CHAPTER 3 MATERIALS

TABLE OF CONTENTS

SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION MATERIALS MANUAL

The Materials Manual is the publication for certification requirements, testing requirements, testing frequencies and testing procedures used by the department for projects. Plan notes and Special Provisions may also determine additional and/or modified requirements or procedures. Materials Manuals may be purchased from the Department by contacting the certification office. Upon purchasing the manual, the holder will be furnished with a set of revisions any time a revision is published which usually happens once a year.

ADMINISTRATION OF MATERIALS CERTIFICATION AND TESTING PROCEDURES

Reviewing Plans

Based on a review of the project plans, the Certification Engineer prepares a DOT-14 which is generated from the Materials Sampling and Testing system (MS&T). The DOT-14 is a compilation of the sampling, testing and certification requirements for each contract and the frequency at which they need to be obtained.

DOT-14 Attachment 1

Building the DOT-14

Requirements on the DOT-14 come from the Minimum Sample and Test Requirements (MSTR) section of the Materials Manual with the exception of materials used in bid items not previously used by the Department (something that is totally new). In that case, the specifications are usually provided in the plans and/or special provisions for that work. The DOT-14 is accessible on the computer at all region/area offices. Hard copy of the DOT-14 can be printed at any of these locations.

Copies of the DOT-14 can be made available to the contractor at the discretion of the Area/Project Engineer. The DOT-14 is a working document and is subject to change due to construction change orders, shop drawings and apparent omissions which may occur without notice. While a reasonably accurate review has been made of all dimensions and of compliance with contract plans and specifications, any corrections, comments or omissions of corrections and comments on the DOT-14 do not relieve the Contractor of their responsibility of complying with the requirements of said contract plans and specifications including changes which have received prior approval by the Engineer.

Certification and Testing Requirements

The entire process outlined herein for certification and testing of materials is used in conjunction with the MS&T system. Nearly all of the forms used by field personnel are automated within the system. Copies of other forms not automated within MS&T can be obtained from the region/area office. All field test data will be loaded electronically. Sample data sheets will be prepared within MS&T. The system will assign a sample/cert ID number for all materials and the data will be updated on the DOT-14 electronically. When the work begins on the project, copies of all certification documents (certificates of compliance, certified mill test reports) received from the Contractor must be forwarded to the Certification Engineer as they are received. Submittal of certification documents will require the preparation of a cover letter

indicating what documents are enclosed so that compliance to specification can be determined. Letters for each material item selected by the Engineer can be printed from MS&T for submittal. If all materials in the submittal meet applicable specifications, the Certification Engineer approves the documentation and inputs a date on the DOT-14 that indicates to the field personnel the item met specifications. If there is a deviation or the submittal is incomplete a letter is drafted to the Project Engineer, indicating what was missing or what is out of specification.

Cover Letter Attachment 2
Yellow Deviation Letter Attachment 3

The number of tests is updated each time a new test is entered and prepared. The number of certificates of compliance is updated each time an approved supplier cert is added to the system or the certification office approves a cert provided from a source not on the approved products list. Testing forms for materials tested in the field do not need to be forwarded to the Certification Engineer.

Samples of materials which cannot be tested in the field (liquid asphalt, air entraining agent, water reducing agent, cement, curing compound, quality tests for aggregates) must be obtained and forwarded to the Central Testing Laboratory for testing. Each sample must be accompanied by a DOT-1 (Sample Data Sheet) and may require a DOT-2 (Submittal Envelope). The DOT-1 should identify the material, its intended use, project number, PCN, county, sample number, by whom submitted and to whom the results should be reported.

A copy of the certificate of compliance received from the Contractor for the material represented by the sample along with the cert ID number should accompany the DOT-1 which is sent with the sample to the Central Testing Laboratory in Pierre. The DOT-1's and cert ID's are created in MS&T.

DOT-1 Attachment 4
DOT-2 Envelope Attachment 5
Certificate of Compliance. Attachment 6

Note: A tabulation of the visual inspection requirements can be printed out and used as a checklist to keep track of what documentation has or has not been made.

Summary of Visual Inspection Requirements. Attachment 7

Each material has a specific container in which samples should be placed. The type of container can be found in the MSTR under the applicable material to be sampled. These containers may be obtained from the Region Materials Engineer.

See materials manual MSTR section for “Minimum Sample Sizes” - Granular Materials Samples shall meet the minimum defined sample size requirements for the applicable material - and all other samples submitted in the various types of containers defined above must consist of 2 containers for each sample.

Umbrella Certification

Umbrella certification is another process used for materials certification which is defined in the Materials Manual Required Sample, Tests and Certificates (RSTC) Section 6. This process takes precedence over other guidelines provided in reference to materials certification for the following areas of work:

Guardrail Systems
Roadway Lighting/Signals/Traffic Control
Permanent Signing Materials
Chain Link Fencing Systems
Bridge Drains

When the above items of work are included in a contract, the Contractor is not required to furnish copies of the Certified Mill Test reports for each component used in the assembly. He merely furnishes the Inspector with a completed copy of a DOT-99 when the work begins. The heading of the form shall be filled out and the body must include a tabulation of the components used to include: Item size & description for each, manufacturer for each, and heat or lot number for each. The items of work involved are the types frequently performed by a Subcontractor. When they are of this variety, the Subcontractor can prepare the DOT-99 but it is the responsibility of the Prime Contractor to sign the form.

DOT-99 Attachment 8

When the Inspector receives the DOT-99 they should review it to ascertain that all components listed on the DOT-14 for that bid item are included in the component tabulation. All components for an assembly which have certification/testing requirements are listed under the bid item on the DOT-14. If all components have not been listed on the DOT-99 the Inspector should take it back to the Contractor and have him provide the missing information as an incomplete DOT-99 cannot be accepted. After the form is complete, it must be forwarded to the Certification Engineer who will verify that all components and the corresponding information required for each have been provided and will make the necessary updates on the DOT-14.

The Contractor is required to keep the original documents (mill tests, etc.) in the file at their office. The office of Operations will randomly select a percentage of the projects with umbrella certification on an annual basis for an audit to verify the Contractor is maintaining the proper paperwork. This audit will be conducted at the Contractor’s office.

The umbrella certification process does not relieve the Inspector of their responsibility to provide the visual Inspection and corresponding documentation of the materials used in the various systems as required for acceptance in the MSTR section of the materials manual.

The Project Engineer must be aware of the supplemental specifications and errata that are also a part of the proposal for every project. These supplemental specifications reflect changes made to the standard specifications since it was published in July of 2015.

The Project Engineer must be aware of the fact that most fabricated systems (lighting structures, bridge rail, structural steel etc.) require submittal of a set of shop drawings before the system is fabricated. These shop drawings must be approved by central office personnel

before the system can be fabricated or installed. Standard Specifications or plan notes will normally point out the requirement for these shop drawings.

Tier System

All materials that have a certification or testing requirement have a "Tier" associated with it. Each material is labeled with the applicable tier on the DOT-14. The tier system is defined in the (RSTC) Section 6 and the following describes what the tiers are and what they should mean to the Project Engineer or Inspector.

a. Tier 1 Materials: A material that is critical to safety or costly to replace – the Department will allow the Contractor to install these materials only after they furnishes the documents specified under the heading "Certification" in the MSTR section of the materials manual and the Certification Engineer advises the materials conform to the specifications. Payment for a Tier 1 material is made only after it has been installed.

b. Tier 2 Materials: The Department will allow the contractor to install a Tier 2 material only after they furnishes the documents specified under the heading "Certification" in the MSTR section of the materials manual or the Contractor uses a material listed on the "Approved Products List" or furnished by a "Certified Supplier". Payment for a Tier 2 material is made only after it has been installed.

c. Tier 3 Materials: Materials that have no requirements under the heading "Certification" in the MSTR section of the materials manual. Many of them do, however, have a requirement for visual inspection for acceptance. The Contractor may install a Tier 3 material at any time and the Department will make payment only after it is installed.

Approved Products List / Plans Products List

The Approved Products List is developed and maintained by the Certification Engineer. The list is a summary of all products that have been approved for use on construction projects by the Department. This list is available on the Internet at dot.sd.gov and is accessible under Doing Business/Certification & Accreditation/Approved Products/Approved Products.

The Plan Products List is an account of acceptable products not found on the Approved Products List. The list is a summary of products which have been approved by the Department for use on certain construction projects for specific items defined in the plans.

These products can be used without furnishing a certificate of compliance unless otherwise specified by specifications or plans. The inspector must however provide verification to the certification office what the product designation is and who manufactured the product. This can be done by either furnishing a certificate of compliance or picking the approved product / plan product in MS&T after creating the cert ID.

Approved Products Index Attachment 9
Approved Products List Attachment 10

Addressing Deviations and/or Deficiencies

If there is a deviation, the Area Engineer should be alerted, so a determination can be made whether the material must be corrected, replaced or if a DOT-18 must be prepared. This is applicable to both certification data and tests of material performed on the project. A deviation summary list is can be generated thru MS&T. It details the bid item, failing results, action taken and determination for the issues.

DOT-18 Attachment 11
Specification Deviation Summary Attachment 12

MATERIALS TESTING & INSPECTION CERTIFICATION PROGRAM

Requirements

This program is mandated by the Federal Highway Administration per 23 CFR 637 Subpart B. It requires that all individuals performing acceptance testing and independent assurance testing or inspection shall be certified, and that all testing equipment used for this testing be calibrated at a specified frequency. South Dakota Standard Specifications further mandate anyone doing inspection shall also be certified.

Areas of Expertise

The program applies to highway construction on all highway systems plus all informal/maintenance projects that require inspection as determined by the Region Engineer or Region Materials Engineer. The calibration records for the equipment must be readily available for review upon request by FHWA (for DOT equipment) and by FHWA or DOT (for consultant equipment).

Areas Included:

Testing	Inspection
Soils	Concrete Paving
Aggregates	Concrete Plants
Concrete Materials (ACI)	Earthwork/Erosion Control/Pipe Installation
Asphalt Materials (QC/QA)	Structures
	Asphalt (QC/QA)
	Erosion & Sediment Control

The soils & aggregate testing and concrete paving, concrete plants, earthwork & structures courses are sponsored and conducted by the Department of Transportation. The scheduling of these courses is handled by the certification office in conjunction with the Bureau of Human Resources (BHR)-Training Activity, and anyone wishing to attend one must register through that office (bhr.sd.gov/employees/individual-training). The fees for this certification and registration can be obtained by contacting BHR-Training Activity, The fees include the course manual except for Soils and Aggregates which does not have a manual; a SDDOT Materials Manual is required to take this course. The certification for each of these courses is good for 4 years.

Anyone certified in these areas became certified initially by completing the certification course. In lieu of attending the course to recertify after 4 years, there is an option of testing out. This means they can take the course examination and if they achieve a minimum score of

70% they will be certified for another 4 years. The test-out option may not be used to recertify for more than one successive 4 year certification period. The test-out option must be alternated with completion of the course on a 4 year basis.

The Erosion & Sediment Control Course is conducted by representatives designated by the BHR office. BHR handles the registration and sets the fees for this certification which includes a copy of the course manual. Certification for each level of this course is good for 3 years. Certification for this area can only be achieved by attending the course and successfully passing the exam every 3 years. Testing out is not an option.

The Asphalt QC/QA Program consists of the following levels: Introduction to Asphalt Concrete (strongly recommended but not mandatory), Asphalt Concrete Aggregate Testing, Asphalt Concrete Hot Mix Testing, Asphalt Concrete Roadway Inspection and Asphalt Concrete Mix Design & Production Control. These certification courses are scheduled and conducted through Dakota Asphalt Pavement Association (DAPA) (www.dakota-asphalt.org). DAPA handles the registration and sets the fees for this certification which includes a copy of the course manual. Certification for each of these levels is good for 4 years. The candidate must attend the certification course every four (4) years or attend the certification course and the recertification course on an alternating basis every four (4) years

The ACI certification course addresses the field tests for concrete. This course is scheduled by the certification office and conducted by SD Ready Mixed Concrete Association (SDRMCA). The fees are set by SDRMCA/ACI and registration done through the SDRMCA website (www.sdrmca.org). The fees include a copy of the ACI Workbook used during the course. Certification for this course is good for 5 years. Recertification can be achieved only by attending the course.

Personnel who complete the various certification workshops receive a wallet card provided by the department annually (around May 1st). The wallet card shows the certification an individual has completed and includes the expiration date for each subject. The wallet card should be retained by the certified individual as proof of their certification. Although ACI and Asphalt QC/QA certification are not sponsored or conducted by the Department of Transportation, the wallet cards will include records of this certification.

The materials testing & inspection certification program includes provisions for disciplinary action – revocation or suspension of certification for just cause. This action is administered by the Oversight Committee which includes a variety of people from the DOT and contracting agencies.

Seasonal and/or temporary people may be used for inspection/testing in accordance with the guidelines provided in the program manual for these people as shown below:

Requirements for Temporary & Seasonal Personnel for Testing:

a) Shall obtain a copy of the test procedure(s) and become familiar with them.
b) Shall observe a certified technician perform the test procedure.
c) Shall perform the test procedure until proficiency is obtained.
d) Shall demonstrate the test procedure to a certified technician. The certified technician shall use the performance checklist for the test being demonstrated to ascertain all steps

are performed correctly. This document shall be retained as verification of successful demonstration of the procedure

e) Shall have a copy of the applicable test procedure available during the demonstration testing and while testing material on the project.

f) Shall work on the same project under direct supervision of an individual certified in that area of testing.

Performance checklist example Attachment 13

Requirements for Temporary & Seasonal Personnel for Inspection:

a) An individual's qualifications (training, education, and experience) will be considered in determining their ability to provide proper inspection in a particular area.

b) The individual must work on the same project under direct supervision of an inspector certified in that inspection area.

c) The certified inspector will determine whether the temporary or seasonal person is qualified for a particular area of inspection.

d) The Individual shall review the applicable Training Manual and have it available for use on the project.

e) Temporary or seasonal personnel will not be required to take any of the inspection certification courses.

Direct Supervision:

a) Materials Testing-A non-certified individual may perform tests or portions of tests only under direct observation of a certified technician until such time the non-certified technician demonstrates they can consistently perform the test or portion thereof in accordance with the outlined procedures. From that point on, the non-certified individual can perform the test or portion thereof whether or not a certified technician is physically present at the test site. The certified technician is however required to spend time at the project/laboratory on a daily basis. The certified technician assumes all responsibility for the accuracy of the test data and signifies so by placing their initials on the worksheet as the checker.

b) Inspection-A non-certified individual may perform inspection of a phase of work only under the direct observation of a certified technician until such time the non-certified individual demonstrates a thorough understanding and knowledge of the requirements and procedures for that phase of work. From that point on, the non-certified individual may inspect that phase of work whether or not a certified technician is physically present on the project. The certified technician shall however spend time on the project on a daily basis. The certified technician assumes all responsibility for the accuracy of the documentation provided and shall place his/her initials on the document to verify review and approval.

The procedure to be followed in evaluating and documenting proficiency of testing and inspection for seasonal or temporary personnel shall be in accordance with the provisions of the program manual.

Performance checklists for the testing procedures can be found at U:\ms\Certification Accreditation\Accreditation - Public Folder\Performance Checklists. A checklist shall be prepared and attached to the training & evaluation record form for each testing procedure a seasonal/temporary employee demonstrates proficiency in.

Training and Evaluation Record form Attachment 14

There are no performance checklists for the inspection areas. The seasonal/temporary shall at all times possess a copy of the most current training manual in the area in which they are providing inspection in. The individual providing the direct supervision must use their judgment in determining when proficiency in a particular area is achieved. This must also be documented on a training & evaluation record form.

The performance checklists and training & evaluation record forms shall be available in the laboratory in which a seasonal/temporary is performing tests and the training and evaluation record form for inspection must be available somewhere on the project for review on request by FHWA, DOT or other authorized personnel.

The above referenced data for department seasonal/temporary personnel must be available for review at the local area office. The Materials Testing & Inspection Certification Program Manual is accessible on the Internet at dot.sd.gov and is located under Doing Business / Certification & Accreditation Manuals & Documents.

Summary of Requirements for Tests and Certs

DOT - 14

Contract: 4993 **Date Let:** 04/15/2015

PCN: 0367 (Main) Related PCN 04W8

Project(s): NH 0281(110)105 (Main) Related Projects NH 0281(109)145

County: Beadle, Jerauld, Spink

Location: US281 - Fm the Jerauld/Beadle County Line to the south Jct. with US14

Type of Work: Asphalt Concrete Resurfacing, Culvert Repair, Signing, & Guardrail

Contractor: ASPHALT PAVING & MATERIALS CO **Length:** 12.070 miles

Engineer: Nathan Stearns **Area:** Huron Area

Material	Quantity	Unit	Reqd	Made		Requirement
260 Base Course (Tier 3)	1,583.6	TON				
Base Course (No Density as per CCO #1) (Tier 3)	1583/50000 = 1		1	1		Central Lab Test for Quality
	1583/15000 = 1		1	1		Sieve Analysis for Independent Assurance - None req'd if less than 1,000 tons
	1583/3000 = 1		1	1		Sieve Analysis for Acceptance
320 PG 64-28 Asphalt Binder (Tier 2)	2,483.0	TON				
	2483/200 = 13		13	15	U	Central Lab Test for Acceptance
			1	1		Central Lab Test for Independent Assurance - One per project (Not req'd if less than 100 ton)
			13	16		Cert of Compliance per Convey for Certification
320 Class Q3 Hot Mixed Asphalt Concrete	44,782.0	Ton				
			1	21		Asphalt Binder Content for Acceptance - One per day
	21858/1000 = 22		22	22		In-Place Density (Gyratory) for Quality Assurance - Specified Density on 21,858 tons.
			3	3		In-Place Density (Gyratory) for Independent Assurance - One within first 5,000 tons and then one per 15,000 tons thereafter. Specified Density on 21,858 tons.
			1	21		Lime Content for Acceptance - One per day (If Used)
	44782/10000 = 5		5	5		Moisture Content for Acceptance
	44782/5000 = 9		9	9		Standard Density (Gyratory) for Quality Assurance
	44782/1000 = 45		45	45		Standard Density (Gyratory) for Quality Control
	44782/15000 = 3		3	3		Standard Density (Gyratory) for Independent Assurance - Specified density on 21,858 tons of Q3 hot mixed asphalt .
AGGREGATE COMPOSITE (Tier 3)	44782/50000 = 1		1	1		Central Lab Test for Quality
	44782/15000 = 3		3	3		Sieve Analysis (Gyratory) for Independent Assurance
	44782/5000 = 9		9	9		Sieve Analysis (Gyratory) for Quality Assurance
	44782/1000 = 45		45	45		Sieve Analysis (Gyratory) for Quality Control - ROF Letter on File (JLS)

Attachment #1

NOTE: Based on CCO's, approved shop drawings & apparent omissions the requirements of this DOT-14 are subject to change.

* = number of requirements cannot be determined at this time, please check comments for additional instructions.

Department Of Transportation
Rapid City Area Office
2300 Eglin Street
P.O. Box 1970
Rapid City, SD 57709-1970 605/394-2248
Fax: 605/394-1904

Contract: 4580 **DATE:** 08/10/2015

PCN: 01KK

Project: IM 0901(148)40

County: Meade

Work: Grading, Asphalt Concrete Surfacing, Structures, & Permanent Signing

To: Certification Engineer
700 E. Broadway
Ave.
Rm 141
Pierre, SD 57501

ITEM(S) ATTACHED

Cert Group Id: 77796

Cert Id	Description	Date Submitted	Submitted By
233987	#18 Reinforcing steel	4/22/2015	Lindsley, Lee

SPEC 510 - Micropile
Material Group: #18 REINFORCING STEEL (A-615 Gr. 75)
Approved Product: - -
Requirement Type: Mill Test or Cert Fabricator **Purpose:** Certification

233992	Micropile 9-5/8 x 0.472 Permanent casing	4/22/2015	Lindsley, Lee

SPEC 510 - Micropile
Material Group: 9 5/8 x 0.472" (API-N80 Special Provision specs) PERMANENT CASING/PIPE
Approved Product: - -
Requirement Type: Mill Test **Purpose:** Certification

The above certification(s) submitted for approval by:

Harry Johnston

cc: Certification Engineer
File

Department of Transportation
Division of Planning/Engineering
Office of Materials and Surfacing
700 E Broadway Avenue
Pierre, South Dakota 57501-2586 605/773-3401
FAX: 605/773-5867

August 19, 2015

Rory Heizelman
Engineer II
Custer, SD

File No. 14.2

Re: Cert Group ID # 78906

BRF 0040(10)32 **PCN: 01RA**
Bridge Deck Overlay, Joint Modification,
Abutment Repair and Epoxy Deck Seals

Dear Rory,

This office acknowledges receipt of the following certification submitted by you dated February 25, 2014.

A. Certified Mill Test for Extra Work involving Guardrail Modifications using a ¾" A307 bolt.

Deviation: The product data indicates the bolt has been galvanized as per ASTM F1941 (ASTM F2329 required). Also, the data sheet provided by Fastenal does not include a statement of manufacturing origin. As per section 6.9 of the Standard Specifications for Roads and Bridges: A statement shall be included on the Certificate of Compliance stating whether the iron or steel is of domestic or foreign origin. Furthermore product data sheets are not acceptable forms of certification. Please provide this office with your basis of acceptance/non-acceptance of this material.

Note: As per section 6.9 of the Standard Specifications for Roads and Bridges: Minor quantities of foreign iron or steel, and coatings, may be incorporated provided their cost does not exceed 0.1 percent of the total contract amount or $2,500, whichever is greater. Since the product data sheet does not include a statement of origin it is considered foreign.

Yours truly,
DEPARTMENT OF TRANSPORTATION

Jerry Schaefer
Certification Engineer

Kelly Hudecek
Transportation Specialist

cc: Region Materials Engineer

Attachment #3

Sample ID

File No.

Sample Data Sheet

DOT-1
9-14

Laboratory Test No. _____

County _____ PCN/PROJECT _____

SUBMITTED BY _____ PROJECT ENGINEER _____

SEND RESULTS TO _____

CONTRACTOR _____ SUB-CONTRACTOR _____

CHARGE TO (If not above project) _____ SUPPLIER _____

This is a _____ sample. MATERIAL TYPE _____

FIELD SAMPLE NO. _____ DATE SAMPLED _____ TIME SAMPLED _____

THIS SAMPLE REPRESENTS _____ (quantity & unit of measurement)

Please identify as: Sta. _____ Dist. L/R _____ Lift _____ / _____

Certification ID: _____

FOR CONCRETE	Type	Lot No.			MISCELLANEOUS	Type	Lot No.
◯ cement			Crushed Rock	%	◯ beads		
◯ admixture			Sand	%	◯ paint		
◯ latex modifier			Lime	%	◯ asphalt		
◯ curing compound			Gravel	%	sampling method		
◯ coarse agg., size			Filler	%	◯ fencing material (list under remarks)		
◯ fine agg.			Coated Aggregate	%	◯		
◯ cylinders			Clay	%			

If material is to be used for CONCRETE, check its use as follows:

◯ On Grading ◯ On Bridge ◯ Paving ◯ Class ◯ Other

If material is to be used for SURFACE COURSES, check its use as follows:

◯ Base Coarse, Type	◯ Treated	◯ Subbase, Type
◯ Asph. Conc., Class/Type	◯ Asph. Surf. Treatment, Type	◯ Gravel Surfacing
◯ Maintenance Stockpile	◯ Miscellaneous	◯ Shoulders

Use Description: _____

FOR SHIPPED IN MATERIAL: Producer's Name & Address _____

Brand, Trade Name or Quarry _____

FOR LOCAL MATERIAL: Location of Pit or Quarrry _____ 1/4 Sec. _____

_____ Twp. _____ Range, _____ County Owner & Address _____

Shipping Ticket No. _____ Truck or Car No. _____ Unloaded at _____

Remarks:

Attachment #4

FROM

_____

_____

TO

SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

_____ LABORATORY

_____, SOUTH DAKOTA

_____

(Zip Code)

DOT-2 (1/84)

SAMPLE DATA

COUNTY _____ **PCN/PROJECT** _____

ACCEPTANCE, IAS, PRELIMINARY _____
(Circle appropriate test type) (or other)

SAMPLE OF _____ TO BE USED FOR _____
(aggregate, soil, or other)

PIT OR
PRODUCER _____ DEPTH _____

STATION OR
LOCATION _____ DISTANCE FROM
CENTERLINE _____

FIELD
NUMBER _____ HOLE
NUMBER _____ LABORATORY
NUMBER _____

DATE
MADE _____ **BREAK**
DATE _____ **AGE** _____

REMARKS:

FLINT HILLS resources

238174

Bill of Lading

Shippers BOL No.	Revision
190021627	2
Ship Date:	08/21/2015

EMERGENCY CONTACT: CHEMTREC (CCN 8586) 1-800-424-9300
SHIPPER/OFFEROR: FLINT HILLS RESOURCES PINE BEND, LLC

RECEIVED in apparent good order, exceptions noted and subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper upon request.

NON-RECOURSE: if this shipment is to be delivered to the consignee without recourse on Flint Hills Resources, the carrier may decline to make delivery of this shipment without payment of freight and lawful charges. Signature: FLINT HILLS RESOURCES, LP and affiliates.

If the cargo tank for the shipment is supplied by the Carrier, Carrier certifies that the cargo tank is a proper container for the transportation of this commodity. Carrier acknowledges that it has, or has been offered and accepted the required hazardous materials placards and emergency response information.

Signature of Carrier _____ Signed 08/21/2015 05:22

Origin	Customer/Consignee/Sold To	Destination/Ship To
FHR PINE BEND, LLC 901 NORTH SEVENTH ST MARSHALL, MN 56258 507-532-9607	MCLAUGHLIN & SCHULZ INC PO BOX 201 MARSHALL, MN 56258	VAR ROBERTS COUNTY SD OVARIOUS, SD N/A

Agreement	Customer PO	Carrier	Freight Paid By	
6431822		943 - KANE TRANSPORT, INC.		
Truck	**Trailer**	**Driver**	**Load Time**	
00803	00134	00422 - BROCKMAN, JIM	In 04:23	Out 05:20

HM	Package	Proper Shipping Description Product Description SDS Classification	Temp (F) SpGr@60F LBS/GAL@60F	Gross GAL Net GAL@60F	Gross LBS Tare LBS
	1-T/T	NON-REGULATED BY DOT	179	6498	78420
		CRS-2P	1.015	6232	25740
		CATIONIC RAPID SET ASPHALT EMULSION	8.453		
				NET WT (LBS)	52680
				(TON)	26.34

Last Load:css1hd50
Tank ID:54/62

Bay:7
Sample ID:25212/25285

Batch ID:140/142

Notes:

Project Notes:
Codington & Clark Co, SD

Certifications:
Flint Hills Resources, LP (FHR) certifies that the product provided under this bill of lading meets the applicable South Dakota product specification criteria based on sampling and testing in accordance with FHR's Agency Quality Control Plan as most recently submitted to such State (SD). Signature: Flint Hills Resources, LP

12A/12B
8-21-15
mt

Specific Gravity and weight per gallon can vary throughout the processes of manufacturing, shipping and handling. The values provided are based on a historical average for the product supplied. These commodities, technology, or software were shipped from the United States in accordance with the Export Administration Regulations. Diversion contrary to U.S. law is prohibited.

To request a current SDS in non-emergency situations, please call 316-828-7988

Attachment #6

SD Department of Transportation
Visual Inspection Summary

Contract: 4830 **Date Let:** 02/04/2015
PCN: 03RU (Main)
Project(s): P 0044(175)348 (Main)

County: Hutchinson
Location: SD44 - FM the Jct. with SD37 to the James River

Type of Work: Asphalt Concrete Resurfacing

Contractor: SPENCER QUARRIES INCORPORATED **Length:** 13.980 miles
Engineer: Greg Putnam **Area:** Yankton Area

320 Asphalt Concrete Composite — Quantity: 296.000 — Unit: Ton — Inspections Required = 1

332 Placing Cold Milled Material — Quantity: 7,510.000 — Unit: Ton — Inspections Required = 1

Placing Cold Milled Material

Inspected By: Greg Putnam
Inspected Date: 07/20/2015
Inspection: The millings were placed as per typical sections and all gradations of the material passed specifications. Meets State Specifications. No deviations.

629 3 Cable Guardrail — Quantity: 414.000 — Unit: Ft — Inspections Required = 1

CABLE (3/4" 3X7)

Inspected By: Greg Putnam
Inspected Date: 07/28/2015
Inspection: Cable used was 3/4" diameter and in good condition. Meets State specifications. No deviations.

629 3 Cable Guardrail — Quantity: 414.000 — Unit: Ft — Inspections Required = 1

I STEEL POST (S3x5.7)

Inspected By: Greg Putnam
Inspected Date: 07/28/2015
Inspection: Posts were 2'4" long had a 5" x 4" slip base and a 3/4" metal keeper. Posts were in good condition. Meet State specifications. No deviations.

629 3 Cable Guardrail — Quantity: 414.000 — Unit: Ft — Inspections Required = 1

FLNGD CHANNEL STEEL POST

Inspected By: Greg Putnam
Inspected Date: 07/28/2015
Inspection: The channel posts used were 3" wide x 1.75" deep and the posts were 5'3". The posts were in good condition. Meet State specifications. No deviations.

629 3 Cable Guardrail Slip Base Anchor Assembly — Quantity: 2.000 — Unit: Each — Inspections Required = 1

3/4" X 18" STEEL ROD (A-449)

Inspected By: Greg Putnam
Inspected Date: 07/28/2015
Inspection: The steel rods were 18" long and 3/4" in diameter. The steel rods were in good condition. Meet State specifications. No deviations.

629 3 Cable Guardrail Slip Base Anchor Assembly — Quantity: 2.000 — Unit: Each — Inspections Required = 1

1/2" PLATE - EXTERNAL STIFFENER

Inspected By: Greg Putnam
Inspected Date: 07/28/2015
Inspection: Plate used was 1/2" and was 3.5" x 3/5" and in good condition. Meet State specifications. No deviations.

Cert Group Id 78372
Contract 4916

DOT - 99
(09/2004)

SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

MATERIALS UMBRELLA CERTIFICATE

COUNTY Pennington PCN/PROJECT 034V IM 0902(157)94

LOCATION I90 - E & WBL Fm Appx 3.6 Mi W of Exit 98 (Wasta) to Exit 112 (US14)

CONTRACTOR BORDER STATES PAVING INC ADDRESS PO BOX 2586, FARGO, ND 58108-2586

SUBCONTRACTOR Hilt Construction, Inc. ADDRESS PO Box 9338, Rapid City, SD 57709

SUBMITTED BY Flottmeyer, Brenda

The following items or materials are for use in the construction of the above mentioned contract.

Component Description	Manufacturer	Heat or Lot Number (as Applicable)
629E0290 NCHRP 350 Test Level 3 High Tension Cable Guardrail Ancho		
1/2" PLATE	NUCOR	JWW141105ZD
1/4" (A-36) PLATE	NUCOR	AU151000090
3/4" PLATE	NUCOR	84V8705
W6 x 15	NUCOR	2504800
W6 x 8.5	Pacific	2412986
629E0300 3 Cable Guardrail Slip Base Anchor Assembly		
1/2" PLATE - EXTERNAL STIFFENER	NUCOR	AU14100234
1/2" X 2 1/2" BOLT/NUT/WSHR (A-307)	NUCOR	NF142017ZZ
1/4" PLATE	NUCOR	AU151000083
3/4" ANCHOR POST PLATE	NUCOR	AU141027946
3/4" X 18" STEEL ROD (A-449)	AMERIBOH	03178370
3/8" PLATE	KLEIN Steel	184647
CABLE ANCHOR BRACKET (1/2")	GERDAU	550370 32 10 4
S3 X 5.7 ANCHOR POST	TRINITY	2403197
629E1143 High Tension 3 Cable Guardrail Post		
S3 x 5.7 POST (A-36)	TRINITY	2403197
629E1158 High Tension 3 Cable Guardrail Post and Sleeve		
.161 (A-1011 Gr. 36) PLATE	Not USED	
1/4" (A-36) PLATE	NUCOR	AU151000090
TS 5 x 3 x 11 Ga. (A-500 Gr. B)	TRINITY	91102697
630E0010 Straight Class A Thrie Beam Guardrail with Wood Posts		
STR. CL A THRIE BEAM	TRINITY	L30815
630E0110 Straight Double Class A Thrie Beam Guardrail with Wood Po		
STR. DBL CL A THRIE BEAM GR	TRINITY	L30815
630E2000 W Beam to Thrie Beam Guardrail Transition		
W Beam to Thrie Beam Guardrail Transition	TRINITY	182999

I hereby certify that these items or materials, including all miscellaneous items required, do meet the requirements as set forth in the plans and/or specifications.

Prime Contractor's Signature	Title	Date
Joe Hilt	President	7/28/2015
Form Completed by (Please Print)	Title	Date

Note: An original copy of this certification must be furnished to the Project Engineer.

Attachment #8

Certification & Accreditation
Approved Products
Welding Certifications
Manuals & Documents

Approved Products

All Approved Products

Product Type Index

Certified Plants

List Products by Product Type
Select a Product Type
Show Products

List Products by Product Name
Select a Product Name
Show Products

List Products by Manufacturer Name
Select a Manufacturer Name
Show Products

Attachment #9

Certification & Accreditation
Approved Products
Welding Certifications
Manuals & Documents

Go Back

Printable Format

Product Type:	Silicone Joint Material & Backer Rod		
Standard Product:	Product Name:	Manufacturer:	Approval Date:
Silicone Joint Backer Rod	HBR	Nomaco ZebulonNC (800)345-7279 http://www.nomaco.com	8/19/2004
Silicone Joint Backer Rod	ITP Standard	Industrial Thermo Polymers, Ltd. Brampton, Ontaio (800)387-3847 http://www.tundrafoam.com	8/19/2004
Silicone Joint Sealant	Dow 888	Dow Corning Corp. MidlandMI (800)451-9562 http://www.dowcorning.com	8/19/2004
Silicone Joint Sealant	Roadsaver 902 / DSB 800	Crafco, Inc. ChandlerAZ (602)276-0406 http://www.crafco.com Notes: CRAFCO INC. PURCHASED DEERY AMERICAN CORP. ON DECEMBER 29, 2010	8/19/2004

Attachment #10

DOT 18
(09/2001)

REPORT OF SPECIFICATION DEVIATION

File # _____ Issue # 3

PROJECT IM 0903(90)174 COUNTY Jackson PCN 020L

CONTRACTOR Knife River Midwest,LLC AREA ENGINEER Doug Sherman

BID ITEMS AFFECTED 053P 380E1500 PCC Overlay, Furnish @ $102.11/CuYd

MATERIAL COARSE AGGREGATE

QUANTITY AFFECTED 906.0 cuyds

WORK INVOLVED

Test No.	Test	Failing Test Results	Sample Id	Test Results	Specification
38	Sieves ((11) 3/8"	sieve : 9.5 mm)	2190124	26	27 - 53

Test No.	Test	Corrective Test Results	Sample Id	Test Results	Specification
No Corrective Test Taken					

ACTION TAKEN (Attach additional sheets as necessary.)

No action taken

Test #37 taken at 32,990 cuyds
Test #38 taken at 33,999 cuyds
Test #39 taken at 34,802 cuyds

Test represents = 906.0 cuyds

It is the decision of the Region that the quality and performance of this material is such that it was accepted without correction and has been Price Adjusted.

8-20-14
AREA ENGINEER DATE

9-10-14
REGION ENGINEER DATE

The Price Adjustment is as set forth in the letter from the Region Engineer.

Copies to: Area
Region
Region Materials
Certification
Construction Management
Contractor (thru Area Engineer when Price Adjustment is involved)
FHWA (when Federal funds are involved)

Attachment #11

SD Department of Transportation
Specification Deviation Summary

Contract: 4164 **Date Let:** 03/19/2014
PCN: 020S (Main)
Project(s): BRF 6170(01) (Main)
County: Brown
Location: Structure 0.3 N & 9.4 W of Frederick over Elm River SN 07-010-070
Type of Work: Structure & Approach Grading (172' 3-Span Concrete Girder Bridge)
Contractor: Grangaard Construction **Length:** 0 miles
Engineer: Brian Rogness **Area:** Aberdeen Area

Issue Nbr: 1 **Issue Status:** Resolved **Spec Dev Status:** Final Price Adjustment **Price Adjustment Amount:** **Contract Change Order Nbr:**
Material: Traffic Control **Pay Estimate Nbr:** **Determination Date:** 09/22/2014
Bid Item(s): 036P 634E0120 Traffic Control, Miscellaneous **Affected Qty:**
Action Taken: The Prime Contractor was notified of the deficiency at 1pm on 9-13-14. The signing was reinstalled by 12pm on 9-15-14.
Determination: Lum Sum Deduction of $928.
Failing Results: Arrived on project at 12:30 pm on 9-13-14 and the subcontractor Construction Signing Corporation had removed all the traffic control signs from the project. There was equipment on the road and the bridge was not in place.

Issue Nbr: 2 **Issue Status:** Resolved **Spec Dev Status:** Final Price Adjustment **Price Adjustment Amount:** **Contract Change Order Nbr:**
Material: Class A45 Concrete, Drilled Shaft **Pay Estimate Nbr:** **Determination Date:**
Bid Item(s): 020P 465E0100 Class A45 Concrete, Drilled Shaft **Affected Qty:** 7 CuYd
Action Taken: The concrete from test #1 and test #2 were both discharged at the same time into the pump hopper at the direction of the Bridge Construction Engineer and resulted in an air content that meets specification.
Determination: Since the Bridge Construction Engineer directed the Contractor to discharge the failing concrete from Tests #1 and #2 at the same time into the pump hopper, the Area and Operations Engineers determined
that the material will be accepted in place with no adjustment in the Contract Unit Bid Price.
Failing Results:

Test Number	Deviation Item	Sampe Id	Test Results	Specifications
01(1)	Fresh Concrete Test (% Entrained Air)	2200228	9.1	5.0 - 7.5

SD DOT Aggregate Testing
Performance Checklist

SD 202 Coarse Aggregate Sieve Analysis

Name: _____ SSN/Dr. Lic. No./Emp. No.: _____

Obtain sample oven dried to a constant weight at Temperature of 230° F, ± 9° F.	explain?
Weigh sample and record the original weight to nearest 0.1 gram.	perform
Assemble a series of sieve that will furnish the information required by specification and to regulate overloading.	explain?
Agitate sieves by hand (or mechanical) for sufficient period of time – end point shall be not more than 0.5% by weight of the material on a sieve passing that sieve in 1 minute.	explain?
On each sieve, remove any dirt adhering to coarse material by rubbing with soft pine or rubber covered block, or agitate in a cement/coffee can. After dirt is removed, sample shall be sieved following above requirements.	explain?
Weigh the material retained on each sieve & pan, total and check that total is within 0.3% of the original weight.	perform
Given DOT-3 with sample weights, calculate % passing and retained for each sieve – record to the nearest 0.1%.	perform
Use the coarse material retained to conduct the balance of required testing for that material type (% Crushed Particles, Flat & Elongated or Flakiness Index, +#4 % Light Weights. Particles, Dust Check).	explain?

Equipment & Materials Needed

Material from splitting (Test Out – need + #4 Material already placed in nest of sieves listed and shook)
12" Diameter Nest of Sieves (3/4" through #4 & pan), Shaker
Electronic Scale, readable to the 0.1 gram.
Brush, cement can (cleaning off the rock)
Cut stake (tapping the sieve's ring and knocking out rocks)

Proctor Signature: _____ Date: _____ Pass ☐ Fail ☐

SDDOT MATERIAL TESTING & INSPECTION CERTIFICATION PROGRAM

Training and Evaluation Record

Seasonal or Temporary Employee Name: ______________________________

SSN/Dr. Lic. No/Emp. No.______________________________

Test Method and Inspection	Check One		Evaluated By	Title	Date	Comments
	Pass	Fail				

Revised 01/2010