

NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION
REQUEST FOR PROPOSAL
STATE AID PROJECT NO. SOIB-7-023(057)046 (PCN-22159)

2.059 Miles
MILL, HMA, & LIGHTING
4 BEARS BRIDGE TO W NEW TOWN

MOUNTRAIL COUNTY

BID OPENING: The bidder's proposal will be accepted via the Bid Express on-line bidding exchange at www.bidx.com until **09:30AM Central Time on November 09, 2018.**

Prior to submitting a Proposal, the Bidder shall complete all applicable sections and properly execute the Proposal Form in accordance with the specifications.

<p>Proposal Form of:</p> <hr/> <p>(Firm Name)</p> <hr/> <p>(Address, City, State, Zipcode)</p> <p style="text-align: right;">(For official use only)</p>

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Project: SOIB-7-023(057)046 (PCN-22159)

The company, firm, corporation, or individual hereby acknowledges that it has designated a responsible person or persons as having the authority to obligate the company, firm, or individual, through electronic or paper submittal, to the terms and conditions described herein and in the contract documents. The designated responsible person submitting this proposal shall be hereafter known as the bidder. By submitting this proposal, the bidder fully accepts and agrees to all the provisions of the proposal. The bidder also certifies that the information given in this proposal is true and the certifications made in this proposal are correct.

The bidder acknowledges that they have thoroughly examined the plans, proposal form, specifications, supplemental specifications, special provisions and agrees that they constitute essential parts of this proposal.

The bidder acknowledges that all line items which contain a quantity shall have a unit price bid. Any line item which is bid lump sum shall contain a lump sum bid price.

The bidder acknowledges that they understand that the quantities of work required by the plans and specifications are approximate only and are subject to increases and decreases; the bidder understands that all quantities of work actually required must be performed and that payment therefore shall be at the prices stipulated herein; that the bidder proposes to timely furnish the specified materials in the quantities required and to furnish the machinery, equipment, labor and expertise necessary to competently complete the proposed work in the time specified.

NON-COLLUSION AND DEBARMENT CERTIFICATION

The bidder certifies that neither he/she, nor any official, agent or employee of the bidder has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with this bid.

By submitting this proposal, the bidder certifies to the best of his/her knowledge and belief that he/she and his/her principles:

- a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal Department or agency;
- b. 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 perform 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

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- c. 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 b. of the certification; and
 - d. Have not within a three-year period preceding this proposal had one or more public transactions (Federal, State or Local) terminated for cause or default

Where the prospective bidder is unable to certify to any of the statements in this certification, the bidder shall submit an explanation in the blanks provided herein. The explanation will not necessarily result in denial of participation in a contract:

Explanation: _____

If the prequalified bidder's status changes, he/she shall immediately submit a new fully executed non-collusion affidavit and debarment certification with an explanation of the change to the Contract Office prior to submitting the bid.

Failure to furnish a certification or an explanation will be grounds for rejection of a bid.

BID LIMITATION (Optional)

The bidder who desires to bid on more than one project on which bids are to be opened on the same date, and who also desires to avoid receiving an award of more projects than the bidder is equipped to handle, may bid on multiple projects and limit the total amount of work awarded to the bidder on selected projects by completing the "Bid Limitation".

The Bid Limitation must be filled in on each proposal form for which the Bidder desires protection. Each such proposal must be covered by a proposal guaranty.

The bid limitation can be made by declaring the total dollar value of work OR total number of projects a bidder is willing to perform.

The Bidder desires to disqualify all of his/her bids on this bid opening that exceed a total dollar value of
\$ _____

OR

that exceed a total number of _____ projects.

The Bidder hereby authorizes the Department to determine which bids shall be disqualified.

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PERMISSIBLE DISCOUNT (optional)

Only when invited to do so in the Request for Proposal by Special Provision, Bidders are permitted to offer a discount on a specific project (discount project) if they are awarded the contract on one or more additional projects bid at the same bid opening time and date. The bidder must present the proposal so that it can be considered with or without the discount. The bid or discount offered on the "discount project" will not affect the determination of the low bid of any other project.

When discounts are offered, they must be presented as a reduction in the unit price for one or more items of work in the specified proposal (discount project).

Space for Offering Discounts:

Item No: _____

Description: _____

Unit: _____

Proposal Quantity: _____ Unit Price Reduction: \$ _____ Discount: \$ _____

Item No: _____

Description: _____

Unit: _____

Proposal Quantity: _____ Unit Price Reduction: \$ _____ Discount: \$ _____

Item No: _____

Description: _____

Unit: _____

Proposal Quantity: _____ Unit Price Reduction: \$ _____ Discount: \$ _____

TOTAL DISCOUNT _____

It is understood that the discount will only apply if awarded under the conditions as listed above and signed by the bidder.

Project: SOIB-7-023(057)046 (PCN-22159)

RECEIPT OF ADDENDA ACKNOWLEDGEMENT

We hereby acknowledge receipt of the following addenda:

Addendum # _____ Dated _____

Addendum # _____ Dated _____

Addendum # _____ Dated _____

Addendum # _____ Dated _____

Addendum # _____ Dated _____

Addendum # _____ Dated _____

PROPOSAL GUARANTY

A proposal guaranty is required. The proposal guaranty must comply with Section 102.09, "Proposal Guarantee" of the Standard Specifications.

TYPE OF PROPOSAL GUARANTY APPLIED TO THIS PROJECT (Check one):

_____ Annual Bid Bond*

_____ Single Project Bid Bond

_____ Certified or Cashier's Check

*Annual Bid Bond is required when submitting proposals electronically

BID ITEMS

Project: SOIB-7-023(057)046 (PCN-22159)

Bidder must type or neatly print unit prices in numerals, make extensions for each item, and total. Do not carry unit prices further than three (3) decimal places.

Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						\$\$\$\$	000	\$\$\$\$	00
001	103	0100	CONTRACT BOND	L SUM	1.				
002	216	0100	WATER	M GAL	52.				
003	230	0125	SHOULDER PREPARATION	MILE	4.118				
004	302	0120	AGGREGATE BASE COURSE CL 5	TON	67.				
005	401	0050	TACK COAT	GAL	7,060.				
006	411	0100	MILLING PAVEMENT SURFACE	TON	2,019.				
007	430	0045	SUPERPAVE FAA 45	TON	4,049.				
008	430	0145	RAP - SUPERPAVE FAA 45	TON	10,391.				
009	430	1000	CORED SAMPLE	EA	74.				
010	430	5809	PG 58V-28 ASPHALT CEMENT	TON	703.				
011	702	0100	MOBILIZATION	L SUM	1.				
012	704	0100	FLAGGING	MHR	900.				
013	704	1000	TRAFFIC CONTROL SIGNS	UNIT	1,421.				
014	704	1048	PORTABLE RUMBLE STRIPS	EA	2.				
015	704	1060	DELINEATOR DRUMS	EA	30.				
016	704	1067	TUBULAR MARKERS	EA	136.				

BID ITEMS

Project: SOIB-7-023(057)046 (PCN-22159)

Bidder must type or neatly print unit prices in numerals, make extensions for each item, and total. Do not carry unit prices further than three (3) decimal places.

Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						\$\$\$\$\$	000	\$\$\$\$\$	00
017	704	1185	PILOT CAR	HR	300.				
018	706	0550	BITUMINOUS LABORATORY	EA	1.				
019	706	0600	CONTRACTOR'S LABORATORY	EA	1.				
020	754	0206	STEEL GALV POSTS-TELESCOPING PERFORATED TUBE	LF	36.				
021	754	0592	RESET SIGN PANEL	EA	2.				
022	762	0110	EPOXY PVMT MK 4IN LINE-GROOVED	LF	34,469.				
023	762	0132	EPOXY PVMT MK 8IN LINE-GROOVED	LF	980.				
024	762	0135	EPOXY PVMT MK 24IN LINE-GROOVED	LF	24.				
025	762	0136	EPOXY PVMT MK MESSAGE-GROOVED	SF	112.				
026	762	0430	SHORT TERM 4IN LINE-TYPE NR	LF	34,554.				
027	766	0100	MAILBOX-ALL TYPES	EA	1.				
028	770	0003	LIGHTING SYSTEM A	EA	1.				
029	770	0004	LIGHTING SYSTEM B	EA	1.				
			TOTAL SUM BID						

Project: SOIB-7-023(057)046 (PCN-22159)

Type of Work: MILL, HMA, & LIGHTING

County: MOUNTRAIL

Length: 2.0590 Miles

TIME FOR COMPLETION:

The undersigned Bidder agrees, if awarded the contract, to prosecute the work with sufficient forces and equipment to complete the contract work within the allowable time specified as follows:

WORKING DAY CONTRACT: NA working days are provided. The Department will begin charging working days beginning NA or the date work begins on the project site, whichever is earlier.

CALENDAR DAY CONTRACT: NA calendar days are provided. The completion date will be determined by adding NA calendar days to NA or the date work begins on the project site, whichever is earlier.

COMPLETION DATE CONTRACT The project completion date is 10/12/2019. The Department provides a minimum of NA working days. The Department will begin charging working days beginning NA or the date work begins on the project site, whichever is earlier.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

Job #21, SOIB-7-023(057)046

Mill, HMA & Lighting

INDEX OF PROVISIONS

Road Restriction Permits

NDDOT Supplemental Specifications dated October 1, 2018

Price Schedule for Miscellaneous Items dated October 1, 2014 (PS-1)

Appendix A of the Title IV Assurances dated February 4, 2015

Appendix E of the Title IV Assurances dated February 4, 2015

On-The-Job Training Program dated October 1, 2016

SP 282(14) Certificate of Compliance

SP 453(14) Haul Roads

SP 462(14) Limitations of Operations

SP 674(14) Tribal Employment Rights Ordinance (TERO)

SP Fuel Cost Adjustment Clause dated September 8, 2006

NOTICE

TO: All prospective bidders on all North Dakota Department of Transportation Highway Construction Projects.

Contractors moving construction equipment to NDDOT highway construction projects are subject to the Road Restriction Policy with the following modifications:

- A. The contractor may purchase up to 10 single trip permits for each NDDOT highway construction project at a cost ranging from \$20 to \$70 each. These permits must be purchased from the Motor Carrier Division of the Highway Patrol at the central office of the NDDOT in Bismarck, North Dakota.
- B. The \$1 per mile fee will not be charged for Gross Vehicle Weights (GVW) exceeding 105,500 pounds, 105,500 pounds, and 105,000 pounds for highways Restricted by Legal Weights, 8 Ton, and 7 Ton highways respectively.
- C. The \$5 per ton per mile fee will be charged only for loads exceeding a GVW of 130,000 pounds, 120,000 pounds, 110,000 pounds and 80,000 pounds for highways Restricted by Legal Weights, 8 Ton, 7 Ton, and 6 Ton highways respectively.
- D. The maximum weights per axle for each of the class restrictions still apply. If it is shown that more axles cannot be added, movement may be authorized; however, a \$1 per ton per mile fee will be charged for all weight in excess of the restricted axle limits.
- E. These construction equipment single trip permits apply to State and US Highways only.
- F. The District Engineers and Highway Patrol will select the route of travel.
- G. Contractors moving equipment to other than NDDOT highway construction projects are subject to all fees as shown in the Road Restriction Permit Policy.
- H. Contractors must call the Highway Patrol prior to movement of all overweight loads on all State and US Highways.

ROAD RESTRICTION PERMITS

Permits shall be issued for the movement of non-divisible vehicles and loads on state highways which exceed the weight limits during spring road restrictions. The issuance of permits may be stopped or posted weights changed at any time based on the varying conditions of the roadways. Permits can be obtained from the Highway Patrol.

RESTRICTION CLASSIFICATIONS WITH ALLOWABLE AXLE WEIGHTS AND GROSS VEHICLE WEIGHTS	PERMIT AND TON/MILE FEES
<p>Highways Restricted by Legal Weight</p> <p>Single Axle -- 20,000 lbs. Tandem Axle -- 34,000 lbs. Triple Axle -- 48,000 lbs. 4 Axles or more -- 15,000 lbs. per axle</p> <p>Gross Vehicle Weight -- 105,500 lbs.</p> <p>Note: The above weights apply to state highways restricted by legal weights, other than interstate highways, in areas where road restrictions are in force. When the gross weight of an axle grouping exceeds 48,000 pounds, the \$1 per ton per mile shall apply to all weight in excess of 15,000 pounds per axle.</p>	<p>Permit Fee: \$20-\$70 per trip</p> <p>Ton Mile Fee:</p> <p>105,501 lbs. to 130,000 lbs. GVW -- \$1 per mile</p> <p>Over 130,000 lbs. GVW -- \$1 per mile plus \$5 per ton per mile for that weight exceeding 130,000 lbs. GVW</p> <p>Exceeding axle limits -- \$1 per ton per mile</p>
<p>8-Ton:</p> <p>Single Axle -- 16,000 lbs. Tandem Axle -- 32,000 lbs. 3 Axles or more -- 14,000 lbs. per axle</p> <p>Gross Vehicle Weight -- 105,500 lbs.</p>	<p>Permit Fee: \$20-\$70 per trip</p> <p>Ton Mile Fee:</p> <p>105,501 lbs. to 120,000 lbs. GVW -- \$1 per mile</p> <p>Over 120,000 lbs. GVW -- \$1 per mile plus \$5 per ton per mile for that weight exceeding 120,000 lbs. GVW</p> <p>Exceeding restricted axle limits -- \$1 per ton per mile</p>
<p>7-Ton:</p> <p>Single Axle -- 14,000 lbs. Tandem Axle -- 28,000 lbs. 3 Axles or more -- 12,000 lbs. per axle</p> <p>Gross Vehicle Weight -- 105,500 lbs.</p>	<p>Permit Fee: \$20-\$70 per trip</p> <p>Ton Mile Fee:</p> <p>105,500 lbs. to 110,000 lbs. GVW -- \$1 per mile</p> <p>Over 110,000 lbs. GVW -- \$1 per mile plus \$5 per ton per mile for that weight exceeding 110,000 lbs. GVW</p> <p>Exceeding restricted axle limits -- \$1 per ton per mile</p>
<p>6-Ton:</p> <p>Single Axle -- 12,000 lbs. Tandem Axle -- 24,000 lbs. 3 Axles or more -- 10,000 lbs. per axle</p> <p>Gross Vehicle Weight -- 80,000 lbs.</p>	<p>Permit Fee: \$20-\$70 per trip</p> <p>Ton Mile Fee:</p> <p>\$5 per ton per mile for all weight exceeding 80,000 lbs. GVW</p> <p>Exceeding restricted axle limits -- \$1 per ton per mile</p>
<p>5-Ton:</p> <p>Single Axle -- 10,000 lbs. Tandem Axle -- 20,000 lbs. 3 Axles or more -- 10,000 lbs. per axle</p> <p>Gross Vehicle Weight -- 80,000 lbs.</p>	<p>No overweight movement allowed</p>

SINGLE UNIT FIXED LOAD VEHICLES SUCH AS TRUCK CRANES AND WORKOVER RIGS

- A. Permit Fee and Ton Mile Fee for Self-Propelled Fixed Load Vehicles .
1. Permit Fee: \$25 per trip
 2. \$1 per ton per mile for all weight in excess of restricted axle limits or in excess of legal limits on state highways in areas where road restrictions are in force. When the gross weight of an axle grouping exceeds 48,000 pounds, the \$1 per ton per mile shall apply to all weight in excess of 15,000 pounds per axle (see weight classification chart in section C.)
 3. **\$5 per ton per mile** for all movements exceeding the following gross vehicle weight limits:
 - a. 105,500 lbs. GVW on unrestricted state highways, other than interstate highways, in areas where road restrictions are in force.
 - b. 105,500 lbs. GVW on 8-ton highways.
 - c. 105,500 lbs. GVW on 7-ton highways.
 - d. 80,000 lbs. GVW on 6-ton highways.
 - e. No overweight movement allowed on 5-ton highways
- B. Permit Fees for Work-Over Rigs and Special Mobile Equipment Exceeding 650 but not 670 Pounds Per Inch Width of Tire.
1. Permit Fee:
 - a. \$50 per trip on work-over rigs up to 650 pounds per inch width.
 - b. \$75 per trip on work-over rigs that exceed 650 but not 670 pounds per inch width of tire.
 2. The work-over rig shall be stripped to the most minimum weights.
 3. A minimal number of state highway miles shall be used.
 4. District engineer approval shall be obtained prior to movement when vehicle exceeds restricted axle weights by more than 5,000 pounds.
 5. A validation number ending in TM must be obtained from the Highway Patrol prior to using a self-issue single trip movement approval form.
 6. The ton mile shall be waived .

**NORTH DAKOTA DEPARTMENT OF TRANSPORTATION
SUPPLEMENTAL SPECIFICATION
REVISIONS**

Effective Date: 10/01/2018

The following specifications are supplementary to the 2014 Edition of the *Standard Specifications for Road and Bridge Construction* as they apply to this Contract. Page references in this document apply to the hard bound, printed edition of the specifications (the “blue book”) and the “as printed” version of the specifications on the Department’s website.

101.03 ABBREVIATIONS

PAGE 8

10/01/15

Delete the line for “ACPA American Concrete Precast Association” and replace it with the following:

ACPA American Concrete Pipe Association

Add the following item to Section 101.03:

NPCA National Precast Concrete Association
SWPPP Storm Water Pollution Prevention Plan

101.04 DEFINITIONS

PAGE 10

10/01/15

Delete the definition for “Sieve” and replace it with the following:

Sieve. U.S.A. Standard Sieve, as defined in ASTM E 11. The specified percent passing for each sieve is measured by weight.

102.07 B Electronic Proposal

Page 23

10/1/16

Replace 102.07 B with the following:

B. Electronic Proposal.

1. Electronic Bidding Credentials.

A Digital ID is required to electronically sign proposals.

If a Bidder does not have a Digital ID, create a Digital ID and set up bidding privileges by following the instructions on the Bid Express website (www.bidx.com). Begin the Digital ID creation process a minimum of 7 business days before the bid opening.

2. Submitting an Electronic Proposal.

Prepare the proposal using Bid Express as follows:

1. Download the most current “Proposal Files” and “DBE Roster File” from the Bid Express website (www.bidx.com).
2. Use the Bid Component for AASHTOWare Project Bids to prepare and submit the proposal forms. Follow the Bid Component software instructions and review the help

screens provided on the Bid Express website to ensure that the bid item list is prepared properly. Provide a unit price for each bid item.

If the proposal forms contain alternate or optional bid items, provide unit prices for those bid items as follows:

- a. For alternate bid items, provide a unit price for each bid item included in the Bidder's preferred alternate.
- b. For optional bid items, provide a unit price for all bid items under all options.

The user's Digital ID must be on file and enabled by Bid Express. The use of the Digital ID constitutes the Bidder's signature for execution of the proposal. The Department is not responsible for the Bidder's inability to submit a proposal using AASHTOWare.

103.08 A General

PAGE 30

10/1/16

Replace the second paragraph with the following:

For subcontracts at any tier equal to or greater than \$750,000, obtain from the subcontractor all bid documentation used to prepare the subcontractor's bid for the portion of the work reflected in the subcontract. The subcontractor's bid documentation requirements shall be the same as for the Contractor, except it shall be submitted within 5 days of approval of the Prime Contractor's Request to Sublet. Submit to the Department the bid documentation and affidavit in a separate sealed container, including the subcontractor's name and address on the container.

104.02 C Significant Changes to the Character of Work

PAGE 34

10/01/15

Delete the following paragraph in its entirety:

If the Contractor believes an alteration in the work is a significant change that necessitates a contract revision, the Contractor shall notify the Engineer in accordance with Section 104.03, "Contractor Requested Contract Revisions".

104.05 A Submission of the Claim

PAGE 37

10/01/15

Replace the fourth paragraph of Section 104.05 with the following:

Provide a claim submittal to the Engineer that contains, at a minimum, the following information for each claim issue included on the [Notice of Intention to File a Claim \(SFN 16743\)](#). Failure to supply the following information for each claim issue constitutes a waiver of claim for additional compensation for each submitted claim item.

104.07 C. Conditions

PAGE 42

10/01/16

Replace number 5 with the following:

5. Contains revisions to the contract that the Department has previously accepted on another Department project, or is based on or similar to standard specifications, special provisions, or another set of plans.

Delete Section 105.03 COOPERATION WITH UTILITY OWNERS and replace with the following:

105.03 COOPERATION WITH UTILITY OWNERS

A. General.

Utility facilities shown on the plans, if any, are for reference purposes only and may not constitute an exhaustive representation of all utility facilities within the project. Notify the North Dakota One Call System (811) before starting the work, so they may locate and mark all utility facilities within the project.

Comply with Chapter 49-23 of the NDCC in determining the location of underground utilities.

Locate Department-owned, publicly-owned, and privately-owned utility facilities, whether on or off the One Call System.

If the Contractor's operations have the potential to damage utility facilities identified in the contract to remain in place during the work, including operations adjacent to these utility facilities, the Contractor shall account for and protect the utility facilities. Before starting the work, coordinate the protections with the utility owner.

B. Utilities Identified in Plans.

Notify all utility owners of the anticipated project schedule within two weeks of receiving notice to proceed. Coordinate adjustments and relocations with affected utility owners. The Contractor, the Engineer, and the utility owners shall agree to a schedule of the work and the adjustments and relocations before beginning the work.

Cooperate with utility owners in relocating and adjusting utility facilities to minimize interruption to service and duplication of work by utility owners.

The Department will provide utility conflict plans, if available. Utility conflict plans are not part of the contract and are for information purposes only.

C. Utilities Encountered During Work.

If the Engineer determines that adjustment or relocation of utility facilities is necessary to accommodate construction, the Engineer will arrange and coordinate the work with the owner if the contract does not otherwise provide for such work. This does not relieve the Contractor of any liability that may arise under the provisions of the NDCC.

D. Scheduling.

1. General.

In order to minimize interference with traffic operations, the Contractor, Engineer, and utility owner shall agree to a detailed schedule before starting work.

2. Utility Coordination Meeting.

If the contract requires a utility coordination meeting, arrange the meeting with the utility owners and the Engineer to occur no later than two weeks after the notice to proceed. At the meeting, provide an agenda and a tentative construction schedule for planning utility relocations and adjustments; after the meeting, publish minutes and distribute a copy to all meeting attendees.

E. Fire Hydrants.

Before starting work that affects a fire hydrant, coordinate with the local fire authority to determine if provisions need to be in place before starting the work. If provisions are necessary, obtain the approval of the local fire authority before beginning the work affecting the fire hydrant.

F. Damage and Interruptions.

If the Contractor causes damage to utility facilities, the Contractor is responsible for the costs of restoring or repairing the damaged utility facility to a condition equal to or better than the condition existing before the damage occurred. Immediately notify the utility owner of the damage or, if the owner is unknown, the One Call System. Do not conceal, attempt to conceal, or make repairs to the utility facilities until approved by the utility owner. If this damage causes interruption to utility service, continuously coordinate with the utility owner until the service is fully restored.

The Department will not pay the Contractor for the cost to restore or repair damage utility facilities and will consider any delays resulting from this damage to be non-excusable in accordance with Section 108.06, Determination of and Extensions to the Contract Time.”

**105.08 A.3 Additional Section 600 Work Drawing Submittal Requirements. PAGE 50
10/01/16**

Replace the first paragraph with the following:

Provide work drawings on 11 inch × 17 inch sheets generated by a CADD system.

Use the minimum text sizes shown in Table 105-01.

Table 105-01	
Dimensions and Notes	0.08 Inches
Detail Subtitles	0.09 Inches
Detail Titles	0.10 Inches

105.08 B Work Drawings Submittal Requirements PAGE 50 10/1/17

Replace 105.08 B with the following:

B. Work Drawing Submittal Requirements.

Submit work drawings by either of the following methods:

1. Paper Submittal.

Submit a cover letter and two copies of the work drawings to the Engineer.

2. Electronic Submittal.

To submit the work drawings electronically to the Engineer, post a cover letter and one electronic copy of the work drawing to the Department’s managed file transfer (MFT) website. Follow the requirements of NDAC Title 28 for all submittals.

Contact the Engineer to receive instructions describing how to upload files to the MFT website.

Replace the Section 105.08 C with the following:

C. Engineer's Response to Work Drawing.

Allow 21 days for the Engineer to review the work drawing. The Engineer will respond in one of the following ways:

- No Exceptions Noted;
- Returned for Correction;
- Not Required for Review; or
- Not Acceptable.

If the work drawing is returned stating "Returned for Correction" or "Not Acceptable", make necessary revisions and resubmit the work drawing as specified in Section 105.08, "Work Drawings".

After the Department has reviewed the work drawings, the Department will return the reviewed work drawing submittal to the Contractor as follows:

- If a paper submittal, the Engineer will return the reviewed drawings to the Contractor.
- If an electronic submittal, the Department will post reviewed work drawings on the MFT site and will send an email notification to the Contractor that the reviewed work drawings are available on the MFT site. Retrieve the reviewed work drawings from the MFT site within 30 calendar days. The Department will delete files from the MFT site after 30 calendar days.

Include the cost of drafting and submitting work drawings in the contract unit price for the relevant contract items.

106.01 C Certificate of Compliance

Replace 106.01 C, "Certificate of Compliance with the following:

C. Certificate of Compliance (CoC).

SP 282(14) Certificate of Compliance (CoC) has replaced this section.

106.02 B.2 Department Owned Sources.

Replace the first paragraph with the following:

If electing to purchase material from a Department owned source, notify the Engineer and Gravel Prospecting Coordinator at Materials and Research Division in writing.

106.02 B.3 Department Optioned Sources.

Replace the second sentence of the first paragraph with the following:

If exercising the Department's option to purchase materials under the terms and conditions provided in the option, notify in writing the surface owner, material owner, the Engineer, and the Gravel Prospecting Coordinator at Materials and Research Division.

106.02 D Aggregate Source Limitations **PAGE 58** **10/01/15**

Delete number 8 and replace it with the following:

8. In Stark County, within the 2-mile radius from the center of Section 30-137-92;

Delete number 11 and replace it with the following:

11. In Hettinger County, within the 1-mile radius from the center of Section 28-135-91;

107.06 Discoveries **Page 70** **10/1/17**

Replace the first paragraph with the following:

If the Contractor encounters one or more of the items included in the following list anywhere the Contractor performs the work, the Contractor shall immediately suspend the work and notify the Engineer of the encounter:

- Threatened or endangered species;
- Prehistoric dwelling sites;
- Human remains;
- Concentrated historic or prehistoric artifacts; or
- Vertebrate, invertebrate, plant and trace fossils.

If encountering one of the following, protect the location from further disturbance:

- Prehistoric dwelling sites;
- Human remains;
- Concentrated historic or prehistoric artifacts; or
- Vertebrate, invertebrate, plant and trace fossils.

Resume work in the location of the encounter only with written approval from the Engineer.

107.07 Responsibility to the Public **PAGE 70** **10/01/17**

Add the following to the end of Section 107.07

F. Crossing Traffic.

Construction vehicles are not allowed to cross lanes of traffic to enter or exit work zones on the interstate. Construction vehicles are required to merge into public traffic.

107.08 Haul Roads **PAGE 72** **10/01/17**

Replace 107.08 with the following:

107.08 HAUL ROADS

SP 453(14) Haul Roads has replaced this section.

107.13 G Railroad Flagging **PAGE 78** **10/01/17**

Delete the last sentence of the first paragraph.

Replace Section 107.17 with the following:

107.17 REMOVED MATERIAL

Unless otherwise designated in the contract, removed material becomes the property of the Contractor.

If the Contractor determines that the material will be disposed of, the material must be disposed in one of the following ways:

- A. Dispose of the material through a beneficial use. Apply for a beneficial use permit from the NDDoH by completing an [NDDOT Projects-Inert Waste Beneficial Use Application \(SFN 58981\)](#). Provide the Engineer with copies of all documents submitted to the NDDoH.
- B. Dispose of the material at an approved permanent waste management facility.
- C. If waste cannot be reasonably managed at a permanent waste management facility, obtain approval from the NDDoH for a variance to dispose of the inert waste at another site. Apply for a variance by completing an [NDDOT Projects-Inert Waste Disposal Variance Application \(SFN 54344\)](#). Provide the Engineer with copies of all documents submitted to the NDDoH.

Obtain locations of permanent waste facilities, applications, and guidelines from the NDDoH, Division of Waste Management. View a list of municipal and inert waste landfills and review guidance on the NDDoH website: <http://www.ndhealth.gov>.

Include the cost of material disposal in the contract unit price of the relevant contract item.

107.18 High Visibility Clothing.

Replace the first paragraph of 107.18 with the following:

When not enclosed in a truck or equipment cab, require that all workers within the right of way wear retroreflective clothing in accordance with the MUTCD.

108.02 PRECONSTRUCTION CONFERENCE

Delete Section 108.02 and replace with the following:

108.02 CONSTRUCTION MEETINGS**A. Preconstruction Conference.**

Before beginning the work, including pit operations specific to the project, and unless waived by the Engineer, coordinate and hold a preconstruction conference with the Engineer at a mutually agreed time and place. Notify subcontractors, utility companies, and other interested parties of the time and place of the preconstruction conference.

Submit the following to the Engineer before or at the preconstruction conference:

1. A company safety plan and the name of the safety officer;
2. An EEO / affirmative action plan and the name of the EEO officer;

3. A list of key project personnel and their phone numbers;
4. The initial or baseline schedule in accordance with Section 108.03, "Progress Schedule";
5. A list of proposed subcontractors requested in accordance with Section 108.01, "Subletting of Contract";
6. A list of material suppliers;
7. A list of pits to be used (owner and legal description);
8. All COAs in accordance with Section 107.05, "Material Source Approval";
9. The applicable storm water permits and the SWPPP in accordance with Section 107.02.C, "Storm Water Permits";
10. The names of Quality Control Personnel and a Quality Control Plan in accordance with Section 430.04 A, "Contractor Quality Control (QC)."

B. Weekly Planning and Reporting Meeting.

The weekly planning and reporting meeting is required when specified in the plans.

Organize a weekly meeting to coordinate efforts between subcontractors, utilities, local authorities, and others. The Engineer will develop a list of parties to be invited to the meeting and will provide the list to the Contractor at the Preconstruction Meeting. The Engineer may provide an updated list with additional attendees at any time.

Send a knowledgeable representative to conduct the meeting. Prepare minutes for each meeting and make the appropriate distribution of the minutes. Distribute the minutes within 48 hours of the meeting conclusion. Allow the Engineer to review and approve the minutes before distribution.

Include in the meeting agenda a discussion of problems encountered since the last meeting, and information of interest to those invited to the meeting. Provide a written schedule of the next week's work and a tentative schedule for the following week.

Replace Table 108-01 with the following:

**Table 108-01
CPM Schedule Price Reductions**

Days Late Submitting Update Schedule	Percentage Price Reduction to the Prorated Amount¹
1	20
2	40
3	60
4	80
5	100

¹ The "prorated amount" is equivalent to the amount calculated for each update schedule submission in Section 108.03 D, Item 2.

108.05 Limitation of Operations

PAGE 91

10/01/17

Replace 108.05 Limitations of Operations with the following:

108.05 LIMITATION OF OPERATIONS

SP 462(14) "Limitation of Operations" has replaced this section.

108.06 B.1 General

PAGE 93

10/01/15

Replace the 6th paragraph of Section 108.06 B.1 with the following:

The Contractor's plea that the contract time was insufficient is not a valid reason for an extension of time. For calendar day and completion date contracts, the Department will not extend the contract time for delays encountered on holidays and during the period from November 15 to April 15. When the time as extended by the Department falls on a date that is a holiday, the Engineer will extend the contract time to the next business day.

108.06 B.4 Excusable, Non-compensable Delays

PAGE 96

10/01/16

Replace letter "f." with the following:

- f. Delays due to utility or railroad work when the Contractor has complied with the requirements of Section 105.03.D, "Scheduling," but the utility or railroad company failed to perform their work within the time agreed to in the utility coordination meeting.
-

109.01 J.2 Scale Applications

PAGE 103

10/01/16

Replace the paragraph with the following:

Use either computerized or non-computerized scales to determine weights for material when the quantity of the material included in the bid item list is 2,000 tons or less.

109.01 J.2.a Computerized Scales

PAGE 103

10/01/16

Replace the first paragraph with the following:

Use a computerized scale to determine the weight of material when the quantity included on the bid item list is greater than 2,000 tons.

109.01 J.2.b Computerized Loader Bucket Scales

PAGE 103

10/01/15

Delete the first paragraph and replace with the following:

Loader bucket scales may be used to weigh materials when the quantity of material included in the bid item list is less than 10,000 tons and for aggregates specified under Sections 420 "Bituminous Seal Coat", 421 "Microsurfacing", and 422 "Slurry Seal" regardless of quantity.

109.01 J.4.b(2) Hopper or Batch Scales**PAGE 105****10/01/15**

Replace Section 109.01 J.4.b(2) with the following:

After the material has been weighed on the project scale and placed in a truck, weigh the loaded truck on a certified scale owned and operated by an entity other than the Contractor. Provide the tare weight of the truck along with the comparison weigh ticket.

109.01 J.6.a General**PAGE 106****10/01/15**

Delete the second paragraph and replace with the following:

Document the weight of each load on a separate, sequentially numbered weigh ticket that has a maximum size of 5.5 × 8.5 inches. Provide one copy to the driver of the truck. The truck driver shall deliver the weigh ticket to the Engineer at the location where the material is incorporated into the work. The Engineer will reject loads that are not accompanied by a legible weigh ticket.

109.05 Payment for Material on Hand.**PAGE 121****10/1/18**

Replace the 12th paragraph of Section 109.05 with the following:

For material not produced or manufactured by the Contractor, within 35 calendar days after the date the Department released payment for the material on hand, the Contractor shall submit to the Engineer paid invoices for the material on hand covered by the payment. With each paid invoice, include a signed statement from the supplier or fabricator acknowledging receipt of payment. If the Contractor fails to submit paid invoices, the Department will deduct the amount paid the Contractor for the material on hand from future payments and will not pay for the material on hand until the Contractor incorporates it into the work.

152.01 D Bituminous Trucks.**PAGE 133****10/1/18**

Add the following sentence to the first paragraph:

Install tarps free of holes larger than 0.5 inches in diameter and of sufficient size to completely cover the opening above the asphalt.

155.02 A General**PAGE 140****10/01/17**

Add the following paragraph to Section 155.02 A:

Provide a NRMCA Certified plant for concrete used in Sections 550, "Concrete Pavement", 570 "Concrete Pavement Repair", 602 "Concrete Structures", and 622 "Pillings".

155.03 A.3 Water Measuring**PAGE 143****10/01/15**

Replace the second paragraph in Section 155.03 A.3 with the following:

Use a water measuring system that:

- Delivers the designated quantity of water for each batch within the tolerance specified in Section 802.03 B.4, "Batching Water";

- Automatically stops the water flow when the designated quantity has been delivered; and
- Is adjustable and has a calibrated indicator showing the quantity of water measured for each batch.

155.07 D Bridge Deck Overlay Finishing Machines**PAGE 147****10/01/15**

Replace Section 155.07 D with the following:

D. Bridge Deck Overlays Finishing Equipment.

Use a finishing machine that is:

- Equipped with an oscillating screed or screeds with an effective weight of at least 75 pounds for each square foot of bottom face area, and provided with positive control of vertical position, the angle of tilt, and the shape of the crown. At least one oscillating screed shall be capable of consolidating the concrete to the specified density;
- Long enough to uniformly strike off and consolidate the width of lane to be paved
- Capable of forward and reverse motion under positive control;
- Travelling on rails with fully-adjustable and stable supports;
- Supported without the use of shims; and
- Not anchored to the concrete using powder actuated fasteners, unless that concrete will be subsequently overlaid.

202.04 A General**PAGE 161****10/01/16**

Replace the second paragraph with the following:

Remove existing bituminous and concrete surfaces to a joint or create a smooth, vertical plane along the entire length of the remaining surface.

202.04 B Removal of Bridges and Box Culverts**PAGE 161****10/01/16**

Replace Section 202.04 B with the following:

B. Removal of Structures and Box Culverts.

When the removal is of a bridge, perform asbestos inspection and testing and submit SFN 17987 "Asbestos Notification of Demolition and Renovation" to NDDoH at least 10 working days before conducting any demolition. If asbestos is discovered, the Engineer will issue a contract revision for work related to the asbestos.

Remove existing substructures to one foot below the existing stream bottom, and remove those parts outside the stream to one foot below final ground surface.

If bridge elements are designated for salvage, match mark the elements and transport them to the location specified in the contract.

202.06 BASIS OF PAYMENT**PAGE 162****10/01/16**

Delete the "Saw Concrete, Linear Foot" and "Saw Bituminous Surfacing-Full Depth, Linear Foot" from the "Pay Item List".

203.02 EQUIPMENT**PAGE 163****10/01/15**

Replace the equipment list in Section 203.02 with the following:

Equipment	Section
Vibratory Sheepsfoot/Pad Foot/Extended Pad Foot Rollers	151.01 E

203.04 B Topsoil**PAGE 164****10/01/17**

Replace 203.04 B with the following:

B. Topsoil.**1. General.**

Remove topsoil to its full depth or a depth up to 6 inches, whichever is less, from all excavation and embankment areas. Do not remove the subsoil or other deleterious material with topsoil. Stockpile the removed topsoil.

Place topsoil piles at acceptable locations outside of the grading limits or, if necessary, outside the right of way at no additional cost to the Department. If stockpiling topsoil outside the right of way, submit a copy of the agreement negotiated with the landowner 10 days before constructing topsoil stockpiles.

When stockpiling topsoil within the clear zone, construct topsoil stockpiles with foreslopes of 4:1 or flatter and approach slopes of 10:1 or flatter.

Scarify the surface to a depth of 2 inches before replacing topsoil.

Uniformly spread the stockpiled topsoil over the disturbed areas within the right of way.

2. Topsoil – Imported.

Provide imported topsoil consisting of friable, fertile soil of loamy character, containing an amount of organic matter normal to the region, capable of sustaining healthy plant life, and reasonably free from subsoil, roots, heavy or stiff clay, stones larger than two inch in greatest dimension, noxious weeds, sticks, brush, litter, and other deleterious matter. Provide the topsoil from a site outside the right of way. Spread the topsoil uniformly to a minimum depth of 6 inches. Use all existing stockpiled topsoil before importing topsoil.

203.04 C Subcut**PAGE 165****10/01/15**

Add the following paragraph to the end of Section 203.04 C:

Dispose of material removed from the subcut area as specified in Section 107.17, "Removed Material".

203.05 B Borrow Excavation**PAGE 169****10/01/16**

Replace the third paragraph of Section 203.05 with the following:

If the borrow source is a Department option, the Engineer will measure the topsoil stripped from the borrow area. Provide a minimum of two working days' notice to allow the Engineer to complete the

preliminary cross sectioning before removing topsoil. Remove and stockpile topsoil, as specified in Section 203.04 B, "Topsoil", before excavation. Provide notice and allow one working day for the Engineer to complete the topsoil measurement before beginning borrow excavation.

203.05 C Topsoil **PAGE 170** **10/01/17**

Add the following to 203.05 C:

The agreement will be in writing and signed by the both the Contractor and the Engineer.

203.05 D Topsoil – Wetland **PAGE 170** **10/01/16**

Replace 203.05 D Topsoil – Wetland with the following:

D. Reserved.
Reserved.

203.06 BASIS OF PAYMENT **PAGE 171** **10/01/16 & 10/1/17**

Delete "Topsoil Borrow Area, Cubic Yard" from the Pay Item List and replace with "Topsoil – Dept Option Borrow Area, Cubic Yard".

Delete "Topsoil – Wetland, Cubic Yard" from the Pay Item List.

203.06 C Department Optioned Borrow **PAGE 171** **10/01/16**

Add the following to the end of Section 203.06 C:

Include the removal and replacement of topsoil in Department optioned borrow areas in the contract unit price for "Topsoil – Dept Option Borrow Area".

216.06 Basis of Payment **PAGE 175** **10/01/15**

Replace Section 216.06 with the following:

Pay Item	Pay Unit
Water	M Gal

An "M Gal" is equivalent to 1,000 gallons.

Such payment is full compensation for furnishing all materials, equipment, labor, and incidentals to complete the work as specified.

Replace Section 230.05 Reshaping Inslopes with the following:

B. Reshaping Foreslopes.

The Engineer will measure each foreslope on each side of the roadway separately.

Replace Table 251-01 with the following:

**TABLE 251-01
Seed Class Mix Requirements**

Grass Species	Variety	Pounds Pure Live Seed Per Acre
Class I		
Kentucky Blue Grass	Park	4.0
Perennial Rye Grass	--	5.4
Blue Grama	Bad River	2.4
Sideoats Grama	Killdeer, Pierre, Butte	7.2
TOTAL		19.0
Class II – Early Season		
Western Wheatgrass	Rodan, Rosana, Walsh, Flintlock, W.R. Poole, Recovery	9.6
Switchgrass	Dacotah, Forestburg, or Sunburst, Summer	3.2
Green Needlegrass	Lodorm, AC Mallard, Fowler	2.4
Sideoats Grama	Killdeer, Pierre, Butte	3.6
Slender Wheatgrass	Revenue, Primar, Adanac, Pryor, Firststrike	5.0
Oats	--	10.0
TOTAL		33.8
Class II – Late Season		
Western Wheatgrass	Rodan, Rosana, Walsh, Flintlock, W.R. Poole, Recovery	9.6
Switchgrass	Dacotah, Forestburg, or Sunburst, Summer	1.6
Green Needlegrass	Lodorm, AC Mallard, Fowler	3.6
Canada Wild-rye	Mandan	5.2
Slender Wheatgrass	Revenue, Primar, Adanac, Pryor, Firststrike	5.0
Oats	--	10.0
TOTAL		35.0

Replace the first paragraph with the following:

When applying hydraulic mulch and seed together, use hydraulic spraying equipment that mixes the seed and mulch in water.

253.03 B Hydraulic Mulch**PAGE 188****10/01/16**

Delete the third paragraph.

253.03 C Straw Mulch**PAGE 188****10/01/15**

Delete the following sentence from this section:

At least 50 percent of the mulch by weight must be at least 8 inches in length.

260.03 C Silt Fence Backing.**PAGE 197****10/01/18**

Replace the title of 260.03 C with the following:

Silt Fence Supported.

Add the following to the beginning of 260.03 C:

Use wire backing or monofilament silt fence when installing supported silt fence.

262.04 A Installation**PAGE 201****10/01/15**

Replace the first paragraph of Section 262.04 A with the following:

Attach anchor lines to the flotation device.

265.06 Basis of Payment**PAGE 204****10/01/15**

Replace the first paragraph after the list of pay items with the following:

Include the cost for pipe, geosynthetic material, topsoil, and seed in the price bid for "Stabilized Construction Access".

302.03 MATERIALS**PAGE 209****10/01/15**

Replace table in Section 302.03 with the following:

Material	Section
Aggregates	816
Salvaged Base Course	817
Traffic Service Aggregate	816 Class 5; or 817

302.04 A.2 Gradation

PAGE 209

10/01/15

Replace the first paragraph in Section 302.04 A.2 with the following:

The Engineer will collect three samples for each 1,000 tons of material placed, except when more than 1,000 tons are placed in a day. If more than 1,000 tons are placed in a day, the Engineer will collect three samples for that day's placement. If the aggregate fails to meet the specified gradation, the Engineer will apply a price reduction as specified in Section 302.06 B, "Contract Price Adjustments".

302.04 B Placement and Compaction

PAGE 210

10/01/17

Replace the third paragraph with the following:

Compact aggregate, utilizing pneumatic-tired rollers, until the surface is tightly bound and shows no rutting or displacement occurs under the roller operation. The Engineer may allow other compaction methods, when placing aggregate under sidewalks, driveways, or medians.

302.04 B Placement and Compaction.

PAGE 210

10/01/18

Replace the last paragraph of 302.04 B with the following:

Compact material over geosynthetic fabric or geogrid as specified in Section 709.04 D. "Geosynthetic Reinforcement (Type R)".

302.04 C Surface Tolerance

PAGE 210

10/01/15

Replace Section 302.04 C with the following:

C. Surface Tolerance.

Unless one of the following surface tolerances is specified, construct the surface to within 0.08 feet of the proposed elevation.

1. Surface Tolerance Type B.

Use trimming equipment, including motor graders, equipped with automatic grade control to adjust for the cross slope and longitudinal profile. Construct the finished surface to within 0.04 feet of the proposed elevation.

Reincorporate material removed from high points during trimming into other portions of the base.

2. Surface Tolerance Type C.

Use roadbed planers to construct the finished surface. The Engineer will allow the base or surface course to be used as the grade reference when trimming shoulders. Construct the finished surface to within 0.04 feet of the proposed elevation.

Reincorporate material removed from high points during trimming into other portions of the base.

Replace the first paragraph in Section 306.04 A.1 with the following:

The Engineer will collect three samples for each 1,000 tons of material placed, except when more than 1,000 tons are placed in a day. If more than 1,000 tons are placed in a day, the Engineer will collect three samples for that day's placement. If the aggregate fails to meet the specified gradation, the Engineer will apply a price reduction as specified in Section 306.06 B, "Contract Price Adjustments".

Replace the last paragraph in Section 401.03 with the following:

Obtain samples of the bitumen under the observation of the Engineer. The Engineer will take immediate possession of the samples.

Delete Section 401.03 B and add the following:

B. Tack Coat.

Use a material from Table 401-01.

Table 401-01

Material	Section
SS-1h	818.02 F
MS-1	818.02 F
CSS-1h	818.02 E.1

When MS-1 is used it may be diluted by the supplier or the Contractor.

C. Fog Seal.

Use a material from Table 401-02.

Table 401-02

Material	Section
SS-1h	818.02 F
CSS-1h	818.02 E.1

Delete Section 401.04 A and add the following:

A. Application of Bitumen.**1. General.**

Prepare the surface by removing loose dirt and deleterious material.

Provide the Engineer with the manufacturer recommended application temperature ranges. During application, maintain the temperature of bitumen within the ranges recommended by the manufacturer.

Apply bitumen with a distributor on a compacted and stable surface. Use hand sprayers to cover irregular areas. Completely cover the area receiving the bitumen application.

If applying bitumen in multiple passes, overlap the bitumen along adjoining edges of the passes.

Protect the surfaces of structures and other roadway appurtenances against tracking and splattering.

2. Prime Coat.

Apply prime coat when the ambient air temperature is at least 40°F.

Allow the prime coat to cure a minimum of 48 hours before placing pavement.

3. Tack Coat.

Apply tack coat when the air temperature and existing mat temperature are at least 35°F.

Apply tack coat to a dry surface.

Allow tack coat to cure before applying surfacing material.

4. Fog Coat.

Apply fog coat when the ambient air temperature is at least 40°F.

Apply fog coat to a dry surface.

411.04 Construction Requirements

PAGE 223

10/01/17

Replace the sixth paragraph with the following:

Coordinate milling and paving operations so that no section of milled roadway has public or construction traffic operating on it for more than 5 days. If public or construction traffic operates on the milled surface for more than 5 days, repair the roadway as directed by the Engineer at no additional cost to the Department.

420.04 A General

PAGE 224

10/01/15

Replace Section 420.04 A with the following:

A. General.

Do not start seal work after September 1.

Allow material to cure as shown in Table 420-01 before applying seal coat materials.

Table 420-01 Curing Period	
Material Type	Curing Period
Prime Coat	4 days
Asphalt Cement Pavements	7 days
Emulsion Pavements	15 days

Schedule the work so that the last bitumen application of the day is sufficiently cured to allow installation of the short-term pavement marking before sunset.

420.04 D Cover Coat Material Application**PAGE 225****10/01/15**

Replace the third paragraph with the following:

Within one minute following the application of the bitumen, spread the cover coat material uniformly over the bituminous material with an aggregate spreader. Apply cover material by hand to areas that are inaccessible to the aggregate spreader.

420.04 D Cover Coat Material Application**PAGE 225****10/01/15**

Delete the eighth paragraph in its entirety.

420.04 H.1 Bitumen**PAGE 226****10/01/16**

Replace Section 420.04 H.1 with the following:

1. Bitumen.

Obtain samples of this material under the observation of the Engineer. The Engineer will take immediate possession of the samples.

421.03 MATERIALS**PAGE 228****10/01/16**

Add the paragraph following to the end of Section 421.03:

Obtain samples of the bitumen under the observation of the Engineer. The Engineer will take immediate possession of the samples.

422.03 MATERIALS**PAGE 232****10/01/16**

Add the paragraph following to the end of Section 422.03:

Obtain samples of the bitumen under the observation of the Engineer. The Engineer will take immediate possession of the samples.

430.02 Equipment.**PAGE 236****10/01/18**

Add the following to the end of 430.02:

When air temperatures fall below 50° F at any place along the haul route of the mix, deploy the tarps installed on the bituminous trucks.

430.03 F Commercial Grade Hot Mix Asphalt**PAGE 238****10/01/17**

Delete Section 430.03 F "Commercial Grade Hot Mix Asphalt" from Section "430.03 Material".

430.04 D.1 General**PAGE 241****10/01/15**

Replace the third paragraph of Section 430.04 D.1 with the following:

Submit the mix design a minimum of 10 calendar days before beginning paving operations. The Engineer will review the mix design. If the Engineer does not approve the mix design, revise the mix design and submit the revised mix design. Allow 10 calendar days for the Engineer to review a revised mix design before beginning paving operations.

430.04 D.2 Items to be Submitted**PAGE 242****10/01/15**

Add the following item to Section 430.04 D.2:

- e. If the mix contains RAP, submit a 50 pound sample of the milled material.

430.04 E.5 Control Limits**PAGE 245****10/01/17**

Replace "Percent Air Voids" values in Table 430-07 with the following:

Test/Assessment	Single Test Target Value Control Limit	Moving Average Target Value Control Limit
Percent Air Voids	2.0% to 6.0%	2.5% to 5.0%

430.04 F Surface Preparation**PAGE 246****10/01/15**

Replace the second paragraph of Section 430.04 F with the following:

Correct local irregularities in the existing surface before placing the first lift of bituminous material. If milling is specified, correct local irregularities after milling. Apply a tack coat to the surface before correcting the irregularities. Use the same type of mix that is required for the subsequent lift. Use a pneumatic roller as specified in Section 151.01 A.3. "Self-Propelled Pneumatic-Tired Roller" to compact the mix.

430.04 G Patching**PAGE 247****10/01/15**

Replace Section 430.04 G with the following:

G. Patching.

Remove existing broken or unstable surface material and replace that material with the same mixture specified for the next course.

Place the bituminous material in lifts not to exceed 3 inches and compact the material. Allow the patch material to cool to 130°F before placing additional material. If patching is required during the paving operation, allow the patch material to cool to 185°F before placing additional material.

430.04 H.1 General**PAGE 248****10/01/15**

Delete the ninth paragraph of Section 430.04 H.1

430.04 I.3.c Intermediate Rolling

PAGE 250

10/01/15

Replace the second paragraph of Section 430.04 I.3.c with the following:

If roller tires pick up the bituminous material or there are excessive roller marks in the mat, the Engineer may allow the removal of the intermediate rolling operation if it appears to the Engineer that compaction is being achieved.

430.04 J Joints

**PAGE 250
10/01/18**

10/01/15 &

Replace Section 430.04 J with the following:

J. Joints.

1. General.

Place pavement against the surface of curbing, gutters, manholes, and similar structures uniformly near the contact surfaces so the pavement is slightly higher than the edge of the structure after compaction. Do not construct a joint on top of a joint from a previous lift or in a wheel path.

2. Longitudinal Joints.

Construct longitudinal joints on successive lifts between 6 and 12 inches from the previous longitudinal joint.

Place and follow markings to guide the paver. Construct joints in a uniform line. Correct pavement edges that deviate from the uniform line and correct areas of the joint that vary from the intended location of the joint by more than 2 inches. Construct joints with tight seams and no visible segregation.

3. Transverse Joints.

Construct transverse joints on successive lifts a minimum of 12 feet from the previous transverse joint.

430.06 A General

PAGE 253

10/01/17

Delete "Commercial Grade Asphalt, Ton" from the Pay Item List

550.03 Materials

PAGE 261

10/01/15

Add the following to Section 550.03:

Develop a mix design with a maximum water-cement ratio of 0.40 when placing concrete with a slip form paving machine. Use the water-cement ratio shown in Section 802.01 B.2, "Concrete Class Designation" for all other paving methods.

Replace the fourth paragraph with the following:

Adjacent concrete may be used as a side form after the concrete has attained a minimum compressive strength of 3,000 psi or a minimum flexural strength of 450 psi.

Replace Section 550.04 H.1.d with the following:

d. Final Surface Finish.

(1) General.

Uniformly texture the surface by dragging a seamless strip of stiff-fiber artificial grass carpet longitudinally along the full width of the pavement in a single pass.

Use and maintain a taut string line for operating the carpet drag. Attach the leading edge of the carpet drag to a bridge. If the Engineer determines it is not feasible to use a bridge or string line, other texturing methods will be allowed.

Maintain a clean carpet free of encrusted concrete.

Provide a minimum texture depth of 0.031 inches.

(2) Roadways with Speed Limits Less than 45 MPH.

The Engineer will test the texture achieved by the carpet drag in accordance with ASTM E 965 and the Field Sampling and Testing Manual. The Engineer will determine the test location.

If three or more lots have texture depths less than 0.031 inches but greater than or equal to 0.025 inches, perform diamond grinding on those lots.

Perform diamond grinding any lot having a texture depth of less than 0.025 inches.

Perform grinding as specified in Section 550.04 M.4, "Grinding."

The Engineer will determine the limits of any failing test by running additional tests at 100 foot intervals before and after the failing test. The Engineer will determine the location of the additional tests.

(3) Roadways with Speed Limits 45 MPH or Greater.

Run a clean, metal tine longitudinally along the surface immediately following the carpet drag. Exclude areas within 3 inches of the edge of the slab and longitudinal joints. Run the tine continuously across transverse joints.

Use a tine that provides:

- 1/8 inch \pm 1/64 inch groove width;
- 3/16 inch \pm 1/16 inch groove depth; and
- 3/4 inch spacing of between grooves.

If the concrete has become too stiff to receive the metal tine finish, use diamond bladed equipment to produce the longitudinal grooves.

550.04 I.3 Impervious Membrane Cure

**PAGE 271 10/01/15 &
10/1/17**

Replace the first paragraph of Section 550.04 I.3 with the following:

Use a curing compound that meets the requirements of Section 810.01 B.2, "Type 2, Class B".

Replace the title of "Impervious Membrane Cure" with "Concrete Curing Compound".

550.04 M.3.a General

PAGE 273 10/01/16

Replace the first sentence of the first paragraph with the following:

The Engineer will determine the pavement smoothness by profiling the finished surface of the mainline pavement.

550.04 M.3.b Operation

**PAGE 273 10/01/16 &
10/1/17**

Replace the second paragraph with the following:

The Engineer will apply a liquidated damage of \$1,500 per trip for each profile collected after the second profile.

Replace the third paragraph with the following:

The Engineer will use an inertial profiler to collect the profile in each wheel path of each lane.

550.04 M.3.c(1) General

PAGE 274 10/1/17

Replace the second bullet with the following:

- Use ProVal, <http://www.roadprofile.com>, to calculate the IRI for the Pavement Profile (PPF);

Replace all instances of "ERD" with "PPF".

550.04 M.3.c(1)(b) Corrective Action Plan

PAGE 275 10/1/17

Replace all instances of "ERD" with "PPF".

550.04 N.1 Contractor Coring

PAGE 276 10/01/17

Add the following to the end of the first paragraph of 550.04 N.1:

Fill the core hole with fresh concrete mix and use a vibrator to consolidate the concrete in the holes. Screed the new concrete off and apply curing compound to the new concrete.

570.03 A General**PAGE 281****10/01/15**

Add the following item to the table:

Impervious Membrane Cure

810.01 B.1

570.03 B Concrete for Repairs**PAGE 281****10/01/18**

Replace all occurrences of AASHTO M 85, Type I or Type IA in section 570.03 B with the following:

Section 804.01, "Cement",

570.03 B.2.a Concrete**PAGE 281
10/1/18****10/01/15 &
10/1/18**

Replace Section 570.03 B.2.a with the following:

a. Concrete.

Use Class AE concrete with cement that meets the requirements of Section 804.01, "Cement", for spall repairs.

570.03 D Curing Compound**PAGE 281****10/01/15**

Delete Section 570.03 D.

570.04 A.1.b Full Depth Repairs**PAGE 282****10/01/15**

Replace Section 570.04 A.1.b with the following:

b. Full Depth Repairs.

Use the lift out method to remove concrete in full depth repair areas with minimal disruption to the subgrade and without damage to the remaining concrete. Do not operate equipment, other than compaction equipment, in areas where concrete has been removed. Fill voids deeper than 1 inch with aggregate and compact the material to the level of the existing subgrade.

Place concrete for repairs less than 100 feet long the same day that removals are initiated. Place concrete for repairs longer than 100 feet within 48 hours of initiating removals. Dampen the faces of existing concrete before placing new concrete.

Place, consolidate, finish, and cure concrete according to the following portions of Section 550.04, "Construction Requirements":

- 550.04 C, "Roadbed Condition";
- 550.04 D, "Placing and Spreading Concrete";
- 550.04 E, "Placing Reinforcing Steel and Tie Bars";
- 550.04 F, "Uncontrolled Cracking";
- 550.04 G, "Joints";
- 550.04 H, "Finishing Concrete", except parts 1.d, "Final Surface Finish" and 1.e, "Imprinting Pavement";
- 550.04 J, "Removing Forms";
- 550.04 K, "Sealing Joints"; and

- 550.04 L, "Opening to Traffic".

Provide finished concrete that is flush with all adjacent pavement surfaces. Before the concrete sets, check the repair utilizing a 10 foot straight edge and correct areas that deviate by 1/8 inch or greater.

Texture the repair by dragging a carpet of artificial grass longitudinally over the repaired area.

If repairs involve multiple lanes, fill the gap between the lane under repair and the existing concrete with cold bituminous material. Remove this material before making the repair to the adjacent lane.

(1) Repairs One Lane Wide.

Use a bond breaker along the centerline joint. Tie bars are not required on repairs that are one lane wide.

When the repair falls in a ramp, restore the longitudinal joints crossing the repair, but do not use tie bars.

(2) Repairs Wider Than One Lane.

Before placing the concrete in the second lane, install 30 inch #5 tie bars in the longitudinal joint using the original tie bar pattern. Drill holes for the bars and secure the bars in the holes using epoxy.

(3) Impervious Membrane Cure.

Use a curing compound that meets the requirements of Section 810.01 B.1, "Type 2".

Apply the cure at a minimum rate of 1 gallon per 150 square feet of pavement in one or two applications. If applying two coats, apply the second application within 30 minutes of the first application.

Protect joints that require sealing from infiltration of the curing compound.

Immediately cover the exposed sides of the concrete pavement with curing compound if removing forms exposes curing concrete before the expiration of the curing period.

Immediately reapply curing compound to damaged areas within the curing period.

570.04 A.2.c Dowel Bars

PAGE 284

10/01/15

Replace the first paragraph of Section 570.04 A.2.c with the following:

Drill 1-3/8 inch diameter holes using a rigid frame-mounted drill. Clean the hole, inject epoxy into the hole, and insert dowels.

570.04 A.3.a Concrete Removal

PAGE 285

10/01/15

Replace the third paragraph of Section 570.04 A.3.a with the following:

If existing reinforcing steel is damaged or bent within the 18 inch lap area, replace the damaged reinforcing steel.

570.04 A.3.b Full-Width, Full Depth Repairs.

PAGE 285

10/01/18

Replace the second and third bullet of 570.04 A.3.b with the following:

- Use Class ASE concrete.
- Place concrete between 4 p.m. and 8 p.m. Tie one rebar end and tie the other end less than 20 minutes before placing concrete.

570.04 C Grinding

PAGE 285

10/01/15

Replace the first paragraph of Section 570.04 C with the following:

Allow new concrete and dowel bar retrofit patch material to cure for a minimum of 24 hours before grinding.

570.04 C.6 Slurry Removal

PAGE 286

10/01/15

Replace Section 570.04 C.6 with the following:

6. Slurry Removal.

Continuously collect all slurry or residue resulting from the grinding operation.

In areas with speed limits of 45 mph or less and in areas with curb and gutter, dispose of slurry as specified in Section 107.17, "Removed Material".

In areas with speeds greater than 45 mph and without curb and gutter, slurry may be placed on the foreslope of the roadway. Prevent slurry from entering pipes, culverts, storm drains, ravines, streams, waterways, wetlands, and all other water conveyances. Install erosion control features as necessary to prevent contamination, or dispose of slurry as specified in Section 107.17, "Removed Material".

570.04 D.1 General

PAGE 286

10/01/16

Replace the first sentence of the first paragraph with the following:

The Engineer will determine the pavement smoothness by profiling the finished surface of the mainline pavement.

570.04 D.2 Operation

PAGE 286

10/01/16

Replace the second paragraph with the following:

The Engineer will apply a liquidated damage of \$1,500 per trip for each profile collected after the second profile.

570.04 E.1 Transverse Joint Cleaning and Sealing.

PAGE 288

10/1/18

Replace the content of 570.04 E.1 with the following:

Clean and reseal the portion of the transverse joint that were ground.

Remove foreign material from vertical edges of the joint. Clean the joint using compressed air removing any incompressible material.

Install backer rod before applying the silicon sealant.

570.05 METHOD OF MEASUREMENT

PAGE 289

10/01/16

Add the following to Section 570.05:

E. Full-Depth Doweled.

Include the cost of the end dowel bars in the contract unit price “___-Inch Concrete Pavement Repair – Full-Depth Doweled”. The cost for intermediate dowel bar assemblies is paid by “Doweled Contraction Joint Assembly”.

570.06 BASIS OF PAYMENT

PAGE 289

10/01/15

Delete the following paragraph from Section 570.06:

Include all costs for saw cuts, steel reinforcing, bar supports, tie bars, and joint sealing in the unit price bid for “___ Inch Concrete Pavement Repair - Full-Depth _____”.

602.02 EQUIPMENT

**PAGE 299
10/1/17**

10/01/16 &

Add the following to Section 602.02.

E. Curing Concrete.

Use a fogging machine as specified in Section 156.02, “Fogger” for exposed surfaces.

F. Shot Blasting Equipment.

Use centrifugal or wheel type shot blasting equipment that is designed to clean concrete surfaces and leave no oil or other foreign material on concrete surfaces. Use a shot blaster capable of collecting blast media and dust.

602.02 A General

PAGE 299

10/01/17

Add the following sentence to the end of 602.02 A:

Use a plant and equipment as specified in Section 155, “Concrete Equipment”.

602.03 A General

PAGE 299

10/01/16

Delete the last paragraph.

Replace Section 602.04 D with the following:

D. Deck and Bridge Approach Slab Finishing.

Following the screed operations, obtain the final surfacing with a 10 foot long scraping straightedge with a suitable handle. Ensure the final surface has the required crown and does not vary more than 1/8 inch from a 10 foot straightedge laid longitudinally thereon.

Pull a burlap or artificial grass drag over the surface in a longitudinal direction while the concrete is plastic.

Immediately following the artificial grass drag, run a clean metal tine transversely across the deck. Stop the tine 18 inches from the face of the barrier or curb and 6 inches from the beginning and end of the deck or approach slab. The tine may be hand-operated. Use a tine that provides:

- 1/8 inch \pm 1/64 inch groove width;
- 3/16 inch \pm 1/16 inch groove depth; and
- 3/4 inch spacing between grooves.

602.04 F.1 General

Add the following to the end of the third paragraph of Section 602.04 F.1:

Do not use a waterproof material to cover the wet burlap during the curing period.

602.04 F.2 Deck Slab Concrete

Delete Section 602.04 F.2 and replace with the following:

2. Deck and Bridge Approach Slab Concrete.

Cure the concrete surface by covering with a double thickness of burlap. Moisten the concrete surface using a light fog spray if the surface begins to dry after finishing and before placement of the wet cure. Keep the burlap continuously moist at all times.

During the curing process do not allow vehicles and equipment on the deck or approach slab and do not perform work on the deck or approach slab.

For deck slab concrete, place the wet cure burlap and start the wet cure within 15 minutes of the passing of the finishing machine.

602.04 G Barriers

Delete Section 602.04 G and add the following:

G. Barriers.**1. General.**

Use Class AAE-3 concrete for barriers.

Perform corrective actions of any surface that deviates by 3/8 inches or more when measured with a 10 foot straightedge. Make corrections by grinding, filling with an approved epoxy mortar, or replacing.

Except at expansion joints, construct V-grooves that are 3/4 inch wide and 3/4 inch deep in all faces of the barriers at each pier and at equal spaces between piers and abutments at approximately 10 foot spacing.

2. Conventional Forming.

Adequately tie forms to avoid any shifting during concrete placement.

If concrete inserts in the deck slab are holding the barrier forms in place, remove the inserts. Clean and fill the cavities flush with the deck slab using an epoxy resin adhesive.

3. Slipforming.

Conventional form a minimum distance of 4 feet on each side of expansion joints before slip forming.

After the reinforcement is installed, check the clear distance between the reinforcement and the slipform for the entire length of the pour.

The Engineer will allow slab overhang distance to be increased up to 1 inch provided the specified gutterline is maintained.

The Engineer will allow a radius to be used instead of a bevel on all edges of the barrier.

602.04 J Penetrating Water Repellent Treatment of Concrete Surfaces

PAGE 307
10/01/17

Replace section 602.04 J with the following:

J. Penetrating Water Repellent Treatment.

Apply penetrating water repellent solution a minimum of 21 days after placement of the concrete bridge deck and approach slabs.

Apply penetrating water repellent solution to the following surfaces:

- Driving surfaces of bridge deck;
- Approach slabs;
- Concrete medians;
- Front faces and tops of curbs; and
- Front faces and tops of barriers.

Remove the barrier forms before applying treatment to surfaces. Clean all surfaces receiving treatment using either sandblasting, shot blasting, or water-washing equipment. Remove dirt, dust, grease, oil, laitance, asphalt, or other materials that may inhibit the coverage and penetration of the solution. Use hand tools and penetrating water repellent solution manufacturer's approved solvents to remove any bonded foreign materials. Do not remove or alter the existing surface finish or expose the coarse aggregate.

Allow any wet concrete surfaces to dry a minimum of 48 hours or longer if required by the solution manufacturer.

Apply the penetrating water repellent solution when the following conditions are met:

- The air temperature is within the following:
 - 40 °F and rising; or
 - 95 °F and falling;

- Wind is less than 25 mph; and
- Rain is not expected within 4 hours.

Use airless equipment that has a pressure range between 15 to 40 psi. Apply the repellent treatment solution uniformly so that one gallon of material does not spread over more than 200 sf. If the repellent solution manufacturer recommends a coverage of an area less than 200 sf per gallon, use the manufacturer's recommended rate. Squeegee or broom excess material to avoid ponding.

602.04 K.1 General

PAGE 307

10/01/15

Replace Section 602.04 K.1 with the following:

1. General.

When shown in the plans, apply membrane and primer in dry weather and when the air temperature is above 40°F. Apply to surfaces that are dry, clean, free of sharp protrusions and above 40°F.

602.06 B Surface Tolerance.

PAGE 308

10/01/18

Replace the last sentence with the following:

The amount of the contract price adjustment will be determined by multiplying the contract unit price for the deck concrete contract item by the area that is out of tolerance, measured in square yards, and the appropriate Contract Price Reduction Factor in Table 602-02.

604.03 B.1 General

PAGE 309

10/01/16

Replace Section 604.03 B.1 with the following:

1. General.

Develop a mix design that produces concrete that will achieve a minimum compressive strength of 5,000 psi within 28 days.

Section 802.01 H, "Air Content" will not apply.

Obtain the Engineer's approval for admixtures before developing the mix design. Include approved admixtures in the mix design.

Perform tests to determine the concrete's compressive strength using 6 inch by 12 inch cylinders.

604.03 B.3 Trial Mix

PAGE 310

10/01/15

Replace the "AASHTO T 23" test requirement with "ND T 23"

604.03 E.1 Concrete

PAGE 310

10/01/15

Replace the "AASHTO T 23" test requirement with "ND T 23"

604.04 B Work Drawings**PAGE 311****10/01/16**

Replace Section 604.04 B with the following:

B. Work Drawings.

Provide work drawings that include:

- Beam dimensions;
- Size and location of all reinforcing and prestressing steel including;
 - o Strand layout;
 - o Pull down locations;
 - o Tensioning forces;
 - o Elongation; and
 - o Proposed changes in the reinforcing steel;
- Initial prestress forces;
- Location of handling hooks or devices; and
- Losses in the prestress due to:
 - o Elastic shortening;
 - o Shrinking or creeping of concrete; and
 - o Relaxation of steel stress as determined by the Contractor method of stressing.

Submit calculations and work drawings that are signed, sealed, and dated by a Professional Engineer registered in the State of North Dakota as set forth in NDCC Title 43.

604.04 D Placing Concrete**PAGE 312****10/01/16**

Replace Section 604.04 D with the following:

D. Placing Concrete.

Place concrete in forms made entirely of steel.

Vibrate concrete for the beams. Vibrate without displacement of reinforcing, conduits, voids, or wire. Vibrate for a sufficient duration and intensity to thoroughly consolidate the concrete without causing segregation.

Rough float and transversely broom the top of the beams.

606.04 A Design and Manufacture**PAGE 314****10/01/15**

Replace the second paragraph in Section 606.04 A with the following:

Use an ACPA or NPCA certified plant in the construction.

616.04 G Assembling Steel.**PAGE 322****10/01/18**

Replace all occurrences of "AASHTO M 164" with the "ASTM F 3125 Grade A 325".

Replace all occurrences of "ASTM A 325" with "ASTM F 3125 Grade A 325".

624.03 Materials.**PAGE 336****10/01/18**

Replace all occurrences of "ASTM A 325" with "ASTM F 3125 Grade A 325".

624.03 B E-Rail Retrofit **PAGE 336** **10/01/16**

Replace ASTM A 307, Grade C with ASTM F 1554, Grade 36.

624.03 C Free Standing Rail Retrofit **PAGE 336** **10/01/16**

Replace ASTM A 307, Grade C with ASTM F 1554, Grade 36.

650.02 EQUIPMENT **PAGE 341** **10/01/16**

Replace the Equipment list with the following:

Equipment	Section
Mobile Mixer	155.03 C
Bridge Deck Overlays Finishing Equipment	155.07 D
Sawing	155.09
Grinding	155.11
Concrete Buggy	155.12
Fogger	156.02
Milling Machine	156.03

650.03 A Concrete **PAGE 342** **10/01/16**

Delete the last paragraph in its entirety.

650.03 B Low Slump Concrete **PAGE 342** **10/01/17**

Replace Section 650.03 B with the following:

B. Low Slump Concrete.

1. General.

Item	Section
Fine Aggregate	802.01 C.3
Coarse Aggregate – Size 5	802.01 C.2
Concrete Admixtures	808
Burlap Cloth	810.01 A
Water	812

Use cement that meets the requirements of AASHTO M 85, Type I or Type IA.

Mix low slump concrete using 8.75 bags of cement per cubic yard and a maximum water-cement ratio of 0.42.

Use coarse aggregate composed of crushed stone. Use crushed stone that has at least one fractured face on 75 percent of the particles retained on the number 4 sieve.

Entrain air within the concrete as specified in Section 802.01 H, "Air Content", except supply concrete with an air content between 5.0 and 7.0 percent of the volume of the concrete at the time of placement.

Produce concrete that has a slump of 1 inch or less, when determined according to ND T 119.

Use a mobile mixer to produce low slump concrete.

2. Mix Design.

Use a mix design that has the percentages shown in Table 650-01.

Table 650-01	
Coarse Aggregate	31%
Fine Aggregate	31%
Air	6%
Water	16%
Cement	16%

650.04 C Removals with Hydrodemolition Equipment

PAGE 343

10/01/16

Add the following to 650.04 C:

In areas inaccessible for using hydrodemolition equipment, remove concrete using hand held hydrodemolition equipment or mechanical equipment.

650.04 C.1 Class 1H

PAGE 343

10/01/16

Delete the last paragraph in 650.04 C.1.

650.04 G Finishing

PAGE 345

10/01/16

Remove and replace the last paragraph of 650.04 G with the following:

Pull a burlap or artificial grass drag over the surface in a longitudinal direction while the concrete is plastic. Immediately follow the drag with a metal tine finish as specified in Section 602.04 D, "Deck and Approach Slab Finishing".

650.04 I Curing

PAGE 345

10/01/16

Replace all instances of Section 602.04 F.2, "Deck Slab Concrete" with the following:

Section 602.04 F.2, "Deck and Bridge Approach Slab Concrete".

650.05 Method of Measurement

PAGE 346 10/01/17

Add the following to the end of Section 650.05:

C. Hydrodemolition Removals.

Removals made beyond the designated limits stated in Sections 650.04 C.1, "Class 1H", and 650.04 C.2, "Class 2H" will not be paid for under any classification of removal.

650.06 B Surface Tolerance.

PAGE 346 10/01/18

Replace the last sentence with the following:

The amount of the contract price adjustment will be determined by multiplying the contract unit price for "Class AAE-3 Concrete" by the area, measured in square yards, that is out of tolerance and the appropriate Contract Price Reduction Factor in Table 650-02.

Table 650-02	
Deviation	Contract Price Reduction Factor
> 1/8 inch and ≤ 1/4 inch	0.6%
> 1/4 inch and ≤ 1/2 inch	1.8 %

702.06 Basis of Payment

PAGE 355 10/01/15

Replace the Table 702-01 with the following:

Table 702-01 Payment for Mobilization		
Original Contract Amount Earned	Payment will be the Lesser of:	
	Mobilization Bid Amount	Original Contract Amount
5%	25%	2.5%
10%	50%	5.0%
50%	100%	7.5%
75%	100%	10.0%

704.03 A General

PAGE 356 10/01/17

Add the following to the end of 704.03 A:

Provide traffic control devices that meet the crash testing requirements of the appropriate classification under NCHRP 350. The Engineer will accept devices that meet the requirements of MASH.

Submit a Certificate of Compliance for all temporary traffic control materials before installation.

704.04 A.1 Requirements Before Sign Installation

PAGE 358

10/1/17

Replace 704.04 A.1 with the following:

1. Requirements Before Device Installation.

Before beginning work, coordinate and hold a meeting with the Engineer to review the traffic control plans.

704.04 B Traffic Control Device Condition Classifications

PAGE 359

10/01/15

Replace all instances of “ATSAA” in Section 704.04 B with “ATSSA”.

704.04 C.3 Traffic Signal Maintenance Person.

PAGE 362

10/01/18

Replace the first sentence with the following:

If permanent or temporary traffic signals are being installed, designate a traffic signal maintenance person.

704.04 C.5 Flaggers

PAGE 362

10/01/17

Replace the web address in the first paragraph with <http://www.ndsc.org>.

Replace the last sentence of the second paragraph with the following:

The handbook is available for download at www.ndltap.org and at <http://www.ndsc.org>.

704.04 M Protection Vehicle with Truck Mounted Attenuation Device (TMA)

PAGE 366

10/01/15

Replace the last paragraph of 704.04 M with the following:

Equip the protection vehicle with an advance warning flashing or sequencing arrow panel conforming to Section 704.03 M, “Advance Warning Flasher or Sequencing Arrow Panel” and the MUTCD.

704.04 O Traffic Control for Uneven Pavement

PAGE 367

10/01/15

10/01/17

Replace all instances of “Sign W20-52-24” in Section 704.04 O with “W20-52-54”.

Change the title of Section 704.04 O.3.b to “Uneven Pavement Greater Than 2 Inches.”

Add the following to 704.04 O:

4. Uneven Shoulder and Adjacent Lane.

If the shoulder and adjacent driving lane are not even at the end of the day, the following criteria will apply:

Install “Shoulder Drop Off” signs (Sign W8-9a-48) at the following locations:

- In advance of the drop off;

- Spaced at each mile from the advance sign; and
- At major intersections (CMC routes, state and US highways, and Interstate ramps).

If the difference in elevation between the shoulder and the driving lane is 2" or greater, construct a slough at the edge of the driving lane that is 4:1 or flatter.

If the difference in elevation between the shoulder and the driving lane is less than 2", no slough is required.

704.04 O.1 General.

Page 367

10/01/17

Replace 704.04 O.1 with the following:

1. General.

If pavement in adjacent lanes or the shoulder adjacent to an open lane is uneven at the completion of a day's work, install traffic control devices as specified in this section.

Leave these devices in place until the pavement surface in the adjacent lanes or shoulder are even.

706.02 A General

PAGE 372

10/01/16

Add the following to the end of Section 706.02 A:

Furnish Aggregate and Bituminous labs with DSL broadband internet and a router that broadcasts Wi-Fi and will allow for hard wiring of a computer.

706.02 B Aggregate Laboratory

PAGE 372

10/01/15

Replace Section 706.02 B with the following:

B. Aggregate Laboratory.

Place the laboratory at a location acceptable to the Engineer. The Engineer will have the full control and the exclusive use of the laboratory.

Provide a laboratory with a minimum floor area of 230 square feet, minimum exterior width of 8 feet, and a minimum ceiling height of 7 feet.

Partition the building into a minimum of two rooms, a smaller room having a floor area of approximately 70 square feet.

Provide a workbench with a length of 7 feet in the smaller room.

Provide the following equipment in the larger room:

1. Mechanical shaker capable of receiving 6 trays that have a screen size of 14 inches by 14 inches and the following compatible sieves:
 - 1-1/2 inch;
 - 1-1/4 inch;
 - 1 inch;
 - 3/4 inch;
 - 1/2 inch;
 - 3/8 inch;
 - No. 4; and

- An enclosed dust pan.
- 2. Mary Ann shaker capable of being adjusted to receive 8 and 12 inch diameter sieves;
- 3. Splitter with a maximum hopper capacity of 0.6 cubic feet;
- 4. Splitter with a minimum hopper capacity of 1.0 cubic feet; and
- 5. An exhaust fan capable of changing the air in the room every minute.

706.04 A. General.

PAGE 373

10/01/18

Add the following sentence to the first paragraph of 706.04 A:

Level, block, and tie down the lab when placing.

709.04 C Geosynthetic Geogrid (Type G)

PAGE 376

10/01/15

Replace Section 709.04 C with the following:

C. Geosynthetic Geogrid (Type G).

Unroll geogrid parallel to the centerline of the road. Do not drag the geogrid across the underlying material. Use geogrid widths that produce overlaps of parallel rolls at the centerline and at the shoulders and so that no overlaps are required along wheel paths.

Overlap geogrid a minimum of 30 inches at all splices and joints when placing on subgrade. Overlap geogrid a minimum of 12 inches at all splices and joints when placing on base.

Construct overlaps at the end of a roll so the previous roll laps over the subsequent roll in the direction of the cover material placement. Mechanically tie transverse joints to maintain the minimum overlap. Place pins, staples, or small piles of aggregate to maintain the geogrid position before placement of cover material.

Stagger end overlaps at least 10 feet from other end overlaps in parallel rolls. Cut or increase overlaps to conform to curves.

Patch damaged areas of geogrid. Place a patch that overlaps the damaged area by 36 inches on all sides. Mechanically tie the patch to the underlying grid.

Place the first lift of material over geogrid installed on subgrade to a depth of 10 inches of loose material. Place the first lift of material over geogrid installed on base to a depth of 6 inches of loose material.

Use low ground pressure equipment to spread the initial lift of material. If rutting occurs, fill the ruts with additional material before placing the subsequent lift. Do not blade out ruts. Do not turn construction equipment on the first layer of material.

714.03 A Culverts and Storm Drains

**PAGE 378
10/1/17**

10/01/16 &

Replace the last paragraph of Section 714.03 A with the following:

Provide mortar consisting of a mixture of one part Portland Cement to two parts mortar sand, and sufficient water to furnish proper consistency.

Where placing new end sections on existing pipe, identify whether the type of end section needed is male or female.

Add the following to the end of Section 714.03 A:

If using polymer coated corrugated steel pipe, install end sections that meet the requirements of Section 830.02 C "Polymer Coated Corrugated Steel Pipes" or 830.02 B, "Metallic (Zinc or Aluminum) Coated Corrugated Steel Culverts, Storm Drains, and Underdrains".

714.04 A.1 Bedding

PAGE 379

10/01/15

Delete the first paragraph from Section 714.04 A.1.

714.04 A.3 Joining Pipe

PAGE 380

10/01/17

Delete the last paragraph.

714.04 A.5 Deflection Testing

PAGE 380

10/01/16

Replace the second paragraph of 714.04 A.5 with the following;

The Engineer will visually inspect all metal and thermoplastic pipe under unpaved approaches for deflection. If the Engineer sees any deflection, the Engineer will require the Contractor to pass a nine point mandrel or other approved object through the pipe to check for deflection. Use a mandrel with a diameter not less than 95 percent of the inside diameter of the pipe. If the mandrel cannot be passed through the pipe, replace the pipe.

714.04 A.6 Connection to Manholes, Inlets, and Pipes

PAGE 380

10/01/15

Replace Section 714.04 A.6 with the following:

6. Connection to Manholes, Inlets, and Pipes.

If connections are required to a manhole, inlet barrel, or pipe entrance; connect pipe by cutting the opening and grouting in the connecting pipe.

714.04 A.7 Compaction Control for Aggregate

PAGE 380

10/01/15

Replace Section 714.04 A.7 with the following:

7. Compaction Control for Aggregate.

Compact aggregate according to Section 203.04 E.2, "Compaction Control, Type A". The moisture content of the aggregate at the time of compaction shall be not less than 2.0 percentage points below, nor more than 3.0 percentage points above the optimum moisture content.

Compact aggregate for approach pipes according to the conduit manufacturer's recommendation

Use a maximum lift thickness of 6 inches.

714.04 A.8 Compaction Control for Non-Aggregate Material

PAGE 380

10/01/15

Replace Section 714.04 A.8 with the following:

8. Compaction Control for Non-Aggregate Material.

If Common Excavation Type A is specified, follow the compaction requirements in Section 203.04 E.2, "Compaction Control, Type A". If Common Excavation Type B is specified, follow the compaction requirements in Section 203.04 E.3, "Compaction Control, Type B".

Compact material for approach pipes according to the conduit manufacturer's recommendations.

714.06 Basis of Payment.

PAGE 383

10/01/18

Replace the first sentence of 714.06 with the following:

Include the cost of end sections in the price bid for pipe conduit

748.03 MATERIALS

PAGE 393

10/01/15

Add the following item to the table:

Impervious Membrane Cure

810.01 B.1 or
810.01 B.2

748.04 D Curing.

PAGE 393

10/1/18

Replace the 6th paragraph with the following:

If Class ASE concrete is used, maintain the surface temperature between 50°F and 90°F

750.03 MATERIALS

PAGE 395

10/01/15

Add the following item to the table:

Impervious Membrane Cure

810.01 B

Replace the paragraph directly after the table with the following:

For imprinted concrete use any size coarse aggregate specified in Section 802.01 C.2, "Coarse Aggregate". Produce a mix that consists of 60 percent fine aggregate and 40 percent coarse aggregate

750.04 G Curing.

PAGE 396

10/1/18

Replace the 6th paragraph with the following:

If Class ASE concrete is used, maintain the surface temperature between 50°F and 90°F.

752.04 E Temporary Safety Fence.

PAGE 399

10/1/18

Add the following paragraph to the end of 752.04 E:

Maintain the temporary safety fence for the duration of the project. Remove the temporary safety fence when it is no longer needed.

752.05 Method of Measurement

PAGE 399

10/01/17

Remove the last paragraph from 752.05:

752.06 Basis of Payment

PAGE 400

10/01/17

Replace "Fence Terminal – Wood Posts" in the Pay Item List with "Fence Terminal".

754.03 Materials

PAGE 401

10/01/17

Replace Concrete Class AAE with Concrete Class AE.

754.04 D.2 Anchor for Telescoping Perforated Tubes Supports

PAGE 403

10/01/15

Replace the last two paragraphs in Section 754.04 D.2 with the following:

If installation is in either concrete or bituminous material, omit the soil plate or use a surface mount anchor base.

Core concrete and bituminous surfacing before installing the anchor unit and fill the cored area with like material that matches the surrounding surfacing.

754.04 F Removing and Resetting Signs and Supports

PAGE 407

10/01/15

10/01/16

Replace the Section 754.04 F with the following:

F. Removing and Resetting Signs and Supports.

1. General.

Remove and reset existing signs and supports as specified. Stockpile all signs and supports not to be reset at designated locations within the project limits. The Engineer will arrange to have stockpiled signs removed from the project limits and delivered to the Department's facility.

Replace removed or reset signs and supports that are damaged during removing, resetting, or stockpiling at no additional cost to the Department.

Remove existing signs and supports as construction progresses, and immediately reset or install new signs.

The Engineer will allow the temporary reset of existing signs, or the temporary installation of new signs. Include the cost of installing and resetting signs temporarily in the price bid for other items.

2. Reset Sign Panel.

Remove sign panels from existing supports. Reinstall sign panels, angles, stringers, and steel channels on new supports.

Provide all necessary brackets and hardware to attach sign panels, angles, stringers, and steel channels on new supports.

3. Reset Sign Support.

Remove sign panels from existing supports. Reinstall support and install new sign panels, angles, stringers, and steel channels.

Provide all necessary brackets and hardware to attach sign panels, angles, stringers, and steel channels on supports.

754.04 I Overlay Panel Sign Refacing

PAGE 407

10/01/15

Replace the second paragraph of Section 754.04 I with the following:

Remove the legend, border, and symbol on those signs that have demountable copy and remove any existing sign overlays and place overlay panels on the signs. Do not remove direct applied sheeting legends, borders, and symbols. Direct apply the new legends, borders, and symbols to the overlay panels and install on the existing signs.

754.04 J Auxiliary Signs

PAGE 408

10/01/15

Replace the Section 754.04 J with the following:

J. Auxiliary Signs.

Install auxiliary signs used with route markers with the same background color as the route markers:

- Interstate, Blue;
- Interstate Business Loop, Green;
- State, White;
- US, White; and
- County, Blue.

754.05 METHOD OF MEASUREMENT

PAGE 408

10/01/15

Add the following to Section 754.05:

D. Reset Sign Panel.

The Engineer will measure the item "Reset Sign Panel" by the number of locations a sign or sign assembly has been reset.

E. Reset Sign Support.

The Engineer will measure the item "Reset Sign Support" by each leg of a sign support that has been reset.

760.03 Materials

PAGE 410

10/01/15

Replace Section 760.03 with the following:

760.03 MATERIALS

Use one of the following materials when applying a fog coat to rumble strips:

- SS-1h, Section 818.02 F, "Anionic Emulsified Asphalt";
- MS-1 Section 818.02 F, "Anionic Emulsified Asphalt"; or
- CSS-1h Section 818.02 E.1 "Cationic Emulsified Asphalt".

When MS-1 is used it may be diluted by the supplier or the Contractor.

760.04 F Traffic Control

PAGE 411

10/01/15

Replace Section 760.04 F with the following:

F. Traffic Control.

1. General.

Use a TMA as specified in Section 704.04 M, "Protection Vehicle with Truck Mounted Attenuation Device (TMA)".

2. Centerline Rumble Strip Installation.

Provide flaggers and 2 sets of the required flagger signing for each direction of travel. Ensure that at least one set of the required flagger signing is in place in each direction of travel whenever work centerline installation is performed. Limit the work area to a maximum of 3 miles.

760.05 METHOD OF MEASUREMENT

PAGE 411

**10/01/15
10/01/16**

Add the following to the end of Section 760.05:

The Engineer will measure flagging and traffic control signs as specified in Section 704.05, "Method of Measurement.

The Engineer will count each leg of an intersection receiving rumbles strips as one "Set".

760.06 BASIS OF PAYMENT

PAGE 411

**10/01/15
10/01/16**

Delete "Rumble Strips – Intersection, Each" and replace with "Rumble Strips – Intersection, Set".

Add the following paragraph after the list of pay items in Section 760.06:

Flagging and traffic control signs will be paid for as specified in Section 704.06, "Basis of Payment".

Replace Section 762.04 A.4 with the following:

4. Grooved Pavement Markings.

a. General.

For messages, groove the same area as the messages. Do not groove a rectangular area to contain the message.

After grinding, blow the grooved slot clean to remove any residue and loose material before the installation of the pavement marking. When wet-grinding, immediately pressure wash the grooved slot to remove residue.

b. Grooves for Preformed Patterned Pavement Marking Film.

If specified in the plans, groove a recess into the pavement surface for each stripe that meets the tolerances specified in Table 762-01.

**Table 762-01
Preformed Patterned Pavement Marking Film Grooves**

Parameter	Tolerance
Depth	90 to 110 mils
Smoothness	Ridges, within the groove, shall be no more than 6 mils higher than either adjacent valley
Width	line width plus 1/2 inch
Length	line length plus 3 inches per end of line
Line End Tapers	3 inches

If pavement marking installation does not occur within 24 hours of grinding, sandblast the groove and install the pavement markings the same day the sandblasting occurs.

c. Grooves for Epoxy Paint.

If specified in the plans, groove a recess into the pavement surface for each stripe that meets the tolerances specified in Table 762-02.

**Table 762-02
Epoxy Paint Grooves**

Parameter	Tolerance
Depth	45 to 55 mils
Smoothness	Ridges, within the groove, shall be no more than 6 mils higher than either adjacent valley
Width	line width plus 1 inch
Length (skips)	line length plus 3 inches per end of line
Line End Tapers	3 inches

After creating the groove, prepare the surface in accordance with the manufacturer's instruction.

Delete the last paragraph of Section 762.04 C.1.a.

762.04 C.1.b. Data Logging System (DLS)

PAGE 415 10/1/16

Replace the first paragraph of Section 762.04 C.1.b with the following:

The use of a computerized DLS is required for monitoring the application of water based paint and epoxy pavement markings when the plan quantity of long lines for liquid pavement marking is 30,000 linear feet or greater.

762.04 C.2.a Method of Application

PAGE 416 10/1/16

Replace Section 762.04 C.2.a with the following:

a. Method of Application.

Allow new bituminous treatment to cool to a temperature below 125°F and cure for a period of 72 hours before applying permanent pavement marking.

Apply pavement marking paint and glass beads separately by machine. Use hand application where machine application is not feasible.

Apply water based paint when the air and pavement surface temperatures are 45°F or warmer. Do not apply paint when the air or pavement surface temperatures are forecasted to be colder than the minimum application temperature during the curing period of the paint. Apply pavement marking paint and beads only during daylight hours.

762.04 C.2.c Tolerances

PAGE 416 10/1/18

Replace the content of 762.04 C.2.c with the following:

(1) Surface Applied.

Place surface applied markings within the following tolerances:

- 3 inches of the specified length;
- 1/4 inch of the specified width;
- 6 inches in a 40 foot cycle;
- 2 inches from the proper alignment; and
- Begin dashed lines placed over existing dashed lines within 6 inches of the beginning of the existing line.

(2) Grooved.

Apply the grooved markings in the groove and within the following tolerances:

- 2 inches of the specified length; and
 - 1/4 inch of the specified width.
-

762.04 C.3.a General

PAGE 417 10/1/16

Replace the last paragraph of Section 762.04 C.3.a with the following:

Place epoxy material after bituminous material has been in place for a minimum of 14 days.

762.04 D.2 Short-Term Pavement Marking – Type NR (Non-Removable)

**PAGE 418
10/01/15**

Replace the second paragraph of Section 762.04 D.2 with the following:

Place the short term pavement markings at the rate specified in Section 762.04 C.2.b, “Rate of Application” with the following exception:

Exception: When the permanent pavement marking is specified as epoxy paint, apply the short term pavement marking at a thickness of 10 mils.

762.04 D.3 Short-Term Pavement Marking – Type R (Removable)

PAGE 419

10/01/15

Replace Section 762.04 D.3 with the following:

3. Short-Term Pavement Marking – Type R (Removable).

Install Type R markings when the air and pavement temperatures are at a minimum of 50°F and expected to remain above 50°F.

If the air or pavement temperature falls below 50°F during installation, Type NR markings may be installed as specified in Section 762.04 D.2, “Short-Term Pavement Markings – Type NR (Non-Removable)”. Install Type R markings once the specified temperatures exist.

Remove Type R markings once they are no longer necessary for traffic control operations. If Type NR markings were substituted for Type R markings, remove the Type NR markings using a method that does not leave a scar on the pavement.

762.06 Basis of Payment

PAGE 419

10/01/15

Add the following to the end of the first paragraph:

If Type NR markings are substituted for Type R markings due to temperature requirements, the markings will be paid for at the contract unit price for Type R markings.

764.04 A General

PAGE 421

10/01/17

Replace section 764.04 A with the following:

A. General.

1. Installation Requirements.

Before guardrail removal, installation, and extension, develop a written construction schedule for work at the guardrail location, and have the schedule reviewed by the Engineer. Include a sequence of controlling items and the timing of each in the schedule of work. Do not stop work between controlling items for more than four working days at any individual run.

Install the guardrail to produce a smooth continuous line with uniform height.

Set posts plumb with the front faces uniformly aligned.

Backfill posts with approved material placed and compacted in 6 inch layers, using a mechanical tamper.

Place hot bituminous pavement before guardrail post installation. Drill post holes for the new or reset guardrail through the hot bituminous pavement. Install the post in the remaining material by augured holes or driving.

When posts are installed in augured holes, backfill the holes with approved material without displacing the post alignment. Remove surplus excavated material.

When posts are driven, make the diameter of the hole in the bituminous pavement sufficient so when the soil around a post heaves up while the post is driven, the remaining asphalt will not move. If driving causes damage to posts, replace the post and install the replacement post by auguring the hole. Use a post cap if making minor vertical adjustments with a sledgehammer or maul.

Place a maximum thickness of 2 inches of bituminous material around each post to blend the post hole into the surrounding bituminous material.

Do not burn or weld after the material has been galvanized. All holes shall be machined drilled.

Repair areas exposed by cutting or drilling and any damaged galvanized coating according to Section 854.02, "Damaged Galvanized Coatings".

Hang guardrail and end terminals for individual runs in a single day.

2. Installation on Roadways Open to Public Traffic.

At locations of guardrail installation where the roadway is open to traffic, complete the installation of each individual run within 10 working days from the date all controlling items allow guardrail installation to begin.

Install delineator drums, as specified in Section 704, "Temporary Traffic Control", at 25-foot intervals adjacent to areas meeting one of the following conditions:

- Existing guardrail was removed and new guardrail will be installed;
- Where no guardrail previously existed but will be installed; or
- At guardrail extensions.

Leave the drums in place until guardrail installation at that location is complete and accepted by the Engineer.

3. Failure to Comply with Installation Requirements.

Provide temporary protection according to the plans at an object if unable to complete the required work in the specified time. Do not use material installed for this purpose in the final guardrail installation. The Department will not make separate payment for attenuation provided due to the Contractor's inability to complete the work in the specified time.

If the Contractor fails to comply with all requirements of Section 764.04 A.2, "Installation on Roadways Open to Public Traffic", the Engineer will perform one or both of the following:

1. The Engineer will apply a contract price reduction of \$1000 per day if the deficiency is not remedied within 24 hours of notification to correct the item.
2. The Engineer will have the temporary protection installed by other forces and deduct the costs from monies due or that become due to the Contractor.

If the Engineer uses other forces to install temporary protections, remove and dispose of the materials installed by the other forces at no additional cost to the Department.

764.04 D Removal of Guardrail**PAGE 422 10/1/17**

Replace section 764.04 D with the following:

D. Removal of Guardrail.**1. General.**

If the Engineer determines that the concrete anchors do not interfere with other construction, cut off concrete anchors one foot below ground level. When concrete anchors are removed, backfill the holes with approved material in 6 inch layers. Thoroughly tamp each layer using a mechanical tamper. If concrete anchors are cut off or removed, shape the surface to match the surrounding area and dispose of the removed concrete.

When removing guardrail posts and not replacing the posts in the same hole, backfill the hole with approved material. When the existing surrounding surface is bituminous, place 2 inches of bituminous material at the top of the hole to match existing surrounding surface.

2. Removed Guardrail in Locations Where There will be no permanent guardrail.

At locations where guardrail is to be removed and no guardrail will exist upon completion of the work, leave the guardrail in place until the hazard associated with the guardrail is no longer present and all work is complete except for that which requires the guardrail to be removed.

764.04 G Completion Requirements**PAGE 423 10/1/17**

Replace section 764.04 G Completion Requirements with the following:

G. Reserved.

Reserved.

764.04 H Attenuation Devices**PAGE 423 10/1/17**

Replace the first paragraph with the following:

Install attenuating devices that meet the appropriate MASH testing Requirements and have an eligibility letter from FHWA.

766.04 CONSTRUCTION REQUIREMENTS**PAGE 425 10/01/15 &
10/1/17**

Replace Section 766.04 with the following:

766.04 CONSTRUCTION REQUIREMENTS**A. General.**

The mailbox owner will furnish a postal service approved mailbox. Install the furnished mailbox on the new support system.

B. Temporary Relocation.

If construction activities require the removal of the support system and delayed installation of the new support system, reset the existing support system at a location approved by the Engineer and postal service.

If construction activities require the removal of the support system and delayed installation of the new support system, relocate mailboxes to a location approved by the Engineer and postal service.

If existing mailboxes meet NCHRP 350 or MASH requirements, they may be reset temporarily during construction. If the existing support does not meet NCHRP 350 or MASH, place temporarily located mailboxes on supports that meet MASH requirements. If there is no support that meets MASH requirements, perform one of the following actions:

- Place them outside the clear zone;
- Place them on a 4 x 4 inch wood post; or
- Reset them using assemblies shown in the plans.

After construction has progressed to allow permanent installation, install the mailbox assemblies and mailboxes at the specified locations.

770.03 A General

**PAGE 426
10/1/18**

**10/01/17 &
10/1/18**

Replace Concrete Class AAE-3 with Concrete Class AE-3.

Add the following to the Table:

Item	Section
Galvanizing	854

770.04 C. Concrete Foundation

PAGE 428

10/01/17

Replace Section 770.04 C with the following:

C. Concrete Foundation.

Cast concrete foundations in place. Place the concrete in one continuous operation with no construction joints. Consolidate the concrete according to Section 602.04 C.2 "Vibration".

Allow the concrete foundation to cure for 7 days before placing poles on the foundation.

Do not grout between the foundation and the pole base.

Install anchor bolts according to Section 754.04 D.5.b, "Anchor Bolt Installation".

770.04 D.1 General

**PAGE 428
10/1/18**

**10/01/15 &
10/1/18**

Replace the 10th paragraph with the following:

Seal conduit ends with steel wool immediately after installation and reinstall after each phase of construction.

Install conduit plugs in each conduit end after the conductor is installed. Provide conduit plugs which create an air and water tight seal, and are removable and reusable. Provide plugs that can be split to permit installation or removal of the plugs without removing the conductor. Provide conduit plugs that seal using an adjustable filler of neoprene or silicone rubber compressed with stainless steel hardware.

Add the following to the end of Section 770.04 D.1:

Install duct seal on all conduits containing cables at controller cabinets, traffic signal bases, and pull boxes.

770.04 G Light Standards**PAGE 430****10/01/16**

Replace the first paragraph of Section 770.04 G with the following:

Plumb the light standard with leveling nuts. Adjust the leveling nuts on assembled light standards before 10:00 am. Tighten anchor nuts according to Section 754.04 D.5.c "Anchor Bolt Tightening".

772.03 A General**PAGE 433****10/01/18**

Replace the table with the following:

Item	Section
Concrete, Class AE	802
Rapid-Hardening Cementitious Materials	806.01
Galvanizing	854
Highway Traffic Signals	896

772.03 D Wiring Diagrams**PAGE 434****10/01/15**

Replace the first paragraph with the following:

At the time the cabinet and control equipment is accepted, furnish a traffic signal cabinet wiring diagrams showing all circuits and parts in detail. Place the wiring diagram in the signal cabinet and submit one PDF copy to the Engineer.

772.04 A General**PAGE 435****10/01/15**

Replace the second paragraph with the following:

Provide and bear all costs for the electrical service necessary to operate and maintain the traffic signal system until the system is accepted as specified in Section 772.04 N.3, "Supplemental Inspections and Final Acceptance".

772.04 E.8 Final Testing**PAGE 439****10/01/15**

Replace Section 772.04 E.8 with the following:

After installing sealer, perform the tests specified in Section 772.04 E.6, "Initial Testing". Record the test results on SFN 60844 *Traffic Signal Loop Detector Test Report* and submit the form to the Engineer.

772.04 G Traffic Signal Standards and Combination Signal and Light Standards**PAGE 439****10/01/18**

Replace the content of 772.04 G with the following:

1. Use leveling nuts to plumb standards. Adjust the leveling nuts on assembled standards before 10:00 am.
 2. Install and tighten the anchor bolts as specified in Section 754.04 D.5, "Overhead Sign Structures".
 3. Provide a rigidly-mounted terminal block in the base of each standard for the connection of control circuits. Install the luminaire fuses in the base of combination signal and light standards.
 4. Provide rodent protection using wire mesh with a maximum size opening of 1/4 inch for all anchor base installations. Place the wire mesh continuously around the inside of the lower plate to prevent rodents from entering the base through the space between the concrete foundation and the lower plate. Secure the mesh to the anchor bolts and lower plate.
-

772.04 M Signal Painting**PAGE 441****10/01/18**

Replace 772.04 M with the following:

M. Reserved.
Reserved.

772.04 N Tests and Acceptance**PAGE 442****10/01/15**

Replace 772.04 N with the following:

1. General.

Furnish all instruments and personnel required for testing and record test results. If a subcontractor performed electrical work, ensure the subcontractor is present during testing and inspection.

The Engineer will perform the initial and final inspections when:

- Winds are 30 mph or less;
- Ambient temperature is 15°F or greater; and
- It is not raining or snowing.

a. Malfunction Management Unit Test.

Before uncovering the signal heads, perform a malfunction management unit test. Record the test results on SFN 60836 *Traffic Signal Malfunction Management Unit Test* and submit the results to the Engineer.

b. Ground Test.

Before opening to traffic, perform a ground test. The maximum allowable resistance at the controller cabinet is 10 Ohms. The maximum allowable resistance at each traffic signal standard is 25 Ohms. Record and submit the test results on SFN 60834, *Traffic Signal Ground Test*.

2. Initial Inspection.

After the signal system is operational and open to traffic, submit a request to schedule the initial inspection. The system must be fully operational for a minimum of 15 days before the Engineer will perform the initial inspection. The Engineer will record the inspection results on form SFN 59867, *Traffic Signal Inspection Checklist* or SFN 60845 *Flashing Beacon Inspection Checklist*. Copies of completed forms will be sent to the Contractor.

3. Supplemental Inspections and Final Acceptance.

After performing corrections, submit a request for a supplemental inspection. The Engineer will perform a supplemental inspection within 30 days of receiving the request.

If this inspection discloses any unsatisfactory items, the Engineer will provide the Contractor with a written list of items that require correction. After correcting the items, request another supplemental inspection.

If the Engineer determines that the work is complete, the signal system must operate for 14 consecutive days without interruption from defective equipment or improper workmanship.

If the signal system fails within the 14 days, make necessary repairs. After repairs are complete, request another supplemental inspection.

If the signal system operates for 14 consecutive days without interruption from defective equipment or improper workmanship, the Engineer will consider the last supplemental inspection as the final inspection and will accept the signal system.

802.01 A General.

PAGE 453

10/01/18

Replace the content of 802.01 A with the following:

1. Development.

Develop a mix design based on the requirements of this section. Perform the specified aggregate and strength tests and submit the results with the mix design. Submit the completed mix design a minimum of 14 days before beginning concrete placement operations.

Use materials slated for use on the project when developing and testing the mix design. If any material or material source changes, develop and submit a revised mix design and test results.

Provide concrete that is air entrained.

Concrete is divided into classifications as shown in Table 802-01.

Table 802-01

Concrete Class Designation	Cementitious Material Content (lbs) per CY	Water-Cement Ratio (Max)
AAE	600 – 650	0.44
AE	550 – 600	0.47
ASE	575 – 625	0.40

A numeral following the alphabetical designation for the class of concrete indicates the gradation of coarse aggregate to be used in the mix, based on Table 802-03. If a specific gradation is not designated, use any gradation from Table 802-03. For ASE concrete, use aggregate that meets the requirements of Section 802.01 C.4, "Well Graded Aggregate".

2. Class AE and AAE Mixes.

Design a mix that will attain a compressive strength of 3,000 psi after 7 days or a flexural strength of 450 psi after 7 days.

Mix designs used for Section 550, "Concrete Pavement" will be required to attain both a compressive strength of 3,000 psi and a flexural strength of 450 psi after 7 days.

Measure compressive strength according to AASHTO T 22 and flexural strength according to AASHTO T 97. Apply a correction factor of 0.92 when using 4 inch x 8 inch concrete cylinders.

3. Class ASE Mix.

Design a mix that will attain a minimum compressive strength of 3,000 psi after 30 hours or a minimum flexural strength of 450 psi after 30 hours.

Develop a maturity curve according to ASTM 1074. Use 6 inch x 12 inch cylinders or flexural beams for strength determination.

4. Certificate of Compliance.

Submit a certificate of compliance for non-aggregate materials.

802.01 B Cement. PAGE 453 10/01/18

Replace the content of 802.01 B with the following:

Provide cement as specified in Section 804.01, "Cement".

802.01 C.2 Coarse Aggregate PAGE 454 10/01/15 & 10/1/18

Replace the first paragraph with the following:

Provide coarse aggregate that meets requirements of Table 802-02 and the appropriate numerical designation from Table 802-03.

Delete the second paragraph.

Replace Table 802-02 with the following:

**Table 802-02
Miscellaneous Coarse Aggregate Properties**

Test	Method	Max. Percent by Weight of the Plus No. 4 fraction
Shale	NDDOT 3	0.7
Iron oxide particles	NDDOT 3	4.0 ¹
Lignite and other coal	NDDOT 3	0.5
Soft Particles (Excluding Shale, Iron oxide particles and Lignite and other coal)	NDDOT 3	2.5
Thin or Elongated Pieces	NDDOT 3	15
L.A. Abrasion	AASHTO T 96	40.0
Soundness (Sodium Sulfate)	AASHTO T 104	12

¹ For concrete for spall repairs and bridge deck overlays, the maximum iron oxide particles shall be 2.0 percent.

802.01 C.3 Fine Aggregate

PAGE 454 10/01/15

Replace the second paragraph of Section 802.01 C.3 with the following:

Test fine aggregates in accordance with AASHTO T 21. If the results of the analysis are darker than the standard color, determine the compressive strength of mortar mixed using the aggregate in accordance with AASHTO T 71. If the results of the AASHTO T 71 test result in a relative strength less than 95 percent, do not use the fine aggregate.

802.01 F Admixtures.

PAGE 456 10/01/18

Replace the content of 802.01 F with the following:

1. General.

Use admixtures as specified in Section 808 "Concrete Admixtures".

2. Bridge Deck Concrete.

Use a retarding admixture in Class AAE-3 concrete in bridge decks when the temperature of the concrete or the ambient air temperature at the time of placement exceeds 75°F. Provide a retarding admixture that meets the requirements of AASHTO M 194 and that are classified as Type B or D under ASTM C 494.

3. ASE Concrete.

A non-calcium chloride accelerator may be used, but must meet the requirements of AASHTO M 194 and be classified as Type C under ASTM C 494. Accelerating admixtures are limited to a maximum of 2.0% by weight of cement.

802.01 G Fly Ash.**PAGE 456****10/01/18**

Replace the content of 802.01 G with the following:

1. General.

Fly ash, meeting the requirements of Section 820, "Fly Ash", may replace cement on a 1:1 ratio, up to a maximum of 29 percent by weight.

2. ASE Concrete.

Include fly ash in the mix at a rate between 10 percent and 20 percent, by weight, of the cementitious material in the mix.

802.01 H Air Content**PAGE 456****10/01/17**

Replace the last paragraph with the following:

Supply concrete with an air content between 5.0 and 8.0 percent of the volume of the concrete at the time of placement.

802.01 I High-Early-Strength Concrete.**PAGE 457****10/01/18**

Replace 802.01 I with the following:

I. Reserved.

Reserved.

802.01 J Tests on Concrete**PAGE 457****10/01/16**

Delete 802.01 J "Tests on Concrete" and replace with the following:

J. Tests on Concrete.

Furnish the concrete necessary for the tests.

Near the site of concrete placement, provide a level area protected from construction activities near the site of placement for the Engineer to conduct tests.

804.01 Cement.**PAGE 461****10/01/18**

Replace the content of 804.01 with the following:

Use one of the following materials:

- Portland Cement that meets the requirements of AASHTO M 85, Type II; or
 - Blended Hydraulic Cement that meets the requirements of AASHTO M 240, Type IL(MS).
-

Add the following to the end of Section 810.01 B:

3. Curing Compound for Pigmented Concrete.

Use a curing compound when curing pigmented concrete that meets the requirements of ASTM C 309 Type 1-D.

Replace Table 816-02 with the following:

**Table 816-02
Aggregates for Blotter and Seal coats**

Sieve Size Or Testing Method	Aggregate Class					
	41	41M	42	43	44	45
	Percent Passing or Testing Requirement					
5/8 inch					100	
3/8 inch	100					100
No. 4	20-70				90-100	85-100
No. 8	0-17		2-20	0-17		
No. 16						45-80
No. 50						10-30
No. 200	0-1.5		0-5	0-2	0-20	0-3
ND T 113, Shale (max %)	8.0%					3.0%
AASHTO T 96, L.A. Abrasion (max %)	40%					
NDDOT 4, Fractured Faces ¹		50%				

¹ Minimum weight percentage allowable for the portion of the aggregate retained on a No. 4 sieve having at least 1 fractured face for Class 41M.

Replace Section 816.04 with the following:

816.04 AGGREGATE FOR MICRO SURFACING

A. General.

Use aggregate that is manufactured crushed stone such as granite, slag, limestone, or other high quality aggregate or combination thereof.

Before stockpiling aggregate, perform the tests specified in Table 816-03.

Table 816-03

Test	Test Method	Requirement
Soundness of Aggregates by Use of Sodium Sulfate	AASHTO T 104	15% Max
Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine ¹	AASHTO T 96	30% Max
Deleterious Substances	ND T 176	60 or Higher

¹ Perform the AASHTO T 96 test on the parent aggregate

B. Mix Design.

Develop a mix design using aggregate that meets the requirements of Table 816-04. Establish mix design target values for each sieve and submit the mix design before beginning placement operations.

Table 816-04
Aggregate Gradation for Development of Mix Design

SIEVE SIZE	TYPE II %PASSING	TYPE III %PASSING
3/8"	100	100
#4	90 – 100	70 – 90
#8	65 – 90	45 – 70
#16	45 – 70	28 – 50
#30	30 – 50	19 – 34
#50	18 – 30	12 – 25
#100	10 – 21	7 – 18
#200	5 – 15	5 – 15

C. Stockpile Tolerances.

The mix design target values will be used for acceptance of material. Gradation tests may vary from the mix design target values based on the stockpile tolerance shown in Table 816-05. The percent passing each sieve for gradation tests may not fall outside the gradation limits specified in Table 816-04.

Table 816-05

SIEVE SIZE	STOCKPILE TOLERANCE
3/8"	-
#4	± 5%
#8	±5%
#16	±5%
#30	±5%
#50	±4%
#100	±3%
#200	±2%

D. Acceptance.

1. Stockpile Testing.

Perform a gradation test in accordance with ND T 11 and ND T 27 for every 500 tons of material produced and placed in the stockpile. Also perform test ND T 176 when performing gradation tests. Submit the test results to the Engineer.

The Engineer will perform acceptance testing. If the result of the Engineer's testing lead to rejection of the stockpile, additional material may be blended with the stockpiled material so that

the stockpile meets the requirements. The Engineer will resample and retest for both gradation and deleterious substances to determine if the stockpiled material will be accepted.

If choosing to blend additional material into the stockpile, use additional material that meets the requirements of Table 816-06. After blending, develop and submit a new mix design.

2. Gradation.

The Engineer will obtain 5 independent samples from the stockpile and perform a gradation analysis in accordance with ND T 11 and ND T 27. If the average gradation for each sieve is within the stockpile tolerance of the mix design target values, the Engineer will accept the material.

If the stockpile is rejected, additional material may be blended with the stockpiled material to obtain the required gradation. The Engineer will resample and retest to determine if the stockpiled material will be accepted.

If choosing to blend additional material into the stockpile, use additional material that meets the requirements of Table 816-03. After blending, develop and submit a new mix design.

3. Deleterious Substances.

The Engineer will determine the amount of deleterious substances in the aggregate using the same samples obtained in Section 816.04 D.2, "Gradation". If the average of the test results is 60 or higher, the Engineer will accept the material.

816.05 AGGREGATE FOR SLURRY SEAL

PAGE 469

10/01/15

Replace Section 816.05 with the following:

816.05 AGGREGATE FOR SLURRY SEAL

A. General.

Use aggregate that is manufactured crushed stone such as granite, slag, limestone, or other high quality aggregate or combination thereof. Use aggregate with 100 percent of the parent aggregate larger than the largest stone in the specified gradation.

Before stockpiling aggregate, perform the tests specified in Table 816-06.

Table 816-06

Test	Test Method	Requirement
Soundness of Aggregates by Use of Sodium Sulfate	AASHTO T 104	15% Max
Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine ¹	AASHTO T 96	35% Max
Deleterious Substances	ND T 176	60 or Higher

¹ Perform the AASHTO T 96 test on the parent aggregate

B. Mix Design.

Develop a mix design using aggregate that meets the requirements of Table 816-07. Establish mix design target values for each sieve and submit the mix design before beginning placement operations.

**Table 816-07
Aggregate Gradation for Development of Mix Design**

SIEVE SIZE	TYPE II %PASSING	TYPE III %PASSING
3/8"	100	100
#4	90 – 100	70 – 90
#8	65 – 90	45 – 70
#16	45 – 70	28 – 50
#30	30 – 50	19 – 34
#50	18 – 30	12 – 25
#100	10 – 21	7 – 18
#200	5 – 15	5 – 15

C. Stockpile Tolerances.

The mix design target values will be used for acceptance of material. Gradation tests may vary from the mix design target values based on the stockpile tolerance shown in Table 816-08. The percent passing each sieve for gradation tests may not fall outside the gradation limits specified in Table 816-07.

Table 816-08

SIEVE SIZE	STOCKPILE TOLERANCE
3/8"	-
#4	± 5%
#8	+5%
#16	+5%
#30	+5%
#50	+4%
#100	+3%
#200	+2%

D. Acceptance.

1. Stockpile Testing.

Perform a gradation test in accordance with ND T 11 and ND T 27 for every 500 tons of material produced and placed in the stockpile. Also perform test ND T 176 when performing gradation tests. Submit the test results to the Engineer.

The Engineer will perform acceptance testing. If the result of the Engineer's testing lead to rejection of the stockpile, additional material may be blended with the stockpiled material so that the stockpile meets the requirements. The Engineer will resample and retest for both gradation and deleterious substances to determine if the stockpiled material will be accepted.

If choosing to blend additional material into the stockpile, use additional material that meets the requirements of Table 816-06. After blending, develop and submit a new mix design.

2. Gradation.

The Engineer will obtain 5 independent samples from the stockpile and perform a gradation analysis in accordance with ND T 11 and ND T 27. If the average gradation for each sieve is within the stockpile tolerance of the mix design target values, the Engineer will accept the material.

3. Deleterious Substances.

The Engineer will determine the amount of deleterious substances in the aggregate using the same samples obtained in Section 816.05 D.2, "Gradation". If the average of the test results is 60 or higher, the Engineer will accept the material.

817.01 D Salvage Base Course Containing Bituminous Material **PAGE 472** **10/01/17**

Replace the last paragraph with the following:

If salvaged base course is to be placed beneath a bituminous asphalt roadway or used as a final surfacing, the following specifications apply.

817.01 D.2.a Extraction Test Method **PAGE 472** **10/01/15**

Replace the second paragraph of Section 817.01 D.2.a with the following:

The Engineer will determine the percentage of asphalt binder in the stockpile in accordance with AASHTO T 164 and average the results obtained from the three samples. The material will be rejected if any single sample has a value greater than 4.0 percent or the average extraction is greater than 3.5 percent. If the stockpile is rejected, the stockpiled material may be blended with other material.

818.02 A Performance Graded (PG) Asphalt Cement **PAGE 474** **10/01/17 &**
10/1/18

Replace the first and second paragraph with the following:

If the Performance Graded (PG) asphalt cement called for in the plans contains an S, H, V, or E designation, use PG asphalt cement that meets AASHTO M 332.

Base asphalt may be modified with Polyphosphoric Acid (PPA). PPA may make up no more than 0.50 percent of the finished binder, by weight.

818.02 E.2 Modified Cationic Emulsified Asphalt **PAGE 474** **10/01/16**

Replace the second paragraph of Section 818.02 E.2 with the following:

Use asphalt with a maximum 3.0 percent oil distillate by volume of emulsified asphalt when tested according to AASHTO T 59, Residue and Oil Distillate by Distillation on Emulsified Asphalt. Use the manufacturer's recommended distillation temperature when using CRS-2P emulsion.

Replace Table 818-01 with the following:

Table 818-01

Test	Specification	Requirement
Settlement and Storage Stability of Emulsified Asphalts, 24-h	AASHTO T 59	1% Minimum
Distillation of Emulsified Asphalt ¹	AASHTO T 59	62% Minimum
Tests on Emulsified Asphalt Residue		
Softening Point of Bitumen (Ring and Ball Apparatus)	AASHTO T 53	135°F Minimum

¹ Hold the temperature for this test at 350°F for 20 minutes.

820.01 Material.

Replace 820.01 with the following:

A. General.

If using fly ash, use fly ash from an electrical generating plant using a single coal source not using limestone injection.

Use fly ash that meets the requirements of AASHTO M 295, Class F, with the following modifications:

- A. Revise "Silicon Dioxide (SiO₂) plus aluminum oxide (Al₂O₃) plus iron oxide (Fe₂O₃), min percent" to 66.0.
- B. Revise "Loss on ignition, max percent" to 2.0.
- C. The silicon dioxide (SiO₂) shall be at least 40.0 percent by dry weight of the total fly ash composition.

Before developing the concrete mix design, submit fly ash test data prepared by an independent lab. Include a chemical and physical analysis report with the test data.

B. Available Alkalies.

The available alkalies, or equivalent, as Na₂O, max percentage is 2.0. If the available alkalies percentage is above 2.0 percent, determine the alkali-silica reactivity according to ASTM C 1567. If the expansion is less than 0.10 percent at 16 days, the material will be accepted.

Submit results of the ASTM C 1567 test with the Certificate of Compliance for cement. Provide results from tests performed no more than one year before the date of certificate submission.

C. Certificate of Compliance.

At the time of delivery, submit a certificate of compliance for each car and tank truck of material. In addition to the requirements of Section 106.01 C "Certificate of Compliance", provide the following information on each certificate of compliance:

- A. Fly ash source by name of company and location of plant.
- B. Gross, tare, and net weight if shipped by truck.
- C. Car initials and number or tank truck number.
- D. Date of shipment.

822.01 General

PAGE 477

10/01/17

Replace the second paragraph with the following:

Use an Alkyl-Alkoxysilane organosilicon compound.

Replace the second bullet in the third paragraph with the following:

- Contains 100 percent active solids;

Replace the last bullet in the third paragraph with the following:

- Treated concrete is surface dry a maximum of 4 hours after application.

822.02 TESTING

**PAGE 477
10/1/17**

**10/01/16 &
10/1/17**

Replace the first sentence of Section 822.02 with the following:

Provide a repellent that, when applied to concrete, meets the following requirements:

Add the following to Section 822.02:

C. Scaling Resistance to Deicing Chemicals.

Test	Duration	Visual Rating	Method
Salt Water Ponding	50 Cycles	0 at 25 cycles	ASTM C 672
		≤ 3 at 50 cycles	ASTM C 672

826.02 B.1 Sealant

Page 479

10/01/16

Replace Section 826.02 B.1 with the following:

1. Sealant.

Provide a one-part silicone joint sealant that meets the requirements of ASTM D 5893, Type NS and the following:

- Low modulus; and
- Is capable of withstanding repeated joint movement between 50 percent shrinkage and 100 percent expansion without losing adhesion to the concrete and without cohesion failure.

826.02 B.2 Backer Rod

PAGE 479

10/01/16

Replace the first paragraph of Section 826.02 B.2 with the following:

Use backer rod that meets the requirements of ASTM D 5249, Type 1 or Type 3.

Replace Section 830.01 with the following:

830.01 CONCRETE PIPE AND DRAINAGE STRUCTURES

The Department will evaluate the fabricator's concrete pipe plant according to Department procedures described in Field Sampling and Testing Manual, Quality Assurance Program for Prestressed and Precast Concrete Products. The results of this evaluation will determine if the material may be accepted by certificate of compliance as specified in Section 106.01 C "Certificate of Compliance."

Use an ACPA or NPCA certified plant in the construction.

A. Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.

Provide pipe that meets AASHTO M 170, M 206, or M 207 for the specified diameters and strength class except use aggregates that meet the requirements in:

- Table 802-02 of Section 802.01 C.2 "Course Aggregate"
- Table 802-05 of Section 802.01 C.3 "Fine Aggregate"

B. Work Drawings.

Provide work drawings for Class IV and V Pipes that include:

- Reinforcing steel layouts;
- Type and strength of concrete and reinforcing steel;
- All concrete and reinforcing dimensions;
- Installation and handling instructions; and
- Design calculations.

Submit calculations and work drawings that are signed, sealed, and dated by a Professional Engineer registered in the State of North Dakota as set forth in NDCC Title 43.

C. Fasteners and Tie Bolts.

Provide tie bolts and nuts that are of steel meeting ASTM A 307 Grade A. Provide steel washers that meet ASTM A 1008 or ASTM A 1011. Provide fastener castings that are gray iron castings that meet ASTM A 48 Class 20.

834.03 Bolts, Nuts, and Washers

Replace all instances of "ASTM A 325" with "ASTM F 3125 Grade A 325".

834.03 A.2 Rotational Capacity Testing of Assemblies

Replace Section 834.03 A.2 with the following:

2. Rotational Capacity Testing of Assemblies.

Perform the rotational capacity test according to ASTM F 3125 Grade A 325, except as modified by this specification.

a. General.

Perform rotational capacity tests on all bolt, nut, and washer assemblies before shipping.

If galvanized parts are required, perform the rotational capacity test after galvanization.

Washers are required as part of the tests even if the final assembly does not require washers.

b. Assemblies.

Test each combination of bolt lot, nut lot, and washer lot as an assembly.

c. Rotational Capacity Lot Numbers.

Assign each combination of lots a rotational capacity lot number. Washers do not need to be identified as part of the assembly lot if they are not required in the final assembly.

d. Testing Frequency.

Test a minimum of two assemblies per rotational capacity lot.

e. Testing Device.

Use a Skidmore-Wilhelm Calibrator, or an approved alternate, to perform the rotational capacity tests.

Test bolts that are too short for the Skidmore-Wilhelm Calibrator in a steel joint. The tension requirements of Table 834-02 do not apply. Compute the maximum torque required in Section 834.03 A.2.g, "Results" using a value of "P" equal to the Turn Test Tension in Table 834-02.

f. Performance of the Test.

The minimum rotation from initial tightening (10 percent of the specified proof load) shall be as specified in Table 834-01.

Table 834-01

Bolt Length	Amount of Turn
Length ≥ 4 diameters	240 degrees (2/3 turn)
4 diameters < Length ≤ 8 diameters	360 degrees (1 turn)
Length > 8 diameters	480 degrees (1-1/3 turn)

The tension reached at the rotation specified in Table 834-01 shall be equal to values for the Turn Test Tension shown in Table 834-02.

Table 834-02

Diameter (in)	1/2	5/8	3/4	7/8	1	1-1/8	1-1/4	1-3/8	1-1/2
Installation Tension (kips)	12	19	28	39	51	56	71	85	103
Turn Test Tension (kips)	12	22	32	45	59	64	82	98	118

g. Results.

After exceeding the Installation Tension specified in Table 834-02, obtain and record a reading of the tension and torque.

The maximum torque (T) shall be equal to 0.25 the measured bolt tension (P) and the bolt diameter (D):

$$T \text{ (foot pounds)} \leq 0.25 \times P(\text{pounds}) \times D(\text{feet})$$

856.01 A General**PAGE 495****10/01/15**

Replace the "Slope Gradient" row in Table 856-01 with the following:

Slope Gradient Application	≤ 3H:1V	< 3H:1V - 2H:1V	≤ 2H:1V	< 2H:1 - 1.5H:1V
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858.01 Geosynthetic**PAGE 498****10/01/18**

Replace the "AOS" line of Table 858-01 with the following:

Geosynthetic Material Property	Test Method	Separation ²		Riprap RR	Reinforcement R1
		S1	S2		
AOS less than mm, (greater than US STD. Sieve)	ASTM D 4751	0.212 (70)	0.15 (100)	0.3 (50)	0.6 (30)

Replace the "AOS" line of Table 858-02 with the following:

Geosynthetic Material Property	Test Method	D1	D2	D3 ²	D4 ²
AOS less than mm, (greater than US STD. Sieve)	ASTM D 4751	0.3 (50)	0.15 (100)	0.125-0.600 (30 - 120)	0.125-0.600 (30-120)

860.02 A Barbed Wire**PAGE 501****10/01/15**

Replace Section 860.02 A with the following:

A. Barbed Wire.

Provide barbed wire that meets the requirements of AASHTO M 280. Provide wire that has a minimum gage of 12½ and at least 2 point barbs.

860.02 B Woven Wire**PAGE 501****10/01/15**

Replace Section 860.02 B with the following:

Provide woven wire that meets the requirement of AASHTO M 279, Design Number 939-6-12½.

862.03 E W-Beam Guardrail End Treatments**PAGE 504****10/1/17**

Replace the first paragraph with the following:

Provide W-beam guardrail end treatments that meet the requirements of MASH TL-3.

Replace the Section 862.04 C with the following:

C. 3-Cable.

Provide round treated timber posts used for three-cable guardrail that are between 4.5 and 6.5 inches in diameter.

Replace 880.01 with the following:

A. Material Requirements.

1. General.

Use acrylic emulsion polymer or modified acrylic polymer in the manufacture of the water-based pavement marking paint.

Provide paint capable of receiving and holding glass beads for producing retroreflective pavement marking.

Provide paint that is free of heavy metals as defined by the EPA.

Provide finished paint that is:

- Fast-drying;
- Capable of withstanding air and roadway temperatures without:
 - Bleeding;
 - Staining;
 - Discoloring; or
 - Deforming;
- Smooth;
- Free of:
 - Coarse particles;
 - Skins; or
 - Any other deleterious materials that are detrimental to its use or appearance;
- Homogeneous; and
- Will not have detrimental interactions with common roadway chemicals.

Provide paint film that is capable of maintaining the original dimensions and placement during the curing period without:

- Chipping;
- Spalling; or
- Cracking.

2. Physical Properties

a. General

Provide paint with the physical properties specified in Table 880-01.

Table 880-01

Characteristic	Requirement	Test
Volatile Organic Compounds	1.25 lbs/gal Max	ASTM D 3960
Viscosity	83-98 Krebs units	ASTM D 562

Table 880-01

Characteristic	Requirement	Test
Grind	3 Hegman Units Minimum	ASTM D 1210
No-Pick-Up Time	10 Minutes Max	ASTM D 711

b. Dry Through Time.

Provide paint with a maximum dry through time of 150 minutes. Dry through is when a twisting thumb action, without pressure, does not distort the paint film. Apply the paint to a non-absorbent substrate at a wet film thickness of 15 mils, with a tolerance of 1 mil. Place the substrate, with the film applied, in a humidity chamber controlled at 90 percent relative humidity with a tolerance of 5 percent and at 72.5°F with a tolerance of 2.5°F.

c. Water Resistance.

Prepare a 15 mil wet film thickness sample on a non-absorbent substrate; allow to dry at 25°C ±1 for 72 hours. Immerse the sample in distilled water without circulation at 25°C ±1. After 18 hours, remove the sample and allow the panels to dry for two hours. Examine the sample for paint softening, blistering, wrinkling, and loss of adhesion.

d. Freeze-Thaw Stability.

Place 1 pint of paint in chamber maintained at -10±1°C for 16 hours. Remove the paint from the chamber and place in ambient conditions (25±1°C) for eight hours. Repeat for a total of five cycles. Acceptable paint shall show no coagulation and no change in viscosity greater than 5 Krebs Units after completion of the freeze thaw cycles.

e. Color.

Provide paint with pigment that falls within CIE Chromaticity coordinate limits specified in Table 880-02. Make color determinations for liquid marking material over the black portion of a 2A or 5C Leneta Chart or equal a minimum of 24 hours after application of a 15-mil wet film. Determine color readings in accordance with the requirements of ASTM E 1349 using CIE 1931 2-degree standard observer and CIE standard illuminant D65.

Table 880-02

Color	1		2		3		4	
	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
Yellow	0.560	0.440	0.490	0.510	0.420	0.440	0.460	0.400

f. Contrast Ratio.

Provide paint that when tested according to ASTM D 2805 has a minimum contrast ratio (hiding power) that is 0.96 when drawn down with a 0.005 mil film applicator on a 2A or 5C Leneta Chart and air-dried for 24 hours. Calculate the contrast ratio as black/white.

g. Reflectance.

Determine the daylight directional reflectance of paint according to ASTM E 1349. Apply a 15-mil wet film to a 2A or 5C Leneta Chart and allow the paint to air dry for 24 hours. Provide white paint with a minimum of 84 percent reflectance and yellow paint with a minimum of 50 percent reflectance.

h. Durability.

Provide paint with a minimum durability rating of 7 on both concrete and asphalt pavement, when tested in the skip line area of a Northern NTPEP Test Deck.

i. Retroreflectivity.

The minimum retroreflectivity of beaded lines, on both concrete and asphalt pavement, after 12 months of exposure on a Northern NTPEP Test Deck shall be 75 milicandelas per foot candle per square foot, when measured in the skip line area according to ASTM E 1710.

B. Manufacturing and Packaging.

If the project quantities are more than 1,000 gallons, manufacture the paint in lot sizes of 1,000 gallons or more. If the project quantities are less than 1,000 gallons, manufacture the entire project quantity in one lot.

Store paint at a temperature of at least 32°F.

Use paint within 12 months from the time of manufacture.

C. Acceptance.

1. General.

The Department will determine conformance to this Specification using the evaluation of test data from NTPEP or other Department-approved facilities, however, the Department reserves the right to utilize additional methods when determining conformance.

Use preapproved pavement marking paint. A list of preapproved pavement marking paint lots is available at the Department's website: www.dot.nd.gov.

Materials will be added to the list based on successful completion and submission of the information listed below. Failure to fully comply with either section will result in the rejection of the material and the lot will be rejected for inclusion.

2. NTPEP Testing.

Submit paint to the National Transportation Product Evaluation Program. Include a reference to the specific NTPEP Test Deck to which the paint formulation was applied, including NTPEP identification numbers and report numbers.

Provide test results from laboratory testing and field evaluation from a Northern NTPEP test deck from within the previous 6 years.

October 1, 2020: Provide test results from laboratory testing and field evaluation from a Northern NTPEP Test Deck from within the previous 4 years.

3. Laboratory Verification Testing.

Samples of each lot manufactured for NDDOT projects must be tested for verification of compliance with this specification. Obtain two, 1-pint samples of paint from each lot. Use epoxy lined cans for sampling and shipping. Obtain samples in the presence of the Engineer. Submit the samples a minimum of 30 days before the scheduled use of the marking paint.

D. Glass Beads.

1. General.

Use glass beads for pavement marking that meet AASHTO M 247, Type I except use beads that have a minimum of 80 percent true spheres. Use beads that have a dual surface treatment consisting of a moisture resistant silicone treatment and a silane adherence surface treatment.

Furnish beads in moisture proof containers or moisture proof bags. Mark each container or bag with name of contents, manufacturer, lot or batch number, ton number, coating type, date of manufacture and the net weight.

2. Acceptance.

Use preapproved glass beads for pavement marking. A list of preapproved glass bead lots is available at the Department’s website: www.dot.nd.gov.

Materials will be added to the list based on successful sampling and testing according to the NDDOT *Materials Sampling and Testing Manual*

Provide a certificate for each lot of the material furnished, giving the properties of the beads and certifying that they meet the required specifications. In addition to the certificate of compliance specified in Section 106.01 C, “Certificate of Compliance” include the date of manufacture.

880.02 B.2 Epoxy Resin Material

PAGE 509 10/01/15 & 10/1/18

Replace Section 880.02 B.2 with the following:

2. Color.

Provide material that meets the requirements of Table 880-03 and 880-04 when tested in accordance with ASTM D 2805.

Table 880-03 CIE Chromaticity limits using illuminant “C” for Epoxy								
Color	1		2		3		4	
	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
Yellow	0.510	0.490	0.473	0.453	0.490	0.432	0.537	0.462

Table 880-04 Daylight Directional Reflectance (Y)	
Color	Minimum Value
White	83
Yellow	50

885.01 E.1 Cast Iron

PAGE 514 10/01/16

Replace Section 885.01 E.1 with the following:

1. Cast Iron.

Provide cast iron panels with a minimum thickness of 0.2 inches. Use either grey cast iron that meets AASHTO M 105, Class 35 B or use ductile cast iron that meets ASTM A 536, Grade 65-45-12. Provide panels without a surface coating and allow the panels to transition to the iron’s natural patina.

894.03 A Hardware for Signs.

PAGE 517 10/01/18

Replace all instances of “ASTM A 325” with “ASTM F 3125 Grade A 325”.

894.03 A.1 General

PAGE 517 10/01/16

Delete the second paragraph from Section 894.03 A.1:

894.05 Structures for Overhead Signs.**PAGE 522****10/01/18**

Replace all instances of “ASTM A 325” with “ASTM F 3125 Grade A 325”.

894.05 A General**PAGE 522****10/01/16**

Replace Section 894.05 A with the following:

A. General.

Galvanize all materials requiring galvanization according to Section 854, “Galvanizing” after fabrication.

Submit work drawings for all structures for overhead signs according to Sections 105.08 A.3, “Additional Section 600 Work Drawing Submittal Requirements”.

1. Welding.**a. General.**

Perform all steel welding according to the specifications for welding of steel structures in the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals.

b. Treatment of Welded Areas.

Punch a minimum 3/4 inch hole into chords to facilitate galvanizing the struts and diagonal tubes. Provide two 1/2 inch holes at the top and bottom of the chords on the capped end to facilitate galvanizing. Provide on the end tower vertical columns two 1/4 inch holes in the base plate and two 3/4 inch holes at the top of each column to facilitate galvanizing.

c. Repair Galvanization.

Repair damaged galvanization according to Section 854, “Galvanizing”.

894.05 B.2 Round-Tapered or Octagonal-Tapered Tubes**PAGE 523****10/1/16**

Replace the second paragraph of 894.05 B.2 with the following

Retain major dimensions, such as truss cross section and length, and end towers vertical dimensions. If this option is chosen, furnish to the Engineer all necessary calculations and drawings used in designing these structures. Design the structures according to the latest issue of the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals. Use a wind velocity of 90 mph to compute the wind pressures on the signs and structures.

895.05 A General**PAGE 528****10/01/16**

Replace Section 895.05 A with the following:

A. General.

Design lighting poles to meet the requirements of AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals.

When a breakaway base is required, provide a manufacturer certification that the light standard base meets the AASHTO requirements for both breakaway and structural adequacy.

Use a wind velocity of 90 mph with the following height and exposure correction factor:

- If the traffic signal is less than 33 feet use a K_z^a of 1.00; or
- If the traffic signal is greater than 33 feet use the K_z^a found in Table 3.8.4-1 "Height and Exposure Factors, K_z^a ".

Apply different wind pressures to the structure at different heights rather than using an average wind pressure for the entire height of the structure.

Design each structural component on light standards 55 feet or greater for fatigue using the requirements of Table 11.6-2, "Fatigue Importance Categories for HMLT's".

Furnish all the necessary calculations and drawings used in the design of poles with the shop drawing submittal. A Professional Engineer duly registered in the State of North Dakota must sign, seal, and date the calculations and work drawings used in the design of lighting standards.

895.05 D Base.

PAGE 529

10/01/18

Replace all instances of "ASTM A 325" with "ASTM F 3125 Grade A 325".

896.02 C Traffic Signal and Flashing Beacon Control Circuits

PAGE 547

10/01/17

Replace the first paragraph with the following:

Use cables that are rated for 600 volts and meet IMSA 19-1 or 20-1.

Delete the fifth paragraph.

896.05 A GENERAL

Page 549

10/01/16

Replace Section 896.05 A with the following:

A. Design.

Design traffic signal standards to meet the requirements of AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals.

Use a wind velocity of 90 mph with the following height and exposure correction factor:

- If the traffic signal is less than 33 feet use a K_z^a of 1.00; or
- If the traffic signal is greater than 33 feet use the K_z^a found in Table 3.8.4-1 "Height and Exposure Factors, K_z^a ".

Apply different wind pressures to the structure at different heights rather than using an average wind pressure for the entire height of the structure.

Design each structure component using the requirements of Table 11.6-1, "Fatigue Importance Factors, I_F ."

Design the components for the total deflection, with galloping, at the free end of the traffic signal arm is limited to less than 8 Inches.

Furnish all the necessary calculations and drawings used in the design of poles with the shop drawing submittal. A Professional Engineer duly registered in the State of North Dakota must sign, seal, and date the calculations and work drawings used in the design of lighting standards.

896.05 C.4 Transformer Base.

PAGE 550

10/01/18

Replace all instances of "AASHTO M 164" with "ASTM F 3125 Grade A 325".

896.10 Controller Cabinet

PAGE 557

10/01/15

Replace the 3 with the following:

3. Provide a metal weatherproof cover that blocks air flow in cold weather, and adequately covers the fan vent assembly and the louver on the door. Install a gasket to the cover and attach the cover to the inside of the cabinet. Construct the cover of the same material as the cabinet.

Provide a weep hole in the bottom loop on each end of the cabinet full-size door.

Build the cabinet to contain the following items:

- All items of control equipment specified in these Specifications.
- Provide a thermostatically-controlled minimum 250 watt strip-type heater mounted on the full-size door cover with a protective wire-mesh shield installed around the heater. Use a heavy-duty thermostat capable of being set within a temperature range of 30°F to 90°F. Activate the power to the fan and to the heater using a three-position toggle switch located on the auxiliary switch panel.

Use a switch that operates vertically up and down with the:

- o Up position being FAN (power to the fan on and power to the heater off);
- o Center position being OFF (power to both the fan and the heater off); and
- o Down position being HEATER (power to the heater on and power to the fan off).

Provide an electrical three-prong twist lock-type plug between the switch and the heater. Mount the heater thermostat on the auxiliary switch panel. Make the connection to the heater with stranded copper wire having 200°C insulation and non-insulated, solderless terminals.

- Provide three duplex receptacles with ground fault interrupter. Fuse the receptacles ahead of the main circuit breaker.
- Provide a switched lamp socket, fuse the lamp socket ahead of the main circuit breaker.
- Include the following in the maintenance switches inside the cabinet:
 - o Stop time control.
 - o Timer power.
 - o Flash.
 - o Vehicle detector input for each phase in use and all future phases.
 - o Pedestrian input for each phase in use and all future phases.

10/1/2014

**NORTH DAKOTA DEPARTMENT OF TRANSPORTATION
PRICE SCHEDULE FOR MISCELLANEOUS ITEMS (PS-1)**

The Contractor agrees to accept the following unit prices for each listed item of work and or material when no project contract unit price exists for that item. Each price listed will be full compensation for the cost of labor, material and equipment necessary to provide the item of work and/or material, complete in place, including (but not limited to) royalty, disposal of unsuitable material, equipment rental, sales tax, use tax, overhead, profit, and incidentals.

Each listed item is referenced to the Standard Specifications by Section number and Section name.

SECTION NO.	SECTION NAME	ITEM NAME	PRICE PER ITEM
107.08	Haul Roads	Water	\$27 per M Gal
107.08	Haul Roads	Bitumen for Mix	Invoice Price ¹ + 10%
107.08	Haul Roads	Bituminous Mix	\$42 per Ton ²
107.08	Haul Roads	Aggregate Base	\$17 per Ton ²
203.01 B	Rock Excavation	Rock Excavation	\$11 per CY
203.01 C	Shale Excavation	Shale Excavation	Common Excavation Price + \$1.00 per CY
203.01 D	Muck Excavation	Muck Excavation	\$9 per CY
203.05 H.3	Embankment	Overhaul	\$1.40 per CY - Mile
260	Silt Fence	Mucking Silt Fence	\$3.90 per LF
260	Silt Fence	Removal of Silt Fence ³	\$4.25 per LF
261	Fiber Rolls	Mucking of Fiber Rolls	\$3.90 per LF
261	Fiber Rolls	Removal of Fiber Rolls ³	\$4.25 per LF
420.04 E	Bituminous Seal Coat	Blotter Sand	\$27 per Ton ²
430.04 G	Hot Mix Asphalt (Exc. Material Hauled to Disposal Area)	Bituminous Mixture	Machine Placed: Bid or Invoice Price + \$31 per ton Hand Placed: Bid or Invoice Price + \$48 per Ton
704	Temporary Traffic Control	Flagging	\$32 per MHR

¹Price paid for bituminous material will be invoice price plus freight costs.

²Price Includes haul up to 10 miles. Payment for haul exceeding 10 miles will be according to Section 109.03 E, "Force Account." The haul distance for aggregate base and bituminous mix will be based on the average haul. The haul distance for blotter sand will be from the point where the haul begins to the point where it enters the project.

³This is only for pre-existing items that were not installed under the Contract.

**NORTH DAKOTA DEPARTMENT OF TRANSPORTATION
APPENDIX A OF THE TITLE VI ASSURANCES**

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 (hereinafter includes consultants) will comply with the Acts and the Regulations relative to Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, the Federal Highway Administration, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.
2. Non-discrimination: The Contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The Contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.
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 will be notified by the Contractor of the Contractor's obligations under this contract and the Acts and the Regulations relative to Non-discrimination on the grounds of race, color, or national origin.
4. Information and Reports: The Contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the Federal Highway Administration to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a Contractor is in the exclusive possession of another who fails or refuses to furnish the information, the Contractor will so certify to the Recipient or the Federal Highway Administration as appropriate, and will set forth what efforts it has made to obtain the information.
5. Sanctions for Noncompliance: In the event of a contractor's noncompliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the Federal Highway Administration may determine to be appropriate, including, but not limited to:
 - a. withholding payments to the Contractor under the contract until the Contractor complies; and/or
 - b. cancelling, terminating, or suspending a contract, in whole or in part.
6. Incorporation of Provisions: The Contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The Contractor will take action with respect to any subcontract or procurement as the Recipient or the Federal Highway Administration may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the Contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the Contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.

**NORTH DAKOTA DEPARTMENT OF TRANSPORTATION
APPENDIX E OF THE TITLE VI ASSURANCES**

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the Contractor) agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

Pertinent Non-Discrimination Authorities:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq.*, 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21.
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 *et seq.*), (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 *et seq.*), as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq.*), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131-12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 *et seq.*)

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION (NDDOT)

2017 ON-THE-JOB TRAINING PROGRAM SPECIAL PROVISION

The bidder's signature on the proposal sheet indicates the bidder agrees to take part in the On-the-Job Training (OJT) Program and to follow the OJT Program Manual and Special Provision. Contractors that fail to do so will be subject to suspension of progress payments or sanctions up to and including revocation of bidding privileges.

OJT is training conducted in a highway construction work environment designed to enable minority, female, and economically disadvantaged individuals to learn a bona fide skill and qualify for a specific occupation through demonstration and practice.

After a training program and trainee candidate have been approved, the contractor begins training its regular employee according to the approved program. The goal of this training is to retain the trainee as a permanent employee. OJT involves individuals at the entry level. Training is designed to help participants reach their fullest potential and become self-sufficient in the job.

I. POLICY STATEMENT

The purpose of the OJT Program is to provide training in the highway construction industry for minority, female, and economically disadvantaged individuals, from this time known as the targeted group. Pursuant to 23 Code of Federal Regulations Part 230, Subpart A, Appendix B - Training Special Provisions, this program provides for on-the-job training aimed at developing journey-level workers in skilled trades.

The Contractor shall take all necessary and reasonable steps to ensure that minorities and women have the opportunity to compete for and participate as trainees or apprentices and to develop as journey-level workers employed in the skilled trades.

Contractors should select a training program(s) based on their company's employment/staffing needs as stated in the OJT Program Manual.

II. INTRODUCTION/PROGRAM BACKGROUND

The OJT Program was originally prepared through the cooperative efforts of the Associated General Contractors of North Dakota (AGC); the Federal Highway Administration (FHWA); the North Dakota Department of Transportation (Department); and, other program stakeholders.

Successful operation of the OJT Program requires contractors to follow uniform and basic training procedures, keep records of trainee progress, and report each trainee's completion or termination.

III. ASSIGNED OJT POSITIONS

A. Trainee positions are assigned contractors based only on federal highway dollars awarded from October 1 to September 30. Trainee assignments are not project specific; that means the contractor may train program participants on any project where training opportunities exist.

The number of trainee positions assigned will be determined by formula based on calculations involving particular project specification numbers on applicable projects. The types of projects NOT applicable in the calculation to assign trainee positions are:

- County-only or state-only funded projects
- Emergency relief, concrete pavement repair (CPR), electrical, rest area, signing, striping projects
- Projects subject to Tribal Employment Rights Ordinances (TERO)
- Projects not let through NDDOT bid openings

- B. Contractors will receive the number of positions assigned and links to resources necessary for completion of program requirements via email.
- C. The number of trainee positions assigned to each contractor will increase proportionately, as shown below, for any applicable federally funded projects awarded to them.

For all federal highway dollars awarded from October 1 to September 30:

6,000,000 to 15,000,000	1	trainee
15,000,001 to 23,000,000	2	trainees
22,000,001 to 31,000,000	3	trainees
31,000,001 and above	4	trainees

A maximum of four (4) trainee positions in a federal fiscal year will be assigned to any prime contractor regardless of dollar amount. Carryover positions from a prior construction season are not included in the four trainee maximum, e.g., a contractor with one carryover and four assigned positions may have a total five trainees.

Failure to follow this OJT Special Provision and the accompanying OJT Program Manual may result in suspension of progress payments or sanctions up to and including revocation of bidding privileges.

IV. FUNDING

The Department will establish an OJT fund annually from which contractors may bill the Department directly for eligible trainee hours. The funds for payment of trainee hours on federal-aid projects will be made available based on 23 USC 504(e) to a maximum of \$100,000. The funds for payment of trainee hours on state-aid only projects will be allocated to a maximum of \$10,000.

V. ONLINE RESOURCES

OJT Program Manual: Includes program requirements, wage rates, and curriculum:
<https://www.dot.nd.gov/divisions/civilrights/docs/ojtprogram.pdf>

SFN 60226 Request for On-the-Job Training Program and Trainee Approval:
<http://www.dot.nd.gov/forms/sfn60226.pdf>

SFN 51023 Voucher for On-the-Job Training Program Hourly Reimbursement:
<http://www.dot.nd.gov/forms/sfn51023.pdf>

Davis-Bacon and Related Acts (DBRA) Handbook: <https://www.dot.nd.gov/manuals/civilrights/davisbacon.pdf>

VI. APPROVALS REQUIRED

- A. Requests for Training Programs and Trainee Approvals must be submitted to Civil Rights Division (CRD). Contractors must request and receive program and trainee candidate approval in order to pay trainees less than the established Davis-Bacon wage for the job classification concerned. No training program hours will count toward the fulfillment of an assigned trainee position or be eligible for reimbursement without prior approval. No retroactive approval will be granted.
 - 1. Submit SFN 60226 *Request for On-the-Job Training Program and Trainee Approval* with each trainee's employment application. <http://www.dot.nd.gov/forms/sfn60226.pdf> and the pre-approved training curriculum for each trainee position assigned by April 1 or within fifteen (15) calendar days of notification of any additional position assignments.
 - 2. Submit SFN 7857 *Application for Eligibility, Job Service North Dakota (JSND)* approval of an economically disadvantaged individual for participation in the OJT Program.

- B. Pre-approved curriculum: NDDOT's OJT Program Manual contains pre-approved training curriculum for a number of skilled trade positions. Contractors should select a training program(s) based on their company's employment/staffing needs.
- C. Customized curriculum: To request a training curriculum not included in the pre-approved curriculum, submit a written request for approval by NDDOT and FHWA.

The request must include:

- A training curriculum, including the classification requested, minimum number of hours required, and type of training the individual will receive to achieve journey-level worker status.
- A minimum wage scale.

If approved, each new classification must comply with the provisions specified in the OJT Program Manual. No hours worked prior to approval will be credited toward completion of the customized training program. Training programs for classifications not covered by the Davis-Bacon and Related Acts (DBRA) will be considered on a limited basis.

The contractor may commence its "customized" training as of the date of the written approval.

- D. Union apprenticeship and on-the-job training programs registered with the Bureau of Apprenticeship and Training (BAT), U.S. Department of Labor, may be used for trainee positions assigned under the OJT Program, provided the trainees or apprentices are minority, female, or economically disadvantaged. Nonminority males not certified as economically disadvantaged may only be used when the contractor has requested and received approval, from the Department, for additional trainee positions. The apprenticeship indenture agreements serve as the trainee's job application and must be provided prior to any hours being credited toward OJT Program completion.
- E. Power Equipment Operators:

The contractor may train an individual on a combination of equipment if each piece of equipment falls within the same groups of power equipment operators identified in the training curricula (groups 1-3 and groups 4-6). These power equipment operator groups are referenced to the federal DBRA wage rates contained in the contract proposal. As an example, a "utility operator" may receive training on a broom, a front-end loader less than 1½ cubic yards, or other piece of equipment that is used around a paver if each piece falls within either groups 1-3 or groups 4-6. When multiple wage rates apply, the trainee's wage will be based on the equipment being operated at the time or on the highest of the applicable wage rates.

Use of the classification "pickup machine operator (asphalt dump-person)" as a group 4 power equipment operator is considered standard industry practice. The classification is defined as: "Operates the controls on the pickup machine that runs in front of the paver, trips the levers on the dump trucks, and balances the loads for the paver. The pickup machine operates on similar principles as a shouldering machine."

- F. Contractors not qualifying for the OJT Program, or contractors desiring to train more than the allotted number of trainees, may apply to the Department for additional trainee positions. Approval of additional positions will be at the sole discretion of the Department. The Department will take into consideration whether there is enough work for the trainee to successfully complete the curriculum and whether the contractor will be exceeding the allowable ratio of trainees to journey-workers (generally considered to be one trainee or apprentice to every three to five journey-workers).

The additional positions may be filled by individuals outside of the targeted groups. The contractor may pay the reduced training rates to additional trainees outside of the targeted groups, but will not receive hourly reimbursement for any individuals who are outside the targeted groups.

VII. NDDOT'S RESPONSIBILITIES

- A. The NDDOT OJT supportive services (OJTSS) consultant will monitor excerpts from the weekly certified payrolls submitted with the monthly vouchers for reimbursement. This includes weekly payrolls from

contractors working on state funded only projects. On contracts where certified payrolls are not required and not available for supporting documentation, contractors may enter trainee wages, hours in training, and the project control number(s) (PCN) in a spreadsheet to support their reimbursement vouchers. In this case, contractors should work with OJTSS to assure that all information required for payment is provided. The OJTSS consultant will assess when the trainees have completed the specified number of hours and their wages are increased accordingly. The OJTSS consultant will also assure that applicable fringe benefits are paid either directly to the trainees or for the trainee into approved plans, funds, or programs.

- B. The OJTSS consultant is charged with visiting trainees and monitoring their progress under the OJT Program. To facilitate the on-site visits, the OJTSS consultant will contact contractors for the location of the trainees weekly.

VIII. CONTRACTOR'S RESPONSIBILITIES

- A. Consistently demonstrate efforts to recruit, hire, and train candidates for the OJT Program.
- B. Assign each trainee to a particular person—either a supervisor or an employee proficient in the skills to be trained—who shall see that the trainee is given timely, instructional experience. This person must be familiar with the OJT Program, keep proper records, and ensure completion of the required training hours in accordance with the training curriculum.
- C. Appoint a company employee who will be available and responsive to weekly contacts by the OJTSS consultant. OJTSS monitors the status of assigned trainee positions (e.g., program and trainee approvals, trainees' progress, etc.). The OJTSS consultant will contact the individual listed on the company's approved SFN 60226 Request for OJT Trainee Approval. This person must reply to communications from the Department and the OJTSS consultant in a timely manner.
- D. Make trainees available to the OJTSS consultant for at least two on-site visits during the construction season.
- E. Make the trainer and project superintendent available to the OJTSS consultant for at least two on-site visits each construction season.
- F. Make trainees aware they are formally enrolled in the OJT program.
- G. Identify trainees on the payroll excerpts, for example: "grp. 4 roller operator trainee." This includes trainees in job classifications not covered by DBRA. Handwritten notes are appropriate for identification.
- H. Notify the Department when a trainee completes the number of hours required to graduate from the OJT Program. The Department will issue the trainee a certificate of completion and a wallet-sized card as proof of the graduate's successful training program completion.
- I. Notify the Department to "propose graduation" or discontinue the training period of a trainee who has completed 90% or more of their hours and thereafter advance the trainee to journey-worker status.
- J. Elect to upgrade proficient trainees from one power equipment operator group or truck driver group to another, with the approval of CRD. Fewer hours are required to complete the upgraded position.

Minimum number of hours required:

Power Equipment Operator Groups 4-6 to Groups 1-3 = 400 hrs.

Class C Truck Driver to Class B = 200 hrs.

Class B Truck Driver to Class A = 200 hrs.

Depending on the variety of experience the trainee has gained under the previous curriculum, the difference in the hours may be deducted from the actual operation of the piece of equipment or truck. The contractor will need to review the trainee's past performance in order to make this determination.

- K. May hire commercial driver's license (CDL) holders as truck driver trainees. Those having over-the-road driving experience, with little or no highway construction experience, may be considered to have completed

the Class C truck driver training curriculum and, therefore, are eligible to be upgraded to a Class B truck driver trainee, with the approval CRD.

- L. May transfer trainees from one project to another in order to complete the OJT Program. If transfers are made, CRD must be notified and provided with the name of the trainer. The training hours will count toward overall OJT Program completion.
- M. May train trainees on municipal, private, out-of-state projects or other non-highway work. These training hours must be paid at the OJT minimum wage scale to count toward their OJT Program completion; however, no program reimbursement will be made for those hours.
- N. May delegate or reassign trainee positions to subcontractors, with the acceptance of the subcontractors and the approval of CRD. The prime contractor must verify that the trainee will be able to accumulate enough hours to complete his or her training program. If approved, the subcontractor must obtain training program and trainee approval from CRD before the trainee begins work under the OJT program. Program reimbursement will be made directly to the prime contractor. The trainee position will remain the responsibility of the prime contractor.
- O. May use trainees on projects subject to TERO requirements as part of the core crew or as part of the skilled labor supplied by the contractor. The training hours will count toward overall OJT Program completion; however, no program reimbursement will be made for those hours unless it is a NDDOT let project.
- P. May not use one trainee to simultaneously fill multiple trainee positions
- Q. May use a trainee on a piece of equipment in groups 1-3 or groups 4-6 for one assigned trainee position, then once that trainee has completed the program, the trainee may be trained on a different piece of equipment in groups 1-3 or groups 4-6 to fulfill a second assigned trainee position. When a trainee is used for a second time within a group, the contractor must pay that trainee at the higher wage rate as described in paragraph B under Wage Rates (page 8).

IX. CLASSROOM TRAINING

- A. Classroom training may be used to train employees. Each classroom training curriculum must be pre-approved by CRD if the contractor wishes to count the classroom hours as training hours and be reimbursed.

Submit a proposed classroom training curriculum to CRD for approval. Define the type of training the individual will receive, classroom training curriculum, and the minimum number of hours required. The Department will determine the number of hours of credit each trainee will receive toward their training. No retroactive approval will be granted.
- B. Contractors will be reimbursed for classroom training hours after the trainee has completed 80 hours of work on highway construction projects.
- C. Reimbursement for classroom training will be limited to 60 hours per trainee per construction season. Reimbursement for classroom training required under the NDDOT Transportation Technician Qualification Program will be at the NDDOT discretion.
- D. The minimum wage scale to be used for classroom training will be that of the first federal-aid highway construction project on which the trainee will be employed. If the trainee is already employed on a federal-aid highway construction project, the trainee will be paid in accordance with the minimum wage scale applicable to that project. However, if the first project on which the trainee will be employed is a state funded only contract, the minimum wage scale to be used for the classroom training will be that of the appropriate DBRA wage in effect at the time of award of the state funded contract.

X. WAGE RATES

- A. When the contractor is submitting the trainee's hours toward training program, wages paid shall in no case

be less than that of those stated in the approved curriculum. A trainee working on a state funded only project, must be paid the DBRA wage rate in effect at the time of award for the type of work the trainee is performing as a trainee.

- B. The minimum wage rates shall not be less than 80% of the journey-worker rate for the first two quarters of training, 85% of the journey-worker rate for the third quarter, and 90% of the journey-worker rate for the fourth quarter.
- Under the power equipment operator training curricula only, once a trainee has completed a training curriculum in either groups 1-3 or groups 4-6, the contractor may enroll the trainee in another training curriculum on a different piece of equipment in either groups 1-3 or groups 4-6.
 - The minimum wage rate under the trainee's second program shall not be less than 85% of the journey-worker rate for the first two quarters of training, 90% of the journey-worker rate for the third quarter, and 95% of the journey-worker rate for the fourth quarter.
 - For the purpose of the OJT Program, a quarter is 25% of the hours the trainee works toward completion of their approved program. The first two quarters of a 550-hour training curriculum would end after 275 hours, the third quarter after 138 hours, and the fourth after 137 hours.
- C. At any time hours are being attributed toward the completion of the approved training program, trainees shall be paid full fringe benefit amounts, where applicable, in accordance to DBRA requirements.
- D. At the completion of the OJT Program, the trainee shall receive the wages of a skilled journey-worker.

XI. RECRUITMENT AND SELECTION

- A. Prerequisites:
Trainees must possess basic physical fitness for the work to be performed, dependability, willingness to learn, ability to follow instructions, and an aptitude to maintain a safe work environment.
- 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.
- C. Recruitment:
1. Place notices and posters setting forth the contractor's Equal Employment Opportunity (EEO) Policy and the availability of the OJT Program in areas readily accessible to employees, applicants for employment, and potential employees.
 2. Employ members of the targeted group (minority, female, or economically disadvantaged individuals) for all trainee positions assigned in accordance with the OJT Program. Additional positions requested by the contractor may be filled by individuals outside of the targeted groups.
 3. Conduct systematic and direct recruitment through public and private employee referral sources.
 4. Screen present employees for upgrading to higher skilled crafts. A present employee may qualify as a trainee; however, no work hours will be reimbursed or counted toward program completion prior to training program and trainee approval by CRD.
- D. Selection:
1. Hire and enroll OJT trainee candidates who qualify as an individual in the targeted group.

2. Select a training program(s) based on their company's employment/staffing needs.
3. Individuals in the targeted group having experience in the selected curriculum may be eligible to participate in the OJT Program providing they:
 - Are not or have not been journey-workers in the selected curriculum, and/or
 - Have not been previously trained in the selected curriculum.
4. Non-minority males who are economically disadvantaged must obtain written certification from Job Service North Dakota (JSND) to qualify for the OJT Program. Contractors wishing to hire and enroll economically disadvantaged candidates must provide JSND's certification along with SFN 60226 and the employment application when requesting trainee approval.
 - JSND is the only agency that may certify an individual as economically disadvantaged. If JSND refers the candidate to the contractor, written certification under this category will be provided to the contractor at the time of the interview.
 - Any person wishing to obtain this certification must apply to JSND and complete the Workforce Investment Act Program's Application for Eligibility (SFN 7857). A contractor recruiting a candidate who may qualify must contact the Workforce Investment Act Program Manager at JSND. JSND contacts are also online:
<http://www.dot.nd.gov/divisions/civilrights/docs/jobservice-workforce-invest-contacts.pdf>

XII. BASIS OF PAYMENT

- A. Contractors will be paid \$4.00 for each hour of training in accordance with the OJT Program Manual.
- B. Reimbursement will be made directly to the contractor. Complete SFN 51023 Voucher for On-the-Job Training Program Hourly Reimbursement for each trainee. Attach excerpts from the weekly certified payrolls showing the trainee's hours, rate of pay, and how applicable fringe benefits were paid. Excerpts from weekly payrolls are also required for state funded only projects. Vouchers without excerpts from payrolls will not be paid until the excerpts are provided. If the excerpts from the payrolls are not provided within one week, the voucher will not be paid and the trainee's hours will not be credited toward completion.
<http://www.dot.nd.gov/forms/sfn51023.pdf>
- C. On contracts where certified payrolls are not required and not available for supporting documentation, contractors may enter trainee wages, hours in training, and the project control number(s) (PCN) in a spreadsheet to support their reimbursement vouchers. In this case, contractors should work with OJTSS to assure that all information required for payment is provided.
- D. Submit completed vouchers to CRD for approval and processing by the fifteenth (15th) calendar day of every following month the trainee is employed under the OJT Program.

Regardless, all vouchers for trainee hours worked on state funded only projects from July 1 to June 30 must be received by CRD no later than July 15 in order to be reimbursed. All vouchers for trainee hours worked on federally funded projects from October 1 to September 30 must be received by CRD no later than October 15 in order to be reimbursed. This is due to state and federal end-of-the-year budget fiduciary requirements.

XIII. FAILURE TO PROVIDE THE TRAINING OR HIRE THE TRAINEE AS A JOURNEY-WORKER

- A. The contractor is required to consistently demonstrate efforts to recruit, hire, and train candidates for the OJT Program.
- B. If the contractor does not show in a timely manner good faith efforts to recruit, hire, and train candidates in the targeted group, the Department may withhold progress payments
- C. If payments have been made, the Department will deduct the amount paid from the contractor's progress

payment.

- D. No payment shall be made to a contractor for failure to provide the required training or failure to hire the trainee as a journey-worker when such failure is caused by the contractor and evidences a lack of good faith on the part of the contractor in meeting the requirements of this OJT Program Special Provision.
- E. Hiring a trainee to begin training as soon as feasible after start of work is evidence of a contractor's good faith efforts to comply with the OJT Program requirements. Additional evidence supporting a contractor's good faith efforts would be to keep the trainee employed as long as training opportunities exist in the approved work classification or until the trainee has completed his or her training program.
- F. It is not required that all trainees be employed for the entire length of the construction season. A contractor will have fulfilled its responsibilities under this OJT Special Provision if it has provided acceptable training to the number of trainees assigned.

XIV. UNFILLED OR INCOMPLETE TRAINEE POSITIONS

- A. By October 1, provide written explanation of the firm's good faith efforts for unfilled or incomplete trainee assignments to CRD. CRD will decide, on a case-by-case basis, whether to carry the assigned positions over to the next construction season.
- B. Positions carried over from the previous construction season must be among the first positions filled at season startup. To notify CRD of the trainee's rehiring, submit *SFN 60226 Request for On-the-Job Trainee Approval*, marking 'Check if Carryover Trainee' in the Approved Training Program section of the form. There is no need for the training position or a returning trainee to be re-approved.
- C. Sanctions, up to and including revocation of bidding privileges, may be imposed on the contractor for failure to provide sufficient explanation and documentation for reasons assigned trainee positions when unfilled or incomplete.

XV. DEFINITIONS

Carryover Position: Incomplete trainee position carried forward from a prior program year.

Carryover Trainee: Trainee scheduled to continue training hours under prior year's approved program.

CRD: NDDOT's Civil Rights Division administers the NDDOT On-the-Job Training Program.

Good Faith Efforts: Documentation supporting a contractor's efforts to fulfill the program requirements, e.g., new hires list, advertising examples/locations, current employees reviewed for upgrades, etc.

Journey-worker: A worker employed in a trade or craft who has attained a level of skill, abilities, and competencies recognized within the industry.

OJT Supportive Services (OJTSS): Department contractor providing in-person oversight, support, and guidance to contractors and trainees to increase the effectiveness of approved training programs.

Trainee: A person who receives training through an apprenticeship program or other FHWA approved program.

Trainer/Supervisor: Contractor's employee assigned to train, supervise, and support a trainee.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

CERTIFICATE OF COMPLIANCE (CoC)

DESCRIPTION

Section 106.01 C, "Certificate of Compliance" is no longer valid. Use this Special Provision in place of that section.

Certificate of Compliance

A Certificate of Compliance (CoC) states that the materials represented by the CoC comply with the contract requirements.

All materials manufactured off-site require either a Manufacturer or Contractor CoC. Materials listed in Table 1 require a Manufacturer CoC. All other materials require a Contractor CoC.

Submit a CoC before incorporating the material into the work. Submit CoC's electronically. Some materials require the submission of additional information as part of the CoC. When this is required, the contract documents will state the additional requirements.

The Department will not include quantities of material represented by a CoC on a progressive estimate until the Contractor has fully met the CoC requirements.

The Department may sample, test, and inspect material represented by a CoC at any time before project acceptance, and will accept or reject materials based on inspections or test results.

Retain records and information relating to material compliance with contract requirements. The Engineer may request receipt of records and information before accepting material for installation or payment.

A. Manufacturer Certificate of Compliance.

A Manufacturer CoC requires the signature of a person having the legal authority to act for the material manufacturer. The manufacturer and prime contractor must sign the Manufacturer CoC.

Provide Manufacturer CoC for the products shown in Table 1.

The entity batching Portland Cement Concrete is considered the manufacturer. When submitting CoC for Portland Cement Concrete, include all manufactured items used in batching concrete on the CoC.

Table 1
Manufacturer Certificates of Compliance

Section	Item
604	Prestressed Concrete Beams
606	Precast Reinforced Concrete Box Culverts
802	Portland Cement Concrete
804	Cement and Lime

Table 1
Manufacturer Certificates of Compliance

820	Fly Ash
830	Pipe and Drainage Structures
834	Structural Steel
836	Reinforcing Steel, Dowel Bars, and Tie Bars
840	Piling
846	Preservatives and Pressure Treatment Process for Timber (excluding materials provided under Sections 752 and 764)
858	Geosynthetics

Submit Manufacturer CoC using the form [Manufacturer Certificate of Compliance \(SFN 61041\)](#).

B. Contractor Certificate of Compliance.

A Contractor CoC requires the signature of a person having the legal authority to act for the prime Contractor. The prime Contractor may require the manufacturer, supplier, or subcontractor to sign the Contractor CoC.

Submit Contractor CoC using the form [Contractor Certificate of Compliance \(SFN 61040\)](#).

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

Haul Roads

DESCRIPTION

Section 107.08, "Haul Roads" is no longer valid. Use this Special Provision in its place.

107.08 HAUL ROADS

A. General.

Before submitting a proposal, contact the appropriate State, County, Township, or City officials to determine if there are any roadways that will be designated as "no haul" routes.

Notify the Engineer of each public road proposed for use as a haul road before hauling over that route. The Engineer will designate the most practical route for transporting materials and designate the route as a "haul road," upon completion of the pre-haul inspection unless deemed unacceptable by a local jurisdiction request.

Change the route of a designated haul road only with the Engineer's written approval. For route change requests made for the Contractor's convenience, the Engineer may require an agreement limiting the Department's liability for the cost of maintenance and restoration of the haul road.

The Engineer will consider the entire haul cycle, loaded and empty, when designating haul routes.

B. Designation of Haul Roads

The Engineer will not designate paved roads off the state system as haul routes.

The Engineer will not designate a road susceptible to severe damage from concentrated heavy hauling as a haul road unless no alternate route is available. Investigate alternate routes before submitting a proposal.

If the Contractor desires to haul on a road that the Engineer determined to be unsuitable for hauling, the Engineer will designate that road as a haul road if the Contractor provides improvements that the Engineer and Contractor agree make the road suitable. Make these improvements at no additional cost to the Department.

If the Engineer determines that pre-haul improvements to a designated haul road will reduce the maintenance or restoration costs, the Department will pay for the materials used to make pre-haul improvements.

A route used to haul material from a commercial pit to the project site is not considered a haul road. A commercial pit is a pit that meets one of the following criteria at the time the project is advertised:

1. The pit has long-term facilities in place and partially derives its annual sales from ongoing operation and sources other than Department or other short-term government contracts;
2. The operator owns the land or has a long-term lease, and did not primarily set up and equip the pit at the location to serve Department contracts; or
3. The operator regularly advertises the availability of material for public sale and has facilities available for effecting public sales at times when there are no government contracted projects utilizing the pit.

C. Pre-Haul Inspection.

Before hauling over a designated haul road, the Engineer, the Contractor, and the agency charged with control and maintenance of the route will make a joint inspection of the haul road. The joint inspection will determine the existing condition of the haul road, including the type, thickness, and width of the surfacing material. The Engineer will record the results in an inspection report. The inspection report will set forth any special conditions for use, maintenance, and restoration of the route. The Contractor, the Engineer, and the agency charged with control and maintenance of the route shall review and sign the report.

D. Use, Maintenance, and Restoration.

Maintain the haul roads used by public traffic in a condition that safely and adequately accommodates public traffic.

If the Contractor damages the haul road by hauling loads in excess of the legal limit, or through negligence or failure to perform maintenance, the Contractor shall repair the damage; the Department will not pay the Contractor for the repairs.

After completing hauling operations over a designated haul road, restore the road to a condition at least equal to the condition existing at the time of the pre-haul inspection. The Engineer will order the type and amount of maintenance and restoration work and the requirements for performing this work.

Maintain and restore the road as required despite the use of the haul road concurrently by other traffic. For haul roads jointly used by multiple contractors on Department contracts, the Engineer will determine the respective obligations for maintenance and restoration.

For haul roads under Department jurisdiction, the Department will only relieve the Contractor of any further obligation for restoration of the road when the Contractor has restored the road to the condition required in the pre-haul inspection report, as accepted in writing by the Engineer. For haul roads under other jurisdiction, obtain a haul road release from the agency charged with control or maintenance of the route and submit a copy of the executed release to the Engineer.

If the Engineer determines that dust from hauling operations on designated haul roads is creating a hazard to traffic or a nuisance to the public, apply water to the haul road as necessary to control the dust.

E. Materials and Construction.

Materials and construction methods used in performing maintenance and restoration work shall meet the requirements of the relevant specifications.

F. Method of Measurement.

The Engineer will measure all approved quantities of material ordered by the Engineer for pre-haul improvements, maintenance, and restoration of designated haul roads as specified in the applicable portions of the contract. The Engineer will measure water used for dust control as specified in Section 216.05, "Method of Measurement".

G. Basis of Payment.

The Department will pay the Contractor for measured quantities of material ordered by the Engineer for pre-haul improvements, maintenance, and restoration of designated haul roads in accordance with Section 109.03, "Compensation for Contract Revisions."

The Department will not pay the Contractor for the costs to maintain and restore routes used to haul materials from commercial pits. Include these costs in the contract unit prices of the relevant contract items.

If maintenance and restoration work only requires the use of equipment, the Department will not pay the Contractor for the costs to use the equipment. Include these costs in the contract unit prices of the relevant contract items.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

LIMITATIONS OF OPERATIONS

DESCRIPTION

Section 108.05, "Limitations of Operations" is no longer valid. Use this Special Provision in its place.

108.05 LIMITATION OF OPERATIONS

A. General.

Perform the work in a manner and sequence that minimizes interference to traffic, and with due regard to the location of detours and provisions for handling traffic. Do not begin work to the prejudice or detriment of work already started; the contract may require a section of roadway to be finished before starting additional sections if the opening of the section is essential to public convenience.

If the prosecution of the work is discontinued, provide the Engineer at least 24-hours notice before resuming operations.

B. Holidays.

Unless the contract allows work on holidays, perform work on holidays only with the Engineer's prior written approval. Submit a written request to the Engineer by noon 2 business days before the requested holiday.

C. Night-time Operations and Extended Hours.

1. General.

When performing work in low light conditions, implement proper safety precautions and provide adequate lighting for the performance and inspection of the work.

2. Nighttime Operations.

Unless the contract allows for nighttime operations, perform work at night only with the Engineer's prior written approval.

Submit a written request to the Engineer a minimum of 7 calendar days before anticipated nighttime operations. The Engineer may deny the request or delay approval if it would require additional staffing considerations. If nighttime operations requires the Engineer to hire additional forces, nighttime operations may not be allowed for up to 30 days from the receipt of the request.

When requesting to perform nighttime operations, include a plan to ensure the safety of all individuals on the project site, including the Contractor's and subcontractor's workers, Department representatives, and the traveling public.

The Department bears no liability for costs or delays resulting from the Engineer's approval, rejection, or delay for staffing purposes of a request to perform nighttime operations.

3. Extended Hours.

Extended hours are allowed before sunrise with verbal notice given to the Engineer the previous day. Extended hours are allowed after sunset with verbal notice given to the Engineer that same day.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

TRIBAL EMPLOYMENT RIGHTS ORDINANCE (TERO) REQUIREMENTS

Project 7-023(057)046 – PCN 22159

This Special Provision defines the core crew, TERO fees, and the Indian preference requirements for the Project listed above.

The core crew and workforce requirements identified in this Special Provision apply to all portions of the highway construction project.

The Contractor and Subcontractors must comply with Tribal laws as long as the Tribal laws are in compliance with state and federal requirements.

CORE CREW

The Contractor and Subcontractor shall choose a core crew and utilize it on the Project listed above. The core crew will consist of the following operators and key personnel:

Asphalt Pavement Surfacing (Mill and Overlay)

Operations:

- 1 Superintendent
- 1 Truck Foreman
- 1 Front End Loader Operator
- 1 Crusher Operator
- 1 Paver Operator
- 1 Asphalt Plant Operator
- 1 Roller Operator
- 1 Head Mechanic
- 1 Milling Machine Operator
- 2 On The Job Program Trainees

Asphalt Pavement Surfacing (S.O.) Operations:

- 1 Superintendent
- 1 Truck Foreman
- 1 Front End Loader Operator
- 1 Crusher Operator
- 1 Paver Operator
- 1 Asphalt Plant Operator
- 1 Roller Operator
- 1 Head Mechanic
- 2 On The Job Program Trainees

Pavement Marking Grooving Operations:

- 1 Superintendent
- 1 Grooving Machine Operator
- 1 Truck Driver
- 1 Follow Vehicle Driver
- 1 Traffic Control Person

Rumble Strip Operations:

- 1 Rumble Strip Grinder Operator
- 1 Road Oil Distributor Operator
- 1 Painter
- 1 Follow Vehicle Driver
- 1 Truck Driver

Traffic Control Operations:

- 1 Foreman
- 1 Watch Person

The successful Bidder will be allowed to fill these key positions with personnel of his/her choosing.

WORK FORCE

The Contractor and all Subcontractors performing work on this Project shall extend preferential employment to Indians. The Contractor and all Subcontractors shall hire at least 75% of all positions (over and above the Core Crew) and 100% of their Group 1-4 Laborers through the Fort Berthold Reservation TERO office.

Each Contractor and Subcontractor shall prepare a list of workers needed to complete the labor force as defined above. This list shall be submitted to the TERO office at least 72 hours (not including Saturday and Sunday) prior to commencement of construction activities. The TERO office shall then see that the qualified employees are available for work at the time and date indicated by the Contractor. The term qualified employees cannot be used to eliminate or discriminate against any potential Indian employees.

If any of the employees have not reported for work within 24 hours of start-up time, the Contractor shall be free to hire by his/her own methods. The Contractor must abide by the Indian preference requirements when hiring additional and replacement workers.

After construction activities have commenced, requests for additional and replacement workers shall be made to the TERO office. The TERO office shall have 24 hours to furnish such employees. If the employees are not provided within this time, the Contractor will be at liberty to do their own hiring. The Contractor must abide by the Indian preference requirements when hiring additional and replacement workers. After the Contractor has hired an additional or replacement employee or subcontractor, the Contractor will be permitted to retain this employee or subcontractor through completion of the Project. The Contractor will not be required to displace workers or subcontractors on the Project.

FEES AND LICENSES

The rate of the TERO fee will be based on the percentage of the Contract that lies within the boundary of the Fort Berthold Reservation as determined below. The TERO fee percentage applies to the entire contract.

The established TERO fee on the Fort Berthold Reservation is two percent (2%) with an established TERO Training fee of one-half percent (1/2%), resulting in a total of up to two and one-half percent (2 ½%) in TERO fees to be assessed to the Contract. For project 7-023(057)046, one hundred percent (100.0%) of this project lies within the boundaries of the Fort Berthold Reservation. Therefore the Contractor shall pay a TERO fee in the amount of 2.5% of the total contract amount.

The fee shall be paid at a rate of 2.5% of each progressive estimate. Payment shall be made within two weeks of receipt of progress payment.

The Contractor shall obtain a construction TERO License at a cost of \$5,000 per year.
The Subcontractor shall obtain a construction TERO License at a cost of \$1,000 per year.

The TERO fee, training fee, and license costs shall be bid as incidental to the Contract as a whole.

The Contractor shall make payment to:

TERO Office
Three Affiliated Tribes
P.O. Box 488
New Town ND 58763

MHA NATION DEPARTMENT OF TRANSPORTATION (MHA DOT)

MHA DOT will not require the Contractors or Subcontractors to obtain any permits for work performed on project 7-023(057)046

If the Contractors or Subcontractors perform work not associated with the contract for project 7-023(057)046, the Contractors or Subcontractors will need to contact the MHA DOT at:

MHA DOT
Three Affiliated Tribes
PO Box 1693
New Town, ND 58763

TERO COMPLIANCE

Contract compliance is the responsibility of the North Dakota Department of Transportation, and the Department has the exclusive right to suspend construction operation on this Project for any instances of noncompliance, including TERO issues. If there is reason to believe that the Contractor or Subcontractors are violating the requirements of the Special Provision, the TERO office will notify the Department. The Department, working with the TERO Office, will resolve those issues with the Contractor or Subcontractor.

Contractor will be required to provide proof of payment to the Engineer before final acceptance of the project.

MEMORANDUM OF UNDERSTANDING

Project 7-023(057)046 – PCN 22159

Be it understood that the Three Affiliated Tribes and the North Dakota Department of Transportation (NDDOT) mutually agree in the award of the above-mentioned project contract to the contractor determined by the NDDOT to be the successful bidder. This memorandum is consistent with and does not supersede or eliminate any requirements specified in SP 674(14), which is part of the contract for this project.

This project consists of milling and overlay on ND 23, which is within the exterior boundaries of the Fort Berthold Reservation.

Conditions are as follows:

1. Employment by the prime contractor of residents and subcontractors of the Three Affiliated Tribes will be as outlined in SP 674(14).
2. Core crew of the contractor will be as outlined in SP 674(14).
3. The only fees on the contract will be a TERO fee, training fee and license fees as outlined in SP 674(14).
4. No contractor or subcontractor shall be required to pay any tribal tax or license fee, other than those set forth above.
5. Employees of the NDDOT or its agents, hired to perform professional engineering services for the NDDOT, (e.g. consulting engineers, testing firms, etc.) will not be subject to reservation taxes, fees, permits, or TERO provisions.

NDDOT will provide copies of the payment estimates to the Tribe.

Mark N Fox
Three Affiliated Tribes
Chairperson

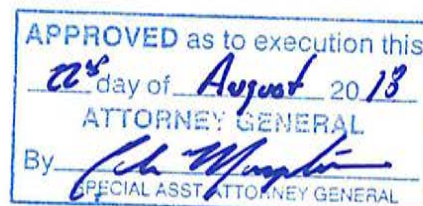
8/17/18
Date

for the
TK Sorel
Thomas K Sorel, Director
North Dakota Department of Transportation

8/23/18
Date

WSS Gaydos
Approved as to Substance by:
Mark Gaydos, P.E.
NDDOT, Environmental & Transportation Services

7/21/18
Date



NORTH DAKOTA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION

FUEL COST ADJUSTMENT CLAUSE

Revision Date: 9/8/2006

Introduction

This Special Provision provides for price adjustments to the Contract when significant changes in the cost of motor fuels and burner fuels occur while completing the Contract work. Participation in fuel cost adjustment program is not mandatory. A Contractor is not required to notify the Department at the time of submitting bids whether the Contractor will or will not participate in the fuel cost adjustment provision.

The North Dakota Department of Transportation (NDDOT) will send the low responsible bidder a "Fuel Cost Adjustment Affidavit" (SFN 58393) with the proposed Contract. The Contractor shall return a completed Fuel Adjustment Affidavit with the signed Contract as specified in Standard Specification Section 103.06, Execution and Approval of the Contract. The affidavit shall be returned on all Contracts with this provision even if the Contractor elects not to participate in the provision.

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 monthly for the cost of the motor fuels and burner fuels whenever the Current Fuel Index (CFI) is outside the given threshold of the Base Fuel Index (BFI) for the Contract.

If the Contractor has a fixed price for fuel for motor or burner fuels to complete the work, no fuel cost adjustments will be made for that fuel type. If there is no fixed fuel price for motor or burner fuels, participation in the Fuel Adjustment provision is the decision of the prime Contractor.

If the prime Contractor decides not to participate, no fuel cost adjustments will be made to the Contract for the Contractor or any subcontractors. If the prime Contractor elects to participate in the fuel cost adjustment provision, the prime Contractor shall include the anticipated fuel cost of subcontractors who wish to participate. If fuel cost adjustments are made to the Contract, the prime Contractor shall ensure that participating 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.

Fuel Indexes

Each month, NDDOT will record the average wholesale price for No. 2 diesel fuel and the average wholesale price for unleaded gasoline (87 octane). The monthly average will be the average of the daily rack prices for the month as reported by DTN Energy for Fargo ND.

The burner fuel index will be the No. 2 diesel fuel index regardless of the type of burner fuel actually used.

The Base Fuel Index (BFI) price for motor fuels and burner fuel to be used in the Contract will be the average wholesale price for the month prior to the bid opening.

The Current Fuel Index (CFI) price for motor fuels and burner fuel to be used for each monthly adjustment will be the average wholesale price for the month prior to the adjustment month.

Fuel Ratio

For motor fuels diesel and unleaded gas, the fuel ratio of the Contract will be determined by dividing the Contractor's affidavit costs for each motor fuel by the original Contract amount.

For burner fuels, the fuel ratio of the contract will be determined by dividing the Contractor's affidavit cost for burner fuels by the original Contract amount of plant-mixed hot bituminous pavement paid by the ton. Asphalt cement, binders and other miscellaneous bituminous items shall not be included.

The fuel ratio of the contract for motor and burner fuels will remain the same throughout the length of the contract. The sum of the affidavit fuel costs shall not exceed 15% of the original Contract amount.

The fuel ratio for the three fuel types will be determined by the following equation:

Fuel Ratio_(x, y, z) = Affidavit Cost_(x, y, z) / Original Contract Amount_(x, y, z)		
(x)	=	Motor Fuel (Diesel)
(y)	=	Motor Fuel (Unleaded)
(z)	=	Burner Fuel
Fuel Ratio _(x, y, z)	=	Fuel ratio of the contract for each respective fuel type
Affidavit Cost _(x, y, z)	=	Fuel costs from Fuel Adjustment Affidavit (SFN 58393)
Original Contract Amount _(x, y)	=	Total of the original contract amount excluding lane rental, and Part B of the bid (when A+B bidding is used), if applicable.
Original Contract Amount _(z)	=	Total original contract amount for all hot bituminous pavement bid items combined, excluding bid items for asphalt cement, sawing and sealing joints, coring, etc. Only hot bituminous pavement bid items measured by the Ton will be included in the calculation.

Cost Change

The monthly change in fuel costs will be determined by the following equation:

Cost Change_(x, y, z) = (CFI_(x, y, z) - BFI_(x, y, z)) / BFI_(x, y, z)		
(x)	=	Motor Fuel (Diesel)
(y)	=	Motor Fuel (Unleaded)
(z)	=	Burner Fuel (use diesel prices)
Cost Change _(x, y, z)	=	The relative change in the current CFI and the BFI for each fuel type
CFI _(x, y, z)	=	Current Fuel Index for each fuel type
BFI _(x, y, z)	=	Base Fuel Index for each fuel type

Contract Adjustments

Contract adjustments will be made for the cost of motor and burner fuels whenever the cost change exceeds a ±0.10 threshold. No fuel cost adjustment will be made for work done under liquidated damages. Adjustments will be determined for Motor Fuel (diesel), Motor Fuel (unleaded), and Burner Fuel (burner) separately and shall be computed on a monthly basis.

When the cost change is greater than 0.10, the rebate to the Contractor for each fuel type shall be computed according to the following formulas:

$FCA_{(x, y, z)} = \text{Fuel Ratio}_{(x, y, z)} \times \text{Estimate}_{(x, y, z)} \times (\text{Cost Change}_{(x, y, z)} - 0.10)$		
(x)	=	Motor Fuel (Diesel)
(y)	=	Motor Fuel (Unleaded)
(z)	=	Burner Fuel
$FCA_{(x, y, z)}$	=	Fuel Cost Adjustment for each of the fuel types
$\text{Fuel Ratio}_{(x, y, z)}$	=	Fuel Ratio for each of the fuel types
$\text{Estimate}_{(x, y)}$	=	The monthly total of work done on estimates issued in the current month excluding incentive or disincentive payments, pay factor adjustments and any work completed under liquidated damages.
$\text{Estimate}_{(z)}$	=	The monthly total of hot bituminous pavement work done on estimates issued in the current month, excluding bid items for asphalt cement, sawing and sealing joints, coring, etc. Only hot bituminous pavement bid items measured by the Ton will be included in the calculation. Hot bituminous pavement work completed under liquidated damages will not be included.
$\text{Cost Change}_{(x, y, z)}$	=	The monthly change in fuel costs for each of the fuel types

When the cost change is less than -0.10, the credit to the Department for each fuel type shall be computed according to the following formulas:

$FCA_{(x, y, z)} = \text{Fuel Ratio}_{(x, y, z)} \times \text{Estimate}_{(x, y, z)} \times (\text{Cost Change}_{(x, y, z)} + 0.10)$		
(x)	=	Motor Fuel (Diesel)
(y)	=	Motor Fuel (Unleaded)
(z)	=	Burner Fuel
$FCA_{(x, y, z)}$	=	Fuel Cost Adjustment for each of the fuel types
$\text{Fuel Ratio}_{(x, y, z)}$	=	Fuel Ratio for each of the fuel types
$\text{Estimate}_{(x, y)}$	=	The monthly total of work done on estimates issued in the current month excluding any incentive or disincentive payments, pay factor adjustments and any work completed under liquidated damages.
$\text{Estimate}_{(z)}$	=	The monthly total of hot bituminous pavement work done on estimates issued in the current month, excluding bid items for asphalt cement, sawing and sealing joints, coring, etc. Only hot bituminous pavement bid items measured by the Ton will be included in the calculation. Hot bituminous pavement work completed under liquidated damages will not be included.
$\text{Cost Change}_{(x, y, z)}$	=	The monthly change in fuel costs for each of the fuel types

Payments

Adjustments will be determined by the Engineer monthly. Adjustments will be made under the following spec and code for each fuel type:

109 0100	Motor Fuels (Diesel)
109 0200	Motor Fuels (Unleaded)
109 0300	Burner Fuel

When significant payment adjustments are made on final estimates to account for final in-place measured quantities, the Engineer may prorate the adjustments back to the months when the work was done.

Attachments

For informational purposes, a 'Fuel Cost Adjustment Affidavit' (SFN 58393) is included as Attachment A.

FUEL COST ADJUSTMENT AFFIDAVITNorth Dakota Department of Transportation, Construction Services
SFN 58393 (8-2017)SP Fuel Cost Adjustment Clause
6 of 6**Attachment A**

PCN	Project Number	
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 Contractor shall return the affidavit on all Contracts with this Provision even if the Contractor elects not to participate.		
Check the box for each fuel type that has a fixed price. No adjustments in fuel price will be made for the boxes that are checked.		
<input type="checkbox"/> Diesel	<input type="checkbox"/> Unleaded	<input type="checkbox"/> Burner
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 .		
		<input type="checkbox"/> Yes <input type="checkbox"/> No
If yes, provide the total dollars for each of the applicable fuels:		
Diesel (D)		
Unleaded (U)		
Burner Fuel (B)		
Sum (D+U+B)		
		% of Original Contract Amount *
*The sum of the D, U, and B may not exceed 15% of the original contract amount.		
Under the penalty of law for perjury of falsification, the undersigned,		
Name (print or type)		Title (print or type)
Contractor (print or type)		
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.		
Signature		Date

Acknowledgement

State of	
County of	
Signed and sworn to (or affirmed) before me on this day _____ (month, day, year)	
Name of Notary Public or other Authorized Officer (Type or Print)	Affix Notary Stamp
Signature of Notary Public or other Authorized Officer	
Commission Expiration Date (if not listed on stamp)	