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Connecting South Dakota and the Nation

DEPARTMENT OF TRANSPORTATION

NOTICE TO CONTRACTORS,

PROPOSAL, SPECIAL PROVISIONS,

CONTRACT AND CONTRACT BOND

FOR

EPOXY CHIP SEAL, COLD MILLING ASPHALT CONCRETE, ASPHALT CONCRETE RESURFACING, & PIPE REPAIR

FEDERAL PROJECT NO. P 0073(68)0, P 0073(65)9
(PCN 04E1, 03AA)

SD HIGHWAY 73

IN BENNETT COUNTY

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.

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PLANS, PROPOSALS AND ADDENDA

AFTER AWARD OF CONTRACT, THE LOW BIDDER WILL RECEIVE TEN (10) COMPLIMENTARY SETS OF PLANS, PROPOSALS, AND ADDENDA FOR FIELD AND OFFICE USE. AN ELECTRONIC COPY WILL ALSO BE PROVIDED. ANY ADDITIONAL COPIES REQUIRED WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.

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Project Number: P 0073(68)0, P 0073(65)9

Revised 5/15/14
PCN 04E1, 03AA

NOTICE TO CONTRACTORS

Electronic Bids for this project will be received by the South Dakota Department of Transportation (SDDOT) via the SDDOT secure bid submission site at http://apps.sd.gov/hc65bidletting/bidsubmittallogin.aspx until 10 A.M. Central time, on February 18, 2015, at which time the SDDOT will open bids. All bids will be checked for qualifications with results posted on the SDDOT website. The South Dakota Transportation Commission will consider all bids at a scheduled Commission meeting.

The work for which proposals are hereby requested is to be completed: **ON OR BEFORE NOVEMBER 13, 2015.**

Construction Schedule: The project category is Category II
The project type is Surfacing
The geographic zone is Zone 4

The DBE goal for this project is: **NOT SPECIFIED.**

Work Type for this project is: **Work Type 5.**

All proposals shall be prepared and submitted accordance with the Special Provision of Electronic Bidding Requirements. Any proposal otherwise submitted will be deemed informal, irregular and not subject to or worthy of consideration in the award of the contract.

Plans and the proposal package for the work may be obtained at:
http://apps.sd.gov/hc65bidletting/ebslettings1.aspx

An electronic version of the most recent version of the South Dakota Standard Specifications for Roads and Bridges may be obtained at http://www.sddot.com/business/contractors/specs/Default.aspx

The electronic bid proposal must be submitted by a valid bidder as designated on the Bidding Authorization Form. The Bidder ID and Password, coupled with a previously Department assigned Company ID, will serve as authentication that an individual is a valid bidder and will assure the secure electronic delivery of bid proposals to the Department. This authorization shall remain in full force and effect until written notice of termination of this authorization is sent by an Officer of the company and received by the Department.

No proposal will be considered unless a guaranty in amount of five percent of the total amount of the bid is secured by the Contractor and received by the Department with the bid or prior to opening of the bids. Satisfactory proposal guaranties include certified checks, cashier's checks, bank drafts issued upon a National or State Bank, or a bid bond issued in accordance with the laws of South Dakota. If electronic bid bonds are used, the Contractor is required to submit the bid bond identification number with the Contractor's bid. Unless otherwise specified in the proposal book, the proposal guaranty shall be made payable at sight to the Department of Transportation, State of South Dakota.

The South Dakota Transportation Commission reserves the right to reject any or all Proposals.

PROPOSAL Revised 8/10/11

SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION, STATE OF SOUTH DAKOTA:

Ladies / Gentlemen:

The following proposal is made on behalf of the undersigned and no others. It is in all respects fair and is made without collusion on the part of any other person, firm or corporation not appearing in the signature to this proposal.

The undersigned certifies that she / he has carefully examined the plans listed herein, the Specifications hereinbefore referred to, the Special Provisions and the form of contract, both of which are attached hereto. The undersigned further certifies that she / he has personally inspected the actual location of the work, together with the local sources of supply and that she / he understands the conditions under which the work is to be performed, or, that if she / he has not so inspected the actual location of the work, that she / he waives all right to plea any misunderstanding regarding the location of the work or the conditions peculiar to the same.

On the basis of the plans, Specifications, Special Provisions and form of contract proposed for use, the undersigned proposes to furnish all necessary machinery, tools, apparatus and other means of construction, to do all the work and furnish all the materials in the manner specified, to finish the entire project **ON OR BEFORE NOVEMBER 13, 2015** and to accept as full compensation therefore the amount of the summation of the products of the actual quantities, as finally determined, multiplied by the unit prices bid.

The undersigned understands that the quantities as shown in the Bid Schedule are subject to increase or decrease, and hereby proposes to perform all quantities of work, as increased or decreased, in accordance with the provisions of the specifications, and subject to any applicable special provisions, and at the unit prices bid.

The undersigned understands that the "Total or Gross Amount Bid" as immediately hereinbefore set forth is not the final amount which will be paid if this proposal is accepted and the work done, but that such amount is computed for the purpose of comparison of the bids submitted and the determination of the amount of the contract bond.

The undersigned further proposes to perform all extra work that may be required on the basis provided in the specifications, and to give such work personal attention in order to see that it is economically performed.

The undersigned further proposes to both execute the contract agreement and to furnish a satisfactory contract bond, in accordance with the terms of the specifications, within twenty (20) days after the receipt of notice from the South Dakota Department of Transportation that this proposal has been accepted.

CERTIFICATION REGARDING LOBBYING

I certify, to the best of my knowledge and belief, that: No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of a Federal contract, grant, loan, or cooperative agreement. If any funds other than Federal appropriated funds have been paid or will be paid to any of the above mentioned parties, the undersigned shall complete and submit Standard Form LLL, “Disclosure Form to Report Lobbying,” in accordance with its instructions.

The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty or not less than $10,000 and not more than $100,000 for each such failure.

REV. 12/19/13

SPECIAL PROVISIONS

PROJECT NUMBER(S): P 0073(68)0, P 0073(65)9 PCN: 04E1, 03AA

TYPE OF WORK: EPOXY CHIP SEAL, COLD MILLING ASPHALT CONCRETE, ASPHALT CONCRETE RESURFACING, & PIPE REPAIR

COUNTY: BENNETT

The following clauses have been prepared subsequent to the Standard Specifications for Roads and Bridges and refer only to the above described improvement, for which the following Proposal is made. In case of any discrepancy or conflict between said specifications and these Special Provisions, the latter are to govern.

The Contractor's attention is directed to the need for securing from the Department of Environment & Natural Resources, Foss Building, Pierre, South Dakota, permission to remove water from public sources (lakes, rivers, streams, etc.). The Contractor should make his request as early as possible after receiving his contract, and insofar as possible at least 30 days prior to the date that the water is to be used.

Penny Kutz is the official in charge of the Pine Ridge Career Center for Bennett County.

THE FOLLOWING ITEMS ARE INCLUDED IN THIS PROPOSAL FORM:

Special Provision for Prosecution and Progress, dated 1/20/15.

Special Provision for Contractor Staking, dated 1/15/15.

Special Provision for On-The-Job Training Program, dated 7/10/12.

Special Provision for Gyratory Controlled Quality Control/Quality Assurance Specifications for Hot Mixed Asphalt Concrete Pavement, dated 9/27/13.

Special Provision for Flexible Pavement Smoothness, dated 11/22/10.

Special Provision for Two Coat Bridge Deck Epoxy Chip Seal, dated 7/14/14.

Special Provision for Contractor Administered Preconstruction Meeting, dated 4/18/13.
Special Provision for Electronic Bidding Requirements, dated 12/18/13.
Special Provision for Fuel Cost Adjustment, dated 7/13/06.
Special Provision for Differing Site Conditions, dated 12/19/13.
Special Provision for Suspension of Work, dated 2/13/04.
Standard Title VI Assurance, dated 7/14/08.
Special Provision For Disadvantaged Business Enterprise, dated 12/19/12.
Special Provision For EEO Affirmative Action Requirements on Federal and Federal-aid Construction Contracts, dated 9/1/97.
Special Provision For Required Contract Provisions Federal-aid Construction Contracts, Form

FHWA 1273 (Rev. May/1/12), dated 4/30/13.
Required Contract Provisions Federal-aid Construction Contracts, Form
FHWA 1273 (Rev. 5/1/12).
Special Provision Regarding Minimum Wage on Federal-Aid Projects, dated 4/30/13.
Wage and Hour Division US Department of Labor Washington DC.
- US Dept. of Labor Decision Number SD100010, dated 8/30/13.
Supplemental Specification for Errata, dated 3/3/10.
Supplemental Specification to Standard Specifications for Roads and Bridges, dated 3/3/10.
Special Provision for Price Schedule for Miscellaneous Items, dated 9/26/13.

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STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
PROSECUTION AND PROGRESS

JANUARY 20, 2015

Delete Section 8.3 of the specifications and replace with the following:

8.3 PROSECUTION AND PROGRESS - The Contractor will include the proposed starting date with the signed contract.

The Contractor will provide sufficient materials, equipment, and labor to complete the project within the contract time set forth within the contract.

Should the Contractor discontinue the work for any reason, the Contractor will provide at least a 24-hour notice to the Engineer prior to resuming operations.

A Construction Schedule is required. The project category, project type, and project geographic zone are defined in the Notice to Contractors.

This work consists of scheduling and monitoring all construction work activities. The Construction Schedule is an integral part of the project. The Construction Schedule is used as a resource for both the Department and the Contractor to monitor work progress. The Contractor will ensure operations are conducted such that the Construction Schedule is adhered to by all contracting parties involved regardless of the amount of work subcontracted. The Contractor will ensure the Construction Schedule meets specified interim and overall contract completion dates for all scheduled work activities.

A. Project Categories:

1. **Category I:** Represents the lowest level of the project ranking system with simple, low risk, short duration projects with minimal impacts on traffic.

   a. Types of projects typically include, but are not limited to, asphalt surface treatments, crack seals, rumble strip installation, bridge deck overlays, and other minor repair projects.

   b. Construction schedule requirements for Category I projects are Written Narrative (WN), Bar Chart Method (BCM), Critical Path Method (CPM), or Linear Schedule Method (LSM).

2. **Category II:** Represents the medium level of the project ranking system with slightly complex projects that typically involve a limited number of linear, repetitive operations with typical project constraints and some traffic impact.

   a. Types of projects typically include, but are not limited to, asphalt concrete resurfacing, grading, shoulder widening, bridge replacement, concrete pavement repair, and major bridge repair projects.

   b. Construction schedule requirements for Category II projects are Bar Chart Method (BCM), Critical Path Method (CPM), or Linear Schedule Method (LSM).

3. **Category III:** Represents the highest level of project ranking system with complex, high risk projects with major impacts on traffic. These projects may last for more than one construction season.

   a. Types of projects typically include, but are not limited to, urban reconstruction, interstate interchanges, and interstate reconstruction.

   b. Construction schedule requirements for Category III projects are Critical Path Method (CPM) or Linear Schedule Method (LSM).

B. General:

The following will apply to all scheduling methods:

1. Startup and Construction Schedules

The Contractor will submit a Startup Schedule or Construction Schedule prior to the scheduling of the preconstruction meeting. For Category II or III projects, the Contractor may submit a Startup Schedule that contains a detailed breakdown of all work activities for the first 30 working days from start of work. The Startup Schedule must meet the requirements of the BCM at a minimum.

If the Contractor elects to submit a Startup Schedule, the Contractor will schedule a joint construction scheduling meeting between the Department and the Contractor at the time of submitting the Startup Schedule. The Contractor and Department will review the Startup Schedule and the proposed Construction Schedule and collaborate to include all remaining work activities for the remainder of the project, or the season if the project is a multi-year project. For multi-year projects, the same submittal requirements and timelines will apply each year.

The Contractor will include expected adverse weather days at the end of the Construction Schedule. See the Expected Adverse Weather Days in Section 8.3 I. The Engineer, with concurrence from the Contractor, will determine which days are adverse weather days lost during each bi-weekly progress report and the Contractor will account for those adverse weather days lost by moving the agreed upon adverse weather days lost forward in the Construction Schedule to the date the working days were lost.

The Engineer will approve or provide suggested revisions to the Construction Schedule within 5 business days of the date of receiving the Construction Schedule. If revisions are needed prior to approval, the Contractor will make the required revisions and submit the revised Construction Schedule to the Engineer. The Engineer will approve the revised Construction Schedule within 2 business days of the date of receiving the revised Construction Schedule. Acceptance of the Construction Schedule by the Engineer does not modify the contract or constitute endorsement or validation by the Engineer of the Contractor's logic, activity durations, or assumptions in creating the schedule. Acceptance of the schedule also does not relieve the Contractor of the obligation to complete all work within interim and overall contract completion dates.

2. **Preface:** The Contractor will preface each Construction Schedule with the following information:

   a. Project Number;

   b. PCN;

   c. Contractor;

   d. Original contract time allowed or completion date and interim completion dates as per the special provision for contract time;

   e. Type of Construction Schedule (Startup, Construction, or Update); and,

   f. Data date of the schedule (the date the schedule was updated to) as applicable by scheduling type.

   In addition, the Contractor will provide a comparison of the initial schedule to the current schedule for project completion.

C. Written Narrative: The written narrative must contain all of the following:

1. Estimated starting and completion dates of each work activity;

2. Description of work to be done within each work activity including the type and quantity of equipment and labor;

3. Description of the location on the project where each work activity occurs;

4. Description of planned production rates by major work activities (example: cubic yards of excavation per day/week);

5. Description of planned work days per week, holidays, number of shifts per day, and number of hours per shift;

6. An estimate of any periods which a work activity is idle or partially idle including the beginning and end dates of the reduced production or idle timeframe;

7. Description of expected and critical delivery dates for equipment and materials that may affect timely completion of the project;

8. Description of critical completion dates for maintaining the construction schedule; and,

9. Identification of the vendor, supplier, or subcontractor to perform the work activity including stating all assumptions made by the Contractor in the scheduling of the subcontractor's or supplier's work.

D. **Bar Chart Method (BCM):** The BCM Construction Schedule consists of a diagram and a written narrative:

1. **Diagram:** The Contractor must show the following in the BCM diagram:

   a. A time scale to graphically show the percentage of work scheduled for completion during the contract time;

   b. Define and relate principle and major work activities into manageable item with durations no longer than 15 working days;

   c. Show all work activities in the order the work is to be performed including submittals, submittal reviews, fabrication, and delivery;

   d. Show all critical (major) work activities that are controlling factors in the completion of the work;

   e. Show the time needed to perform each work activity and the work activity's relationship in time to other work activities; and,

f. Show the expected time to complete all work.

In addition, the Contractor will provide enough space for each work activity to permit 2 additional plots parallel to the original time span plot. The Contractor will use one spot for revision of the planned time span and one spot for showing the actual time span achieved.

2. **Written Narrative:** The written narrative must contain the information required in Section 8.3 C. If all of the information required in Section 8.3 C. is shown in the BCM Construction Schedule, the Contractor will not be required to provide a written narrative.

E. **Critical Path Method (CPM):** The CPM Construction Schedule consists of a diagram and a written narrative:

1. **Diagram:** The Contractor must show the following in the CPM diagram:

a. Planned start and completion dates for each work activity;

b. Duration of each work activity (stated in working days with work activities of more than 15 working days in duration broken into two or more work activities distinguished by location or some other feature);

c. Interim and project completion dates specified in the contract as the only constraints in the schedule logic;

d. Work activities related to the procurement of materials, equipment, and articles of special manufacture;

e. Contractor work activities related to the preparation and submission of working drawings, shop plans, and other data specified for review or approval by the Engineer; and,

f. Department activities related to specified activities by the Department (including, but not limited to, review of shop drawings and results from Central Lab) and third parties.

2. **Written Narrative:** The written narrative must contain the information required in Section 8.3 C. If all of the information required in Section 8.3 C. is shown in the CPM Construction Schedule, the Contractor will not be required to provide a written narrative.

F. **Linear Schedule Method (LSM):** The LSM Construction Schedule consists of a diagram and a written narrative:

1. **Diagram:** The Contractor must show the following in the LSM diagram:

a. Planned start and completion dates for each work activity;

b. All work activities longer than 3 days in duration, or an alternate longer or shorter duration per work activity as mutually agreed upon by the Contractor and the Engineer;

c. Interim and project completion dates specified in the contract as the only constraints in the schedule logic;

d. Work activities related to the procurement of materials, equipment, and articles of special manufacture;

e. Contractor work activities related to the preparation and submission of working drawings, shop plans, and other data specified for review or approval by the Engineer;

f. Department activities related to specified work activities by the Department (including, but not limited to, review of shop drawings and results from Central Lab) and third parties.

2. Written Narrative: The written narrative must contain the information required in Section 8.3 C. If all of the information required in Section 8.3 C. is shown in the LSM Construction Schedule, the Contractor will not be required to provide a written narrative.

G. Construction Schedule Updates: The Contractor will review the Construction Schedule to verify finish dates of completed work activities, remaining duration of uncompleted work activities, and any proposed logic or time estimate revisions. The Contractor will keep the Engineer informed of the current Construction Schedule and all logic changes. The Construction Schedule and all Construction Schedule updates will be discussed during the weekly meetings or at a frequency agreed upon by the Contractor and Engineer.

The Contractor will submit an updated Construction Schedule for acceptance by the Engineer at least every month or when any of the following conditions occur:

1. A delay occurs in the completion of a critical (major) work activity;

2. A delay occurs which causes a change in a critical work activity for BCM schedules, the critical path for CPM schedules, or work activity lines are crossed for LSM schedules;

3. The actual prosecution of the work is different from that represented on the current Construction Schedule;

4. There is an addition, deletion, or revision of work activities caused by a contract change order; or,

5. There is a change in the Construction Schedule logic

The Engineer will approve or provide suggested revisions to the updated Construction Schedule within 5 business days of the date of receiving the updated Construction Schedule. If revisions are needed prior to approval, the Contractor will make the required revisions and submit the revised updated Construction Schedule to the Engineer. The Engineer will approve the revised updated Construction Schedule within 2 business days of the date of receiving the revised updated Construction Schedule.

H. Construction Schedule Payment and Assessments:

1. **Construction Schedule Payment:** Payment will be full compensation for the work prescribed in this section. The Engineer will make progress payments Construction Schedule in accordance with the following:

   a. 25% of the item amount, not to exceed 1% of the original contract amount will be paid after the Construction Schedule is accepted.

   b. Payment of the remaining portion of the lump sum contract unit price will be prorated based on the total work completed.

2. **Assessments:**

   a. **Construction Schedule:** If the Contractor begins work prior to the Engineer's approval of the Construction Schedule, the Engineer will make an assessment of $100 for Category I, $250 for Category II, and $500 for Category III for each working day until the Construction Schedule is approved. If the Contractor chooses to use the Startup Schedule option, the assessment will not apply until 30 working days from start of work

   b. **Construction Schedule Updates:** If the Contractor does not submit the updated Construction Schedule by the agreed upon date each month or as required in 8.3 G., the Engineer will make an assessment of $100 for Category I, $250 for Category II, and $500 for Category III for each working day until the updated Construction Schedule is submitted.

I. Expected Adverse Weather Days:

The Department has provided Attachment 1. This table depicts the typical number of adverse weather days expected for any given month, based on historical records. The Contractor will use the expected adverse weather days shown in the table when establishing and updating the Construction Schedule.

When considering a time extension for the interim completion date, substantial completion date, and field work completion date, the Engineer will compare the total number of expected adverse weather days against the total number of actual adverse weather days in the accepted Construction Schedule.

* * * * *

ATTACHMENT 1

Figure A. Expected Adverse Weather Days for South Dakota

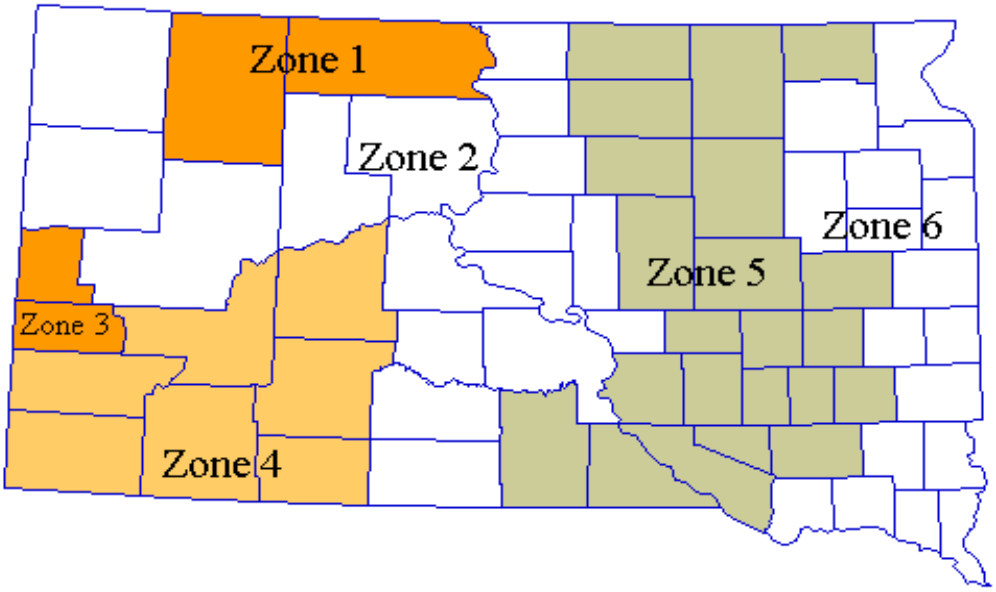

Table 1. Expected Adverse Weather Days for South Dakota

	Grading Projects						Surfacing and Structural Projects					
	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
Jan	18	18	16	16	22	24	18	18	15	16	21	23
Feb	19	18	12	14	19	21	19	18	12	14	19	21
Mar	12	10	9	8	11	13	12	10	9	8	10	12
Apr	6	5	8	5	6	6	5	4	6	4	4	4
May	6	6	8	6	6	6	5	5	6	4	4	5
Jun	7	6	7	6	7	8	5	5	5	4	5	6
Jul	5	5	6	5	6	7	4	4	5	3	4	5
Aug	4	4	5	4	5	6	3	3	4	3	4	4
Sep	3	3	4	3	4	5	2	2	3	2	3	4
Oct	4	3	5	3	4	4	3	3	4	2	3	3
Nov	11	9	8	7	10	12	11	9	8	7	10	11
Dec	21	19	15	14	20	22	21	19	15	14	20	22

NOTE: Includes Holidays and Weekends.

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
CONTRACTOR STAKING

PROJECT P 0073(68)0 & P 0073(65)9, PCN 04E1 & 03AA
BENNETT COUNTY

JANUARY 15, 2015

Add the following to Section 5.8 of the Standard Specifications:

SECTION 5.8
CONSTRUCTION STAKES, LINES AND GRADES
CONTRACTOR GRADE STAKING

A. DESCRIPTION

The Contractor will perform the construction staking. The staking work includes placing an offset line to re-establish the project centerline throughout the entire project length prior to placement of asphalt surfacing; staking for pavement markings and rumble strips: re-establish plan benchmarks; and setting additional benchmarks as needed.

The Contractor will perform all construction layout and reference staking necessary for the accurate control and completion of all paving, and all other appurtenances required for the complete construction and acceptance of the work.

The Contractor will perform the staking according to the Department Survey Manual, except as modified by this specification.

B. MATERIALS

The Contractor shall furnish all staking materials of adequate quality for the purpose intended including all stakes, stake chasers, paint, field note books, and all other materials and equipment necessary to properly perform the required work.

C. CONSTRUCTION REQUIREMENTS

1. **General:** The Contractor will perform all staking work under the supervision of a qualified surveyor or engineer who is experienced and competent in road and bridge construction surveying and staking. The surveyor or engineer shall be available to review work, resolve problems, and make decisions in a timely manner. A crew chief, competent to perform all required surveying duties, shall supervise the staking in the absence of the surveyor or engineer from the project. The Contractor will submit the qualifications and work experience history of the surveyor or engineer who will supervise the construction survey work to the Engineer for review at least 14 calendar days prior to beginning the staking work.

   The Contractor shall also submit the proposed starting date of the staking, and the anticipated surveying work schedule.

   The Contractor will furnish, set, and properly reference all stakes, references, lines, grades, and batter boards required. Minimum reference notations will be for type, location, and alignment (when there are multiple alignments in the same area). The Contractor will perform the survey and staking work in a manner consistent with standard engineering practices and approved by the Engineer.

   The Contractor is solely responsible for the accuracy of the survey and staking work. The Contractor will notify the Engineer of any errors and discrepancies found in previous surveys, plans, specifications, or special provisions prior to proceeding with the survey work.

   The Contractor will be responsible for the supervision of the construction staking personnel. The Contractor will correct any deficient survey or staking work that results in construction errors at no additional cost to the Department.

   The Contractor will keep field notes in conventional handwritten notebooks or in a computerized form acceptable to the Engineer in a clear, orderly, and neat manner. The notebooks will become the property of the Department upon completion of the project. The notebooks will provide enough information such that quantity measurements are verifiable by the Department. Field notes are subject to inspection by the Engineer at any time.

   The Contractor shall be required to reset control points and submit any required quantity calculations and notes to the Engineer no later than 60 calendar days after completion of the survey.

   The Contractor is responsible for the preservation of ties and references to all control points, necessary for the accurate re-establishment of all base line(s)

and centerline(s) shown in the plans, whether established by the Contractor or found on or adjacent to the project.

The Contractor shall furnish stakes of sufficient length to provide a solid set in the ground. The Contractor will place half-length lath stakes or stake chasers or an alternate, acceptable to the Engineer, adjacent to or on the blue top hubs for guards. Stakes set not meeting these requirements shall be reset at the Contractors expense. The Contractor will replace stakes damaged, destroyed, or made unusable at no additional expense to the Department.

The Engineer may check the accuracy and control of the Contractor's survey and staking work at any time. The checks performed by the Engineer will not relieve the Contractor of the responsibility for the accuracy of the survey layout or the construction work. If the random checks show that the grade is out of tolerance, the Contractor may be required to place additional grade and/or paving hub stakes, at the discretion of the Engineer, at no additional cost to the Department. If the Engineer orders additional stakes, the additional staking will be required until the Contractor can show that his operations have been modified such that the specified grade tolerances can be achieved.

At bridge sites, the level circuit to check the plan benchmarks shall include two benchmarks, one on each end of the structure.

2. **Construction Staking:** The Contractor will perform all survey work necessary to establish offset points to be used for re-establishment of centerline on the entire project prior to placement of Asphalt Surfacing. The Contractor is required to place a nail and lath on one side of the roadway at an offset from centerline so as to not interfere with construction work. Once established, this offset will remain constant throughout the project length. This nail and lath will be placed at even 200 foot intervals throughout the entire length of the project in tangent sections. This nail and lath will be placed at even 100 foot intervals throughout all horizontally curved sections. Stationing will be clearly marked with a permanent marker on each lath placed. The Contractor is solely responsible for the accuracy of this work.

   It is a requirement that a surveying instrument be utilized to set the offset nails at a true offset from actual centerline. A tolerance of 0.04' will be allowed on the offset nails. Original Construction plans showing locations of alignment points are available at the Pierre Area Office.

   The Contractor is hereby advised that spiral curves may be present along some South Dakota Highway routes, and if found will need to be duplicated as well as normal simple curves when staking this offset line. Any deficient work which may result in staking errors shall be corrected by the Contractor at

no additional expense to the Department. All costs associated with this work will be paid under the Bid Item Construction Staking.

3. **Three Man Survey Crew:** The use of the three-man survey crew is intended for surveying not included in the plan notes and this special provision. The Contractor may use a three man survey crew to perform additional survey work caused or required by the Department. The Engineer will use a written order to authorize the hourly three man survey crew item and describe the staking work required of the Contractor.

D. METHOD OF MEASUREMENT

1. **Construction Staking:** The Department will not measure construction staking. The Department will pay the plan quantity as the final quantity.

2. **Three Man Survey Crew:** The Department will measure three man survey crew by the hour with the following restrictions:

   The use of a three-man survey crew will be for the work ordered by the Engineer. The measured quantity will be the actual time the survey crew is working on the project, physically performing the field survey work. The Department will not include travel time for the survey crew in the measurement.

   The Contractor may use a two-man survey crew with the Engineer's prior approval. When a two-man survey crew is used, measurement for payment will be at 75 percent of the hours for a three-man crew. For example: 8 hours of two-man survey crew will result in 6 hours measured for payment as three-man survey crew time.

   The Contractor may use a one-man survey crew with the Engineer's prior approval. When a one-man survey crew is used, measurement for payment will be at 50 percent of the hours for a three-man crew. For example: 8 hours of a one-man survey crew will result in 4 hours measured for payment as three-man survey crew time.

   The Engineer will issue a DOT 75 ticket for the hours authorized for three-man survey crew.

E. BASIS OF PAYMENT

1. **Construction Staking:** The Department will pay construction staking at the contract unit price per mile. Payment for all of the survey items will be considered full compensation furnishing all necessary personnel, equipment,

supplies, materials, recording fees, transportation, and incidentals to accurately and satisfactorily complete the work.

The Department of Transportation reserves the right to omit any of these bid items without providing compensation to the contractor the Department deems the bid prices are unreasonable.

2. **Three Man Survey Crew:** The Department will pay three man survey crew on an hourly basis as per the Price Schedule for Miscellaneous Items. The value listed in the Price Schedule for Miscellaneous Items includes salaries, travel time, equipment, staking supplies, payroll additive, and all incidental expenses related to providing the survey crew.

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STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION FOR ON-THE-JOB TRAINING PROGRAM

JULY 10, 2012

This Training Special Provision supersedes Part II, Nondiscrimination, Section 6, Training and Promotion, paragraph "b" on Page 2 of the Required Contract Provisions Federal-Aid Construction Contracts (FHWA 1273 – Rev. 5/1/2012).

PURPOSE

The purpose of the On-the-Job Training (OJT) Program is to provide training for minority, female and economically disadvantaged individuals, hereinafter known as the targeted group, in order that they may develop marketable skills and gain journeyworker status in the skilled craft classifications in which they are being trained.

INTRODUCTION

Successful operation of the OJT program requires that contractors follow uniform and basic procedures in training, keeping records of trainee progress toward journeyworker status, and reporting each trainee's successful completion or termination from the program.

The bidder's signature on the proposal sheet indicates the bidder agrees to participate in the OJT Program and to abide by the provisions of this OJT Program Special Provision.

SELECTION OF TRAINING PROGRAM

A. The minimum length and type of training for each classification will be as established in the training program selected by the Contractor and approved by the South Dakota Department of Transportation (Department or SDDOT) and the Federal Highway Administration (FHWA).

B. The Department and FHWA have currently approved one OJT program for use in South Dakota and that is the OJT program designed and implemented by Associated General Contractors (A.G.C.) of South Dakota; Highway, Heavy, Utilities Chapter. The department has assumed the administration functions of the A.G.C. Training program. The OJT Program previously used by the Department of Transportation is no longer available but any trainee who has begun training in 1997 under the Department program will be allowed to complete that program.

C. There may be other training programs which some Contractors might wish to utilize. If the Contractor intends to use such a program to meet the OJT requirements on a federal-aid contract with training requirements, approval or acceptance of such program shall be obtained from the Department and FHWA **prior** to beginning training on any classification covered by that program.

It is the intention of these provisions that training is to be provided in the construction crafts rather than administrative support type positions or lower level management positions. Training for semi-skilled laborer classifications is discouraged but may be permitted provided that significant and meaningful training is provided and prior approval is obtained by the Department Civil Rights Office and the FHWA Division office.

RECRUITMENT AND SELECTION PROCEDURES

A. Prerequisite for Trainees

1. To be qualified for enrollment in the OJT Program, a trainee applicant must be a member of one of the targeted groups (unless an alternate selection is authorized by the Department), must possess basic physical fitness for the work to be performed, should have demonstrated qualities of dependability, willingness to learn, ability to understand and follow instructions and an aptitude to maintain a safe work environment.

2. No person shall be employed as a trainee in any classification in which he has successfully completed a training course leading to journeyworker status or in which he has been employed as a journeyworker. The Contractor should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used, the Contractor's records should document the findings in each case.

B. Licenses

Truck driver trainees must possess appropriate driver permits or licenses for the operation of Class A, B, and C trucks. When an instructional permit is used in lieu of a license, the trainee must be accompanied by an operator who:

1. Holds a license corresponding to the vehicle being operated;

2. Has had at least one year of driving experience; and

3. Is occupying the seat next to the driver trainee.

C. Recruitment

1. Notices and posters setting forth the Contractor's Equal Employment Opportunity Policy and the availability of training programs will be placed in areas readily accessible to employees, applicants for employment and potential employees.

2. Training and upgrading of minorities, women, and socially and economically disadvantaged persons toward journeyworker status is the primary objective of this Special Provision. Accordingly, the Contractor shall make every effort to enroll minority trainees, women and disadvantaged persons (e.g. by conducting systematic and direct recruitment through public and private sources likely to yield minority and female applicants) to the extent that such persons are available within a reasonable area of recruitment.

3. Full consideration will be given to upgrading current minority and female employees.

D. Selection

1. The selection and employment of an eligible person by a participating Contractor, in accord with the above Parts A, B, and C, shall qualify the person of the OJT Program.

2. Employment of trainees will be in accordance with the work force requirements of the Contractor. Each Contractor will hire and train the trainees for use in his own organization.

3. Contractors **must** follow the registration procedures as set out for the South Dakota Department of Transportation. An original registration form must be sent to the Department Civil Rights Office for review and approval. In the event that the Department OJT Registration Form(s) are not received by the Civil Rights Office within two weeks of the date the contractor begins significant work on the project, progress payments will be suspended. This suspension will be lifted upon receipt and approval of the form(s).

4. To be acceptable as an economically disadvantaged trainee, the applicant must meet current disadvantaged guidelines (relative to employment and income) as set out by the United States Department of Labor. These guidelines are available from South Dakota One-Stop Career Centers and contractors must provide the necessary documentation, i.e. application information, to support an OJT registration from a disadvantaged candidate. This documentation must be provided to the Civil Rights office with the other required information as a part of the approval process for trainees.

5. The Department expects that Contractors will employ minority, female, and disadvantaged persons for all trainee positions assigned through this OJT Special Provision unless such persons are not available within a reasonable area of recruitment. The Civil Rights office will withhold approval of any trainee who is not a member of one of the targeted groups unless the Contractor can demonstrate that he has made a good faith effort to recruit and select a minority, female, or economically disadvantaged person and, for reasons beyond his control, was unable to do so.

DEPARTMENT RESPONSIBILITES

The Department (Civil Rights office):

A. Will monitor Contractor payrolls and OJT reports for payment of correct wage rates and for evidence of providing a continuing instructional process. The Civil Rights office will maintain records of Contractor participation in the program; names, and training classifications of trainees and other information necessary to assess program participation and results.

B. Will assist contractor's with trainee recruitment, will encourage minority/female recruitment sources to refer suitable applicants, and will monitor Contractor instructional efforts and record keeping.

CONTRACTOR RESPONSIBILITIES

The Contractor:

A. Will furnish the trainee a copy of the training program to be followed in providing the training and will provide each trainee graduate with a certificate showing the type of training satisfactorily completed.

B. Will identify all trainees on the registration forms, training reports and project payroll by proper classification title, (see either Department Contractor's EEO/OJT Manual or A.G.C. program booklets) e.g. *heavy duty mechanic, form builder,* etc. **Do not use** coding letters/numbers from the wage scale. On payrolls, contractors must include the designation "trainee" following the job classification title.

C. Will assign each trainee to a particular person – either a supervisor or an employee proficient in the skill – who shall see that timely, instructional experience is received by the trainee. This person, in cooperation with the Contractor EEO Officer, will ensure that the program is explained and reviewed with the prospective trainee including training outline and the periodic wage adjustments, that required training hours are completed in accordance with the training curriculum, that proper records are kept, and that required reports are filed with the Department.

D. Will provide a monthly training report to the Department Civil Rights office within thirty (30) days of the last full pay period of the month on the form supplied by the Department and will use this same form to promptly notify the Department (within thirty days) whenever a trainee leaves the OJT program (voluntarily or involuntarily) or when a trainee completes the program.

E. Will pay not less than the minimum wage rates as set forth in the specific requirements of the applicable training program and as noted on the copy of the registration form returned to the contractor.

PROVISIONS APPLICABLE TO A.G.C. OJT PROGRAM

A. The minimum number of hours of training to be provided **on this project** are as specified in the bid documents. The Contractor shall select whatever training classification specified in the A.G.C. program best meet his employment needs and training hours and minimum wage shall be in accord with that classification.

B. Registration and reporting requirements shall be as set forth in the program documents and instructions and this provision.

C. Contractors using the A.G.C. program may meet the training obligations by either 1) enrolling a new trainee in one of the classifications, or 2) using a trainee currently enrolled in one of the A.G.C. classifications, provided that person has sufficient training hours remaining to meet the minimum project requirements as specified in bid documents. In either case, prospective trainees must meet the program requirements as set forth in "Recruitment and Selection Procedures" above.

D. Effective March 1, 2002, the department will be responsible for long term maintenance of records regarding trainee registration in various training classifications and for total trainee hours as provided by one or more contractors.

WAGE RATES

A. Minimum wage rates shall be in accord with program requirements for each classification and trainee placement within the training hours requirement. In no case shall the minimum wage be less than the common laborer classification of the applicable wage rate information contained in the bid documents. Where applicable, trainees shall be paid full fringe benefit amounts.

B. At the completion of the OJT program, the trainee shall receive the wages of a skilled journeyworker for that specific classification.

C. For the purpose of the OJT program, a quarter of the program is twenty-five percent (25%) of the training hours credited to the trainee for a particular classification and does not represent three months of the year. Other wage benchmarks are calculated in a similar manner.

METHOD OF MEASUREMENT

A. All hours of onsite and approved offsite training provided in accordance with the approved program and this provision and as shown in trainee reports and on project payrolls will be credited as trainee hours for purpose of contract payment.

BASIS OF PAYMENT

A. All program reimbursements will be made directly to the Contractor at the project conclusion. The Contractor will be paid, as reimbursement for the extra cost involved in providing the training, the amount per training hour bid for the item “Training” for each hour of training provided and reported.

B. No payment will be made to the Contractor if either the failure to provide the required training, or the failure to hire the trainee as a journeyworker, is caused by the Contractor and evidences a lack of good faith on the part of the Contractor in meeting the requirements of this Special Provision.

C. Liquidated damages will be assessed the contractor for failure to make a good faith effort to enroll the number of trainees necessary to meet the training requirements of this Special Provision. For each trainee slot left unfilled, damages will be assessed at the rate of 100% of the bid amount for the training item times the minimum number of hours specified in the item quantity. For each trainee for whom contractor training is determined to be inadequate and which evidences a lack of good faith to fulfill the training requirements, damages will be assessed at the rate of 100% of the bid amount for the training item times the minimum number of hours specified in the item quantity.

D. Failure to furnish required documents and reports in the manner and time specified may result in forfeiture of all or a portion of the amounts due the Contractor for reimbursement for training.

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STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
GYRATORY CONTROLLED
QUALITY CONTROL/QUALITY ASSURANCE SPECIFICATIONS
FOR HOT MIXED ASPHALT CONCRETE PAVEMENT

SEPTEMBER 27, 2013

For all Gyratory Controlled Quality Control/Quality Assurance (QC/QA) Hot Mixed Asphalt Concrete Pavements irrespective of class, type, asphalt material, or pavement use; delete Section 320 from the Standard Specifications in its entirety and replace it with the following revised specification:

320.1 DESCRIPTION

These requirements are applicable to all Gyratory Controlled Quality Control/Quality Assurance (QC/QA) hot mixed asphalt concrete pavements irrespective of class, type, asphalt material, or pavement use. The work consists of constructing one or more courses of Gyratory Controlled QC/QA hot mixed asphalt concrete pavement on a prepared foundation.

320.2 MATERIALS

A. Composition of Mixtures: The asphalt concrete shall be composed of a mixture of aggregate, asphalt, and approved modifiers. Unless otherwise specified in the plans, no reclaimed asphalt pavements (RAP) are allowed in Gyratory Controlled QC/QA hot mixed asphalt concrete pavements. Aggregate fractions shall be combined in proportions that result in the asphalt mixture meeting the specified requirements.

The operation of the plant shall not commence until the Bituminous Engineer has verified, in writing, a job mix formula meeting the specification requirements (Tables A-K) for the asphalt concrete specified. The mixture shall conform within the range of tolerances established by the job mix formula target values shown in Table P.

B. Aggregates: Virgin mineral aggregate shall conform to the requirements specified in this provision. RAP, when required, shall conform to the requirements specified in the plans.

C. Asphalt Binder: Asphalt binder shall conform to Section 890.

D. Hydrated Lime: Hydrated lime shall conform to Section 760.

E. Burner Fuel: Burner fuel used for production of asphalt concrete shall be propane, butane, natural gas, Grade 1 fuel oil, Grade 2 fuel oil, Grade 4 fuel oil, Grade 4 (light) fuel oil, Grade 5 (light or heavy) fuel oil, or Grade 6 fuel oil. Fuel oil heavier than Grade 2 shall meet the requirements of ASTM D396. Recycled fuel oils, RF04, RF05L, and RF05H may also be used provided they meet the requirements of ASTM D6448. Each load of burner fuel shall be certified that it meets the applicable ASTM specification.

F. Shoulder Joint Sealant: Joint sealant shall conform to Section 870.

320.3 CONSTRUCTION REQUIREMENTS

A. Weather and Seasonal Limitations: Asphalt concrete shall not be placed when the underlying surface is wet or frozen. Asphalt concrete shall not be placed when weather conditions prevent proper handling, compaction, or finishing. The temperature and seasonal limitations are as follows:

MINIMUM AIR TEMPERATURES & SEASONAL LIMITATIONS

Compacted Thickness	Surface Course		Subsurface Course & Shoulder Course	
	Min. Temp.	Seasonal Limits	Min. Temp.	Seasonal Limits
1” (25 mm) or less	45°F (7°C)	May 1 to Oct. 15 (inclusive)	45°F (7°C)	none
over 1” (25 mm)	40°F (4°C)	May 1 to Oct. 15 (inclusive)	40°F (4°C)	none

B. Equipment:

1. **Requirements for All Plants:** The central plant for mixing the mineral aggregate and asphalt may be a batch or drum mix type mixing plant.

   Stockpiles of mineral aggregate shall be kept separate and adequate measures to prevent contamination must be used at stockpile sites. Segregated piles will be rejected until corrected.

   When mineral filler, hydrated lime, or other additives are required, a separate feed system shall be provided to store and accurately and uniformly proportion the required quantity into the mix.

   All cold feed bins shall be equipped with dividers to prevent overflow of aggregates into the adjacent bins.

The plant shall be equipped with emission control equipment including a dust collector capable of eliminating or conserving the dust necessary to meet gradation limits and environmental standards.

Recycled fuel oils and fuel oils heavier than Grade 2 used for burner fuel shall be properly preheated and efficiently burned. Production of mix shall be stopped if flameouts or signs of incomplete combustion occur.

A pyrometer or other thermometric instrument shall be installed in the supply line between the storage tank and the discharge point in the plant to accurately measure the temperature of the asphalt binder.

The plant shall be equipped with accurate weighing and volumetric measurement devices.

Asphalt binder storage tanks shall be kept level. Accurate calibration charts, which show the quantity of material contained in a tank at each 1/4 inch (5 mm) increment(s) of depth and a suitable device to measure the depth of the material, shall be provided. Storage tanks shall uniformly heat the material, under effective and positive control, to the required temperature. Heating shall be accomplished by steam coils, electricity, or burners, provided the flame does not come in direct contact with the heating tank. The asphalt circulating system shall be of adequate size to ensure proper circulation during the entire operating period. An accurate thermometer must be installed in the tank so temperature can be monitored.

Hydrated lime, when added, shall be added at the pugmill to moistened aggregate containing a minimum moisture content of 1.0 percent above the saturated surface dry condition of the aggregate, as noted on the approved mix design report. The mixing of the aggregate, hydrated lime and water shall be accomplished by using an enclosed twin-shaft pugmill with a minimum effective length of 4.5 ft (1.4 m). A water spray system must be installed at the discharge end of the pug mill. This water system must be used when directed by the Engineer to prevent fugitive lime dust from being released into the air.

When hydrated lime is used, the Contractors hydrated lime system shall be equipped with scales to accurately determine the amount of hydrated lime used at any time.

When RAP is required, RAP, virgin aggregate, and asphalt binder shall be mixed by a conventional hot mix batch plant or a drum mix type hot plant. The Contractor may be required to crush RAP.

2. **Batch Type Mixing Plants:** Batch type plants shall have at least two storage bins with sufficient capacity to furnish the quantity of mineral aggregate materials necessary to operate at the calibrated capacity of the plant. Each compartment shall have partitions that prevent diversion of material into other compartments. Vibrators shall be provided to prevent bridging or arching of the bin contents.

   Batch plants shall be fully automatic, to the extent that the only manual operation required would be for the proportioning of one batch utilizing a single actuation switch or starter.

   The automatic unit shall include a timer to automatically control the measuring, mixing, and dumping processes through a central control. The automatic unit shall include a time lock device, which is capable of controlling the operations of a complete mixing cycle.

   When RAP is required, batch plants shall be modified to permit the cold salvaged asphalt mix material to feed directly into the weigh hopper of the plant.

   When RAP is required, the heated virgin aggregate shall be deposited in the weigh hopper first followed by the cold salvaged mix material. These two materials shall be “dry” mixed for a minimum of 10 seconds before introduction of asphalt binder into the pugmill. Wet mixing time shall be a minimum of 25 seconds. Mixing times may be adjusted by the Engineer, as necessary, to achieve uniform mixing and coating. Discharge of the heated virgin aggregate shall be from one bin only and shall be discharged into the center of the weigh hopper. The amount of aggregate stored in the bin shall not exceed one batch in weight and shall be fed into the bin in a manner that will prevent segregation.

   A recording pyrometer shall be mounted in the discharge chute of the dryer. Daily charts of continuous aggregate temperature readings shall be submitted to the Engineer.

   In lieu of a recording pyrometer, a computer printout showing the aggregate temperature readings at the discharge chute of the dryer may be substituted as approved by the Engineer

3. **Drum Mix Plants:** The dryer drum shall uniformly heat, coat, and mix the materials without overheating the materials and adversely affecting the mixture.

   a. Materials and additives, except RAP, shall be fed simultaneously into the dryer.

b. The virgin aggregate and RAP feed system shall provide positive control of the aggregate feed that can be easily and accurately calibrated. The rate of feed shall be continuously monitored by belt scale, or other device that is interlocked with the asphalt metering mechanism.

c. RAP, when added shall be introduced into the drum and combined with the virgin aggregate so the RAP does not come into direct contact with the burner flame. Asphalt binder shall be added to the mixture in the drum after the aggregates have been combined.

d. The asphalt metering device shall positively control the rate asphalt is introduced into the mixture and shall instantaneously adjust to variation in the aggregate and RAP feed rate.

e. Production shall be limited to the rate required to obtain uniform aggregate coating and a uniform mixture meeting job mix temperature requirements. The rate must be within manufacturers rated plant capacity.

f. A recording pyrometer shall be mounted in the discharge end of the mixer for determining the temperature of the mix. Daily mix temperature readings shall be submitted to the Engineer.

In lieu of a recording pyrometer, a computer printout showing the mix temperature readings at the discharge end of the mixer may be substituted as approved by the Engineer.

4. Pavers: Self-propelled pavers shall be equipped with a hopper having a bottom conveyor, a full width vibrating screed with heaters and be capable of spreading and finishing the mix to the specified widths, typical sections and thickness. The paver shall provide an accurate, smooth, uniform textured spread, and provide preliminary compaction through the use of the vibrating screed.

An attachment shall be provided on the paver that will place a beveled edge on the mat as specified.

Pavers shall be equipped so that the height and transverse slope of the screed is automatically controlled using a fixed or traveling stringline on either or both sides of the paver. The traveling stringline shall utilize either mechanical skis or non-contacting grade averaging sensors. The traveling stringline shall have a minimum effective length of 24 feet (7.3 meters). The system shall be capable of manually controlling the transverse slope and the screed height.

5. **Rollers:** Rollers for compaction of the asphalt concrete shall be of the self-propelled type, capable of producing a smooth surface finish. The number and weight of rollers furnished shall be sufficient to compact the mix to the required density. The rollers shall be capable of being reversed smoothly, without shoving or tearing the asphalt concrete.

   Rollers shall be equipped to prevent "pickup" on the tires or drums. Moistening the drums or tires with water, a water detergent solution, or enclosing the roller to prevent heat loss from the tires may be required. The use of fuel oil or other petroleum based solvents to prevent "pickup" will not be permitted. Measures shall be taken to prevent oil, grease, or fuels from being dropped on the mat by rollers or any other type of equipment.

C. Laboratories:

1. **Quality Control Laboratory:** The Contractor shall furnish and maintain a Quality Control (QC) laboratory at the plant site. The laboratory shall be furnished with the necessary space, equipment, and supplies to properly perform all specified testing. The laboratory shall be equipped with a gyratory compactor meeting the requirements of AASHTO T 312. The laboratory equipment shall meet the requirements of the test methods contained in the Department's Materials Manual and Materials Testing & Inspection Certification Program Manual. A copy of the equipment calibration records shall be kept in the QC laboratory.

   The Contractor's QC laboratory shall be equipped with a mechanical convection oven meeting the requirements of Section 600 of the Standard Specifications.

   The Contractor shall furnish a cut off saw equipped with a diamond tipped blade. The saw is to separate the core samples to the actual lift thickness. The cores shall be sawed by the Contractor to the correct lift line prior to testing the cores for density.

2. **Quality Assurance Laboratory:** The Contractor shall also provide a separate Quality Assurance (QA) laboratory for QA testing performed by the Engineer. The QA laboratory shall meet the requirements of Section 600 of the Standard Specifications.

D. Quality Control:

1. **Contractor Furnished Quality Control Program:** QC for the asphalt concrete pavement is the responsibility of the Contractor. The Contractor shall provide and maintain a QC program. The program shall assure that all asphalt concrete materials and constructed pavement submitted for

acceptance conforms to the contract requirements. The Contractor shall be responsible for all asphalt concrete materials and constructed pavement, including aggregate process control and handling.

The Contractor shall provide at least one technician certified in Asphalt Concrete Aggregate Testing and Asphalt Concrete Hot Mix Testing for conducting the QC testing and at least one technician certified in Asphalt Concrete Roadway Inspection for roadway inspection. All of the Contractors QC testing and inspection technicians shall meet the Departments certification requirements or be under the direct supervision of a certified technician for the type of work they are actually performing. The certified testing and inspection technicians must be present at the plant and roadway whenever the plant is supplying asphalt concrete to the roadway.

At or prior to the preconstruction meeting the Contractor shall submit a QC plan to the Engineer for approval. The plan shall contain the following minimum requirements:

a. The names and phone numbers of the individual(s) responsible for the Contractor's QC program.

b. A listing of the certified technician(s) responsible for the QC inspection, material sampling, and testing.

c. A copy of the completed Performance Checklist, Training and Evaluation Records for all Temporary or Seasonal personnel who will be performing QC inspection or sampling and testing.

d. An organizational chart indicating lines of authority.

e. The Contractor shall notify the Engineer if a Control Test Strip will be used. The Contractor may produce approximately 500 tons (500 metric tons) of material to establish a roller pattern and verify the field produced mix properties match those of the lab mix design. After test strip placement further mixing and laydown operations will be suspended until the laboratory test results of the asphalt mixture and core densities are available. The material used in the test strip will not be included in the mix pay factor analysis. The material used in the test strip shall be tested for all the properties listed in Table M. The Engineer shall approve the location of the test strip.

If a Control Test Strip is not constructed, the QC plan shall specify how the contractor will establish a roller pattern to achieve the specified density and volumetrics.

The Engineer will provide the following to the Contractor at the preconstruction meeting:

Names of the certified individuals in charge of Quality Assurance (QA) testing and roadway inspection.

An organizational chart including the names and phone numbers of those in the direct line of authority.

2. **Mineral Aggregate Testing Prior to Production:** The aggregate producer shall provide test results to the Contractor and Engineer for each stockpile of virgin mineral aggregate that will be incorporated into the asphalt concrete mixture. The aggregate producer shall use an individual certified in Asphalt Concrete Aggregate Testing. The required tests shall include gradation, fractured faces, fine aggregate angularity, flat and elongated particles, sand equivalent, and lightweight particles at the following minimum frequencies:

   One test per 1500 tons (1500 metric tons) for each virgin mineral aggregate ingredient produced.

   A minimum of three tests for each virgin mineral aggregate stockpile.

   The Contractor may vary the frequency of the fractured faces, fine aggregate angularity, flat and elongated particles, sand equivalent, and lightweight particles tests on ledge rock sources depending on the quality and uniformity of the materials.

3. **Contractor Furnished Mix Designs:** Asphalt concrete mix designs shall be performed by the Contractor and verified by the Department's Bituminous Mix Design Lab. A certified Asphalt Concrete Mix Design and Production Control technician shall perform the asphalt concrete mix design. All Contractors submitting mix designs to the SDDOT are required to participate in the Proficiency Sample Program.

   Prior to submitting samples to the Department's Bituminous Mix Design Lab, 50 percent of the plans quantity or 15,000 tons (15,000 metric tons), whichever is less, of the virgin mineral aggregate shall be produced.

   When RAP is required, the Contractor shall sample the RAP from the roadway by an approved method. The sampling method shall ensure a representative sample of material is obtained from approximately the same depth as the plans shown milling depth. The RAP sample shall be obtained from a minimum of three locations throughout the project length. The Contractor shall daylight all edges of the sampling area leaving no vertical faces or shall fill the sample area with an approved product leaving

no vertical faces. The equipment used shall generate a representative sample of RAP similar to what will be produced from the cold milling operation. The Contractor shall notify the Area office a minimum of five (5) calendar days prior to sampling the RAP from the roadway. A representative from the Area office shall witness all sampling of RAP to be submitted for mix design. This material shall be used to perform the mix design. A portion of this sample shall be submitted to the Department's Bituminous Mix Design Lab.

The Contractor shall notify the Area office a minimum of five (5) calendar days prior to sampling and submitting the mix design aggregates. A representative from the Area office shall witness all sampling of aggregates to be submitted for mix design.

A representative from the Area office shall complete the Form DOT-1 for the composite aggregate sample and RAP sample required for submittal to the Department's Bituminous Mix Design Lab. The Area office representative shall take possession of the aggregate and RAP samples for mix design and aggregate quality testing. Samples shall be obtained a minimum of twenty-one (21) calendar days prior to hot mix production. The Department will deliver the samples to the Department's Bituminous Mix Design Lab in Pierre, SD.

The Department may allow the Contractor to transport and deliver the RAP and aggregate samples for mix design and aggregate quality testing only when the Area office representative has sealed the samples with a tamper evident tag, with the DOT-1 attached.

Mix designs will only be performed on samples when accompanied by the following information:

a. A completed data sheet (form DOT-1), including the legal description of virgin mineral aggregate source(s).

b. Representative virgin mineral aggregate samples and RAP samples shall be proportionate to the bin splits proposed for use during construction. The total aggregate submitted for mix design verification shall be from 400 to 500 pounds (180 to 230 kilograms).

c. A summary sheet showing all test results from the gradations completed and the average gradation of each mineral aggregate stockpile produced along with the proposed bin splits to be used in the production of asphalt concrete pavement.

d. A two-gallon (eight liter) sample of asphalt binder intended for use shall be obtained from the designated supplier for the project.

e. A mix design report and moisture sensitivity test results, if required, that includes the lab data and test results required in SD 318, SD 319, and this special provision. The Contractor's mix design shall meet all of the mix design specifications.

When the mix design verification is completed by the Department's Bituminous Mix Design Lab, an approved mix design report (DOT 64) will be provided to the Area Engineer and the Contractor prior to production. The mix design report will include the single percentage of aggregate passing each required sieve size, a single percentage of asphalt binder to be added to the mixture, a single percentage of hydrated lime to be added to the mixture, a single asphalt binder application temperature, a single temperature at which the mix is to be discharged from the mixer, and a single temperature at which the mix is to be delivered on the road.

4. Gyratory Controlled QC/QA Mix Design Requirements and Specifications: Unless otherwise specified in the plans, the mix design criteria shall conform to the following requirements.

a. Consensus Virgin Mineral Aggregate Requirements:

1.) Fractured Faces (Crushed Particles; SD 211)
The Fractured Faces shall be tested on the composite virgin mineral aggregate sample.

Table A **Fractured Faces**	
	Minimum Two or more fractured faces (%)
Class Q1	50
Class Q2	65
Class Q3	75
Class Q4	90
Class Q5	100

2.) Fine Aggregate Angularity (SD 217)

Table B - Fine Aggregate Angularity	
	Minimum Uncompacted Void Content (%)
Class Q1	40.0
Class Q2	41.5
Class Q3	43.0
Class Q4	44.0
Class Q5	45.0

3.) Flat and Elongated Particles (SD 212)

The maximum amount of flat and elongated particles for the coarse aggregate shall not exceed the limits shown in Table C. Flat and elongated particles are defined where the ratio of maximum to minimum dimension is greater than five to one. The aggregate tested shall be the composite virgin aggregate material that is retained on a 4.75 mm (#4) sieve

Table C – Flat and Elongated Particles	
	*Maximum Flat and Elongated Particles (%)
Class Q1	No Limit
Class Q2	10
Class Q3	10
Class Q4	10
Class Q5	10

*Evaluated for specification at mix design only

4.) Sand Equivalent (SD 221)

Table D - Sand Equivalent	
	Sand Equivalent Minimum (%)
Class Q1	40
Class Q2	42
Class Q3	45
Class Q4	50
Class Q5	60

b. Source Virgin Mineral Aggregate Requirements:

1.) Source Virgin Mineral Aggregate Requirements

Table E - Source Mineral Aggregate Requirements					
	Light Weight Particles (SD 208 & SD 214)		Sodium Sulfate Soundness (SD 220; 5 cycles)		Los Angeles Abrasion Loss (SD 204)
	+4.75mm (#4)	-4.75mm (#4)	+4.75mm (#4)	-4.75mm (#4)	
Class Q1	4.5% maximum	4.5% maximum	15% maximum	15% maximum	45 % maximum
Class Q2	3.0% maximum	3.0% maximum	15% maximum	15% maximum	45 % maximum
Class Q3	3.0% maximum	3.0% maximum	15% maximum	15% maximum	40 % maximum
Class Q4	1.0% maximum	1.0% maximum	12% maximum	12% maximum	35 % maximum
Class Q5	0.5% maximum	0.5% maximum	12% maximum	12% maximum	35 % maximum

2.) Gyratory Controlled QC/QA Gradation (Sieve Analysis; SD 202)

Virgin mineral aggregate gradations, at mix design, must be within the control points for the designated aggregate size of the table below.

Table F - Gyratory Controlled QC/QA Gradation(1)		
	Control Points (percent passing)	
Sieve - in (mm)	Min.	Max.
3/4 (19)	100	
1/2 (12.5)	90	100
3/8 (9.5)		85
#8 (2.36)	30	55
#200 (0.075)	2.0	7.0

(1) The gradation sample shall not include hydrated lime.

c. Mixture Requirements:

1.) Gyratory Compactive Effort

The mixture shall be compacted in accordance with SD 318. The number of gyrations and densification criteria are in listed in Tables G and H.

Table G - Gyratory Compactive Effort			
	$N_{initial}$	N_{design}	$N_{maximum}$
Class Q1	6	40	65
Class Q2	6	50	75
Class Q3	6	60	85
Class Q4	7	70	95
Class Q5	7	80	110

2.) Mixture Densification Criteria

Table H – Mixture Densification Criteria		
	Percent of Mixture Maximum Specific Gravity (G_{mm})	
	N_{design}	$N_{maximum}$*
Class Q1	96.0	≤98.0
Class Q2	96.0	≤98.0
Class Q3	96.0	≤98.0
Class Q4	96.0	≤98.0
Class Q5	96.0	≤98.0

*$N_{maximum}$ evaluated for specification at mix design only

3.) Voids in Mineral Aggregate Criteria (VMA)

VMA is calculated from the mixture bulk specific gravity at N_{design} gyrations.

Table I - Voids in Mineral Aggregate Criteria	
Nominal Maximum Aggregate Size	Minimum VMA, Percent(1)
Class Q1	14.5
Class Q2	14.5
Class Q3	14.5
Class Q4	14.5
Class Q5	14.5

(1) The minimum VMA percent required for Hot Mix during production shall be 13.5 percent

4.) Voids Filled with Asphalt (VFA)

VFA is calculated from the mixture bulk specific gravity at N_{design} gyrations.

Table J - Voids Filled with Asphalt Criteria	
	VFA*, percent
Class Q1	70-80
Class Q2	65-80
Class Q3	65-78
Class Q4	65-78
Class Q5	65-75

*evaluated for specification at mix design only

5.) Dust to Binder Ratio

The dust to binder ratio shall be 0.6 to 1.4 The dust to binder ratio is calculated as the percent by mass of the total material passing the #200 (0.075mm) sieve (including hydrated lime) divided by the effective asphalt binder content (expressed as percent by mass of mix). If the aggregate gradation percent passing the #8 (2.36 mm) sieve is less than 39 percent at mix design, the dust to binder ratio shall be increased to 0.8 to 1.6.

6.) Moisture Sensitivity (SD 309)

The minimum retained tensile strength ratio for the mixture is 80 percent. The moisture sensitivity requirement will be waived if 1.00% hydrated lime is added to the mix. Hydrated lime will not be required, or can be added at a rate lower than 1.00% if the moisture sensitivity requirement is met. If lime is used, a minimum of 0.50% hydrated lime shall be added to the mix. Liquid anti-stripping additives will not be allowed in lieu of hydrated lime. An item will be included in the contract for hydrated lime. Payment for hydrated lime will only be made when hydrated lime is actually used. Moisture Sensitivity will only be evaluated during the mix design process.

7.) Asphalt Pavement Analyzer: (AASHTO T 340)

Samples shall be compacted at the N_{design} gyratory level at the Contractor selected binder content and tested at the PG binder high temperature. Field samples will be tested at the binder and air void content of the selected field gyratory samples or as made at the N_{design} gyratory level from a sample of field produced mix.

Table K - Asphalt Pavement Analyzer Criteria	
	APA, Maximum Rutting (mm)
Class Q1	8
Class Q2	7
Class Q3	6
Class Q4	5
Class Q5	5

8.) Moisture Content of Mix

The maximum moisture in the field produced mix shall be 0.3 %. The mix shall be sampled from the windrow in front of the laydown machine and placed in an airtight tared container. The mix shall be dried to a constant mass as described in SD 305.

5. Quality Control Testing:

a. Calibration Testing:

1.) Cold Feed: Prior to production of asphalt concrete, the QC and QA certified technicians shall conduct comparison tests at the plant with a split companion cold feed calibration sample of virgin aggregate to assure that all associated equipment and procedures provide comparable results. Comparison test results shall meet the requirements of the mix design report and shall conform to the tolerances shown in Table L. The split companion calibration testing shall continue until the results meet the requirements of the mix design report and are within the listed tolerances. The split companion calibration testing shall be performed on each mix type produced prior to production of that mix type.

2.) Mixture Testing: The QC and the QA technicians shall perform correlation testing on a reheated prebuilt split companion sample (from the mix design process) supplied by the Contractor. The correlation testing will be for the theoretical maximum specific gravity (Rice Method) and gyratory bulk specific gravities.

Two gyratory compaction samples shall be made using a compactive effort of N_{design}. The bulk specific gravity shall than be measured on specimens compacted to N_{design} gyrations. Air voids shall be calculated using the theoretical maximum specific gravity and bulk specific gravity at N_{design} gyrations. The percent of theoretical maximum specific gravity densification shall be determined at N_{design}. The results shall be within the tolerances shown in Table L.

3.) Bulk Specific Gravity Reheat Correlation: The QC and the QA technicians shall perform a reheat correlation test for the bulk specific gravity. The reheat correlation test shall be performed on a split sample of a sublot from within the first lot of production for the mix design. An additional reheat correlation test shall be performed on a split sample of a sublot from within the first lot of production for any new mix designs.

Cool a split portion of the sample down to room temperature. After the split sample has cooled, reheat and compact according to SD 318. Calculate the difference in the bulk specific gravities of the non-reheated and reheated tests. The average difference using the QC and QA technician's test results will be the correction factor for a reheated bulk specific gravity. This test may be repeated at the discretion of the Contractor or the Engineer.

Table L – TOLERANCE BETWEEN QC, QA, AND IA TEST RESULTS		
	Attribute	**Tolerance**
a.	Sieve 9.5 mm (3/8 in) & larger	± 5
b.	Sieve 4.75 mm (#4) thru 300 μm (#50)	± 3
c.	Sieve 150μm (#100) thru 75 μm (#200)	± 1.5
d.	Lightweight Particles	± 1.0
e.	Sand Equivalent	± 7
f.	Fractured Faces	± 10
g.	Fine Aggregate Angularity	± 1.0
i.	Air Voids	± 1.2
j.	Bulk Specific Gravity of Asphalt Concrete (gyratory) @ N_{design}	± 0.020
k.	Mixture Densification @ N_{design}	± 1.0
l.	Maximum Specific Gravity (Rice)	± 0.020

b. Asphalt Concrete Quality Control (Production) Testing: After the calibration cold feed and mixture testing is completed and the results are within the specified tolerances, the Contractor will be allowed to begin production of asphalt concrete.

The Engineer shall randomly determine all sample locations at a frequency meeting the requirements of Table M. Sampling and splitting not performed by the Engineer shall be witnessed by the Engineer. To ensure that a representative random sample is obtained, the QC sample locations shall only be given to the Contractor immediately prior to sampling. The hot mix sample shall be obtained before the cold feed gradation sample. If lime is used in the mix, the lime shall be momentarily shut off while obtaining the cold feed gradation sample. If lime is to be included in the mix, care shall be taken to ensure that the hot mix sample is obtained with lime included in the sample. There will be a 200 ton (200 metric ton) buffer between the random sample locations. The intent of the buffer is to prevent back-to-back sampling and to more evenly distribute the sampling and testing workload.

A lot shall consist of five sublots. Sublots shall not represent more than 1000 tons (1000 metric tons) of asphalt concrete unless the current sublot is terminated.

The Contractor shall obtain QC samples at the specified locations for four of the five sublots. The Engineer will sample and split a minimum of one of the five sublots, and witness all QC sampling. The Contractor shall test all five sublot samples (a split of the one sublot sampled by the Engineer and four sublot samples taken by the Contractor). The material shall be sampled, split, and tested by the methods and procedures described in the Department's Materials Manual.

The aggregate and hot mix samples shall be large enough to obtain four (4) splits of the minimum sample size needed for testing. If the sample is to be used for IA testing, the samples shall be large enough to obtain six (6) splits of the minimum size needed for testing. Immediately after splitting, the QA technician shall take possession of half of the sample for all of the QC samples. The QA technician shall ensure the Department's portion of the backup samples for all QC and QA tests are properly labeled, stored, and retained until the Bituminous Engineer has completed the F-test and t-test statistical evaluation. The QC technician shall retain their backup split until the QC, QA, and IA technicians have obtained their test results for the individual lot and have found the results to be within the allowable tolerances in Table L, SD 317, and the Engineer has approved the disposal of the backup samples.

Table M - Minimum Frequency For Production Sampling/Testing			
TEST		**MINIMUM FREQUENCY**	**TEST METHOD**
Virgin Mineral Aggregate Gradation*		1/1000 ton (M ton)	SD 202
Lightweight Particles*		1/1000 ton (M ton)	SD 208 & SD 214
Sand Equivalent*		1/1000 ton (M ton)	SD 221
Fractured Faces*		1/1000 ton (M ton)	SD 211
Fine Aggregate Angularity*		1/1000 ton (M ton)	SD 217
Max. Specific Gravity of Asphalt Concrete (Rice Method)**		1/1000 ton (M ton)	SD 312
Bulk Specific Gravity of Asphalt Concrete (gyratory)**	N_{design}	1/1000 ton (M ton)	SD 318 (average of 2 specimens)
Mixture Densification	N_{design}	1/1000 ton (M ton)	Calculation (SD 318)
Voids in Mineral Aggregate (VMA) @ N_{design}		1/1000 ton (M ton)	Calculation (SD 318)
Dust to Binder Ratio		1/1000 ton (M ton)	Calculation (SD 318)
Asphalt Binder Content (sticking the tank)		1 per day	SD 314
Hydrated Lime Content		1 per day	Form DOT-33Q
RAP Content (if used)		1 per day	Form DOT-93
Moisture Content of Mix**		1/10000 ton (M ton)	SD 305
Density, In Place***		2/1000 ton (M ton)	SD 315

* Samples shall be taken according to SD 201 Section 3.2.

** Samples shall be taken from the windrow in front of the laydown machine.

*** Two density cores per 1000 ton (M ton) sublot shall be taken for determination of in place density. The average of the two core density results will be the 1000 ton (M ton) sublot value used for density in the pay factor calculations. The Engineer will determine

and mark the core locations after the mix is placed and compacted. The cores will be taken the next working day after the asphalt pavement is placed. The Contractor shall perform the coring under observation by the Engineer. The Engineer will take immediate possession of the core samples for density testing. The Contractor shall fill all core holes before the end of the next working day with hot asphalt concrete and compact the mix to a density close to that of the surrounding pavement.

Core samples for density will be tested by the Engineer.

The Contractor may request to reduce the QC testing frequency when the QC samples and the QA samples indicate acceptable results within the specifications in Tables A, B, D, and E and the tolerances from Table L for sand equivalent, lightweight particles, fractured faces, and fine aggregate angularity and the Engineer and the Contractor are both confident that future production will meet specifications. The reduction in test frequency shall be authorized in writing by the Area Engineer.

The Area Engineer shall notify the Contractor in writing of the reduction in testing frequency and a copy of this letter shall be forwarded to the Region Materials Engineer and Certification Engineer. A reduction in testing frequency may be revoked by the Area Engineer at any time.

The QC technician shall complete all of the required tests on the samples that are selected for QA testing. The QA technician will complete all of the required tests on the samples that are selected for QA testing.

The frequency of tests performed may be reduced using the following procedure. The QC technician shall complete all tests on the first lot of material produced. A reduction in the frequency of testing shall be allowed based upon the average test results obtained from the first lot of material tested by the QC technician. This reduction in test frequency for any of the test shown in the QC Test Frequency Reduction Guidelines shall remain in effect as long as the test results remain within the range of the testing frequency currently being used.

The frequency of the QC testing for sand equivalent, lightweight particles, and fractured faces may be further reduced beyond what is shown in the QC Test Frequency Reduction Guidelines by the Area Engineer. The Area Engineer may reduce the frequency beyond what is shown in the QC Test Frequency Reduction Guidelines based on an evaluation of test results from the material source.

QC TEST FREQUENCY REDUCTION GUIDELINES

Sand Equivalent

10 or more above minimum	Reduce test frequency to 1 test per lot
7 to 9 above minimum	Reduce test frequency to 2 tests per lot
4 to 6 above minimum	Reduce test frequency to 3 tests per lot
Within 3 of minimum	No reduction in test frequency

+ #4 and - #4 Lightweight Particles (less than 1.95 Specific Gravity)

Results of 0.0% lightweight particles	Reduce test frequency to 1 test per lot
1.5 % or more below maximum	Reduce test frequency to 1 test per lot
1.1 to 1.4 % below maximum	Reduce test frequency to 2 tests per lot
0.6 to 1.0 % below maximum	Reduce test frequency to 3 tests per lot
Within 0.5 % of maximum	No reduction in test frequency

Fractured Faces

Results of 100% fractured faces	Reduce test frequency to 1 test per lot
25 % or more above minimum	Reduce test frequency to 1 test per lot
16 to 24 % above minimum	Reduce test frequency to 2 tests per lot
6 to 15 % above minimum	Reduce test frequency to 3 tests per lot
Within 5 % of minimum	No reduction in test frequency

Fine Aggregate Angularity

2.5 % or more above minimum	Reduce test frequency to 1 test per lot
2.0 to 2.4 % above minimum	Reduce test frequency to 2 tests per lot
1.5 to 1.9 % above minimum	Reduce test frequency to 3 tests per lot
Within 1.4 % of minimum	No reduction in test frequency

c. Specification Control Limits: The control limits of materials being produced will be evaluated under two different categories, Pay Factor Attributes and Non-Pay Factor Attributes.

1.) Pay Factor Attributes: Air voids and in place density (compaction) are the two pay factor attributes. These attributes will be statistically analyzed for contract unit price adjustment.

The percent air voids shall meet the requirement in Table N and the in place density of the asphalt concrete when expressed as a percent of the lot average maximum specific gravity (Rice Method) shall meet the requirements in Table N.

TABLE N - PAY FACTOR ATTRIBUTES			
a.	% Air Voids	4.0% ± 1.0%	
b.	In Place Density (% Compaction)	Class Q1	92.0% to 96.0%
		Class Q2	92.0% to 96.0%
		Class Q3	92.0% to 96.0%
		Class Q4	92.0% to 96.0%
		Class Q5	92.0% to 96.0%

When field test results for air voids or in place density deviate from the job mix formula values, the Contractor may adjust the gradation and/or asphalt binder content within the allowable tolerances shown for items a, b, c, and d shown in Table P. Bin splits may be adjusted up to ± 5 percent from the job mix formula bin splits. Adjustments shall be made as a result of an interactive process between the Contractor and the Engineer. The Contractor's recommendations shall prevail, provided all specifications and established mix design criteria are being met.

If new materials are to be incorporated into the asphalt concrete or bin split percentages are adjusted by more than 5 percent from the job mix formula, a new mix design will be required by the Contractor (unless otherwise approved by the Bituminous Engineer) with verification by the Department's Bituminous Mix Design Lab. The Contractor shall be responsible to verify that all mix design criteria are being met prior to written job mix formula approval.

When a new job mix formula is required, the current sublot shall be terminated and incorporated into the previous sublot for pay factor analysis. A new lot will be started when production is changed to the new job mix formula. At the end of production, the current sublot shall be terminated and incorporated into the previous sublot.

2.) Non-Pay Factor Attributes: There are several requirements not used in the determination of the pay factor that are very important to the performance of the asphalt concrete. The below listed attributes are tested at the frequency listed in Table M. The attributes shall be maintained within the requirements in section 320.3 D.4 or as otherwise specified.

Table O – Non-Pay Factor Attributes
Virgin Mineral Aggregate Gradation
Asphalt Binder Content
Hydrated Lime Content
Moisture Content of Mix
Sand Equivalent
Lightweight Particles
Fractured Faces
Fine Aggregate Angularity
Voids in Mineral Aggregate (VMA)
Dust to Binder Ratio
RAP Content (if used)

The Asphalt Binder and Hydrated Lime content are not statistically evaluated as pay factor attributes, but may be price adjusted (DOT-18) for failure to conform to specification requirements.

The VMA and Dust to Binder Ratio are calculated using the asphalt binder percentage determined from the daily cutoff from that day's production. The bulk specific gravity of the mineral aggregate will be determined by the SDDOT central lab during the mix design verification.

When RAP is required, the VMA will be calculated using the bulk specific gravity of the mixture, the percent stone of the mixture, and the bulk specific gravity of the aggregate as determined by the SDDOT central lab during the mix design verification, all including RAP. When RAP is required, the Dust to Binder Ratio will be calculated using the percent -#200 material from the virgin aggregate, the percent hydrated lime, and the effective binder content of the total mixture including RAP.

The bulk specific gravity of the mineral aggregate may be tested during production at the discretion of the Contractor or the Engineer. A split portion of material shall be given to the other entity for verification.

If the VMA or Dust to Binder Ratio values fail to meet the requirements in Section 320.3 D.4, the Contractor shall make corrective actions before production continues and document the corrective actions taken. If three out of any five consecutive tests for VMA or Dust to Binder Ratio exceed the criteria in Section 320.3 D.4, the Contractor shall immediately cease operations. A new mix design will be required by the Contractor (unless otherwise approved by the Bituminous Engineer) with verification by the Department's Bituminous Mix Design Lab prior to resuming production. The Contractor shall be responsible to verify that all mix design criteria are being met.

TABLE P – JOB MIX FORMULA TOLERANCES		
	Attribute	**Tolerance from Target Value**
a.	Sieve 5/8" (16 mm) thru 3/8" (9.5 mm)	± 7
b.	Sieve #4 (4.75 mm) thru #50 (300 μm)	± 5
c.	Sieve #100 (150 μm) thru #200 (75 μm)	± 2.0
d.	Percent Asphalt Binder	± 0.3
e.	Sand Equivalent*	Minimum or more
f.	Percent Lightweight Particles*	Maximum or less
g.	Fine Aggregate Angularity*	Minimum or more
h.	Fractured Faces*	Minimum or more
j.	Percent Hydrated Lime	± 0.10
k.	Asphalt Application Temperature	± 20°F (±11°C)
l.	Temp. of Mixture when emptied from the mixer	± 20°F (±11°C)
m.	Temp. of Mixture on delivery to the road	-20°F & + 30 °F (-11°C & +17°C)
n.	Percent RAP Content (if used)	± 5

*These properties are not listed on the job mix formula but will be tested for compliance with the mix design specifications listed in Tables A-E.

If two out of any five consecutive tests for the gradation requirements (Items a, b, or c) fail to meet the tolerances contained in Table P, the Contractor shall immediately cease operations. The Contractor shall investigate the cause of the variation in production. Production will not be allowed to resume until a passing cold feed sample is obtained and the Engineer has approved the corrective action.

If the asphalt binder content, hydrated lime content, or RAP content falls outside the tolerance in Table P; the Contractor shall make corrective actions before production continues and document the corrective actions taken. If two out of any five consecutive tests for the asphalt binder content, hydrated lime content, or RAP content fail to meet the tolerances contained in Table P; the corrective action shall include recalibration of the binder meter, the lime weigh and feed system, or the RAP feed system, respectively.

The maximum moisture content in the field-produced mix shall be 0.3 %. If the moisture content in the mix exceeds the maximum allowed the Contractor shall make corrective actions before production continues and document the corrective actions taken. Burner adjustments, increase mix temperature, slower plant production rates, use of drier aggregates, or adjust the amount of time material is in drum for mixing and heating are possible corrective actions. Additional moisture content in the field-produced mix tests shall be conducted to verify that the corrective action has worked to produce specification mix.

If the sand equivalent, percent lightweight particles, fine aggregate angularity, or fractured faces (Items e, f, g, or h) for a single test fall outside the tolerances shown in Table P, the Contractor shall immediately cease operations. The Contractor shall investigate the cause of the variation in production. The Contractor will not be allowed to continue operations until a passing cold feed sample is obtained and the Engineer has approved the corrective action.

3.) Test Identification: Number the production control sublot tests consecutively in accordance with the Department's Materials Manual starting with number "QC01" or "QC001" based on the total number of samples needed. The two density cores in a sublot shall have the same number along with an "A" or "B" designation and shall match the sublot number. The two gyratory specimens shall be numbered with the sublot number and an "A" and a "B" for the two specimens. Use "N" before the sublot number for non-pay factor material. Use "Info" before the number for information samples. Use "TS" before the sublot number for test strip samples. Use "R" after the number for remedial samples. Use "Cal" before the number for calibration samples.

4.) Control Charts: The Contractor shall provide QC charts that include the control limits and each individual test result for the following parameters:

a) Gradation of the control sieves in the Job Mix Formula
b) Asphalt Binder Content
c) Hydrated Lime Content
d) Maximum Specific Gravity (Rice)
e) Bulk Specific Gravity (Gyratory)
f) Air voids
g) In-place density
h) VMA
i) Dust to Binder Ratio

QC test results shall be recorded on the control charts immediately after completion of the test. The control charts shall also include the QA and Independent Assurance test results. The control charts shall be prominently displayed and accessible to the Engineer. The control charts shall be given to the Engineer upon completion of the project.

5.) Documentation: The Contractor is responsible for documenting all observations, inspection records, mixture adjustments, test results, and corrective actions on a daily basis. The Contractor shall also

record and maintain a plant record of plant starts and stops, mix temperatures leaving the plant, bin split of aggregates, and the temperature of the asphalt binder going into the mix.

Field observations and inspections shall be noted as they occur in a permanent duplicating field book or diary, provided by the Engineer. The roadway diaries shall include hours paved, equipment in use, stations paved, course depth, width, crown, spread checks, tonnage, weather, and temperature of mixture delivered to the road. Plant diaries shall include plant start and shutdown times, mix temperature of material produced, binder spot checks, aggregate bin splits being used, actual calculated asphalt binder percentage for the day, tons of mix produced, mixture or aggregate adjustments, weather conditions, and any other pertinent information.

The Engineer will collect copies of documentation records and recorded mix temperature charts daily. All records shall be made available at all times upon request by the Engineer. The test results and original work sheets, including all gyratory specimen compaction sheets, for the production control testing listed in Table M shall be given to the Engineer upon completion of the test.

E. Quality Assurance: The Engineer will randomly sample and test a minimum of one sublot for each lot. The Engineer may test any or all of the splits of the QC sublot samples as part of the QA program. The Engineer will provide at least one individual certified in Asphalt Concrete Aggregate Testing and Asphalt Concrete Hot Mix Testing for conducting the QA testing and at least one individual certified in Asphalt Concrete Roadway Inspection for roadway inspection.

The QA technician will complete all of the required tests on the samples that are selected for QA testing.

The services of contractor's personnel to assist in obtaining the QA samples should be limited only to instances when hazardous conditions or liability issues exists that dictate their involvement and the following requirements are meet:

1. The QA sample location or time is only given to the contractor immediately prior to sampling.
2. The contractor's personnel are used only to provide labor to assist in physically obtaining the QA sample.
3. The Engineer is present to witness the taking of the QA sample.

4. The Engineer witnessing the sampling and the contractor labor performing the sampling are certified in accordance with the Department's Certification program.
5. The Engineer immediately takes possession of the QA sample.

QA test results will be made available to the Contractor within 24 hours, or the next working day.

The split sample test results (QA) of the sample taken by the Engineer will be compared to the Contractor test results (QC) for conformance with Table L. Populations of the QC sample test results will be compared to the QA sample test results utilizing the procedures shown in SD 317. If the test results are within the allowable tolerances, found to be similar, and found to represent the same population, as determined by F-test and t-test statistical evaluation procedures conducted by the Bituminous Engineer, the Contract unit price adjustments will be based on the Contractor QC test results.

Sampling and splitting not required to be performed by the Engineer will be witnessed by the Engineer.

The Engineer will test the core samples for density.

The Engineer will perform or witness the measurement of the depth of the asphalt binder in the storage tanks as described in SD 314. The Engineer will determine the temperature of the asphalt binder in the tank and will perform the daily calculation of the asphalt binder content.

The Engineer will perform the daily calculation of the hydrated lime content.

The Engineer will test the moisture content of the hot mix. The mix for the moisture test shall be sampled from the windrow in front of the laydown machine and placed in an airtight, tared container. The mix shall be dried to a constant mass as described in SD 305.

F. **Independent Assurance Procedures:** The Department will perform Independent Assurance (IA) testing on project produced materials. Random samples of mineral aggregate and hot mix asphalt concrete used for QC testing will be selected by the Region Materials Engineer for independent testing. IA testing will be performed at a minimum frequency of one per 15,000 tons (M ton).

The Region Materials Engineer will perform IA testing for the attributes listed in Table L. The tolerances from Table L will be used to independently evaluate the QC and QA testing procedures and equipment. The Region Materials Engineer shall witness the sampling and splitting of the designated

IA sample (an actual sublot sample). The Region Materials Engineer may select either Engineer or Contractor sampled sublot for the IA testing.

The Region Materials Engineer will also perform IA testing for the bulk specific gravity on in place density cores. A separate IA core shall be obtained by the Contractor while obtaining the in place density core used to determine the pay factor. The IA core shall be taken at the same offset and within one foot of the core used in determining the pay factor. An IA core must be taken during the first 5,000 (M ton) tons of hot mix tested for in place density and then at a minimum frequency of one core per 15,000 tons (M ton) thereafter. A tolerance of 0.020 will be used to evaluate the bulk specific gravity of the in place density cores.

G. Dispute Resolution System: If the differences between the QC and QA results are greater than allowed in Table L or SD 317, the Engineer will investigate the reason for the difference. The investigation may include review and observation of test procedures and equipment. The QA technician shall test the next QC sample as soon as a difference between any QC and QA test result is found. The Engineer may require that a sample be tested jointly by the Contractor's QC technician, the Engineer's QA technician, and the Region Materials Engineer. The Region Materials Engineer test results and/or Central Office Materials Lab test results will be the referee used for acceptance and will determine which sample test results will be incorporated into the pay factor calculations only when a dispute between the QA and QC sample cannot be resolved. Process verification procedures using F-test and t-test statistical evaluation procedures to determine if both QC and QA test results represent the same sample population may result in the need for testing backup sublot samples and substituting the new test result for pay factor calculations. If the QC and QA test results do represent the same population, as determined by F-test and t-test statistical evaluation procedures, the Contractor’s test results may be used for quality acceptance.

H. Preparation of the Mixture: The mineral aggregate shall be satisfactorily mixed with the proper quantity of asphalt binder at the central mixing plant. The asphalt binder shall be added and the mix produced at the temperatures established by the job mix formula.

The mixing plant shall be operated using automatic controls. Manual operation will be permitted for the remainder of the day when automatic controls fail, provided specified results are obtained. The Contractor shall restore the automatic operation prior to the next day’s resumption of paving operations.

In batch plants, the mineral aggregate shall be mixed dry for a minimum of five seconds.

After introducing the required aggregate and asphalt into the mixer the materials shall be continuously mixed until the aggregate is completely and uniformly coated and a thorough distribution of the asphalt binder throughout the aggregate is obtained.

When hot mix storage bins are used, storage of the asphalt mix shall be limited to a maximum of 15 hours. The point of temperature measurement will be the discharge end of the mixer.

I. **Transportation and Delivery of the Mixture:** The mixture shall be transported from the plant to the point of use in pneumatic tired vehicles. The vehicle boxes shall be tight, clean, and smooth. Boxes shall be cleaned only with release agents such as lime water, soap, a detergent solution, or a commercial product specifically intended for this use. Oils, diesel fuel, or other petroleum solvents shall not be used. No material shall be used which could adversely affect the asphalt concrete mixture. Excess solution in the box shall be disposed of before the vehicle is loaded.

Loads shall be tarped in inclement weather conditions and when directed by the Engineer.

J. **Tacking, Spreading, and Compacting:** The surface, including all vertical contact faces on which the asphalt concrete is to be placed, shall be tacked according to Section 330. The tack coat shall be allowed a cure period, as determined by the Engineer, prior to asphalt concrete placement.

Surfaces which have been primed with cutback asphalt shall be allowed to cure for a minimum of 72 hours prior to being overlaid with asphalt concrete.

Asphalt concrete shall be placed by self-propelled pavers. Handwork is permissible in inaccessible or odd shaped areas. In lieu of a self-propelled paver, asphalt concrete may be placed by a shouldering machine on shoulders less than 6 feet (2 m) in width.

Spot leveling and repair of the existing surface with asphalt concrete shall be required prior to the paver laid courses at locations designated. Potholes and areas of localized disintegration shall be cleaned of loose material, squared, tacked, leveled with asphalt concrete, and satisfactorily compacted. Spot leveling may be blade laid in lifts not exceeding three inches (75 mm) of uncompacted depth. Compaction shall be by the specified roller coverage method, except a steel face roller will not be required.

Paver laid mix shall be spread using automatic transverse and longitudinal grade controls. If the automatic controls fail or malfunction, the Engineer may permit manual operation the remainder of the day, provided the finished

product meets the specifications. Frequent breakdowns will be cause for suspension of the work by the Engineer until repair or replacement is made.

Following placement of the first pass using the traveling stringline for control, adjacent passes and succeeding lifts shall be placed using the traveling stringline riding on the previously laid material. A shoe attachment may be used to match the longitudinal joint(s) on the final paver pass(es) of the top lift unless otherwise directed by the Engineer.

A shoe attachment on the paver shall be used to automatically match the elevation of asphalt concrete shoulders with concrete pavements.

Automatic slope controls will be required on paving equipment used to pave asphalt shoulders that are 8 feet (2.4 m) or more in finished width.

Asphalt concrete shall be placed directly in a uniform windrow and then fed into the paver by a paver feeder. The use of a paver feeder is not required on shoulders, turning lanes less than 500 ft (150 m), roadway paving less than 500 ft (150 m), and transitions into bridge decks less than 500 ft (150 m). The paver feeder shall pick up substantially all of the mix and feed it into the paver without segregation. The size of the windrow shall be regulated so that the paver is fed a continuous and adequate supply of mix. The screed shall not be raised solely to accommodate excess material in the windrow or paver hopper. A Material Transfer Vehicle (MTV), which takes material directly from the trucks, stores and mixes it, and then dumps into the paver hopper, may be used if approved by the Engineer.

On the final surfacing lift laydown operations shall commence at the farthest point and progress continuously toward the plant.

On rural projects, a partial width pass may be extended beyond the adjacent pass by as much as one days run. The paver shall be moved back the following working day to place the adjoining pass. Where a difference in elevation exists between two lanes carrying traffic in the same direction on rural multi-lane asphalt concrete construction, one of the effected lanes shall remain closed to traffic.

The plant production and availability of hauling vehicles shall be sufficient to provide a uniform and consistent quantity of asphalt concrete to the paver so laydown operations are continuous. Stops and starts shall be restricted to a minimum. Stopping normal laydown operations to surface an approach, thereby creating an unnecessary joint, will not be permitted.

Laydown operations shall proceed from the center to the shoulders of the roadbed surface. When turning lanes are present, the Contractor may alter the laydown operation. The Contractor shall submit his proposed laydown

operation to the Engineer for prior approval. The center joint of the top lift shall be located on centerline. Longitudinal joints below the surface shall be offset from the previously constructed joints by approximately 6 in. (150 mm) and be located within 12 in. (300 mm) of the lane line. In curb and gutter sections, laydown may proceed from the gutter line to the centerline.

Transverse joints in the final lift shall be formed by sawing back the previous run to expose the full depth of the course. The finished transverse joint of all lifts shall have a uniform texture and comply with the straightedge requirement. Waste material resulting from forming joints and temporary ramps shall be removed and disposed of by the Contractor.

Segregation or excessive pulling of the mix shall warrant suspension of operations.

Immediately after the mix has been placed and surface irregularities adjusted, it shall be thoroughly and uniformly compacted by rolling.

Multiple lift laydown operations will not be allowed on the same location on the same day unless approved by the Engineer.

Vibratory rollers shall have an automatic shutoff to deactivate the vibrators when the roller speed is less than 0.5 mph. They shall operate according to the manufacturer's recommendations for speed, impacts per foot, and amplitude of vibration for the thickness of mix being compacted. Rolling shall be longitudinal, commencing at the outer edges of the mat and progressing toward the center in straight, parallel strips, overlapping at least six inches (150 mm). On superelevated curves, rolling shall progress from the lower to the upper edge of the mat. The Contractor shall vary the points of reversal to prevent a transverse crease. The rollers shall not stand idle on any part of the mat that has not been compacted and cooled sufficiently to resist deformation.

The shoulders shall be compacted using the same roller pattern used on the adjacent mainline asphalt concrete or as directed by the Engineer.

The beveled edge shall be satisfactorily compacted.

Longitudinal joints shall be compacted in accordance with the following:

For confined edges, on the first pass adjacent to the confined edge; the compaction equipment shall be entirely on the hot mat 6 in. (150 mm) from the longitudinal joint.

For unconfined edges, on the first pass adjacent to the unconfined edge, the compaction equipment shall extend 6 in. (150 mm) beyond the edge of the mat.

The surface of each lift shall be free of waves and other irregularities. The final lift surface shall be checked with a ten foot (three meter) straightedge. The variation of the surface from the straightedge between any two contact points shall not exceed 1/4 inch (6 mm). The crown, on all lifts, as indicated by checking with a ten foot (three meter) straightedge, shall be within 0.04 foot (12 mm) of specified crown in any ten foot (three meter) length.

Irregularities shall be corrected before the temperature of the asphalt mix drops below 175º F (80º C). The longitudinal profile can only be improved by using a grinder with diamond blades mounted on a horizontal shaft and when approved by the Engineer. Areas that have been ground shall not be left smooth or polished, but shall have a uniform texture equal in roughness to the surrounding unground asphalt concrete. Grinding shall be daylighted to the outside edge of the pavement. Ground surfaces shall be flushed sealed. Under no circumstances shall operations continue when it becomes evident final rolling is not producing a smooth, uniform, compacted surface free from roller marks and other irregularities.

The mix shall be compacted by one of the following methods: Unless otherwise specified, the specified density method shall be used.

1. **Specified Density Method:** The mix shall be compacted to the density specified. Compaction rolling shall be completed before the temperature of the mix drops below 175°F (80°C). Vibratory rollers may only be used in the static mode for finish rolling.

   Compaction of mix placed on farm entrances, residences, businesses, and intersecting road approaches shall be compacted by the specified roller coverage method.

2. **Specified Roller Coverage:** The mix shall be compacted by at least four complete coverage's with pneumatic tired rollers (a minimum of 60 inches wide [1500 mm] and weighing at least 250 pounds per inch [4.5 kilograms per millimeter] of roller width) and at least one complete coverage with steel faced rollers, or as approved by the Engineer. The steel faced rollers used for specified roller coverage shall be the same as the rollers used for mainline compaction or similar rollers of equal size (weighing at least 325 pounds per linear inch [5.8 kilograms per millimeter] of roller width).

   Breakdown rolling may be accomplished by using steel-faced rollers, only when approved by the Engineer.

Rolling shall proceed on the mat as soon as lay down is completed. Completion of rolling on any segment shall not lag behind the laydown more than 1000 feet (300 meters). During periods of cool weather this maximum distance between laydown and final rolling shall be reduced as directed by the Engineer.

Compaction to a specified density will not be required. However, additional roller coverage may be required to obtain a smooth surface finish.

When directed by the Engineer, the Contractor shall cool, saw, and remove an undamaged, 6 inch (150 mm) square sample or a 6 inch (150 mm) diameter round sample from a designated area and repair the hole to the satisfaction of the Engineer. The Engineer shall take immediate possession of all samples for further testing.

K. Maintenance: The Contractor shall maintain the work during construction and until final acceptance. Maintenance shall include protection and repair of the prepared base course, tack coat, wearing surface mat, shoulders, and seal course. Rich or bleeding areas, breaks, raveled spots, or other nonconforming areas in the wearing surface or base shall be corrected.

L. Traffic Control: Hauling or allowing traffic on the roadway will not be permitted until the surface has been compacted and cooled sufficiently to resist marking or distortion.

Where traffic is to be maintained by means of part width construction, the Contractor shall control all traffic by identified pilot cars and flaggers. The Contractor shall schedule work so traffic will not be greatly inconvenienced with long one-way lanes.

M. Shoulder Joints: When specified a continuous groove shall be constructed by forming, sawing, or routing the joint between the Portland cement concrete pavement and the asphalt concrete shoulder.

Sawing may be done with either diamond or water-cooled abrasive blades.

If a router is used it must be capable of cutting a groove to the required dimensions. Equipment designed to plow the groove to dimension will not be permitted. The walls of the finished groove shall be vertical and the groove bottom shall be flat.

The groove shall be thoroughly cleaned immediately after forming, sawing, or routing. Dry sawed joints shall be cleaned with high-pressure air. Wet sawed joints shall be cleaned with high-pressure water followed by high-pressure air. The air compressor shall produce a minimum of 125 CFM (0.06 cubic meters per second) output and shall be equipped with a maximum 3/4 inch (20 mm)

nozzle. The groove (including the sides) shall be free of dirt, dust, water, oil, grease, and loose material immediately prior to sealing. The Portland cement concrete surface shall be free of asphalt and any curing compound that would prevent bonding. The groove shall be completely dry and filled level with joint sealer by a sealing device, which will not entrap air in the sealed joint.

Joint sealer application will not be permitted when the air temperature near the joint is less than 40° F (5°C) or is 40° F (5°C) and falling.

320.4 METHOD OF ACCEPTANCE AND MEASUREMENT

A. Asphalt Binder: Asphalt binder will be measured to the nearest 0.1 ton (M ton). Quantities of asphalt binder in excess of the asphalt content listed on the job mix formula plus 0.3% tolerance will not be accepted for payment.

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B. Asphalt Concrete: The asphalt concrete shall be statistically accepted by lots. A lot shall consist of five sublots. Sublots shall not represent more than 1000 tons (M ton) unless the current sublot is terminated. The first lot shall start at the beginning of production or following the Control Test Strip.

A lot will be terminated when a new job mix formula is issued. If less than five sublots have been completed when a lot is terminated, the sublots will be included in the previous lot and the pay factor computed for the revised lot. If there is no previous lot, the lot will not be terminated until five sublots are obtained.

1. **Determination of Contract Unit Price Adjustment:** Asphalt concrete that is not compacted according to the Specified Density Method will not be included in the pay factor calculations but may be price adjusted (DOT-18) for failure to conform to specification requirements. The material specified to be sampled and tested on a QC/QA basis will be evaluated for payment under this subsection. All QC test results for a lot will be analyzed collectively and statistically by the Quality Level Analysis-Standard Deviation Method using the procedures herein defined. The lots will be analyzed to determine the total estimated percent of the lot that is within the specification limits.

   Quality Level Analysis (specification conformance analysis) is a statistical procedure for estimating the percent of material that is within the specification limits (PWL). The PWL is determined by using the lot mean, ($\overline{X}$) and the lot standard deviation (s). Two measures of quality are required to establish the contract unit price adjustment. The first measure is the Acceptable Quality Level (AQL) which is the PWL at which the lot will receive 100 percent pay or a composite pay factor of 1.00. The second measure of quality is the Rejectable Quality Level (RQL) at which the

Engineer has determined the material may not perform as desired and may be rejected.

The AQL has been selected at 90 PWL and the RQL at 60 PWL. The RQL using the pay factor equation will result in 85 percent pay or a pay factor of 0.85.

An individual pay factor for any attribute resulting in less than 85 percent pay may result in the lot being rejected.

When the Acceptable Quality Level of any individual pay factor attribute has a QL of 90 or less the composite pay factor shall not exceed 1.00.

A lot may be accepted provided the composite pay factor is at least 0.85 and there are no isolated defects identified by the Engineer.

A lot containing material with less than a 0.85 composite pay factor may be rejected. All of the rejected material shall be removed from the work. The Engineer will determine if the material may remain in place at a reduced price. A lot containing material with less than a 0.85 composite pay factor may not be overlaid prior to the Engineer determining the acceptability of the lot.

The Engineer may reject any quantity of material that appears to be defective based on visual inspection or test results. The visual rejection may include segregation, low temperature material, very high or low asphalt content, etc. Such rejected material shall not be used in the work or included with the lot acceptance tests. Rejected material will not be measured for payment.

The Contractor may elect to remove any defective material and replace it with new material to avoid a pay factor less than 1.00. Any such new material will be sampled, tested, and evaluated for acceptance according to this specification.

2. **Quality Level Analysis:** The standard deviation method procedures are as follows:

   a. Only test results on material incorporated in the work will be included in the quality level analysis.

   b. Calculate the arithmetic mean ($\overline{X}$) of the test values:

$$\overline{X} = \frac{\Sigma x}{n}$$

Where: Σ = summation of
x = individual test value to x_n
n = total number of test values

c. Calculate the sample standard deviation(s):

$$S = \sqrt{\frac{n\Sigma(x^2)-(\Sigma x)^2}{n(n-1)}}$$

Where: $\Sigma(x^2)$ = summation of the squares of individual test values.
$(\Sigma x)^2$ = summation of the individual test values squared.

d. Calculate the upper quality index (Q_U):

$$Q_U = \frac{USL - \overline{X}}{s}$$

Where: USL = upper specification limit or target value (TV) plus allowable deviation.

Target Value = the single specification value which would result in an ideal product.

e. Calculate the lower quality index (Q_L):

$$Q_L = \frac{\overline{X} - LSL}{s}$$

Where: LSL = lower specification limit or target value minus allowable deviation.

f. Determine P_U (percent within the upper specification limit which corresponds to a given Q_U) from Table R.

Note: If a USL is not specified, P_U will be 100.

g. Determine P_L (percent within the lower specification limit which corresponds to a given Q_L) from Table R.

Note: If an LSL is not specified, P_L will be 100.

h. Determine the Quality Level (the total percent within specification limits).

Quality Level (QL) = $(P_U + P_L) - 100$

i. To determine the pay factor for each individual attribute (PF) = 55 + 0.5(QL).

j. Determine the Composite Pay Factor (CPF) for each lot. The third decimal place of the CPF shall be rounded to the nearest hundredth by the computer program.

$$CPF = \frac{[f_1(PF_1) + f_2(PF_2)]}{(100)\ \Sigma f}$$

f = 1 to 2

Where: $f_{1\ or\ 2}$ = price adjustment factor listed in Table Q for each measured attribute.

$PF_{1\ or\ 2}$ = Pay Factor for each measured attribute.

Σf = Sum of the "f" (price adjustment) factors.

The asphalt concrete pavement contract unit price will be adjusted according to Section 320.4 of this specification. Payment for the asphalt concrete will be made at a price determined by multiplying the contract unit price by the composite pay factor. The following table will be used to calculate the composite pay factor:

Table Q - Pay Attributes & Price Adjustment Factors	
Measured Attribute	**Factor "f"**
Design Air Voids	50
In Place Density (% Compaction)	50

All mineral aggregate testing prior to production and QC/QA testing shall be incidental to the contract unit price per ton for asphalt concrete.

Asphalt concrete will be measured to the nearest 0.1 ton (M ton). The mixture of mineral aggregate and asphalt will be weighed after mixing. No deduction will be made for the weight of the asphalt included in the mixture.

Deduction will not be made for material removed from temporary approaches. Deductions will be made for all rejected asphalt concrete pavement.

C. **Hydrated Lime:** Hydrated lime, when provided as an additive to the asphalt concrete mixture to meet the moisture sensitivity requirements, will be measured to the nearest 0.1 ton (M ton). Quantities of hydrated lime in excess of the lime content listed on the job mix formula plus 0.1% tolerance will not be accepted for payment.

D. **QA and QC Field Laboratories:** There will be no measurement or payment for the QC laboratory furnished and used by the Contractor to perform the QC testing. The Contractor furnished QA laboratory will be measured on a per each basis.

E. **Sawing and Sealing Shoulder Joints:** Field measurement for this work will not be required. Plan quantity will be the basis of payment. If changes are ordered by the Engineer, the length will be measured and the quantity changed.

320.5 BASIS OF PAYMENT

A. **Asphalt Binder:** The accepted quantities of asphalt binder will be paid for at the contract unit price per ton (M ton). The amount bid for this item shall be at least the cost of the asphalt binder furnished and delivered to the project site.

Payment for the asphalt binder is not subject to the statistical pay factor adjustment. The asphalt concrete is subject to removal or price adjustment.

B. **Asphalt Concrete:** The accepted quantities of asphalt concrete, will be paid for at the contract unit price as adjusted by the pay factor calculations in Section 320.4 of this specification per ton (M ton) complete and accepted in place.

Asphalt concrete that is not compacted according to the Specified Density Method will not be included in the pay factor calculations. Asphalt concrete that is not included in the pay factor calculations shall be paid for at the contract unit price per ton (M ton).

The contract unit price of asphalt concrete shall include all cost for labor, equipment, materials, testing, and all incidentals required to furnish and place the asphalt concrete mix according to these specifications.

C. **Hydrated Lime:** Hydrated lime will be paid at the contract unit price per ton (M ton) complete in place. Payment for hydrated lime will only be made when hydrated lime is actually used. The amount bid for this item shall be at least the cost of the hydrated lime furnished and delivered to the project site.

D. Laboratories:

1. **QC Laboratory:** The laboratory used by the Contractor for QC testing shall be incidental to the asphalt concrete pavement item(s).

2. **QA Laboratory:** Payment for the QA laboratory will be according to Section 600 of the Standard Specifications.

E. Sawing and Sealing Shoulder Joints: Sawing and sealing shoulder joints will be paid for at the contract unit price per foot (meter).

Refer to Table R for the upper quality and lower quality index data for use in the pay factor calculations.

TABLE R - QUALITY LEVELS
QUALITY LEVEL ANALYSIS BY STANDARD DEVIATION METHOD

P_u or P_l Percent Within Limits for Positive Values Of Q_u or Q_l	UPPER QUALITY INDEX Q_U OR LOWER QUALITY INDEX Q_L														
	n=3	n=4	n=5	n=6	n=7	n=8	n=9	n=10 to n=11	n=12 to n=14	n=15 to n=18	n=19 to n=25	n=26 to n=37	n=38 to n=69	n=70 to n=200	n=201 to n=∞
100	1.16	1.50	1.79	2.03	2.23	2.39	2.53	2.65	2.83	3.03	3.20	3.38	3.54	3.70	3.83
99		1.47	1.67	1.80	1.89	1.95	2.00	2.04	2.09	2.14	2.18	2.22	2.26	2.29	2.31
98	1.15	1.44	1.60	1.70	1.76	1.81	1.84	1.86	1.91	1.93	1.96	1.99	2.01	2.03	2.05
97		1.41	1.54	1.62	1.67	1.70	1.72	1.74	1.77	1.79	1.81	1.83	1.85	1.86	1.87
96	1.14	1.38	1.49	1.55	1.59	1.61	1.63	1.65	1.67	1.68	1.70	1.71	1.73	1.74	1.75
95		1.35	1.44	1.49	1.52	1.54	1.55	1.56	1.58	1.59	1.61	1.62	1.63	1.63	1.64
94	1.13	1.32	1.39	1.43	1.46	1.47	1.48	1.49	1.50	1.51	1.52	1.53	1.54	1.55	1.55
93		1.29	1.35	1.38	1.40	1.41	1.42	1.43	1.44	1.44	1.45	1.46	1.46	1.47	1.47
92	1.12	1.26	1.31	1.33	1.35	1.36	1.36	1.37	1.37	1.38	1.39	1.39	1.40	1.40	1.40
91	1.11	1.23	1.27	1.29	1.30	1.30	1.31	1.31	1.32	1.32	1.33	1.33	1.33	1.34	1.34
90	1.10	1.20	1.23	1.24	1.25	1.25	1.26	1.26	1.26	1.27	1.27	1.27	1.28	1.28	1.28
89	1.09	1.17	1.19	1.20	1.20	1.21	1.21	1.21	1.21	1.22	1.22	1.22	1.22	1.22	1.23
88	1.07	1.14	1.15	1.16	1.16	1.16	1.16	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17
87	1.06	1.11	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.13	1.13
86	1.04	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
85	1.03	1.05	1.05	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
84	1.01	1.02	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99
83	1.00	0.99	0.98	0.97	0.97	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.95	0.95	0.95
82	0.97	0.96	0.95	0.94	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
81	0.96	0.93	0.91	0.90	0.90	0.89	0.89	0.89	0.89	0.88	0.88	0.88	0.88	0.88	0.88
80	0.93	0.90	0.88	0.87	0.86	0.86	0.86	0.85	0.85	0.85	0.85	0.84	0.84	0.84	0.84
79	0.91	0.87	0.85	0.84	0.83	0.82	0.82	0.82	0.82	0.81	0.81	0.81	0.81	0.81	0.81
78	0.89	0.84	0.82	0.80	0.80	0.79	0.79	0.79	0.78	0.78	0.78	0.78	0.77	0.77	0.77
77	0.87	0.81	0.78	0.77	0.76	0.76	0.76	0.75	0.75	0.75	0.75	0.74	0.74	0.74	0.74
76	0.84	0.78	0.75	0.74	0.73	0.73	0.72	0.72	0.72	0.71	0.71	0.71	0.71	0.71	0.71
75	0.82	0.75	0.72	0.71	0.70	0.70	0.69	0.69	0.69	0.68	0.68	0.68	0.68	0.68	0.67
74	0.79	0.72	0.69	0.68	0.67	0.66	0.66	0.66	0.66	0.65	0.65	0.65	0.65	0.64	0.64
73	0.76	0.69	0.66	0.65	0.64	0.63	0.63	0.63	0.62	0.62	0.62	0.62	0.62	0.61	0.61
72	0.74	0.66	0.63	0.62	0.61	0.60	0.60	0.60	0.59	0.59	0.59	0.59	0.59	0.58	0.58
71	0.71	0.63	0.60	0.59	0.58	0.57	0.57	0.57	0.57	0.56	0.56	0.56	0.56	0.55	0.55
70	0.68	0.60	0.57	0.56	0.55	0.55	0.54	0.54	0.54	0.53	0.53	0.53	0.53	0.53	0.52
69	0.65	0.57	0.54	0.53	0.52	0.52	0.51	0.51	0.51	0.50	0.50	0.50	0.50	0.50	0.50
68	0.62	0.54	0.51	0.50	0.49	0.49	0.48	0.48	0.48	0.48	0.47	0.47	0.47	0.47	0.47
67	0.59	0.51	0.47	0.47	0.46	0.46	0.46	0.45	0.45	0.45	0.45	0.44	0.44	0.44	0.44
66	0.56	0.48	0.45	0.44	0.44	0.43	0.43	0.43	0.42	0.42	0.42	0.42	0.41	0.41	0.41
65	0.52	0.45	0.43	0.41	0.41	0.40	0.40	0.40	0.40	0.39	0.39	0.39	0.39	0.39	0.39
64	0.49	0.42	0.40	0.39	0.38	0.38	0.37	0.37	0.37	0.37	0.36	0.36	0.36	0.36	0.36
63	0.46	0.39	0.37	0.36	0.35	0.35	0.35	0.34	0.34	0.34	0.34	0.34	0.33	0.33	0.33
62	0.43	0.36	0.34	0.33	0.32	0.32	0.32	0.32	0.31	0.31	0.31	0.31	0.31	0.31	0.31
61	0.39	0.33	0.31	0.30	0.30	0.29	0.29	0.29	0.29	0.29	0.28	0.28	0.28	0.28	0.28
60	0.36	0.30	0.28	0.27	0.27	0.27	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.25	0.25
59	0.32	0.27	0.25	0.25	0.24	0.24	0.24	0.24	0.23	0.23	0.23	0.23	0.23	0.23	0.23
58	0.29	0.24	0.23	0.22	0.21	0.21	0.21	0.21	0.21	0.21	0.20	0.20	0.20	0.20	0.20
57	0.25	0.21	0.20	0.19	0.19	0.19	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
56	0.22	0.18	0.17	0.16	0.16	0.16	0.16	0.16	0.16	0.15	0.15	0.15	0.15	0.15	0.15
55	0.18	0.15	0.14	0.14	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
54	0.14	0.12	0.11	0.11	0.11	0.11	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
53	0.11	0.09	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
52	0.07	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
51	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02
50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

NOTE: For negative values of Q_U or Q_L, P_U or P_L is equal to 100 minus the table P_U or P_L. If the value of Q_U or Q_L does not correspond exactly to a figure in the table, use the next higher value.

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STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
FLEXIBLE PAVEMENT SMOOTHNESS

PROJECT P 0073(68)0 & P 0073(65)9, PCN 04E1 & 03AA
BENNETT COUNTY

NOVEMBER 22, 2010

In Section 320.3 F of the specifications, and in Section 320.3 J of the Special Provision for Quality Control/Quality Assurance Specifications for Hot Mixed Asphalt Concrete Pavement, or Section 320.3 J or the Special Provision for Gyratory Controlled Quality Control/Quality Assurance Specifications for Hot Mixed Asphalt Concrete Pavement, as included in the proposal for this project, delete the paragraph regarding checking the final lift with a 10 foot (3m) straightedge and replace with the following:

The pavement smoothness will be determined by profiling the finished surfaces of the mainline pavement. All finished bituminous surfaces will be profiled with the following conditions and exceptions:

A. Exclusions: Excluded from the profile testing are:

1. Bridge decks, approach slabs and a distance of 100 feet (30 m) from the end of the bridge (or approach slab if applicable)

2. Acceleration, deceleration, and any lane less than 0.3 miles (0.5 km) in length

3. Side roads

4. Shoulders, ramps and gore areas

5. Pavements on horizontal curves with centerline radius of curvature of less than 1000 feet (300 m), and pavement within the superelevation transition of such curves

6. Existing curb and gutter sections (curb and gutter to remain in place)

7. Sections with a speed limit of less than 45 mph

8. The first or last 100 feet (30 m) of a pavement where the Contractor is not responsible for the adjoining in place pavement

9. A distance of 100 feet (30 m) from railroad crossings

On surfaces excluded from the profile testing, the Engineer will determine the pavement smoothness according to the following:

The surface of each lift shall be free of waves and other irregularities. The final lift shall be checked with a 10 foot (3 m) straightedge. The variation of the surface from the straightedge between any two contact points shall not exceed 1/4 inch (6 mm). The crown, on all lifts, as indicated by checking with a 10 foot (3 m) straightedge, shall be within 0.04 feet (12 mm) of specified crown in any 10 foot (3 m) length.

B. Profiler: The profiler will be furnished and operated by the Department. The surface smoothness of the final roadway surface profile will be measured and analyzed using the International Roughness Index (IRI) to the nearest 0.1 inch/mile (1 mm/km). The Department will be using a profiler that meets ASTM E-950 Class I specifications.

The profiler shall use a long wavelength filter of 200 feet. The profiler shall use a short wavelength filter of 2 feet.

C. Operation: The surface smoothness will be evaluated on a lot basis. A lot is defined as a single paved lane, 12 feet (3.6 m) wide, 0.10 mile (0.10 km) long. Mainline pavement sections less than 0.10 mile (0.10 km) long will be added to the previous adjacent lot and the average IRI and price adjustment will be prorated. If the section is less than 0.10 mile (0.10 km) long but at least 200 feet (60 m) long and not adjacent to a previous lot, the average IRI and price adjustment for the section will be evaluated individually and prorated.

The Department will make one pass in each driving lane in the direction of traffic flow. One pass will consist of a profile being performed in each wheel path for each lane (one trace approximately 31" (790 mm) from centerline of the roadway and the other trace approximately 97" (2460 mm) from centerline). The data will be marked and labeled at the beginning and end of each trace, equation, and reference points as identified by the Department. Each trace shall be labeled to show the project, location, lane, wheel path, date tested and the operator's name.

For scheduling purposes, it will be the responsibility of the Contractor to contact the Materials and Surfacing Office one week prior to the anticipated completion date of paving on the final lift.

Data will be collected within two working days of the completion of the final lift of paving on all lanes for the project. If the final lift of pavement cannot be completed

before the seasonal limitation, data will be collected for all portions of the roadway having been paved through the final lift at the completion of construction for the season. Profile data will be collected for the remaining pavement once the paving is completed.

Profile data collection and grinding shall be completed before flush sealing the final surface.

1. **Evaluation:** The data collected by the Department will be evaluated by and remain the property of the Department. The average IRI for each lot will be determined by averaging the IRI values from the two wheel paths for each pass (lane) to the nearest 0.1 inch/mile (1 mm/km). This average will be used to evaluate incentive/disincentive payment.

   Incentive/disincentive payment schedule will be a fixed dollar amount per lot based on the average IRI and the total number of opportunities. An opportunity shall be defined as a single paved lift of 1" or greater thickness, cold milling 1" or greater thickness, cold in place recycle, process in place, surface preparation, or base material placed by contractor. The thickness of cold milling will be determined by what is specified in the plans. Each opportunity shall be counted and added up to a total number of opportunities (one opportunity, two opportunities, or three or more opportunities). Each project may have different sections with a varying number of opportunities.

   The Department will not test when the ambient temperature is below 40°F (4°C), or while it is raining and/or under weather conditions determined inclement by the Engineer. The Department will test the roadway when the pavement is dry and free of other deleterious material that would not provide accurate test results. It shall be the Contractor's responsibility to provide a clean surface for testing and shall pay for all costs including but not limited to sweeping.

   The Contractor will be furnished the test results within two working days of completing the data collection. Individual bumps will be identified using a profile plot.

2. **Requirements:** All bituminous pavement lots with one opportunity, except as excluded under this provision, shall not exceed an average IRI of 100.0 inches per mile (1580 mm per km). Lots with an average IRI greater than 100.0 inches per mile (1580 mm per km) will require grinding to an average IRI of less than 65.1 inches per mile (1028 mm per km) and will receive 100.0 percent pay. This will require that the lot be reprofiled by the Department.

   All bituminous pavement lots with two opportunities, except as excluded under this provision, shall not exceed an average IRI of 90.0 inches per mile (1421 mm per km). Lots with an average IRI greater than 90.0 inches per mile (1421 mm per km) will require grinding to an average IRI of less than 60.1 inches per mile

(948 mm per km) and will receive 100.0 percent pay. This will require that the lot be reprofiled by the Department.

All bituminous pavement lots with three or more opportunities, except as excluded under this provision, shall not exceed an average IRI of 90.0 inches per mile (1421 mm per km). Lots with an average IRI greater than 90.0 inches per mile (1421 mm per km) will require grinding to an average IRI of less than 60.1 inches per mile (948 mm per km) and will receive 100.0 percent pay. This will require that the lot be reprofiled by the Department.

Lot(s) requiring grinding will be reprofiled within two working days of completion of the grinding.

Individual bumps in excess of 0.4 inches in 25 feet (10 mm in 7.5 m) regardless of number of opportunities shall be subject to one of the following:

a. Correct by grinding until less than 0.125 inches in 10 feet (3 mm in 3 m).

b. Bumps 0.125 to 0.25 inches in 10 feet (3 to 6 mm in 3 m) may be accepted without grinding. If accepted without grinding a $500 disincentive will be assessed per bump.

c. Bumps less than 0.125 inches in 10 feet (3 mm in 3 m) may be accepted without grinding. No disincentive will be assessed for bumps less than 0.125 inches in 10 feet (3 mm in 3 m).

The surface of each lift shall be free of waves and other irregularities. If waves or other irregularities are identified by the Engineer, the final lift in those areas may be checked with a 10 foot (3 m) straightedge. If additional correction areas are identified by the Engineer, the variation of the surface from the straightedge between any two contact points shall not exceed 1/4 inch (6 mm).

Individual bumps and lot(s) requiring grinding shall be completed within 15 working days of notification.

Grinding shall be accomplished with specially prepared circular diamond blades mounted on a horizontal shaft. Areas that have been ground shall not be left smooth or polished, but shall have a uniform texture equal in roughness to the surrounding unground asphalt concrete. Grinding shall be day lighted to the outside edge of the pavement.

All surfaces that are ground shall be flush sealed.

3. Incentive/Disincentive Payment: Incentive/disincentive payments will be based on the average IRI determined for each lot and will be based on the following tables:

1 Opportunity		
IRI		Price Adjustment
Inches per mile	mm per km	(Dollars per lot)
35.0 or less	553 or less	$600
35.1 to 40.0	554 to 632	$300
40.1 to 45.0	633 to 710	$200
45.1 to 50.0	711 to 789	$100
50.1 to 65.0	790 to 1027	$0
65.1 to 70.0	1028 to 1105	-$100
70.1 to 75.0	1106 to 1184	-$200
75.1 to 80.0	1185 to 1263	-$300
80.1 to 100.0	1264 to 1580	-$600
100.1 or greater	1581 or greater	Grind

2 Opportunities		
IRI		Price Adjustment
Inches per mile	mm per km	(Dollars per lot)
30.0 or less	474 or less	$600
30.1 to 35.0	475 to 553	$300
35.1 to 40.0	554 to 632	$200
40.1 to 45.0	633 to 710	$100
45.1 to 60.0	711 to 947	$0
60.1 to 65.0	948 to 1027	-$100
65.1 to 70.0	1028 to 1105	-$200
70.1 to 80.0	1106 to 1263	-$300
80.1 to 90.0	1264 to 1421	-$600
90.1 or greater	1422 or greater	Grind

3 or more Opportunities		
IRI		Price Adjustment
Inches per mile	mm per km	(Dollars per lot)
25.0 or less	395 or less	$600
25.1 to 30.0	396 to 474	$300
30.1 to 35.0	475 to 553	$200
35.1 to 40.0	554 to 632	$100
40.1 to 60.0	633 to 947	$0
60.1 to 65.0	948 to 1027	-$100
65.1 to 70.0	1028 to 1105	-$200
70.1 to 80.0	1106 to 1263	-$300
80.1 to 90.0	1264 to 1421	-$600
90.1 or greater	1422 or greater	Grind

Incentive payments cannot be improved due to grinding regardless of the average IRI.

Miscellaneous: All work required to prepare the roadway for testing, such as but not limited to sweeping and furnishing all traffic control required to conduct the smoothness testing, will not be measured and shall be incidental to the contract. Flagging and pilot car will be paid for at the contract unit price per hour.

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STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
TWO COAT BRIDGE DECK EPOXY CHIP SEAL

JULY 14, 2014

Delete Section 491 of the Standard Specifications for Roads and Bridges and replace with the following:

491.1 DESCRIPTION

This work consists of the preparation of the plans specified existing bridge deck surface and furnishing and placing two coats of an epoxy chip seal on the prepared bridge deck surface.

491.2 MATERIALS

A. Epoxy: Epoxy shall be a two component epoxy consisting of a base component and a hardener. Both components shall be supplied in tightly sealed undamaged containers. The containers shall be marked to identify each component and shall be clearly labeled with product name, mixing instructions and proportions, recommended storage temperature, lot number, batch number, date of manufacture and quantity contained. The epoxy shall be one of the epoxies from the Approved Products List.

B. Cover Aggregate: The cover aggregate shall be processed washed and dried dark grey or black colored aggregate. Washing shall remove dust covering the aggregate. Recycled cover aggregate shall not be used. Cover aggregate shall conform to the following:

1. The Mohs hardness must be 6.0 minimum.

2. The gradation shall conform to the following:

Sieve Size	% Passing
No. 4 (4.75 mm)	100
No. 8 (2.36 mm)	30 - 75
No. 16 (1.18 mm)	0 - 5
No. 30 (600 µm)	0 - 1

3. The maximum aggregate moisture at the time of application shall not exceed 0.5 %.

4. The aggregate shall be supplied in waterproof bags and shall be stored in a dry, moisture-free atmosphere. The aggregate shall be fully protected from any contaminants on the job site and shall be stored so as not to be exposed to rain or other moisture sources. Materials shall remain adequately covered and protected from contamination throughout the project. Any material not adequately covered or found to be contaminated shall not be used.

5. The Contractor shall submit a sieve analysis for the processed washed and dried aggregate and documentation of the Mohs hardness with the certified test reports. No field samples for sieve analysis or hardness shall be required.

491.3 CONSTRUCTION REQUIREMENTS

A. Surface Preparation:

1. **Grinding:** The bridge deck surface shall be ground prior to placement of epoxy chip seal.

   The grinding shall remove the existing surface conditions as defined by the bridge plan notes including, but not limited to; rubberized asphalt chip seal, epoxy chip seal, pavement markings, and tining and shall be to the satisfaction of the Engineer.

   The grinding shall be performed in the longitudinal direction. The grinding shall result in a parallel corduroy texture consisting of grooves between 0.090 and 0.130 inches (2 and 3 mm) wide. The distance between the grooves shall be between 0.060 and 0.125 inches (1.5 and 3 mm). The peaks of the ridges shall not be greater than 1/16 inch (1.5 mm) higher than the bottom of the grooves. The grinding shall be uniform and shall follow the existing profile of the bridge deck. The grinding process shall not introduce dips and bumps that did not previously exist on the bridge deck surface or in any way decrease the existing riding quality of the bridge deck.

   Grinding of the bridge deck shall be accomplished utilizing diamond blades mounted on a self-propelled machine designed for grinding and texturing pavement. The equipment shall be operated in such a manner that it will not damage the underlying deck surface. Grinding equipment that causes ravels, aggregate fractures, or spalls shall not be permitted. Residue or excess water generated by the grinding operations shall be removed with vacuum equipment from the deck surface before the residue

has time to set up. Vacuumed residue or excess water shall not be expelled on the approach roadway or shoulder surfaces.

2. **Shot Blast and Abrasive Blast Cleaning:** After grinding and removal and replacement of loose and delaminated concrete, the entire bridge deck surface shall be thoroughly shot blasted to approximately an International Concrete Repair Institute (ICRI) concrete surface profile CSP-5 (medium shot blast) to remove all foreign materials which may interfere with the bonding or curing of the epoxy chip seal. The shot blasting shall remove all surface laitance and shall expose the coarse aggregate to the satisfaction of the Engineer. Small areas where shot blasting is unable to be performed (curb lines, etc.) shall be cleaned by abrasive blast cleaning to the satisfaction of the Engineer.

   Upon completion of the shot blasting and abrasive blasting, the entire bridge deck shall be blown clean with dry compressed air to remove all dust and debris.

   Cleaning by shot blasting, abrasive blasting, and compressed air shall be done no more than 24 hours prior to the placement of the epoxy chip seal. In the event that the epoxy chip seal is not placed within 24 hours of shot blasting and abrasive blast cleaning or in the event of rain or other inclement weather contaminating the surface, the surface shall be re-cleaned by abrasive blast cleaning and dry compressed air.

   Only equipment required for the application of the epoxy chip seal will be allowed on any portion of the bridge deck which has been cleaned and prepared for application of the epoxy chip seal. If equipment is used on the cleaned and prepared bridge deck, the area shall be protected from contamination with plastic.

B. Bridge Deck Epoxy Chip Seal:

1. **Seasonal Limitations:** Epoxy chip seals shall only be applied within the seasonal limitation of May 1 to October 15 (inclusive).

2. **Manufacturer's Representative:** An approved manufacturer's representative shall be present on the jobsite for a minimum of two full production days of epoxy chip seal application.

   The manufacturer's representative shall provide the Engineer and the Contractor with a copy of the written recommendations, technical data sheet, and product safety data sheet. In addition, the Contractor shall make a product safety data sheet available to anyone that will be exposed to the epoxy materials.

3. **Epoxy Application Requirements:** The Contractor shall store, mix, handle, and apply the epoxy in accordance with the manufacturer's recommendations, or as approved by the Engineer, unless otherwise specified by the following requirements:

   a. Epoxy shall not be applied to the bridge deck surface unless the ambient air temperature and the bridge deck surface temperature is between 50°F and 100°F (10°C and 38°C) with the air temperature at least 5°F (2.8°C) above the dew point temperature. In addition, the forecast for the duration of the application period plus four hours after the anticipated completion of the chip seal application shall be such that no rain is expected and temperatures are forecasted to be between 50°F and 100°F (10°C and 38°C) with the air temperature at least 5°F (2.8°C) above the dew point temperature.

   b. The application of the epoxy chip seal system shall not be made on a wet or damp surface. In the event of rain, the surface shall be dried for 24 hours prior to application. In lieu of waiting the 24 hours, ASTM D 4263 "Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method" may be used to determine when all moisture is out of the concrete. The use of a surface moisture meter to determine surface conditions will not be allowed.

   c. The openings of any bridge deck drains shall be temporarily sealed during epoxy placement as approved by the Engineer.

   d. When phased construction of the epoxy chip seal is required, the Contractor shall maintain a straight line between the phases of epoxy placement for both layers by masking the line between phases with duct tape, or other material approved by the Engineer. The masking shall be completely removed before the epoxy achieves initial set and shall be removed in a manner that will not damage the adjacent epoxy. Overlapping the new epoxy chip seal onto existing epoxy chip seal shall not be done.

   e. Prior to mixing, the bridge deck shall be marked in a grid to ensure proper spread rates are achieved.

   f. A prime coat, if required by manufacturer, shall be applied according to manufacturer's recommendations and will be applied in addition to the two coats of epoxy chip seal.

   g. A coat of epoxy shall be distributed at the manufacturer's recommended application rate. The application rate shall be a minimum of 1 gallon per 40 square feet (1 liter per 1 square meter).

4. **Cover Aggregate Application Requirements:**

   a. After the epoxy is distributed on the application area of the bridge deck surface, a broadcast of cover aggregate shall be made to refusal such that:

      1) A uniform layer of cover aggregate is attained*. (A non-uniform broadcast will result in an inconsistent epoxy chip seal thickness and a poor riding bridge deck)*.

      2) There are no visible shiny wet spots after application.

   b. Broadcasting shall be done by hand-seeding or other methods approved by the manufacturer's representative such that the following conditions are met:

      1) Cover aggregate is required to be broadcast in such a manner that the aggregate is falling vertically to the bridge deck surface to prevent pushing of the epoxy resin.

      2) Aggregate coverage is uniform over the application area.

5. **Clean-up of Excess Cover Aggregate:** The epoxy shall be allowed to cure before excess cover aggregate is removed. Cure the epoxy for 2 to 6 hours depending on temperature before removing excess cover aggregate. The epoxy must have sufficient strength to retain aggregate. Excess aggregate will be removed by brooming, high pressured dry air, or vacuuming and shall be disposed of by the Contractor as approved by the Engineer.

6. **Second Coat Epoxy Application:** A second coat of epoxy shall be distributed at the manufacturer's recommended application rate. The application rate shall be a minimum of 1 gallon per 20 square feet (2 liters per 1 square meter). Cover aggregate shall be broadcast as per section 491.3 B.4 of this special provision. In the event of rain before second coat is applied, the surface shall be dried for 24 hours prior to application. If second coat is not applied within 24 hours or traffic is allowed on the first coat, the bridge deck must be abrasive blasted prior to application.

7. **Testing:** Pull-off tests shall be performed after the final coat of epoxy chip seal is cured and excess aggregate is removed to verify adequate bond strength of the epoxy to the cover aggregate and concrete substrate. Pull-off tests shall be performed by the Contractor and shall be witnessed by the Engineer. Placement of pull-off test shall be decided by the Engineer and be performed prior to opening to traffic. Pull-off tests may not be performed when the surface temperature is at or above 90°F (32°C. One

pull-off test shall be performed for each 75 linear feet (23 meters) of epoxy chip seal application width, up to 24 feet (7.5 meters) wide, for each structure. A minimum of 3 pull-off tests will be required for each structure. The testing shall be performed as follows:

a. Pull-off tests shall be performed according to ASTM D7234.

b. Pull-off tests with a resulting load of 250 psi (1.7 Mpa) or more shall be considered passing.

c. All pull-off tests with a resulting load of less than 250 psi (1.7 Mpa) shall be retested according to the type of failure. There are four possibilities or combinations thereof as described below:

1) Failure in the concrete substrate (concrete failure) - The Contractor shall perform one additional test within one foot (0.3 meter) of the failing test to verify concrete failure.

2) Detaching assembly adhesive failure (adhesive failure) - The Contractor shall perform one additional test within one foot (0.3 meter) of the failing test. The Contractor shall repeat the test until the adhesive no longer fails.

3) Separation of the epoxy chip seal from the concrete surface (epoxy failure) - the Contractor shall perform two additional pull-off tests as described below.

4) Pullout of the aggregate from the epoxy (epoxy or aggregate failure) - The Contractor shall perform two additional pull-off tests as described below.

For failure 3 or 4, the Contractor shall perform two additional pull-off tests. One test shall be performed between 10 ft. (3 meters) and 15 ft. (4.5 meters) back from the failing test and one test shall be performed between 10 ft. (3 meters) and 15 ft. (4.5 meters) ahead of the failing test. If either of these two additional pull-off tests fails, the epoxy chip seal fails and the failing epoxy chip seal shall be removed and replaced at the Contractor’s expense. The limits of the failing epoxy chip seal shall be defined as the epoxy chip seal one-half of the distance back and one-half of the distance ahead to the adjacent passing tests.

When the detaching assembly has been separated from the surface, the damage created by the test shall be repaired using a small amount of the epoxy and aggregate used in the epoxy chip seal.

491.4 METHOD OF MEASUREMENT

A. **Bridge Deck Grinding:** Measurement will not be made for bridge deck grinding. The plan quantity will be the basis of payment

B. **Abrasive Blasting of Bridge Deck:** Measurement will not be made for abrasive blasting of bridge deck. The plan quantity will be the basis of payment.

C. **Two Coat Bridge Deck Epoxy Chip Seal:** Measurement will not be made for two coat bridge deck epoxy chip seal. The plan quantity will be the basis of payment.

D. **Pull-Off Test:** Measurement will not be made for pull-off tests.

491.5 BASIS OF PAYMENT

A. **Bridge Deck Grinding:** Bridge deck grinding, when specified in the plans, will be paid for at the contract unit price per square yard (square meter). Payment will be full compensation for all labor, equipment, materials, and all incidental work required to grind the bridge deck surface to the required profile and to remove and dispose of the grinding residue and water.

B. **Abrasive Blasting of Bridge Deck:** Abrasive blasting of bridge deck will be paid for at the contract unit price per square yard (square meter). Payment will be full compensation for all labor, equipment, materials, and all incidental work required to shot blast and abrasive blast clean the bridge deck surface of all foreign materials and to remove and dispose of all residue.

C. **Two Coat Bridge Deck Epoxy Chip Seal:** Two coat bridge deck epoxy chip seal will be paid for at the contract unit price per square yard (square meter). Payment will be full compensation for all labor, equipment, materials, and all incidental work required to furnish and install the two coat bridge deck epoxy chip seal and to remove and dispose of the excess cover aggregate.

D. **Pull-Off Test:** No payment will be made for pull-off tests. All costs related to the testing for labor, test equipment, laboratory, tools and all incidentals required to satisfactorily perform the required work shall be incidental to the contract unit price for two coat bridge deck epoxy chip seal.

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STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
CONTRACTOR ADMINISTERED PRECONSTRUCTION MEETING

APRIL 18, 2013

I. DESCRIPTION

This work consists of the Contractor scheduling and conducting a preconstruction meeting prior to beginning work on this contract. Additionally this work consists of the Contractor providing the Area Engineer a completed list of required submittals.

II. MATERIALS (Not Specified)

III. CONSTRUCTION REQUIREMENTS

For the purposes of this special provision, a business day is any calendar day except Saturdays, holidays, and days designated by the Governor of this State as an administrative leave day for state employees.

The Department will provide the Contractor a list of required submittals and the Authorization Form for Preconstruction Meeting (Form DOT-270) within five (5) business days of the date of the Notice to Proceed.

The Contractor's Required Submittals Form (Form DOT-272) is a document outlining information required prior to the completion of the project. This list will include two types of submittals; 1) information required before scheduling a preconstruction meeting and 2) information required before the Contractor begins related work. The Department reserves the right to request additional information not included in the original list of required submittals. The list of required submittals will include, but is not limited to, proposed sequence changes, shop drawings, permits, certifications, mix designs, labor compliance, equal employment opportunity, and disadvantaged business enterprise documents.

Prior to scheduling the preconstruction meeting, the Contractor will complete and provide the Area Engineer all items on the list of required submittals that are required as described in 1) above. If the Contractor cannot complete and provide a submittal item required prior to scheduling the preconstruction meeting, the Contractor will contact the Area Engineer to establish a mutually agreed upon

date when the required submittal will be completed and provided to the Area office.

The Contractor will not begin work on an item until the Contractor has provided the Area Engineer with all required information for the applicable work item and the appropriate office has approved the information, if necessary. The Contractor will make every reasonable effort to deliver the required submittals at the earliest possible time.

The Contractor's authorized representative as indicated on the Signature Authorization Form (Form DOT-209) will complete, in its entirety, the first page of the Authorization Form for Preconstruction Meeting and will initial each proceeding section. By initialing each section, the Contractor is confirming comprehension of each section.

When the Contractor has provided the Area Engineer all required submittals, unless the Contractor and Department have established an agreement in writing providing future dates of outstanding required submittal items, the Contractor will schedule a preconstruction meeting with the Area Engineer.

Within two (2) business days following the Contractor scheduling the preconstruction meeting, the Area Engineer will prepare and send the Contractor a meeting confirmation and the Preconstruction Meeting Outline (Form DOT-271) of discussion items including specific Department items.

The Contractor will complete the Contractor's portion of the Preconstruction Meeting Outline and will add additional discussion items as needed. The Contractor will send the meeting notice and final Preconstruction Meeting Outline to the Area Engineer, all subcontractors, utility companies, and all suppliers at least five (5) business days prior to the preconstruction meeting.

The Area Engineer will send the notice of the meeting and the final Preconstruction Meeting Outline of discussion items to any other government entities and other principle stakeholders involved in the project at least three (3) business days prior to the preconstruction meeting.

At the discretion of the Area Engineer, the preconstruction meeting may be held in person, videoconference, or over the phone. The Contractor's competent superintendent, as required by Section 5.5, who will be working on this project, is required to attend the preconstruction meeting.

The Contractor will lead the meeting discussion as described in the Preconstruction Meeting Outline. The Area Engineer will prepare the meeting minutes including any unresolved items and distribute them to all attendees and principle stakeholders within five (5) business days following the preconstruction meeting.

IV. METHOD OF MEASUREMENT

The Department will not make a separate measurement for the preconstruction meeting.

V. BASIS OF PAYMENT

The Department will not make a separate payment for the preconstruction meeting. All costs associated with the preconstruction meeting will be incidental to other contract items.

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STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
ELECTRONIC BIDDING REQUIREMENTS

DECEMBER 18, 2013

The South Dakota Department of Transportation requires all bid proposals submitted for this project be prepared and submitted using the latest version of the South Dakota Electronic Bidding System (SDEBS).

A prospective bidder may obtain the latest version of the SDEBS software from the SDDOT Website:
http://apps.sd.gov/hc65bidletting/ebsInstall.aspx

MAKE THE INDICATED CHANGES TO THE FOLLOWING SPECIFIED SECTIONS OF THE STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES:

Delete Section 2.1 and replace with the following:

2.1

A. PREQUALIFICATION OF BIDDERS - Prequalification on state highway construction contracts is required unless the amount being bid is less than $200,000.

A prospective bidder must be prequalified prior to the time and date specified for bid opening. A prospective bidder may apply for prequalification by completing and executing a Contractor's prequalification statement on a form approved by the Department. This application must be received by the Department's classification and rating committee at least 14 calendar days prior to the letting date.

Once prequalified, the Department will issue a notice to the prospective bidder stating the prospective bidder's approved work classification or work classifications, the prospective bidder's bidding capacity, and the prospective bidder's expiration date for prequalification status.

A prospective bidder may obtain the prequalification requirements contained in South Dakota Administrative Rules from the website:
http://legis.sd.gov/rules/DisplayRule.aspx?Rule=70:07

B. ELECTRONIC IDENTIFICATION – A prospective bidder must register as a new user on the Department's website to obtain a company identification and password. Certain bidding documents will only be available for download with proper company identification and password. Each company will receive one company identification and password.

In addition to the company identification and password, a prospective bidder must obtain a bidder identification and password for each individual who will be authorized to submit a bid proposal on behalf of the company. To authorize an individual to submit a bid proposal on behalf of the company, and obtain the bidder identification(s) and password(s), the company must complete a Bidding Authorization Form (available on the Department's website), furnishing all required information and all appropriate notarized signatures, and submit the form to the Department no later than 48 hours prior to the bid opening.

The individual receiving this bidder identification and password must be an authorized agent of the company having legal authority to do business for the company.

Delete Section 2.2 and replace with the following:

2.2 CONTENTS OF BIDDING PACKAGE - The bidding package consists of the proposal booklet, plans, electronic design files, specifications, special provisions, supplemental specifications, addenda, project question and answer (Q&A) forum, and electronic bid files. The bidding package will state the location and description of the contemplated construction, show the estimate of the various quantities and type of work to be performed or materials to be furnished, and will have a schedule of items for which unit bid prices are invited. The bidding package will state the time in which the contract work must be completed, the time and date deadline for submitting the required bid proposals, and prequalification requirements.

Prospective bidders must refer to the SDDOT Website to acquire the bidding package. The prospective bidder will be responsible for all costs associated with utilizing the SDEBS and electronic bonds through the bond management company.

The Department will open the project Q&A forum when the project is advertised for letting. Prospective bidders are responsible for periodically checking the project Q&A forum for new questions and answers. The Department will post questions and answers, but will provide no additional notification of posted questions and answers. Prospective bidders may post new questions to the project Q&A forum until 10:00 AM CT on the Friday prior to the letting, at which time prospective bidders will be locked from further posting. The Department may post new questions and answers to the project Q&A forum up until 10:00 AM CT

on the Tuesday prior to the letting, at which time the project Q&A forum will be final and locked from all editing. In submitting a complete and final bid, a prospective bidder must account for any and all information posted to the final project Q&A forum regardless of when the prospective bidder submits a bid proposal.

Delete Section 2.3 and replace with the following:

2.3 ISSUANCE OF BIDDING PACKAGE - The Department will not place restrictions on who may download the bidding package from the website, except that certain documents will require the company identification described in Section 2.1 B. The bidder must verify the bidder's prequalification status prior to bidding. The Department will verify bidder status in accordance with Section 3.1 prior to opening bids.

Delete Section 2.5 and replace with the following:

2.5 EXAMINATION OF PLANS, SPECIFICATIONS, SPECIAL PROVISIONS, PROJECT Q&A FORUM, AND SITE OF WORK - The bidder must examine the project site, and the entire bidding package for the work contemplated. The submission of a bid proposal will be considered conclusive evidence the bidder has investigated and is satisfied as to the conditions to be encountered, the character, quality, and quantities of work to be performed, and materials to be furnished, according to all contract documents.

Boring logs and other records of subsurface investigations are available for inspection by prospective bidders. Prospective bidders must understand this information was obtained and is intended for Department design and estimating purposes and the Department cannot guarantee the accuracy of this information. This information is made available so all prospective bidders have access to the same subsurface information available to the Department. The furnishing of this information is not intended as a substitute for the prospective bidder's personal investigation, interpretation, and judgment.

The Department will not be bound by any statement or representation made by any Department employee or agent prior to the execution of the contract, unless included in the bidding package.

A prospective bidder must request any explanation regarding the meaning or interpretation of the bidding package in adequate time to allow a Department reply to reach all prospective bidders before submission of final bid proposals. The bidder will contact the Department by submitting a request for explanation to the project Q&A forum. If the deadline for submitting questions to the project Q&A forum has passed, the bidder will submit the request for explanation to the Department Bid Letting office. The Department may answer the request for explanation on the project Q&A forum or issue an addendum to all prospective

bidders, as appropriate, in the Department's sole discretion. The Department will furnish any addendum to all prospective bidders by electronic addendum before the time specified for opening of bid proposals.

The bidder will not take advantage of any apparent error, omission, or ambiguity in the bidding package. If the bidder discovers an error, omission, or ambiguity, the bidder will immediately notify the Department of the apparent error, omission, or ambiguity and its perceived consequences. The bidder will notify the Department by submitting a question to the project Q&A forum. If the deadline for submitting questions to the project Q&A forum has passed, the bidder will notify the Department Bid Letting office. The Department may certify the error, omission, or ambiguity and may answer the question on the project Q&A forum or issue an addendum to all prospective bidders, as appropriate, in the Department's sole discretion. The Department will furnish any addendum to all prospective bidders by electronic addendum before the time specified for opening of bid proposals.

The Contractor will not take advantage of any apparent error, omission, or ambiguity in the contract. If the Contractor discovers an error, omission, or ambiguity, the Contractor will immediately notify the Department of the apparent error, omission, or ambiguity and its perceived consequences. The Contractor will notify the Engineer. The Engineer will make corrections and interpretations as necessary to fulfill the intent of the Contract.

Delete Section 2.6 and replace with the following:

2.6 PREPARATION OF PROPOSAL - The bidder must submit the proposal using the SDEBS.

The bidder must specify a unit price, in numerals, for each bid item for which a quantity is given. A unit price cannot be "$0.00."

When the bidding package contains an alternate bid item or group(s) of alternate bid items, the bidder must indicate a choice for each available group by entering unit prices for all bid items within the alternate chosen.

The bidder must complete all required fields in the SDEBS. If the bidder does not completely fill out all required fields the Department may consider the bid irregular and reject the bid proposal in accordance with Section 2.7.

For bidding purposes, in case of a discrepancy between the line number, bid item description, or quantity shown in the SDEBS and the corresponding item shown in the plans, the bid item description and the quantity shown in the SDEBS will govern.

2.7 IRREGULAR BID PROPOSALS – The Department will consider a bid proposal irregular and may reject the bid proposal for any of the following reasons:

A. The bid proposal is incomplete, or is submitted on a form other than the Department's latest version of the SDEBS;

B. The bid proposal contains unauthorized additions, conditional or alternate bids, or other irregularities, which may tend to make the bid proposal incomplete, indefinite, or ambiguous as to its meaning;

C. The bid proposal contains provisions reserving the right to accept or reject an award, or to enter into a contract pursuant to an award (this is not intended to exclude a bid proposal limiting the maximum gross amount of awards acceptable to a bidder at one bid letting. The Department will select awards in its sole discretion.);

D. The bid proposal does not contain a unit price in numerals for each pay item listed, except in the case of authorized alternate pay items;

E. The bid proposal is signed with an invalid bidder identification;

F. The Department determines, in its sole discretion, that any of the unit bid prices are significantly unbalanced to the potential detriment of the Department; or,

G. Confirmation of receipt of all addenda issued by the Department is not included in the bid proposal.

Delete Section 2.8 and replace with the following:

2.8 PROPOSAL GUARANTY - The Department will not consider any bid proposal unless the bidder has furnished the Department a guaranty in the amount of five percent of the total amount of the bid prior to opening of the bids. Satisfactory forms of proposal guaranties are certified checks, cashier's checks, bank drafts issued upon a national or state bank, and bid bonds issued in accordance with South Dakota law. If the bidder uses an electronic bid bond, the bidder must submit the bid bond identification number with the bid proposal. Unless otherwise specified in the bidding package, the proposal guaranty must be made payable at sight to the "South Dakota Department of Transportation."

Delete Section 2.9 and replace with the following:

2.9 SUBMISSION OF BID PROPOSALS – A bidder must submit a bid proposal electronically using the SDEBS to the Department's secure bid submission site prior to the time and date specified by the Notice to Contractors in the bidding

package. The Department will not accept any bid proposal received after the time specified for opening of bids.

Delete Section 2.10 and replace with the following:

2.10 WITHDRAWAL OR REVISION OF PROPOSALS - A bidder may withdraw a proposal after it has been submitted, if the withdrawal is made before the time set for opening the proposals.

A bidder may revise and resubmit a bid proposal any time prior to the time set for opening the proposals. The Department will consider only the last bid proposal submitted as a valid bid proposal for that project. A bidder may revise a bid only through the SDEBS.

Delete Section 3.1 and replace with the following:

3.1 CONSIDERATION OF BID PROPOSALS - After the bids are received, but prior to opening, the Department will verify the bidder is prequalified for the specified work type. After the bids are opened, the Department will verify the bidder's status at that time is sufficient to handle the work for which the bidder submitted a bid. The Department reserves the right to refuse to accept a bid proposal for any of the following reasons:

A. Lack of competency or adequate machinery, plant, and other equipment, as shown by the Contractor's Prequalification Statement;

B. Uncompleted work which the Department determines, in its sole discretion, may hinder or prevent the prompt completion of additional work;

C. Failure to pay or satisfactorily settle any legal obligation due for labor or material on any contract at the time of issuance of proposals;

D. Failure to comply with the Department's prequalification regulations;

E. Default under any previous contract or contracts;

F. Debarment by the Department or the federal government;

G. Lack of bidding capacity as established by the Contractor's prequalification statement, considering the uncompleted work currently under contract; or,

H. Unsatisfactory performance on previous work or any current contract or contracts consisting of, but not limited to:

1. Noncompliance with contract specifications, contract requirements, or Engineer's directives;

2. Failure to complete work on time;

3. Instances of substantial corrective work prior to acceptance;

4. Instances of completed work that requires acceptance at reduced pay;

5. Production of work or materials not meeting required specifications, and when applicable, requiring price reductions or corrective work;

6. Failure to provide adequate safety measures or appropriate traffic control that endangers the safety of the work force and public;

7. Questionable moral integrity as determined by the Attorney General of the State, or the Department; or,

8. Failure to reimburse the State for monies owed on any previously awarded contract including any contract where the prospective bidder is a party to a joint venture and the joint venture has failed to reimburse the State for monies owed.

After the bid proposals are opened, the Department will compare the bids on the basis of the summation of the products of the quantities shown in the bid proposal by the unit bid prices. The results of such comparisons will be available to the public via the Department's Internet Website.

The Department reserves the right to reject any bid proposal, the right to waive technicalities, and the right to reject all bid proposals and advertise for new bid proposals, if in the sole judgment of the Department the rejection or waiver will promote the best interest of the Department.

Delete Section 3.4 and replace with the following:

3.4 PROPOSAL GUARANTY - The Department will retain the proposal guaranties of the two lowest responsible and competent bidders. The Department will release the remaining proposal guaranties following opening and checking of bid proposals. The Department will release the proposal guaranties of the two low bidders when the contract has been executed.

Delete Section 5.4 and replace with the following:

5.4 COORDINATION OF CONTRACT DOCUMENTS – The contents of the bidding package are essential parts of the contract. A requirement occurring in one is as binding as though occurring in all. The contents of the bidding package are intended to be complimentary and to describe and provide for a complete work.

If any discrepancy exists, the governing ranking is:

1. Addenda
2. Project Q&A forum
3. Special provisions
4. Plans
5. Supplemental specifications
6. Standard specifications
7. Electronic design files

Notwithstanding the above governing ranking, addenda will govern over the project Q&A forum unless specifically addressed by a Department response in the project Q&A forum.

In case of a discrepancy between questions on the project Q&A forum regarding the same topic, the most recent question and answer will govern over previous questions and answers. Questions will be numbered on the project Q&A forum in order of date and time posted.

In addition, calculated dimensions will govern over scaled dimensions.

Delete Section 570

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STATE OF SOUTH DAKOTA

DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
FUEL COST ADJUSTMENT

JULY 13, 2006

Delete Section 9.12 of the Standard Specifications for Roads and Bridges and replace with the following:

General

Compensation adjustments for motor fuels and burner fuels consumed in prosecuting the contract shall be determined by the Engineer in accordance with the provisions set forth herein.

Compensation adjustments will be assessed for the cost of the motor fuels and burner fuels whenever the Current Fuel Index (CFI) is outside the range of 85 percent to 115 percent of the Base Fuel Index (BFI). Compensation adjustments for burner fuel will only be made when asphalt concrete bid items are paid for on the estimate.

The Contractor is not required to notify the Department at the time of submitting bids whether he will or will not participate in the fuel cost adjustment program. Prior to execution of the contract, the successful bidder shall submit the Fuel Adjustment Affidavit - Form DOT-208 to the Department.

Determination of whether to participate in the Fuel Adjustment program is the decision of the Prime Contractor. If the Prime Contractor decides not to participate, or if he has a fixed fuel cost for any of the fuel types, no compensation adjustments will be made for the subcontractors by the Department. The Fuel Adjustment Affidavit shall include the anticipated fuel cost of subcontractors, if the Prime Contractor chooses to participate in the fuel cost adjustment program. If compensation adjustments are made, the prime contractor shall ensure that all subcontractors including second and lower tier, are included in the adjustments in proportion to the percentage of work and anticipated fuel cost by that subcontractor.

Each week the Department will record the average wholesale price for No. 2 fuel oil (diesel), regular unleaded gasoline, and propane (LPG), Freight On Board (FOB) South Dakota terminals, as listed in the “Oil Price Information Service” (OPIS) publication.

The BFI price for motor fuels and burner fuel to be used in the contract will be the average of the recorded wholesale fuel prices for the four most recent weekly reporting periods prior to the week of the bid letting.

The CFI price for motor fuels and burner fuel to be used for each progress payment will be the average for the recorded wholesale fuel prices for the four most recent weekly reporting periods available at the time when the progress payment is prepared.

Burner fuel adjustment will use the BFI and CFI as determined for No. 2 fuel oil (diesel), except when the contractor lists the burner fuel as propane (LPG) on Form DOT-208, Fuel Adjustment Affidavit. In that case, the BFI and CFI will be as determined for propane (LPG).

Compensation adjustments will not be assessed for fuel items which the contractor has obtained a fixed fuel cost, or if the contractor elects not to participate in fuel adjustments on Form DOT-208, Fuel Adjustment Affidavit. Fixed fuel costs are defined as a fuel cost that has been set and will remain the same for the entire length of the contract.

Compensation adjustments made in accordance with these provisions may be made on progress payments without a prior approved Construction Change Order.

Fuel Cost Percentage Change

The biweekly change in fuel cost percentage will be determined by Equation 1 as follows:

<u>Equation 1</u>

$$Change_{(x,\,y,\,z)} = \left(\frac{CFI_{(x,\,y,\,z)} - BFI_{(x,\,y,\,z)}}{BFI_{(x,\,y,\,z)}} \right)$$

(x)	=	Motor Fuel (Diesel)
(y)	=	Motor Fuel (Unleaded)
(z)	=	Burner Fuel
$Change_{(x,\,y,\,z)}$	=	Percent change in the respective fuel price compared to the Base Fuel Index Price set for the contract.
$CFI_{(x,\,y,\,z)}$	=	Current Fuel Index Price for the respective fuel type ($$).
$BFI_{(x,\,y,\,z)}$	=	Base Fuel Index Price for the respective fuel type ($$).

Contract Fuel Percentage

For the purpose of determining fuel cost adjustment, a percent of contract will be determined for Motor Fuel (Diesel), and Motor Fuel (Unleaded) based on the original

contract prices. Burner Fuel will be adjusted based on the original contract prices of the plant mix asphalt concrete pavement bid items.

The percent of the contract will remain the same throughout the length of the contract. No changes to this percentage will be allowed for any reason. The sum of the individual fuel costs shall not exceed 15% of the Original Contract Cost. The percent of the contract will be determined by Equation 2 as follows:

Equation 2

$$\%\ Contract_{(x,\,y,\,z)} = \left(\frac{Affidavit\ Cost_{(x,\,y,\,z)}}{Original\ Contract\ Cost_{(x,\,y,\,z)}} \right) x\,100$$

(x)	=	Motor Fuel (Diesel)
(y)	=	Motor Fuel (Unleaded)
(z)	=	Burner Fuel
% $Contract_{(x,y,z)}$	=	Percent of contract for each respective fuel item.
Affidavit $Cost_{(x,y,z)}$	=	Cost from Fuel Adjustment Affidavit (Form DOT-208)
Original Contract $Cost_{(x,y)}$	=	Total of the original contract bid cost excluding lane rental, and Part B of the bid (when A+B bidding is used), if applicable ($$).
Original Contract $Cost_{(z)}$	=	Total original contract cost for all plant mix asphalt concrete pavement bid items combined, excluding bid items for asphalt binder, hydrated lime, sawing and sealing joints, compaction samples, etc. Only bid items measured by the Ton will be included in the calculation.

Compensation Adjustment

The compensation adjustments will be determined for Motor Fuel (diesel), Motor Fuel (Unleaded), and Burner Fuel separately. The calculation will be based on the current Engineer's pay estimate, the percent of the contract for each of the respective fuel items, and the portion of the Current Fuel Index price that falls outside the 85 to 115 percent range of the Base Fuel Index price.

When the "$Change_{(x,\,y,\,z)}$" from Equation 1 is greater than 15%, Equation 3 will be used to determine the compensation adjustment for each item as follows:

Equation 3

$$FCA_{(x,\,y.z)} = \frac{\%\ Contract_{(x,\,y,\,z)}}{100}\ x\ Estimate\ Cost_{(x,\,y,\,z)}\ x\ \left(Change_{(x,\,y,\,z)} - 0.15\right)$$

(x)	=	Motor Fuel (Diesel)
(y)	=	Motor Fuel (Unleaded)
(z)	=	Burner Fuel
$FCA_{(x,y,z)}$	=	Fuel Cost Adjustment for the respective fuel item for the current Engineer's estimate ($$).
% $Contract_{(x,y,z)}$	=	Percent of contract for each respective fuel item (from Equation 2).
Estimate $Cost_{(x,y)}$	=	Amount to be paid on the biweekly pay estimate excluding all pay adjustments made for incentive, disincentive, price adjustments, pay factor adjustments, liquidated damages, and royalties.
Estimate $Cost_{(z)}$	=	Amount to be paid on the biweekly pay estimate for all plant mix asphalt concrete pavement bid items combined, excluding bid items for asphalt binder, hydrated lime, sawing and sealing joints, compaction samples, all pay adjustments made for incentive, disincentive, price adjustments, pay factor adjustments, liquidated damages, and royalties. Only asphalt concrete bid items measured by the Ton will be included in the calculation.
$Change_{(x,y,z)}$	=	Change in the respective fuel price compared to the Base Fuel Index price (from Equation1).

When the "$Change_{(x,y,z)}$" from Equation 1 is less than -15%, the Equation 4 will be used to determine the compensation adjustment for each item.

Equation 4

$$FCA_{(x,\,y.z)} = \frac{\%\ Contract_{(x,\,y,\,z)}}{100}\ x\ Estimate\ Cost_{(x,\,y,\,z)}\ x\ \left(Change_{(x,\,y,\,z)} + 0.15\right)$$

(x)	=	Motor Fuel (Diesel)
(y)	=	Motor Fuel (Unleaded)
(z)	=	Burner Fuel

$FCA_{(x,y,z)}$	=	Fuel Cost Adjustment for the respective fuel item for the current Engineer's estimate ($$).
% $Contract_{(x,y,z)}$	=	Percent of contract for each respective fuel item (from Equation 2).
Estimate $Cost_{(x,y)}$	=	Amount to be paid on the biweekly pay estimate excluding all pay adjustments made for incentive, disincentive, price adjustments, pay factor adjustments, liquidated damages, and royalties.
Estimate $Cost_{(z)}$	=	Amount to be paid on the biweekly pay estimate for all plant mix asphalt concrete pavement bid items combined, excluding bid items for asphalt binder, hydrated lime, sawing and sealing joints, compaction samples, all pay adjustments made for incentive, disincentive, price adjustments, pay factor adjustments, liquidated damages and royalties. Only asphalt concrete bid items measured by the Ton will be included in the calculation.
$Change_{(x,y,z)}$	=	Change in the respective fuel price compared to the Base Fuel Index price (from Equation1).

Payment

Adjustments will be determined by the Engineer on biweekly progress payments based on when the completed work is paid for, not when the work is completed. Adjustments will be made by utilizing the following lump sum line items: Motor Fuel Cost Adjustment, Diesel; Motor Fuel Cost Adjustment, Unleaded; Burner Fuel Cost Adjustment, Propane; and Burner Fuel Cost Adjustment, Diesel.

* * * * *

For informational purposes, Form DOT-208 follows in Attachment A.

Attachment A

DOT-208
(05/07)

FUEL ADJUSTMENT AFFIDAVIT

Project Number _____
PCN _____
County _____

The Contractor is not required to notify the Department at the time of submitting bids whether he will or will not participate in the fuel cost adjustment program The Fuel Adjustment Affidavit shall include the anticipated fuel cost of subcontractors.

Does your company elect to participate in a fuel adjustment for this contract for the fuels that do not have a fixed price? No adjustments in fuel prices will be made if "No" is checked.

☐ Yes ☐ No

If yes, provide the total dollars for each of the applicable fuels. No adjustments in fuel price will be made for the fuel types that are left blank or completed with a $0.00 value.

Diesel (x) $_____

Unleaded (y) $_____

Burner Fuel (z) $_____ Type of Burner Fuel Used: _____

Sum (x + y + z) = $_____

Note: The sum of the x, y, and z may not exceed 15% of the original contract amount.

The following must be completed regardless of whether the Contractor elects to participate in the fuel adjustment affidavit

Under the penalty of law for perjury or falsification, the undersigned, _____,
(Printed Name)

_____ of _____,
(Title) *(Contractor)*

hereby certifies that the documentation is submitted in good faith, that the information provided is accurate and complete to the best of their knowledge and belief, and that the monetary amount identified accurately reflects the cost for fuel, and that they are duly authorized to certify the above documentation on behalf of the company.

I hereby agree that the Department or its authorized representative shall have the right to examine and copy all Contractor records, documents, work sheets, bid sheets, and other data pertinent to the justification of the fuel costs shown above.

Dated _____ Signature _____

Notarization is required only when the Contractor elects to participate in the fuel adjustment affidavit

Subscribed and sworn before me this _____ day of _____ , 20___.

_____ _____
Notary Public *My Commission Expires*

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
DIFFERING SITE CONDITIONS

DECEMBER 19, 2013

During the progress of the work, if subsurface or latent physical conditions are encountered at the site differing materially from those indicated in the contract or if unknown physical conditions of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the contract, are encountered at the site, the party discovering such conditions shall promptly notify the other party in writing of the specific differing conditions before the site is disturbed and before the affected work is performed.

Upon written notification, the Engineer will investigate the conditions, and if it is determined that the conditions materially differ and cause an increase or decrease in the cost or time required for the performance of any work under the contract, an adjustment, excluding anticipated profits, will be made and the contract modified in writing accordingly. The Engineer will notify the Contractor of the determination whether or not an adjustment of the contract is warranted.

No contract adjustment which results in a benefit to the Contractor will be allowed unless the Contractor has provided the required written notice.

No contract adjustment will be allowed under this clause for any effects caused on unchanged work.

This section does not apply to material sources shown on the plans and as defined in Section 6.

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STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISON
FOR
SUSPENSION OF WORK

FEBRUARY 13, 2004

The following shall apply when suspension of the work is ordered by the Engineer.

If the performance of all or any portion of the work is suspended or delayed by the Engineer in writing for an unreasonable period of time (not originally anticipated, customary, or inherent to the construction industry) and the Contractor believes that additional compensation and/ or contract time is due as a result of such suspension or delay, the Contractor shall submit to the Engineer in writing a request for adjustment within 7 calendar days of receipt of the notice to resume work. The request shall set forth the reasons and support for such adjustment.

Upon receipt, the Engineer will evaluate the contractor's request in accordance with Section 5.17 and/or Section 8.6 of the Standard Specifications. If the Engineer agrees that the cost and/or time required for the performance of the contract has increased as a result of such suspension and the suspension was caused by conditions beyond the control of and not the fault of the Contractor, its suppliers, or subcontractors at any approved tier, and not caused by weather, the Engineer will make an adjustment (excluding profit) and modify the contract in writing accordingly. The Contractor will be notified of the Engineer's determination whether or not an adjustment of the contract is warranted.

No contract adjustment will be allowed unless the Contractor has submitted the request for adjustment within the time prescribed.

No contract adjustment will be allowed under this clause to the extent that performance would have been suspended or delayed by any other cause, or for which an adjustment is provided or excluded under any other term or condition of this contract.

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STATE OF SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION
TITLE VI AND NONDISCRIMINATION ASSURANCE
JULY 14, 2008

During the performance of this contract, the contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

(1) Compliance with Regulations: The contractor shall comply with the Regulations relative to nondiscrimination in Federally-assisted programs of the Department of Transportation, Title 49, Code of Federal Regulations, Part 21, as they may be amended (hereinafter referred to as the "Regulations"), incorporated by reference and made a part of this contract.

(2) Nondiscrimination: The contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, religion, national origin, sex, age or disability in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor shall not participate either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.

(3) Solicitations for Subcontracts, Including Procurements of Materials and Equipment: In all solicitations either by competitive bidding or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, religion, national original, sex, age or disability.

(4) Information and Reports: The contractor shall provide all information and reports required by the Regulations, or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the South Dakota Department of Transportation or the Federal Highway Administration to be pertinent to ascertain compliance with such Regulations or directives. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information, the contractor shall so certify to the South Dakota Department of Transportation, or the Federal Highway Administration as appropriate, and shall set forth what efforts it has made to obtain this information.

(5) Sanctions for Noncompliance: In the event of the contractor's noncompliance with the nondiscrimination provisions of this contract, the South Dakota Department of Transportation shall impose such contract sanctions as it or the Federal Highway Administration may determine to be appropriate, including but not limited to:

(a) withholding of payments to the contractor under the contract until the contractor complies, and/or
(b) cancellation, termination or suspension of the contract, in whole or in part.

(6) Incorporation of Provisions: The contractor shall include the provisions of paragraphs (1) through (6) in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives pursuant thereto.

The contractor shall take such action with respect to any subcontract or procurement as the South Dakota Department of Transportation or the Federal Highway Administration may direct as a means of enforcing such provisions including sanctions for non-compliance. Provided, however, that, in the event of a contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the contractor may request the South Dakota Department of Transportation to enter into such litigation to protect the interest of the State, and, in addition, the contractor may request the United States to enter such litigation to protect the interests of the United States.

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STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
DISADVANTAGED BUSINESS ENTERPRISE

DECEMBER 19, 2012

The Contractor, subrecipient, or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the Department deems appropriate.

I. Definitions

A. Specified Goal: A DBE participation goal for a contract as indicated by a specific numerical percentage of the total dollar amount of the contract in the bidding documents.

B. Not Specified: No specific DBE participation goal is specified for a contract.

C. Disadvantaged Business Enterprise (DBE): A for-profit small business that is certified by the Department and is listed in the DBE Directory available on the Department's web site.

D. Good Faith Effort (GFE): Efforts to achieve a DBE goal which; by their scope, intensity, and appropriateness to the objective; can reasonably be expected to meet the objective of the Department's DBE program pursuant to 49 CFR 26.1.

E. Positive Contact: Communication between the bidder and the DBE in which the bidder receives an oral or written response from the DBE stating the DBE's intention to quote or not quote a project.

F. Commitment: The dollar amount of work to be subcontracted to DBEs, according to the bidder's bid. The commitment may be compared to the dollar amount of all contract items in the bidder's bid and expressed as a percentage of the total bid amount.

II. Bidding Requirements

A bidder must not discriminate on the basis of race, color, national origin, or sex in the solicitation or award to subcontractors and material suppliers. Bidders who demonstrate a pattern of possible discrimination through consistent and repeated under-utilization of DBEs may be subject to investigation and sanctions allowed by regulation, administrative rule, or law.

The Bidder's failure to carry out the requirements of this special provision will be treated as a non-responsive bid.

On contracts that specify a specific DBE contract participation goal, all bidders must include their DBE commitment for the contract in the bidding files provided by the Department.

If the contract indicates "Not Specified," all bidders are encouraged to include their anticipated DBE utilization for the contract in the bidding files provided by the Department.

Each bidder must submit a list of all subcontractors and suppliers (DBEs and non-DBEs) the bidder received quotes from for that contract with the bid files.

A Contractor must make reasonable efforts to provide opportunities for DBEs to participate on Federal-aid contracts throughout the life of the contract.

On contracts let with a specified DBE contract participation goal, where the low bidder has not met or exceeded that goal, the bidder must provide GFE documentation as indicated in Section III.

When the DBE participation is "Not Specified" on a contract, each bidder is encouraged to use DBE Contractors; however no bidder will be required to furnish GFE documentation.

The apparent low bidder must submit GFE documentation, when requested by the Department, within two (2) business days from the date the apparent low bidder is contacted by the Department. Section III provides information on the types of action bidders should make as part of their GFE to obtain DBE participation. The apparent low bidder may submit documentation with the bidding files provided all pertinent information is included. The apparent low bidder must submit any missing documentation within two (2) business days from the date the Department contacts the low bidder.

If the apparent low bidder does not provide documentation showing GFE as required by this special provision, the Department will consider that bid nonresponsive and may either award the contract to the next lowest responsible bidder with a responsive bid, or reject all bids. Subsequent to the DBE

committee's decision that the apparent low bidder's efforts do not establish GFE, the apparent low bidder will be notified that the bid is not responsive. The apparent low bidder will have two (2) business days from the date of notification to contact the Bid Letting Engineer to arrange a meeting with the Department Secretary, or the Secretary's designee, to present documentation and argument about why the bid should not be rejected. The Department Secretary or the Secretary's designee will issue a written decision on responsiveness of the bid within two (2) business days after the meeting.

If the apparent low bid is rejected for failure to meet the GFE or other requirements, the next apparent low bidder will be notified, unless all bids are rejected. The next apparent low bidder's DBE commitment will also be reviewed, and GFE documentation may be requested. Unless all bids are rejected, award of the contract will be made to the lowest bidder with a responsive bid.

The lowest responsive bidder will be required to complete form DOT-289B, as included in the contract documents, when the contract is sent for signature. This form requires a signature from each DBE identified in the low bidder's DBE commitment. A separate form will be supplied for each DBE and will be included in the contract documents.

Bidders are encouraged to assist interested DBEs in obtaining bonding, lines of credit, insurance, necessary equipment, supplies, materials, or other related services.

III. Good Faith Efforts

If a GFE package is requested on a contract with a specified goal, the apparent low bidder must submit documentation showing compliance with the following requirements:

A. The apparent low bidder will submit a contact log of all solicitation efforts including:

- Name of the DBE firm
- Name and phone number of the individual with whom contact was made
- Date, time, and manner of each and every contact (by phone, in person, fax, mail, e-mail, etc.)
- The DBE's response to the solicitation
- Result of the solicitation effort

An example of a solicitation log is available on the Department's Bid Letting website. When bidding utilizing the South Dakota Electronic Bidding System (SDEBS) software, the software may be used to document the log of solicitation efforts for the project.

B. The apparent low bidder will also submit documentation that shows GFE in relation to the following requirements:

1. The bidder must select contract work items to encourage DBE participation. This includes breaking out contract work items into economically feasible units to facilitate DBE participation, even when the bidder might otherwise prefer to perform these work items with its own forces.

2. The bidder must solicit all certified DBEs that are listed in the appropriate work classifications in the DBE directory and that have indicated in the directory they are willing to work in the project's geographic area. Without exception, all DBEs who are listed on the plan holders list by 10 AM central time seven (7) calendar days prior to the bid letting must be solicited in accordance with Section III.B.3 of this special provision. If the bidder has not solicited any DBE meeting these requirements, the bidder will provide a detailed written explanation showing why the DBE was not solicited.

3. To provide adequate time for the DBE to respond with a quote in the normal course of business, the bidder must make the initial solicitation at least six (6) calendar days by mail or five (5) calendar days by phone, fax, or e-mail prior to the letting date. Without exception, all DBEs who are listed on the plan holders list by 10 AM central time seven (7) calendar days prior to the bid letting must be solicited.

4. If the bidder does not receive a positive contact from a DBE, the bidder must follow up the initial solicitation with a second solicitation by phone, fax, or e-mail to determine whether the DBE is interested in quoting. The bidder must make this second solicitation at least two (2) business days prior to the letting.

5. The bidder will provide interested DBEs with adequate and timely information about plans, specifications, and requirements of the contract to assist DBEs in responding to a solicitation.

6. If a bidder rejects a DBE quote because of previous problems with a particular DBE, the bidder must prepare a detailed written explanation of the problem. Additional cost involved in finding and using DBEs is not, in itself, sufficient reason for a bidder to reject a quote. A bidder must not reject a DBE as being unqualified without sound reasons based on a thorough investigation of the DBE's capabilities.

7. Any additional information requested by the Department.

C. The bidder must consider qualified DBEs whose quotes are reasonably competitive. If the bidder rejects any quote because it is considered not to be "reasonably competitive," the bidder must provide copies of all DBE and non-DBE quotes, and a work item price spreadsheet comparing DBE quotes to non-DBE quotes. The spreadsheet must show which quote was included in the bid for the work items being compared. The ability or desire of a bidder to perform the work with its own forces does not relieve the bidder of the responsibility to make GFE. In the event a bidder elects to use its own forces over a DBE, the bidder must include, on the spreadsheet, documentation of the costs of using the bidder's own forces. This can be shown in a number of ways, which may include submitting portions of the bidder's work sheets used to prepare the bid.

D. The bidder must explain why the specified goal could not be met.

E. The bidder must identify any additional efforts the bidder made to secure DBE participation.

IV. Counting DBE Participation

On projects with a specified goal, the contract commitment, as submitted with the bid, will be documented on form DOT-289R/C as included in the contract documents.

If the project is shown as "Not Specified," the anticipated DBE utilization, as submitted with the bid, will be documented on form DOT-289 R/N – DBE Utilization Form, as included in the contract documents. The DBE utilization shown on this form is not a commitment to use the DBE. This information will be used by the Department to track anticipated DBE usage.

Only the portion of a contract performed by the DBE's own forces will count toward DBE participation. Included is the cost of supplies and materials obtained by the DBE for the contract, including supplies purchased or equipment leased by the DBE. Supplies and equipment the DBE subcontractor purchased or leased from the Contractor or its affiliate is not allowed to be included.

When a DBE performs as a participant in an approved joint venture, only the portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work of the contract that the DBE performs with its own forces will count toward DBE participation.

A bidder may count toward its DBE participation only that percentage of expenditures to DBEs that perform a commercially useful function (CUF) in the performance of a contract. A DBE performs a CUF when the DBE is responsible for execution of the work of a contract and is carrying out the DBE's responsibilities by actually performing, managing and supervising the work

involved. To perform a CUF, the DBE must also be responsible, with respect to materials and supplies used on the contract, for negotiating prices, determining quality and quantity, ordering and installing (where applicable) the materials, and paying for the material itself. To determine whether a DBE is performing a CUF, the Department will evaluate the amount of work subcontracted, the industry practice, and whether the amount the DBE is to be paid is commensurate with the work it is actually performing, DBE credit claimed for performance of the work, and other relevant factors.

A DBE is not performing a CUF if the DBE performs less than 30% of the total cost of its contract with its own work force, or if its role is limited to that of an extra participant in a transaction, project, or contract through which funds are passed in order to obtain the appearance of DBE participation. In determining whether a DBE is simply an extra participant, the Department will examine similar transactions, particularly those in which DBEs do not participate.

DBE participation will be counted for trucking services as follows:

> The bidder/Contractor will receive credit toward DBE participation for the total value of the transportation services the DBE provides on the contract using trucks the DBE owns, insures, and operates and which are driven by drivers the DBE employs.
>
> A DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. When a DBE leases trucks from another DBE, the bidder/Contractor can count the total value of the transportation services the lessee DBE provides on the contract toward DBE participation.
>
> The DBE may also lease trucks from a non-DBE firm, including an owner-operator. When a DBE leases trucks from a non-DBE, the bidder/Contractor can count toward DBE participation only the fee or commission the DBE receives as a result of the lease arrangement. The bidder/Contractor does not receive credit toward DBE participation for the total value of the transportation services, since all services are not provided by a DBE.

The bidder may count toward DBE participation expenditures to DBE firms for materials, supplies, or services as follows:

> If the materials or supplies are obtained from a DBE manufacturer, count 100 percent of the cost of the materials or supplies toward DBE participation. A manufacturer is a firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the contract and of general character described by the specifications.

If the materials or supplies are purchased from a DBE regular dealer, count 60 percent of the cost of the materials or supplies toward DBE participation. A regular dealer is a firm that owns, operates, or maintains a store, warehouse or other establishment in which the materials, supplies, articles, or equipment are bought, kept in stock, and regularly sold or leased to the public in the usual course of business.

If the materials or supplies are purchased from a DBE which is neither a manufacturer nor a regular dealer, count only the amount of fee or commission charged for assistance in the procurement of the materials or supplies or fee or transportation charges for the delivery of materials or supplies required at the job site toward DBE participation. In order to be counted, the Department must determine the fee to be reasonable and not excessive as compared to fees customarily allowed for similar services. The cost of the materials and supplies themselves will not count toward DBE goals.

The Department will not count toward DBE participation materials or services provided by a DBE who is not currently certified.

No intended or actual subcontracting arrangement which is contrived to artificially inflate DBE participation is allowed. This includes, but is not limited to, DBE middlemen which serve no commercially useful function, or arrangements where a DBE is acting essentially as a broker of goods or services, but has been counted as a manufacturer, regular dealer, or subcontractor.

The Department will review and monitor projects for compliance with the bidder's intended DBE participation. Failure by the Contractor to fulfill the contract commitment constitutes a breach of contract. The Department may also investigate the form and substance of particular business arrangements between and among DBE and Contractors with regard to specific contracts. If, as a result of an investigation, the Department determines a particular business arrangement is not allowable, the dollar amount of the unallowable DBE participation will be subtracted from the Contractor's DBE participation on that project. The Contractor will be notified if the apparent DBE participation is not adequate to meet the DBE participation stated on the form DOT-289R/C. The Contractor will be directed to seek additional participation from other DBEs to meet the unallowable portion on that contract.

All Contractors and DBEs shall cooperate fully and promptly with the Department in compliance reviews, investigations, and other requests for information. If the Department determines a Contractor was a knowing and willing participant in an unallowable business arrangement, or in the event of repeated violations, falsification, or misrepresentation, the Department will impose sanctions. Sanctions may include, but are not limited to one or more of the following:

- Assessment of liquidated damages as stated in Section VII below
- Suspension of bidding privileges or debarment
- Withholding progress payments
- Securing additional DBE participation on future Federal-aid contracts sufficient to make up for the DBE participation found to be unallowable
- Referral of the matter for criminal prosecution

V. Joint Checks to DBEs

A joint check is a check issued by a prime Contractor to a DBE subcontractor and to a material supplier or another third party for items or services to be incorporated into a project. For a prime Contractor to receive DBE credit, the DBE must perform a commercially useful function and be responsible for negotiating price, determining quality and quantity, ordering materials and installing (where applicable) and paying for materials.

To ensure that the DBE is independent of the prime Contractor and in compliance with the regulation, use of joint checks will be reviewed and allowed only under following conditions:

- Issued for valid reasons only, not simply for the convenience of the prime Contractor
- Used for a specific contract or specific time frame and not long-term or open ended
- Payment is made to the DBE and not directly to the supplier
- Requested and received prior written approval from the DBE Compliance Officer.

The request must include the following:

- Name of the DBE
- The DOT contract number(s)
- The DOT PCN number(s)
- The work the DBE will be performing on each contract
- Name of the supplier(s) used by the DBE
- The specific reason(s) for issuing joint checks

The Department will review the request and verify the circumstances indicated in the request with the DBE. A copy of the request and approval will be provided to the prime Contractor and the DBE.

VI. Certification of DBE Performance and Payments

Within 30 days of physical completion of the project the Contractor is required to submit form DOT-289 (Certification of DBE Performance and Payments), listing all DBEs that participated in the contract, and the total dollar amount paid (and

anticipated to be paid) to each. DBE attainments are compared to commitments on form DOT-289R/C and any payments less than 90 percent of that commitment, without proper justification and documentation, will have liquidated damages assessed against the contract. The Contractor's final payment is not released until receipt of the form DOT-289.

Contractors are required to maintain a running tally of payments to DBEs. For reports of payments not being made in accordance with the prompt payment provision, alleged discrimination against a DBE or other similar complaint, the tally may be requested for review by the Department. The Department may perform audits of contract payments to DBEs to ensure that the amounts paid were as reported on the form DOT-289. All Contractors participating in Federal-aid contracts are expected cooperate fully and promptly with the Department in compliance reviews, investigations and other requests for information regarding payments to DBEs. Their failure to do so is grounds for appropriate sanctions or action against the Contractor.

The DOT will monitor the running tally on a program basis and if reporting issues are identified, additional reporting requirements may be implemented.

VII. Liquidated Damages

A. If the Contractor does not meet its contract commitment documented on form DOT-289 R/C, the Department will assess liquidated damages according to the following schedule:

1. For the first $1,000 DBE deficiency, one hundred percent (100%) of the deficiency.

2. For the next $9,000 DBE deficiency, fifty percent (50%) of the deficiency.

3. For the next $10,000 DBE deficiency, twenty five percent (25%) of the deficiency.

4. For any remaining DBE deficiency in excess of $20,000, ten percent (10%) of the deficiency.

This liquidated damage provision will not be applicable where actual payment to a DBE is within ninety percent (90%) of the commitment or where there are good and sufficient reasons, properly documented, for the deficiency such as quantity under-runs, project changes, or other unexpected occurrences.

B. If a Contractor finds it impossible, for reasons beyond its control, to meet the contract commitment on form DOT-289R/C, the Contractor may, at any time prior to completion of the project, provide a written request to the DBE Compliance Officer for a complete or partial waiver of liquidated damages. No

request for a waiver will be accepted after Acceptance of Field Work has been made.

VIII. Termination or Substitution of a DBE

The Contractor will not be allowed to terminate or substitute a DBE without the Department's prior verbal consent followed by written approval. This includes, but is not limited to, instances in where the Contractor desires to perform work originally committed to a DBE with its own forces, with an affiliated company, with a non-DBE, or with another DBE. Department approval is required when the contract contains a "specified goal" on form DOT-289R/C and the DBE to be terminated or substituted is listed as a commitment on the form DOT-289R/C.

The Department will provide written consent only if the Department agrees the Contractor has good cause to terminate the DBE listed on the form DOT-289R/C. Good cause includes the following:

- The DBE fails or refuses to execute a written contract
- The DBE fails or refuses to perform the work of the DBE subcontract in a manner consistent with normal industry standards or DOT specifications unless the failure or refusal by the DBE is a result of unfair or discriminatory actions by the Contractor
- The DBE fails or refuses to meet the Contractor's reasonable nondiscriminatory bond requirements
- The DBE becomes bankrupt, insolvent, or exhibits credit unworthiness
- The DBE in ineligible to work on public works projects because of suspension and debarment proceedings pursuant to 2 CFR Parts 180, 215, and 1,200 or applicable state law
- The Department has determined that the DBE is not a responsible Contractor
- The DBE voluntarily withdraws from the project and provided the Department with a written notice of withdrawal
- The DBE is found to be ineligible to receive DBE credit for the type of work required
- A DBE owner dies or becomes disabled with the result that the DBE is unable to complete its work on the contract
- Other documented good cause that the Department determines to substantiate the termination of the DBE.

Good cause does not exist if the Contractor seeks to terminate a DBE so the Contractor can self-perform the work for which the DBE was committed, or so the Contractor can substitute another DBE or non-DBE Contractor after the contract award.

Before submitting a request to terminate or substitute a DBE to the Department, the Contractor must first provide written notice to the DBE, with a copy of the

notice to the DBE Compliance Officer, of the Contractor's intent to request to terminate or substitute, and the reason for the request.

The Contractor must give the DBE five (5) calendar days to respond to the notice and advise the Department and the Contractor of the reasons, if any, why it objects to the proposed termination of its subcontract and why the Department should not approve the Contractor's action. If required in a particular case as a matter of public necessity (e.g. safety), the Department may provide a response period shorter than five (5) calendar days.

When a DBE is terminated or fails to complete its work on the contract for any reason, the Contractor must make good faith efforts to replace the committed DBE with another DBE. The Contractor must make efforts to find another DBE to perform the same amount of work under the contract as the DBE that was terminated. The letter to the Department requesting termination or substitution must include the name of the DBE and dollar amount of the replacement DBE. If the Contractor is unable to find another DBE, the Contractor must provide the names of the DBEs it contacted and reason why they were unable to use those DBEs.

If the Contractor does not utilize or pay DBEs as required, liquidated damages will be assessed as specified in Section VII. In addition, if the Contractor is found to have knowingly and willingly attempted to circumvent the DBE contract provisions, sanctions referred to in Section IV may be imposed.

The Contractor does not need Department approval to terminate or substitute a DBE under the following circumstances:

- The DBE is being used on a contact with a "Specified Goal" however the DBE was not listed as a DBE commitment on form DOT-289R/C.
- The DBE was listed as a commitment on a "Not Specified" DBE goal contract on form DOT-289R/N.

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SPECIAL PROVISION FOR
EEO AFFIRMATIVE ACTION REQUIREMENTS ON
FEDERAL AND FEDERAL-AID CONSTRUCTION CONTRACTS

SEPTEMBER 1, 1997

APPENDIX A

Notice or Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246)

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.

2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

GOALS FOR MINORITY PARTICIPATION FOR EACH TRADE

Aurora	0.8%	Fall River	7.9%	Marshall	1.3%
Beadle	0.8%	Faulk	1.3%	Meade	3.4%
Bennett	7.9%	Grant	1.3%	Mellette	7.9%
Bon Homme	1.2%	Gregory	0.8%	Miner	0.8%
Brookings	0.8%	Haakon	7.9%	Minnehaha	1.2%
Brown	1.3%	Hamlin	1.3%	Moody	0.8%
Brule	0.8%	Hand	0.8%	Pennington	3.4%
Buffalo	7.9%	Hanson	0.8%	Perkins	7.9%
Butte	7.9%	Harding	7.9%	Potter	7.9%
Campbell	7.9%	Hughes	7.9%	Roberts	1.3%
Charles Mix	0.8%	Hutchinson	0.8%	Sanborn	0.8%
Clark	1.3%	Hyde	7.9%	Shannon	7.9%
Clay	1.2%	Jackson	7.9%	Spink	1.3%
Codington	1.3%	Jerauld	0.8%	Stanley	7.9%
Corson	7.9%	Jones	7.9%	Sully	7.9%
Custer	7.9%	Kingsbury	0.8%	Todd	7.9%
Davison	0.8%	Lake	0.8%	Tripp	7.9%
Day	1.3%	Lawrence	7.9%	Turner	0.8%
Deuel	1.3%	Lincoln	0.8%	Union	1.2%
Dewey	7.9%	Lyman	7.9%	Walworth	7.9%
Douglas	0.8%	McCook	0.8%	Yankton	1.2%
Edmunds	1.3%	McPherson	1.3%	Ziebach	7.9%

GOALS FOR FEMALE PARTICIPATION IN EACH TRADE

Statewide - - - - - - - - - - 6.9%

These goals are applicable to all the contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and nonfederally involved construction.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3 (a), and its efforts to meet the goals established for the geographical area where the contract resulting from this solicitation is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project

for the sole purpose of meeting the contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor when requesting permission to sublet shall provide written notification to the Department of Transportation as specified in Section 8.1 of the Standard Specifications for Roads and Bridges. When the subcontract is in excess of $10,000, the request for permission to sublet shall list the name, address and telephone number of subcontractor; employer identification number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed. The Department of Transportation will then provide written notification to the Director of the Office of Federal Contract Compliance Programs through proper channels.

4. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is as shown by county designation on the Title Sheet of the plans.

APPENDIX B

Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246)

1. As used in these specifications:

   a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;

   b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;

   c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.

   d. "Minority" includes:

      (I) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);

      (II) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);

      (III) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and

      (IV) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of $10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor of Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed

as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered Construction contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office, from Federal procurement contracting officers or from the South Dakota Department of Transportation. The Contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully and shall implement affirmative action steps at least as extensive as the following:

    a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

    b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its union have employment opportunities available, and maintain a record of the organization's responses.

    c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or if referred, not employed by the Contractor, this shall be documented in the file with the reason thereof, along with whatever additional actions the Contractor may have taken.

    d. Provide immediate written notification to the Director when the union with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

    e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources complied under 7b above.

    f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc., by specific review of the policy

with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with onsite supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractors and Subcontractors with whom the Contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's workforce.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc. such opportunities.

m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligation.

8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union contractor-community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these specifications provided that the contractor actively participates in the group, makes every effort to assure that the group, has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goal and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply,

however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).

10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

11. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The Contractor in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

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STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION FOR
REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA 1273 (MAY 1, 2012)

APRIL 30, 2013

The following are amendments to the above contract provisions.

Section I.4.

Delete this section and replace with the following:

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a Federal-aid construction project unless it is labor performed by convicts who are on parole, supervised release, or probation.

Section IV.

Delete the first paragraph and replace with the following:

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway.

Section IV.3.b.(1)

Delete the first sentence and replace with the following:

The contractor and each related subcontractor must submit weekly, for each week in which any contract work is performed, a copy of a completed certified weekly payroll report to the South Dakota Department of Transportation (SDDOT) Labor Compliance Officer (LCO) within fourteen (14) calendar days of the end of the workweek. The address of the Labor Compliance Officer is: South Dakota Department of Transportation, Labor Compliance Program, 700 E. Broadway Avenue, Pierre, SD 57501-2586.

Section IV.3.b.(2)

Delete the first paragraph and replace with the following:

Each submitted certified weekly payroll report must set out accurately and completely all information required by the Instructions for SDDOT Statement of Compliance & Certified Payroll Report (located on the SDDOT Labor Compliance website). Each certified weekly payroll report must include the most recent SDDOT Statement of Compliance Form, signed by the Contractor or related subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract. The SDDOT will not accept any payroll report which does not include the most recent SDDOT Statement of Compliance Form. This SDDOT Statement of Compliance Form must certify the following:

Section IV.3.b.(3)

Delete this paragraph and replace with the following:

The weekly submission of a properly executed SDDOT Statement of Compliance Form shall satisfy the requirement for submission of the "Statement of Compliance Form" required by paragraph 3.b.(2) of this section.

Section IV.4.a

Delete the first sentence of the third paragraph and replace with the following:

Every apprentice must be paid the higher of the Common Laborer wage rate contained in the bid documents or the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination.

* * * * *

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. General
II. Nondiscrimination
III. Nonsegregated Facilities
IV. Davis-Bacon and Related Act Provisions
V. Contract Work Hours and Safety Standards Act Provisions
VI. Subletting or Assigning the Contract
VII. Safety: Accident Prevention
VIII. False Statements Concerning Highway Projects
IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
X. Compliance with Governmentwide Suspension and Debarment Requirements
XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under

this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are

applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor

will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 “Contract provisions and related matters” with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH–1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b.(1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or

will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b.(1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/esa/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term “perform work with its own organization” refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
(2) the prime contractor remains responsible for the quality of the work of the leased employees;
(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be 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.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1**. Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. **Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the

department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION REGARDING
MINIMUM WAGE ON FEDERAL-AID PROJECTS

APRIL 30, 2013

This proposal contains a copy of the most recent United States Department of Labor (USDOL) Davis-Bacon Act Wage Decision.

The Contractor and each related subcontractor will pay their respective employees not less than the USDOL minimum wage for each work classification an employee actually performs at the site of the work.

The Contractor and each related subcontractor must submit weekly, for each week in which any contract work is performed, a copy of a completed certified weekly payroll report to the South Dakota Department of Transportation (SDDOT) Labor Compliance Officer (LCO) within fourteen (14) calendar days of the end of the workweek.

Each certified weekly payroll report must include the most recent SDDOT Statement of Compliance Form. The Department will not accept any payroll report which does not include the most recent SDDOT Statement of Compliance Form.

* * * * *

Wage and Hour Division
U.S. Department of Labor (DOL)
200 Constitution Avenue, N.W.
Washington, DC 20210

Davis-Bacon Act Wage Decisions
State: South Dakota
Construction Types: Heavy and Highway
Counties: South Dakota Statewide

	* SUSD2013-001
Agency:	U.S. DOL
Wage Decision Number:	**SD130009 SD9**
Counties:	Statewide: All Counties in South Dakota
Wage Decision Date:	**08/30/2013**

	Rates	Fringes
LABORERS		
GROUP GL1		
Air Tool Operator; Common Laborer; Landscape Worker; Flagger; Pilot Car Driver; Trucks under 26,000 GVW; Blue-top Checker; Materials Checker	15.08	0.00
GROUP GL2		
Mechanic Tender (Helper); Pipe Layer (except culvert); Form Builder Tender; Special Surface Finish Applicator; Striping	16.78	0.00
GROUP GL3		
Asphalt Plant Tender; Pile Driver Leadsman; Form Setter; Oiler/Greaser	18.42	0.00
GROUP GL5		
Carpenter; Form Builder	21.82	0.00
GROUP GL6		
Concrete Finisher; Painter; Grade Checker	20.81	0.00
POWER EQUIPMENT OPERATORS		
GROUP G01		
Concrete Paving Cure Machine; Concrete Paving Joint Sealer; Conveyor; Tractor (farm type with attachments); Self Propelled Broom; Concrete Routing Machine; Paver Feeder; Pugmill; Skid Steer	16.15	0.00
GROUP G02		
Bull Dozer 80 HP or less; Front End Loader 1.25 CY or less; Self Propelled Roller (except Hot Mix); Sheepsfoot/50Ton Pneumatic Roller; Pneumatic Tired Tractor or Crawler (includes Water Wagon and Power Spray units); Wagon Drill; Air Trac; Truck Type Auger; Concrete Paving Saw	17.62	0.00
GROUP G03		
Asphalt Distributor; Bull Dozer over 80 HP; Concrete Paving Finishing Machine; Backhoes/ Excavators 20 tons or less; Crusher (may include internal screening plant); Front End Loader over 1.25 CY; Rough Motor Grader; Self Propelled Hot Mix Roller; Push Tractor; Euclid or Dumpster; Material Spreader; Rumble Strip Machine	19.33	0.00
GROUP G04		
Asphalt Paving Machine Screed; Asphalt Paving Machine; Cranes/Derricks/Draglines/Pile Drivers/Shovels 30 to 50 tons; Backhoes/Excavators 21 to 40 tons; Maintenance Mechanic; Scrapers; Concrete Pump Truck	19.73	0.00
GROUP G05		
Asphalt Plant; Concrete Batch Plant; Backhoes/Excavators over 40 Tons; Cranes/ Derricks/Draglines/Pile Drivers/Shovels over 50 tons; Heavy Duty Mechanic; Finish Motor Grader; Automatic Fine Grader; Milling Machine; Bridge Welder	21.80	0.00
TRUCK DRIVERS		
GROUP GT1		
Tandem Truck without trailer or pup; Single Axle Truck over 26,000 GVW with Trailer	15.88	0.00
GROUP GT2		
Semi-Tractor and Trailer; Tandem Truck with Pup	18.29	0.00
ELECTRICIANS		
GROUP E01		
Electrician	21.84	0.00

*Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Survey wage rates will remain in effect and will not change until a new survey is conducted.

A COPY OF THIS DOCUMENT, COLORED SOLAR YELLOW, MUST BE CONSPICUOUSLY POSTED AT THE PROJECT SITE

Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Davis-Bacon Act Wage Decisions
State: South Dakota
Construction Types: Heavy and Highway
Counties: South Dakota Statewide

WELDERS – Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award, pursuant to 29 CFR 5.5(a)(1)(ii); contractors are responsible for requesting SDDOT to secure necessary additional work classifications and rates.

For SDDOT Defined Work Classifications, please visit: http://www.sddot.com/business/contractors/labor/wcwr/Default.aspx

In the listing above, the "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union majority rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. Survey wage rates will remain in effect and will not change until a new survey is conducted.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- an existing published wage determination
- a survey underlying a wage determination
- a Wage and Hour Division letter setting forth a position on a wage determination matter
- a conformance (additional classification and rate)
- ruling on survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and our Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, Project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION FOR
ERRATA

MARCH 3, 2010

MAKE THE INDICATED CORRECTIONS TO THE FOLLOWING SPECIFIED SECTIONS:

Section 491.5 A, B, C, D, E – Page 290 – Add the following to the end of the first sentence of each of these sections:

(square meter).

Section 629.4 C – Page 351 – Replace the first sentence with the following:

Remove Three Cable Guardrail will be measured to the nearest foot (0.1 meter) along the centerline of the cable.

Section 629.4 D – Page 351 – Replace the first sentence with the following:

Removal of Anchor Assembly will be measured by the each.

Section 630.3 D – Page 354 – Replace the fourth sentence with the following:

The drawings shall contain all components of the W beam end terminal.

Section 634.2 – Page 371 – Replace the second paragraph with the following:

Traffic control devices shall meet the crashworthy requirements of the National Cooperative Highway Research Program Report 350 (NCHRP 350) for Category I, II and III devices.

Section 635.3 L – Page 383 – Delete and replace with the following:

L. Luminaires: Luminaires shall be adjusted on the support so the laminar sets level as indicated by a small bubble level. Bolts shall be firmly tightened.

Section 635.4 K – Page 385 – Delete and replace with the following:

K. Luminaires: Measurement will be by the actual count of the various types and sizes of luminaires furnished and installed.

Section 635.5 K – Page 387 – Delete and replace with the following:

K. Luminaires: Payment for luminaires of the various types and sizes will be at their respective contract unit prices per each. Payment will be full compensation for furnishing and installing luminaires.

Section 984.3 H – Page 504 – Replace the first paragraph with the following:

Temporary road markers shall consist of a yellow or white plastic body providing a horizontal width and length of approximately 3 ½ inches (90 mm) in both dimensions and approximately ¾ inches (20

mm) high. If flexible vertical markers are used they shall be approximately 4 inches (100 mm) wide and approximately 2 inches (50 mm) high.

Index – Page 532 – Under Portland Cement Concrete Pavement – Delete "Dowel and Tie Bars…517" and replace with the following:

Dowel and Tie Bars…….. 519

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STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION TO
STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES

MARCH 3, 2010

All items included in this supplemental specification will govern over the Errata.

MAKE THE INDICATED CHANGES TO THE FOLLOWING SPECIFIED SECTIONS:

Section 2.6 D – Page 11 – Delete and replace with the following:

D. PCN

Section 3.6 – Page 15 – Delete and replace with the following:

3.6 EXECUTION AND APPROVAL OF CONTRACT - The contract shall be signed and returned by the successful bidder, together with the contract bond, within 20 calendar days after the receipt of the Notice of Award. If the contract is not executed by the Department within 15 calendar days following the receipt from the bidder of the signed contract and related documents, the bidder shall have the right to withdraw the bid without penalty. A contract will not be considered in effect until it has been executed by all parties to the contract.

Section 3.7 – Page 15 – Delete the first sentence and replace with the following:

Failure to execute the contract and file acceptable bonds within 20 calendar days after bidder's receipt of the Notice of Award shall be just cause for the cancellation of the award and the forfeiture of the proposal guaranty which shall become the property of the Department, for liquidation of damages sustained.

Section 4.6 – Page 19 – Delete and replace with the following:

4.6 FINAL CLEANING UP - Before Acceptance of Field Work is made by the Area Office, the highway and areas occupied by the Contractor in connection with the work shall be cleaned of rubbish, excess materials, temporary structures, and equipment; and the work left in an acceptable condition, unless otherwise approved by the Engineer.

Section 5.6 – Page 24 – Delete the last sentence of the seventh paragraph and replace with the following:

The depth applies to the existing grade or ditch flowline within the right-of-way.

Section 5.6 – Page 24 – Delete the last two sentences of the eighth paragraph and replace with the following:

Contractors shall give at least 48 hour notice prior to commencement of excavation, excluding Saturdays, Sundays, and legal holidays of the state. South Dakota One Call phone number is **1-800-781-7474** or **811** within the State of South Dakota.

Section 5.6 – Page 24 – Add the following to the list of items on page 25:

Tunneling or Boring
Duration of Excavation
Nearest Cross Street

Section 5.6 – Page 24 – Delete the third sentence of the last paragraph on page 25 and replace with the following:

The utility shall as soon as possible but not longer than two hours from the notification time during the business day and not longer than four hours from the notification time outside of the business day or by the start time on the ticket, whichever is later provide all reasonably available practical information to the Contractor.

Section 5.10 – Page 27 – Add the following sentence to this section:

Neither the Department's authority to inspect all work nor any actual inspections performed by the Department during the course of construction shall constitute an acceptance of work performed, or operate to relieve the Contractor of its obligation to construct the project in compliance with the plans and specifications.

Section 5.14 – Page 28 – Delete the first sentence of the first paragraph and replace with the following:

The Contractor shall maintain the work during construction and until the Area Office issues the Acceptance of Field Work.

Section 5.14 – Page 28 – Delete the last paragraph and replace with the following:

Cost of maintenance work during construction and before the Area Office issues the Acceptance of Field Work shall be included in the unit price bid on the various pay items and the Contractor will not be paid an additional amount for such work.

Section 5.16 – Page 29 – Delete and replace with the following:

5.16 ACCEPTANCE OF FIELD WORK - When the contract work, including authorized modifications and final cleanup has been completed, the Area Engineer or his designee will, within fourteen days, make a final inspection of the work. When provided in the Contract, the Area Engineer or his designee may make inspections following completion of portions of the contract. If the work is found to conform with the requirements of the Contract, the Area Engineer or his designee will issue written notification to the Contractor of Acceptance of Field Work. Such notice is not to be construed as an acceptance by the Area Engineer or his designee of previously noted defective or unauthorized work, or of unauthorized work subsequently determined during the final computations of field measurements. Should the work fail to conform with requirements of the Contract, a written statement of the features to be remedied will be given the Contractor. Final Acceptance will not be made until the Contractor advises the Engineer that the corrections have been made and the requirements have been met.

Section 5.17 – Page 29 – Delete the first paragraph and replace with the following:

5.17 CLAIMS FOR ADJUSTMENT AND DISPUTES - If the Contractor deems that additional compensation is warranted for work or materials not covered in the Contract and not ordered as extra work as defined herein, the Contractor shall give the Area Engineer written notice of the claim for additional compensation.

Section 5.17 – Page 29 – Delete the fourth paragraph and replace with the following:

Under no circumstances will a claim be considered if written notification is made more than 30 days after the final payment is made.

Section 5.17 – Page 30 – Delete the sixth and seventh paragraphs and replace with the following two paragraphs:

The Contractor hereby agrees to waive any claim for additional compensation if timely written notification is not furnished and the Area Engineer is not provided the opportunity to keep account of or determine costs, to incorporate alternate methods of accomplishing the disputed work or to otherwise resolve the claim.

A Claims Documentation Form, furnished by the Department, shall be completed by the Contractor and submitted to the Area Engineer after completion of the work on which the claim is based. The Claims Documentation Form shall be completed within 120 calendar days after completion of the work unless an extension is granted, in writing, by the Area Engineer.

Section 5.17 – Page 30 – Delete the last three paragraphs of this section and replace with the following five paragraphs:

Claims which are properly submitted, but which are not approved, will be automatically escalated to the next higher authority level within the Department for review. The Secretary of Transportation has final resolution authority on all submitted claims.

Claims may be submitted by the Department to a third-party claim investigator for further review and investigation. The report prepared by the claim investigator shall not be shared with the Contractor, nor shall the report be used in subsequent administrative or legal proceedings. Failure to fully cooperate with the third-party investigator may result in

denial of the claim. After the Secretary of Transportation receives the report, the parties, by mutual agreement, may initiate a non-binding mediation to attempt to resolve the claim.

If the claim is determined completely or partially valid, those portions determined valid, plus interest computed at the rate of 4.25% per annum for the time period between the date shown on the Region Engineer's letter of Final Acceptance and the date the claim was resolved, will be paid.

If a claim is determined completely or partially valid in a subsequent proceeding in circuit court and pre-judgment interest is awarded by the court on all or a portion of the judgment, that interest shall be computed at the rate of 4.25% per annum.

Nothing in this section shall be construed as establishing any claim contrary to the terms of Section 4.2.

Section 7.6 – Page 37 – Add the following paragraph to this section:

All workers within the right of way who are exposed either to traffic (vehicles using the highway for purposes of travel) or to construction equipment within the work area shall wear high-visibility safety apparel intended to provide conspicuity during both daytime and nighttime usage, and meeting the Performance Class 2 or 3 requirements of the ANSI/ISEA 107-2004 publication entitled "American National Standard for High-Visibility Safety Apparel and Headwear".

Section 7.12 – Page 39 – Delete the last sentence of the second paragraph and replace with the following:

The Contractor's responsibility will not be released until completion of the project and Final Acceptance is made, as noted by the date shown on the Region Engineer's letter of Final Acceptance.

Section 7.14 – Page 39 – Delete this section and replace with the following:

7.14 RESPONSIBILITY FOR DAMAGE CLAIMS - The Contractor shall hold harmless and indemnify the Department, its officers and employees, from all suits, actions, or claims of any character brought because of any injuries or damages received or sustained by any person, persons or property arising from the operations of the said Contractor; or on account of or in consequence of any neglect in safeguarding the work; or through use of unacceptable materials in constructing the work; or because of any act or omission, neglect, or misconduct of said Contractor; or because of any claims or amounts recovered from any infringements of patent, trademark, or copyright; or from any claims or amounts arising or recovered under the "Workmen's Compensation Act", or any other law, ordinance, order, or decree; and so much of the money due the said Contractor under and by virtue of his contract as may be considered necessary by the Department for such purpose may be retained for the use of the State; or in case no money is due, his surety may be held until such suit or suits, action or actions, claim or claims for injuries or damages as aforesaid shall have been settled and suitable evidence to that effect furnished to the Department; money due the Contractor will not be withheld when the Contractor produces satisfactory written confirmation from its insurer that adequate public liability insurance and property damage insurance providing coverage for such particular clams as may be made is in force; a copy of a certificate of insurance, without further confirmation of coverage for the particular claim being made, will not be sufficient to satisfy the requirement of written confirmation.

Section 7.15 – Page 40 – Delete the first sentence and replace with the following:

7.15 LIABILITY INSURANCE - The Contractor shall procure and maintain at the Contractor's expense, during duration of the Contract, liability insurance with an insurance company authorized to do business in the state of South Dakota, for damages imposed by law.

Section 7.16 – Page 40 – Delete the second sentence of the last paragraph and replace with the following:

In such event, the Contractor shall not be relieved of liability or responsibility during the period the work is so opened and prior to Acceptance of Field Work.

Section 7.17 – Page 40 – Delete the first paragraph and replace with the following two paragraphs:

CONTRACTOR'S RESPONSIBILITY FOR WORK - The Contractor is responsible for the work until the Acceptance of Field Work is made by the Area Office, except as set forth in Section 4.4 B.1. The Contractor shall protect the work against injury or damage from all causes, whether arising from the execution or from the non-execution of the work. The Contractor shall rebuild, repair, restore, and replace all work that is injured or damaged prior to the Acceptance of Field Work, at no additional cost to the Department. Damage to work due to unforeseeable

causes beyond the control of and without the fault or negligence of the Contractor, including but not restricted to acts of God, acts of the public enemy, or acts of governmental authorities shall be restored by the Contractor at the Department's expense according to subsection 4.2 or 4.3, as applicable.

Following the Acceptance of Field Work, but prior to Final Acceptance as described in Section 9.9, the Contractor shall be responsible for damage to work resulting from an act, omission, neglect, or misconduct in the Contractor's manner or method of executing the work, or due to defective work or materials at no additional cost to the Department.

Section 8.1 – Page 45 – Delete and replace with the following:

8.1 SUBLETTING OF CONTRACT - The Contractor shall not sublet, sell, transfer, assign, or dispose of the contract or contracts or any portion of them, without written consent of the Engineer. Each request to sublet shall be submitted on the form provided by the Engineer. The Contractor shall submit a request to sublet for any contracting firms a subcontractor proposes to use as a lower tier subcontractor. The Contractor shall obtain approval of each subcontractor before the start of the work performed by the subcontractor.

The Contractor will be permitted to sublet up to 50 percent of the contract amount, based on the contract unit prices, but shall perform work amounting to not less than 50 percent of the total contract amount with his own organization.

The Department will consider the Contractor's own organization to include only workers employed and paid directly by the Contractor, equipment owned or rented by the Contractor, and materials purchased by the Contractor for its use in performing Contract work. This does not include employees, equipment, or materials purchased by or incorporated into work of any subcontractor, assignee, or agent of the Contractor.

The Department will not consider as subcontracting the following; 1) any material produced outside the project limits including but not limited to the production of sand, gravel, crushed stone, batched concrete aggregates, ready mix concrete, off-site fabricated structural steel, other off-site fabricated items, and any materials delivered by established and recognized commercial plants; or 2) delivery of these materials to the work site from an off-site location in vehicles owned or operated by such plants or by recognized independent or commercial hauling companies. Project limits is defined as being within a 1/2 mile radius of the project proper.

Any items designated in the contract as "specialty items" may be performed by subcontract and the cost of designated specialty items performed by subcontract will be deducted from the total contract amount before computing the amount of work required to be performed by the Contractor's own organization.

The Contractor shall give assurance to the Engineer that all pertinent provisions of the prime contract including minimum wage for labor shall apply to the work sublet. Subcontract, or transfer of contract, shall not relieve the Contractor of his responsibilities and liability under the contract and bonds.

Section 8.2 – Page 45 – Delete and replace with the following:

8.2 NOTICE TO PROCEED - The Notice to Proceed shall consist of written notification to the Contractor to proceed with the work. Such notification will be issued within 15 calendar days following the receipt from the bidder of the signed contract and related documents. The contract time will start on the date the Contractor actually starts construction work or 30 calendar days after the date of the Notice to Proceed, whichever date is earlier. The Contractor shall not begin work prior to the date of the Notice to Proceed.

Section 8.6 A – Page 48 – Delete the first paragraph on page 48 and replace with the following:

If for reasons beyond the Contractor's control the work cannot be completed within the contract time as specified or as extended according to the provisions of this section, the Contractor may make a written request for an extension of contract time. The written request shall be made at any time prior to the expiration of the contract time as extended. The Contractor's time extension request shall set forth the reasons which will justify an extension of time.

A Time Extension Request Form, furnished by the Department, shall be completed by the Contractor and submitted to the Area Engineer. If the written request was properly filed in accordance with the requirements of this section, the time extension request will be forwarded through the proper channels, to the Secretary of Transportation for final resolution.

The Time Extension Request Form shall be fully completed and will contain the following:

1. A narrative justification citing the basis for the time extension.

2. A statement of the amount of extra compensation, including liquidated damages, incentive, or disincentive associated with the time extension.

3. A signed and notarized statement that the information furnished is true and fully documented.

4. Permission for the Department or its authorized representative to examine all Contractor records concerning this time extension request.

The Secretary of Transportation may submit the time extension request to a third-party investigator for further review and investigation. The report prepared by the investigator shall not be shared with the Contractor, nor shall the report be used in subsequent administrative or legal proceedings. Failure to fully cooperate with the third-party investigator may result in denial of the time extension request. After the Secretary of Transportation receives the report, the parties, by mutual agreement, may initiate a non-binding mediation to attempt to resolve the time extension request.

Section 8.6 A – Page 48 – Delete the first sentence of the second to last paragraph and replace with the following:

If the Secretary of Transportation finds that the work was delayed because of conditions beyond the control and without the fault of the Contractor, the Secretary may extend the time for completion in such amount as the conditions justify.

Section 8.6 A – Page 48 – Delete the last paragraph and replace with the following:

When Acceptance of Field Work has been duly made as prescribed in Section 5.16, the daily time count/assessment will cease. The daily time count/assessment may resume if the Contractor fails to provide, in a timely manner, required project documentation as ordered by the Area Engineer. The daily time count/assessment may also resume when in accordance with Section 7.17, repairs, rework, or other activities are ordered for work that the Contractor is responsible for.

Section 8.6 B – Page 50 – Delete the second paragraph on page 50 and replace with the following:

If for reasons beyond the Contractor's control the work cannot be completed within the contract time as specified or as extended according to the provisions of this section, the Contractor may make a written request for an extension of contract time. The written request shall be made at any time prior to the expiration of the contract time as extended. The Contractor’s time extension request shall set forth the reasons which will justify an extension of time.

A Time Extension Request Form, furnished by the Department, shall be completed by the Contractor and submitted to the Area Engineer. If the written request was properly filed in accordance with the requirements of this section, the time extension request will be forwarded through the proper channels, to the Secretary of Transportation for final resolution.

The Time Extension Request Form shall be fully completed and will contain the following:

1. A narrative justification citing the basis for the time extension.

2. A statement of the amount of extra compensation, including liquidated damages, incentive, or disincentive associated with the time extension.

3. A signed and notarized statement that the information furnished is true and fully documented.

4. Permission for the Department or its authorized representative to examine all Contractor records concerning this time extension request.

The Secretary of Transportation may submit the time extension request to a third-party investigator for further review and investigation. The report prepared by the investigator shall not be shared with the Contractor, nor shall the report be used in subsequent administrative or legal proceedings. Failure to fully cooperate with the third-party investigator may result in denial of the time extension request. After the Secretary of Transportation receives the report, the parties, by mutual agreement, may initiate a non-binding mediation to attempt to resolve the time extension request.

Section 8.6 B – Page 51 – Delete the last sentence of the second to last paragraph and replace with the following:

If the Secretary of Transportation finds that the work was delayed because of conditions beyond the control and without the fault of the Contractor, the Secretary may extend the time for completion in such amount as the conditions justify. The extended time for completion shall then be in full force and effect the same as though it were the original time for completion.

Section 8.6 B – Page 51 – Delete the last paragraph and replace with the following:

When Acceptance of Field Work has been duly made as prescribed in Section 5.16, the daily time count/assessment will cease. The daily time count/assessment may resume if the Contractor fails to provide, in a timely manner, required project documentation as ordered by the Area Engineer. The daily time count/assessment may also resume when in accordance with Section 7.17, repairs, rework, or other activities are ordered for work that the Contractor is responsible for.

Section 8.7 – Page 51 – Delete the last sentence of the second paragraph and replace with the following:

This sum shall be considered and treated not as a penalty but as liquidated damages due the Department from the Contractor by reason of added cost of engineering and supervision resulting from failure to complete the work within the time specified in the contract.

Section 9.1 B – Page 56 – Delete the fourth paragraph on page 57 and replace with the following:

Loader Scales - Loader scales will be allowed to be used on contracts when the quantity per line item of granular material to be weighed for payment is less than 10,000 tons (10,000 metric tons).

Section 9.1 B – Page 56 – Add the following sentence to the end of the sixth paragraph on page 57:

The accuracy check shall be performed prior to weighing the material for payment and then once per week thereafter.

Section 9.4 – Page 61 – Delete and replace with the following:

9.4 COMPENSATION FOR ALTERED QUANTITIES - When the accepted quantities of work vary from the estimated quantities in the Contract, the Contractor shall accept as payment in full, payment at the original contract unit prices for the accepted quantities of work. Allowance will not be made for increased expense, except as provided in Section 4.2. Allowance will also not be made for loss of expected reimbursement or loss of anticipated profits.

Section 9.5 D – Page 62 – Delete the first paragraph of this section and replace with the following:

D. Equipment: For machinery or special equipment including fuel and lubricants, plus transportation costs, authorized by the Engineer, the Contractor shall be paid in accordance with the provisions and rates set forth in the South Dakota Equipment Rental Rates Book which is currently established as the "Rental Rate Blue Book" published by EquipmentWatch, a division of Penton Media, Inc. For purposes of determining an hourly rate, the monthly rate divided by 176 shall be used. This rate will be adjusted for regional factors, age and operating expenses as set forth in the "Rental Rate Blue Book".

Section 9.7 – Page 64 – Add the following sentence to the end of the second to last paragraph:

Progress payments shall not constitute acceptance of the work.

Section 9.9 - Page 65 - Delete this section and replace with the following:

9.9 FINAL ACCEPTANCE AND FINAL PAYMENT - When Acceptance of Field Work has been made as prescribed in Section 5.16, and all project documentation has been provided, the Engineer will prepare the final estimate of the quantities of the various classes of work performed. After the Engineer determines the final estimate, the Contractor will be paid the entire sum found to be due after deducting previous payments and amounts to be retained or deducted under the provisions of the contract.

Prior partial estimates and payments shall be subject to correction in the final estimate of payment. Final payment will be due 120 days after the date shown on the Region Engineer's letter of Final Acceptance.

Interest will be added to payments in excess of $2000 which are due the Contractor and remain unpaid 120 days after the date shown on the Region Engineer's letter of Final Acceptance. Interest will accrue at a rate of 4.25% per annum for the time period after the noted 120 days until final payment is made.

Section 9.12 – Page 66 – Delete and replace with the following:

9.12 THIS SECTION INTENTIONALLY LEFT BLANK

Section 120.2 A – Page 73 – Delete and replace with the following:

A. Unclassified Excavation: All materials except those classified as rock excavation, unclassified/rock excavation, muck excavation, option borrow excavation, contractor furnished borrow, or borrow unclassified excavation encountered during the construction of the work, regardless of their nature or manner in which they are removed, will be considered unclassified excavation.

Section 120.2 – Page 73 – Add the following to the end of this Section:

I. Option Borrow Excavation: Material, furnished by the State, from a pit or other source. The Contractor may use this material at his option.

J. Contractor Furnished Borrow: Material, furnished by the Contractor, from a pit or other source.

K. Borrow Unclassified Excavation: Material, furnished by the State, from a pit or other source. The Contractor must use this material.

Section 120.3 – Page 74 – Delete the fifth paragraph and replace with the following:

The subgrade shall be finished to within minus 0.04 feet (13 mm) to plus 0.08 feet (25 mm) from the design grade and typical section shown in the plans and to within ±0.5 percent of the typical section cross slope. The quarter crown within any 12 foot (3.6 m) transverse length shall not exceed 0.04 feet (13 mm) when measured with a straight edge, stringline, or by other suitable equipment.

Section 120.3 B.3.a – Page 77 – Delete the fifth paragraph and replace with the following:

Density shall be determined in accordance with SD 105 (AASHTO T 191), SD 106, or SD 114 (AASHTO T 310).

Section 120.3 B.3.a – Page 78 – Add the following sentence to the end of the second to last paragraph:

If the material does not contain enough fines to allow for conventional density testing (SD 105 or SD 106), the material shall be compacted as specified for A-2-4(0) and A-3 soils.

Section 120.4 – Page 79 – Add the following to the end of this Section:

I. Borrow Unclassified Excavation: Borrow unclassified excavation will be measured in its original position by cross sectioning. Volumes will be computed in cubic yards (cubic meters) by the average end area method.

Original cross sections will be taken prior to removal of any material and final sections will be taken following replacement of topsoil. Salvaged topsoil which is stockpiled from the borrow sources will be included as borrow unclassified excavation.

The quantity of topsoil stockpiled and respread on borrow sources will be determined by measuring the stockpiles prior to removal of the material from the stockpiles.

Section 120.5 – Page 81 – Add the following to the end of this Section:

I. Borrow Unclassified Excavation: Borrow unclassified excavation will be paid for at the contract unit price per cubic yard (cubic meter). Payment will be full compensation for excavation and furnishing the material on the project, construction and compaction of embankments, shaping of slopes, finishing of surface, completion of subgrade, shoulders, and roadway, and maintenance, and for furnishing materials (except topsoil), labor, and incidentals required for restoration of the pit.

Topsoil which is stockpiled from the borrow source will be respread and paid for at the contract unit price per cubic yard (cubic meter) of borrow unclassified excavation and placing topsoil.

Section 120.5 F – Page 82 – Delete the last sentence and replace with the following:

Topsoil, seed, fertilizer and mulch for the restoration of the pit shall be incidental to the unit price per cubic yard (cubic meter) of contractor furnished borrow.

Section 210.3 – Page 85 – Delete the second to last paragraph and replace with the following:

The subgrade shall be finished to within minus 0.04 feet (13 mm) to plus 0.08 feet (25 mm) from the design grade and typical section shown in the plans and to within ±0.5 percent of the typical section cross slope. The quarter crown within any 12 foot (3.6 m) transverse length shall not exceed 0.04 feet (13 mm) when measured with a straight edge, stringline, or by other suitable equipment.

Section 260.3 A – Page 93 - Delete the first paragraph and replace with the following:

A. Subbase and Base Course: Roadway shaping shall be performed in accordance with Section 210.3 B prior to placement of the material.

Section 260.3 A – Page 94 - Delete the last paragraph and replace with the following:

Recycled Portland cement concrete pavement used as a granular base material shall not be used for Base Course, Salvaged Base Course, or in areas where drainage fabric, edge drains, or other similar drainage systems are present.

Section 270.1 – Page 97 – Delete and replace with the following:

270.1 DESCRIPTION

This work consists of salvaging, processing or crushing, and stockpiling salvaged material from the existing roadway. Salvaged material shall consist of granular material, asphalt concrete mix material, or asphalt mix and granular base material.

Section 270.2 – Page 97 – Delete this section and replace with the following:

270.2 MATERIALS

The salvaged material shall be processed or crushed to provide material meeting the following gradation.

Sieve Size	% Passing
1 ½ inch (37.5 mm)	100
1 inch (25.0 mm)	95-100

Section 270.3 – Page 97 – Delete and replace with the following:

270.3 CONSTRUCTION REQUIREMENTS

A. Salvage and Stockpile Granular Material or Asphalt Mix and Granular Base Material:

1. **Salvaging:** The salvaged material shall be moved and loaded in a manner that minimizes waste and avoids contamination of the salvage material with underlying subgrade soil. Scrapers shall not be used for the removing or loading operations, but may be used to haul the material. Salvaging of material shall not exceed two miles (3.2 kilometers) in advance of the grading operation, unless otherwise directed. The material shall be moved toward the center of the road, to the extent necessary to ensure that salvage material is not lost down inslopes.

2. **Processing:** Processing and blending may be accomplished in place, provided the Contractor's method meets the blending and gradation requirements and has positive depth control.

3. **Stockpiling:** Asphalt concrete mix and granular material shall be processed or crushed and stockpiled together so that a uniform blend is obtained. The salvaged material may be stockpiled at contractor provided sites. Prior to stockpiling, the stockpile site shall be prepared by removal of the top six inches (150 mm) of topsoil and the area bladed smooth.

B. Salvage and Stockpile Asphalt Mix Material:

1. **Salvaging:** The salvaged material shall be moved and loaded in a manner that minimizes waste and avoids contamination of the salvage material. Scrapers shall not be used for the removing or loading operations, but may be used to haul the material. Salvaging of material shall not exceed two miles (3.2 kilometers) in advance of the grading operation, unless otherwise directed. The material shall be moved toward the center of the road, to the extent necessary to ensure that salvage material is not lost down inslopes.

2. **Stockpiling:** Salvaged asphalt mix material shall be processed or crushed and stockpiled so that a uniform blend is obtained. Prior to stockpiling, the stockpile site shall be prepared by removal of the top six inches (150 mm) of topsoil and the area bladed smooth. Stockpiles shall be constructed in accordance with Section 320. The stockpiles shall not contain dirt, grease, oil, brick, paving fabric, clay balls, organic debris, and other foreign material.

Section 270.4 – Page 97 – Delete and replace with the following:

270.4 METHOD OF MEASUREMENT

Salvage and stockpile granular material, salvage and stockpile asphalt mix and granular base material, and salvage and stockpile asphalt mix material will be measured to the nearest 0.1 ton (0.1 metric ton) or 0.1 cubic yard (0.1 cubic meter) at the time it is hauled to the road.

When less than 5000 tons (4500 metric tons) of salvaged material is generated on a project, the material may be measured in a stockpile and converted to tons (metric tons) using a factor of 1.5 tons per Cu. Yd. (1.78 metric tons per cubic meter), in lieu of weighing the material.

Alternate measurement techniques may be allowed if agreed upon by the Contractor and Engineer prior to salvaging operations commencing.

Material stockpiled for future use will be measured in the stockpile and converted to tons (metric tons) using a factor of 1.50 tons per Cu. Yd. (1.78 metric tons per cubic meter).

The unclassified excavation quantities will not be increased or decreased to reflect whether salvaged material was taken from cut or fill sections.

Section 270.5 – Page 97 – Delete and replace with the following:

270.5 BASIS OF PAYMENT

Salvage and stockpile granular material, salvage and stockpile asphalt mix and granular base material, and salvage and stockpile asphalt mix material will be paid for at the contract unit price per ton (metric ton) or cubic yard (cubic meter). Payment will be full compensation for work required to salvage, haul, process or crush, and stockpile the material.

Removal of this material is included in and paid for under the item of unclassified excavation.

Section 280.2 – Page 99 – Delete this section and replace with the following:

280.2 MATERIALS

The asphalt mix and granular material shall be processed to provide material meeting the following gradation.

Sieve Size	% Passing
1 ½ inch (37.5 mm)	100
1 inch (25.0 mm)	95-100

Section 320.3 B.1 – Page 103 – Delete the first sentence of the fourth paragraph and replace with the following:

Burner fuel used for production of asphalt concrete shall be propane, butane, natural gas, Grade 1 fuel oil, Grade 2 fuel oil, Grade 4 fuel oil, Grade 4 (light) fuel oil, Grade 5 (light or heavy) fuel oil, or Grade 6 fuel oil.

Section 320.3 B.1 – Page 103 – Add the following to the end of the seventh paragraph:

An accurate thermometer must be installed in the tank so the temperature can be monitored.

Section 320.3 B.4 – Page 104 – Delete the third sentence of the first paragraph.

Section 320.3 B.4 – Page 105 – Delete the last sentence of the third paragraph and replace with the following:

The system shall be capable of manually controlling the transverse slope and the screed height.

Section 320.3 B.5 – Page 105 – Delete the last sentence of the first paragraph and replace with the following:

The rollers shall be capable of being reversed smoothly, without shoving or tearing the asphalt concrete.

Section 320.3 C.3.d – Page 106 – Delete and replace with the following:

d. A one-gallon (four liter) sample of asphalt binder intended for use shall be obtained from the designated supplier for the project.

Section 320.3 D – Page 107 – Delete the last sentence of the fifth paragraph and replace with the following:

A water spray system must be installed at the discharge end of the pug mill. This water system must be used when directed by the Engineer to prevent fugitive lime dust from being released into the air.

Section 320.3 E – Page 107 – Add the following after the fourth sentence in the first paragraph:

No material shall be used which could adversely affect the asphalt concrete.

Section 320.3 F – Page 107 – Add the following new paragraph after the first paragraph:

Surfaces which have been primed with cutback asphalt shall be allowed to cure for a minimum of 72 hours prior to being covered.

Section 320.3 F – Page 107 – Add the following to the end of the third paragraph:

In lieu of a self-propelled paver, asphalt concrete may be placed by a shouldering machine on shoulders less than 6 feet (2 m) in width.

Section 320.3 F – Page 110 – Delete the first paragraph at the top of Page 110 and replace with the following:

Irregularities shall be corrected before the temperature of the asphalt mix drops below 175º F (80º C). The longitudinal profile can only be improved by using a grinder with diamond blades mounted on a horizontal shaft and when approved by the Engineer. Areas that have been ground shall not be left smooth or polished, but shall have a uniform texture equal in roughness to the surrounding unground asphalt concrete. Grinding shall be day lighted to the outside edge of the pavement. Ground surfaces shall be flushed sealed. Under no circumstances shall operations continue when it becomes evident final rolling is not producing a smooth, uniform, compacted surface free from roller marks and other irregularities.

Section 320.4 A – Page 111 – Add the following after the first sentence:

Quantities of asphalt binder in excess of the asphalt content listed on the job mix formula plus 0.3% tolerance will not be accepted for payment.

Section 320.4 B – Page 111 – Delete the last two sentences of the first paragraph and replace with the following:

The mixture of mineral aggregate, asphalt binder, and hydrated lime, when required, will be weighed after mixing. No deduction will be made for the weight of the asphalt binder or hydrated lime, when required, included in the mixture.

Section 320.4 E – Page 112 – Add the following after the first sentence:

Quantities of hydrated lime in excess of the lime content listed on the job mix formula plus 0.1% tolerance will not be accepted for payment.

Section 320.5 C – Page 112 – Add the following sentence to the end of the paragraph:

Payment will be full compensation for all labor, equipment, materials, and all other items incidental to sampling and repair of the sample locations to the satisfaction of the Engineer.

Section 321.3 B – Page 113 – Delete and replace with the following:

B. Density: The minimum density requirement shall be 92 percent of the maximum specific gravity of the test specimens prepared in the field in accordance with SD 312. The compacted density of asphalt concrete shall be determined according to SD 311.

Section 324.5 – Page 115 and 116 – Delete the last sentence and replace with the following:

When required, the following shall also be included in the contract unit price per ton (metric ton) for Asphalt Concrete Composite: Asphalt for Prime MC-70, Blotting Sand for Prime, Asphalt for Flush Seal SS-1h or CSS-1h, Sand for Flush seal, Hydrated Lime, equipment, labor and incidentals necessary.

Section 330.2 – Page 121 – Add the following to the end of this section:

D. Sand for Fog Seal: Section 879

Section 330.3 A.2.b – Page 121 – Add the following paragraph after the second paragraph:

Surfaces primed with cutback asphalt shall be allowed to cure for a minimum of 72 hours prior to being overlaid with asphalt concrete.

Section 330.3 F – Page 123 – Delete the first sentence of the fourth paragraph and replace with the following:

When applying fog seal coats, a light application of sand may be ordered by the Engineer to prevent material pickup.

Section 330.4 – Page 124 – Add the following to the end of this section:

D. Sand for Fog Seal: Sand for fog seal will be measured to the nearest 0.1 ton (0.1 metric ton).

Section 330.5 – Page 124 – Add the following to the end of this section:

D. Sand for Fog Seal: Sand for fog seal will be paid for at the contract unit price per ton (metric ton) complete in place. Payment will be full compensation for furnishing, installing, and all incidentals required to complete the work.

Section 332.2 – Page 125 – Delete this section and replace with the following:

332.2 MATERIALS

The material produced by cold milling shall be processed or crushed to provide material meeting the following requirements.

Sieve Size	% Passing
1 ½ inch (37.5 mm)	100
1 inch (25.0 mm)	95-100

Cold milled asphalt concrete material used in hot mixed asphalt as recycled asphalt pavement (RAP) shall have the 1 inch sieve size requirement waived.

Section 332.3 B – Page 125 – Delete the first paragraph and replace with the following:

B. Equipment: The equipment for cold milling shall consist of a rotating drum equipped with teeth capable of removing material to a depth of up to three inches (75 mm) in one pass, producing a uniform surface finish.

Section 332.3 C – Page 125 – Delete the last paragraph of this section on page 126 and replace with the following:

When traffic will be exposed to the milled surface, all cold milling asphalt concrete shall be accomplished on one-half of the roadway at a time. The Contractor shall schedule the cold milling asphalt concrete operations so that there are no drop offs, uneven lanes, or windrows of milled material remaining on the roadway overnight. At the end of the day the Contractor shall place cold milled asphalt concrete material to provide temporary ramps as a transition onto or off of the milled surface and the project limits, bridge approaches, and intersecting roads. The resultant transition shall be of sufficient length to provide a slope no steeper than 20:1.

1. **Cold Milling Asphalt Concrete and Placing Cold Milled Material:** Some areas of the shoulder may require the movement of cold milled asphalt concrete material either ahead or back to achieve the required cross section. No separate payment will be made for the movement of this material.

   Material placed on the shoulders shall be compacted according to Section 260.3 B of the Standard Specifications except that a pneumatic tired roller with an effective roller weight of at least 250 pounds per inch (4.5 kilograms per mm) of roller width will be required.

2. **Cold Milling Asphalt Concrete:** Loose material resulting from the milling shall be immediately picked up, hauled to the stockpile site(s), and stockpiled. Prior to allowing traffic on the milled surface, the surface shall be thoroughly broomed free of remaining loose material.

   Cold milled asphalt concrete material shall be processed or crushed and stockpiled so that a uniform blend is obtained. Prior to stockpiling, the stockpile site shall be prepared by removal of the top six inches (150 mm) of topsoil and the area bladed smooth. Stockpiles shall be constructed in accordance with Section 320. The stockpiles shall not contain dirt, grease, oil, brick, paving fabric, clay balls, organic debris, and other foreign material

Section 332.4 – Page 126 – Delete and replace with the following:

332.4 METHOD OF MEASUREMENT

A. Cold Milling Asphalt Concrete and Placing Cold Milled Material: Cold Milling Asphalt Concrete and Placing Cold Milled Material will not be measured. Plans quantity will be used. If changes from the plans quantity are ordered these areas will be measured and the plans quantity will be appropriately adjusted.

B. Cold Milling Asphalt Concrete: Cold milling Asphalt Concrete will not be measured. Plans quantity will be used. If changes from the plans quantity are ordered these areas will be measured and the plans quantity will be appropriately adjusted.

Section 332.5 – Page 126 – Delete and replace with the following:

332.5 BASIS OF PAYMENT

A. Cold Milling Asphalt Concrete and Placing Cold Milled Material: Cold Milling Asphalt Concrete and Placing Cold Milled Material will be paid for at the contract unit price per square yard (square meter) or as indicated in the plans. Payment will be full compensation for the removal of grass, weeds, topsoil, etc. from the placement location, milling, removing, placing, and compaction of the cold milled material and the brooming, equipment, labor, and all incidentals required.

B. Cold Milling Asphalt Concrete: Cold Milling Asphalt Concrete will be paid for at the contract unit price per square yard (square meter) or as indicated in the plans. Payment will be full compensation for milling, removing, hauling, stockpiling, processing or crushing the cold milled material, brooming, equipment, labor, and all incidentals required.

Section 350.2 – Page 127 – Delete this section and replace with the following:

The sealant shall conform to the requirements of ASTM D-6690 Type IV.

The sealant material shall have a unit weight no greater than 9.35 lbs./gal (1124 kilograms per cubic meter).

Only products that meet the above requirements and have performed satisfactorily based on Department analysis may be used. A listing of acceptable products meeting ASTM D-6690 Type IV requirements may be obtained from the Department's Approved Products List. Products on the Approved Products list for Joint Sealant for Asphalt Over Long Jointed Concrete Pavement may also be used.

The blocking medium shall be an inert, compressible material, which is compatible with the sealant.

Section 350.4 – Page 129 – Add the following sentence to this section:

Quantities of asphalt concrete crack sealing with a manufacturer's unit weight in excess of the specified unit weight will be reduced to the specified maximum unit weight prior to measurement for payment.

Section 360.3 A – Page 131 – Delete the minimum temperature and seasonal limitations table and replace with the following:

Minimum temperatures and seasonal limitations are as follows:

Cover Aggregates	Air and Surface Temp. (In the Shade and Rising)	Seasonal Limitations (Dates are Inclusive)
Type 1	70° F (21° C)	May 15 - Aug. 31
Type 2	70° F (21° C)	May 15 - Aug. 31
Type 3	70° F (21° C)	May 15 - Sept. 15

Section 360.3 B.3 – Page 131 – Delete the last sentence of this section:

Section 370.2 – Page 135 – Delete the first paragraph of this section and replace with the following:

The RAP material, after processing, shall meet the following gradation.

Sieve Size	% Passing
1 ¼ inch (31.5 mm)	100
1 inch (25.0 mm)	95-100

Section 380.2 – Page 139 – Add the following to the end of this section:

L. Epoxy Resin Adhesive: Epoxy resin adhesive shall be of the type intended for horizontal applications, and shall conform to the requirements of ASTM C 881, Type IV, Grade 3 (equivalent to AASHTO M235, Type IV, Grade 3).

Section 380.3 B.1 – Page 140 – Delete the first paragraph on page 141 and replace with the following:

When automatic moisture sensing equipment is used for an aggregate component, the batch ticket shall show the percent of moisture for the aggregate component with moisture sensing equipment. The results of the most recent two hour moisture test shall be shown for aggregate components without moisture sensing equipment.

The W/C ratio shall be calculated using the following formula and rounded to the nearest 0.01:

$$\text{W / C ratio} = \left[\frac{\text{weight of free water} + \text{weight of batch water}}{\text{weight of cement} + \text{weight of supplementary cementitious material}} \right]$$

weight of free water = (% total moisture in aggregate - % absorption of aggregate) x weight of aggregate
weight of batch water = total weight of water added to the batch of concrete either at the plant or in the truck

The weight of free water shall be calculated for both the fine aggregate and the coarse aggregate.

Section 380.3 D – Page 146 – Add the following paragraph to the end of this section:

The amount of batch water and aggregates added to the mix shall be adjusted accordingly using the results of the most recent two hour moisture tests. If automatic moisture sensing equipment is used, the Engineer may allow the use of the automatic moisture sensing results to make adjustments.

Section 380.3 E – Page 146 – Delete the second sentence and replace with the following:

Truck mixing will be permitted only when approved by the Engineer.

Section 380.3 E – Page 146 – Delete the fifth paragraph and replace with the following:

When a concrete batch is transported in a truck mixer or agitator and the batch is smaller than 60 percent of the rated capacity of the truck mixer or agitator, the following percentage of additional cementitious material at the same proportions as listed on the mix design shall be added to the batch:

Section 380.3 E – Page 146 – Delete the paragraph below the table at the top of page 147 and replace with the following:

The above provisions regarding additional cementitious material shall also apply to the mixing of small batches in central plants. Additional cementitious material will not be required when the small batch is mixed in a drum that is sufficiently coated with mortar to withstand the loss of cementitious material. Sufficient mortar coating, as determined by the Engineer, may include mortar coating the drum from a previously mixed batch during continuous mixing operations. Additional cementitious material will be required if more than 30 minutes has passed from the mixing of the previous batch, if the drum has been cleaned following the previous batch, or if the mortar coating the drum has been disturbed following the previous batch.

Section 380.3 E.2 – Page 147 – Delete the second sentence of the second paragraph and replace with the following:

When approved by the Engineer, additional water or cement may be added to the batch after completion of the original mixing, in which case the batch shall be mixed an additional 30 revolutions at mixing speed.

Section 380.3 L – Page 149 – Add the following sentence to the end of this section:

Epoxy coated dowel bars and tie bars shall meet the requirements of Section 480.3 A.

Section 380.3 M.2 – Page 151 – Delete the first sentence of the last paragraph and replace with the following:

The Contractor shall load test five percent of the first 500 tie bars that are drilled and epoxied in place.

Section 380.3 M.3 – Page 151 – Add the following paragraph to this section:

If a soft cut style saw is used, the soft cut shall remain approximately 1" (25mm) from the edges of the concrete slab to control spalling at the edge. Additionally if a soft cut is used, the Contractor shall complete the initial saw cut for the entire width and to the required depth before the end of the 72 hour curing period.

Section 380.3 M.4 – Page 151 – Delete the first sentence of the fourth paragraph and replace with the following:

If an uncontrolled crack develops within six feet (1.8 m) of the contraction joint, a minimum of six feet (1.8 m) of pavement removal and replacement will be required.

Section 380.3 N.6 – Page 153 – Delete this section and replace with the following:

6. **Final Finish**: Before the concrete has attained its initial set, the surface shall be given a final finish with a carpet drag drawn over the surface in a longitudinal direction. The drag shall be mounted on a bridge and shall be sized so that a strip of the carpet approximately two feet (600 mm) wide is in contact with the pavement surface while the drag is operated.

The condition of the drag shall be maintained so the resultant surface is of uniform appearance with corrugations approximately 1/16 inch (2 mm) in depth. Drags shall be maintained clean and free of encrusted mortar. Drags that cannot be cleaned shall be discarded and replaced.

The carpet shall meet the following requirements:

Facing Material	- Molded polyethylene pile face
Blade Length	- 7/8", ±1/8" (22 mm, ±3 mm)
Total Fabric Weight	- 70 oz. per square yard min. (2.37 kg per square meter min.)

The backing shall be of a strong, durable material, not subject to rot, which is adequately bonded to the facing.

Plain Jointed concrete pavement shall be either longitudinally or transversely tined as specified in the plans.

Continuously reinforced concrete pavement shall be longitudinally tined.

Tining depth and spacing shall be determined according to SD 418.

a. Transverse Tining: Immediately following the carpet drag, the surface of the concrete pavement shall be given a transverse metal-tine finish with a separate self-propelled mechanical device. The metal-tine finish shall provide a groove width of 1/8" and a groove depth of 6/32 inch (5 mm) ± 2/32 inch (2 mm). The spacing between the individual tines shall meet the following:
Inches (ten foot tining rake)

2-5/16, 2-15/16, 1-1/4, 2-7/16, 2-1/16, 1-1/4, 13/16, 1, 1-5/16, 1-1/8, 2-5/16
2-1/2, 2-7/8, 2-3/4, 1-1/8, 2-3/4, 2-1/8, 1-15/16, 13/16, 7/8, 2-5/8, 3-1/16
3-1/16, 7/8, 9/16, 9/16, 1-5/8, 2-3/8, 1, 1-1/4, 1-9/16, 2-15/16, 1-1/8
1-15/16, 2-3/16, 2, 2-13/16, 1, 2-11/16, 13/16, 1-7/8, 9/16, 2-5/16, 1-7/8
2-1/2, 1-5/16, 3-3/16, 1-3/8, 15/16, 7/8, 1-5/8, 9/16, 1-3/4, 2-7/8, 3
1-5/8, 1-5/8, 7/8, 9/16, 5/8, 2-13/16, 1-5/8, 2-7/16, 13/16, 1-1/4, 11/16
2-3/4, 2-5/16, 1-1/8

Millimeters (3 meter tining rake)

58, 74, 31, 62, 53, 32, 21, 26, 33, 28, 59
64, 73, 70, 29, 70, 54, 49, 20, 22, 67, 78
77, 23, 15, 15, 41, 60, 25, 32, 39, 75, 28
50, 55, 51, 72, 25, 69, 21, 47, 15, 59, 47
64, 34, 55, 35, 24, 22, 42, 14, 45, 73, 76
41, 41, 22, 15, 16, 71, 41, 62, 21, 31, 17
70, 58, 29

Successive passes of the tining shall not overlap.

Each location, where transverse joint saw cuts are to be made, shall be protected from tining by covering with a metal strip from four inches (100 mm) to six inches (150 mm) or by other methods that produce acceptable results.

Brooming may be used on irregular areas in lieu of the carpet drag and tine finish. The broom shall be drawn transversely across the pavement with adjacent strokes slightly overlapping.

Brooming shall be uniform in appearance and shall produce grooves 1/16 inch (2 mm) deep. Texturing shall be completed while the concrete surface can be broomed without being torn or unduly roughened by the operation.

The finished surface shall be free from rough and porous areas, irregularities, and depressions resulting from improper handling of the broom.

b. Longitudinal Tining: Immediately following the carpet drag, the surface of the concrete pavement shall be given a longitudinal metal-tine finish with a wire broom or comb attached to a separate self-propelled mechanical device.

Transverse joints shall not be protected from longitudinal tining, the tining shall be continuous across the joints.

The slab shall not be tined within 3 inches of the edge of the slab, centerline, or rumblestrip.

The longitudinal tining equipment shall have the ability to be raised and lowered, and shall have vertical and horizontal string line controls to ensure straight grooves that are parallel to the longitudinal joint.

The curing unit shall be separate from the tining unit when longitudinal tining is used unless the tining and curing can be accomplished simultaneously with the same piece of equipment at the specified rate to the satisfaction of the Engineer.

The tine bar shall have a single row of tines and shall provide a groove width of 1/8 inch (3 mm) $\pm$1/64 inch (0.4 mm) and a groove depth of 6/32 inch (5 mm) $\pm$ 2/32 inch (2 mm). The spacing between the individual tines shall be uniformly spaced at 3/4 inch (20 mm) intervals.

Section 380.3 N.7 – Page 155 – Delete the first sentence of the first paragraph and replace with the following:

After the final finish, and while the concrete is still plastic, the edges of the pavement along each side of the slab, and on each side of transverse construction joints, shall be worked with an approved tool and rounded to the specified radius.

Section 380.3 O – Page 155 – Add the following two sentences to the beginning of this section:

The pavement surface shall be checked for deviations using either a ten foot (3 meter) straightedge or a profilograph (when specified). When the use of a profilograph is specified, the ten foot (3 meter) straightedge check may also be required in locations determined by the Engineer.

Section 380.3 O.2.c.2 – Page 157 – Delete the first paragraph and replace with the following:

Areas excluded from profilograph testing shall be shoulders, transitions, area within 50 feet (15 m) of existing pavement and bridges, existing curb and gutter sections, ramps, pavements on horizontal curves having a centerline radius less than 1,000 feet (300 m) and the superelevation transitions. Pavement sections not subject to profilograph testing shall meet the 10 foot (3 m) straight edge test requirements in Section 380.3 O.1.

Section 380.3 O.2.c.2 – Page 157 – Add the following to the end of the last paragraph:

Grinding shall be day lighted to the outside edge of the pavement.

Section 380.3 O.2.f.1 – Page 158 – Delete this section and replace with the following:

1) Satisfactorily correct deficient area by grinding with equipment meeting the requirements of Section 380.3 O.2.c.2.

Section 380.3 O.2.h – Page 158 – Delete the last paragraph of this section.

Section 380.3 R.2 – Page 161 – Delete the first sentence of the third paragraph and replace with the following:

The sealant surface shall be tooled to produce a slightly concave surface below the pavement surface.

Section 380.3 T – Page 162 – Add the following sentence after the first sentence in the second paragraph:

Equipment operated on a previously constructed pavement that has attained a compressive strength of at least 3000 psi (21 Mpa) but less than 4000 psi (28 Mpa) shall be tracked type equipment.

Section 390.2 B – Page 167 – Delete and replace with the following:

B. Concrete Patches: Concrete patching material shall be one of the following:

1. A packaged, dry, rapid-hardening cementitious mortar conforming to the requirements of ASTM C 928, Type R-3 containing no chloride ions.

2. A packaged, dry, rapid-hardening concrete materials conforming to the requirements of ASTM C 928, Type R-3 containing no chloride ions.

3. A patching material meeting the following requirements:

   a. **Cement:** Cement shall be Type III conforming to Section 750.

   b. **Air Entraining Admixtures:** Air entraining admixtures shall conform to Section 751.

   c. **Water:** Water shall conform to Section 790.

   d. **Fine Aggregate:** Fine aggregate shall conform to Section 800.

   e. **Coarse Aggregate:** Coarse aggregate shall be crushed quarry stone, size five, conforming to Section 820.

   f. **Curing Compound:** Curing compound shall conform to Section 821.

   g. **Proportioning:** Materials for concrete patches shall be mixed at the following proportions:

      Fine Aggregate..……..165 lbs./bag (75 kg/bag) cement
      Coarse Aggregate……165 lbs./bag (75 kg/bag) cement
      Cement (min)……. 8.0 bags/c. y.(10.5 bags/cubic meter) concrete
      Water (maximum)……..5.0 gallon/bag (19 L/bag) cement

   h. **Air and Slump:** The slump and air shall conform to the following:

      Air……7% $\pm$ 2%
      Slump……...1-1/2" (40 mm) maximum

Section 391.2 A – Page 171 – Add the following paragraph to the end of this Section:

Alternate design mixes for the grout may be submitted to the Engineer for approval.

Section 392.2 A – Page 177 – Add the following paragraph to the end of this section:

Alternate jacking slurry design mixes may be submitted to the Engineer for approval.

Section 410.3 G.6 – Page 195 – Add the following section to the end of this section:

g. The turn-of-nut method for bolt tightening may be used when specified in the plans. When the turn-of-nut installation method is specified, hardened washers are not required except as specified in Section 410.3 G.6.d.

A sufficient number of bolts shall first be placed in the joint and snugged to insure that all faying surfaces are in firm contact, prior to tightening. Snug tight is defined as the tightness attained by a few impacts of an impact wrench or the full effort of a man using an ordinary wrench. Bolts shall be placed in any remaining holes and snugged tight as erection bolts or pins are removed. All bolts in the joint shall then be tightened the amount shown in Table 2 progressing systematically from the center most rigid part of the joint to its free edges. When tightening, the element not turned shall be held with a hand wrench to prevent rotation.

Table 2 Nut Rotation from Snugged Condition[a,b]			
	Geometry of Outer Faces of Bolted Parts		
Bolt Length Measured From Underside of Head to End of Bolt	Both Faces Normal to Bolt Axis	One Face Normal to Bolt Axis and Other Face Sloped Not More Than 1:20, Bevel	Both Faces Sloped Not More Than 1:20 From Normal to Bolt Axis, Bevel Washers Not

		Washer Not Used	Used
Up to and including 4 diameters	1/3 turn	1/2 turn	2/3 turn
Over 4 diameters but not exceeding 8 diameters	1/2 turn	2/3 turn	5/6 turn
Over 8 diameters but not exceeding 12 diameters[c]	2/3 turn	5/6 turn	1 turn

[a] Nut rotation is relative to bolt, regardless of the element (nut or bolt) being turned. For bolts installed by 1/2 turn and less, the tolerance should be plus or minus 30 degrees; for bolts installed by 2/3 turn and more, the tolerance should be plus or minus 45 degrees.

[b] Applicable only to connections in which all material within grip of the bolt is steel.

[c] No research work has been performed by the Research Council Riveted and Bolted Structural Joints to establish the turn-of-nut procedure when bolt lengths exceed 12 diameters. Therefore, the required rotation must be determined by actual tests in a suitable tension device simulating the actual conditions.

Section 421.3 A – Page 213 – Delete the second sentence of the second paragraph and replace with the following:

Backfill shall be compacted to 95% or greater of Maximum Dry Density in horizontal layers not to exceed six inches (150 mm) loose depth.

Section 423.1 – Page 219 – Delete this section and replace with the following:

423.1 DESCRIPTION

This work consists of the design, construction, and subsequent removal of all temporary works including, but not limited to; falsework, formwork, cofferdams, work berms and platforms, temporary traffic and stream diversions, and temporary retaining structures.

Section 421.2 A – Page 213 – Delete the sieve analysis specification for the No. 200 (75 μm) sieve and replace with the following:

No. 200 (75 μm) 0 - 18.0

Section 421.2 B – Page 213 – Delete the sieve analysis specification for the No. 200 (75 μm) sieve and replace with the following:

No. 200 (75 μm) 0 - 10.0

Section 421.3 – Page 213 – Add the following to this section:

D. Extruded Insulation Board (Polystyrene): No equipment will be allowed on the uncovered insulation board. The backfill covering the insulation board shall be spread and compacted in such a manner that the equipment used shall be operated on a minimum of 6 inches (150 mm) of backfill material at all times.

Section 421.4 – Page 214 – Add the following to this section:

C. Extruded Insulation Board (Polystyrene): Extruded insulation board (polystyrene) will be measured to the nearest square yard (square meter).

Section 421.5 – Page 214 – Add the following to this section:

C. Extruded Insulation Board (Polystyrene): Extruded insulation board (polystyrene) will be paid for at the contract unit price per square yard (square meter). Payment shall be full compensation for labor, equipment, and incidentals to furnish and install the extruded insulation board (polystyrene).

Section 423.3 A – Page 219 – Add the following to the end of this section:

All temporary works in streams or wetlands are required to be covered in the Corp of Engineers 404 Permit. At the time of the preconstruction meeting, the Contractor shall submit documentation for all temporary works for the purpose of complying with the 404 Permit requirements. The documentation shall include at a minimum:

1. A written description of the proposed temporary works including types of materials to be used, how the temporary works will be installed, removed, and what portion, if any, will remain in place after construction.

2. Details showing approximate size and location of the temporary works. Details shall include at a minimum, a Plan View and a Cross-Section View of the temporary works. Details shall provide sufficient dimensions such that the approximate size of the temporary works and location of the temporary works from a known point is shown.

3. Estimated quantities of all temporary fill material below the ordinary high water elevation. If the temporary fill is to be placed in a wetland, the estimated quantity shall be the amount of wetland loss, (in acres).

If during the course of construction there is a need for additional temporary works, the documentation shall be submitted to the Engineer at that time.

The Engineer will submit the documentation to the Corp of Engineers for approval. No construction of temporary works below the ordinary high water mark or in wetlands may begin until Corp of Engineer approval is attained by the Engineer.

Section 423.3 B – Page 219 – Delete the first sentence and replace with the following two sentences:

Falsework plans and design calculations for bridges shall be prepared by an Engineer registered in the State of South Dakota. Three (3) copies of the falsework plans and design calculations shall be submitted to the Bridge Construction Engineer for review at least 30 days prior to construction of falsework.

Section 423.5 – Page 221 – Delete this section and replace with the following:

423.5 BASIS OF PAYMENT

No payment will be made for temporary works. All costs involved in designing, constructing, and removing temporary works shall be incidental to the other contract items.

Section 430.2 A. – Page 223 – Delete the last sentence of the second paragraph and replace with the following:

The percentage of material passing a No. 200 (75μm) sieve shall not exceed 2.0 percent.

Section 430.2 B – Page 223 – Delete this section and replace with the following:

B. Granular Bridge End Backfill: The granular bridge end backfill material shall conform to Section 882.

Section 430.3 C – Page 225 – Delete the second and third paragraphs and replace with the following:

Granular bridge end backfill shall not be placed until at least 24 hours after completion of the deck pour. In addition, granular bridge end backfill shall not be placed until the abutments and sills, including wingwalls, have attained full design strength.

Granular bridge end backfill shall be placed in loose lifts not to exceed eight inches (200 mm) and compacted to 97% of maximum dry density. The moisture at the time of compaction shall be within ± 4% of optimum moisture. Maximum dry density and optimum moisture will be determined in accordance with SD 104.

Section 430.3 C.1 through 6 – Page 225 and 226 – Delete and replace with the following:

1. Each layer of granular bridge end backfill shall be placed in loose lifts not to exceed eight inches (200 mm). The placement and compaction of each layer must be inspected and approved by the Engineer prior to placement of the next layer.

2. Any equipment used to install the bridge end backfill over the geotextile fabric shall be operated in such a manner that the geotextile fabric is not damaged. To avoid damage to the geotextile fabric, the equipment used to place, spread, and compact the granular bridge end backfill over the geotextile fabric shall not be operated on less than six inches (150 mm) of material.

3. The geotextile fabric may be oriented in any direction. To minimize the horizontal deflection of the mechanically stabilized vertical face, it is extremely important to make sure that the geotextile fabric is taut and free of wrinkles during placement of the granular bridge end backfill.

4. Any geotextile fabric that is torn or punctured shall be repaired or replaced by the Contractor at no additional cost to the Department. The repair shall consist of a patch of the same type of geotextile fabric being placed over the ruptured area such that it overlaps the damaged area a minimum of 3 ft. (1 m) from any damaged edge. A sewn patch meeting the same requirements for seam strength as that of the fabric being repaired is allowed.

5. Seams that are perpendicular to face of the mechanically stabilized backfill may be constructed by overlapping the fabric a minimum of two feet (0.6 m). All other seams, as well as those in which the two foot (0.6 m) minimum overlap cannot be accomplished, shall be sewn. All seams shall be inspected by the Engineer and any deficient seams repaired by the Contractor prior to placement of the next layer of granular bridge end backfill. Geotextile fabric that is joined by sewn seams shall have strength properties at the seam equal to the specified strength requirements of the geotextile fabric. High strength polyester, polypropylene, or kevlar thread shall be used for sewn seams. Nylon threads shall not be used. The edges of the fabric shall be even and shall be completely penetrated by the stitch.

6. During periods of shipment and storage, the geotextile fabric shall be enclosed in a heavy duty opaque wrapping such that the fabric is protected from direct sunlight, ultraviolet rays, dirt or debris. The fabric shall not be subjected to temperatures greater than 140°F (60°C).

Section 430.5 B – Page 227 – Delete the second sentence and replace with the following:

Payment will be full compensation for all labor, equipment, materials, water, and all other items incidental to scarifying, reshaping and recompacting the area to be backfilled, furnishing and installing the polyethylene sheeting, drainage fabric, geotextile fabric, and furnishing, placing, and compacting the porous backfill and granular bridge end backfill to the limits shown on the plans.

Section 450.2 – Page 231 – Add the following to this section:

F. **High Density Polyethylene Pipe:** Section 990.

Section 450.3 C – Page 231 – Delete and replace with the following:

C. **Polyethylene Pipe Culverts:** Corrugated polyethylene pipe culverts and high density polyethylene pipe culverts shall be installed according to manufacturer instructions.

Section 450.3 G – Page 232 – Delete and replace with the following:

G. **Backfill Above Bedding Grade:** Moisture and density requirements for backfill shall be as specified in the plans and shall meet the requirements of Section 120. The backfill material shall be pre-moistened if necessary to obtain uniform moisture.

Selected embankment material shall be placed along the pipe in layers not exceeding six inches (150 mm) in depth and thoroughly compacted by mechanical compactors to the specified density before successive layers are placed. The width of the berms on each side of the pipe shall be twice as wide as the external diameter of the pipe or 12 feet (four meters), whichever is less. This method of backfilling shall be continued until the embankment is at least two feet (600 mm) over the top of the pipe.

In trench installations, backfill width shall be equal to trench width. The backfill shall be brought up evenly on both sides of the pipe for its full length. This method of backfilling shall be continued until the embankment is at least two feet (600 mm) over the top of the pipe.

Section 460.3 A – Page 235 – Delete the first paragraph of this section and replace with the following:

Concrete Quality and Proportion: The Contractor shall design and be responsible for the performance of all concrete mixes used in structures.

All mix designs and any modifications thereto, including changes in admixtures, shall be approved by the Concrete Engineer prior to use. Mix design data and test results shall be recorded on a DOT-24 and submitted to the Engineer.

The mix proportioning selected shall conform to the following requirements:

Section 460.3 A – Page 236 – Delete the second sentence in Note 1 under Table 1.

Section 460.3 A – Page 235 – Delete the second sentence of the first paragraph on page 236 and replace with the following:

The mix design shall be based upon obtaining an average concrete compressive strength 1200 psi above the specified minimum 28 day compressive strength.

Section 460.3 A – Page 235 – Delete the last sentence of the second paragraph on page 236 and replace with the following:

Trial batches shall be conducted in accordance with the American Concrete Institute Publication ACI 211.1, ACI 318, ASTM C192 and the following:

Section 460.3 A – Page 235 – Delete the first paragraph on page 237 and replace with the following:

Concrete mix designs previously used will be considered in compliance with the mix design requirements provided all of the following conditions are met:

Section 460.3 A – Page 235 – Delete the second sentence of item 3 on page 237 and replace with the following:

These test results and associated batch tickets shall be submitted to the Engineer.

Section 460.3 A – Page 235 – Add the following to the list of items on page 237:

4. All supporting information for the mix design including but not limited to, fresh concrete tests and material properties.

Section 460.3 A – Page 235 – Delete the last two paragraphs of this section on page 237:

Section 460.3 B.2 – Page 237 – Delete the last paragraph of this section on page 238 and replace with the following:

If the average compressive strength of the 28 day and the backup cylinder compressive strength is more than 500 psi (3.5 Mpa) below the specified 28 day compressive strength, the concrete represented by the cylinders shall be removed and replaced.

Section 460.3 B.3 – Page 238 – Delete the last paragraph of this section and replace with the following:

If the average core compressive strength is more than 500 psi (3.5 Mpa) below the specified 28 day compressive strength, the concrete represented by the cylinders shall be removed and replaced.

Section 460.3 B.4 – Page 238 – Delete the last paragraph of this section on page 239 and replace with the following:

If the average core compressive strength is more than 500 psi (3.5 Mpa) below the specified 28 day compressive strength, the concrete represented by the cylinders shall be removed and replaced.

Section 460.3 B.5 – Page 239 – Delete the first sentence and replace with the following:

If the Contractor utilizes the option to core as specified in Section 460.3 B.4, the Contractor shall arrange for an independent testing laboratory to perform the coring and compressive testing within 14 calendar days of notification of the failing compressive strength of the backup cylinder.

Section 460.3 B.5 – Page 239 – Delete the last sentence of the second paragraph.

Section 460.3 B.5.a – Page 239 – Delete this section and replace with the following.

a. Include DOT project number, county, & PCN.

Section 460.3 C.1 – Page 240 – Add the following to the list of items to be included on the printed ticket on page 241:

W/C ratio

Aggregate Moistures (total moisture & absorption)

Section 460.3 C.1 – Page 240 – Add the following after the last paragraph of this section on page 241:

The W/C ratio shall be calculated using the following formula and rounded to the nearest 0.01:

$$\text{W / C ratio} = \left[\frac{\text{weight of free water} + \text{weight of batch water}}{\text{weight of cement} + \text{weight of supplimentary cementitious material}} \right]$$

weight of free water = (% total moisture in aggregate - % absorption of aggregate) x weight of aggregate
weight of batch water = total weight of water added to the batch of concrete either at the plant or in the truck

The weight of free water shall be calculated for both the fine aggregate and the coarse aggregate.

Section 460.3 D – Page 242 – Add the following to this section:

6. The amount of batch water and aggregates added to the mix shall be adjusted accordingly using the results of the most recent two hour moisture tests. If automatic moisture sensing equipment is used, the Engineer may allow the use of the automatic moisture sensing results to make adjustments.

Section 460.3 E – Page 243 – Delete the third paragraph and replace with the following:

When a concrete batch is transported in a truck mixer or agitator and the batch is smaller than 60 percent of the rated capacity of the truck mixer or agitator, the following percentage of additional cementitious material at the same proportions as listed on the mix design shall be added to the batch:

Section 460.3 E – Page 243 – Delete the paragraph below the table on the middle of page 243 and replace with the following:

The above provisions regarding additional cementitious material shall also apply to the mixing of small batches in central plants. Additional cementitious material will not be required when the small batch is mixed in a drum that is sufficiently coated with mortar to withstand the loss of cementitious material. Sufficient mortar coating, as determined by the Engineer, may include mortar coating the drum from a previously mixed batch during continuous mixing operations. Additional cementitious material will be required if more than 30 minutes has passed from the mixing of the previous batch, if the drum has been cleaned following the previous batch, or if the mortar coating the drum has been disturbed following the previous batch.

Section 460.3 K.1 – Page 247 – Delete and replace with the following:

1. The coarse aggregate piles must be flushed with water for a minimum of 24 hours.

Section 460.3 K – Page 248 – Delete the twelfth paragraph and replace with the following:

Barrier curbs will not be allowed to be placed with slipform paving equipment.

Section 460.3 M.4.c – Page 251 – Delete the second sentence of the first paragraph and replace with the following:

Tining depth and spacing shall be measured according to SD 418. The metal-tine finish shall provide a groove width of 1/8" and a groove depth of 6/32 inch (5 mm) ±2/32 inch (3 mm).

Section 465.2 A.3 – Page 265 – Add the following sentence to the end of the paragraph:

Slump loss shall be tested in accordance with SD 423.

Section 465.2 A.6 – Page 265 – Delete this section and replace with the following:

6. The mix design shall establish a maximum water cementitious material ratio for the concrete mix (never to exceed 0.44)

The use of a water reducer will be required to achieve the above properties. Water reducers conforming to AASHTO M194 Type C (Accelerating) and Type E (Water-Reducing and Accelerating) will not be permitted.

Section 480.3 C.1 – Page 280 – Delete the fifth paragraph and replace with the following:

Welding of reinforcing steel shall not be allowed without written approval of the Bridge Construction Engineer. The request for approval shall list the bars to be welded, welding procedure, type of electrode, joint detail, and mill certificate of the reinforcing steel to be welded.

Section 480.4 – Page 281 and 282 – Delete the English and Metric Bar Designation tables and replace with the following:

Bar Designation

Size (English)	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9	No. 10	No. 11	No. 14	No. 18
Weight (lb/ft)	0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.65	13.60
Size (Metric)	10	13	16	19	22	25	29	32	36	43	57
Weight (kg/m)	0.560	0.994	1.552	2.235	3.042	3.973	5.060	6.404	7.907	11.38	20.24

Section 550.3 A.2 – Page 303 – Delete the second sentence of the last paragraph and replace with the following:

When backfilling extra depth holes in accordance with Section 550.3 C.1.f.2, a grout admixture shall be added to the grout mixture in accordance with the manufacturer's recommendations.

Section 550.3 C.1.b – Page 305 – Delete the third sentence of the first paragraph and replace with the following:

After completion of the Type 1A removal, the Engineer will inspect the deck and mark remaining areas of unsound existing overlay.

Section 550.3 C.1.c – Page 306 – Delete and replace with the following:

c. Type 1B Removal areas will be determined after Type 1A Removal (or Type 2A Removal if specified) has been accomplished. Type 1B Removal shall consist of removing delaminated or unsound concrete by chipping below the Type 1A Removal (or Type 2A Removal if specified) and extending down to the top of the top bar in the top mat of reinforcing steel. Concrete removed below the top of the top bar incidental to Type 1B Removal will be considered a part of the Type 1B Removal.

Section 550.3 C.1.f.2 – Page 306 – Delete the first sentence and replace with the following:

Backfill of Extra Depth Holes: When Type 1D removal is necessary, or when holes deeper than 4" (100mm) below the top of the scarified surface are encountered, they shall be backfilled as follows:

Section 550.3 D.2 – Page 309 – Delete the fourth paragraph and replace with the following:

Concrete placement will not be permitted after October 1 or before May 1 or when the air temperature is above 85°F (29°C) in the shade. It may be necessary to place concrete during evening or early morning hours and not during periods of low humidity and high wind to comply with this requirement.

Section 550.3 E – Page 310 – Delete and replace with the following:

E. Proportioning and Mixing Concrete Materials: Proportioning and mixing shall conform to Section 460.3 F.

Section 560.2 A – Page 317 – Add the following:

6. Cement: Section 750. Type II cement shall be used, unless otherwise specified.

Section 560.3 A – Page 317 – Add the following paragraph after the first paragraph:

Precast concrete drop inlets shall conform to the requirements of Section 670.

Section 560.3 A.1 – Page 317 – Delete and replace with the following:

1. **Fabrication:** The Fabricator shall notify the Area Engineer prior to the fabrication of precast and prestressed concrete items.

Section 560.3 A.2 – Page 317 – Delete the last sentence of the first paragraph and replace with the following:

When a plant has been in operation and satisfactorily producing material, the Contractor will not be required to submit a concrete mix design for precast concrete, unless changes have been made to the pre-approved mix design or the material used in the mix design. Concrete mix designs shall be submitted for each project on all prestressed concrete products.

Section 560.3 B.1 – Page 319 – Delete the second sentence of the fifth paragraph and replace with the following:

A checked design includes the design calculations and check design calculations performed by an independent Engineer registered in the State of South Dakota.

Section 560.3 B.2.b – Page 321 – Delete the second paragraph and replace with the following:

Acceptance of the precast units shall be in accordance with Section 460.3 B except that the fabricator shall be responsible for the sampling, preparing, and properly curing of all concrete cylinders for concrete compressive strength in accordance with the Materials Manual. The precast units will be accepted when the minimum design concrete compressive strength requirements have been met. Accepted precast units represented by that test group of cylinders may be delivered to the project and will not require the 28 day cylinder test.

Section 600.2 A.17 – Page 333 – Add the following sentence at the end of the paragraph:

The concrete pad must be securely mounted and solidly supported under the laboratory to minimize vibration while operating the Marshall compactor.

Section 600.3 – Page 336 – Delete the fourth and fifth sentence and replace with the following:

On projects that a Type III lab is required, the Engineer may allow a Type I or II lab to be supplied until such a time the Engineer determines the Type III lab is required. If the Engineer allows a temporary Type I or II lab to be furnished, no additional payment for that lab will be made.

Section 605.3 C – Page 339 – Delete the third sentence of the first paragraph and replace with the following:

If fly ash is used, the minimum amount of cement to be replaced is 15 percent and the maximum amount is 20 percent at a 1:1 ratio by weight.

Section 630.4 A – Page 355 – Delete this section and replace with the following:

A. **Beam Guardrail:** Each class and type will be measured to the nearest 0.1 foot (0.1 meter) along the centerline of the rail. The length in feet (meters) shall be the overall length center to center of end posts or to connections with bridges.

Section 630.4 C – Page 355 – Delete this section and replace with the following:

C. **Remove Beam Guardrail:** Remove Beam Guardrail will be measured to the nearest 0.1 foot (0.1 meter) along the centerline of the rail.

Section 630.5 A – Page 355 – Delete this section and replace with the following:

A. **Beam Guardrail:** Beam guardrail will be paid for at the contract unit price per 0.1 foot (0.1 meter) for each class and type installed. Payment will be full compensation for labor, materials, equipment, and incidentals required.

Section 630.5 C – Page 356 – Delete this section and replace with the following:

C. **Remove Beam Guardrail:** Remove Beam Guardrail will be paid for at the contract unit price per 0.1 foot (0.1 meter). Payment will be full compensation for the backfill of holes and the removal of the guardrail including end terminals, beam guardrail, posts, blocks, and hardware from the project limits.

Section 632.3 H.2.c – Page 361 – Delete and replace with the following:

c. Anchor bolts shall be provided with leveling nuts, top nuts, and jam nuts. Anchor bolts shall be tightened in accordance with Section 635.3 F.

Section 633.3 D – Page 368 – In the grooving tolerance tables, replace "Depth of Groove" with the following:

	(English)	
Depth of Groove	80 mils	+ 10 mils
	(Metric)	
Depth of Groove	2.032 mm	+ 0.25 mm

Section 634.3 A – Page 372 – Delete the first sentence of the fourth paragraph and replace with the following:

All workers within the right of way who are exposed either to traffic (vehicles using the highway for purposes of travel) or to construction equipment within the work area shall wear high-visibility safety apparel intended to provide conspicuity during both daytime and nighttime usage, and meeting the Performance Class 2 or 3 requirements of the ANSI/ISEA 107-2004 publication entitled "American National Standard for High-Visibility Safety Apparel and Headwear".

Section 634.3 A – Page 372 – Delete the first sentence of the fifth paragraph.

Section 634.3 C – Page 374 – Add the following paragraph after the first paragraph:

For 2 lane roadways with average daily traffic volumes of 2500 or less, no passing zones may be identified using DO NOT PASS, PASS WITH CARE, and NO PASSING ZONE signs rather than pavement markings. The DO NOT PASS and NO PASSING ZONE signs shall be used to mark the beginning of each no passing zone, and the PASS WITH CARE signs to mark the end of each zone. These may be utilized in place of the pavement markings normally used to identify no passing zones for no longer than 2 weeks. The placement of the dashed centerline marking and these signs shall be required prior to nightfall.

Section 635.3 C.3 – Page 380 – Add the following sentence at the end of the first paragraph:

The contractor shall not use a machine requiring flowing water for installation of conduit under streets or roadways unless approved by the Engineer.

Section 635.3 F – Page 381 – Delete and replace with the following:

F. Anchor Bolts: Anchor bolts shall be installed in accordance with the following requirements.

1. General: Anchor bolts shall be provided with leveling nuts and top nuts. Anchor bolts for light towers shall be provided with leveling nuts, top nuts, and jam nuts.

2. Anchor Bolt Installation: A steel template shall be used to accurately locate and hold the anchor bolts plumb and in proper alignment. This template shall be in place during placement of the concrete base and shall remain in place a minimum of 24 hours after the concrete placement has been completed. Out of position anchor bolts and anchor bolts greater than 1:40 out-of-plumb are cause for rejection of the base. Bending of the anchor bolts to straighten or move into position, or alterations of the pole base plate will not be permitted.

3. Anchor Bolt Tightening:

a. All leveling nuts (bottom nuts) shall be brought to full bearing on the bottom of the base plate. The bottom of the leveling nuts must be kept as close to the concrete base as practical, and shall not be more than one inch above the top of the concrete base. Leveling nuts must be threaded onto the anchor bolt to provide at least ¼ inch (6 mm) projection of the bolt above the top nut or jam nut if required when in its tightened position.

b. A softened beeswax or equivalent shall be applied to the top nut bearing face and top nut internal threads prior to placement on the anchor bolt. All top nuts shall be tightened to a snug tight condition. Snug tight

is defined as the tightness attained by the full effort of a person using a wrench with a length equal to 14 times the diameter of the anchor bolt, except the minimum length shall be 18 inches. The use of adjustable wrenches will not be allowed. The full effort required to achieve a snug tight condition, shall be applied as close to the end of the wrench as possible. Pull firmly by leaning back and using full body weight (brace feet to prevent slipping) on the end of the wrench until the nut stops rotating. This snug tightening shall be accomplished in a minimum of two separate passes of tightening. The sequence of tightening in each pass shall be such that the opposite side nut, to the extent possible, shall be subsequently tightened until all the nuts in that pass have been snugged.

Snug tightness of both the top and leveling nuts shall be checked in the presence of Department personnel after the Contractor has completed nut snugging as described above, but prior to final tightening. Snug tightness of the nuts (top and leveling) shall be checked by applying a torque in a range from 20% to 30% of the verification torque. See Table 1 for verification and snug tight torque values.

Table 1

Anchor Bolt Tightening

Anchor Bolt Diameter (in)	Anchor Bolt Stress Area (sq in)	Yield Strength (ksi)	Minimum Tensile Strength (ksi)	Verification Torque (ft-lbs)	30% Snug Tight Torque (ft-lbs)	20% Snug Tight Torque (ft-lbs)
1.00	0.61	36.0	58.0	177	53	35
1.25	0.97	36.0	58.0	351	105	70
1.50	1.41	36.0	58.0	613	184	123
1.75	1.90	36.0	58.0	964	289	193
2.00	2.50	36.0	58.0	1449	435	290
2.25	3.25	36.0	58.0	2120	636	424
2.50	4.00	36.0	58.0	2899	870	580
2.75	4.93	36.0	58.0	3930	1179	786
3.00	5.97	36.0	58.0	5192	1558	1038
1.00	0.61	55.0	75.0	274	82	55
1.25	0.97	55.0	75.0	545	163	109
1.50	1.41	55.0	75.0	951	285	190
1.75	1.90	55.0	75.0	1496	449	299
2.00	2.50	55.0	75.0	2249	675	450
2.25	3.25	55.0	75.0	3289	987	658
2.50	4.00	55.0	75.0	4498	1349	900
2.75	4.93	55.0	75.0	6098	1830	1220
3.00	5.97	55.0	75.0	8056	2417	1611
1.00	0.61	75.0	100.0	366	110	73
1.25	0.97	75.0	100.0	726	218	145
1.50	1.41	75.0	100.0	1268	381	254
1.75	1.90	75.0	100.0	1994	598	399
2.00	2.50	75.0	100.0	2999	900	600
2.25	3.25	75.0	100.0	4386	1316	877
2.50	4.00	75.0	100.0	5998	1799	1200
2.75	4.93	75.0	100.0	8131	2439	1626
3.00	5.97	75.0	100.0	10742	3223	2148
1.00	0.61	105.0	125.0	457	137	91
1.25	0.97	105.0	125.0	908	272	182
1.50	1.41	105.0	125.0	1586	476	317
1.75	1.90	105.0	125.0	2493	748	499
2.00	2.50	105.0	125.0	3749	1125	750
2.25	3.25	105.0	125.0	5482	1645	1096
2.50	4.00	105.0	125.0	7497	2249	1499
2.75	4.93	105.0	125.0	10164	3049	2033

3.00	5.97	105.0	125.0	13427	4028	2685

c. At this point, the top nut and leveling nut must be in full bearing on the base plate. If any gap exists between either nut (top or leveling) and the base plate, a beveled washer shall be added between the nut washer and the base plate to eliminate the gap. The beveled washer shall be stainless steel Type 304, the same diameter as the hardened washer, and beveled as required to eliminate the gap between the nut and the base plate. All nuts shall be retightened according to steps (a) and (b) above if beveled washers are added. All costs required to remove and re-erect the structure to install beveled stainless steel washers shall be at the Contractor's expense.

d. Using a hydraulic wrench rotate all top nuts as indicated in Table 2. The additional turn of the nuts shall be accomplished by tightening all the nuts in two separate passes of equal incremental turns (i.e., for 1/3 turn use 1/6 turn each pass). The sequence of nut tightening in each pass shall be such that the opposite side nut, to the extent possible, shall be subsequently tightened until all the nuts in that pass have been turned. There shall be no rotation of the leveling nut during top nut tightening.

In lieu of a hydraulic wrench, torque wrenches and multipliers may be used to achieve the desired nut rotations and tightness.

e. Tightness of the nuts shall be checked in the presence of Department personnel. Tightness of the nuts shall be checked within a minimum of 48 hours and a maximum of 96 hours after the nuts have been rotated as indicated in Section 635.3 F.3.d above. Tightness of the top nuts shall be checked by applying the verification torque to the nut. See Table 1 for verification torque.

Table 2

Nut Rotation for Turn-Of-Nut Pretensioning

Anchor Rod Diameter (in)*	Nut Rotation from Snug-Tight Condition a, b	
	F1554 Grade 36, A307	F1554 Grade 55 and 105, A449
< 1 ½	1/6 Turn	1/3 Turn
≥ 1 ½	1/12 Turn	1/6 Turn
a. Nut rotation is relative to anchor rod. The tolerance is plus 20 degrees b. Applicable only to double-nut-movement joints.		

Bottom leveling nuts shall be in contact with the base prior to applying the torque. An inability to achieve the verification torque indicates that the threads have stripped and the anchor bolt must be replaced. All costs for replacing anchor bolts shall be at the Contractor's expense.

f. Install jam nut after verification torque has been applied to top nut. Lubricate threads of jam nut with beeswax or equivalent and tighten to a torque of 100 ft-lb (approximated without the use of a torque wrench).

Section 635.3 H – Page 382 – Delete the first paragraph and replace with the following:

Traffic signal conductors shall be continuous from the controller cabinets to the pole bases. Splicing of conductors will not be allowed in the junction boxes.

Section 635.3 Q.3 – Page 384 – Delete and replace with the following:

3. Preformed Loops: Each set of loop wires shall be tagged to identify loop. If installation of the loop is for future use the loop wires in the same lane shall be taped together. If installation is on a signal project, tagging shall be done and wires connected in series.

In new roadways, the preformed loops and lead-in conduits shall be placed in the base course, with the top of the conduit flush with the top of the base, and then covered with hot mix asphalt or Portland cement concrete pavement. Preformed loops and lead-in conduits shall be protected from damage prior to and during pavement placement.

In new reinforced concrete structure decks, the preformed loops shall be secured to the top of the uppermost layer of reinforcing steel using nylon wire ties. The loop shall be held parallel to the structure deck by using PVC or polypropylene spacers where necessary. Conduit for lead-in conductors shall be placed below the upper mat of reinforcing steel.

In existing pavement, the preformed loops shall be placed in a saw slot, 1-1/4 inches minimum width, cut into the existing pavement. The top of the conduit shall be 2 inches, minimum, below the top of existing surface. Sawed Slots shall be filled with an approved loop sealant.

On asphalt or concrete resurfacing projects, the preformed loops shall be placed in a saw slot, 1-1/4 inches minimum width, cut into the existing pavement. The top of the conduit shall be 2 inches, minimum, below the top of existing surface after any required surface removal is completed and prior to the placing of the new surface. Sawed Slots shall be filled with an approved loop sealant.

Section 635.3 R.3 – Page 384 – Delete the first sentence in the first paragraph and replace with the following:

All circular red, red arrow, circular yellow, yellow arrow, circular green, green arrow, and pedestrian indications shall be light emitting diode (LED) signal modules.

Section 635.5 E – Page 386 – Delete and replace with the following:

D. Anchor Bolts: Cost for anchor bolts shall be included in the contract unit price for the concrete for which they are incorporated with.

Section 651.2 C – Page 391 – Delete the last sentence of this section and replace with the following:

Not more than 25.0 percent by weight shall pass a No. 200 (75µm) sieve.

Section 670.3 – Page 393 – Delete and replace with the following:

A. General Requirements: Concrete for drop inlets shall be proportioned, mixed, hauled, and placed in accordance with Section 462.

When the foundation for a drop inlet is in new embankment, the embankment shall be constructed to an elevation at least one foot (300 mm) above the footing before the foundation for the drop inlet is prepared. The foundation shall be compacted as specified for the adjacent embankment.

Castings shall be set in full mortar beds or secured as specified. Castings shall be set accurately to the correct elevation so subsequent adjustment will not be necessary.

Inlet and outlet pipe connections shall be of the same size and kind and shall meet the same requirements as the pipe they connect. Pipe sections shall be flush on the inside of the structure wall and project outside sufficiently for proper connection with the next pipe section. Masonry shall fit neatly and tightly around the pipe. Grouting of the pipe connection may be required as directed by the Engineer if voids exist after form removal.

Drop inlets shall be either cast in place or precast. Precast drop inlets shall be defined as those drop inlets cast outside of the project limits. Drop inlets cast within the project limits will be considered cast in place.

B. Cast in Place Drop Inlets: The foundation excavated for drop inlets shall be thoroughly moistened immediately prior to placing concrete.

Steel reinforcement shall be placed in accordance with Section 480.

The finished surface of the concrete shall present a neat and smooth appearance. Concrete shall be protected and cured in accordance with Section 460.3, except the minimum curing time shall be 72 hours.

Upon completion and curing of the unit, the sheeting, bracing, forms, and falsework shall be removed and the excavation backfilled. The unit shall not be backfilled until the completion of the 72 hour curing period, or until the concrete reaches a minimum compressive strength of 3000 psi (21 MPa). Backfill shall be placed in layers not

exceeding six inches (150 mm) thick and compacted to the same degree as specified for the adjacent embankment. Installations shall be finished completed and left in a neat appearing condition.

C. Precast Drop Inlets: Precast drop inlets shall conform to the following requirements:

1. **Notification:** The Contractor shall notify the Engineer 24 hours in advance of all concrete pours for inspection and observation of Contractor testing:

2. **Design:** Precast drop inlets shall conform to the configurations of the standard plates. Variations from the standard plates may be accepted provided the AASHTO materials, design, fabrication specifications, and the requirements of this section are complied with.

   Precast drop inlets shall be designed to specified load conditions. The Design Engineer of the drop inlets must be registered in the State of South Dakota. The design shall conform to the AASHTO design requirements for the depth of fill, including surfacing, etc., as well as live load or specified loading.

   The Contractor shall furnish a checked design with the shop drawings. A checked design shall include the design calculations, and check design calculations performed by an independent Engineer registered in the State of South Dakota.

3. **Shop Drawings:** Fifteen days prior to fabrication, the Contractor shall furnish shop drawings for Department review. The shop drawings shall consist of fabrication details including reinforcing steel and spacer placement and configurations, total quantities for the complete item, and all information for fabrication and erection.

4. **Forms:** The forms shall be designed to withstand the fluid pressure of the concrete and the added forces due to vibration and impact without distortion. The forms shall be mortar tight and free from warp.

   The form surface area in contact with the concrete shall be treated with an approved form oil or wax before the form is set in position. The forms shall be thoroughly cleaned of all other substances.

5. **Concrete Cure:** The concrete shall be cured by low pressure steam, radiant heat, or as specified in Section 460.3 N. When curing in accordance with Section 460.3 N., the concrete temperature requirements of Section 460.3 O. shall apply.

   Low pressure steam or radiant heat curing shall be done under an enclosure to contain the live steam or the heat and prevent heat and moisture loss. The concrete shall be allowed to attain initial set before application of the steam or heat. The initial application of the steam or heat shall be three hours after the final placement of concrete to allow the initial set to occur. When retarders are used, the waiting period before application of the steam or radiant heat shall be five hours. When the time of initial set is determined by ASTM C 403, the time limits described above may be waived.

   During the waiting period, the minimum temperature within the curing chamber shall not be less than 50° F (10° C) and live steam or radiant heat may be used to maintain the curing chamber between 50° F (10° C) and 80° F (27° C). During the waiting period the concrete shall be kept moist.

   Application of live steam shall not be directed on the concrete forms causing localized high temperatures. Radiant heat may be applied by pipes circulating steam, hot oil, hot water, or by electric heating elements. Moisture loss shall be minimized by covering exposed concrete surfaces with a plastic sheeting or by applying an approved liquid membrane curing compound to exposed concrete surfaces. The top surface of concrete members for use in composite construction shall be free of membrane curing compound residue unless suitable mechanical means for full bond development are provided.

   During the initial application of live steam or radiant heat, the concrete temperature shall increase at an average rate not exceeding 40° F (22° C) per hour until the curing temperature is reached. The maximum concrete temperature shall not exceed 160° F (71° C). The maximum temperature shall be held until the concrete has reached the desired strength. After discontinuing the steam or radiant heat application, the temperature of the concrete shall decrease at a rate not to exceed 40° F (22° C) per hour until the concrete temperature is within 20° F (11° C) of the ambient air temperature. The Contractor will not be required to monitor this cool down temperature when the ambient air temperature is 20° F (11° C) or above.

The test cylinders shall be cured with the unit, or in a similar manner (similar curing method and concrete curing temperature, as approved by the Concrete Engineer) as the unit, until minimum compressive strength has been obtained.

6. **Surface Finish and Patching:** If a precast or prestressed item shows stone pockets, honeycomb, delamination or other defects which may be detrimental to the structural capacity of the item, it will be subject to rejection at the discretion of the Engineer. Minor surface irregularities or cavities, which do not impair the service of the item, and which are satisfactorily repaired will not constitute cause for rejection. Repairs shall not be made until the Engineer has inspected the extent of the irregularities and has determined whether the item can be satisfactorily repaired. If the item is deemed to be repairable, the repair method and procedures shall be agreed upon by the Department and fabricator prior to the work commencing.

   Depressions resulting from the removal of metal ties or other causes shall be carefully poainted with a mortar of sand and cement in the proportions, which are similar to the specific class of concrete in the unit. A sack rub finish is required on prestressed beams except for the bottom of the bottom flange and the top of the top flange. A sack rub finish is also required on sloped surfaces of box culvert end sections.

7. **Fresh Concrete Testing:** The Contractor shall be responsible for performing all fresh concrete testing in accordance with the materials manualMaterials Manual. Tests shall be documented on a DOT-54 form and submitted to the Engineer.

8. **Concrete Compressive Strength:** The Contractor shall make a minimum of one group of test cylinders for each class of concrete for each day's production, not to exceed 150 cubic yard (125 cubic meters) per group of cylinders.

   At a minimum, a group of test cylinders shall consist of the following:

   a. Two test cylinders are required for the 28 day compression test.

   b. Two additional cylinders will be required for determining concrete strength, when the Contractor desires to make delivery and obtain acceptance by the Department prior to the 28 day compression test.

   Acceptance of the precast units shall be in accordance with Section 460.3 B. The precast units will be accepted when the minimum design concrete compressive strength requirements have been met. Accepted precast units represented by that test group of cylinders may be delivered to the project and will not require the 28 day cylinder test.

   The Engineer will be responsible for breaking of all concrete cylinders for concrete compressive strength in accordance with the Materials Manual.

Section 670.5 – Page 394 – Add the following paragraph after the first paragraph:

Unless otherwise specified in the plans the cost for removal of existing pipe, if necessary, to facilitate the installation of new drop inlets shall be incidental to the associated drop inlet contract unit prices.

Section 671.5 – Page 397 – Add the following paragraph to this section:

Unless otherwise specified in the plans the cost for removal of existing pipe, if necessary, to facilitate the installation of new manholes shall be incidental to the associated manhole contract unit prices.

Section 680.2 A – Page 399 – Delete the last sentence of the second paragraph and replace with the following:

The percentage of material passing a No. 200 (75μm) sieve shall not exceed 2.0 percent.

Section 720.4 – Page 405 – Delete this section and replace with the following:

A. Bank and Channel Protection Gabions: Bank and channel protection gabions will be measured to the nearest 0.1 cubic yard (0.1 cubic meter). If a substitution is made, the dimensions of the bank and channel protection installed shall be equal to or greater than the dimensions specified. Payment will be based on plans quantity, unless changes are ordered in writing by the Engineer.

B. Drainage Fabric: Drainage fabric will be measured to the nearest square yard (square meter). The lap at joints will not be included in the measurement.

Section 720.5 – Page 405 – Delete this section and replace with the following:

A. Bank and Channel Protection Gabions: Bank and channel protection gabions will be paid for at the contract unit price per cubic yard (cubic meter). Payment will be full compensation for materials, equipment, labor, excavating, shaping and incidentals required.

B. Drainage Fabric: Drainage fabric will be paid for at the contract unit price per square yard (square meter). Payment will be full compensation for furnishing and installing the drainage fabric as specified. Payment will be for plan quantity unless changes are ordered in writing.

Section 730.2 C – Page 407 – Delete the fourth sentence and replace with the following:

If the seed is not planted within the 9 month period, the Contractor shall have the seed retested for germination, as described above, and a new certified test report shall be furnished prior to starting seeding operations.

Section 734.3 – Page 423 – Add the following paragraph before the first paragraph:

The Contractor shall designate an employee as Erosion Control Supervisor whose responsibility is the construction and maintenance of erosion and sediment control. This person shall be available to be reached by phone 24 hours a day, 7 days a week, and must be able to respond to emergency situations at the job site within 12 hours. The person so designated must have training and be certified by the South Dakota Department of Transportation in the area of erosion and sediment control. The name, phone number, and location of the person shall be provided to the Department at the preconstruction meeting.

Section 734.3 B.2 – Page 424 – Delete the second sentence and replace with the following:

The muck will be removed when the surface of the muck is at approximately one-third the height of the silt fence.

Section 750 – Page 431 – Add the following after the second paragraph:

In addition to the certification requirement specified in SD 416, when limestone is used, the manufacturer shall state in writing the amount thereof, the percentage of Calcium Carbonate in the limestone, and shall supply comparative test data on chemical and physical properties of the cement with and without the limestone. The comparative tests do not supersede the normal testing to confirm that the cement meets chemical and physical requirements.

Section 800.2 D – Page 436 – Add the following sentence to the end of the fourth paragraph:

Fine aggregate with a 14 day expansion value of 0.400 or greater shall not be used.

Section 800.2 D – Page 436 – Add the following sentence to the end of the last paragraph:

The expansion value of the blended sources will be used to determine the type of cement required.

Section 800.2 F – Page 437 – Delete the last three sentences of the first paragraph and replace with the following:

If the fineness modulus falls outside this limit the Concrete Engineer shall be notified. A new or adjusted mix design may be provided or approved. The uniformity of grading requirements do not apply to fine aggregate for Low slump Dense Concrete and Class M (I) concrete.

Section 800.2 F – Page 437 – Delete the first sentence of the second paragraph and replace with the following:

For determining the FM deviation from the design mix FM, the average of the five most recent FM test shall be used.

Section 800.2 F – Page 437 – Delete the first sentence of the last paragraph and replace with the following:

Additionally for Portland Cement Concrete Paving conforming to Section 380; the FM of the fine aggregate, as established by the mix design, will be from 2.40 to 3.10 (wide band).

Section 810.1 B – Page 439 – Delete the sieve analysis specification for the No. 200 (75 µm) sieve and replace with the following:

No. 200 (75 µm)	- - -	0 to 25.0

Section 820.2 E – Page 443 – Delete SD 218 from the list and replace with the following:

SD 218 *

Section 820.2 E – Page 443 – Delete SD 216 from the list and replace with the following:

SD 216 *

Section 820.2 E – Page 443 – Add the following to the end of this section:

* Not required for crushed ledge rock (Quarry Stone).

Section 821.1 A – Page 444 – Delete and replace with the following:

A. Burlap Cloth made from Jute or Kenaf……AASHTO M 182

White non-woven polypropylene geotextile conforming to the following requirements may be used in lieu of burlap for horizontal applications only. This material is not to be used for curing vertical surfaces.

Property	Test Method	Unit	Min. Ave. Roll Value
Weight	ASTM D 5261	Oz/Sq. Yd.	8.0

Section 821.1 B – Page 444 – Add the following sentence to this Section:

The compound shall be stored at temperatures above 35º F (2º C). Compound stored for a period in excess of six months will require resampling and testing for compliance prior to use.

Section 821.1 D.2 – Page 444 – Delete the second sentence and replace with the following:

Compound stored for a period in excess of six months will require resampling and testing for compliance prior to use.

Section 870.1 A – Page 452 – Delete this section and replace with the following:

A. Hot Poured Elastic Joint Sealer: The sealant shall conform to the requirements of ASTM D 6690 Type II or Type IV or be on the Departments approved products list for Joint Sealants for Asphalt Over Long Jointed Concrete Pavement.

Hot poured elastic joint sealer meeting the requirements of ASTM D 6690 Type IV shall not weigh more than 9.35 lbs/gal (1.12 kg/L).

Test methods shall conform to ASTM D 5329, except the fine aggregate used in preparing the concrete test blocks shall conform to Section 800. The Contractor shall furnish a certificate of compliance for hot poured elastic joint sealer not listed on the approved products list.

Section 880.2 A – Page 455 – Delete this section and replace with the following:

A. Mineral Aggregate: The mineral aggregate job mix formula, without the addition of hydrated lime, shall conform to the requirements shown in Table 1. The single percentage aggregate gradation established in the job mix formula for Class D, E, and G asphalt concrete mixes shall be within the limits in Table 1. The single percentage aggregate gradation established in the job mix formula for Class S asphalt concrete mixes will be the center of the gradation band in Table 1. The Class S gradation will include mineral fillers or other approved additives.

TABLE 1

REQUIREMENTS	CLASS D		CLASS E		CLASS G		CLASS S	
	TYPE 1	TYPE 2	TYPE 1	TYPE 2	TYPE 1	TYPE 2	TYPE 1	TYPE 2
SIEVE	PERCENT PASSING							
1" (25.0 mm)	100		100		100			
3/4" (19.0 mm)	97-100	100	97-100	100	97-100	100		
½" (12.5 mm)	75-95	97-100	75-95	97-100	75-95	97-100	86-100	100
3/8" (9.50 mm)							66-80	80-100
No. 4 (4.75 mm)	45-75	60-80	45-75	60-80	45-75	60-80	24-34	24-45
No. 8 (2.36 mm)	30-55	40-60	30-55	40-60	30-55	40-60	10-20	10-22
No. 16 (1.18 mm)	20-45	25-50	20-45	25-50	20-45	25-50		
No. 40 (425 µm)	10-30	15-35	10-30	15-35	10-30	15-35		
No. 200 (75 µm)	3.0-7.0	4.0-8.0	3.0-7.0	4.0-8.0	3.0-7.0	4.0-8.0	4.0-8.0	2.0-5.0
Processing Required	Crushed		Crushed		Crushed		Crushed	
Liquid Limit (max)	25		25		25		25	
Plasticity Index, (max)	3		Non-Plastic		Non-Plastic		Non-Plastic	
L.A. Abra. Loss, (max)	45%		40%		35%		40%	
Sodium Sulfate (Soundness) (Max.)								
+4 (4.75 mm) sieve	15%		15%		12%		12%	
-4 (4.75 mm) sieve	15%		15%		12%		12%	
Lightweight Particles (Max.)								
+4 (4.75 mm) sieve	4.5%		3.0%		1.0%		1.0%	
-4 (4.75 mm) sieve	4.5%		3.0%		1.0%		1.0%	
Crushed Particles (Min.)								
+4 (4.75 mm) sieve	50% 1-FF		70% 2-FF		90% 2-FF		90% 2-FF	
* - 4 Manufactured Fines	NA		20% Min.		70% Min.		95% Min.	

* - Manufactured fines shall be manufactured solely from material retained on the ¾ inch (19mm) sieve, unless the aggregate material is produced from a ledge rock source.

Section 880.2 B.1 – Page 456 – Delete the second sentence and replace with the following:

The material shall be fine enough that when pulverized for testing, 90 percent by dry weight will pass a No. 40 (425 µm) sieve and 60.0 percent by dry weight will pass a No. 200 (75µm) sieve.

Section 880.2 B.2 – Page 456 – Delete the sieve analysis specification for the No. 200 (75 µm) sieve and replace with the following:

Passing a No. 200 (75 µm) sieve 65.0-100%

Section 882.2 – Page 459 – Delete Table 1 and replace with the following:

Table 1

REQUIREMENT	Subbase	Gravel Cushion	Granular Bridge End Backfill	Aggregate Base Course	Limestone Ledge Rock		Gravel Surfacing
					Base Course	Gravel Cushion	
SIEVE	PERCENT PASSING						
2" (50 mm)	100						
1" (25.0 mm)	70-100		100	100	100		
3/4" (19.0 mm)		100	80-100	80-100	80-100	100	100
½" (12.5 mm)			68-91	68-91	68-90		
No. 4 (4.75 mm)	30-70	50-75	42-70	46-70	42-70	46-70	50-78
No. 8 (2.36 mm)	22-62	38-64	29-58	34-58	29-53	29-53	37-67
No. 40 (425 µm)	10-35	15-35	10-35	13-35	10-28	10-28	13-35
No. 200 (75 µm)	0.0-15.0	3.0-12.0	0.0-5.0	3.0-12.0	3.0-12.0	3.0-12.0	4.0-15.0
Liquid Limit Max		25	25	25	25	25	
Plasticity Index	0-6	0-6	0-6	0-6	0-3	0-3	4-12
L.A. Abra. Loss, max.	50	40	40	40	40	40	40
Foot Notes		2	1,2	1,2			
Processing Required	crushed	crushed	crushed	crushed	crushed	crushed	crushed

Section 890.2 G – Page 465 – In the table, under TESTS ON RESIDUE FROM DISTILLATION TESTS, add the following after Elastic Recovery @ 50ºF (10ºC):

(see Note 4)

Section 890.2 G – Page 465 – Add the following after Note 3:

Note 4: The Elastic Recovery test shall be in accordance with AASHTO T301, except that the residue will be obtained by distillation, not oven evaporation. The distillation temperature shall be as recommended by the emulsion manufacturer.

Section 972.2 B – Page 479 – Delete the second paragraph and replace with the following:

For bolts that are 1" (M24) (incl.) in diameter and less, the maximum hardness for AASHTO M164 (ASTM A325) bolts shall be 33 Rc.

Section 972.2 C – Page 483 – Add the following paragraph before the second to last paragraph:

Jam nuts shall conform to ASTM A563 Grade A.

Section 972.2 C – Page 483 – Delete the first sentence of the last paragraph and replace with the following:

Bolts and nuts shall be hot dipped galvanized in accordance with ASTM F2329 or mechanically galvanized in accordance with ASTM B695. Washers shall be hot dipped galvanized in accordance with ASTM F2329 or mechanically galvanized in accordance with ASTM B695.

Section 972.2 D – Page 484 – Delete the fourth note under the table as denoted by "**" and replace with the following:**

******** Anchor bolts conforming to ASTM F1554 Grade 55 (380) shall satisfy Supplemental Requirement S4. Anchor bolts conforming to ASTM F1554 Grade 105 (725) shall satisfy Supplemental Requirement S5.

Section 980.1 A.1 – Page 485 – Delete this section and replace with the following:

1. **Quantitative Requirements:** The finished paint shall meet the following quantitative requirements:

	WHITE	YELLOW
Lead, parts per million max. ASTM D 3335 or X-ray fluorescence	100	100
Pigment, percent by weight	60.0 - 62.5	58.5 – 61.0
Pigment, percent by weight; when tested in accordance with ASTM D 3723 (See Note 1)	60.0 - 62.5	56.1 - 58.6

Note 1: The residual extracted pigment upon analysis shall conform to the following quantitative compositional requirements when tested in accordance with ASTM D 1394 or ASTM D 4764.

Titanium Dioxide ASTM D 476 Type II Rutile 92% min. $Ti0_2$ tested in accordance with ASTM D 1394 or ASTM D 4764	1.00 lb/gal min.	0.20 lb/gal min.
Total Solids, percent by weight; min. when tested in accordance with ASTM D 3723	77.0	76.1
Non-volatile Vehicle, percent by weight vehicle; min. when tested in accordance with FTMS 141c (Method 4051.1)	42.5	42.5
Consistency. Krebs-Stormer Shearing rate 200 r.p.m. Grams	190 to 300	190 to 300
Equivalent K.U. when tested in accordance with ASTM D 562 (See Note 2)	80 to 95	80 to 95

Note 2: The consistency of the paint shall be within the stated specification when determined a minimum 48 hours after packaging the material.

Weight per Gallon, pounds minimum when tested in accordance with ASTM D 1475 (See Note 3)	Rohm & Haas Dow DT 250NA	13.85 13.75	13.30 13.20

Note 3: In addition to compliance with the minimum, the weight per gallon shall not vary more than ± 0.3 lbs / gal. between batches.

Fineness of Dispersion Hegman Scale, min. when tested in accordance with ASTM D 1210	2 min. "B" Cleanliness"	2 min B" Cleanliness
Drying Time, No Pick-Up, Minutes, max. when tested in accordance with ASTM D711, except the wet film thickness shall be 12.5 ± 0.5 mils. The applied film shall be immediately placed in a laboratory drying chamber maintaining the relative humidity of 65 ± 3%, the temperature 73.5 ± 3.5°F (23 ± 2°C), and air flow less than one foot (1') per minute.	12max.	12max.
Drying Time, Dry-through, Minutes	120max.	120max.

max. when tested in accordance with ASTM 1640, except the wet film thickness shall be 12.5 ± 0.5 mils. The applied film shall be immediately placed in a laboratory drying chamber maintaining the relative humidity at 90 ± 3%, and the temperature 23 ± 2°C. The pressure exerted will be the minimum needed to maintain contact between the thumb and film. A reference-control paint will be run in conjunction with the candidate paint. Rohm and Haas formulation will be referenced-control paint.

Note 4: If either the candidate or reference-control paint exceeds the 120 minute maximum, then the candidate paint shall not exceed the dry time of the reference-control paint by more than 15 minutes.

Field Drying Time, Track-Free, minutes max. 2 2
When applied under the following conditions, the line shall show no visual tracking when viewed from 50 feet after driving a passenger vehicle over the line at a speed of 25-35 mph:
Fifteen mils wet film thickness
Six lbs. of glass beads per gal. of paint
Paint temperature at nozzle between 70 to 120°F
Pavement dry, pavement temperature 50 to 120°F
Relative humidity of 85% maximum

Directional Reflectance, minimum. 85 50
when applied at a wet film thickness of 15 mils and when tested in accordance with ASTM E 1347 (Illuminate C 2°)

pH, minimum. 9.80 9.80
when tested in accordance with ASTM E70

Dry Opacity, Contrast ratio, min. 0.955 0.880
when applied at a wet film thickness of 6 to 7 mils and when tested in accordance with FTMS 141c (Method 4121 Illuminate C 2°)

Volatile Organic Content (VOC), max. 115 g/liter 115 g/liter
in accordance with ASTM D 3960

Flash Point, closed cup, min. 115°F 115°F

Color: The paint shall meet the color specification limits and luminance factors listed in Tables 1 & 2 when tested in accordance with ASTM E1347 or ASTM E1349. The paint shall not discolor in sunlight and shall maintain the colors and luminance factors throughout the life of the paint. No Bayferrox 3950, iron oxides or other color enhancers will be permitted to achieve the color chromaticity coordinates.

Table 1*

Color	Chromaticity Coordinates (corner points)								Min. Luminance Factor (Y %)
	X	Y	X	Y	X	Y	X	Y	
White	0.355	0.355	0.305	0.305	0.285	0.325	0.335	0.375	35
Yellow	0.560	0.440	0.490	0.510	0.420	0.440	0.460	0.400	25

* Daytime Color Specification Limits and Luminance Factors for Pavement Markings Material with CIE 2° Standard Observer and 45/0 (0/45) Geometry and CIE Standard Illuminant D65

Table 2**

Color	Chromaticity Coordinates (corner points)							
	1		2		3		4	
	X	Y	X	Y	X	Y	X	Y
White	0.480	0.410	0.430	0.380	0.405	0.405	0.455	0.435
Yellow	0.575	0.425	0.508	0.415	0.473	0.453	0.510	0.490

** Nighttime Color Specification Limits for Pavement Marking Retroreflective Material With CIE 2° Standard Observer, Observation Angle = 1.05°, Entrance Angle + 88.76° and CIE Standard Illuminant A.

Section 981.1 – Page 489 – Delete this section and replace with the following:

Glass beads for use with pavement marking paint shall be moisture resistant and shall meet the requirements of AASHTO M 247, Type I. The glass beads shall be without floatation properties. The glass beads shall have dual surface treatment consisting of a moisture resistant silicone treatment, and silane adherence surface treatment. The glass beads shall have a minimum of 80% true spheres. Roundness shall be tested in accordance with SD 510.

Section 983.1 – Page 499 – Delete the third sentence of the first paragraph:

Section 983.1 B – Page 499 – Delete this section in it's entirety.

Section 983.2 B – Page 500 – Delete this section in it's entirety.

Section 985.1 D – Page 506 – Delete the last two sentences of the first paragraph and replace with the following:

Vertical reinforcement shall be deformed unless otherwise noted and shall conform to the requirements of ASTM A 615/AASHTO M 31 Grade 60 (400). Circular ties, stirrups, and spiral reinforcing may be fabricated from deformed bars conforming to the requirements of ASTM A 615/AASHTO M31 Grade 60 (400). Spiral reinforcing may also be fabricated from cold drawn wire conforming to ASTM A 82 or hot rolled plain bars conforming to ASTM A 615/AASHTO M 31 Grade 60 (400).

Section 985.1 G.4 – Page 508 – Delete the first sentence and replace with the following:

Conductor insulation shall be colored in accordance with ICEA S-95-658, Method 1, Table K-2.

Section 985.1 G.5 – Page 508 – Delete the first sentence and replace with the following:

Jackets shall be polyvinyl chloride meeting UL requirements for Class 12 jackets and ICEA S-95-658, Section 4.

Section 985.1 I.1.b – Page 508-509 – Delete the last sentence in the paragraph:

Section 985.1 N – Page 514 – Delete the second sentence in the fifth paragraph and replace with the following:

The flash control circuit shall ensure that remote transfer to flashing from normal stop and go operations occurs during the end of the mainline green interval in the cycle.

Section 985.1 N.1 and 2 – Page 515 – Delete these two sections and replace with the following sentence:

The controller furnished shall meet current NEMA TS2 standards for controllers.

Section 985.1 Q.7 – Page 516 – Delete and replace with the following:

7. Backplates for Signal Heads: Unless otherwise stated on the plans, backplates may be either 0.050 inch (1.27 mm) thick aluminum or 0.125 inch (3.18 mm) thick polycarbonate. The polycarbonate backplates must be made up from no more than two pieces.

Section 990.1 – Page 517 – Add the following to this section:

G. High Density Polyethylene Pipe: High Density Polyethylene pipe, couplings, and fittings shall conform to the requirements of AASHTO M 294.

Section 990.1 A.2.a – Page 517 – Delete and replace with the following:

a. Portland cement shall conform to Section 750.

Section 990.1 A.2.h – Page 517 – Delete and replace with the following:

h. Flexible watertight gaskets shall conform to AASHTO M 198.

Section 990.1 A.3 – Page 517 – Delete and replace with the following:

3. **Concrete:** The concrete in special sections shall have a minimum compressive strength of 4000 psi (28 MPa). Special sections are those sections of concrete pipe not covered by the class requirement of AASHTO M 170, M 206, or M 207. The strength shall be determined by test cylinders or by cores.

Section 1010.1 A – Page 519 – Add the following to the end of the first paragraph:

Bar reinforcement shall be deformed, unless otherwise noted.

Section 1010.1 C – Page 519 – Delete the second paragraph and replace with the following:

Dowel bars for concrete pavements shall be epoxy coated and shall conform to AASHTO M 254 Type B except the film thickness shall be from 5 to 12 mils (0.13 to 0.30 mm) after cure. The steel cores shall be plain round bars conforming to AASHTO M 31 Grade 40 or 60, M 227 Grade 70 minimum, or M 255 Grade 75 minimum. The bars shall be the diameter shown in the plans, free from burring or other deformation restricting slippage in the concrete.

Section 1010.1 C – Page 519 – Add the following sentence after the first sentence of the third paragraph:

The cut ends do not have to be coated.

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STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
PRICE SCHEDULE FOR MISCELLANEOUS ITEMS

SEPTEMBER 26, 2013

The following unit bid prices have been established by the Transportation Commission. These prices will be pre-entered on the Bid Schedule sheets for each project or will establish a standard price to be used whenever no project contract unit price exists for that item.

Each unit price listed is considered full compensation for the cost of labor, material, and equipment to provide the item of work and/or material, complete in place, including (but not limited to) royalty, waste of unsuitable materials, equipment rental, overhead, profit, and incidentals.

Items specified in this document may be paid for on progressive estimates without the benefit of a prior approved Construction Change Order.

Use the equivalent metric unit prices that are listed in parenthesis below the item prices on metric projects.

Specification Section Number	Specification Section Name	Item Name	Price Per Item
5.8	Construction Stakes, Lines and Grades	Three-Man Survey Crew	$160.00/hour
7.7	Public Convenience and Safety	Water	$15.00/M.Gal ($3.96/cubic meter)
9.3	Payment for extra haul of Materials	Extra Haul	$0.15/ton mile ($0.10/mton kilometer)
120.5 A.4.	Roadway and Drainage Exc. & Emb.	Unclassified Excavation Digouts	$8.00/cu.yd. ($10.46/cubic meter)
120.5 G.	Roadway and Drainage Exc. & Emb.	Extra Haul	$0.05/cu.yd. station ($ 2.14/cubic meter station)

120.5 H	Roadway and Drainage Exc. & Emb.	Water for Embankment	$15.00/M.Gal ($3.96/cubic meter)
421.5	Undercutting Pipe & Plate Pipe	Undercutting Culverts	$12.00/cu. yd. ($15.69/cubic meter)
510.5 D.	Timber, Prestressed, and Steel Piles	Timber Pile Splice	$550.00/each
		Steel Pile Splices (* All Weights)	Splice made after one of the pieces has been driven.
		8 HP* (HP 200)	$220.00/each
		10 HP* (HP 250)	$300.00/each
		12 HP* (HP 300)	$360.00/each
		14 HP* (HP 350)	$420.00/each
			Splice made before either of the pieces has been driven.
		8 HP* (HP 200)	$105.00/each
		10 HP* (HP 250)	$125.00/each
		12 HP* (HP 300)	$140.00/each
		14 HP* (HP 350)	$160.00/each
510.5 E	Timber, Prestressed, and Steel Piles	Pile Shoes (Timber Pile)	$110.00/each
510.5.H	Timber, Prestressed, and Steel Piles	Pile Tip Reinforcement (Steel Pile)	
		10” (250mm) HP Tip Reinforced	$120.00/each
		12” (300 mm) HP Tip Reinforced	$140.00/each
		14” (350 mm) HP Tip Reinforced	$170.00/each
601.5	Haul Roads	Granular Material	$12.00/ton ($13.22/mton)

601.5	Haul Roads	Asphalt Concrete (including asphalt)	$80.00/ton ($88.18/mton)
601.5	Haul Roads	Cover Aggregate	$25.00/ton ($27.56/mton)
601.5	Haul Roads	Asphalt for Prime	$700.00/ton ($771.00/mton)
601.5	Haul Roads	Asphalt (Tack, Flush & Surface Treatment)	$450.00/ton ($496.00/mton)
601.5	Haul Roads	Water	$15.00/M.Gal ($3.96/cubic meter)
601.5	Haul Roads	Dust Control Chlorides	$0.35/lb ($.77/kg)
634.5	Traffic Control	Flagging	$23.55/hour
634.5	Traffic Control	Pilot Car	$39.62/hour

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