitted with the bid on the forms provided herein. If a bidder has not submitted the written statement of qualifications, that bid shall not be considered. It is the intent to disqualify any bidders not meeting the pre-qualification requirements before bids are accepted. MMSD reserves the right to reject the bid of any bidder who cannot meet the minimum requirements set forth in this section.

Project Location

2019 Pavement Improvement is located at the Nine Springs Wastewater Treatment Plant Vehicle Loading Building, 7305 S. Town Rd, Madison, Wisconsin.

Project Description and Scope of Work

2019 Pavement Improvement includes the excavation, foundation preparation and the installation of approximately 5,000 sq./ft. of asphalt pavement to create a truck parking area at the Nine Springs Wastewater Treatment plant (per attached drawing).

Excavation operations shall be conducted so as to minimize disturbing the surrounding area as much as is practical. Excavation spoils may be deposited on plant grounds approximately 500 yards south of the work site.

Foundation crushed aggregate base course and asphalt construction shall comply with Sections 401 and 402 of City of Madison Standard Specifications (attached). Disregard Sections 401.3 and 402.6 – Measurement and Payment.

New pavement shall be constructed according to “City of Madison Engineering Division-Pavement Design Criteria” (attached). Paved area shall be roadway classification “Type C”, Arterial Type, consisting of 12” crushed aggregate base course and 2 separate lifts of Pavement mixture type E-1 at 3.50” per lower layer and 2” per upper layer. A tack coat shall be applied between lifts per City of Madison Paving Specifications, 402.4.

Warranty

Provide Warranty covering 1 year from date of completion. Warranty shall include both material and installation.
**Conduct of Work and Use of Site**

Contractor must conduct work in manner that will not hinder District personnel's access. Adequate equipment must be provided by the Contractor to ensure a minimum negative impact on the surrounding property during the work. The Contractor is responsible for determining the suitability of access points to the site. The Contractor shall submit access routes and proposed storage areas. These access routes and any proposed storage areas must be approved by MMSD before beginning work.

The Contractor shall conform to all local, state, and federal regulations including those set forth by OSHA, RCRA and the EPA and any other applicable authorities.

Typical allowable working hours are 7 am to 7 pm.

Any damage done by the Contractor to any property shall be repaired to a condition equal to or better than what existed prior to the damage. Any damage repairs shall be considered as incidental to the Contract.

Upon acceptance of the installed work and testing, the Contractor shall restore the project area affected by the operations to a condition at least equal to that existing prior to the work. Clean up includes, but is not limited to removing rubbish, debris, dirt, equipment and excess material from the site. The Contractor shall clean adjacent surfaces soiled by and during the course of work.

**Project Sequence and Schedule**

Award of Contract is anticipated to be Wednesday, July 24, 2019. Final completion shall be ninety (90) calendar days from the Award of Contract.

Contractor shall give written notice to the District at least five (5) working days in advance of anticipated start of work.

**Quality Assurance**

Contractor shall initiate and enforce quality control procedures consistent with applicable ASTM standards, City of Madison Standard Specifications for Public Works Construction part IV (Pavements) and the manufacturer's recommendations. The Contractor shall provide inspection services.

The Contractor’s Inspector will observe crushed aggregate base course and asphalt pavement installation procedures to ensure adherence to the specifications.

The District may also retain the services of an Inspector. If used, all costs for these inspection services to be borne by the District. Contractor shall give District’s representative and inspector timely notice of readiness of work for all inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate same.

District representatives and the District’s inspector shall have access to the site and the work at reasonable times for their observation, inspection, and testing. Contractor shall provide proper and safe conditions for such access and advise them of Contractor’s site safety procedures and programs so that they may comply therewith as applicable. The interpretation of this shall mean,
but not be limited to mean, that the Contractor shall provide the District’s inspector with access and proper safety equipment at appropriate times to perform inspection and testing.

**Safety**

The contractor agrees to perform all work under this contract in accordance with local, state, and federal safety regulations. The Contractor is specifically notified that wastewater treatment plants, pumping stations and sewer systems contain confined space work areas which may be susceptible to accumulation of hazardous gases or depletion of oxygen levels.

Handling of hazardous materials, machinery operations, worker protection, and control of airborne dust and fumes shall comply with all applicable facility, local, state, and federal health and safety regulations.

**Contractor's Insurance**

The Contractor shall not commence work under this Contract until all insurance required hereunder has been obtained and such insurance certification has been reviewed by the Owner. The Contractor shall not allow any Subcontractor to commence work on his Subcontract until certification for all similar insurance required for that portion of the Work has been reviewed by the Owner. Review of the insurance certification by the Owner shall not relieve or decrease the liability of the Contractor hereunder. The insurance certification shall name as Additional Insured the Madison Metropolitan Sewerage District.

The Contractor shall obtain, pay for, and maintain during the life of this Contract such Worker's Compensation and Employer's Liability, Comprehensive General Liability, Business Automobile Liability, and Umbrella Liability Insurance to protect the Contractor performing work covered by this Contract from claims for damages for bodily injury, including accidental death, as well as for claims for property damage which may arise from operations under this Contract whether such operations be by the Contractor or any Subcontractor, or by anyone directly or indirectly employed by either of them, on the forms, and with limits not less than set forth below:

a) General Liability
   - Comprehensive general liability coverage shall include, but not be limited to, Products and Completed Operations, Independent Contractors, Contractual Liability, Broad Form Property Damage, Personal Injury, Premises and Operations, and Explosion, Collapse and Underground.
   - General aggregate limit shall be at least $2,000,000. Policy shall be endorsed such that this full limit is reserved specifically for the named Madison Metropolitan Sewerage District project.
   - Products-Completed Operations Aggregate limit shall be at least $2,000,000.
   - Each Occurrence limit shall be at least $1,000,000.

b) Automobile Liability
   - Auto liability policy shall cover all autos, whether owned, non-owned, or hired.
   - Bodily injury and property damage limits shall be at least $1,000,000 each, or
   - Combined single limit shall be at least $1,000,000.

c) Excess Liability Umbrella Form
   - Umbrella limits shall be at least $2,000,000 aggregate/$2,000,000 each occurrence.

d) Worker’s Compensation and Employer’s Liability
• Worker’s Compensation limits shall be in accordance with all applicable state and federal statutes.
• Employer’s Liability limits shall be at least $100,000 each accident, $500,000 disease policy limit, and $100,000 disease-each employee.

**Equal Employment Opportunity Requirements**

In connection with the performance of Work under this Contract, Contractor agrees not to discriminate against any employee or applicant for employment because of age, race, religion, color, handicap, sex, physical condition, national origin or developmental disability as defined in Wisconsin Statutes. This provision shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Contractor further agrees to take affirmative action to ensure equal employment opportunities for persons with disabilities. Contractor agrees to post in conspicuous places, available for employees and applicants for employment, notices setting forth the provisions of the nondiscrimination clause.

**Bid Requirements**

All bids must be made on the forms provided herein and shall be addressed to the Madison Metropolitan Sewerage District; 1610 Moorland Road, Madison, Wisconsin 53713; Attn: Brady Lessner and shall be marked "Sealed Proposal, 2019 Pavement Improvement."

Bids are requested in terms of a lump sum bid.

Bids shall include all labor, materials, equipment, tools, power, utilities, transportation, and all other services or items necessary to perform and complete in a workmanlike manner, 2019 Pavement Improvement. Contractor is responsible for obtaining all necessary permits at the contractor's expense.

This project is exempt from State of Wisconsin sales and use taxes in accordance with Wisconsin Administrative Rule Tax 11.11 pursuant to Section 77.54(26) of the Wisconsin Statutes.

The bidders are required to carefully review all the Contract Documents and to inform themselves of the conditions under which the work is to be performed. The bidder, if awarded the Contract, shall not be allowed any extra compensation by reason of his failure to have fully informed himself prior to the bidding of any matter or thing which such bidder might have fully informed him.

If the bidder is in doubt as to the true meaning of any part of the Contract Documents, the bidder may submit to the District a written request for an interpretation thereof. Any interpretation of the Contract Documents will be made only by an addendum duly issued.

A bidder may withdraw his bid, providing such a written request is in the hands of the District by the time set for opening bids. When such a bid is reached, it will be returned unopened to the bidder. No bid shall be withdrawn after the opening of bids for a period of thirty (30) calendar days after the scheduled time of receiving bids without the consent of the District.
**Terms**

The District reserves the right to reject any or all bids or to waive any irregularities in any bid or to accept any bid which will be in the best interests of the District.

Within seven (7) calendar days after the opening of bids, the Owner will accept one of the bids or will act as stated herein. The acceptance of the bid will be by written Notice of Award, mailed or delivered to the office designated in the bid.

Before award of any Contract can be approved, MMSD shall be satisfied that the bidder involved maintains a permanent place of business, has adequate plant and equipment to do the work properly and expeditiously, has a suitable financial status to meet obligations incident to the work, has appropriate technical experience, and has a satisfactory performance record. The award, if made, will be made to the lowest, qualified, responsive, responsible bidder.

Payment will be made to the Contractor within 30 days of written request for payment after completion of the work. Written requests for payment shall indicate date of completion for warranty purposes.

Contract letting is subject to the provisions of Section 66.0901, Wisconsin Statutes.

**Referenced Documents and Standards**

This specification references standards from the American Society for Testing and Materials, City of Madison Standard Specifications For Public Works Construction (2019 Edition) and City of Madison Engineering Division- Pavement Design Criteria. In case of conflicting requirements between this specification and these referenced documents, this specification will govern. Also included are all Manufacturers Specifications and Standards.
MMSD PRE-QUALIFICATION APPLICATION

Bidders Statement of Qualification

Submitted to: Madison Metropolitan Sewerage District
1610 Moorland Road
Madison, WI 53713

PHONE (608) 222-1201
FAX (608) 299-2129

Instructions:

To be submitted by prime contract bidders only.

Must be received by District prior to deadline stated in bidding documents.

Additional information, if necessary, may be requested by the District.

Name of Bidder: _________________________________________________________
Mailing Address: _________________________________________________________
_________________________________________________________
Phone: _____________________________ Fax: ________________________________
Contact Name: __________________________________________________________
E-Mail: ________________________________________________________________

The above named Bidder requests to be pre-qualified for construction of the following project(s)/contract(s)
(insert project/contract name(s) below):

a. 2019 Pavement Improvement

b. __________________________________________________________________

c. __________________________________________________________________

When was the Company organized? _________________________________________

What is the primary field of work? _________________________________________
Bidders Statement of Qualification-Continued

Attach a statement or resumes showing the experience and qualifications of your key personnel.
Attach a list of your major equipment

References

Please supply 3 references for jobs recently completed similar in type to the project currently proposed.

Project Name: ____________________________________________________________
Date Completed: __________________________________________________________
Address: ________________________________________________________________
Estimate Project Cost: $____________________________________________________
Contact Name: ___________________________________________________________
Phone: _____________________________ Fax: ________________________________
E-Mail__________________________________________________________________

Project Name: ____________________________________________________________
Date Completed: __________________________________________________________
Address: ________________________________________________________________
Estimate Project Cost: $____________________________________________________
Contact Name: ___________________________________________________________
Phone: _____________________________ Fax: ________________________________
E-Mail__________________________________________________________________

Project Name: ____________________________________________________________
Date Completed: __________________________________________________________
Address: ________________________________________________________________
Estimate Project Cost: $____________________________________________________
Contact Name: ___________________________________________________________
Phone: _____________________________ Fax: ________________________________
E-Mail__________________________________________________________________
Bidders Statement of Qualification-Continued

Project Name: ____________________________________________________________

Date Completed: _________________________________________________________

Address: ________________________________________________________________

Estimate Project Cost: $____________________________________________________

Contact Name: ___________________________________________________________

Phone: _____________________________ Fax: ________________________________

E-Mail__________________________________________________________________

I certify that all above statements and attachments hereto are true and correct and are made on behalf of:

_______________________________________________________________________

Company Name

_______________________________________________________________________

Signature _____________________________ Date __________

Title
BID FOR
MADISON METROPOLITAN SEWERAGE DISTRICT
2019 PAVEMENT IMPROVEMENT

Name of Bidder___________________________________________________________
Address_________________________________________________________________
Telephone No. __________________________ email____________________________
Contact Person___________________________________________________________
Date______________________________________________

Bids to be received until the time and date stated in Request for Proposal.

TO: MADISON METROPOLITAN SEWERAGE DISTRICT
    1610 MOORLAND ROAD
    MADISON, WI  53713
    ATTN: BRADY LESSNER

SEALED BID “2019 PAVEMENT IMPROVEMENT”

The undersigned Bidder declares that he/she has carefully inspected the site of the work and
examined the Request for Proposal and plans and hereby proposes to provide all labor, materials,
equipment, tools, power, utilities, transportation, and all other services or items necessary to
perform and complete, in a workmanlike manner, 2019 Pavement Improvement for the
Madison Metropolitan Sewerage District at the price for said work as follows:

2019 Pavement Improvement:

A) Total Lump sum of: $_________________________
   (in figures)

__________________________ Dollars
and ________________________ Cents

Signature: _______________________________________

Title: _________________________________________
CONTRACT

THIS CONTRACT, made this ______ day of __________________, 2019

between ______________________________________________

hereinafter called the CONTRACTOR, and the Madison Metropolitan Sewerage District,

hereinafter called the OWNER or the District.

WITNESSETH: That the Contractor and the Owner for the consideration stated herein agree as

follows:

ARTICLE I, SCOPE OF WORK:

The contractor shall provide and furnish all labor, materials, equipment, tools, power, utilities,
transportation, and all other items and services necessary to perform and complete in a workman
like manner the 2019 Pavement Improvement for the Madison Metropolitan Sewerage District,
all in accordance with the Bidding Documents herein mentioned, including any and all Addenda
prepared by the Madison Metropolitan Sewerage District, which Contract Documents are made a
part of this Contract; and the contractor shall do all other things required of the Contractor by
said Contract Documents.

ARTICLE II, CONTRACT PRICE:

The Owner shall pay to the contractor for the performance of this Contract in U.S. dollars, the
amount of ____________________________ and ____________________________ Cents, (______________ __________),
the said amount being computed from the Contractor’s prices stated in the Proposal. Payments
are to be made to the Contractor in accordance with and subject to the provisions embodied in
the Contract Documents.

ARTICLE III, CONTRACT DOCUMENTS:

This Contract consists of the following Contract Documents, all of which are as fully a part of
this Contract as if herein set out verbatim, or if not attached, as if hereto attached.

1. This Instrument
2. Contractor’s Bid
3. Advertisement
4. Request for Bid
5. Addenda No. ____ to ____ inclusive
6. Plans
In the event that any provision in any of the above component parts of this Contract conflicts with any provision in any other of the component parts, the provision in the component part first enumerated above shall govern over any other component part which follows it numerically, except as may be otherwise specifically stated.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed in two (2) original counterparts this day and year first above written.

___________________                                ______

Contractor

Attest _______________________________ By _________________________________

Title ________________________________ Title _______________________________

___________________

Madison Metropolitan Sewerage District

(Owner)

Attest _______________________________ By _________________________________

Title ________________________________ Title _______________________________
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ARTICLE 401 - CRUSHED AGGREGATE BASE COURSE

401.1 General.

401.1(a) Description.

This item shall consist of a dense compacted base course composed of two or more courses or layers of coarse aggregate, either crushed stone or crushed concrete, fine aggregate and surface or filler blended as necessary to produce an intimate mixture, of the required gradation and stability, constructed on the prepared foundation in accordance with the specifications and in conformity with the lines, grades, thickness and typical cross sections shown on the plans or established by the Engineer.

The crushed stone base course shall be placed on the same day as the existing stone base is removed.

The Contractor shall maintain a minimum of six (6”) inches of stone base course (existing or new) on all portions of the roadway open to vehicle access. No additional compensation will be given for stone used to maintain the six (6”) required for access.

Crushed stone base course shall be used for bringing temporary ramps to grade. This material shall be reused after ramp is removed.

401.1(b) Materials.

The aggregates shall conform to Part 3 of the latest edition of the Standard Specifications for Highway and Structure Construction of the State of Wisconsin, Department of Transportation, except as modified herein or in the Special Provisions of the contract.

The aggregates shall consist of hard, durable particles of crushed stone resulting from the artificial crushing of rock, boulders, large cobble stones, or concrete substantially all faces of which have resulted from the crushing operation. The material shall be free from dirt, debris, frozen materials, vegetable matter, shale, and lumps or balls of clay.

The determination of the acceptability of the aggregates will be made by field evaluation and/or laboratory test. The Engineer reserves the right to prohibit the use of material from any source, plant, pit, quarry or deposit where the character of the material or method of operation is such as to make improbable the furnishing of aggregates conforming to the requirements of these Specifications, unless satisfactory evidence is shown that material conforming to specification requirements is produced.

Unless specified in the Contract or permitted by the Engineer, crushed asphalt pavements, and mixtures thereof shall not be used for constructing Crushed Aggregate Base Course.
The aggregates shall be well graded between the limits specified and shall conform to the following gradation requirements:

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>Gradation No. 1 (3” Maximum)</th>
<th>Gradation No. 2 (1-1/4” Maximum)</th>
<th>Gradation No. 3 (3/4” Maximum)</th>
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<tbody>
<tr>
<td>9”</td>
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<tr>
<td>6”</td>
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<tr>
<td>5”</td>
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<tr>
<td>3”</td>
<td>100</td>
<td>- - -</td>
<td>- - -</td>
</tr>
<tr>
<td>2-1/2”</td>
<td>90 - 100</td>
<td>- - -</td>
<td>- - -</td>
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<tr>
<td>2”</td>
<td>- - -</td>
<td>- - -</td>
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<tr>
<td>1-1/2”</td>
<td>25 - 60</td>
<td>100</td>
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<tr>
<td>1-1/4”</td>
<td>- - -</td>
<td>95 - 100</td>
<td>- - -</td>
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<tr>
<td>1”</td>
<td>- - -</td>
<td>- - -</td>
<td>100</td>
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<tr>
<td>3/4”</td>
<td>0 - 20</td>
<td>70 - 93</td>
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<td>3/8”</td>
<td>0 - 5</td>
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<td>2 - 12</td>
<td>3 - 12</td>
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</table>

1. Limited to a maximum of 8% for base placed between old and new pavement.
2. 3.0 – 10.0% if base is > 50% crushed gravel.

NOTE:

Unless otherwise provided in the contract, aggregates for the top layer of base course shall be Gradation No. 2, and the aggregates for the bottom layer shall be Gradation No. 1. Gradation No. 3 shall be used for top dressing and final finishing.

401.1(c) Equipment.

Equipment and tools necessary for performing and maintaining all parts of the work, satisfactory as to design, capacity and mechanical condition for the purpose intended, must be on the job before the work is started. Any equipment which is not maintained in full working order, or which as used by the Contractor is inadequate to obtain the results prescribed, shall be repaired, improved, replaced, or supplemented to obtain the progress and quality of work contemplated by the contract.

401.2 Construction Methods.

401.2(a) Preparation of Foundation.

The foundation shall be so prepared and constructed that it will have uniform density throughout. It shall be brought to the required alignment and cross section with equipment and methods adapted for the purpose. Upon completion of the shaping and compacting operations, the foundation shall be smooth, at required density, and at the proper elevation and contour to receive the course to be constructed on it.
The right is reserved to make such minor adjustments in the finished grade line from that shown on the plans as may be necessary or desirable to maintain the characteristics of a stabilized foundation by minimizing the amount of cutting into or filling over such stabilized foundation, provided such adjustments do not impair the riding qualities, drainage, or appearance of the finished pavement or cause, in effect, a deviation from a grade established by appropriate municipal ordinance. Areas of yielding or unstable material shall be excavated and backfilled with approved material as ordered by the Engineer. This work shall be measured and paid for under the appropriate contract items, or as Extra Work, in the absence of such a contract item or items.

Base material shall not be placed on a foundation that is soft or spongy or one that is covered by ice or snow. Base material shall not be placed on a dry or dusty foundation where the existing condition would cause rapid dissipation of moisture from the base material and hinder or preclude its proper compaction. Such dry foundations shall have water applied to them and shall be reworked or recompacted if necessary.

401.2(b) Spreading and Shaping.

Equipment used for spreading and shaping the crushed aggregate base course shall be designed and operated so as to spread the material in uniform layers without undue segregation. Power graders and blade graders used for spreading and shaping shall have weight, rigidity and design suitable for the work. Power graders shall have sufficient power to properly perform the work. Other types of equipment for spreading and shaping the material will be permitted, provided the work performed or produced by them is equivalent to or better than the work obtainable from blade machines. All equipment necessary for spreading and shaping, compaction, and water sprinkling of the base material shall be on the site prior to beginning the work of installing the base material.

Crushed aggregate base course shall not be installed until curbs and gutters and other concrete structures have cured per Standard Specifications to withstand hauling and placing operations. No crushed aggregate shall be placed between the curbs until the curbs have been adequately backfilled. The material shall be deposited on the foundation or previously placed layer in a manner to minimize segregation and to facilitate spreading to a uniform layer of the required dimensions. Excessive manipulation which will cause segregation between the coarse and fine materials shall be avoided. The work shall, in general, proceed from the point on the project nearest the source of supply of the aggregate in order that the hauling equipment will travel over the previously placed material, and the hauling equipment shall be routed as uniformly as possible over all portions of the previously constructed courses or layers of the base course. Stockpiling of the aggregates shall be performed in such a manner as to facilitate the recovery of the maximum amount of stockpiled material and to minimize segregation of the material.

The crushed aggregate base course shall be constructed in two or more layers as directed by the Engineer. The material shall be spread in uniform uncompacted lifts, not to exceed five (5) inches in depth for Gradation No. 1 (3” maximum size) crushed aggregate, not to exceed three and one-half (3-1/2) inches for Gradation No. 2 (1-1/2” maximum size) crushed aggregate, and not to exceed one and one-half (1-1/2) inches for Gradation No. 3 (3/4” maximum size) crushed aggregate.

When directed by the Engineer, the Contractor shall spread a layer of Gradation No. 3 (3/4” maximum size) crushed aggregate over the subbase before the application of the Gradation No. 1 (3”
maximum size) crushed aggregate. It shall not be necessary to compact the lift of Gradation No. 3 crushed aggregate when placed directly on the subbase.

Top dressing and final finishing of the crushed aggregate base course shall be performed with Gradation No. 3 (3/4” maximum size) crushed aggregate after compaction of the surfaces of the base is complete, and after depressions and high points in the crown and along the gutter edges have been brought to grade. This material shall also be water sprinkled and compacted. The maximum compacted depth of this material shall be one (1) inch.

401.2(c) Compaction and Water Sprinkling.

Prior to and during compaction operations the material shall be shaped and maintained to proper dimensions and contour by means of blade graders or other suitable equipment. The surface of each layer shall be kept true and smooth at all times.

All crushed aggregate shall be thoroughly water sprinkled before spreading begins to prevent segregation.

The crushed aggregate base course shall be placed in two or more layers, each layer being water sprinkled to the satisfaction of the Engineer to provide the required compaction. After leveling and water sprinkling, each layer of crushed aggregate shall be compacted to the degree that no further appreciable consolidation or movement of the base is evidenced under the action of the compaction equipment. The required compaction shall be attained for each layer before any material for a succeeding layer is placed thereon.

The compaction shall be performed by means of tamping rollers, pneumatic rollers, vibratory rollers, or other types of equipment which will produce the required results in the materials encountered, and be subject to the approval of the Engineer. Tandem or three wheel rollers, if used on the project, shall weigh at least ten (10) tons. Hauling and leveling equipment shall be routed and distributed over each layer of crushed aggregate in such a manner as to make use of the compaction afforded thereby.

All areas where proper compaction is not obtainable due to segregation of materials, excess fines, or other deficiencies in the crushed aggregate, shall be reworked as necessary or the material in them removed and replaced with material that will yield the required results. The complete cost of such reworking and replacement shall be at the Contractor’s expense.

401.2(d) Driveways.

Where shown on the plans or directed by the Engineer, the Contractor shall construct driveways of Gradation No. 2 (1-1/2” maximum size) crushed aggregate. Unless otherwise specified, driveways shall be six (6) inches in depth.

401.3 Measurement and Payment.

401.3(a) Method of Measurement.

The item of Crushed Aggregate Base Course shall be measured by the ton. The quantity to be measured for payment shall be the amount of material required and incorporated in the work in accordance with the contract.
The Contractor shall furnish and deliver to the Engineer a ticket with each load showing the project name, date, time, ticket number, truck number, material type, load count, gross, tare, net weights, cumulative weight of crushed aggregate. All tickets for materials delivered to a City of Madison project shall be presented to the City representative on the project within twenty-four (24) hours after delivery of the materials to the project. Tickets presented after the time specified shall be rejected due to inability to substantiate actual use of the materials on the project.

As an alternative to furnishing individual load tickets, the contractor may submit a daily summary sheet of crushed aggregate delivered to the project. This sheet shall include project name, date, time, ticket number, truck number, material type and mix number, load count, gross, tare, net weights, cumulative weight for each load delivered to the site and a daily summary of total weight provided for each item. This summary sheet shall be provided to the inspector within twenty-four (24) hours after delivery of the material to the project. The actual tickets shall be made available upon request.

Aggregates which contain total moisture at the time of delivery in excess of seven (7) percent shall have moisture content in excess of seven (7) percent deducted from the measured weight. Determination of the moisture content of the aggregates shall be based on and expressed as a percent of the dry weight of the aggregates.

401.3(b) Basis of Payment.

The quantity of crushed aggregate measured as provided above will be paid for at the contract unit price per ton for Crushed Aggregate Base Course, complete in place, which price shall be full compensation for furnishing, placing, watering, drying, compacting, and maintaining the crushed aggregate base course; for preparing foundation; for stockpiling, if required; and for furnishing all labor, tools, equipment and incidentals necessary to complete the work.
ARTICLE 402 - ASPHALT CONSTRUCTION

402.1 Materials for Asphalt Construction.

The materials intended for use in base, lower, and upper layer mixtures, tack and seal coats, surface treatments, and similar work, shall comply with the requirements of Part 4, “Pavements” of the latest edition of the Standard Specifications for Highway and Structure Construction of the State of Wisconsin, Department of Transportation, except as modified herein or in the Special Provisions of the contract.

Wherever the terms “Division”, “Divisions”, “Department” or “Departments” appear in the above mentioned specifications, such terms shall be understood to mean “City” or “City’s” respectively.

Aggregate shall be from a Wisconsin Department of Transportation approved source as specified under 106.3.4.2 except the Contractor shall provide to the City the results from the Freeze / Thaw Test (AASHTO T103) for quarried course aggregates used in the work produced from limestone/dolomite sources. The maximum percent loss for aggregates used in the work shall be four percent (4%).

The Contractor shall provide Asphalt Pavement mix designs in accordance with the aforementioned Part 4 of the latest edition of the Standard Specifications for Highway and Structure Construction of the State of Wisconsin, Department of Transportation. The Engineer reserves the right to designate a grade of asphalt at the time of construction other than that specified in the contract.

402.2 Placing Asphalt Mixtures.

402.2(a) Description.

Asphalt mixtures shall not be placed when the air temperature approximately three (3) feet above ground at the site of the work, in the shade and away from the effects of artificial heat, is less than 40°F unless approved by the Engineer in writing. Notify the engineer at least one business day before paving.

The contractor shall submit a cold weather paving plan outlining equipment changes, including modifications to the compaction process and when to use them, when the air temperature is less than 40°F, approximately 3 feet above grade, in the shade and away from the effects of artificial heat. Engineer written acceptance is required for the cold weather paving plan. Engineer acceptance of the plan does not relieve the contractor of responsibility for the quality of HMA pavement placed in cold weather.

The fact that the Engineer does not grant such approval shall not be construed as substantiating an extension of contract time for the completion of the work. Whenever such approval to extend the paving season has been denied, the Contractor shall ramp all access structures, catchbasins and water valve castings, ends of pavements, and curb edges with asphalt material to facilitate maintenance of the pavement area during the suspension of paving operations. Prior to the installation of succeeding layers of asphalt pavement, all such ramping shall be removed as directed by the Engineer and disposed of by the Contractor. All costs of installing and removing such ramping shall be at the Contractor’s expense.
Place asphaltic mixture only on a prepared, firm, and compacted base, foundation layer, or existing pavement substantially surface-dry and free of loose and foreign material. Do not place over frozen subgrade or base, or where the roadbed is unstable.

After all layers have been thoroughly compacted, they may be tested for smoothness by means of a fourteen (14) foot straightedge placed parallel to the center line of the pavement, parallel to the grade line in each lane, and touching the surface. Ordinates measured from the face of the straightedge to the lower layer shall at no place exceed one-fourth (1/4) inch. Variations exceeding one-fourth (1/4) inch in the lower layer shall be corrected as directed by the Engineer. Ordinates measured from the face of the straightedge to the upper layer shall not exceed one-eighth (1/8) inch. For each variation in the upper layer greater than one-eighth (1/8) inch but less than one-fourth (1/4) inch, where directed by the Engineer, the area affected shall be removed and replaced with fresh upper layer mixture at the expense of the Contractor. If variations in the upper layer exceed one-fourth (1/4) inch, the entire area affected shall be removed and replaced with fresh upper layer mixture at the expense of the Contractor.

The Contractor shall be responsible for and maintain the work during the several stages of construction and until the acceptance thereof. Such maintenance shall include protection and repair of the foundation, tack coat, base, and surface. Any rich or bleeding areas, any breaks, any raveled spots, or other unsatisfactory areas shall be corrected during such maintenance period.

The Contractor shall protect all sections of the newly placed and compacted mixture from traffic until the material has cooled and hardened to the satisfaction of the Engineer. The Contractor shall furnish, install and maintain barricades to protect the surfaces tack coated and the pavement laid from traffic. Barricades may be removed only with the Engineer’s approval. Barricades and fencing shall be designed and installed so as not to mark or otherwise damage the completed pavement.

Paving equipment shall not be cleaned with kerosene, fuel oil or gasoline on newly laid asphalt pavement, crushed stone base course prepared for asphalt pavement, or on existing asphalt pavements, unless the pavement or base is protected with a material, acceptable to the Engineer, which shall prevent cleaning oils or fluids from coming in contact with the pavement or base.

The Contractor shall maintain on the project suitable fire fighting equipment, or other equipment of similar purpose, and an adequate supply of hand brooms, shovels, mechanical tampers, hand tampers, lutes, and iron rake for use at places which are inaccessible to pavers and rollers. The Contractor shall not commence paving on each day unless the above equipment is on the paver or readily available for use. A steel plate will also be required and utilized when paving over open grates and inlets.

Prior to beginning the installation of the asphalt upper layer on any project, the Contractor shall complete the final adjustment of all water valve castings to finished grade.

The Contractor shall thoroughly clean all hard surfaces immediately before applying tack material to areas overlaid with HMA mixtures. Such cleaning to remove all dust, debris, or other objectionable material shall be done using a street sweeper with vacuum or regenerative pickup head or equal. Unsatisfactory areas shall be hand cleaned by sweeping or compressed air as directed by the Engineer.
402.2(b) Personnel.

The Contractor shall provide competent workers who are capable of performing the duties assigned to them in the work of placing and compacting asphalt mixtures in accordance with the specifications. The paving crew shall be under the supervision of an experienced supervisor who shall be on the project at all times, and who shall not operate equipment, such as paving machines or rollers, at any time during the paving operation. Under no circumstances shall the workers, or others, be allowed to walk across recently laid asphalt mixture behind the paving machine and ahead of the roller.

402.2(c) Equipment.

A mechanical vibratory plate compactor shall be available on the job site at all times during asphalt pavement placement and shall be used for compaction around access structures, catchbasins, water valves and other castings which appear in the paved areas. The mechanical vibratory plate compactor shall be equipped with a working water reservoir and shall be of sufficient size and capability to attain the compaction requirements of these specifications.

402.2(d) Spreading and Finishing.

Pave at a constant speed, according to the paver specifications and mixture, for uniform spreading and strike-off with a smooth, dense texture and no tearing or segregation.

In any event, the speed of placing asphalt mixtures shall not exceed that which coincides with the average rate of delivery to the paver, so as to provide as nearly as possible continuous operation of the paver.

The roller shall pass over an unprotected end of freshly laid mixture only when the laying of the course is to be discontinued long enough to permit the mixture to become cooled. In the event of such discontinuance, the end of the course shall be treated as a transverse construction joint as specified below.

402.2(e) Compaction.

Where the edges are not supported by a curb and gutter or similar structure, the outside edges of the lower and upper layers shall be sloped and pressed in place by means of a self adjusting constant pressure edge plate held in proper position on the finishing machine. A string line shall be used as a guide for the finishing machine in order to maintain a uniform edge alignment. If any other method is used, it shall meet the approval of the Engineer. The edge of the pavement shall be sloped approximately one (1) inch from the vertical and no material shall extend beyond the limits of the base. Irregularities in alignment along the outside edges and along the longitudinal joints shall be corrected by adding or removing paving mixtures before the edges are rolled.

The mixture shall be spread sufficiently so that after compaction the finished surface shall be one-eighth (1/8) to one-fourth (1/4) inch above the edges of curbs, gutters, access structures and similar structures.

Each roller, while the paving is under way, shall be kept as nearly as practicable in continuous operation and the speed shall at all times be slow enough to avoid undue displacement of the mixture. When pneumatic-tired rollers are used, they shall be operated continuously at a rate of speed which
will not cause damage to the mat and which will provide the maximum number of coverages possible while the temperature of the mat is conducive to densification and surface sealing. Rollers shall be operated with the drive roll or wheels nearest the paver.

<table>
<thead>
<tr>
<th>Layer</th>
<th>Mixture Type</th>
<th>E-0.3, E-1, E-3</th>
<th>E-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower</td>
<td>92.0</td>
<td>92.0</td>
<td></td>
</tr>
<tr>
<td>Upper</td>
<td>92.0</td>
<td>92.0</td>
<td></td>
</tr>
</tbody>
</table>

402.2(f) Joints.

Longitudinal joints including mainline interior joints for all pavement layers shall be “hot” joints. “Hot” joints shall be defined as joints with a temperature at or above the asphalt mixture compaction temperature.

Evenly reheat at least an 8-inch wide strip of the previously compacted surface lift in the adjacent lane as follows:

- Ambient air temperature above 60º F, reheat to 130º F.
- Ambient air temperature below 60º F, reheat to 120º F.

The engineer may modify the required joint reheat temperatures to adjust for weather, wind, or other field conditions. Coordinate the heater output and paver speed to achieve the required joint reheat temperature without visible smoke emission.

Contractor shall provide a self-contained heating unit that heats by convection only. Do not use forced air to enhance the flame. Provide a fireproof barrier between the flame and the heater's fuel source. The heater must produce a uniform distribution of heat within the heat box. Provide automatic controls to regulate the heater output and shutoff the heater when the paver stops or the heater control system loses power. Mount the heater on the paver inside the paver’s automatic leveling device.

Where “Michigan” joints are placed to allow traffic use, the joint shall be milled, reheated and tacked in accordance with the above stated reheating specification before continuation of paving.

Contractor’s operations shall not result in additional transverse joints unless approved by the Engineer.

402.3 Asphalt Pavement.

Unless otherwise specified or directed by the Engineer, asphalt driveways and asphalt terrace paving shall be constructed of three (3) inches of upper layer pavement installed in one (1) lift on select fill, or as directed by the Engineer. 4 LT 58-28 S, 5 LT 58-28 S mixture or an approved commercial mix shall be used, unless a substitute is approved by engineer.

The composition for the various asphalt mixtures shall conform to the limits specified in Part 4 of the latest edition of the Standard Specifications for Highway and Structure Construction of the State of Wisconsin, Department of Transportation, except as modified herein or in the Special Provisions of the contract. Warm mix HMA is not approved.
The mixture shall be laid and compacted so that the average yields in pounds per square yard shall conform to the following charts showing the various thicknesses of installation:

Unless otherwise specified in the contract, or directed by the Engineer, the upper layer mixtures shall be installed in one course of one and one-half (1-3/4) inches in depth.

<table>
<thead>
<tr>
<th>Thickness</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5”</td>
<td>172</td>
<td>180</td>
</tr>
<tr>
<td>1.75”</td>
<td>201</td>
<td>210</td>
</tr>
<tr>
<td>2”</td>
<td>230</td>
<td>240</td>
</tr>
<tr>
<td>2.5”</td>
<td>287</td>
<td>300</td>
</tr>
<tr>
<td>3”</td>
<td>345</td>
<td>360</td>
</tr>
<tr>
<td>4”</td>
<td>460</td>
<td>480</td>
</tr>
<tr>
<td>5”</td>
<td>575</td>
<td>600</td>
</tr>
</tbody>
</table>

For installations of the upper layer which are specified to be other than one and one-half (1-1/2) inches in depth, the allowable yields for such installations shall be in proportion to the allowable yields specified above.

Whenever the yields fall below the minimum allowable yields specified above, the Engineer shall determine the corrective action to be taken. The corrective action may include removal and replacement of the area of deficient thickness, an overlay with approved material of the area of deficient thickness, or such other action as the Engineer shall determine including a reduction in payment up to 50% of the unit price for the deficient amount. The area of deficient thickness shall be determined on the basis of street area, project area, or area covered in one day’s operation, whichever is less. The Engineer’s determination will be based on the circumstances of the area involved, and will include a determination of the distribution of costs of the corrective work required.

Recycled Asphalitic Materials

The contractor may use recycled asphalitic materials from FRAP, RAP, and RAS in HMA mixtures. Stockpile recycled materials separately from virgin materials and list each as individual JMF components.

Control recycled materials used in HMA by evaluating the percent binder replacement, the ratio of recovered binder to the total binder. Conform to the following:

<table>
<thead>
<tr>
<th>Recycled Asphalitic Material</th>
<th>Lower Layers</th>
<th>Upper Layer</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAS if used alone</td>
<td>25</td>
<td>20</td>
</tr>
<tr>
<td>RAP and FRAP in any combination</td>
<td>40</td>
<td>25</td>
</tr>
<tr>
<td>RAS, RAP and FRAP in combination*</td>
<td>35</td>
<td>25</td>
</tr>
</tbody>
</table>

*When used in combination the RAS component cannot exceed 5 percent of the total weight of the aggregate blend.
402.4 Asphalt Tack Coat.

Unless otherwise specified in the contract, or directed by the Engineer, the types and grades of asphalt materials and rates of applications in gallons per square yard shall conform to the following requirements:

1. The tack coat material shall be type MS-2, SS-1, SS-1h, CSS-1, or an approved modified emulsified asphalt.
2. For existing concrete or asphalt pavements, the rate of application shall be between 0.07 and 0.10 gallons per square yard.
3. Diluting emulsified asphalt only if approved by the engineer. Provide calculations using the asphalt content as received from the supplier and subsequent contractor dilutions to show that as-placed material has 50 percent or more residual asphalt content.

The Contractor shall apply asphaltic tack coat to streets prior to placing asphalt pavement as directed by the Engineer. No tack coat shall be placed on the base course unless directed by the Engineer. The Contractor shall apply an asphaltic tack coat to all butt joints and all longitudinal joints meeting both existing pavements and new pavements on successive paving passes. All costs for furnishing and applying tack coat to butt joints and longitudinal joints as specified above shall be considered incidental to the bid item for asphalt tack coat.

Apply tack coat only when the air temperature is 32°F or more unless the engineer approves otherwise in writing. Before applying tack coat ensure that the surface is dry and reasonably free of loose dirt, dust, or other foreign matter. Do not apply if weather or surface conditions are unfavorable or before impending rains.

402.5 Recycled Asphalt Pavement.

This work shall consist of the construction of a plant mixed recycled asphalt mixture furnished and placed all in accordance with Article 460 of the latest edition of the Standard Specifications for Highway and Structure Construction of the State of Wisconsin, Department of Transportation, except as listed below.

The City of Madison shall approve the sources of recycled asphalt material, including shingles.

402.6 Measurement and Payment.

402.6(a) Asphalt Pavement Mixtures.

Asphalt mixtures of the type or types included in the contract, shall be measured by the ton of mixed aggregate and asphalt material, or by the square yard of area paved. The quantity measured for payment shall be the amount of material furnished, delivered to and incorporated in the accepted work, or the area paved, including cleaning and maintenance, and for all labor, tools, equipment, and incidentals necessary to complete the work contemplated by the contract. Deductions shall be made for any quantities which are wasted, which are not actually incorporated in the work in accordance with the contract, and for those materials which do not conform to the requirements of these specifications.
Asphalt mixtures shall be tested by the City in order to determine aggregate gradations, asphalt content, air voids and VMA.

When the average yield on a project exceeds the maximum allowable yield, as specified in Section 402.3, all excess material shall be paid for at the rate of one-half (1/2) the contract unit price for the type of material involved. The average yield for this purpose shall be computed on a daily basis, a project basis, or a street area, whichever covers the smallest area of paving.

When the average yield on a project is below the minimum yield allowable, as specified in Section 402.3, the quantity of material below the minimum shall be paid at a rate no less than one-half (1/2) the contract unit price for the type of material involved if required by the Engineer. The average yield for this purpose shall be computed on a daily basis, a project basis, or a street area, whichever covers the smallest area of paving.

If the average density for the day on a project is less than the specified minimum in section 402.2(e), pay will be reduced based on the contract unit price for the HMA Pavement bid item as follows:

<table>
<thead>
<tr>
<th>Percent Density Below Specified Minimum</th>
<th>Payment Factor (percent of contract price)</th>
</tr>
</thead>
<tbody>
<tr>
<td>From 0.5 to 1.0 inclusive</td>
<td>98</td>
</tr>
<tr>
<td>From 1.1 to 1.5 inclusive</td>
<td>95</td>
</tr>
<tr>
<td>From 1.6 to 2.0 inclusive</td>
<td>91</td>
</tr>
<tr>
<td>More than 2.0</td>
<td>(1)</td>
</tr>
</tbody>
</table>

(1) Remove and replace with a mixture at the specified density. When acceptably replaced, payment will be made for the replaced work at the contract unit price. Alternatively the engineer may allow the nonconforming material to remain in place with a 50 percent payment factor.

The Contractor shall furnish and deliver to the Engineer a ticket with each load showing the project name, date, time, ticket number, truck number, material type and mix number, load count, gross, tare, net weights, cumulative weight, of hot mix asphalt. All tickets for materials delivered to a City of Madison project shall be presented to the City representative on the project within twenty-four (24) hours after delivery of the materials to the project. Tickets presented after the time specified shall be rejected due to inability to substantiate actual use of the materials on the project.

As an alternative to furnishing individual load tickets, the contractor may submit a daily summary sheet of hot mix asphalt delivered to the project. This sheet shall include project name, date, time, ticket number, truck number, material type and mix number, load count, gross, tare, net weights, cumulative weight for each load delivered to the site and a daily summary of total weight provided for each item. This summary sheet shall be provided to the inspector within twenty-four (24) hours after delivery of the material to the project. The actual tickets shall be made available upon request.

402.6(b) Asphalt Tack Coat.

The asphalt materials required for and incorporated in the work of applying asphalt tack coat shall be measured by volume in gallons as provided in the contract. Deductions shall be made for any quantities which are wasted or are not actually incorporated in the work in accordance with the contract.
The quantity of asphalt material measured as provided above will be paid for at the contract unit price per gallon for the item of asphalt tack coat, which price shall be full compensation for furnishing; heating, unloading, hauling, and applying the asphalt material; for maintenance of the tack coat; and for all labor, tools, equipment, and incidentals necessary to complete the work contemplated by the contract.

402.6(c) Asphalt “Hot” Joints.

Asphalt heating equipment, labor, tools and methods required to keep or create “hot” joints shall be incidental to asphalt pavement mixtures unless otherwise specified in the special provisions.
PAVEMENT DESIGN CRITERIA

Identification of roadway classification for pavement design.

Type A - Local street with low traffic volume.

Type B - Collector Type streets or any streets expected to become bus routes (Design Year DLT ≤ 2500).

Type C - Arterial Type streets - all streets expected to carry significant truck traffic (Design Year DLT > 2500).

A.) Design procedure Type A roadway - use greater of:

1. The Standard Minimum Section:
   3.5" Asphaltic Pavement
   12" Crushed Aggregate Base Course

2. Pavement design based on Section 14-10-5 of the Wisconsin Department of Transportation's Facilities Development Manual. Use serviceability index (P+) = 2.5, ESAL = 1018K per day, and the soil support value given the existing field conditions. The Minimum Section is based on the above parameters and a soil support value of 3.5.

B.) Design Procedure Type B roadway - use greater of:

1. The Standard Minimum Section:
   4.50" Asphaltic Pavement
   12" Crushed Aggregate Base Course

2. Pavement design based on Section 14-10-5 of the Wisconsin Department of Transportation's Facilities Development Manual. Use serviceability index (P+) = 2.5, ESAL = 2018K per day, and the soil support value given the existing field conditions. The Minimum Section is based on the above parameters and a soil support value of 3.5.

C.) Design Procedure Type C roadway - use greater of:

1. The Standard Minimum Section:
   5.50" Asphaltic Pavement
   12" Crushed Aggregate Base Course

2. Pavement design based on Section 14-10-5 of the Wisconsin Department of Transportation's Facilities Development Manual. Use serviceability index (P+) = 2.5, and the soil support value given the existing field conditions. The ESAL shall be calculated based on Section 14-1-5.