INFORMATIONAL PROPOSAL (For information only, not to be used for bidding)

NEBRASKA DEPARTMENT OF ROADS
LETTING DATE : May 22, 2003

CALL ORDER: N01 CONTRACT ID: 1673

CONTROL NO./SEQ. NO.: 12673 /000 PROJECT NO.: RD-43-2(1005)

TENTATIVE START DATE: 10/14/03 CONTRACT TIME: 10 WORKING DAYS

LOCATION: ON N-43, IN BENNET & SOUTH.
IN COUNTY: LANCASTER

BIDDER

GROUP 9 BITUMINOUS

NOTES

THE TOTAL AMOUNT OF WORK WHICH WILL BE ACCEPTED IN THIS LETTING IS LIMITED TO $_____.

THE NUMBER OF _____ CONTRACTS WHICH WILL BE ACCEPTED IN THIS LETTING IS LIMITED TO ____.

NOTICE TO ALL BIDDERS

To report bid rigging activities, call: 1-800-424-9071

The U.S. Department of Transportation (DOT) operates the above toll-free “hotline” Monday through Friday, 8:00 a.m. to 5:00 p.m. eastern time. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the “hotline” to report such activities.

The “hotline” is part of the DOT’s continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

LETTING QUESTIONS

Prior to the letting, any questions pertaining to the Special Provisions or the plans for this project should be directed to Construction Division personnel at (402) 479-4568 or (402) 479-4529.

STATE OF NEBRASKA
DEPARTMENT OF ROADS

Required Provisions Supplemental to the

Standard Specifications for Highway Construction

I. Application

These contract provisions shall apply to all work performed on the contract by the contractor with his own organization and with the assistance of workmen under his immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

The contractor shall insert in each of his subcontracts all of the stipulations contained in the Special Provisions and these Required Provisions.

A breach of any of the stipulations contained in these Required Provisions may be grounds for termination of the contract.

II. Equal Opportunity

1. **Selection of Labor**

   During the performance of this contract, the contractor shall not discriminate against labor from any other state.

2. **Nebraska Fair Employment Practices Act**

   The contractor shall not discriminate against any employee or applicant for employment, to be employed in the performance of this contract with respect to his hire, tenure, terms, conditions, or privileges of employment, because of his race, color, religion, sex or national origin. The contractor agrees to post in a conspicuous place or places a notice to be provided by the State Highway Department which sets forth excerpts of the Act.

3. **Nebraska Equal Pay Act**

   The contractor shall not discriminate on the basis of sex by paying wages to employees of one sex at a lesser rate than the rate paid to employees of the opposite sex for comparable work on jobs which have comparable requirements. An abstract of the Act is included on the notice which is provided by the State Highway Department.

April 4, 1995

III. Employment of Labor

1. **General**

No person under the age of sixteen (16) years, and no one whose age or physical condition is such as to make his employment dangerous to his health or safety, or to the health and safety of others shall be employed on any project. This paragraph shall not be construed to deny the employment of older people or physically handicapped persons, otherwise employable, where such persons may be safely assigned to work which they can ably perform.

No person currently serving sentence to a penal or correction institution shall be employed on any project.

Except as specifically provided under this section, workers who are qualified by training or experience to be assigned to projects of this character shall not be discriminated against on any grounds whatsoever.

2. **Payrolls**

Payrolls and basic records relating thereto will be maintained during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working on the site of the work.

The contractor's and subcontractor's payroll records shall be available for inspection by authorized representatives of the State Highway Department and authorized representatives of Federal Agencies.

The wages of labor shall be paid in legal tender of the United States, except that this condition will be considered satisfied if payment is made by a negotiable check, on a solvent bank, which may be cashed readily by the employee in the local community for the full amount, without discount or collection charges of any kind. Where checks are used for payment the contractor shall make all necessary arrangements for them to be cashed and shall give information regarding such arrangements.

No fee of any kind shall be asked or accepted by the contractor or any of his agents from any person as a condition of employment on the project.

No laborers shall be charged for any tools used in performing their respective duties except for reasonably avoidable loss or damage thereto.

Every employee on the work covered by this contract shall be permitted to lodge, board and trade where and with whom he elects and neither the contractor nor his agents, nor his employees shall directly or indirectly require as a condition of employment that an employee shall lodge, board or trade at a particular place or with a particular person.

No charge shall be made for any transportation furnished by the contractor or his agents to any person employed on the work.

No individual shall be employed as a laborer on this contract except on a wage basis, but this shall not be construed to prohibit the rental of teams, trucks or other equipment from individuals. No such rental agreement, or any charges for feed, gasoline, supplies, or repairs on account of such agreement, shall cause any deduction from the wages accruing to any employee except as authorized by the regulations hereinbefore cited.

IV. Safety and Accident Prevention

In the performance of this contract, the contractor shall comply with all applicable Federal, State and local laws governing safety, health and sanitation. The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions, on his own responsibility or as the contracting officer may determine, reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

V. Subletting or Assigning the Contract

The contractor shall perform with his own organization contract work amounting to not less than 30 percent of the total contract amount except that any items designated in the contract as "Specialty Items" may be performed by subcontract and the amount of any such "Specialty Items" so performed may be deducted from the total contract amount before computing the amount of work required to be performed by the contractor with his own organization.

Any items that have been selected as "Specialty Items" for the contract are listed as such in the Special Provisions found elsewhere in the contract.

No portion of the contract shall be sublet, assigned, or otherwise disposed of except with the written consent of the contracting officer or his authorized representative. Requests for permission to sublet assign or otherwise dispose of any portion of the contract shall be in writing and accompanied by a showing that the organization which will perform the work is particularly experienced and equipped for such work. The contractor shall give assurance that the minimum wage for labor as stated in his proposal shall apply to labor performed on all work sublet, assigned or otherwise disposed of in any way. Consent to sublet, assign or otherwise dispose of any portion of the contract shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract.

SPECIAL PROVISIONS
FOR
STATE
PROJECT NO. RD-43-2(1005)

GENERAL CONDITIONS

Sealed bids for the work contemplated in this proposal form will be received at the office of the Nebraska Department of Roads in Room 104 of the Central Office Building at 1500 Highway 2 at Lincoln, Nebraska, on May 22, 2003, until 1:30 P.M.

Bids submitted by mail should be addressed to the Nebraska Department of Roads, c/o Contract Lettings Section, P.O. Box 94759, Lincoln, NE 68509-4759.

The 1997 English Edition of the Standard Specifications for Highway Construction, including all amendments and additions thereto effective at the date of the contract, are made a part of these Special Provisions, through reference.

The Supplemental Specifications to the 1997 English Edition of the Standard Specifications for Highway Construction dated July 12, 2001, including all amendments and additions thereto effective at the date of the contract, are made part of these Special Provisions, through reference.

The Required Provisions dated April 4, 1995, are attached to and are a part of this proposal form.

The attention of bidders is directed to the Required Provisions covering subletting or assigning the contract.

The proposal contains a statement that the contractor is complying with, and will continue to comply with, fair labor standards in the pursuit of his business and in the execution of the work contemplated in this proposal.

Fair labor standards shall be construed to mean such a scale of wages and conditions of employment as are paid and maintained by at least fifty per cent of the contractors in the same business or field of endeavor as the contractor filing this proposal.

STATUS OF UTILITIES

No utilities have been or will be required to relocate within the limits of this project.

Underground utilities may exist within the limits of this project. The Contractor shall determine to his satisfaction the extent of occupancy of any underground utilities located within the respective construction areas and the extent of conflict with the proposed work under this contract.

Any utility adjustments or interruption of service for the convenience of the Contractor shall be the sole responsibility of the Contractor.

To arrange for utilities to locate and flag their underground facilities, contact The Diggers Hotline of Nebraska at 1-800-331-5666.

STATUS OF RIGHT-OF-WAY
(S1-16-0801)

According to the best information available, all necessary right-of-way has been acquired.

SUBCONTRACTOR BIDDERS LIST INFORMATION
(S1-43-0801)

All bidders must complete and submit with the bidding proposal, the "Subcontractor Bidders List" form provided by the NDR Contracts office.

Bidders must identify all firms who bid or quote subcontracts on all projects. If no bids or subcontractor quotations are received, the "Subcontractor Bidders List" must be submitted with the bidding documents and the bidder must indicate on the face of the "Subcontractor Bidders List" that no bids or subcontractor quotations were received.

CONTROL OF WORK
(S1-43-0901)

Subsection 105.08 in the 1997 Standard Specifications is void and replaced by the following:

105.08 - Authority and Duty of the Inspector

Department inspectors are authorized to inspect all work performed and all materials furnished. Such inspection may extend to the preparation, fabrication, or manufacture of the materials. The inspector has the authority to reject work or materials until any issues can be decided, including the right to suspend work. The inspector is not authorized to alter or waive the provisions of the contract or act as a supervisor for the Contractor.

105.13 – Tentative Acceptance of Portions of the Project

Paragraph 3.a. of Subsection 105.13 is amended by deleting the word "normal".

LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC
(S1-43-1001)

107.14 – Opening of Sections of the Project to Traffic

Subsection 107.14 Paragraphs 2.b.(1) and (2) are void and replaced by the following:

2.b. (1) Whenever the Department permits the public use of a highway undergoing construction, repair, or maintenance in lieu of a detour route, the Contractor shall not be held responsible for damages to those portions of the project upon which the Department permitted public use, when such damages are the result of no proximate act or failure to act on the part of the Contractor.

(2) If the traveling public should cause damage to the roadway, the Contractor shall assist the State in identifying the responsible party and the Contractor shall as a minimum if present at the time of the damage record pertinent information regarding the accident. (Who caused the damage; when the damage occurred; and how the damage occurred.)

107.15 – Contractor's Responsibility for Work

Subsection 107.15 is amended by adding Paragraph 1.b.(3) as follows:

(3) The Contractor shall not be held responsible for damage caused by the traveling public on those portions of the project where the Department has permitted public use of the road in lieu of using a detour route and the damage as not the result of any proximate act or failure to act on the part of the Contractor.

MEASUREMENT AND PAYMENT
(S1-43-0901)

109.08 – Acceptance, Final Payment, and Termination of Contractor's Responsibility

Subsection 109.08 Paragraph c. amended by deleting the word "normal".

Subsection 109.08 Paragraph d. is void and replaced by the following:

d. If the traveling public should cause damage to the roadway the Contractor shall assist the State in identifying the responsible party and the Contractor shall as a minimum if present at the time of the damage record pertinent information regarding the accident. (Who caused the damage; when the damage occurred; and how the damage occurred.)

OMAHA PUBLIC POWER DISTRICT

RAILROAD SAFETY TRAINING
(S1-22A-0801)

The railroad company requires that anyone working within the railroad right-of-way attend a “Rail Safety Training” class. The Contractor, or their representative, will not be allowed on railroad right-of-way until they have successfully completed the mandatory safety training. The railroad will present a certification card to everyone who completes their safety training, and construction crews will be required to have their safety training certification cards in their possession at all times when they are working on railroad right-of-way.

The contractor will be responsible for all costs associated with attending this training class.

FLAGGING PROTECTION

When, for any reason, the General Manager or other duly authorized representative of the Omaha Public Power District shall deem it necessary to employ flagmen for the protection of train operations, such flagmen shall be furnished by the Railroad Company and all costs for such flagmen shall be borne by the contractor.

Prospective bidders shall familiarize themselves fully with the Railroad Company's requirements for flagging protection before bidding on the work.

REIMBURSEMENT TO RAILROAD COMPANY FOR FLAGGING COSTS
(S1-24-0801)

At all times while performing such work, flagmen shall be deemed to be employees of the Railroad Company.

The contractor shall reimburse the Railroad Company directly for this flagging protection and shall make a showing that the Railroad Company has been reimbursed for all necessary flagging required by his operations before final payment for the work contemplated in the contract is made by the State.

Direct payment for flagging protection as required in these special provisions will not be made but it shall be considered that this work is subsidiary to any or all of the items for which the contract provides that direct payment shall be made.

FLAGGING CONDITIONS
(S1-25-0801)

Flagging and other protective services and devices will be provided by the Company to protect its facilities, property and movements of its trains or engine.

In general, the Company will furnish such flagging or other protective services and devices:

(a) For any excavation below elevation of track subgrade, if, in the opinion of the Company's representative, track or other railroad facilities may be subject to settlement or movement.

(b) During any clearing, grubbing, grading or blasting in proximity to the railroad, which, in the opinion of the Company's representative, may endanger or interfere with the railroad's facilities or operations.

(c) When any of the Contractor's operations are carried on or within the Railroad Company's right of way and in the opinion of the Company's representative could endanger Company's facilities or create a hazard to the Company's operations.

PROTECTION OF UTILITIES
(S1-26-0801)

Before the contractor begins his operations on the railroad right-of-way he shall confer with the official representatives of the State and the Railroad Company with regard to any underground or overhead utilities which may be on or in close proximity to the site of the work. The contractor shall take such measures as the State or Railroad Company may direct in protecting those utilities properly throughout the period his construction operations are in progress. The party or parties owning or operating overhead or underground utilities shall perform the actual work of moving, repairing, reconditioning or revising those utilities, except as otherwise provided in the contract. Whenever and wherever such operations are undertaken by owners of utilities, the contractor shall cooperate to the extent that ample protection of their work will be provided so that the entire work that is contemplated in the contract may be expedited to the best interests of all concerned, as judged by the engineer for the State.

The contractor shall be responsible for any and all damages to utilities that are permitted to remain in place, or to reconstructed utilities in the vicinity, which may be due either directly or indirectly to his operations, and shall repair promptly any such damaged property to the satisfaction of the engineer and the owner of the property, or shall make payment to such owners for repairs as may become necessary on account of damages that are due to his operations.

Direct payment for this work will not be made but it shall be considered that the protection of the utilities is subsidiary to any or all of the items for which the contract provides that direct payment shall be made.

RAILROAD SPECIAL PROVISIONS

Before the contractor begins his operations on railroad right of way, he will contact the railroad at least 10 days in advance by telephone at 1-402-636-2427 (a 24-hour number) to determine if fiber optic cable is buried anywhere on the railroad property to be used by the contractor.

The railroad will advise the contractor if fiber optic cable exists at the location(s) being occupied and will dispatch a representative to locate, mark and protect each cable in the vicinity of the work to be performed by the contractor.

The railroad will need the Railroad Mile Post involved which is 45.78 on this project.

The contractor, for his own protection, should obtain and record the "Trouble Log Number" from the railroad for verification of the call made.

WRITTEN NOTICE TO RAILROAD COMPANY

The contractor shall give written notice to the General Manager or to his authorized representative, at least ten days in advance of the date on which he expects to begin any work under or adjacent to any of the tracks of the Railroad Company or he expects to begin any construction work on the right of way of the Railroad Company. The contractor shall also give written notice to the General Manager no later than ten days after completion of all work on the railroad company's right of way.

PROTECTION OF PROPERTY (S1-29-0801)

The contractor shall use the utmost care to guard against accidents or cause the least possible interference with the operation of trains of the Railroad Company and the telephone, telegraph or signal lines of the Railroad Company or of any tenant of the Railroad Company's right-of-way. The contractor shall use the utmost care in guarding against injury to underground and overhead public utilities and services at or near the site of the work.

All work to be done under this contract shall be handled by the contractor so as to interfere as little as is reasonably possible with the use of tracks, wires, signals and property of the Railroad Company or its tenants, and the underground or overhead services of public and private utilities, and the contractor shall be responsible for any damages which may be sustained by the Railroad Company, its tenants, employees, passengers or freight in its care, or by the owners of any public or private overhead or underground services caused by such interferences which could have been avoided by the proper handling of said work. The contractor shall discontinue immediately, upon request of the engineer, any practices or actions which, in the opinion of the engineer, are unsafe or cause damage to underground or overhead services of public or private utilities, or which might result in delays to trains, engines or cars, or damage to tracks, roadbed, telephone, telegraph or signal wires.

The contractor shall take all precautions for the purposes of protecting the embankment of all railroad tracks as may be determined necessary by the authorized representative of the Railroad Company. The contractor agrees to affix the seal of a registered professional engineer licensed to practice in the State of Nebraska on all plans and calculations pertaining to details for sheeting or otherwise protecting excavations next to or adjacent to railroad tracks if necessary and noted on the State's plans. The contractor also shall take all precautions for the protection of underground and overhead services either public or private, as may be determined by the engineer.

PROTECTION OF PROPERTY

The contractor shall not place or permit to be placed, or remain, piles of material or other temporary obstructions closer than 12 feet (3.7 meters) to the nearest rail of any track or closer than 23 feet (7 meters) above the top of any rail except that the construction forms and scaffolding may be placed no closer than 12 feet (3.7 meters) from the centerline of any such track.

Any changes necessary in the clearance set forth above shall be made only by special arrangements with the General Manager of the Company or his authorized representative.

The contractor agrees to affix the seal of a registered professional engineer licensed to practice in the State of Nebraska on all plans and calculations pertaining to details for sheeting or otherwise protecting excavations next to or adjacent to railroad tracks if necessary and noted on the State's plans.

RAILROAD CROSSINGS
(S1-31-1201)

The Contractor shall use only public roadways or special crossings that are specifically shown on the plans to cross railroad tracks. If the Contractor should desire a temporary crossing for construction purposes at a location other than an existing public crossing, provisions for such crossing shall be negotiated with the railroad by the Contractor, and all costs for such crossing shall be borne by the Contractor.

Prospective bidders should familiarize themselves with railroad temporary crossing and insurance requirements before bidding on the work.

INSPECTION
(S1-32-0801)

Subsection 105.09 in the Standard Specifications is amended to provide also that the work shall be subject to the inspection of the properly authorized representatives of the railroad and that such inspection shall in no sense make the railroad a party to this contract and will in no way interfere with the rights of either party hereunder.

INSURANCE
(S1-33-1201)

The State shall require its Contractor or any of his subcontractors to carry regular Contractor's Public Liability and Property Damage Insurance as specified in Federal-Aid Policy Guide 23 CFR 646A providing for a limit of not less than Two Million Dollars ($2,000,000) for all damages arising out of bodily injuries to or death of one person, and subject to that limit for each person, a total limit of not less than Four Million Dollars ($4,000,000) for all damages arising out of bodily injuries to or death of two or more persons in any one accident and providing for a limit of not less than Two Million Dollars ($2,000,000) for all damages to or destruction of property in any one accident and subject to that limit a total (or aggregate) limit of not less than Four Million Dollars ($4,000,000) for all damages to or destruction of property during the policy period. A certified copy of the policy providing said Contractor's Public Liability and Property Damage Insurance executed by a corporation qualified to write the same in the State in which the work is to be performed, in form and substance satisfactory to the Railroad, shall be delivered to and approved by the Railroad prior to the entry upon or use of the Railroad's property by the Contractor.

In addition to any other forms of insurance or bonds required under the terms of the contract and the specifications, the Contractor shall furnish to the Railroad a Railroad Protective Policy in the form provided by Federal-Aid Policy Guide 23 CFR 646A. The combined single limit of said policy shall not be less than Two Million Dollars ($2,000,000) for all damages arising out of bodily injuries to or death of any person or persons and for all damages arising out of loss

or destruction of or injury or damage to property in any one occurrence during the policy period; and subject to that limit, a total (or aggregate) limit of not less than Six Million Dollars ($6,000,000) for all damages arising out of bodily injuries to or death of any person or persons and for all damages arising out of or loss or destruction of or injury or damage to property during the policy period. Said insurance policy executed by a corporation qualified to write the same in the State in which the work is to be performed shall be in form and substance satisfactory to the Railroad and shall be delivered to and approved by the Railroad prior to the entry upon or use of its property by the Contractor.

The above mentioned insurance shall be written in accordance with the Federal-Aid Policy Guide 23 CFR 646A issued by the Federal Highway Administration, which is hereby, through reference, made a part of these provisions.

The State shall require its Contractor or any of its subcontractors to carry a Business Automobile Insurance Policy or equivalent policy with minimum limits of one million dollars ($1,000,000) for bodily injury and property damage per occurrence on all vehicles which the Contractor or subcontractors, their agents or employees may use at any time in connection with the performance of the work on this project. A certified copy of the policy providing said Business Automobile Insurance executed by a corporation qualified to write the same in the state in which the work is to be performed, in form and substance satisfactory to the companies, shall be delivered to and approved by the companies prior to the entry upon or use of the companies property by the Contractor.

The insurance as hereinbefore specified shall be carried by the Contractor and the Railroad covering all work performed on this project within the limits of the rights-of-way of the Railroad. Said insurance shall be carried until all work required under the terms of the contract is satisfactorily completed, as evidenced by formal acceptance by the State.

The State's Contractor shall cause triplicate originals of the policy or policies covering the Railroad Protective Liability Insurance specified above to be delivered to the State for delivery to the Railroad. The Contractor shall not enter upon or perform any work upon the property or the rights-of-way of the Railroad until the specified originals of the policy or policies have been delivered to and approved by the Railroad. The Contractor shall deliver one original policy of the above described Contractor's Property Damage Liability Insurance and one copy of the Business Automobile Insurance Policy to the State prior to the beginning of any work on the Railroad's right-of-way.

In addition to the above, the Contractor shall indemnify and hold the railroad(s) harmless against and from all cost, liability, and expense whatsoever (including the railroad attorney's fees and court costs and expenses) actually incurred arising out of or in any way contributed to by any negligent act or omission of the Contractor and its employees, for any damage to or destruction of any telecommunications system by the Contractor and its employees on the railroad's property.

RIGHT OF WAY
(S1-34-0801)

The right of way and property which the public has, or will have, by ownership or easement, for the permanent construction and the prosecution of the construction operations, is indicated in the plans or will be defined upon request. Any additional ground, or working or storage space that the contractor may require for his operations, shall be provided by the contractor at his own expense.

RESTORATION OF RAILROAD COMPANY'S PROPERTY
(S1-35-0801)

In the event the contractor shall in any manner move or disturb other property of the Railroad Company, in connection with the use of the said property, then, and in that event, the contractor shall, as soon as possible and at its sole expense, restore such property to the same condition as it was in before such property was moved or disturbed, and the contractor shall indemnify and save harmless the Railroad Company against and from any and all liability, loss, damages, claims, demands, costs and expenses of whatsoever nature, including court costs and attorneys' fees, which may result from injury to or death of persons whomsoever, or damage to or loss or destruction of property whatsoever, when such injury, death, damage, loss or destruction grows out of or arises from the taking down of any fence, or the moving or disturbance of any other property, of the Railroad Company.

FINAL CLEANING UP
(S1-36-0801)

Subsection 104.08 in the Standard Specifications is amended to provide also that upon the completion of the work contemplated in this contract, the contractor shall remove all machinery, equipment, surplus materials, falsework, rubbish, ditches, and temporary building, furnished or erected by him from within the limits of the right of way of the Railroad Company and shall leave the said right of way in a neat condition satisfactory to the Chief Engineer of the Railroad Company, or his authorized representative.

PERCENTAGE OF COST OF WORK WITHIN RAILROAD RIGHT-OF-WAY

The following information is furnished to aid in the determination of a proper premium for the Railroad Protective Liability Insurance required elsewhere in these special provisions.

RAILROAD PROTECTIVE POLICY DATA SHEET

Railroad: Omaha Public Power District

Railroad Contact: Richard M. Kotan, P.E.

Title: Manager, Rail Operations & Maintenance

Address: 444 South 16th Street Mall 4E/EP 4, Omaha, NE 68102-2247

Telephone Number: (402) 636-2427

Project Number: RD-43-2(1005)

Control Number: 12673

Type of Project: Overlay

No. of trains/day: Total: 2

Freight or Coal: 2 Speed: 25 mph Passenger 0 Speed ___ mph

No. of Tracks: Mainline 1 Branchline 1 (Industrial)

Project Over RR: No X Yes __ Project Under Railroad: No X Yes __

Railroad Shoo-fly Required: No X Yes __

Project Parallel to RR: No X Yes __ If Yes, Number of Miles ___

Crossings on State Highway or City Street System: No __ Yes X

If Yes, Number of Crossings 1 at DOT 083915J

Pavement or Overlay up to Crossing on County or City Road:

No X Yes __ If Yes, Number of Crossings __

Work to be done by Railroad None

It shall be the contractor's responsibility to contact the railroad for additional information needed to purchase the Railroad Protective Policy.

The percentage of work within railroad right of way that is within 50 feet (15.25 meters) of any railroad track shall be covered by railroad protective insurance. The railroad's ownership of right of way that extends beyond 50 feet (15.25 meters) from the closest track shall be covered under regular Contractor's Public liability and Property Damage Insurance in the amounts specified in this contract.

Group	Approximate Percent of Work Within 50 feet (15.25 meters) of Nearest Track	Approximate Percent of Work on RR/ROW Not Within 50 feet (15.25 meters) of Nearest Track	Description of Work
9	0.001 %	-- %	Asphalt Surfacing

CONSTRUCTION DETAILS

EARTH SHOULDER CONSTRUCTION

Section 304 of the Standard Specifications is amended to include the following:

No additional Earth Shouldering materials will be required from Station 121+91 to Station 216+00. The Contractor will be required to reshape existing earth shouldering material as shown in the plans in this area.

Extreme Care shall be taken to avoid contaminating the OGFC Asphaltic Concrete with soil during the shouldering operation.

TEMPORARY TRAFFIC CONTROL DEVICES (S4-9-1201)

Paragraphs 2.a. of Subsection 422.05 in the Standard Specifications is void and superseded by the following:

2.a. If signs are not returned or are returned damaged, and the damage is beyond reasonable “wear and tear” and the damage was caused by the Contractor, then the Contractor shall be charged the value of the missing or damaged items. These charges shall be deducted from monies due the Contractor upon final payment.

TYPE B HIGH INTENSITY WARNING LIGHTS (S4-9-1002)

All references in the plans to Type B High Intensity Warning Lights shall be considered void. The plans will not be revised to reflect this change.

LOCAL MATERIAL SOURCES
(S5-1-0801)

Information regarding possible sources of local materials is available at the Materials and Research Division of the Department of Roads, Lincoln, Nebraska.

ASPHALTIC CONCRETE
(S5-5-0801)

Paragraph 5. of Subsection 503.02 in the Standard Specifications is void.

ASPHALTIC CONCRETE
(S5-7-0902)

Paragraph 11.a. in Subsection 503.04 of the 2001 Supplemental Specifications is void.

Paragraph 4. in Subsection 503.05 of the 1997 Standard Specifications is void.

The pay item “Asphalt Pavement Smoothness Testing” in Subsection 503.06 of the 1997 Standard Specifications is void.

ASPHALTIC CONCRETE PAVEMENT SMOOTHNESS
(S5-7-0902)

Section 502 in the 1997 Standard Specifications for Highway Construction and the 2001 Supplemental Specifications is void and superseded by the following:

502.01 – General

1. This specification establishes a standard for asphaltic concrete pavement smoothness, and defines defective pavement smoothness. The intent of the specification is to produce a finished asphaltic concrete pavement driving surface with a Profile Index no greater than 12 inches per mile. Pavement smoothness will be evaluated as prescribed in this section.

2. When the pay item "Asphalt Pavement Smoothness Testing I/D" is included in the contract, all the requirements of the following sections including the incentive/disincentive provisions shall apply.

3. When the pay item "Asphalt Pavement Smoothness Testing" is included in the contract, the incentive/disincentive provisions of this section do not apply, but the smoothness testing shall be performed as prescribed. The asphaltic concrete pavement shall be evaluated in accordance with Paragraph 11. b. of Subsection 503.04 in the 2001 Supplemental Specifications.

4. When the contract contains no item for smoothness testing, the asphaltic concrete pavement shall be evaluated in accordance with Paragraph 11. b. of Subsection 503.04 in the 2001 Supplemental Specifications.

502.02 – Equipment

1. The Contractor shall furnish a 25-ft California profilograph approved by the Nebraska Department of Roads.

2. The profilograph shall have multiple, non-uniformly spaced, articulated support wheels arranged such that no two wheels pass the same location on the pavement surface at the same time (ASTM Designation: E 1274, Paragraph 5.1.2)

3. The profilograph shall be equipped with a computerized system that will record, analyze, and print the test data.

4. The profilograph shall produce a printed pavement profile trace (profilogram) with a vertical scale of 1:1, and a horizontal scale of 1:300 (1" paper = 25' pavement). The profilogram shall include the following information:

    a. Project number
    b. Test date
    c. Traffic lane
    d. Test direction
    e. Test path
    f. Pass number (1 for initial test; 2, 3, etc. for repeat runs)
    g. Operator's name
    h. Project stations
    i. Data filter values
    j. Blanking (Null) band width
    k. Profile counts for each test section
    l. Profile Index for each test section
    m. Bump locations for each test section

502.03 – Certification and Independent Assurance Testing

1. The Department shall calibrate and certify the Contractor's profilograph annually at a test site established by the Department.

    a. The profilograph shall be inspected for compliance with general equipment requirements, including wheel configuration, effective length, data analysis system, guidance system, and overall condition.

    b. The profilograph shall be calibrated for distance measurement by moving it over the prescribed path of a premeasured test distance at walking speed, and determining its distance calibration factor.

    c. The profilograph shall be checked for vertical measurement accuracy by placing a 1-inch and 2-inch calibration block, measured to the nearest 0.01 inch, under the sensing wheel while the profilograph is stationary. The vertical measurement indicated by the profilograph shall be within 4.0% tolerance of the actual premeasured block height.

    d. The profilograph shall be checked for overall performance by moving it over the prescribed path of a pre-measured pavement test section at walking speed.

e. Distance measurement indicated by the profilograph shall be within 0.2% tolerance of the actual premeasured test section distance. To ensure accurate distance measurement during test runs, the air pressure of the distance measurement tire must always be maintained at the same level used for calibration.

f. The Profile Index reported by the profilograph for the test section shall be within 10.0% tolerance of the Profile Index reported by a Nebraska Department of Roads profilograph for the same test section.

g. A dated and signed decal will be placed on the profilograph to certify its acceptability for use on Nebraska Department of Roads pavement construction projects.

2. The Department shall certify the Contractor's profilograph operator at least every 5 years. The operator may be certified by presenting certification from another State Highway Agency or by completing certification training conducted by the Nebraska Department of Roads.

3. The Department shall schedule and perform Independent Assurance tests for the Contractor's profilographs and operators at least once per construction season. Independent Assurance testing shall be conducted at a randomly selected time on an active construction project. The criteria for the test will be similar to those used for certification.

502.04 – Profilograph Test Procedures

1. The Contractor shall perform all pavement smoothness specification tests except the 10-foot straight edge testing as shown in Paragraph 16. below:

2. The Engineer shall furnish a report form to the Contractor identifying all required test sections.

   a. The pavement surface shall be divided into lane-width segments that end at a bridge, railroad crossing, or other designated termini.

   b. The lane-width segments shall be further divided into individual 528 feet (0.10 mile) long test sections in the direction of project stationing. The last test section in a segment is usually shorter than 528 feet.

   c. If a test section is less than 300 feet long, it shall be combined with the preceding 528 feet long test section for analysis.

3. The Contractor's certified profilograph operator shall perform smoothness specification tests in the Engineer's presence. Smoothness testing shall be performed during normal daylight working hours unless otherwise approved by the Engineer. If the Contractor notifies the Engineer of a proposed test and the Engineer elects not to be present, then the Contractor may proceed unaccompanied.

4. The Contractor shall report test results to the Engineer within 2 NDR workdays after initial asphaltic concrete placement or surface corrective work. The Contractor shall report additional test results to the Engineer as soon as possible, but not later than 7 calendar days after completion of the mainline pavement.

5. The asphaltic concrete pavement surface temperature shall be 150 degrees F. or lower when smoothness tests are performed.

6. The profilograph operator shall perform pavement smoothness measurements in the right-hand or left-hand wheel path of all driving lanes, as directed by the Engineer, including climbing and fly-by lanes. In urban areas, where inlet block-outs or manholes are in the right or left-hand wheel path, the pavement smoothness measurements shall be made in a location determined by the Engineer. All wheels of the profilograph shall be on the new pavement for which the Contractor is responsible.

7. The Contractor shall remove all objects and foreign material from the pavement surface before testing.

8. The profilograph operator shall guide the profilograph along the specified wheel path of each traffic lane at walking speed. Propulsion may be by personnel pushing manually, or by a suitable propulsion unit that does not exceed a speed of 4 miles per hour. Excessive speed can produce erratic test results.

9. A lateral location indicator shall be used to keep the profilograph in the required test path during testing. Pavement edges, longitudinal joints, or longitudinal pavement markings may be used as reference lines. An additional person may be required to hold the back end of the profilograph on the required path on horizontal curves.

10. Before testing, the profilograph operator shall lower the profilograph's recording wheel to the pavement surface and move the profilograph forward to the beginning location of a test section to stabilize the measurement system. To ensure consistent distance measurement, the profilograph operator shall also check and adjust the recording wheel tire pressure several times a day.

11. All station references on the profilograms and report forms shall be actual project stations. Stations shall be accurately noted on the profilogram at least every 200 feet.

12. The profilograph operator and the Engineer shall sign the profilograms immediately after completion of the tests. If the Engineer was not present at the time of the tests, then the absence shall be noted on the profilograms.

13. The Engineer shall perform or schedule verification tests on at least 10 percent of the pavement surface, using a profilograph owned by the Department.

14. If the verification test, Independent Assurance tests, or other observations indicate that the Contractor's procedures and/or results are not acceptable or accurate, the Engineer may do any of the following:

    a. require the Contractor to calibrate the profilograph and re-run the tests.

    b. disqualify the Contractor’s equipment and/or operator.

    c. perform the tests for part, or all, of the project with a profilograph owned by the Department, and charge the Contractor $500.00 per lane mile for all testing done by the Department.

15. The following areas of pavement shall be excluded from the Profile Index, unless otherwise specified in the Special Provisions.

    a. Pavement on horizontal curves having a centerline radius of curvature of less than 1,000 feet, and pavement within the superelevation transition of such curves.

    b. Pavement within 50 feet of a transverse joint that separates the pavement from an approach slab to a bridge deck or existing pavement not constructed under the contract.

    c. Pavement for truck weigh stations or rest areas, acceleration/deceleration lanes, and interchange ramps and loops.

    d. Pavement within 50 feet of railroad crossings and associated transitions.

    e. Pavement with a posted speed limit of 45 miles per hour or less.

    f. Pavement where the Engineer requires the contractor to open an area prematurely to cross traffic at intersections and driveways.

    g. Additional exceptions shown on the summary sheet in the plans.

16. Excluded pavement sections shall be measured for bumps with either a profilograph or a 10-foot straight edge. If the profilograph is used, the deviation shall not exceed 0.40 inch. The deviation of the surface shall not exceed 1/8 inch, if a 10-foot straightedge is used.

502.05 – Evaluation

1. The Contractor shall determine a Profile Index and number of correctable bumps and dips for each test section, record the information on the report form, and provide a copy of the report, along with the corresponding profilograms, to the Engineer.

    a. The Profile Index shall be calculated by adding the absolute value of the vertical deviations (inches) outside of a 0.1 inch blanking band and dividing the sum by the length of the test section (miles). The resulting Profile Index is in units of inches per mile.

    b. Correctable bumps shall be separately identified on the profilograms. They appear as high points on the profilogram and correspond to high points on the pavement surface. Correctable bumps are vertical deviations on the pavement surface that exceed 0.40 inch in height above a base line span of 25 feet.

    c. Correctable dips shall be separately identified on the profilograms. They appear as low points on the profilogram and correspond to low points on the pavement surface. Correctable dips are vertical deviations on the pavement surface that exceed 0.40 inch in depth below a base line span of 25 feet.

502.06 – Pavement Surface Correction

1. The Contractor shall locate and perform all required pavement surface corrective work, with the approval of and in the presence of, the Engineer.

2. Corrective work may be required for any bump, dip, or a combination of bumps and dips or other roughness that, in the opinion of the Engineer, produces an objectionable ride. Corrective work shall be accomplished at no cost to the Department.

    a. When the initial Profile Index of a test section is 21 in/mi or less, bump and dip correction is the only corrective work allowed for that section.

    b. When the Profile Index of a test section exceeds 21 in/mi, corrective work shall be performed.

    c. The Contractor shall retest all corrected test sections with the profilograph.

3. All bumps, as defined in Subsection 502.05, Paragraph 1.b., and all test sections with a Profile Index exceeding 21 in/mi shall be corrected by diamond grinding.

    a. Bumps shall be considered corrected when they are at or below the 0.40 inch maximum height.

    b. Sections with a Profile Index exceeding 21 in/mi shall be considered corrected when the Profile Index for that section has been reduced to a value of 21 in/mi or less.

4. All dips, as defined in Subsection 502.05, Paragraph 1.c., shall be corrected until they are at or below the 0.40 inch maximum depth. The Contractor shall have the following options:

    a. diamond grind on either or both sides of the dip,

    b. with the approval of the Engineer, remove and replace a sufficient length of the surface layer to correct the deficiency, under the following conditions:

        (1) The Contractor shall furnish replacement material that meets the original specifications for the material removed.

        (2) Removal and replacement shall be for the full lane width.

    c. a combination of the grinding and removal and replacement methods, or

    d. with the approval of the Engineer, elect to leave an uncorrected or partially corrected dip in place for a monetary deduction.

5. Diamond grinding equipment used for surface correction shall be power driven, self-propelled units specifically designed to grind and texture pavements. The cutting head shall be at least 36 inches wide and consist of many diamond blades with spacers. The Engineer may approve equipment with a narrower width for irregular and confined areas, which will not accommodate larger equipment, and for bumps of limited number and area.

502.07 - Traffic Control

The Contractor shall provide all traffic control for smoothness testing and corrective work at no cost to the Department.

502.08 - Method of Measurement

1. "Asphalt Pavement Smoothness Testing I/D" and "Asphalt Pavement Smoothness Testing" shall be measured on a lump sum basis.

2. a. When the pay item "Asphalt Pavement Smoothness Testing I/D" is included in the contract, the unit price of the accepted quantity of asphaltic concrete pavement and performance graded binder in the surface layer of each profilograph test section shall be adjusted according to the schedule in Table 502.01, subject to the limitations in Paragraphs 3 and 4 of this Subsection. Pavement sections excluded from this smoothness specification shall not qualify for incentive pay.

   b. When the pay item "Asphalt Pavement Smoothness Testing " is included in the contract, the incentive/disincentive provisions of this Subsection do not apply.

Table 502.01

Payment Adjustment Schedule	
Profile Index Inches Per Lane Mile	**Percent of Contract Prices**
0 to 2	107
Greater than 2 to 4	105
Greater than 4 to 6	103
Greater than 6 to 8	102
Greater than 8 to 12	100
Greater than 12 to 14	98
Greater than 14 to 16	96
Greater than 16 to 18	94
Greater than 18 to 20	92
Greater than 20 to 21	90
Greater than 21	Corrective Work Required

3. When the initial Profile Index of a test section is 21 in/mi or less, that value shall determine the percent of incentive pay for the section unless bump and dip correction performed in that section increases the percent of pay.

4. When the initial Profile Index of a test section is greater than 21 in/mi, corrective work performed in that section may increase the percent of pay up to the level indicated in Table 502.01.

502.09 – Basis of Payment

1. When the pay item "Asphalt Pavement Smoothness Testing I/D" is included in the contract, the overall pay factor for the accepted quantity of asphaltic concrete and performance graded binder in the surface layer of all profilograph test sections shall be determined according to the formula in Table 502.02.

Table 502.02

Pay Factor Formula		
PF = $\frac{A(1.07) + B+(1.05) + C(1.03) + D(1.02) + E(1.00) + F(0.98) + G(0.96) + H(0.94) + I(0.92) = J(0.90)}{A + B + C + D + E + F + G + H + I + J}$		
Where:		
A	=	Length of pavement with a Profile Index of 0 to 2 inches per mile.
B	=	Length of pavement with a Profile Index greater than 2 to 4 inches per mile.
C	=	Length of pavement with a Profile Index greater than 4 to 6 inches per mile.
D	=	Length of pavement with a Profile Index greater than 6 to 8 inches per mile.
E	=	Length of pavement with a Profile Index greater than 8 to 12 inches per mile.
F	=	Length of pavement with a Profile Index greater than 12 to 14 inches per mile.
G	=	Length of pavement with a Profile Index greater than 14 to 16 inches per mile.
H	=	Length of pavement with a Profile Index greater than 16 to 18 inches per mile.
I	=	Length of pavement with a Profile Index greater than 18 to 20 inches per mile.
J	=	Length of pavement with a Profile Index greater than 20 to 21 inches per mile.

2. The Contractor shall be assessed $500 each for all uncorrected or partially corrected dips left in place.

3. The work of Asphalt pavement Smoothness Testing I/D" and "Asphalt Pavement Smoothness Testing" shall be paid at the lump sum contract unit price. This price shall be full compensation for all smoothness testing as set forth in this specification.

COLD MILLING CLASS 5

The Cold Milling machine shall conform to the requirements of Section 510 of the Standard Specifications. The milling drum shall be a minimum of 6 feet wide and capable of feathering out an existing notch in the asphaltic concrete.

The Contractor shall mill areas shown in the plans as directed by the Engineer.

Bituminous material produced from the cold milling operation shall become the property of the Contractor and removed from the project.

MILLING ASPHALTIC CONCRETE INLAYS

Subsection 510.05 of the Standard Specifications is amended to provide that the work of milling the asphaltic concrete inlays will not be measured and paid for, but shall be considered subsidiary to the item “Asphaltic Concrete Type OGFC”.

SEEDING

Subsection 803.02 in the 1997 English Edition of the Standard Specifications is amended to include the following:

Type "B"	Minimum Purity (%)	Broadcast or Hydraulic Seeder Appli-cation Rate in lb. of Pure Live Seed/Acre	Approved Mech. Drill Application Rate in lb. of Pure Live Seed/Acre
Perennial Ryegrass - Linn	85		8
K-31 Fescue	85		15
Sheeps Fescue	85		8
Western Wheatgrass – Flintlock	85		10
Buffalograss – Sharps 2, Cody	80		5
Blue Grama – NE, KS, CO	35		2
Birdsfoot Trefoil – Empire – 5x Inoculation	90		4
Oats/Wheat	90		15

All seed shall be origin Nebraska, adjoining states, or as specified. A contractor proposing to use a substitute variety, or origin shall submit for the engineer's consideration a seed tag representing the seed which shows the variety, origin and analysis of the seed.

Rates of application of commercial inorganic fertilizer shall be:

	Rate of Application Per Acre (Minimum)
Available Nitrogen (N2) ----------	32 or 36 lb.
Available Phosphoric Acid (P2O5) ----------	92 or 96 lb.

Rate of application of granular sulphur coated urea fertilizer shall be:

Nitrogen (total available) ----------	60 lb.

The contractor may, at his option, apply granular urea formaldehyde in lieu of the sulphur coated urea fertilizer at the following rate:

Nitrogen (total available) ----------	60 lb.

FLY ASH
(S10-5-0801)

Subsection 1008.01 in the Standard Specifications is void and superseded by the following:

Fly ash shall be Class C or F meeting the requirements of ASTM C 618.

STRUCTURAL STEEL
(S10-5-0801)

Section 1045 of the Standard Specifications is amended to include the following:

1045.03 -- Steel Plate Substitution

The Contractor may use either English or Metric steel plates in accordance with Table 1045.01.

Table 1045.01

English-Metric Steel Plate Substitution Table

Metric (millimeters)	English (inches)	Metric (millimeters)	English (inches)
9	3/8	32	1 1/4
10	3/8	35	1 3/8
11	7/16	38	1 1/2
12	½	40	1 5/8
14	9/16	45	1 3/4
16	11/16	50	2
18	¾	55	2 1/4
20	13/16	60	2 3/8
22	7/8	70	2 3/4
25	1	80	3 1/4
28	1 1/8	90	3 1/2
30	1 ¼		

REPAIR OF DAMAGED METALLIC COATINGS
(S10-5-0801)

Paragraph 2. of Subsection 1061.01 in the Standard Specifications is void and superseded by the following:

2. The material used for repair shall provide a minimum coating thickness of at least 50 µm with one application.

DOWEL BARS
(S10-5-0801)

Subsection 1022.02 in the Standard Specifications is amended to include the following:

In addition to these certificates, two 1.8 meter samples of the coated bar (for tension testing and bend testing) of each size bar and each heat number shall be sent to the NDR Materials and Research Laboratory, Lincoln, Nebraska. These bars will be properly identified with tags showing the size and heat number.

CORRUGATED METAL PIPE
(S10-5-0801)

Table 1035.01 in Section 1035 of the Supplemental Specifications is amended by deleting the title “Steel and Aluminum Culvert Thickness”.

METAL FLARED-END SECTIONS
(S10-5-0801)

Table 1036.01 in Section 1036 of the Supplemental Specifications is amended by deleting the title “Steel and Aluminum Flared-End Thickness”.

REINFORCED CONCRETE PIPE, MANHOLE RISERS, AND FLARED-END SECTIONS
(S10-5-0801)

Paragraph 3.a. of Subsection 1037.02 in the Supplemental Specifications is void and superseded by the following:

3.a. Round reinforced concrete pipe shall conform to the requirements of AASHTO M 170-95 with the exception of the minimum circumferential reinforcing (in2/ft. (mm 2/m) of pipe wall) for 15, 21, and 24 inch (380, 460, 600 mm) Class III pipe, as shown below:

Paragraph 3.b. of Subsection 1037.02 is void and superseded by the following:

b. AASHTO M 170-95 Specifications are modified as follows:

Paragraph 4. of Subsection 1037.02 is void and superseded by the following:

4. Reinforced concrete arch pipe shall conform to the requirements of AASHTO M 206-95.

Paragraph 5. of Subsection 1037.02 is void and superseded by the following:

5. Reinforced concrete elliptical pipe shall conform to the requirements of AASHTO M 207-95.

Paragraph 7. of Subsection 1037.02 is void and superseded by the following:

7. Concrete flared-end sections shall be of the design shown in the plans and in conformance with the applicable requirements of AASHTO M 170-95, Class II pipe, AASHTO M 206-95, Class A-II pipe, or AASHTO M 207-95, Class HE-II pipe for the diameter of pipe which it is to be installed.

HIGH TENSILE BOLTS, NUTS, AND WASHERS (S10-5-1001)

Subsection 1058.02 in the Supplemental Specifications is void.

Paragraph 4.b.(5) in the Standard Specifications is void and superseded by the following:

(5) The bolt, nut, and washer assembly shall be assembled in a Skidmore-Wilhelm calibrator or an acceptable equivalent device. For bolts that are too short to be assembled in the calibrator, see Subsection 1058.03, Paragraph 4.b.(9).

ELASTOMERIC BEARINGS AND LAMINATED BEARING PADS (S10-5-0202)

Paragraph 2. of Subsection 1068.02 in the Standard Specifications is void and superseded by the following:

2. Certification shall be furnished in accordance with NDR's *Materials Sampling Guide*.

Paragraph 3. of Subsection 1068.02 is void.

STEEL BARS FOR CONCRETE REINFORCEMENT (S10-5-1201)

Section 1020 in the Standard Specifications is void and superseded by the following:

1020.01 - Description

Steel tie bars for longitudinal joint reinforcement in concrete pavements shall be epoxy coated and deformed Grade 40 or 60 billet steel as shown in the plans, specifications or Special Provisions.

1020.02 - Material Characteristics

1. Billet-steel bars shall conform to the requirements of ASTM A 615/A 615M.
2. Epoxy coatings shall conform to the requirements in Section 1021 of the Standard Specifications and Supplemental Specifications.

1020.03 - Acceptance Requirements

Acceptance shall be based on sampling, testing, and certification requirements in accordance with the NDR *Materials Sampling Guide*.

EPOXY COATED REINFORCING STEEL (S10-5-0403)

Table 1021.01 in Section 1021 of the Standard Specifications is void and superseded by the following:

Table 1021.01

Bend Test Requirements

English		Metric	
Bar No.	**Mandrel Diameter (inches)**	**Bar**	**Mandrel Diameter (millimeters)**
3	3	10	75
4	4	13	100
5	5	16	125
6	6	19	150
7	7	22	175
8	8	25	200
9	9	29	230
10	10	32	250
11	11	36	280
14	17	43	430
18	23	57	580

PERFORMANCE GRADED BINDER

Section 503 in the Standard Specifications and Supplemental Specifications is amended to include Performance Graded Binders.

I. Description:

The performance graded binder to be used on this project shall be PG Binder 70-28, supplied by a Certified Supplier.

Certified Supplier

A supplier must be certified by the Nebraska Department of Roads to be allowed to supply Performance Graded Binder in Nebraska. A certified supplier must be a participant in one or more of the following PG Binder groups.

1. AASHTO Materials Reference Laboratory (AMRL)
2. Western Cooperative Testing Group
3. Combined States Binder Group

The supplier must maintain and follow the requirements of the group or groups in which they participate in to maintain certification by the Nebraska Department of Roads. In addition, active participation is required to maintain certification by the Department. Active participation will include submitting of round robin samples results, along with meeting other requirements of the group or groups. Failure to do so will result in loss of certification by the Department.

A certified supplier may be asked to supply to the Department, past round robin results, laboratory inspection reports, reasons for and investigative reports on out lying results, quality control testing, and/or technician training and proficiency testing reports.

Supplier Certification

A supplier may request certification by contacting the Nebraska Department of Roads, Materials and Research Division, Flexible Pavement Engineer at (402) 479-4675. A temporary certification may be issued for a period of up to one year. Split sample testing will be required prior to receiving a temporary certification. Split sample testing will be done on all grades of binder that the supplier intends to supply during the temporary certification. The supplier will have up to one year to become certified by participating in and following the requirements of one or more of the approved binder groups.

A supplier may become certified through active participation in other binder certification/round robin groups that are approved by the Department. The Department may request from the supplier prior to approval, past or current round robin results, quality control testing, laboratory inspection reports, and/or technician training and proficiency testing reports.

II. Binder Sampling and Testing:

1. Lots. Each 3750 tons (3400 Mg) of HMA produced will be a binder lot.

2. A binder lot will include only one PG Binder grade or a blend as allowed in paragraph 6.e.

3. A Binder lot will only include one supplier of the PG Binder or a blend as allowed in paragraph 6.e.

4. Blending of different binder grades and binders from different suppliers will be allowed with restrictions as noted in paragraph 6.e. The Engineer must be notified of the intent to blend prior to actual blending.

5. All binders shall be sampled at the rate of one sample per lot with a minimum of three samples per project.

   a. The sample shall consist of two one-quart (liter) cans and shall be taken by the Contractor's Certified Sampling Technician, with assistance from or under supervision of NDR personnel. The sample shall be taken at the plant from the line between the storage tank and the mixer or from the tank supplying material to the line, at a location at which material sampled is representative of the material in the line to the mixer. One can will be tested for compliance with MP1 specifications and the other can portion will be saved for dispute resolution, if needed. The sampling process shall follow procedures of the NDR Materials Sampling Guide and NDR T 40.

   b. Testing. When the tested PG Binder is in compliance, the binder lot will be accepted and both cans of the sample can be discarded. If the tested PG Binder does not comply, then the price of the PG Binder lot represented by the sample shall be adjusted according to Table 1. Overall project average testing requirements and price adjustments will also apply, as stated in Table 2.

6. Material Requirements:

   a. Performance graded binder, as specified in the contract items shall be in accordance with AASHTO Designation MP1 and meet all minimum and maximum requirements.

   b. Substitution of a PG Binder, which exceeds the upper and lower grade designations from the specified, requires advance notification of the Engineer, and be documented by a no cost change order. The bill of lading or delivery ticket shall state the binder grade and specific gravity.

   c. Material Certification - A Material Certification shall be submitted prior to construction stating, the type of modifier being used, and the recommended mixing and compaction temperatures for the Hot Mix Asphalt.

   d. The Contractor shall receive from the supplier, instructions on the proper storage and handling of each grade and shipment of PG Binder.

   e. Blending of PG Binders at the hot mix plant site will be allowed only when transitioning to an asphalt mixture requiring a different grade of binder and with the following restrictions:

      (1) The resultant blend will meet MP-1 specifications when tested as ±3° of the specified PG binder. The sample of the blended material will 1) be considered as a lot sample, 2) will be taken during initial production following the blending of the binders, and 3) deductions when not meeting MP-1, will apply. On the blended sample's identification form will be a note explaining the blending conditions and a statement that the sample is a blend of materials. The next lot sample, following the sample representing the blend,

will be tested as the specified binder grade for the asphalt mixture being produced and shall meet MP-1 specifications.

(2) Modified Binders - When a type of modification is used and stated in the Material Certification as required in paragraph 6.c., it will not be allowed to be blended with a binder containing a different type of modification. Blending of the same type of modifiers will be allowed.

TABLE 1

SINGLE SAMPLE TOLERANCE AND PRICE REDUCTION TABLE		
	Price Reduction[1] Pay Factor of 0.75	**Determined by Engineer[2] Pay Factor of 0.50 or Removal**
Tests on Original Binder Dynamic Shear, G*/Sin δ, kPa	0.86-0.92	< 0.86
Tests on Rolling Thin Film Oven Residue Dynamic Shear, G*/Sin δ, kPa	1.76-1.97	< 1.76
Tests Pressure Aging Vessel Residue Dynamic Shear, G*Sin δ, kPa	5601-6200	> 6200
Creep Stiffness S, Mpa	325-348	> 348
m-value	0.270-0.284	< 0.270

NOTE: If more than one test fails to meet requirements, the largest individual price reduction (pay factor of 0.75 or 0.50) will be used to calculate price reduction for the asphalt binder.

[1]Price Reduction will be based on contract unit price of asphalt binder.

[2]The Engineer will determine if the non-compliant material will be removed. If the non-compliant material is accepted, a price reduction of 50% will be applied. The price reduction shall be based on the contract unit price of asphalt binder.

The pay factor will be applied to the quantity of material that the sample represents.

Overall Project Average - Price Reduction Based on Complete MP-1 Testing

Out of specification material will be determined by the specifications outlined in AASHTO MP-1, excluding Direct Tension.

The Nebraska Department of Roads, Materials and Research, Bituminous Laboratory will do complete testing, per MP-1 specifications, on a minimum of three samples or 20% of the total samples from the project, whichever is the greatest. The Department will randomly select one sample for complete MP-1 testing out of every five samples received. When any test result shows sample not meeting MP-1 specifications, the previous and following sample received will

be tested for complete MP-1 compliance. Testing will continue in this manner until tested samples meet all of MP-1 specifications.

Original Dynamic Shear Rheometer testing will be completed on all samples. When a sample being tested for only Original Dynamic Shear Rheometer compliance falls out of MP-1 specification, it will then be tested for complete MP-1 specification compliance. Adjacent samples will be tested when results, other than the Original Dynamic Shear Rheometer result, do not meet specification. This additional complete testing for MP-1 compliance is in addition to the minimum number of samples that will be tested for complete MP-1 compliance.

At the completion of testing, all complete MP-1 test results will be averaged. For averages that do not meet MP-1 specifications, the largest reduction shown in Table 2 will be applied to all the Performance Graded Binder used on the project.

Table 2

OVERALL PROJECT AVERAGE - PRICE REDUCTION TABLE		
	Range of Average	**Pay Factor Applied**
Tests on Original Binder Dynamic Shear, G*/Sin δ, kPa Min. 1.00 kPa	< 1.00 - 0.98 < 0.98 - 0.96 < 0.96 - 0.94 < 0.94	0.98 0.95 0.92 0.85
Tests on Rolling Thin Film Oven Residue Dynamic Shear, G*/Sin δ, kPa Min. 2.20 kPa	< 2.20 - 2.156 < 2.156 - 2.09 < 2.-09 - 2.024 < 2.024	0.98 0.95 0.92 0.85
Tests Pressure Aging Vessel Residue Dynamic Shear, G*Sin δ, kPa Max. 5000 kPa	< 5000 - 5100 < 5100 - 5250 < 5250 - 5400 < 5400	0.98 0.95 0.92 0.85
m-Value Min. 0.300	< 0.300 - 0.298 < 0.298 - 0.293 < 0.293 - 0.290 < 0.290	0.98 0.95 0.92 0.85
Creep Stiffness S, MPa Max. 300 MPa	< 300 - 306 < 306 - 315 < 315 - 324 < 324	0.98 0.95 0.92 0.85

Single Sample Reduction and Overall Project Average Reduction

A sample representing a lot, not meeting MP-1 Specification, will have a reduction for the material that the sample represents. Only the largest reduction from Table 1, will apply when more than one result of a single sample does not meet MP-1 specifications. Only the largest overall project average reduction from Table 2, will apply when more than one test average falls out of MP-1 specifications. Pay Factors based on both Table 1 and Table 2 test results are separate from each other and both will be applied.

Investigation of Verification Lot Samples That Do Not Meet Specifications

When the lot sample shows test results out of specification limits, the process of resolving the sample failure will include the following actions as appropriate:

1. The Bituminous Lab may conduct retesting of the remaining portion of the original can sample as determined necessary to confirm or disaffirm the original test result(s).

2. The Flexible Pavement Engineer will notify the Contractor who will arrange to investigate all aspects of the testing, loading, handling and delivery of the material in question. The Contractor shall report findings to the Central Laboratory, Flexible Pavement Engineer.

3. The Department will collect and compile all information and prepare a report. A copy of the report will be distributed to the District and the Contractor.

4. The Bituminous Laboratory will issue the standard report of tests for all samples tested, to include any resulting pay factor deductions. A copy of the report of tests will be distributed to the District, Construction Division, and Contractor.

Dispute Resolution

After testing and investigations have been completed on the one can of the sample and there is still a dispute, the Department will select an independent laboratory for referee testing to take place on the second can of the sample. If the independent lab's tests indicate failing results and pay deductions equal to or great than the Department's, the Contractor will reimburse the Department for the cost of testing. If the independent lab's tests indicate that the material meets specification or is at a pay deduction less than the Department's, the Department will assume the cost of testing. When the independent lab's tests indicate a pay deduction, the lesser of the Department's and the independent lab's deductions will be applied.

Basis of Measurement

PG Binder shall be measured in accordance with Subsection 503.05 in the Standard Specifications and Supplemental Specifications.

Basis of Payment:

Subsection 503.06 in the Standard Specifications and Supplemental Specifications is amended to provide that PG Binder, accepted by the Engineer for use in asphaltic concrete, will be paid for at the contract unit price per ton (Megagram) for the item "Performance Graded Binder _____", less any deductions as prescribed in the tolerance and price reduction tables.

ASPHALTIC CONCRETE TYPE OGFC

Description

Section 503 of the Standard Specifications is amended to include Asphaltic Concrete Type OGFC.

Section 1028 in the Supplemental Specifications is void and superceded by the following:

The Asphaltic Concrete Type OGFC is an open graded, 50-gyration Superpave mix design.

Paragraphs 3, 4, 5, 6 and 7 of Subsection 503.02 and paragraphs 5.c. (3), (4), (5), (6) and (7) of Subsection 503.04 of the Standard Specifications, are void.

In paragraphs 2.b.(1), 5.b., 5.c.(1) and 6. of Subsection 503.06 the following change shall take place:

Wherever it shows 2750 tons in the above paragraphs, it shall read 3750 tons instead.

Section 1028 of the Standard Specifications is void and superseded by the following:

1. a. Asphaltic Concrete Type OGFC is a Contractor-designed mix.

   b. The Contractor will be required to define properties using a Gyratory compactor that has met the AASHTO evaluation test procedures, during mix design and production.

2. a. Before production of asphaltic concrete, the Contractor shall submit, in writing, a tentative job mix formula for approval to the NDR Flexible Pavement Engineer at the Lincoln, Nebraska Central Laboratory.

   b. The job mix formula shall identify the mineral aggregates and mineral admixture with the value of the percent passing each specified sieve for the individual and blended materials.

      (1) Submitted with these samples shall be a copy of the Contractor's results for all mix design tests.

      (2) This mix design shall include at a minimum:

         (i) The bulk specific gravity of the blended aggregate. The bulk specific gravity shall be determined for the blend from an unwashed sample of the -#4 and a washed sample of the +#4 material in accordance with AASHTO T 84 and AASHTO T 85 respectively.

         (ii) The target PG Binder content.

         (iii) The percent, grade and source of the PG Binder.

         (iv) The maximum specific gravity of the combined mixture (Rice).

(v) The average bulk specific gravity and air voids of the 50 gyration specimens. The gravity will be determined by use of the Corelock™ method. The Contractor shall submit 3 compacted specimens to the NDR Lincoln Nebraska Central Laboratory for Bulk Specific Gravity testing.

(vi) The percent of draindown from test ASTM D 6390

(vii) Fine Aggregate Angularity (FAA), Coarse Aggregate Angularity (CAA), Flat and Elongated Particles and Clay Content of the aggregate blend.

(viii) Location description and/or legal descriptions and producers of materials used in the mix.

c. Before the mix design is approved, the Materials and Research Laboratory shall verify all properties.

3. Quality Control Program:

a. The Contractor shall establish, provide, and maintain an effective Quality Control (QC) Program. The QC Program shall detail the methods and procedures that will be taken to assure that all materials and completed construction conforms to all contract requirements.

b. Although guidelines are established and certain minimum requirements are specified herein and elsewhere in the contract, the Contractor shall assume full responsibility for placing a pavement course that meets the target field values.

c. The Contractor shall establish a necessary level of control that will:

(1) Adequately provide for the production of acceptable quality materials.

(2) Provide sufficient information to assure both the Contractor and the Engineer that the specification requirements can be met.

(3) Allow the Contractor as much latitude as possible in developing control standards.

d. (1) The Contractor shall develop and provide the Engineer a copy of the QC Program no less than 10 NDR working days prior to the preconstruction conference or no less than 10 NDR working days prior to beginning production of project materials.

(2) The Contractor shall not begin any construction or production of materials until the Engineer has approved the QC Program.

e. The QC Program shall address, as a minimum, the following items:

(1) QC organization chart.

(2) The mix design.

(3) Submittals schedule.

(4) Inspection requirements.

(i) Equipment.

(ii) Asphaltic concrete production.

(iii) Asphaltic concrete placement.

(5) QC testing plan.

(6) Documentation of QC activities.

(7) Requirements for corrective action when QC and/or acceptance criteria are not met.

(8) Any additional elements deemed necessary.

(9) A list, with the name and manufacturer's model number, for all test equipment used during laboratory testing.

(10) A description of maintenance and calibration procedures, including the frequency that the procedures are performed.

f. The QC organization chart shall consist of the following personnel:

(1) A Program Administrator:

(i) The Program Administrator shall be a full-time employee of the Contractor or a Subcontractor (Consultant) hired by the Contractor.

(ii) The Program Administrator shall have a minimum of 5 years experience in highway construction.

(iii) The Program Administrator need not be on the job site at all times but shall have full authority to institute any and all actions necessary for the successful implementation of the QC Program.

(iv) The Program Administrator's qualifications and training shall be described in the QC Program.

(2) One or more Quality Control Technicians:

(i) The quality control technicians shall report directly to the Program Administrator and shall perform all QC tests as required by the contract.

(ii) The QC technicians shall be qualified by the NDR Materials and Research Division.

(iii) Qualification at an equivalent level by a state or nationally recognized organization may be acceptable.

(iv) The QC technician's credentials and NDR training records shall be submitted to the NDR Materials and Research Division.

(v) The Contractor may have a non-qualified technician working under the direct supervision of a qualified technician for no more than one construction season.

g. (1) Inspections shall be performed daily to ensure continuing compliance with contract requirements until completion of the work.

(2) QC test results and periodic inspections shall be used to ensure the mix quality and to adjust and control mix proportioning.

h. QC Testing Plan:

(1) The testing plan shall include the NDR statistically based procedure of random sampling for acquiring test samples.

(2) The Contractor may add any tests necessary to adequately control production.

(3) All QC test results shall be documented by the Contractor with a copy provided to the Engineer within 1 week after the tests are complete. Daily review by the Engineer will be allowed if requested.

(4) Copies of all forms to be used shall be included in the QC Testing Plan.

i. Corrective Action Requirements:

(1) The Contractor shall establish and utilize QC charts for individual QC tests. The requirements for corrective action shall be linked to the control charts.

(2) The Contractor's QC Program shall detail how the results of QC inspections and tests will be used to determine the need for corrective action.

(3) (i) A clear set of rules to determine when a process is out of control and the type of correction to be taken to regain process control will be provided.

(ii) As a minimum, the plan shall address the corrective actions that will be taken when measurements of the following items or conditions approach the specification limits:

(I) Plant produced mix gradations at laydown.

(II) PG Binder content.

(III) Air voids.

(IV) FAA AASHTO T 304
CAA ASTM D 5821

(iii) Corrective actions that will be taken when the following conditions occur:

(I) Rutting

(II) Segregation

(III) Surface voids

(IV) Draindown occurs

(V) Flushing of Binder occurs

Material Characteristics

1. Aggregates and Mineral Filler:

a. Aggregates for use in asphaltic concrete shall be tested on an individual basis.

b. Asphaltic Concrete Type OGFC shall contain a minimum of 75 percent quartzite.

c. Crushed rock material for use in asphaltic concrete, 1/4 inch down, screenings and manufactured sand shall have a Sodium Sulfate loss of not more than 12 percent by mass at the end of 5 cycles. One 20-lb. sample shall be taken by NDR personnel at the project for every 5,000 tons of aggregate used, with a minimum of one per project for quality testing.

d. Quartzite, granite, and chat shall conform to the requirements of Subsection 1033.02, Paragraph 4.a.(8). One 60-lb. sample shall be taken by NDR personnel at the project every 3,000 tons of aggregate used, with a minimum of one per project for quality testing.

e. Crushed rock (Limestone) and Dolomite shall conform to the requirements of Subsection 1033.02, Paragraph 4.a.(4), (5), and (6). Sampling size and frequency shall adhere to the Current NDR Materials Sampling Guide.

f. Amend Paragraph 4.a.(7) of Subsection 1033.02 to provide that soundness tests shall not be required for fine sand.

g. Amend Subsection 1033.02 to provide that once the satisfactory quality of aggregates from a source has been established, sufficient additional soundness tests will be performed to insure the continued satisfactory quality of the material.

h. The coarse angularity value of the blended aggregate material shall meet or exceed a minimum value of 95% for one or more fractured faces and 90% for two fractured faces.

i. The fine aggregate angularity value of the blended aggregate material from the fine and coarse aggregates shall meet or exceed a minimum value of 45.0.

Note: The specific gravity for calculation of the Fine Aggregate Angularity (FAA) shall be based on material passing the No. 8 sieve and retained on the No. 100 sieve.

j. The coarse aggregate shall not contain flat and elongated particles exceeding a maximum value of 10. Criterion based on a 5:1 maximum to minimum ratio.

k. The clay content of the blended aggregate material from the fine and coarse aggregates shall meet or exceed a minimum value of 55.

l. Mineral admixture will be required. The amount shall be 1.0 percent, by weight of the mineral aggregate, and shall be either Portland Cement Type II or hydrated lime, conforming to ASTM C 150 or ASTM C 1097, respectively.

m. When draindown test results (ASTM D 6390) are greater than 0.3 percent the Contractor will be required to select either a cellulose fiber (typically 0.3 percent by mix mass) or a mineral fiber (typically 0.4 percent by mix mass) and determine the percent needed in order to meet the draindown specification.

n. The blended aggregate shall conform to the gradation requirements specified below.

Table 1
GRADATION CONTROL POINTS
(without Mineral Admixture)

	Control Points (percent passing)	
Sieve	Minimum	Maximum
3/4 inch	100	
1/2 inch	90	100
3/8 inch	40	80
No. 4	15	30
No. 8	5	15
No. 200	2	8

2. Volumetric Mix Design

a. The job mix formula shall be determined from a mix design for each mixture. A volumetric mixture design in accordance with NDR T245, will be required. However, the mixture for the gyratory specimens and maximum specific gravity mixture shall be short-term aged for two hours, in accordance with AASHTO R 30.

b. The design shall have at least four points, including a minimum of two points above and one point below the optimum PG Binder content. The amount of uncompacted mixture shall be determined in accordance with AASHTO T 209.

c. Changes in the types or sources of aggregates shall require a new job mix formula and mix design. The new proposed job mix formula shall be in accordance with the requirements as stated above and submitted 5 working days prior to use for approval.

d. Draindown

(1) A draindown test is required on the loose mix at a temperature 59° Fahrenheit (15° Celsius) higher than the anticipated production temperature using ASTM D 6390. A maximum draindown of 0.3 percent by mass of the total mix is required.

(2) The fiber stabilizing additive, if required, should be added to the heated aggregate prior to the introduction of the PG Binder. The fiber will be dry mixed thoroughly with the heated aggregate. This procedure is needed to ensure an even distribution of the stabilizing additive during the laboratory mixing process. Slightly longer mixing times may be required due to the increased surface area added by the fiber and or the stiffening effect of the polymer.

(3) Form a crater in the dry blended aggregate and stabilizing additive and add the required amount of PG Binder. Care shall be exercised to prevent the loss of the mix during subsequent handling. At this point, the aggregate and binder shall be at the recommended mixing temperature. Mix the aggregate and binder rapidly until thoroughly coated.

e. Design Criteria:

(1) The design criteria for each mixture shall meet the requirements as follows.

Table 2

Mix Criteria	Requirement
Air Voids, %	18 ± 1
% Binder.	5.8 to 6.8

3. The Contractor shall make Mix adjustments when:

a. Air voids, FAA, CAA or PG Binder content do not meet the currently approved criteria.

b. Surface voids create a surface and/or texture which does not meet the criteria of Sections 502 and 503 of the Standard Specifications.

c. Pavement does not meet any other design criteria.

d. Rutting occurs.

e. Draindown occurs.

f. Flushing of Binder occurs.

4. Mix adjustments at the plant are authorized within the limits shown in Table 15 without redesigning the initially approved mix:

a. The adjustment must produce a mix with the percent air voids required.

b. All adjustments must be reported to the Engineer.

Table 3

Aggregate Adjustments	
Sieve Size	**Adjustments**
1 inch, 3/4 inch, 1/2 inch, 3/8 inch	± 6%
No. 8, No. 16, No. 30, No. 50.....	± 4%
No. 200	± 2%

c. The adjustment values in Table 3 will be the tolerances allowed for adjustments from the NDR verified mix design “Combined Gradation” target values which resulted from production or mix design adjustments.

5. Sampling and Testing:

a. The Contractor shall take samples at locations identified by the Engineer, according to the NDR statistically based procedure. The samples shall be approximately 75 pounds, transported to the test facility in an insulated container and split according to NDR T 248.

b. All samples and companion samples within a Lot shall be identified, stored, and retained by the Contractor until the NDR has completed the verification testing process.

c. (1) The sample shall be taken from the roadway, behind the paver before compaction.

(2) At least one QC sample shall be tested for every 750 tons of plant produced mix.

(i) If, at the completion of the project, the final lot consists of less than 3,750 tons of asphaltic concrete, 1 sample for each 750 tons or fraction thereof, shall be taken and tested.

(3) Additional sampling and testing for the Contractor's information may be performed at the Contractor's discretion. Any additional testing will not be used in pay factor determination.

(4) At the project start-up and when a substantial aggregate proportion or other major mix change has been made, at least 1 sample shall be taken from the first 300 tons of production.

(5) At least one CAA and FAA sample shall be taken and tested daily by the Contractor. The FAA and CAA may be sampled from the blended cold feed material but in addition, the Contractor will be required to test FAA and CAA from a roadway sample using an ignition oven sample for correlation. If the coarse portion of the blend is all ledge rock the CAA tests can be waived.

(6) The use of RAP material will not be allowed.

d. Samples should not be taken from the first 110 tons of mix produced or after a significant mix change.

e. The sample shall be compacted immediately while still hot (additional heating may be required to raise the temperature of the sample to compaction temperature).

f. Each QC sample shall be tested as follows:

(1) A Superpave gyratory sample will be compacted for each QC sample taken.

(2) (i) Bulk Specific Gravity (Gmb) shall be determined for each specimen in accordance using the Corelock™ method at the Lincoln Nebraska Central Laboratory.

(ii) The 3 specimen results are averaged for each sample.

(iii) If an individual specimen result deviates by more than 0.02 from the average of the 3 specimens, that result shall be thrown out and the remaining 2 results shall be averaged.

(iv) At the Contractors request, upon evidence that the 3 Bulk Specific Gravity specimens are exhibiting consistency in their results, the Materials and Research Laboratory may reduce the number of specimens to 2.

(3) One Theoretical Maximum Specific Gravity (Gmm) test for each production sample of uncompacted mixture shall be determined in accordance with NDR T 209 - Maximum Specific Gravity of Bituminous Paving Mixtures.

(4) (i) The Blended Aggregate Bulk Specific Gravity (Gsb) shall be determined from the individual aggregate component bulk specific gravities.

(ii) AASHTO T 84 - Specific Gravity and Absorption of Fine Aggregate.

(iii) AASHTO T 85 - Specific Gravity and Absorption of Coarse Aggregate.

Table 4

$$Gsb = \frac{P1 + P2 + P3 + P4 + Pn}{\frac{P1}{G1} + \frac{P2}{G2} + \frac{P3}{G3} + \frac{P4}{G4} + \frac{Pn}{Gn}}$$

P1, P2.....Pn = Mass or percentages of aggregates

G1, G2.....Gn = Bulk specific gravities of individual aggregate components.

NOTE: Gsb need not be recomputed for each production sample, but only after a significant aggregate proportion change.

(5) The laboratory volumetrics shall be determined in accordance with the following:

Table 5

$\%Gmm = 100 \times (Gmb \div Gmm)$

$\%\ Air\ Voids = 100 - \%Gmm$

(6) (i) The percent of PG Binder shall be determined by ignition oven on roadway samples. Production of Asphaltic concrete shall cease immediately if the plant and ignition oven results vary by an amount greater than 0.5% from the verified mix design.

(6) (ii) The gradations shall be determined for each QC test using AASHTO T 30.

(7) Except as noted in this Subsection, all sampling and testing shall be done as prescribed in the NDR *Materials Sampling Guide*.

g. Testing Documentation:

(1) All test results and calculations shall be recorded and documented on data sheets using the latest version of NDOR provided "Superpave" software. A copy containing complete project documentation will be provided to the Materials and Research Division at the completion of the project.

(2) Specific test results shall be recorded on a daily summary sheet provided by the NDR to facilitate the computation of moving test averages.

h. QC Charts:

(1) QC charts shall be posted at the asphalt production site and kept current with both individual test results and moving average values for review by the Engineer.

(2) Control charts shall include a target value and specification limits.

(3) As a minimum, the following values shall be plotted or reported on NDR provided forms as indicated below:

(i) Laboratory Gyratory density (each point being an average of 3 specimens) will be reported.

(ii) Ignition oven or cold feed aggregate gradations for the 3/4", 1/2", 3/8", & Nos. 4,8,16,30,50,100,200 sieves will be reported.

(iii) PG Binder content shall be plotted to the nearest 0.1 percent by ignition oven results in accordance with AASHTO T 308.

(iv) The theoretical maximum specific gravity (Rice) to the nearest 0.001 percent will be reported.

(v) Laboratory Gyratory air voids shall be plotted to nearest 0.1 percent.

(vi) FAA and CAA of the asphaltic concrete for both the blended cold feed and ignition oven samples will be reported to the nearest 0.1 percent.

i. Independent Assurance (IA) Review of Testing:

(1) The Contractor will allow NDR personnel access to their laboratory to conduct IA review of technician testing procedures. Any deficiencies discover in testing procedures will be noted and corrected.

(2) During an IA review, NDR personnel and the Contractor will split a sample for the purpose of IA testing. The sample(s) selected will be tested in the NDR Branch Laboratory. Any IA test results found to be outside of defined testing tolerances will be noted and further review by the Contractor of their testing apparatus will be conducted and corrected.

(3) Testing Tolerances

a. Asphaltic Concrete and Asphaltic Concrete Aggregates

	Tolerance
a. Asphalt Content by ignition oven	0.5%
b. Gyratory Density	0.020
c. Maximum Specific Gravity	0.015
d. Bulk Dry Specific Gravity (For Mix Design)	0.028
e. FAA	0.50%
f. CAA	10.0%

b. Aggregate Gradation (Blended Aggregate)

Size Fraction Between Consecutive Sieves, %	**Tolerances**
0.0 to 3.0	2.0%
3.1 to 10.0	3.0%
10.1 to 20.0	5.0%
20.1 to 30.0	6.0%
30.1 to 40.0	7.0%
40.1 to 50.0	9.0%

6. a. In response to QC tests results, the Contractor shall notify the Engineer whenever the process approaches Specification limits.

b. Two consecutive test results outside Specification limits shall be cause to cease operations.

c. The Contractor shall assume the responsibility to cease operations.

d. The process shall not be started again without approval of the Engineer.

g. Failure to cease operations after 2 consecutive test results fall outside the Specification limits shall subject all subsequent material to be rejected.

7. Verification Sampling and Testing:

   a. The NDR will select and test at random one of the sublot samples (750 tons) within a Lot (3750 tons) for acceptance and report results in a timely manner.

   b. The results of Contractor QC testing will be verified by NDR verification tests. On any given Lot, if the results of Air Void verification testing and its companion QC testing are within 1.4 percent or less, the Air Void verification for the entire Lot is complete. If the Air Void verification test results and the companion QC test results are outside the above tolerance, the results from the verification test will be used to determine acceptance for that sublot. Any or all of the remaining four NDR sublot samples may be tested and the NDR sublot test results may be used to determine acceptance. The Engineer may stop production until a review of Contractor test procedures is conducted and any deficiencies found are corrected.

   c. When verification test results show a consistent pattern of deviation from the QC results, the Engineer may cease production and request additional verification testing or initiate a complete IA review.

   d. If the project personnel and the Contractor cannot reach agreement on the accuracy of the test results, the Materials and Research Laboratory will be asked to resolve the dispute, which will be final.

8. Asphaltic Concrete Air Voids

   a. Normally, 1 sample for testing will be taken from each sublot (750 tons) at locations determined by the Engineer.

   b. Air voids shall be 18% ± 1%.

9. Asphalt Concrete Density Samples:

   a. Normally, 1 sample for testing will be taken from each sublot (750 tons) at locations determined by the Engineer.

   b. Density tests will be performed by the Contractor under direct observation of NDR personnel. Density will be monitored by a nuclear gauge to maximize in place density without damaging aggregate.

10. Asphalt Mix Control Strip

   a. In paragraphs 2.a. and 2.h. of Subsection 503.04 the following change shall take place.

      Wherever it shows 440 tons in the above paragraphs it shall read 500 tons instead.

   b. Paragraph 2.b. (1) of Subsection 503.04 is void and superseded by the following:

The Contractor shall take at least 4 control strip mixture samples and evaluate the air voids and the PG Binder content.

c. Paragraph 2.b. (2) of Subsection 503.04 is void and superseded by the following:

Random sampling shall be taken, and the air voids shall be between the values shown in section 8.

Table 6
CONTROL STRIP SAMPLING

Sample #	Tons	Air Voids
1	0 to 125	16.0 to 20.0
2	125 to 250	17.0 to 20.0
3	250 to 375	18.0 to 20.0
4	375 to 500	18.0 to 20.0

d. Paragraph 2.b. (4) of Subsection 503.04 is void and superseded by the following:

The tests results must fall within the specified tolerances, but if subsequent tests continue a trend toward the target values specified, the department may tentatively accept the control strip with assurance from the contractor that any further adjustments will be made in an effort to attain and then maintain target specifications.

11. Contractor's Lab Equipment:

a. The Contractor shall calibrate and correlate the testing equipment according to the procedures prescribed for the individual tests and conduct tests in conformance with specified testing procedures.

b. The Contractor shall have the following equipment (or approved equal) at or near the project location:

(1) An AASHTO approved Gyratory Compactor and molds.

(2) An AASHTO approved Asphalt Content Ignition Oven.

(3) Rice equipment

(4) FAA equipment

(5) To test density of compacted asphaltic concrete, a minimum 6000 gm balance, 0.1 gm resolution, with under body connect and water container large enough to conveniently place specimen in the basket and completely submerge the basket and specimen without touching the sides or bottom is required.

(6) QC Laboratory (suggested size 8 ft. x 45 ft.) which contain the following:

Air conditioner.
Dedicated phone (where available).
FAX machine.
Xerox type copy machine.
Sample storage.
Work table.
Bulletin board.
Running water.
Desk and chair.
Separate power supply.
Incidental spoons, trowels, pans, pails.

(7) Oven, 347°F minimum, sensitive ±5°F.

(8) USA Standard Series Sieves for coarse and fine aggregate with appropriate shakers (12 inch recommended).

(9) Color printer and personal computer capable of running the latest version of NDOR provided “Superpave” software.

General Requirements

1. Mineral Admixture Proportioning, Bag House Fines, and Production

   a. The aggregates to be mixed with the mineral admixture must be damp prior to mixing.

   b. The mineral admixture shall be added and thoroughly mixed by means of a mechanical mixing device prior to the mixture entering the drum drier. The mineral admixture shall be weighed across a weigh belt or an approved alternative weighing system, with a weight totalizer prior to entry into the mechanical mixing device. The mechanical mixing device shall be a pugmill type mixer consisting of at least two motorized shafts with mixing paddles. The mixing device shall be designed such that the mixture of aggregate and admixture is moved in a near horizontal direction by the mixing paddles without the aid of conveyor belts for a distance of at least three feet. Mixing devices which permit the mixture of aggregate and admixture to fall through mixing blades onto a belt or chute are not acceptable. The mixing device’s rated capacity in tons per hour shall not be exceeded by the rate of material feed to the mixer. The mixer shall be constructed to prevent the leakage of the contents. The mixer shall be located in the system at a location where the mixed material can be readily inspected on a belt prior to entry into the drum. The mixing device shall be capable of effective mixing in the full range of asphaltic concrete production rates.

   c. A positive signal system and a limit switch device shall be installed in the plant at the point of introduction of the admixture. The positive signal system shall be placed between the metering device and the drum drier,

and utilized during production whereby the mixing shall automatically be stopped if the admixture is not being introduced into the mixture.

d. The Contractor will have the option of premixing the mineral admixture in stockpiles. If this option is chosen, the Contractor will only be required to premix aggregates other than limestone.

e. The moisture content of the Asphaltic Concrete shall not exceed 0.5 percent. Drying and heating shall be accomplished in such a manner as to preclude the mineral aggregate from becoming coated with fuel oil or carbon. The production of the plant shall be governed by the rate required to obtain a thorough and uniform mixture of the materials.

2. Placing and Finishing

a. Asphaltic Concrete shall be placed only when the temperature of the surface on which it is to be placed is at least 65 degrees F and the ambient temperature is at least 65 degrees F and rising.

b. In order to achieve, as far as practical, a continuous operation, the speed of the paving machine shall be coordinated with the production of the plant. If the paving machine is stopped for more than three minutes, or there is three minute or longer interval between the completion of delivery by one truck and the beginning of delivery by the next truck, the paving machine shall be pulled away from the mat in order for the rollers to compact this area in accordance with the temperature limitations given hereinafter.

c. The temperature of the asphaltic concrete just prior to compaction shall be at least 275 °F.

d. The wheels of compactors shall be wetted with water, or if necessary soapy water, or an approved product by the Engineer to prevent the asphaltic concrete from sticking to the steel wheels during rolling.

e. A minimum of two steel wheel compactors shall be provided, however, sufficient compactors must be provided to cover the entire width of the paving machine on the initial forward pass while a static compactor remains to complete the final rolling.

f. The compactors shall weigh no less than eight tons.

g. Static wheel compactors, or vibratory compactors in the static mode, shall be used for all compaction. Initial breakdown rollers shall be maintained no more than 300 feet behind the paving machine. As many passes as are possible shall be made with the compactors before the temperature of the Asphaltic concrete falls below 240 °F.

Method of Measurement:

Asphaltic Concrete Type OGFC shall be measured for payment in tons at the contract unit price for the item “Asphaltic Concrete Type OGFC.

Basis of Payment:

1. Paragraphs 2.a., 2.b.(1), 2.b.(2) and 2.b.(3) of Subsection 503.06 are void and superseded by the following:

    a. Asphaltic Concrete Type OGFC shall be paid at the contract unit price per ton for the item “Asphaltic Concrete Type OGFC”.

PROPOSAL GUARANTY
(S1-38-0801)

As an evidence of good faith in submitting a proposal for this work or for any portion thereof as provided in the proposal form, the bidder must file with his proposal a bid bond, which must be executed on the Department of Roads' Bid Bond form, in the amount of 5 percent of the amount bid for any group of items or collection of groups for which the bid is submitted. Any alterations, conditions or limitations added to the Department of Roads' Bid Bond form will be unacceptable and cause the bid not to be opened and read.

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