

# INFORMATIONAL PROPOSAL

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

NEBRASKA DEPARTMENT OF ROADS  
LETTING DATE: November 19, 2015

CALL ORDER: 410  
CONTROL NO. SEQ. NO.: 42462 000  
TENTATIVE START DATE: 07/18/2016  
LOCATION: N-44, NORTH CHANNEL PLATTE RIVER, KEARNEY  
IN COUNTY: BUFFALO

CONTRACT ID: 4462X  
PROJECT NO.: STR-44-2(1009)  
CONTRACT TIME: 60 Working Days

BIDDER

GROUP 6 BRIDGE AT STA. 222+84.87LT.  
GROUP 6A BRIDGE AT STA. 222+84.87RT.  
GROUP 8B ELECTRICAL  
GROUP 10 GENERAL ITEMS

SEE SPECIAL PROVISIONS FOR GROUP TIES

## NOTES

THE TOTAL AMOUNT OR WORK WHICH WILL BE ACCEPTED IN  
THIS LETTING IS LIMITED TO \$\_\_\_\_\_.

THE NUMBER OF GROUP \_\_\_\_\_ CONTRACTS WHICH WILL BE  
ACCEPTED IN THIS LETTING IS LIMITED TO \_\_\_\_\_.

## NOTICE TO ALL BIDDERS

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

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

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

## LETTING QUESTIONS

Prior to the letting, any questions pertaining to the Special Provisions or the Plans for this project should be submitted to NDOR in a written format through the Bid Express (BidX) website at <https://www.bidx.com/ne/lettings>. Likewise, NDOR will post answers exclusively to the BidX website. All official answers will be identified as “Authorized by NDOR.” **Questions will not be answered verbally.**

STATE OF NEBRASKA  
DEPARTMENT OF ROADS

Required Provisions Supplemental to the

**Standard Specifications for Highway Construction**

**I. Application**

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

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

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

**II. Equal Opportunity**

1. **Selection of Labor**

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

2. **Nebraska Fair Employment Practices Act**

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

3. **Nebraska Equal Pay Act**

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

April 4, 1995

### III. Employment of Labor

#### 1. General

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

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

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

#### 2. Payrolls

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

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

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

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

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

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

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

April 4, 1995

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

#### **IV. Safety and Accident Prevention**

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

#### **V. Subletting or Assigning the Contract**

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

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

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

April 4, 1995

**SPECIAL PROVISIONS  
FOR  
STATE  
PROJECT NO. STR-44-2(1009)**

**GENERAL CONDITIONS**

Bids for the work contemplated in this proposal form will be received at the office of the Nebraska Department of Roads in Room 104 of the Central Office Building at 1500 Highway 2 at Lincoln, Nebraska, on November 19, 2015, until 1:30 P.M.

- a. Bids submitted by mail should be addressed to the Nebraska Department of Roads, c/o Contract Lettings Section, P.O. Box 94759, Lincoln, NE 68509-4759.
- b. Bids submitted electronically over the internet, shall be submitted using [www.bidx.com](http://www.bidx.com).

The 2007 Edition of the Standard Specifications for Highway Construction, including all amendments and additions thereto effective at the date of the contract, are made a part of these Special Provisions, through reference.

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

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

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

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

GROUPS 6, 6A, 8B & 10 ARE TIED TOGETHER AND BIDDING PROPOSAL FORMS FOR THIS WORK WILL BE ISSUED AND A CONTRACT AWARDED TO A CONTRACTOR WHO IS QUALIFIED FOR BRIDGE.

**STATUS OF UTILITIES**

The following information is current as of August 18, 2015.

Aerial and/or underground utility facilities may exist within this project. The Contractor should request a utility status update at the preconstruction conference, and/or prior to starting work.

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

To arrange for utilities to locate and flag their underground facilities, contact Diggers Hotline of Nebraska at 1-800-331-5666, or dial 811.

The following utilities have facilities within the project area, and have been provided project plans:

- Charter Communications
- City of Kearney
- Frontier Communications
- Kinder Morgan
- NPPD
- Northwestern Energy
- SourceGas Distribution LLC
- USGS

All utility relocation will be accomplished prior to or concurrent with construction.

### **STATUS OF RIGHT OF WAY**

The right of way for this project has been acquired and physical possession is held by the State of Nebraska and ready for the Contractor's use, except tracts listed below:

**Unacquired Right-of-Way Tracts as follows:**

Tract Number	Status of Tract	Hearing Date
None	None	None

**Right-of-Way Tracts with Pay Items:**

Tract Number	Pay Items
None	None

- No encroachments on the old right of way.
- Acquisition of right of way is not required for this project.

### **SPECIAL PROSECUTION AND PROGRESS (Phasing)**

The plans depict phasing sequences that are to be used in the construction of this project. Any deviation from these sequences shall require the written approval of the Engineer.

### **SPECIAL PROSECUTION AND PROGRESS (Environmental Considerations)**

The Contractor shall contain all paint removal and/or other debris generated over the stream channel (high bank to high bank). If ground disturbance is necessary for access and/or abutment repair work, silt fence shall be placed at the top of the channel high banks to prevent sediment and debris from entering the stream channel. No temporary access crossings are

allowed through the stream channel unless the Contractor elects to use a temporary structure(s), at the Contractor's expense, that spans the channel banks.

### **SPECIAL PROSECUTION AND PROGRESS (Bike Trail)**

Temporary impacts to or temporary closure of the existing bike trail located under the structures near the south abutments is anticipated. Any damage to this trail that results from work required for the project shall be repaired or replaced, at no cost to the Department, so that the trail is restored to as good or better condition than it was prior to the project.

### **ENVIRONMENTAL COMMITMENT**

**Control No.:** 42462                      **Project No.:** STR-44-2(1009)  
**Project Name:** N. Channel Pl. Rv. Br. In Kearney

Below are the Conservation Conditions that will be required for this project. All conditions and regulations of any permit obtained for this project will be followed by the Contractor.

**(Responsible Party for the measure is found in parentheses)**

**Conservation Measure for Environmentally Sensitive Areas**

All wetlands within the project area will be marked on the project plans for the Contractor as avoidance areas. (NDOR Design, NDOR Environmental)

The Contractor shall not stage, store, waste or stockpile materials and equipment in undisturbed locations, or in known/potential wetlands and/or known/potential streams that exhibit a clear "bed and Bank" channel. Potential wetland areas consist of any area that is known to pond water, swampy areas or areas supporting known wetland vegetation or areas where there is a distinct difference in vegetation (at lower elevations) from the surrounding upland areas. (Contractor, NDOR District)

- Regulated Wetlands and/or Water Resources for this project have been identified and delineated in the field by NDOR. The above condition pertains to the areas within delineated wetland boundaries (Wetlands – Do Not Disturb) and/or environmentally sensitive areas (Area of Environmental Concern – Do Not Disturb) as shown in the 2-W aerial plan sheets and/or the erosion control plan sheets included in the plan set. If access to any of these areas is required to complete the project construction, the NDOR Construction Project Manager shall coordinate with the Environmental Permits Unit to determine need for field verification and/or permitting requirements prior to disturbance of the area. (Contractor, District Construction)

Contact Person: Nick Burnham, Highway Environmental Biologist, (402) 479-3818



## General Conservation Conditions

- **Changes in Project Scope.** If there is a change in the project scope, the project limits, or environmental commitments, the NDOR Environmental Section must be contacted to evaluate potential impacts prior to implementation. Environmental commitments are not subject to change without prior written approval from the NDOR Environmental Section. (District Construction, Contractor)
- **Threatened and Endangered Species.** The Contractor shall reference the AGC Endangered Species Guide or the Nebraska Game and Parks Commission website for a reference of federal and state listed species that may occur in the project vicinity prior to starting project construction. These guidance documents can be found at:
  - [http://www.agcne.org/services/es\\_guide.htm](http://www.agcne.org/services/es_guide.htm)
  - [http://outdoornebraska.ne.gov/wildlife/programs/nongame/Endangered\\_Threatened.asp](http://outdoornebraska.ne.gov/wildlife/programs/nongame/Endangered_Threatened.asp)

If federal or state listed species are observed during construction, stop work and contact the NDOR Environmental Section to determine action required prior to resuming work (NDOR Environmental, District Construction, Contractor)

- **Refueling.** Refueling will be conducted within the confines of the paved roadway surface or within the boundaries of an approved stockpile/staging site (Contractor)
- **Restricted Activities.** The following project activities shall, to the extent possible, be restricted to between the beginning and ending points of the project, within the right-of-way designated on the project plans.
  - Borrow sites
  - Construction debris waste disposal areas
  - Asphalt plants
  - Haul roads
  - Stockpiling areas
  - Staging areas
  - Material storage sites

Any project related activities that occur outside of the project limits (includes the paved surface and within 12 inches of the paved surface) must be environmentally cleared/permitted with the Nebraska Game and Parks Commission as well as any other appropriate agencies by the Contractor and those clearances/permits shall be submitted to the District Construction Project Manager prior to the start of the above listed project activities. The Contractor shall submit a NDOR Plant Site/Stockpile Site Request Identification and Evaluation Form (DR Form 56) and/or a Borrow Site/Waste Site Request Identification and Evaluation Form (DR Form 119) as appropriate, and include information such as an aerial photo showing the proposed activity site, a plan-sheet or drawing showing the location and dimensions of the activity site, ground photos showing the existing conditions at the proposed activity site, etc. The Contractor must receive Notice of Acceptance from NDOR, prior to starting the above listed project activities. These project activities cannot adversely affect state and/or federally listed species or designated critical habitat. Fill cannot be placed in Wetland, Stream or other Waters of the U.S without authorization. (NDOR Environmental, District Construction, Contractor)

- **Waste/Debris.** Construction waste/debris will be disposed of in areas or a manner which will not adversely affect state and/or federally listed species and/or designated critical habitat. (Contractor)

### **Northern Long-eared Bat**

**NLEB-1** Bridge painting, expansion joint replacement and sealing activities will be scheduled to occur between October 1<sup>st</sup> – March 31<sup>st</sup> to avoid impacts to the northern long-eared bat roosting period. (NDOR Environmental, Construction, Contractor)

**OR**

**NLEB-2** If bridge painting, expansion joint replacement and sealing activities occur during the northern long-eared bat roosting period (April 1<sup>st</sup> – September 30<sup>th</sup>), NDOR personnel will perform surveys prior to the start of these activities at the following locations: *At the bridge structures (location of suitable habitat)*. If the species is absent, work may proceed. If the species is found, NDOR Environmental Section will consult with the USFWS and NGPC prior to the start of construction. (NDOR Environmental, Construction, Contractor)

**NDOR Construction Project Managers should contact NDOR Environmental at 402-479-3546 or [Melissa.marinovich@nebraska.gov](mailto:Melissa.marinovich@nebraska.gov) at least 30 days prior to construction start to schedule Northern Long-Eared Bat surveys.**

Contact Person: Melissa Marinovich, Highway Environmental Biologist, (402) 479-3546

### **Unexpected Waste**

If contaminated soils and/or water or hazardous materials are encountered, all work within the immediate area of the discovered hazardous material must stop until NDOR/FHWA is notified and a plan to dispose of the hazardous materials has been developed. The NDEQ shall then be consulted and a remediation plan developed for this project. The potential also exists to have contaminants present from minor spillage associated with fueling and service of construction equipment. Should contamination be found on the project during construction, the NDEQ shall be contacted for consultation and appropriate actions to be taken. The Contractor is required by NDOR's Standard Specification, Section 107 (Legal Relations and Responsibilities to the Public), to handle and dispose of contaminated material in accordance with all applicable laws. (NDOR PM, Contractor)

### **Lead Paint**

There is potential for lead based paint to be found on the bridge structures. If lead-based paint is being removed in a manner that would create waste debris (i.e. sandblasting, abrasive removal, scraping), the Contractor shall remove the paint in accordance with NDOR's Standard Specification for Highway Construction Section 732 (Lead-based Paint Removal) and Title 128, Nebraska Hazardous Waste Regulations. There is potential for lead based paint to be found on the bridges painted components. If the method of removal of the components generates paint debris, the waste shall be handled in accordance with NDOR's Standard Specification for Highway Construction Section 732 (Lead-based Paint Removal) and Title 128, Nebraska Hazardous Waste Regulations. Extreme caution shall be taken to minimize the amount of potential lead based painted material or debris from causing or threatening to cause pollution of

the air, land and waters of the State. The Contractor's implementation plan efforts shall be documented in ECOD.

The Contractor shall recycle any lead bearing plates at a legitimate recycling facility as found in paragraph 3 (environmental requirements) in Section 203.01 of the Standard Specification for Highway Construction and in accordance with Title 128, Nebraska Hazardous Waste Regulations. The Contractors implementation plan efforts shall be documented in ECOD.

Contact Person: Shannon Sjolie, Highway Environmental Biologist, (402) 479-4415

## FLOODPLAIN PERMIT

### Nebraska Department of Roads Floodplain/Floodway Development Permit/Application

RECEIVED

JUL 22 2015

ENVIRONMENTAL SECTION

Permit Application No.
Date: <span style="float: right;">7/13/15</span>

This form is used for any man-made change to improved or unimproved transportation facility, including, but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavation, drilling operations, or storage of equipment or materials.

Nebraska Department of Roads will obtain all other necessary federal, state, or local permits (e.g., Corps of Engineers 404 Permit, Local Levee District, etc.)

<b>1.</b>	Name of Applicant: Nebraska Department of Roads PO Box 94759 Lincoln NE 68509-4759
<b>2.</b>	Type and Use of Development <p style="text-align: center;">Bridge Repair</p>
<b>3.</b>	Specific Location of Development: <p style="text-align: center;">Highway 44 at Mile Marker 49+83</p>
<b>4.</b>	Complete this section if the proposed development involves the improvement of a structure (i.e., walled and roofed building).  Pre-improvement Value of Structure: \$ ..... Cost of Improvement: \$ .....

**The following section is to be completed by the community official:**

<b>5.</b>	Is the development Substantial Improvement? (see #4)	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>6.</b>	Is the development in an identified floodplain?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>If Yes, complete the following:</b>		
a.	Elevation of the Base (100-Year) Flood	..... Ft. MSL/NGVD 29 or NAVD 88
b.	Elevation/Floodproofing Requirement (if applicable)	..... Ft. MSL/NGVD 29 or NAVD 88
c.	Is the development in a designed Floodway?	
<input type="checkbox"/> Yes	New structures for human habitation are prohibited. For any other Floodway development, the NDOR must provide certification by a registered professional engineer that the development would result in no increase along the floodway water surface profile.	
<input type="checkbox"/> No	If a floodway has not been designated, the NDOR may be required to submit hydraulic data demonstrating that the proposed development will not increase flood heights more than one foot at any location.	

**If the development is in a floodplain, the following shall apply:**

This permit is issued with the condition that the lowest floor (including basement) of a new or substantially improved nonresidential building will be elevated or floodproofed at least one foot above the base flood elevation. NDOR will provide certification by a registered Engineer, Architect, or Land Surveyor that these provisions are met.

All provisions of the Kearney Floodplain Management Resolution/Ordinance (Number ..... ) shall be complied with.  
(County of KEARNEY)

  
Local Authorizing Official (Name & Title)  
  
NDOR Environmental Permits Manager

7/20/2015  
Date  
  
7-13-2015  
Date

Project Name: N Channel PI Rv Br In Kearney	
Project No.: 44-2(1009)	
Control No.: 42462	Structure No.: S044 04983 L/R

**SPECIAL PROSECUTION AND PROGRESS  
(Migratory Birds)  
(A-42-1112)**

The Department of Roads will, to the extent practicable, schedule the letting of projects such that clearing and grubbing can occur outside of the primary nesting season in Nebraska which has been determined to generally occur between April 1 and September 1. Work on structures, such as but not limited to bridges and culverts, should occur outside the primary swallow nesting season, April 15 to September 30, unless approved methods of avoiding nesting have been taken on the bridge and/or culvert structures. The nesting dates above are a guide only, nesting can occur outside of those dates. Work outside of those dates is not exempt from compliance with the Migratory Bird Treaty Act.

The Contractor shall, to the extent possible, schedule work on structures, such as but not limited to bridges and culverts, and clearing and grubbing activities to occur outside the primary nesting season in Nebraska. However, if circumstances dictate that project construction or demolition must be done when nesting migratory birds may be present, a survey of the number of active nests and species of birds shall be conducted by qualified personnel representing the Contractor, and assisted by the Project Manager (PM), NDOR Environmental Section staff, or the United States Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) - Wildlife Services Office. If the survey finds that nests will be impacted by the proposed construction, the Contractor may be responsible for delays.

The following guidance is provided for compliance with the Migratory Bird Treaty Act for construction of NDOR projects:

1. The Contractor shall submit a plan to the NDOR regarding how he intends to accomplish bridge demolition or clearing and grubbing of the project to avoid conflict with nesting migratory birds.
2. The Contractor must submit a temporary erosion control plan tailored to fit the plan for clearing and grubbing.
3. If construction operations result in unavoidable conflict with nesting migratory bird's eggs or young, which will result in "taking" nests and their contents, the Contractor should notify the NDOR Project Manager (PM). The PM shall notify the Environmental Section of Planning and Project Development by telephone at 402-479-4766.
4. The NDOR Environmental Section will then determine if assistance in conducting the survey will be provided by the NDOR Environmental Section (if available) or from the USDA APHIS - Wildlife Services Office and arrange for assistance with the survey of nest numbers, bird species, etc. Results of the survey shall be maintained by the NDOR until project completion.
5. If the nesting survey is required, and the project was awarded prior to the nesting season, and the Contractor did not accomplish clearing/grubbing and/or work on bridge/culvert structures outside the nesting season, the Contractor will reimburse the Department of Roads for each survey required at \$1,000 per

survey. If the project was awarded during the nesting season, and construction activities are such that clearing/grubbing and/or work on bridge/culvert structures must be accomplished prior to any other activity on the project, then there will be no charge assessed for the initial survey. The Contractor is responsible for removing all trees surveyed, that do not contain active nests, and for taking appropriate measures on bridge/culvert structures, within 3 days of the survey. Reimbursement for additional surveys may be charged if the Contractor fails to remove the trees within 3 days of the survey, and requires an additional survey. Survey reimbursement will be determined on a project specific basis, considering the project timeline and associated activities.

6. If an active nest is found during the survey, the Contractor should do everything possible to restructure his activities and leave the nest undisturbed until the young fledge. Fledging could occur within a week, or up to a month, after the survey depending on the species of bird and whether the nest contained eggs or young. Also depending on the species of bird and their sensitivity to disturbance, a buffer of up to 30 feet surrounding the tree with the active nest could be required.
7. If construction cannot be rescheduled to allow the birds to fledge, and it is determined as an unavoidable "take" circumstance, the Contractor shall stop all work within 30 feet of the active nest and coordinate with the Construction Project Manager to determine how to proceed. The Construction Project Manager will then coordinate with the NDOR Environmental Section and they will facilitate coordination with the US Fish and Wildlife Service and the Federal Highway Administration (for projects using Federal-aid) to determine the appropriate way to address the active nest. No work shall occur within 30 feet of the active nest until US Fish and Wildlife Service coordination is complete and the requirements of the Migratory Bird Treaty Act are satisfied.
8. It is the Contractor's responsibility to schedule his work to accommodate the process of conducting a survey(s) and submitting the necessary documentation if avoidance is not practicable. The Contractor shall be responsible for using any legal and practical method to prevent the nesting of birds in order to prevent the need for any survey and prevent the need for additional surveys. It is understood and agreed that the Contractor has considered in the bid all of the pertinent requirements concerning migratory birds (including endangered species) and that no additional compensation, other than time extensions if warranted, will be allowed for any delays or inconvenience resulting in these requirements.

### **STORM WATER DISCHARGES (A-43-0408)**

In compliance with the Federal Water Pollution Control Act, authorization to discharge storm water on this project has been granted under National Pollutant Discharge Elimination System (NPDES) General NPDES Permit Number NER110000 for Storm Water Discharges from Construction Sites to Waters of the State of Nebraska. This permit became effective on January 1, 2008.

Contractors are advised that, under the Construction Storm Water General Permit, ***plant sites, camp sites, storage sites, and borrow or waste sites not shown on the plans may be subject to separate NPDES permit authorization requirements for stormwater discharges from those locations.*** Contractors shall be responsible for verifying the need for NPDES permit coverage with the Nebraska Department of Environmental Quality (NDEQ). When required for these locations, the filing of a "Notice of Intent" shall be made by the Contractor directly to the NDEQ.

Additionally, asphalt (SIC Code 2951) or concrete (SIC Code 3273) batch plants that are owned by a private contractor and are operated on a contract-for-service basis to perform work for the Contractor completing the project may be subject to NPDES General Permit Number NER000000 for Industrial Storm Water Discharges. While the plant may be required for completion of the project, it is not under the control of the Department (or other project owner); and the filing of a "Notice of Intent" shall be made by the Contractor directly to the NDEQ.

The NDEQ may be contacted at 402-471-4220 for additional information.

### **REQUIRED SUBCONTRACTOR/SUPPLIER QUOTATIONS LIST (A-43-0307)**

All bidders must provide to the NDOR the identity of all firms who provided quotations on all projects, including both DBEs and non-DBEs. This information must be on a form provided by the NDOR Contracts Office.

If no quotations were received, the bidder must indicate this in the space provided.

Each bidder will be required to submit one list per letting to cover all projects bid.

### **PROPOSAL GUARANTY BID BOND (A-43-0307)**

Paragraphs 1.a. and 1.b. of Subsection 102.15 in the *Standard Specifications* are void and superseded by the following:

- a. OPTION 1 - (Project Specific Paper Bid Bond). The Bid Bond shall be executed on an original Department Bid Bond Form, which may be obtained from the Department. The original Bid Bond shall be delivered to the Department with the bid. A reproduction or a copy of the original form will not be accepted and will cause the bid not to be opened and read.
- b. OPTION 2 - (Annual Bid Bond). The Department at its discretion may allow a bidder to place an "Annual Bid Bond" on file with the Department. This bond would cover all projects the bidder bids for a 12-month period shown in the bond. The bidder must indicate in the bid submittal to the Department that their "Annual Bid Bond" applies to the submitted bid. The original Annual Bid Bond shall be executed on the Department of Roads Bid Bond Form, which may be obtained from the Department. A reproduction or a copy of the original form will not be accepted.

**WORKER VISIBILITY  
(A-43-0507)**

Pursuant to Part 634, Title 23, Code of Federal Regulations, the following modified rule is being implemented:

Effective on January 1, 2008, all workers within the right-of-way who are exposed either to traffic (vehicles using the highway for purposes of travel) or to construction equipment within the work area shall wear high-visibility safety apparel.

High-visibility safety apparel is defined to mean personal protective safety clothing that:

- 1 - is intended to provide conspicuity during both daytime and nighttime usage, and
- 2 - meets the Performance Class 2 or Class 3 requirements of the ANSI/ISEA 107-2004 publication titled "American National Standards for High-Visibility Safety Apparel and Headwear."

**VALUE ENGINEERING PROPOSALS (VEP)  
(A-43-0807)**

Subsection 104.03 in the *Standard Specifications* is amended to include the following:

14. A VEP will not be accepted if the proposal is prepared by an Engineer or the Engineering Firm who designed the contract plans.

**LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC  
(A-43-0210)**

Paragraph 4.a. of Subsection 107.01 in the *Standard Specifications* is void and superseded by the following:

4. a. Whenever the Contractor violates any governing Federal, State or Local environmental quality regulation and/or is in noncompliance with any environmental commitment, the violating activity must cease immediately until the appropriate remedy can be determined by: the Engineer, the NDOR Environmental Section, the Federal Highway Administration (for projects utilizing Federal-aid) and other agencies, as deemed appropriate. The Engineer, with assistance from the NDOR Environmental Section and the FHWA, will provide a written order confirming the appropriate corrective action to the Contractor. Work can resume to normal conditions once the Engineer determines that the violation or non-compliance has been addressed in accordance with the order for corrective action.



Subsection 107.01 in the *Standard Specifications* is amended to include the following two paragraphs:

5. Should the Contractor encounter any previously unidentified hazardous materials, the Engineer shall be promptly notified. The Contractor shall suspend operations in the area involved until such time that arrangements are made for their proper treatment or removal.
6. The Contractor shall prevent the transfer of invasive plant and animal species. The Contractor shall wash equipment at the Contractor's storage facility prior to entering the construction site. The Contractor shall inspect all construction equipment and remove all attached vegetation and animals prior to leaving the construction site.

**SPECIAL PROSECUTION AND PROGRESS  
(Federal Immigration Verification System)  
(A-43-1209)**

The Contractor shall register with and use a Federal Immigration Verification System to determine the work eligibility status of newly hired employees physically performing services within the State of Nebraska. The Prime Contractor shall contractually require every subcontractor to register with and use a Federal Immigration Verification System to determine the work eligibility status of newly hired employees physically performing services within the State of Nebraska.

The Federal Immigration Verification System shall be an electronic verification of the work authorization program of the Illegal Immigration Reform and Immigration Responsibility Act of 1996, 8 U.S.C. 1324a, known as the E-Verify Program. The Contractor may use an equivalent Federal program designated by the United States Department of Homeland Security or other Federal agency authorized to verify the work eligibility status of a newly hired employee. The equivalent program shall comply with the Immigration Reform and Control Act of 1986.

The Prime Contractor shall furnish a letter to the NDOR Construction Division in Lincoln on company letterhead and signed by an officer of the company stating that documentation is on file certifying that the Contractor and all subcontractors have registered with and used a Federal Immigration Verification System. The Contractor shall maintain all records of registration and use for a period of three years and make records available upon request. The Contractor shall contractually require subcontractors to maintain all records for a period of three years and make records available upon request.

Payment will not be made to the Contractor for using the Federal Immigration Verification System or the maintenance of the records. This work shall be subsidiary to the work being performed.

The Contractor's Certification shall become part of the final records of the Contract. The Department considers this document to have direct bearing to the beginning interest date and may affect the amount of interest earned.

**CONTRACT TIME ALLOWANCE  
(A-43-0911)**

Paragraph 5. of Subsection 108.02 of the *Standard Specifications* is void and superseded by the following:

5. Each week, the Engineer shall post on the Department's website a report of working days or calendar days charged. The Contractor then has 14 days from the day the Engineer's report is posted to provide a written explanation of why he/she does not concur with the working days or calendar days as assessed.

Paragraph 6.b. of Subsection 108.02 of the *Standard Specifications* is amended to include the following:

- (4) If the time allowance for the contract has been established on a calendar day basis, the Contractor is expected to schedule the work and assign whatever resources are necessary to complete the work in the time allowance provided regardless of the weather. Accordingly, regardless of anything to the contrary contained in these *Specifications*, the Department will not consider delays caused by inclement or unseasonable weather as justification for an extension of the contract time allowance unless:
  - i. the weather phenomena alleged to have contributed to or caused the delay is of such magnitude that it results in the Governor issuing a Disaster Declaration, **and**
  - ii. the weather phenomena alleged to have contributed to or caused the delay can clearly be shown to have directly impacted the work on the critical path identified on the Contractor's schedule.

Paragraphs 10.b. and 10.c. of Subsection 108.02 of the *Standard Specifications* are void and superseded by the following:

- b.
  - (1) If the extra work is not in the original contract, time extensions will be granted by determining the actual time necessary to accomplish the extra work.
  - (2) If the extra work is the result of the addition of additional quantities of existing contract items, time extensions will be granted by either:
    - (i) determining the actual time necessary to accomplish the extra work; or
    - (ii) determining the additional time to be granted by comparing the value of the additional quantities of work to the total amount of the original contract when measurement of the actual additional time is not possible or practical.
  - (3) In either case, only the time necessary to perform the extra work of the additional quantities of existing contract items when the extra work or the additional quantities of existing contract items are deemed to be the current controlling operation will be granted as a time extension.

- c. Increases in quantities of work associated with traffic control items measured by the day will not be considered for extending the contract time allowance. Overruns of traffic control items that are measured by methods other than time may be considered for extending the contract time allowance, but they must be deemed to be a controlling operation when the overrun of quantities occurs.

**PARTIAL PAYMENT  
(A-43-1110)**

Paragraph 2. of Subsection 109.07 of the *Standard Specifications* is void and superseded by the following:

- 2. When the value of the work completed during a semi-monthly period exceeds \$10,000, the Contractor will receive semi-monthly progress estimates from which the Department shall make such retentions as may be allowed by the contract, provided that the nature and quality of the completed work are satisfactory and provided further that the progress of the work conforms to the requirements of Subsection 108.07.

Paragraph 3.b. of Subsection 109.07 of the *Standard Specifications* is void and superseded by the following:

- b. Under normal circumstances, the Department shall not retain any earnings on a progress estimate. However, the Department reserves the right to retain such amounts as are necessary for material deficiencies, anticipated liquidated damages, unpaid borrow, and for other reasons to protect the Department's interests.

**PARTIAL PAYMENT  
(A-43-0611)**

Paragraph 4. of Subsection 109.07 of the *Standard Specifications* is void and superseded by the following:

- 4. a. (1) Upon presentation by the Contractor of receipted bills, billing invoices, or such other documentation sufficient to satisfy the Engineer and verify the Contractor's or subcontractor's actual costs for the materials, payments may also be allowed for acceptable nonperishable materials purchased expressly to be incorporated into the work and delivered in the vicinity of the project or stored in acceptable storage places within Nebraska.
- (2) Materials not delivered and stored in the immediate vicinity of or on the actual project site must be clearly marked to identify the project on which they are to be used, must be segregated from similar materials at the storage site, and cannot be included in a supplier's inventory of material available for sale for other purposes.

- (3) All items eligible for partial payment as stored materials must be available for verification, sampling, and measurement.
- b. The amount to be included in the payment will be determined by the Engineer, but in no case shall it exceed 100 percent of the value of the materials documented. This value may not exceed the appropriate portion of the value of the contract item or items in which such materials are to be incorporated, nor shall the quantity in any case exceed the total estimated quantity required to complete the project.
- c. Payment will not be approved when the documented value of such materials amounts to less than \$1,000.00, when the progress of the work is not in accordance with the requirements set forth in Subsection 108.07, or when the material can reasonably be expected to be incorporated into the work and eligible for payment as completed work on a progress estimate within 15 days of being placed into storage.
- d. Deductions at rates and in amounts which are equal to the payments will be made from estimates as the materials are incorporated into the work.
- e. Payment for the materials shall not in itself constitute acceptance, and any materials which do not conform to the specifications shall be rejected in accordance with Subsection 106.05.
- f. The Contractor shall be responsible for all damages and material losses until the material is incorporated into the work and the work is accepted.
- g. Partial payment will not include payment for fuels, supplies, form lumber, falsework, other materials, or temporary structures of any kind which will not become an integral part of the finished construction.
- h. No partial payments will be made on living or perishable plant materials until planted.

**BUY AMERICA  
(A-43-0212)**

Subsection 106.07 in the *Standard Specifications* is void and superseded by the following:

**106.07 -- Buy America**

1. The Buy America rule requires that steel or iron materials be produced domestically, and only those products which are brought to the construction site and permanently incorporated into the completed project are covered. Construction materials, forms, etc., which remain in place at the Contractor's convenience, but are not required by the contract, are not covered.
2. To further define the coverage, a domestic product is a manufactured steel construction material that was produced in one of the 50 States, the District of Columbia, Puerto Rico, or in the territories and possessions of the United States.

3. All manufacturing processes to produce steel or iron materials (i.e., smelting, and any subsequent process which alters the steel or iron material's physical form or shape, or changes its chemical composition) must occur within one of the 50 States, the District of Columbia, Puerto Rico, or in the territories and possessions of the United States, to be considered of domestic origin. This includes processes such as casting, rolling, extruding, machining, bending, grinding, drilling, and coating. Coating includes epoxy coating, galvanizing, painting, and any other coating that protects or enhances the value of the material. The manufacturer shall include a statement on the material test report or certification that all material described above except the coating material is a domestic product.
4. Raw materials used in the steel or iron materials may be imported. All manufacturing processes to produce steel or iron materials must occur domestically. Raw materials are materials such as iron ore, limestone, waste products, etc., which are used in the manufacturing process to produce the steel products. Waste products would include scrap; i.e., steel no longer useful in its present form from old automobiles, machinery, pipe, railroad tracks and the like. Also, steel trimmings from mills or product manufacturing are considered waste. Extracting, crushing, and handling the raw materials which is customary to prepare them for transporting are exempt from Buy America. The use of pig iron and processed, pelletized, and reduced iron ore manufactured outside of the United States may be used in the domestic manufacturing process for steel and/or iron materials.
5. Notwithstanding this requirement, a minimum of foreign steel or iron materials will be permitted if its value is less than one-tenth of one percent of the total contract cost or \$2,500, whichever is greater.
6. Upon completion of all work utilizing steel or iron products, the Prime Contractor shall furnish a letter to the State on company letterhead and signed by an officer of the company stating that documentation is on file certifying that all steel or iron materials brought to the construction site and permanently incorporated into the work complied in all respects with the Buy America requirements.

### **BORROW, WASTE, STOCKPILE, AND PLANT SITE APPROVAL (A-43-0512)**

Subsection 107.02 in the Standard Specifications is amended to include the following:

4. Site Approval:
  - a. When borrow is obtained from a borrow site or waste excavation is placed at sites which are not shown in the contract, or the Contractor plans to use a plant or stockpile site which is not shown in the contract, the Contractor shall be solely responsible for obtaining all necessary site approvals. The Department will provide the procedures necessary to obtain approvals from the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Nebraska State Historical Society, Nebraska Game and

Parks Commission, and Nebraska Department of Natural Resources on the NDOR website. The Contractor shall also be responsible for obtaining a Discharge Number from the Nebraska Department of Environmental Quality (NDEQ) that allows work under the current Construction Stormwater Permit. The Contractor shall also be responsible for obtaining any and all other permits required by local governments.

- b. It is anticipated that it may require 60 calendar days or more for the Contractor to obtain the necessary approvals. The Contractor will not be allowed to begin work at borrow or waste sites until the necessary approvals are obtained. No extension of completion time will be granted due to any delays in securing approval of a borrow or disposal site unless a review of the time frames concludes that there were conditions beyond the Contractor's control.

Paragraph 7. of Subsection 205.02 in the Standard Specifications is void and superseded by the following:

7. Borrow and Waste Site Approval:
  - a. Borrow and waste site approvals shall be in accordance with Section 107.02.
  - b. Material shall not be removed from borrow sites until preliminary cross sections and representative soil samples have been taken by the Engineer. The Contractor shall notify the Engineer a sufficient time in advance of the opening of any borrow site so that cross sections may be taken.
  - c. Material shall be removed in a manner that will allow accurate final cross sections to be taken for determining the quantity of excavation. The surfaces of the borrow sites shall be bladed and shaped to drain as shown in the contract or as directed by the Engineer.

**SPECIAL PROSECUTION AND PROGRESS  
(Subletting or Assigning of Contract)  
(A-43-0414)**

Subsection 108.01 in the Standard Specifications is void and superseded by the following:

**108.01 – Subletting or Assigning of Contract**

1. a. (1) The Contractor will not be allowed to sublet, assign, sell, transfer, or otherwise dispose of any portion of the contract or any right, title, or interest therein; or to either legally or equitably assign any of the money payable under the contract or the claims without the prior written consent of the Engineer.

- (2) With the Engineer's consent, the Contractor may sublet up to 70 percent of the work.
  - (3) Any items designated in the contract as "specialty items" may be performed by subcontract.
  - (4) The cost of any subcontracted "specialty items" may be deducted from the total contract cost before computing the percentage of work required to be performed by the Contractor.
  - (5) Subcontracts, or transfer of contract, will not release the Contractor of any liability under the contract and bonds.
- b. Certain items of work may be performed without a subcontract. A list of items not requiring a subcontract is available from the Engineer.
2. The performance of any work by a subcontractor before the date of authorization by the Department shall subject both the Contractor and subcontractor to the imposition of appropriate sanctions by the Department.
  3. a. The Contractor's request to sublet work shall be made electronically to the NDR Construction Engineer using project management software identified by the Department. A signed subcontract agreement shall be on file in the Contractor's office when the request is made. The subcontract agreement must provide that the subcontracted work will be completed according to the terms of the contract. The required and Special Provisions contained in the proposal shall be physically included in any subcontract.
    - b. **On all Federal-aid projects, a scanned copy (.pdf format) of the signed subcontract agreement shall be included with the subcontracting request. (Federal-aid projects can be identified by inclusion in the Proposal of Form FHWA-1273 (REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS)).**
    - c. Scanned copies (.pdf format) of all executed subcontracts, written agreements, and/or lease agreements used to meet DBE goals shall be submitted to the NDR Construction Engineer with the subcontracting request. These copies must show labor cost, material prices, overhead and profit.
  4. a. Second tier subcontracts will be allowed.
    - b. If a DBE firm subcontracts work to another firm, only work subcontracted to another DBE firm can be counted toward meeting a DBE goal.
    - c. All requests for second tier subcontracting shall be submitted to and approved by the Prime Contractor before they are forwarded to the NDR Construction Engineer for approval.
  5. All subcontract documents relating to the contract shall be maintained during the course of the work and preserved for a period of three years thereafter. These documents shall be available for inspection by authorized representatives of

State and Federal agencies. Scanned copies (.pdf format) of the signed subcontract agreements not specifically identified elsewhere in this Subsection shall be furnished to the Department upon request.

6. The Contractor may discuss a proposed subcontract with the Engineer before entering into a signed subcontract agreement, but final approval will not be granted until a formal request and proper certification has been received by the Department.
7. On projects requiring submittal of certified payrolls, all subcontractor payrolls shall be checked by the Contractor before submittal to the Engineer.
8. a. The Prime Contractor, and subcontractors when subletting work to lower tier subcontractors, shall include language which can be identified as a "Prompt Payment Clause" as a part of every subcontract for work and materials.
  - b. (1) The language constituting the "Prompt Payment Clause" will require payment to all first tier subcontractors for all labor and materials --- for work completed to date --- within 20 calendar days of receipt of progress payments from the Department for said work. Similar language in a contract between a subcontractor and a lower-tier subcontractor will require payment to the lower tier subcontractor for all labor and materials --- for work completed to date --- within 10 calendar days of receipt of progress payments from the prime Contractor for said work.
  - (2) The language constituting the "Prompt Payment Clause" will also stipulate the return of retainage within 30 calendar days after the satisfactory completion of the work by the subcontractor as evidenced by inclusion of the work on a progress payment.
  - (3) Additionally, the language constituting the "Prompt Payment Clause" may stipulate the subcontractor's obligation to return to the Contractor or subcontractor, as the case may be, any overpayments which result from adjustments to measured and recorded quantities as part of the preparation of subsequent progress payments or the final records. Overpayments shall be returned to the Prime Contractor or subcontractor, as the case may be, within 20 calendar days of receiving notice of the adjusted quantities and the amount of the overpayment.
- c. The Prime Contractor of subcontractors, as the case may be, may withhold payment only for just cause and shall not withhold, delay, or postpone payment without first receiving written approval from the Department.
- d. (1) The failure by the Prime Contractor to abide by the agreements identified in the "Prompt Payment Clause" without just cause, including the timely return of retainage, is a material breach of this contract which may result in the Department withholding the amount of payment from the prime Contractor that should have been paid to the subcontractor, termination of this contract, or other such remedy as the Department deems necessary.



- (2) Additionally, the failure of any subcontractor to abide by the agreements identified in the "Prompt Payment Clause" without just cause, including the timely return of retainage to lower tier subcontractors, or by failing to return overpayments in a timely manner when the language permitted in Paragraph 8.b.(3) above is included in the subcontract may result in the Department withholding subcontract approval for other work until the overpayments have been returned.
9. a.
  - (1) For Davis Bacon (DBRA)-covered projects and Non-DBRA-covered projects, a Contractor or subcontractor may wish to use another individual owner-operator or trucking company to supplement his or her hauling fleet. (The Department will not recognize multiple individuals claiming to be collectively identified as a single "owner operator.")
  - (2) This supplemental individual or company must either become a subcontractor (first tier or lower tier, as the case may be) or be otherwise documented by the utilizing Contractor or subcontractor by entering into a lease agreement for the trucks and showing the driver (or drivers) from the supplemental company on the Prime Contractor's or subcontractor's payrolls in the manner described below.
  - (3) Payrolls will only be accepted from the Prime Contractor or approved subcontractors.
- b.
  - (1) If the decision is made to subcontract the hauling, the Prime Contractor must first notify the NDOR Construction Office to request subcontract approval. As part of the subcontract approval process --- at any tier --- the proper certificates of insurance must be provided before approval will be granted.
  - (2) Additionally, on DBRA-covered projects, the Prime Contractor must submit payrolls for all subcontractors --- at any tier.
- c.
  - (1) Owner/Operators of trucks hired by a Contractor or subcontractor to supplement his or her hauling fleet are not subject to Davis Bacon wage requirements. However, they must still be shown on a payroll prepared by the Contractor or subcontractor for whom they are working with the notation "owner/operator."
  - (2) Any other employees of the "owner/operator" must appear on the certified payroll in complete detail and must be compensated according to the wage rates established for the project.
- d. In the event a Prime Contractor or subcontractor elects to not subcontract the supplemental driver or drivers but instead chooses to "carry the workers/truckers on their payroll," the following requirements must be met:
  - (1) The Prime Contractor's or subcontractor's certified payroll must contain the names of all workers/truck drivers, and the payroll should identify their supervisors (including "owner-operators").

- (2) Pay checks for the workers/truckers in question must be drawn against the Prime Contractor's or subcontractor's payroll or other account.
- (3) Owner/Operators need only be identified as such on the payroll. Additional drivers, if any, from the "owner-operator's" company must appear on a payroll in complete detail and be compensated according to the wage rates established for the project.
- (4) The Prime Contractor or subcontractor must enter into a lease agreement for the trucks driven by such drivers, and the lease agreement must show that the compensation for the leased equipment is on a time basis and not based on the amount of work accomplished. The lease agreements must be available for inspection by NDOR personnel.
- (5) Any supplemental truckers employed under this arrangement must still carry the minimum automobile liability coverage specified in the contract. It shall be the duty of the Prime Contractor to ensure that the supplemental truckers have such coverage in effect. Evidence of proper insurance must be presented for verification on demand.

### **ELECTRONIC SHOP DRAWINGS (A-43-0215)**

Paragraphs 5,6, and 7 of Subsection 105.02 of the Standard Specifications are void and superseded by the following:

5. a. The Contractor shall provide electronic working drawings in a Portable Document Format (PDF). The PDFs shall be sized to print on an 11x17 inch sheet of paper and have a minimum resolution of 300 dpi. Each sheet of the shop drawings shall have a space provided for an electronic stamp that measures 2.5 inches x 3.5 inches when printed.
  - b. Electronic working drawing files shall be named with the following file naming format:  
  
Control Number\_Brief Description\_Date.pdf  
  
For example: 12345\_FloorDrains\_05Feb2015  
12345\_FloorDrainCoverLetter\_05Feb2015
  - c. The project number, control number, and project location as it appears on the plans shall be shown on the front sheet of each Shop Drawing file. Structure numbers shall be included, if applicable.
6. No electronic working drawings shall be submitted to the Engineer unless they have been checked by the Contractor. The electronic submittal shall be accompanied by a Contractor's letter of approval in a PDF format. This letter shall also be named with the format shown in the example above. The letter of approval shall clearly indicate that the Contractor is responsible for any errors on the working drawings.

7. a. Electronic submittals shall be submitted by email to the following address:  

DOR.ShopDrawings@nebraska.gov
- b. Attachments shall be limited to 25 MB of data per email. Larger files shall be separated and sent in multiple emails.
- c. Electronic working drawings will only be accepted from the Prime Contractor.
8. Any reference to hard copy shop drawings in the contract shall be considered void.

### **LIABILITY INSURANCE (A-55-0414)**

Subsection 107.13 in the Standard Specifications is void and superseded by the following:

#### **107.13 – Liability Insurance**

Prior to execution of the contract, the Contractor shall obtain insurance coverage to fully protect it from loss associated with the work, and have at a minimum the insurance described below:

1. General Liability:  
Limits of at least:
  - \$ 1,000,000 per Occurrence
  - \$ 2,000,000 General Aggregate
  - \$ 2,000,000 Completed Operations Aggregate
  - \$ 1,000,000 Personal and Advertising Injury
- a. Contractor shall be responsible for the payment of any deductibles.
- b. Coverage shall be provided by a standard form Commercial General Liability Policy (CG0001 or equivalent) covering bodily injury, property damage including loss of use, and personal injury.
- c. The General Aggregate shall apply on a Per Project Basis.
- d. The State of Nebraska, Department of Roads, shall be named as an Additional Insured on a primary and non-contributory basis including completed operations for three (3) years after final acceptance and payment.
- e. Contractor agrees to waive its rights of recovery against the State of Nebraska, Department of Roads. Waiver of Subrogation in favor of the State of Nebraska, Department of Roads shall be added to the policy.
- f. Contractual liability coverage shall be on a broad form basis and shall not be amended by any limiting endorsements.
- g. If work is being performed near a railroad track, the 50' railroad right-of-way exclusion must be deleted.

- h. Products and completed operations coverage in the amount provided above shall be maintained for the duration of the work, and shall be further maintained for a minimum period of three years after final acceptance and payment.
  - i. Coverage shall be included for demolition of any building or structure, collapse, explosion, blasting, excavation and damage to property below surface of ground (XCU coverage).
  - j. Policy shall not contain a total or absolute pollution exclusion. Coverage shall be provided for pollution exposures arising from products and completed operations as per standard CG0001 Pollution Exclusion or equivalent. If the standard pollution exclusion as provided by CG0001 has been amended, coverage must be substituted with a separate Pollution Liability policy of \$1.0 million per occurrence and \$2.0 million aggregate. If coverage is provided by a "claims made" form, coverage will be maintained for three years after project completion. Any applicable deductible is the responsibility of the Contractor.
2. Automobile Liability:  
Limits of at least:  
\$ 1,000,000 CSL per Accident
- a. Coverage shall apply to all Owned, Hired, and Non-Owned Autos.
  - b. If work is being performed near a railroad track, the 50-foot railroad right-of-way exclusion must be deleted.
  - c. Contractor agrees to waive its rights of recovery against the State of Nebraska, Department of Roads. Waiver of Subrogation in favor of the State of Nebraska, Department of Roads, shall be added to the policy.
  - d. Automobile liability coverage shall be obtained from an insurance carrier who is licensed with the Nebraska Department of Insurance.
3. Workers' Compensation:  
Limit: Statutory coverage for the State where the project is located.  
Employer's Liability limits: \$500,000 Each Accident  
\$500,000 Disease – Per Person  
\$500,000 Disease – Policy Limit
- a. Contractor agrees to waive its rights of recovery against the State of Nebraska, Department of Roads. Waiver of Subrogation in favor of the State of Nebraska, Department of Roads shall be added to the policy.
  - b. Workers' compensation coverage shall be obtained from an insurance carrier who is licensed with the Nebraska Department of Insurance.
  - c. Where applicable, the Longshore and Harborworkers Compensation Act endorsement shall be attached to the policy.

4. Umbrella/Excess:  
Limits of at least:  
\$1,000,000 per Occurrence
  - a. Policy shall provide liability coverage in excess of the specified Employers Liability, Commercial General Liability and Automobile Liability.
  - b. The State of Nebraska, Department of Roads, shall be an "Additional Insured."
  - c. Contractor agrees to waive its rights of recovery against the State of Nebraska, Department of Roads. Waiver of subrogation in favor of the State of Nebraska, Department of Roads shall be provided.
5. Pollution Liability:
  - a. When "hazardous wastes" or contaminated or polluted materials must be handled and/or moved, the Contractor shall obtain Pollution Liability Coverage with minimum limits of \$1,000,000 per occurrence and \$2,000,000 aggregate.
  - b. If, during the course of construction, hazardous wastes, contaminated or polluted material are discovered on the project, the Contractor shall immediately cease any operation that may disturb these materials, and shall immediately notify the Engineer of all facts related to the discovery of these materials.
  - c. Unforeseen work related to the discovery of hazardous, contaminated or polluted materials on the project, and the extra cost, if any, of pollution liability coverage will be handled as "extra work."
6. Additional Requirements:
  - a. The Contractor shall provide and carry any additional insurance required by the Special Provisions.
  - b. Except as otherwise provided herein, all insurance shall be kept in full force and effect until after the State releases the Contractor from all obligations under the contract.
  - c.
    - (1) If any of the work is sublet, equivalent insurance shall be provided by or on behalf of the subcontractor or subcontractors (at any tier) to cover all operations.
    - (2) Approved trucking subcontractors (at any tier) who are being utilized only for the purpose of hauling materials shall be exempt from the requirements of Paragraphs 1, 4, and 5.
    - (3)
      - (i) When a Contractor or subcontractor chooses to employ a trucker by carrying the driver on his or her payroll and entering into a lease agreement for the truck, the owner-operator of the truck shall be required to comply with the Automobile Liability provisions of Paragraph 2.
      - (ii) Furthermore, it shall be the duty of the Prime Contractor to ensure that the owner-operator of the truck has such insurance in effect. The Prime Contractor shall maintain evidence that any truckers so

utilized (at any tier) are insured to the minimum limits specified and be able to furnish documentation of the same on demand.

- (iii) Failure to ensure that insurance coverage exists and failure to maintain evidence thereof shall be considered a breach of the contract.
- d. Any insurance policy shall be written by an insurance company with a Best's Insurance Guide Rating of A – VII or better.
- e. Prior to execution of the contract, Contractor shall provide the State of Nebraska, Department of Roads evidence of such insurance coverage in effect in the form of an Accord (or equivalent) certificate of insurance executed by a licensed representative of the participating insurer(s). Certificates of insurance shall show the Nebraska Department of Roads as the certificate holders.
- f. For so long as insurance coverage is required under this agreement, the Contractor shall have a duty to notify the Department when the Contractor knows, or has reason to believe, that any insurance coverage required under this agreement will lapse, or may be cancelled or terminated. The Contractor must forward any pertinent notice of cancellation or termination to the Department at the address listed below by mail (return receipt requested), hand-delivery, or facsimile transmission within 2 business days of receipt by Contractor of any such notice from an insurance carrier. Notice shall be sent to:

Nebraska Department of Roads  
Construction Division --- Insurance Section  
1500 Highway 2, P.O. Box 94759  
Lincoln, NE 68509-4759  
Facsimile No. 402-479-4854
- g. Failure of the owner or any other party to review, approve, and/or reject a certificate of insurance in whole or in part does not waive the requirements of this agreement.
- h. The limits of coverage set forth in this document are suggested minimum limits of coverage. The suggested limits of coverage shall not be construed to be a limitation of the liability on the part of the Contractor or any of its subcontractors/tier subcontractors. The carrying of insurance described shall in no way be interpreted as relieving the Contractor, subcontractor, or tier subcontractors of any responsibility or liability under the contract.
- i. If there is a discrepancy of coverage between this document and any other insurance specification for this project, the greater limit or coverage requirement shall prevail.

## CONSTRUCTION DETAILS

### TEMPORARY WATER POLLUTION CONTROL (B-3-1014)

Section 204 in the Standard Specifications is void.

### CONSTRUCTION STORMWATER MANAGEMENT CONTROL (B-3-1014)

#### A. General

1. This Section defines some best management practices (BMPs) for erosion and sediment control measures and construction practices the Contractor shall use to prevent soil erosion and avoid water pollution.
2.
  - a. The Department and the Contractor are co-permittees of the NPDES Construction Storm Water General Permit.
  - b. The Contractor shall comply with all conditions required by the current NPDES Construction Storm Water General Permit.
3. The Contractor shall exercise every reasonable precaution throughout the life of the contract to prevent silting of the waters of the state, the project site, and adjacent property. Construction of drainage facilities, as well as performance of other contract work which will contribute to the control of siltation, shall be carried out in conjunction with earthwork operations or as soon thereafter as is practicable.
4.
  - a. The Contractor shall take sufficient precautions to prevent pollution of the waters of the state, the project site, and adjacent property from construction debris, petroleum products, chemicals, or other harmful materials.  
  
The Contractor shall conduct and schedule the operations to avoid interference with any protected species.
  - b. The Contractor shall comply with all applicable statutes relating to pollution of the waters of the state and fish and game regulations.
5. All construction debris shall be disposed in a manner that it cannot enter any waterway. Excavation shall be deposited as to protect the waters of the state from siltation.
6. All erosion and sediment control measures shall be properly installed and maintained by the Contractor until all permanent drainage facilities have been constructed, and all slopes are sufficiently vegetated to be an effective erosion deterrent; or until tentative acceptance of the work.

7. All erosion and sedimentation resulting from the Contractor's operations and the weather conditions must be corrected by the Contractor.

### **LIMITATION OF OPERATIONS (B-3-1014)**

#### **A. General**

1. The maximum exposed surface area for the Contractor's operations in excavation, borrow, and embankment is 18 acres (72,800 m<sup>2</sup>) plus an equal area of clearing and grubbing/large tree removal. A written request for an increase in the maximum exposed surface area may be approved by the Engineer. This approval will be based on the soil, moisture, seasonal conditions, the Contractor's operation, or other conditions.
2. The Engineer shall have the authority to reduce the maximum exposed surface area when any of the following conditions warrant:
  - a. Soil and moisture conditions are such that erosion is probable.
  - b. Seasonal conditions may force extended delays.
  - c. Proximity to the waters of the state requires more stringent controls.
  - d. Equipment and personnel available on the job is not sufficient to properly maintain erosion and dust control measures.
  - e. Any other environmental condition in the area that may exist which would be affected by erosion from the project.
3. Construction operations in rivers, streams, wetlands, and impoundments shall be restricted to those areas specifically shown in the contract. Rivers, streams, wetlands, and impoundments shall be promptly cleared of all false work, piling, debris, or other obstructions placed therein or caused by the construction operations.
4. Fording and operation of construction equipment within streams and wetlands will not be allowed, unless explicitly allowed in the contract. Streams are defined as any area between the high banks, regardless of the flow conditions.



## **CONSTRUCTION METHODS (B-3-1014)**

### **A. General**

1. The Contractor shall conduct all construction activities and install temporary erosion control measures, as necessary, to control sediment and avoid soil erosion during construction.
2. The Contractor shall incorporate all permanent erosion control features into the project at the earliest practicable time.
3. Construction stormwater management control measures for Contractor obtained work areas located outside the right-of-way, such as borrow site operations, haul roads, plant sites, staging sites, waste sites, equipment storage sites, etc. are the sole responsibility of the Contractor. All construction stormwater management control measures for these areas are at the Contractor's expense. The Contractor is responsible for securing all required permits for use of these sites.
4. The construction stormwater management procedures contained herein shall be coordinated with any permanent erosion control measures specified elsewhere in the contract to the extent practical to assure economical, effective, and continuous erosion and sediment control throughout the construction period.
5. The Contractor shall be responsible to limit erosion and prevent siltation into the waters of the state during the construction period, as well as during the times that work may be suspended.
6.
  - a. All erosion and sediment control items shall be installed by personnel who are knowledgeable in the principles and practice of various BMP installations.
  - b. The installation of all erosion and sediment control items shall be done under the direct supervision of the Contractor's employee who has successfully completed training provided by the Department and has been certified as an Erosion and Sediment Control Inspector (Inspector). The Contractor's Inspector shall be present at each site during installation to direct and inspect all erosion and sediment control BMP installations.
    - i. The NDOR Erosion and Sediment Control Inspector Certification is obtained by completing an Erosion and Sediment Control Inspector Training Course provided by the Nebraska Department of Roads and passing the examination that accompanies the training.
  - c. The Contractor shall notify the Engineer of all employees, who have been certified as Inspectors, who will be on the project to direct and inspect all erosion and sediment control BMP installations.

- d. No payment will be made for any erosion and sediment control item unless a Contractor's Inspector was present to directly supervise and inspect the work.
- e. No payment will be made for any erosion and sediment control item that is not properly installed. All erosion and sediment control items shall be installed as per the contract.

**ENVIRONMENTAL COMMITMENT DOCUMENT  
(B-3-1014)**

**A. Environmental Commitment Document**

- 1. a. An Environmental Commitment Document will be created by the Department to identify all project specific environmental commitments and will be included in the Contract.
- b. The Department will provide information for the following, when applicable:
  - i. Storm Water Pollution Prevention Plan (SWPPP)
  - ii. U.S. Army Corps of Engineers (USACE) Section 404 Permit
  - iii. Nebraska Department of Environmental Quality 401 Water Quality Certification
  - iv. State Title 117 Waters (USACE Non-Jurisdictional)
  - v. Floodplain Permit
  - vi. Historic Clearance
  - vii. Endangered Species Act Clearance
  - viii. Nebraska Nongame and Endangered Species Conservation Act Clearance
  - ix. National Environmental Policy Act Compliance
  - x. NPDES Construction Stormwater Permit (within Right-of-Way limits, only)
  - xi. Conservation Measures
  - xii. Migratory Bird Treaty Act
  - xiii. Bald and Golden Eagle Protection Act Compliance
  - xiv. Other pertinent issues
- c. The Contractor shall provide information for the following, when applicable:
  - i. Temporary Erosion Control Plan
  - ii. Spill Prevention and Control Plan
  - iii. Migratory Bird Treaty Act Compliance Plan
  - iv. Name and telephone number of the Contractor's representative responsible for the Environmental Commitments
  - v. Name and telephone number of the employees that are NDOR-Certified Erosion and Sediment Control Inspectors
  - vi. Critical Path Construction Schedule
  - vii. Other items as defined elsewhere in the contract

**STORM WATER POLLUTION PREVENTION PLAN (SWPPP)  
(B-3-1014)**

**A. General**

1. A SWPPP is required for projects that construction activities will cause a land disturbance of one (1) acre or more. The Department will prepare the SWPPP for the areas within the Right-of-Way, temporary easements and permanent easements.
2. For projects not requiring a SWPPP, the Contractor shall comply with the requirements of Environmental Commitment Document, Paragraph 1.b. of this Special Provision, as applicable.
3. Contractor obtained work areas, located on private property, are not included in the NDOR Project SWPPP.

**B. Temporary Erosion Control Plan**

1. The Contractor shall prepare and submit the Temporary Erosion Control Plan prior to the start of any work. The Contractor shall not begin work until the Temporary Erosion Control Plan has been submitted to the Engineer and appropriate erosion control measures are in place. Payment for any work on the contract will be withheld if erosion control measures are not in place or properly maintained.
2. The Temporary Erosion Control Plan will be reviewed at project progress meetings. All active Contractors shall have their Inspectors present and work in cooperation to determine any necessary changes. Necessary changes will be documented on the Temporary Erosion Control Plan by the Engineer.
3. Payment for preparing the Temporary Erosion Control Plan, inspections and meeting reviews are subsidiary to items that direct payment is made.

**C. Spill Prevention and Control Plan**

1. All project activities shall be addressed in the Spill Prevention and Control Plan. The Contractor shall prepare and submit the plan to the Engineer and install all appropriate spill prevention and control measures prior to the start of any work.
2. The Spill Prevention and Control Plan shall clearly state measures to prevent, contain, document and clean up a spill. It shall state measures for disposal of the contaminated material, disposal documentation and incident review to train personnel to prevent spills from reoccurring.
3. Spill Prevention and Control Plans are applicable to construction sites where hazardous materials are stored, used and/or generated onsite. Hazardous

materials include, but not limited to: hazardous wastes, pesticides, paints, cleaners, petroleum products, fertilizers, solvents and porta-potty wastes.

4. Direct payment will not be made for the Spill Prevention and Control Plan.

**D. Migratory Bird Treaty Act Compliance Plan**

1. The Contractor shall not begin work until a Migratory Bird Treaty Act Compliance Plan has been submitted to the Engineer and appropriate nesting migratory bird avoidance measures are in place.
2. a. The Contractor shall clearly state the necessary measures they intend to use to avoid a "Take" of nesting migratory birds in the Migratory Bird Treaty Act Compliance Plan. Measures may include but are not limited to:
  - i. Clearing and grubbing prior to April 1<sup>st</sup> or after September 1<sup>st</sup>
  - ii. Tree removal prior to April 1<sup>st</sup> or after September 1<sup>st</sup>
  - iii. Clearing empty nests on structures prior to April 1<sup>st</sup>
  - iv. Maintaining clear structures until commencement and throughout the duration of work on structures
  - v. Netting structures to prevent nesting
  - vi. Commitment to perform surveys according to protocol
  - vii. Hire a biologist to survey areas to be disturbed prior to commencement of work during the nesting season
  - viii. Submittal of required bird survey reports
  - ix. Training of Contractor Personnel to insure compliance
3. a. The Migratory Bird Treaty Act Compliance Plan is applicable to the entire project site to avoid the "Take" of migratory birds protected under the Migratory Bird Treaty Act.  
  
b. "Take" is defined as: pursuit, hunt, shoot, wound, kill, trap, capture, collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect.
4. The Migratory Bird Treaty Act Compliance Plan shall adhere to the NDOR's Avian Protection Plan located at:  
<http://www.transportation.nebraska.gov/environment/guides/avian-protection-plan.pdf>

Direct payment will not be made for the Migratory Bird Treaty Act Compliance Plan.

**E. SWPPP Inspection**

1. The Contractor shall accompany the Engineer on inspections in accordance with the NPDES Construction Storm Water General Permit.

2. The SWPPP will be maintained and updated by the Engineer as work progresses and site conditions change to accurately describe the BMPs that are currently in place.
3. The Contractor's participation in SWPPP inspections, maintenance and updates shall begin on the first day construction activities cause land disturbance and end on the date of project completion as evidenced as the completion date in the District Engineer's Letter of Tentative Acceptance.
4.
  - a. The Contractor's Inspector shall be responsible for ensuring that all BMPs are installed in accordance with the contract or the manufacturers' recommendations. The Contractor's Inspector shall be capable of reading and interpreting these documents.
  - b. The Contractor's Inspector shall be familiar with product and structural BMPs. The Contractor's Inspector shall inspect, assess, and supervise the maintenance of erosion and sediment control BMPs to ensure compliance with the NPDES Construction Storm Water General Permit while preserving BMP functionality.
5. Payment for project inspection is subsidiary to items that direct payment is made.

**ENVIRONMENTAL COMMITMENT ENFORCEMENT  
(B-3-1014)**

**A. General**

1. This specification establishes payment and disincentive assessment for the Contractor's performance in complying with Contract Environmental Commitments.
2. Deficiencies are described but not limited to:
  - a. Failure to install pollution prevention control BMPs as work progresses or as described in the SWPPP.
  - b. Failure to maintain existing pollution prevention control BMPs.
  - c. Failure to remove non-functioning pollution prevention control BMPs.
  - d. Failure to comply with USACE Section 404 Permit requirements.
  - e. Failure to comply with NPDES Construction Storm Water General Permit requirements.
  - f. Failure to comply with all applicable statutes relating to pollution of the waters of the state.
  - g. Exceeding the maximum exposed surface area for excavation of 18 Acres without written request for permission and written approval.

- h. Failure to comply with wildlife species specific conservation conditions.
- i. Failure to comply with the Contract.
- j. Failure to comply with the Engineers directives.

**B. SWPPP Deficiency Notification**

1. The Engineer will document and direct the Contractor to correct deficiencies.
2.
  - a. The Contractor shall commence correcting deficiencies, provide adequate equipment and personnel, and diligently pursue correcting deficiencies without cessation until all deficiencies have been corrected.
  - b. The count of Working Days and/or Calendar Days will continue during the time period that corrective work is being performed.
  - c. Delays to the project as a result of the Contractor conducting corrective actions for the Contract Environmental Commitments will not constitute a valid reason for an extension of the contract time allowance.
3. Deficiencies shall be corrected within seven (7) calendar days of notification or within an approved extension. When deficiencies are not corrected within seven (7) calendar days or within an approved extension, the Engineer will make a disincentive assessment to the contract as stated herein.
4.
  - a. If soil, weather, or other conditions prevent the Contractor from completing the corrective actions within seven (7) calendar days, the Contractor shall notify the Engineer in writing. The Contractor's letter shall state the reasons preventing corrective action within the time allowed. The Contractor shall propose a written Corrective Action Plan within 48 hours. Corrective work shall continue while the Corrective Action Plan is developed. The Contractor's Corrective Action Plan must contain a course of action and a time frame for completion. If the reasons and the Corrective Action Plan are acceptable, the Engineer may extend the time in which to complete the corrective work.
  - b. The Contractor will be allowed to proceed with the plan as proposed without incurring a disincentive assessment. If all corrective work is completed within the time allowance shown in the Notification or within an approved extension, a disincentive assessment will not be imposed upon the Contractor.
  - c. Storm events or soil and weather conditions occurring on other projects, which interfere with a Contractor completing corrective actions on the project within seven (7) calendar days, will not be justification for a time extension to complete the corrective work.
5. If all corrective work identified in the Notification has not been completed at the end of the seventh (7<sup>th</sup>) calendar day after the Initial Notice Date or within an

approved extension, a Shut-Down Notice will be issued on the eighth (8<sup>th</sup>) calendar day after the Initial Notice Date or on the calendar day following the last day of an approved extension.

6. All operations shall cease as of the date and time cited in the Shut-Down Notice. The Contractor shall work, exclusively, on the deficiencies until all have been corrected or as directed by the Engineer. Upon issuance of the Shut-Down Notice, a disincentive of \$500.00 per deficiency per calendar day will be assessed thru the day the corrective work is completed, inclusive.
7. The Engineer may require the Contractor to provide a written Procedures Plan that describes the process to prevent reoccurrence of deficiencies. The written Procedures Plan shall be provided within two (2) calendar days of the request. Failure to correct all deficiencies and provide a Procedures Plan may result in payments being withheld until such time that procedures are outlined.
  - a. Payment for preparing a written Procedures Plan is subsidiary to items that direct payment is made.

**C. Storm Event Restoration – Incentive and Disincentive**

1. The Department will pay “Storm Event Restoration - Incentive” when the Contractor completes the restoration work to eliminate the pollution prevention control deficiencies within seven (7) calendar days of Notification or within an approved extension. Multiple deficiencies may be included in one notification. If the restoration work has not been completed within seven (7) calendar days after the Initial Notice or within an approved extension, payment for the item of “Storm Event Restoration - Incentive” will not be made.
2. A storm event is defined as a storm exceeding 0.50 inch of rain in a 24 hour period.
3. The Department will notify the Contractor of pollution prevention control deficiencies.
4.
  - a. Payment for the item of “Storm Event Restoration - Incentive” may not be made when the Contractor is notified to correct pollution prevention devices not installed in accordance with the contract or the manufacturer’s recommended installation instructions.
5. If the restoration work is not completed within seven (7) calendar days or within an approved extension, a disincentive assessment of \$500.00 per deficiency per calendar day will be assessed. The disincentive assessment will begin on the eighth (8<sup>th</sup>) calendar day after the issuance of the Initial Notice Date or on the calendar day following the last day of an approved extension(s) and continue through the day that the restoration work is completed, inclusive.

**D. Method of Measurement**

1.
  - a. “Storm Event Restoration – Incentive” will be measured by the each upon completion of restoration of all deficiencies included in a notification within

the allowed time and only one payment per notification is allowed when multiple deficiencies are included on the notification.

- b. If deficiencies from multiple notifications are restored during the same restoration operation, only one (1) incentive is eligible for payment.
  - c. If multiple notifications are the result of successive storm events and deficiencies are transferred to ensuing notifications, incentive payment is only eligible for the latest notification.
2. "Storm Event Restoration – Disincentive" will be measured by the calendar day in accordance with Paragraph C.5. above.

**E. Basis of Payment**

- |    |  |   |
|----|--|---|
| 1. | <b>Pay Item</b><br>Storm Event Restoration – Incentive<br>Storm Event Restoration – Disincentive | <b>Pay Unit</b><br>Each<br>Calendar Day |
|----|--|---|
- 2. All equipment, materials, etc. used in the restoration work will be paid for in accordance with Division 800 of the Standard Specifications.
  - 3. Payment is full compensation for all other incidentals required to complete the restoration work included in the notification within the allowed time.

**F. Environmental Commitments – Contractor Compliance**

- 1. To provide payment for all plans, inspections, surveys, reports, travel, qualified inspection persons and any other subsidiary activities for the work of implementing threatened and endangered species commitments, temporary erosion control or any other environmental commitments prescribed in the contract.
- 2. Multiple visits to the project may be required to comply with environmental commitments prescribed in the contract.

**G. Method of Measurement**

- 1. No measurement is required.

**H. Basis of Payment**

- |    |  |                             |
|----|--|-----------------------------|
| 1. | <b>Pay Item</b><br>Environmental Commitments – Contractor Compliance | <b>Pay Unit</b><br>Lump Sum |
|----|--|-----------------------------|
- 2. Partial payments will be made as follows:
    - a. The Department will pay 50 percent of the total amount bid for the item Environmental Commitments – Contractor Compliance within seven (7) calendar days after the Notice to Proceed Date.



- b. Upon completion of 50 percent of the Original Contract Amount, the Department will pay 30 percent of the amount bid for the item Environmental Commitments – Contractor Compliance.
  - c. Upon completion of 75 percent of the Original Contract Amount, the Department will pay the remaining 20 percent of the amount bid for the item Environmental Commitments – Contractor Compliance.
  - d. Failure to comply with any or all of the contract requirements, included for payment under the item of Environmental Commitments – Contractor Compliance, will preclude all payment for the item, including any previous payment.
3. Payment is full compensation for all work prescribed in the contract.

**I. Immediate Action Deficiencies**

1. Deficiencies that pose an imminent threat to the environment are considered an emergency situation. These deficiencies will be identified in the Immediate Action Deficiencies Section of the Environmental Commitment Deficiency Notification Form. The corrective work for Immediate Action Deficiencies shall begin immediately and continue without cessation until completed.
2. The Engineer will issue a shut-down notice. All work on the contract shall cease until the corrective work has been completed. The Engineer may allow the Contractor to continue working in areas unaffected by the Immediate Action Deficiency, provided corrective actions are being actively performed on the deficiency.
3. Immediate Action Deficiencies are not eligible for an incentive payment.
4. The Contractor will be assessed a disincentive assessment of \$1,000.00 per deficiency per calendar day for failure to begin corrective actions or failing to continue to completion as directed by the Engineer or by the regulatory agency with jurisdiction.
5. Examples of Immediate Action Deficiencies include but are not limited to:
  - a. Threatened & Endangered Species habitat protection deficiencies
  - b. USACE Section 404 Permit Noncompliance
  - c. Petroleum Spills/Tank Leakage
  - d. Hazardous Material Spills

**J. Rights Reserved**

1. The Department reserves the right to initiate and perform corrective action on any deficiencies which result from the Contractors' actions, inactions, or for failure to comply with the NPDES Construction Stormwater General Permit, USACE Section 404 Permit, or any other applicable permit.
2. The Contractor shall be liable to the Department for any and all costs incurred by the Department for corrective actions taken by the Department.
3. It is expressly understood that the provisions of this specification shall not relieve the Contractor of their responsibilities nor shall it relieve the Surety of its obligation for and concerning any just claim.
4. The Contractor shall indemnify and save harmless the Department and all of its representatives from any and all actions or claims brought because of the Contractor's actions, inactions, or for failure to comply with the NPDES Construction Storm Water General Permit, USACE Section 404 Permit, or any other applicable permit.

**ACCEPTANCE TESTING OF SOILS BY USE OF THE LIGHT WEIGHT  
DEFLECTOMETER (LWD) SCOPE  
(B-4-0915)**

This test method covers the in-place measurement of deflection and moisture content of Class III embankments, subgrade preparation, granular fill and backfill for acceptance testing on Nebraska Department of Roads Projects. Refer to Subsection 205.03 of the NDOR Standard Specifications for Highway Construction for a definition of Class III embankments. Refer to NDR Test Method T 2835 for the proper operation of the LWD.

The deflection test measurement shall be the average measured deflection of the fourth, fifth, and sixth drops of the falling weight of the LWD. The first three drops are to be used to seat the LWD.

The Deflection Target Value (DTV) is the deflection value of each soil determined by using a test strip or from correlation with the Nebraska Group Index for an individual Soil.

**Option 1**

**A. Determination of DTV using a Test Strip**

1. A test strip shall be constructed for each soil type to determine the deflection target value.
2. A new test strip shall be constructed when there is an observed change in material or as determined by the Engineer.
3. The test strip dimensions for roadway embankment and subgrades shall have a minimum length of 200 feet and a width equal to the embankment or roadway. The total thickness shall be no less than 6 inches for roadway subgrade and no less than 1-foot and no more than 3 feet for roadway embankment.

4. The test strip dimensions for trenches, culverts, and structures shall have a minimum length of 10 feet and a width equal to that of the excavation. The total thickness shall be no less than 1-foot and no more than 3 feet.
5. The optimum moisture of fine grained soils shall either be determined in the NDOR Branch Lab or Central Lab, and shall be based on a correlation with the Plastic Limit or determined from AASHTO T-99. A 10-lb sample of proposed material shall be submitted to the NDOR Branch Lab or Central Lab a minimum of 14 days prior to grading operations.
6. The moisture content for granular soils shall be “as necessary” to achieve proper compaction.
7. The moisture content limits of the soil shall follow the requirements provided in Table 1.
8. The test strip area construction shall be incidental to the embankment construction.
9. The testing rate during the test strip construction is provided in Table 2.

**Table 1 - Moisture Requirements**

Location	Soil Type	Depth Below Finished Subgrade	Minimum %	Maximum %
Soil materials receiving concrete pavement	Silt – Clay Silt- Clay Granular	Upper 3 feet Greater than 3 feet All Depths	Opt. -3 Opt. -3 **	Opt. +2 Opt. +2 **
Soil materials receiving flexible pavement	Silt – Clay Silt- Clay Granular	Upper 3 feet Greater than 3 feet All Depths	Opt. -2 Opt. -3 **	Opt. +1 Opt. +2 **
Soil materials receiving gravel surfacing	All materials	All Depths	**	**
Subgrade prep. Shoulder subgrade prep (concrete pavement)	Silt – Clay Granular	The upper 6 inches of subgrade soil	Opt. -3 **	Opt +2 **
Subgrade prep. Shoulder subgrade prep (flexible pavement)	Silt – Clay Granular	The upper 6 inches of subgrade soil	Opt. -2 **	Opt +1 **
Stabilized Subgrade	-	-	See Specifications	
Granular Structural Fill (MSE Walls, bridges, culverts, et.)	Granular	All Depths	**	**

\*\* Moisture as necessary to obtain proper compaction. The moisture target value for granular materials shall be established in the field by the Contractor during the compaction process. Once established the target moisture shall not vary by more than  $\pm 2\%$ .

**Table 2 - Test Strip Testing Rate**

Material Location	Minimum Testing Rate
Roadway embankment and subgrade	3 tests/ pass*
Trenches, culverts, and miscellaneous structures	1 test / pass*

\* Number of passes with compaction equipment as described in paragraph 14c of Subsection 205.03 of the NDOR Standard Specifications for Highway Construction.

### **B. Test Strip Construction and Testing**

1. Prior to placing the fill material for the test strip, the subgrade shall be scarified and re-compacted.
2. The fill material shall be placed with a lift thickness no greater than 8 inches uncompacted.
3. The test strip shall be constructed with uniform material and moisture content, and compaction; until it meets the requirements of numbers 3 or 4 of Section A of this provision.
4. The deflection target value is obtained when:
  - i. The moisture content is within the acceptable range.
  - ii. The average of the deflection test measurements for three consecutive passes of compaction equipment does not change by more than 10% with additional compaction. The DTV shall be based on the lowest average deflection test measurement from these passes.
5. A 10-lb sample of the test strip material shall be submitted to the NDOR Branch Lab or Materials and Research Soil Lab for index testing.
6. The DTV shall be re-evaluated when:
  - i. Deflection test measurements are consistently less than the DTV. (3 out of 5 consecutive deflection test measurements are less than 0.80 of the DTV).
  - ii. Failing test results are consistently occurring and adequate compaction is observed.

### **Option 2**

#### **C. Determination of Deflection Target Values based on the Nebraska Group Index (NGI)**

1. Prior to construction a 10-lb bag of representative material shall be submitted to the nearest NDOR Branch Lab or Materials and Research Soil Lab for each different soil type no less than 21 days prior to grading operations.
2. From the laboratory testing NDOR will determine the Nebraska Group Index (NGI) for each soil type submitted and provide a correlated minimum DTV and optimum moisture content.

3. If no correlation data is available for an individual NGI, a test strip shall be used to determine the DTV as discussed in parts A and B in this provision.
4. The DTV shall be re-evaluated when:
  - i. Deflection test measurements are consistently less than the DTV. (More than 20% of the deflection test measurements are less than 0.80 of the DTV.
  - ii. Failing test results are consistently occurring and adequate compaction is observed.

### **Acceptance Testing**

1. The Deflection Target Value for use as acceptance testing shall be:  
$$\text{DTV} \leq 1.10 \times \text{average deflection value determined from Option 1, Part B, of this provision}$$
  
$$\text{DTV} \leq \text{Correlated DTV determined from the NGI correlation, Option 2, Part C}$$
2. The testing frequency for moisture and deflection shall follow the NDOR Materials Sampling Guide.
3. The moisture content of soil shall be performed using NDOR's approved equipment and methods. Approved equipment includes: 1) hot plates, stove, or microwave, 2) Speedy Moisture Method, or 3) Laboratory oven method.
4. Moisture content results shall be reported to the nearest tenth of a percent.

### **TYPE B HIGH INTENSITY WARNING LIGHTS (D-6-0307)**

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

### **TEMPORARY TRAFFIC CONTROL DEVICES (Type II Barricades, Reflectorized Drums, 42" (1070 mm) Reflective Cones, and Vertical Panels) (D-6-1112)**

Paragraph 2.d. of Subsection 422.03 in the Standard Specifications is void and superseded by the following:

- d. (1) Reflectorized drums used for traffic warning or channelization shall be constructed of lightweight, flexible, and deformable materials, be a minimum of 36 inches (900 mm) in height, and have a minimum width of 18 inches (450 mm), regardless of orientation. The predominant color of the drum shall be orange.

- (2) Steel drums shall not be used.
- (3) The markings on drums shall be horizontal, shall be circumferential, and shall display four 6-inch (150 mm) wide bands of retroreflective sheeting, alternating fluorescent orange - white – fluorescent orange - white. The fluorescent orange sheeting shall meet the luminance requirements of the following table.

**FHWA Luminance Factor**

Sheeting Type	Luminance Factor $Y_T$		
	Min	Max	Fluorescence Luminance Factor Limit, $Y_F$
Fluorescent Orange	25	None	15

- e. When approved by the Engineer or shown in the plans, 42" (1070 mm) reflective cones may be used in lieu of Type II Barricades or Reflectorized Drums. 42" (1070 mm) reflective cones shall include a 30-pound (14 kg) rubber base and display four 6-inch (150 mm) wide bands of retroreflective sheeting, alternating fluorescent orange - white - fluorescent orange - white. 42" (1070 mm) reflective cones shall not be used for lane-closure tapers or shifts.
- f. Rubber base-mounted 36-inch vertical panels shall not be used for channelization when the speed limit exceeds 40 miles per hour.

Paragraph 2.b. of Subsection 422.04 of the Standard Specifications is void and superseded by the following:

- b. (i) Type II Barricades, Reflectorized Drums, and 42" (1070 mm) Reflective Cones shall be counted as "Barricades, Type II" and measured for payment by the number of calendar days each is in place and positioned as shown in the plans or as directed by the Engineer.
- (ii) Vertical Panels shall be measured for payment as permanent "Sign Days" (by the each) by the number of calendar days each vertical panel unit is in place and positioned as shown in the plans or as directed by the Engineer.

Paragraph 2.c. of Subsection 422.04 of the Standard Specifications is amended to include Reflectorized Drums.

Paragraphs 3. and 4. of Subsection 422.05 of the Standard Specifications are void and superseded by the following:

- 3. a. The pay item "Barricade, Type II" is used to pay for three items ("Barricades, Type II", "42" (1070 mm) Reflectorized Cones", and "Reflectorized Drums").
- b. "Barricades, Type II", which includes "42" (1070 mm) Reflectorized Cones", and "Reflectorized Drums", is paid for as an "established" contract unit price item. The established unit price is identified on the "Schedule of Items" shown in the Proposal.

4. Payment for vertical panels includes all posts, brackets, or hardware necessary to install and maintain the vertical panel units.

### **WORK ZONE TRAFFIC CONTROL SIGNS (D-6-1212)**

The Department has adopted the FHWA 2009 Manual of Uniform Traffic Control (MUTCD) and the 2011 Nebraska Supplement to the MUTCD as the official guidance for work zone traffic control signs. Many work zone traffic control signs have been revised, redesigned, or replaced in the 2009 MUTCD (and 2011 Nebraska Supplement). Accordingly, all work zone signs shall comply with the following:

- 1 - All signs, regardless of age, shall meet the design standards of the 2009 MUTCD (and 2011 Nebraska Supplement).

### **TEMPORARY PAVEMENT MARKING (D-10-0811)**

Paragraph 4.f. of Subsection 422.01 in the Standard Specifications is void.

Paragraph 6.a.(2) of Subsection 422.03 is void and superseded by the following:

- (2) When the markings are no longer needed, the Contractor shall remove them. If removing markings from the final wearing surface, the removal process shall not mar or damage the surface. Removed markings shall no longer be visible on the final wearing surface.

Paragraph 6. of Subsection 422.03 in the Standard Specifications is amended to include the following:

This work shall consist of installing and removing reflectorized temporary pavement lines of the color, width and line configuration shown in the plans or as designated by the Engineer.

Temporary paint markings will be used on this project. The use of Type I tape will not be permitted and Type II tape may be used for short durations only, as directed by the Engineer. Temporary paint stripes shall be a minimum 4" (100 mm) wide, 10' (3 m) long with a 30-foot (9 m) gap or a minimum 4" (100 mm) wide solid line as shown on the plans.

Temporary pavement marking which is no longer applicable shall be removed as directed by the Engineer.

Paragraph 12.a. of Subsection 422.04 is void and superseded by the following:

- a. "Pavement Marking Removal" and "Temporary Pavement Marking Removal" shall be measured by the linear foot (meter) along the centerline of the traveled roadway for each line removed.

Subsection 422.04 is amended to include the following:

21. The use of paint for Temporary Pavement Marking shall be measured per linear foot (meter) for the item "Temporary Pavement Marking, Type Paint".
22. Temporary pavement marking tape Type II shall be measured per linear foot (meter) for the item "Temporary Pavement Marking, Type II".
23. Initial surface preparation requiring sand or shot blasting shall be measured per linear foot (meter) for the item "Temporary Pavement Marking, Surface Preparation". Surface preparation for repainting, consisting of air blasting and brushing, shall be subsidiary to other items for which payment is made.

Paragraph 1. of Subsection 422.05 is amended to include the following:

<b>Pay Item</b>	<b>Pay Unit</b>
Temporary Pavement Marking Removal	Linear Foot (LF)
Temporary Pavement Marking, Type Paint	Linear Foot (LF)
Temporary Pavement Marking, Type II	Linear Foot (LF)
Temporary Pavement Marking, Surface Preparation	Linear Foot (LF)

Paragraph 9.c. of Subsection 422.05 is void.

Paragraph 13. of Subsection 422.05 is void and superseded by the following:

13. Removal of temporary pavement markings including overlay broken/solid lines will be paid for except:
  - a. When the temporary markings are intended to be covered up by permanent markings.
  - b. When surface preparation removes the temporary markings.

Section 1069 in the Standard Specifications is amended to include the following:

1. Prior to the initial placement of the markings, temporary paint, or Type II tape the pavement upon which the markings are to be placed shall be dry, cleaned and properly prepared by sand or shot blasting, as a minimum, and to the extent recommended by the manufacturer so that all contaminants, loose debris, and other foreign material are completely removed. Surface preparation for any subsequent application shall consist of air blasting and brushing the roadway surface to remove all loose dirt, mud or other debris and to dry the surface. Each additional application of paint shall be applied over the previously painted stripes.



Prior to placing the temporary pavement markings on the prepared surface, the Contractor shall layout, spot or string line the proposed temporary marking location. The temporary markings shall be aligned in such a way as to provide a smooth and gradual transition to and from the existing markings, and throughout both straight and horizontally curved sections of the project.

2. The material used for temporary paint marking shall be a commercially available acrylic resin Type II traffic paint that dries to no pickup in 4 minutes and shall be applied with a minimum of 6 pounds (0.7 kg) of glass beads per gallon (liter). The paint shall be applied at a minimum width of 4 inches (100 mm) and a wet thickness of approximately 15 mils (380  $\mu$ m) {approximately 16.5 gallons (39 liters) of paint per mile (kilometer) of solid line}. The equipment used to paint the line shall be a machine designed for the purpose of applying long line traffic lane markings of the type, width and thickness required, and shall be self-propelled or truck mounted and be equipped with an adjustable guide-on to assure proper placement of the line. Hand application, walk behind equipment or towing of the equipment will not be allowed.

Temporary paint lines shall be used on new or existing concrete pavement and asphaltic concrete pavement.

Any temporary painted line or segment of line, placed before December 1, which fails to adhere to the roadway surface for a minimum of 60 days under normal vehicular traffic or which appears wavy, nonuniform, thin, poorly applied, misaligned, beadless or nonreflective, shall be replaced as directed by the Engineer. For temporary painted pavement markings placed between December 1 and March 15, the minimum time requirement shall be 15 days with the same conditions applicable. No direct payment will be made for replacement within the 60 day or 15 day warranty periods.

After the minimum 60 day or 15 day warranty periods, the Contractor may be required to repaint the temporary traffic markings, as directed by the Engineer. Direct payment will be made for each additional application. However, should the additional application fail within the 60 day or 15 day warranty periods, the provisions as stated in the previous paragraph shall apply.

The Contractor must begin each additional repainting application within 72 hours after notification by the Engineer. Should the Contractor fail to begin repainting within this 72 hour period, the Engineer may use State forces or hire a private contractor to repaint the temporary traffic markings. The Contractor will be assessed any costs above the contract unit price "Temporary Pavement Marking, Type Paint" incurred by the State as a result of performing the corrective action by others, and the project will be shut down until the painting is completed.

When painting is required with air temperatures between 38° F (3° C) and 50° F (10° C), the paint shall be heated according to the manufacturer's recommendation prior to application on the dry, clean and properly prepared pavement. Any paint application made when the air temperature is below 38° F (3° C) will be paid for by the State, even if the application falls within either the 60 day or 15 day warranty periods previously described.

3. Temporary pavement marking tape Type II shall be a mixture of high quality polymeric materials and pigments, with glass beads throughout the pigmented portion of the film, and a reflective layer of high index of refraction glass beads bonded to the top surface. The film shall be precoated with a pressure-sensitive adhesive. Unless otherwise specified, the temporary pavement marking shall be 4 inches (100 mm) wide and the reflectorizing glass beads shall be incorporated to facilitate removal of the tape easily from asphalt and Portland cement concrete surfaces intact or in large pieces, at temperatures above 40° F (4° C), either manually or with a recommended roll up device. Removal shall be accomplished without the use of heat, solvents, grinding or sandblasting.

### **INERTIAL BARRIER SYSTEM (D-14-0509)**

Paragraph 9.b.(5) of Subsection 422.03 in the Standard Specifications is void and superseded by the following:

- (5) All inertial barriers shall have 5 to 15 percent (by volume) rock salt mixed with the filler material.

### **CONCRETE PROTECTION BARRIERS (D-20-0614)**

Guidance for concrete protection barriers:

1. Type A: 4-loop barriers with a large opening at the bottom.  
Type B: 6-loop barriers with 4 lifting slots and no slots for tie-down rods.  
Type C: 6-loop barriers with 4 lifting slots and 6 slots for tie-down rods.
2. Barriers Type A, B and C may be used on this project and may directly be pinned to each other in the same installation arrangement; however, only Type B or C concrete protection barriers shall be allowed for use on any Interstate roadway or Interstate bridge.
3. Other existing barriers meeting NCHRP 350 or MASH testing guidelines and FHWA approval may only be used with written permission (containing this project name and/or control number) from the District and Roadway Design Division.
4. If new barriers are to be fabricated for use on this project, only Type C barriers shall be fabricated.

Paragraph 5 of Subsection 422.03 in the Standard Specifications is amended to include the following:

- f. (1) Concrete protection barriers that become dislodged or moved out of alignment shall be placed back in alignment as soon as practical. If the dislodged barriers are considered to be a hazard to the traveling public by the Engineer, or the barriers encroach into the traveled lane, the barriers shall be realigned within four (4) hours of the time the Contractor is notified. For each occurrence, failure to

realign the barriers within the four (4) hour time period will result in the assessment of a lump sum \$1,000 liquidated damage assessment and the Engineer may proceed to correct the adverse condition(s) in a manner that is deemed appropriate. The Contractor will also be assessed the cost incurred when the action is performed by others. This assessment has not been provided for elsewhere in the contract and shall be considered in addition to other liquidated damage assessments which are a part of the contract.

## **TRAFFIC CONTROL MANAGEMENT**

### **Description and General Requirements**

Paragraph 1. of Subsection 422.01 in the Standard Specifications is void and superseded by the following:

1. a. This work consists of furnishing, installing at the locations shown on the plans, operating, maintaining, and when work is complete, removing the temporary traffic control devices described in this Section. This work shall also consist of providing Traffic Control Management by furnishing one or more qualified individuals who shall be specifically responsible for performing or supervising the installation, inspection, maintenance, and removal of those devices.
- b. When project conditions warrant, the Engineer may suspend the need for Traffic Control Management and will notify the Contractor accordingly. The Contractor shall be given at least three days' notice of the suspension, but the work may be suspended in a lesser time if mutually acceptable to the Department and the Contractor. During periods when no payment is being made for Traffic Control Management under this special provision, this provision will not apply.

Paragraphs 2.i., 2.j.(2)(ii), and 2.k. of Subsection 422.01 of the Standard Specifications are void.

Paragraph 2. of Subsection 422.01 of the Standard Specifications is amended to include the following:

- p.(1) The Contractor shall designate an individual, other than the Project Superintendent, to be the Traffic Control Manager for the project. This person shall be qualified by having attended and having satisfactorily passed the examination which accompanies the training for the courses for Traffic Control Supervisor or Traffic Control Technician offered by the American Traffic Safety Services Association (ATSSA). The training shall have been completed no more than 4 years prior to working on the project. Formal certification by ATSSA in these disciplines is encouraged, but not mandated. Other training or certifications may be accepted if approved by the Engineer. The Traffic Control Manager shall also possess a current Flagger Certification Card. Documentation of the Traffic Control Manager's training or certifications shall be provided to the Engineer prior to the installation of any traffic control devices on the project.
- (2) The Contractor may also designate one or more Assistant Traffic Control Managers for the project. These individuals shall possess a valid Flagger Certification Card and be qualified by having attended and having satisfactorily

passed the examination which accompanies the training for the course for Traffic Control Technician or Traffic Control Supervisor offered by the American Traffic Safety Services Association (ATSSA) --- the training having been completed no more than 4 years prior to working on the project --- or by certification according to the Department's certification program for Assistant Traffic Control Managers --- the training having been completed no more than 2 years prior to working on the project . Documentation of the Assistant Traffic Control Manager's training or certifications shall be provided to the Engineer.

- (3) In order to be qualified according to the Department's Certification Program, the prospective Assistant Traffic Control Manager must:
  - i. View the 47-minute video "Training and Certification of Assistant Traffic Control Managers."
  - ii. Correctly answer 80 percent of the questions on an examination that accompanies the video.
- (4) Upon satisfactory completion of the training and examination procedure, the prospective Assistant Traffic Control Manager shall be issued an Assistant Traffic Control Manager Certification Card by the examining Contractor. The Assistant Traffic Control Manager's name, last four digits of social security number, and test score shall be reported to the Construction Engineer on DR Form 90a, "Certification Report for Assistant Traffic Control Managers."
- (5) The video examination forms, Assistant Traffic Control Manager Cards, and Certification Reports for Assistant Traffic Control Managers shall be furnished by the Department.
- q. The Traffic Control Manager or Assistant Traffic Control Manager shall be available and reasonably accessible (within 30 minutes) to the project during normal working hours on every day that work is being performed on the project and always on-call at other times. During other than normal working hours, these individuals shall respond and be on the project within 60 minutes of notice being given that traffic control items on the project are in need of attention. The Contractor may elect to have an employee or employees perform this function simultaneously on more than one project, but shall not be relieved from the sanctions or disincentives that may be imposed for failure to meet the deadlines specified herein.
- r. The Traffic Control Manager's or Assistant Traffic Control Manager's activities on the project shall be dedicated to the purpose of monitoring and maintaining the traffic control devices. The performance of other crafts or trades will be permitted, but shall be secondary to the performance of duties associated with traffic control.
- s. The Contractor shall provide prior to the installation of any traffic control devices on the project two to four telephone numbers where the Traffic Control Manager or an Assistant Traffic Control Manager may be reached 24 hours a day, seven days a week.

- t. The Traffic Control Manager or Assistant Traffic Control Manager shall have available at all times an approved, current version of the Traffic Control Plan.
- u. If corrective action is not taken by the Contractor within the times specified in Paragraph 2.q., the Engineer may suspend all work on the project until the problem is corrected. The Engineer shall make reasonable allowance for existing weather conditions in the case of materials whose installation is governed by temperature or other atmospheric conditions.

### **Construction Methods**

Subsection 422.03 of the Standard Specifications is amended to include the following:

- 20. The Traffic Control Manager's or Assistant Traffic Control Manager's duties shall include:
  - a. Insuring that all traffic control devices, including flagging operations, are functioning properly, are clean, and are correctly located as shown on the Traffic Control Plan or as directed by the Engineer. This provision in no way restricts the cleaning, repair and maintenance of traffic control devices to the Traffic Control Manager or his or her assistants.
  - b. Inspecting all traffic control devices on every calendar day that traffic control devices are in place, whether in use or covered. Inspections shall take place a minimum of twice daily, at least two inspections shall be eight hours apart, and at least one weekly inspection shall be during the hours of darkness. However, during or following periods of inclement weather or when the situation warrants for other reasons, inspections shall be done more frequently. Additionally, when flagger control is being utilized, at least one inspection each week shall be performed during flagging operations for monitoring purposes. The Traffic Control Manager or Assistant Traffic Control Manager shall perform the inspections.
  - c. Monitoring the cleaning and maintenance of all traffic control devices and the placement of temporary pavement markings.
  - d. Completing a Traffic Control Inspection Form provided by the Engineer at the completion of each inspection. These forms shall be submitted daily to the Engineer, either in person or via facsimile transmission.
  - e. Monitoring flagging operations on the project to insure signing and flagging techniques are in compliance with Department and ATSSA requirements (flagger location and proper spacing / signage as per the plans). The Traffic Control Manager or Assistant Traffic Control Manager shall not act as a flagger, except in an emergency or when providing relief for short periods of time.
  - f. Coordinating all traffic control operations, including those of subcontractors and suppliers.

- g. Coordinating traffic-related activities with the appropriate law enforcement, fire, and emergency medical agencies.
- h. Attending all project scheduling meetings.

**Method of Measurement**

Subsection 422.04 of the Standard Specifications is amended to include the following:

- 21.(1) Traffic Control Management is measured by the day for the actual number of days management and inspection are required and provided. Payment will only be made for one day of Traffic Control Management during each midnight-to-midnight period regardless of the number of Traffic Control Managers or Assistants required to adequately perform the work.
- (2) No measurement will be made when the Engineer has suspended the need for Traffic Control Management and notified the Contractor accordingly.

**Basis of Payment**

Paragraph 1. of Subsection 422.05 of the Standard Specifications is amended to include the following:

<b>Pay Item</b>	<b>Pay Unit</b>
Traffic Control Management	Day (d)

Paragraph 15. of Subsection 422.05 of the Standard Specifications is renumbered to be Paragraph 16. Subsection 422.05 of the Standard Specifications is amended to include the following:

- 15. With regard to inspection, maintenance and repair of temporary traffic control devices, an assessment in the amount of \$500 per occurrence per day shall be charged to the Contractor when any of the following occur (these assessments shall be in addition to any other liquidated damages which may be assessed):
  - a. The Contractor fails to respond within the timeframe specified in Paragraph 2.q. of the amended Subsection 422.01 of the Standard Specifications. Response time shall begin when:
    - 1) The Engineer notifies the Contractor of deficiencies in person;
    - 2) The Engineer makes notification of deficiencies via the 24-hour phone number(s) provided by the Contractor; or
    - 3) The Engineer leaves a message or receives no answer at the number(s) provided;
  - b. The Contractor fails to begin corrective actions to repair, replace, remove, relocate, or clean any traffic control devices or pavement markings within two hours of the completion of an inspection that uncovers deficiencies or within two hours of notification of deficiencies by the Engineer (including flagging operations).

- c. The Contractor fails to begin corrective actions to repair, replace, remove, relocate, or clean any traffic control devices or pavement markings within two hours of documented notification by an official law enforcement agency (including flagging operations).
- d. The Contractor fails to correct improper flagging procedures.
- e. The Contractor fails to make or report the inspections prescribed in this specification.
- f. The Engineer observes and documents any occurrence of the Contractor or his or her subcontractors flagrantly disregarding the necessary maintenance of traffic control devices that are in obvious need of attention.

### **RELOCATE PULL BOX**

If the existing pull box is in satisfactory condition as determined by the Engineer, the Contractor shall relocate the pull box to the new location shown in the plans. Any fill needed to accomplish this task shall be compacted to the density requirements of the project.

The item "Relocate Pull Box \_\_\_\_" will be measured for payment as a complete unit for each existing pull box relocated. Payment shall be considered full compensation for all work prescribed.

### **RELOCATE INERTIAL BARRIER SYSTEM**

Paragraph 19. b. of Subsection 422.04 in the Standard Specifications is void and superseded by the following:

- b. "Relocate Inertial Barrier System" is the pay item for moving the inertial barrier system to a new location after initial installation and operation.

Paragraph 1. of Subsection 422.05 is amended to include the following:

1.	Pay Item	Pay Unit
	Relocate Inertial Barrier System	Each (ea)

**CONCRETE CONSTRUCTION  
(G-5-1015)**

Section 704 in the Standard Specifications is amended to include the following:

All concrete rails on bridges and approach slabs shall be cast-in-place. Slip-forming will not be permitted for concrete rails on bridges and approach slabs.

Paragraph 8. of Subsection 704.03 is amended to provide that forms for 42 inch bridge rails shall be made of steel. Wood forms that are commercially manufactured to the specific shape of the 42 inch rail shall be permitted. Forms shall be capable of producing a uniform surface, texture and appearance equal to that obtained by using steel panels in good condition.

The fourth subparagraph of Paragraph 8.j. of Subsection 704.03 is void and superseded by the following:

Steel stay-in-place form material shall conform to the requirements of ASTM A 653/A 653M Coating Designation G165/Z500.

Paragraphs 8.a., b. and c. of Subsection 704.05 are void and superseded by the following:

8. Payment Deductions:
  - a. The 28-day compressive strength is determined by the average strength of all cylinders made on a specific day to determine the 28-day compressive strength of all of a group's class of concrete poured that day. Concrete with a 28-day compressive strength not meeting the design compressive strength is subject to removal.
  - b. If the 28-day compressive strength is less than the design compressive strength, cores may be taken, at the discretion of the Engineer, within 45 days after the concrete was poured. The average of the cores will be used to determine the compressive strength.
  - c. If either the 28-day compressive strength or the average core strength is less than the design strength and the Engineer determines that the concrete is acceptable for use, the concrete is subject to a payment deduction. The pay deduction is shown below:

$$\frac{2 \times (\text{Design Compressive Strength} - 28\text{-day Compressive Strength})}{\text{Design Compressive Strength}} = \text{Percent Reduction}$$

Or

$$\frac{2 \times (\text{Design Compressive Strength} - \text{Average Core Compressive Strength})}{\text{Design Compressive Strength}} = \text{Percent Reduction}$$



**CONCRETE BRIDGE FLOORS  
(10-DAY WET CURE)  
(G-5-1014)**

The following Special Provision applies to concrete decks on girder bridges for new bridges and complete deck replacements. Slab bridges and partial deck replacements shall be cured in accordance with Section 706 of the specifications.

Paragraph 8. i of Subsection 704.03 in the Standard Specifications is amended to include the following:

- 8.i.(4) Reinforcing steel and form work for bridge curbs and bridge rails shall not be placed until after the 10-day wet curing.

Paragraph 14 of Subsection 704.03 in the Standard Specifications is void and superseded by the following:

- 14. Bridge Deck Curing in Cold Weather
  - a. The following requirements shall govern the placement of bridge deck concrete when the temperature will be less than 40<sup>0</sup>F during the 10-day wet curing period.
    - (1) The temperature of the concrete shall not be less than 50<sup>0</sup>F immediately after being placed.
    - (2) The Contractor shall furnish heating equipment and/or enclose and protect the structure in such a way that the concrete shall be maintained at a temperature between 50<sup>0</sup>F and 100<sup>0</sup>F for the first 72 hours after the concrete has been placed, and at a temperature of between 40<sup>0</sup>F and 100<sup>0</sup>F for the next 168 hours.
    - (3) After 240 hours of curing is complete, the fall of the concrete temperature shall not be at a rate faster than 5<sup>0</sup>F/hour.
  - b. The Contractor shall assume all risk connected with the placing of concrete during freezing weather, and permission given by the Engineer to place concrete during such time will in no way relieve the Contractor of the responsibility for satisfactory results. Any concrete showing damage from freezing shall be rejected.

Paragraph 5 of Subsection 706.03 in the Standard Specifications is void and superseded by the following:

- 5. No work shall be performed on the bridge deck, including forming and placing reinforcement for concrete curbs or railing until the concrete deck has cured for 10 days.

Paragraphs 8, 9, and 10 of Subsection 706.03 in the Standard Specifications are void and superseded by the following:

8. a. Finishing

- (1) Immediately following the finishing machine, the Contractor shall give the bridge floor surface a drag finish with wet burlap, carpet or a soft bristled broom. The drag finish shall create a uniform, fine-grained finish on the sealed concrete surface.

b. Grooving

- (1) Transverse tining in plastic concrete of bridge decks (and approaches on new bridges and bridge deck replacements) will not be allowed unless otherwise stated in the contract documents.
- (2) The Contractor shall cut longitudinal grooves into hardened concrete surfaces using a mechanical cutting device. Perform longitudinal grooving after surface correction grinding.
- (3) The longitudinal grooves shall be:
  - (i) 1/8 inch  $\pm$  1/64 inch wide,
  - (ii) 1/8 inch to 1/4 inch (3 mm to 6 mm) deep, and
  - (iii) Uniformly spaced at 3/4 inch intervals measured center to center of groove.
- (4) Longitudinal grooving shall terminate approximately 6 inches (150 mm) from bridge expansion joints.
- (5) Longitudinal grooving on the bridge deck and approach sections shall be discontinued 2 feet from the bridge curb, rail, raised medians, or barriers unless otherwise indicated on the plans.
- (6) For phased bridge and bridge approach construction:
  - (i) The Contractor may cut longitudinal grooves in the hardened concrete at the end of each phase of construction or wait until all phases have been completed. If the Contractor elects to delay cutting of the longitudinal grooves until completion of all phases, apply an interim broom finish on the concrete deck and bridge approach during placement for all phases opened to traffic.
  - (ii) The Contractor shall finish all longitudinal grooving for all phases within 30 calendar days following completion of the last phase of the bridge.
  - (iii) The interim broom finish will not be allowed as a surface texture when opened to traffic over a winter season. If the interim broom texture is present and the Contractor is not in a position to finish all phases of the bridge, the Contractor shall cut longitudinal grooving into the hardened concrete in order to establish an acceptable driving surface texture for the winter season.

- (7) Grooves shall be constructed using multi-blade saw cutting equipment, fitted with diamond-tipped circular saw blades.

Before grooving operations, two approved gauges to verify groove depth shall be supplied. The gauges shall be accompanied by the manufacturer's instructions for their use.

During grooving operations, the groove dimensions will be checked at random. If the minimum groove depth has not been achieved, grooving operations shall stop and the necessary adjustments shall be made.

- (8) Sidewalks and top of curbs shall not be grooved and shall receive a final finish with a fine – bristle broom.

## 9. Curing

- a. For this Specification, the bridge deck is defined as the concrete deck and pavement cast between the bridge grade beams. Approaches outside the grade beams are excluded.

- b. The Contractor shall cure the concrete deck with wet burlap for at least 240 hours.

- (1) The Contractor shall place uniformly saturated wet burlap on the concrete no later than 20 minutes after the finishing machine passes.
- (2) The burlap shall be thoroughly wetted prior to placing it on the concrete. The burlap shall be kept continuously wet by means of a sprinkling or wetting system for the 10 days.
- (3) The wet burlap shall be secured or weighed down so that it remains in contact with the concrete surface.
- (4) After 96 hours, the Contractor may place white opaque polyethylene film over the wet burlap to reduce the amount of water needed.

- c. After the 10 day wet cure, the Contractor shall apply an approved white pigment curing compound within 45 minutes of removing the wet burlap.

- (1) The total rate of combined applications shall be a minimum of 1 Gal/150 SF of surface area.
- (2) The Contractor shall cure the deck with the white pigment curing membrane for an additional 7 days. The Contractor may work on the bridge concrete rail during the 7 days provided caution is used to limit damage to the membrane.
- (3) Curing compound shall not be applied to construction joints or reinforcing steel.

- d. The Contractor must provide a list of equipment, equipment certification, and the number of personnel that will be dedicated to the curing operation at least 24 hours before the actual casting date.
- e. The Contractor shall be responsible for the repair of all visible cracks more than 3 inches (75 mm) in length that develop on the bridge deck up to the time the project is accepted at no additional cost to the Department.
- f. Cracks shall be repaired with an approved bridge deck crack sealant (methacrylate). Crack sealants shall be installed in accordance with the manufacturer's recommendations.
- g. Concrete Bridge curbs and rails shall be cured in accordance with Subsection 704.03.

10. Grinding

- a. The grinding and grooving shall not be done until after the 17 days of curing is complete.
- b. Bridge decks shall be ground for smoothness in accordance with Section 733.
  - (1) For bridge decks and approaches that are not covered by Section 733:
    - i. The Contractor shall test the cured concrete for surface irregularities with either a 10 foot straightedge placed or operated parallel to the centerline of the roadway or some other device for measuring deviations from a plane. Variations greater than 1/8th inch shall be plainly marked for removal, except that for decks which are to receive a subsequent overlay course greater than 1 inch thick, where ¼ inch variations are allowed.
    - ii. The Contractor shall grind or cut irregularities that exceed the above limits. Bush hammering or other impact methods are not allowed.

Paragraph 15 of Subsection 706.03 in the Standard Specifications is void and superseded by the following:

15. Time for Opening Bridge Floor to Traffic

- a. The Contractor shall not open the bridge floor to traffic until approval has been given by the Engineer. The Engineer may open the bridge when the concrete has reached a minimum age of 17 days and has developed a compressive strength of 3500 psi.

- b. Construction equipment will not be allowed on the deck until after the 10 day wet curing period. Vehicles needed for construction activities and weighing less than 4.0 kips, and comparable materials and equipment loads, shall be allowed on any span only after the last placed deck concrete has attained a compressive strength of at least 2.4 ksi. Loads in excess of the above shall not be carried on bridge decks until the deck concrete has reached 80% of the minimum compressive strength prescribed on the plans and after the 10 days wet curing period.

Paragraph 1 of Subsection 706.05 in the Standard Specifications is amended to include the following:

1.	<b>Pay Item</b> Bridge Deck Grooving	<b>Pay Unit</b> SY
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**PREFORMED EXPANSION JOINT  
(G-11-1212)**

Section 734 of the Standard Specifications is void and superseded by the following:

**Description**

- 1. This work shall consist of furnishing and installing a Preformed Expansion Joint in a preformed gap at the locations and limits shown on the plans.
- 2. The Preformed Expansion Joint shall be either a Precompressed Polyurethane Foam Joint or a Preformed Silicone Joint, as indicated in the plans.
  - a. When the item is “Precompressed Polyurethane Foam Joint, Type \_\_\_\_” the joint shall be a Precompressed Polyurethane Foam Joint of the type indicated in the plans.
  - b. When the item is “Preformed Silicone Joint, Type \_\_\_\_”, the joint shall be a Preformed Silicone Joint of the type indicated in the plans.
  - c. When the item is “Preformed Expansion Joint, Type \_\_\_\_”, the joint may be either a Precompressed Polyurethane Foam Joint or a Preformed Silicone Joint of the type indicated in the plans.

**Material Requirements**

- 1. Precompressed Polyurethane Foam Joints:
  - a. PPF Joint shall be precompressed self-expanding polyurethane foam with factory applied silicone facing on top of the foam.
  - b. PPF joints shall be ordered for the joint material dimension shown in the plans.
  - c. Approved PPF Joint systems are shown on the NDOR Approved Products List under Precompressed Polyurethane Foam Joint, Type A or B.
- 2. The approved Preformed Silicone Joint systems are shown on the NDOR Approved Products List under Preformed Silicone Joint, Type A or B.

3. Primers, epoxy adhesives, and silicone sealants shall comply with the manufacturer's recommendations.
4. Materials shall be resistant to ozone, ultraviolet rays, petroleum products, solvents, industrial cleaners, corrosive vapors and acids.
5. Joint material shall be delivered to the Contractor's storage area and to the job site in the Manufacturer's original undamaged containers with wrapping intact. Storage of joint material shall be in a dry, enclosed area, off the ground, between 60°F (16°C) and 75° F (24°C) and out of direct sunlight until immediately prior to installation.

### **Construction Methods**

1. The installation of the Preformed Expansion Joint and the adhesives shall be completed according to the manufacturer's specifications. Additional field applied silicone is required on both sides of the top of the joint. Any installation that fails to meet the manufacturer's specifications shall be removed and replaced at no cost to the Department.
2. The installation instructions and specifications shall be given to the Engineer 7 days prior to the installation.
3. The Preformed Expansion Joint shall be installed in the presence of the Engineer.
4. The joint opening in the concrete shall be cleaned by sandblasting and shall be dry and free of oil and other deleterious materials before the installation of the Preformed Expansion Joint.
5. The installation of the Preformed Expansion Joint shall be completed between 45°F (7°C) and 90°F (32°C).
6. Any joint material damaged during corrective grinding shall be replaced at no cost to the Department.

### **Method of Measurement**

1. The Preformed Expansion Joint shall be measured for payment by the linear foot (meter) of the joint properly installed and accepted by the Engineer.
2. Pay limits for the Preformed Expansion Joints shall be the horizontal distance from end to end along the centerline of the joint assembly at the locations shown in the plans and 1 foot (0.3 m) upward at the gutter line if shown.

### **Basis of Payment**

- | <b>Pay Item</b>                                  | <b>Pay Unit</b>              |
|--|------------------------------|
| 1. Preformed Expansion Joint, Type ____          | Linear Foot (LF) [Meter (m)] |
| Precompressed Polyurethane Foam Joint, Type ____ | Linear Foot (LF) [Meter (m)] |
| Preformed Silicone Joint, Type ____              | Linear Foot (LF) [Meter (m)] |

2. Payment is full compensation for furnishing and installing the Preformed Expansion Joint and for all labor, equipment, tools and incidentals necessary to complete the work.

## **CONCRETE REPAIR (G-20-1015)**

### **Description**

This provision entails the repair of deteriorated or damaged concrete manifested as spalling, delamination, cracking, crushing or breakage. This type of repair shall consist of patching defective concrete with suitable materials. Concrete repair shall be performed at locations indicated on the plans and/or as authorized by the Engineer.

### **Material Requirements**

Products appearing on the Approved Products List under "Pavement and Structural Patching Materials" may be used without further qualification. Products suitable for vertical and overhead placement are shown on a continuation of this list. Products used shall be prescribed by the manufacturer for the purpose for which they are to be used.

### **Equipment**

Sand blasting equipment for cleaning of reinforcing steel and adequate tools for placement of repair material shall be used as needed. Effective mixing equipment shall be used for mixing concrete repair materials.

### **Construction Methods**

The Contractor shall sandblast and clean all exposed reinforcing bars and all prepared concrete surfaces. All concrete surfaces that contact new material shall be clean and free of all contaminants, dust and laitance so as to ensure proper adhesion of the material to the concrete. The instructions of the repair product manufacturer shall be followed regarding preparation, installation and any precautions that pertain to safety or performance of the product.

### **Method of Measurement**

All work done under the pay item "CONCRETE REPAIR" shall be paid for by the SQUARE FOOT (SF) of area, as determined by field measurement.

### **Basis of Payment**

Payment for work done under the pay item "CONCRETE REPAIR" shall be paid at the contract unit price per SQUARE FOOT (SF). Payment shall be full compensation for all labor, equipment, tools, materials and incidentals necessary to do the work.

## **CRACK EPOXY INJECTION (G-22-1015)**

### **Description**

This provision covers the repair of deep cracks in concrete structures with epoxy based compounds. The concrete shall be thoroughly repaired by full depth injection of epoxy, where required, so as to restore structural integrity of the concrete.

### **Material Requirements**

Epoxy compounds and adhesives are covered in Section 1018 of "The Standard Specifications for Highway Construction". Type I or Type IV products compatible with the epoxy injection process shall be chosen. Product viscosities should be compatible with the size and type of cracks to be repaired. The Approved Products List under "Epoxy Resin Bonding Systems" shows products that may be used without further qualification. The Engineer shall make the final determination as to product suitability for a specific purpose. It is recommended that, in case any uncertainty exists as to the suitability of a product, Bridge Division be contacted prior to ordering that product.

### **Equipment**

Equipment shall be compliant with industry standards and prescribed by the product manufacturer for use in application of their products.

### **Construction Methods**

Techniques should be used to inject approved epoxy resin compounds to the full depth of the cracks in concrete structures, as indicated in the plans. Methods shall be in accordance with industry standards and application of materials shall be as prescribed by the material manufacturer.

Before epoxy injection, the soundness of the concrete shall be investigated. Unsound concrete that may become unattached during injection shall be removed and exposed reinforcing steel cleaned. Areas where concrete is spalled or has been removed shall be repaired as per special provision "Concrete Repair". Subsection 1018.03 of "The Standard Specifications for Highway Construction" shall apply.

### **Method of Measurement**

All work done under the pay item "CRACK EPOXY INJECTION" shall be paid for by the LINEAR FOOT (LF) of area, as determined by field measurement.

### **Basis of Payment**

All labor, material, tools, equipment and incidentals shall be compensated under the pay item "CRACK EPOXY INJECTION". This item shall be paid for at the contract unit price per LINEAR FOOT (LF) of crack repaired.



**DOWELING INTO CONCRETE STRUCTURES - POST INSTALLED ADHESIVE  
ANCHORS  
(G-28-1015)**

**Materials**

1. This provision is concerned with reinforcing bars adhered to hardened concrete. The adhesive anchor system used for post-installed anchorage of reinforcing steel to concrete shall conform to requirements of the most recently published ACI 355.4, *Acceptance criteria for Qualification of Post-Installed Anchors in Concrete and Commentary*.
2. With regard to epoxy resin adhesives for the anchor system, one of the following requirements shall be met:
  - a. Adhesives for post-installed anchors are acceptable for use if they are given on the Approved Products List and they also comply with minimum requirements as stated in this provision.
  - b. Adhesives for post-installed anchors shall meet ACI 355.4 and also comply with minimum requirements as stated in this provision. Bulk mixed adhesives are not permitted.
3. The adhesive anchors, shall be supplied as an entire system. The system shall include, but not be limited to, the new adhesive cartridge, a clean mixing nozzle, extension tube, a dispensing gun and all manufacturer recommended supplies for properly cleaning the drilled hole.
4. Anchorage design is in accordance with Appendix D of ACI 318-11. For adhesive anchors, the following minimum values for bond stress were assumed for design using the above adhesive anchor assemblies:

$$T = 2050 \text{ psi}$$

5. Epoxy resin adhesives used for doweling reinforcing bars into hardened concrete shall be capable of providing the full tensile resistance of the reinforcement at the embedment depths specified in the plans. The ultimate tensile force for 60 ksi reinforcement is given in the table below for various bar sizes. If the particular product used requires a greater embedment depth to achieve the required pull-out capacity than that shown in the plans, the Engineer shall be informed.

#3	7,425 lb.
#4	13,500 lb.
#5	20,925 lb.
#6	29,700 lb.

### **General Installation Guidelines**

1. Concrete shall have a minimum compressive strength ( $f'_c$ ) of 2500 psi at the time of adhesive anchor installation.
2. Concrete at time of anchor installation shall have a minimum age of 21 days.
3. Concrete temperature at the time of anchor installation shall be 50°F (10°C) or warmer.
4. Anchor embedment depth and projection (length protruding) from the concrete surface are shown on the drawing or detail for the particular anchor being installed. The Engineer shall be consulted in cases where this information is unclear or absent from the plans.
5. Adhesives shall be stored and installed within the service temperature ranges recommended by the manufacturer.

### **Installation Techniques**

1. Post-installed adhesive anchors shall be installed in accordance with the Manufacturer's Printed Installation Instructions (MPII) with the exception, as follows. When the instructions of this provision are more stringent than the MPII, adhesive anchors shall be installed in accordance with these provisions, as a minimum requirement.
2. Installation of adhesive anchors, horizontally or upwardly inclined or those used to support sustained tension loads, shall be performed by personnel certified by the ACI/CRSI Adhesive Anchor Installer Certification Program. It is recommended that all adhesive anchors are installed under the supervision of a certified installer.
3. The installer's qualifications, when required, shall be submitted to the Engineer, prior to any work being done on the project.
4. The Contractor shall provide all equipment required to install the adhesive anchor, including but not limited to drills, setting tools, clean-out brushes, blow-out bulbs, oil-free compressed air, shop vacuums, wrenches, etc.
5. Anchors shall be installed in holes drilled with a rotary impact hammer drill or rock drill.
6. Anchor holes shall be thoroughly cleaned prior to adhesive injection, as required by the MPII. At a minimum, this consists of cleaning with compressed air free of oil and moisture using a nozzle extended to the bottom of the hole. This shall be supplemented with brush or other tool cleaning to remove all concrete dust and loose material followed by a second compressed air cleaning. This is commonly known as "blow-brush-blow" (BBB).
7. Drilled and cleaned anchor holes shall be protected from contamination until the adhesive is installed.
8. A drilled hole shall be re-cleaned if, in the opinion of the Engineer, the hole has become contaminated after cleaning.

9. Unless otherwise indicated on the MPII, adhesive shall be dispensed through a tube or cartridge extension, beginning at the maximum depth of the hole that is withdrawn as adhesive is injected until the hole is entirely filled. This shall be followed by insertion and rotation of the anchor to the specified depth. Where necessary, spaces around anchors, at the surface, shall be sealed to prevent loss of the adhesive during curing where holes are drilled in a range from horizontally to upward.
10. Anchors to be installed in the adhesive shall be clean and free of any surface contaminants or imperfections; e.g., oil, loose rust, paint or other coatings.
11. Installed adhesive anchors shall be securely fixed in place to prevent displacement during curing of the adhesive. Unless shown otherwise on the drawings, anchors shall be installed perpendicular to the concrete surface. Anchors displaced before full adhesive cure shall be considered damaged and replaced at the Contractor's expense.
12. Reinforcing bars shall not be bent after being adhered to the concrete unless permitted by the Engineer.

#### **Basis of Payment**

1. Pay shall be made subsidiary to other items for which payment is made.

### **PAINTING STEEL (G-32-1015)**

- ***If painting Girder Ends:***

The pay item "PAINTING STRUCTURE (ZONE COAT) AT \_\_\_\_\_" shall be measured and paid for by the square foot and shall include painting of the girder ends or other components at the locations shown on the plans. The Contractor shall perform surface preparation in accordance with the requirements of SSPC-SP 10, and in accordance with the coating manufacturer's recommendations. Surface profile after abrasive blasting shall be in accordance with the coating manufacturer's recommendations. Care shall be taken to protect nearby surfaces.

- ***If painting Bearings:***

The pay item "PAINTING BEARINGS" shall be measured and paid for on an each basis and shall include painting of the bearings at the locations shown on the plans. The Contractor shall perform surface preparation in accordance with the requirements of SSPC-SP 10, and in accordance with the coating manufacturer's recommendations. Surface profile after abrasive blasting shall be in accordance with the coating manufacturer's recommendations. Care shall be taken to protect nearby surfaces.

- ***If painting Existing Piling:***

The pay item "PAINTING PILES AND MISCELLANEOUS STEEL" shall be paid for on a lump sum basis and shall include painting of the existing piling at the locations shown on the plans. The Contractor shall perform surface preparation in accordance with the

requirements of SSPC-SP 10, and in accordance with the coating manufacturer's recommendations. Surface profile after abrasive blasting shall be in accordance with the coating manufacturer's recommendations. Care shall be taken to protect nearby surfaces.

Removal of lead paint shall be done in accordance with Section 732 of the Standard Specifications for Highway Construction. Existing paint shall be assumed to contain lead unless confirmed otherwise by testing. The Contractor is required to conduct its own monitoring at project start-up, and in accordance with federal regulations adjust worker protection and work practices according to the results. Containment shall be provided by the Contractor to capture all spent abrasive blast material and paint chip debris. The Contractor shall dispose of all wastes in accordance with all federal, state and local regulations.

After abrasive blasting, the Contractor shall test for the presence of soluble salts using a CHLOR\*TEST kit. If salts are detected, the substrate shall be pressure washed with CHLOR\*RID in accordance with manufacturer's recommendations until the salt is removed.

Surfaces to be painted shall exhibit the cleanliness required by the coating manufacturer prior to applying the coating.

Coatings shall be applied in accordance with Section 709 of the Standard Specifications for Highway Construction, and in accordance with the coating manufacturer's recommendations.

The Contractor shall apply each coat to the thicknesses specified. The Contractor shall measure the thickness of each coat using nondestructive magnetic dry film thickness gages. The Contractor shall comply with SSPC-PA2 for the calibration and use of the gages, and the frequency of thickness measurements. Spot readings 120% of the specified maximum and 80% of the specified minimum are acceptable, provided the average thicknesses are within the specified tolerances.

If there are questions regarding the non-destructive measurements of coating thickness, a Tooke Gage (destructive scratch gage) may be used when authorized by the Engineer. The Contractor shall conduct measurements in accordance with ASTM D4138, but limit the use of the gage to a minimum of locations. The Contractor shall mark and repair all damage caused by the destructive testing, whether created by the Engineer or the Contractor.

The Contractor shall apply additional coating of the same type to areas of insufficient thickness.

The Contractor shall use care during application to assure that all repairs blend in with the surrounding surfaces.

The Contractor shall provide the finish coat in a color and gloss as specified on the plans and approved by the Engineer.

The Contractor shall select from one of the following coating systems.

- ***If painting Girder Ends:***

Application shall be by airless spray in accordance with manufacturer's recommendations.

**Carboline Company**

Sales contact: Jesse Hartman  
(319) 754-4823

Prime coat:	Carbozinc 11 HS, Solvent Based Inorganic Zinc	(2.0 - 3.0 mils DFT)
Intermediate coat:	Carboguard 893, Cycloaliphatic Amine Epoxy	(4.0 - 6.0 mils DFT)
Finish coat:	Carbothane 133HB, Aliphatic Acrylic-Polyester Polyurethane	(3.0 - 5.0 mils DFT)

**International**

Sales contact: Eric Shelton  
(785) 817-0150

	<b><u>Devcoe High Performance Coatings</u></b>	
Prime coat:	Catha-Coat 304L, Inorganic Zinc Silicate	(2-3 mils DFT)
Intermediate coat:	Bar-Rust 231, Surface Tolerant Epoxy	(4-8 mils DFT)
Finish coat:	Devthane 378, Polyurethane	(2-3 mils DFT)

OR

	<b><u>International</u></b>	
Prime coat:	Interzinc 22HS, Inorganic Zinc-Rich Silicate	(2.5 - 3 mils DFT)
Intermediate coat:	Intergard 475HS, Epoxy	(4-8 mils DFT)
Finish coat:	Interthane 870, Polyurethane	(3-5 mils DFT)

**PPG Industries, Inc**

Sales contact: Ron Wolfe  
(712) 355-1954

Prime coat:	METALHIDE 1001 Inorganic Zinc Rich Coating (97-673 Series)	(2.5 - 3.5 mils DFT)
Intermediate coat:	PITT-GUARD Direct-To-Rust Epoxy Mastic Coatings (97-145 Series)	(4.0 - 7.0 mils DFT)
Finish coat:	PITTHANE High Build Semi-Gloss Urethane Enamels (95-8800 Series)	(2.0 - 5.0 mils DFT)

**Sherwin Williams Company**

Sales contact: Joe Wishard  
(402) 699-6994

Prime coat:	Zinc Clad II LV, Inorganic Zinc-Rich Coating	(2.0 - 4.0 mils DFT)
Intermediate coat:	Macropoxy 646 Fast Cure Epoxy	(5.0 - 10.0 mils DFT)
Finish coat:	Acrolon 218 HS, Acrylic Polyurethane	(3.0 - 6.0 mils DFT)

OR

Prime coat:	Corothane I - Mio-Zinc Primer (or Corothane I - Galvapak Zinc Primer)	(3.0 - 4.0 mils DFT)
Intermediate coat:	Corothane I – Mastic	(2.5 - 3.5 mils DFT)
Finish coat:	Corothane I - Aliphatic Finish Coat	(2.0 - 3.0 mils DFT)

- ***If painting Bearings:***

Application shall be by brush and roller methods in accordance with manufacturer's recommendations.

**Carboline Company**

Sales contact: Jesse Hartman  
(319) 754-4823

Prime coat:	Carboguard 893, Cycloaliphatic Amine Epoxy	(4.0 - 6.0 mils DFT)
Intermediate coat:	Carboguard 893, Cycloaliphatic Amine Epoxy	(4.0 - 6.0 mils DFT)
Finish coat:	Carboguard 893, Cycloaliphatic Amine Epoxy	(4.0 - 6.0 mils DFT)

**International**

Sales contact: Eric Shelton  
(785) 817-0150

	<b><u>Devoe High Performance Coatings</u></b>	
Prime coat:	Bar-Rust 235, Surface Tolerant Epoxy	(3-6 mils DFT)
Intermediate coat:	Bar-Rust 235, Surface Tolerant Epoxy	(3-6 mils DFT)
Finish coat:	Bar-Rust 235, Surface Tolerant Epoxy	(3-6 mils DFT)

**Sherwin Williams Company**

Sales contact: Joe Wishard  
(402) 699-6994

Prime coat:	Macropoxy 646 Fast Cure Epoxy	(5.0 - 10.0 mils DFT)
Finish coat:	Macropoxy 646 Fast Cure Epoxy	(5.0 - 10.0 mils DFT)

- ***If painting Existing Piling:***

Application shall be by airless spray in accordance with manufacturer's recommendations.

**Carboline Company**

Sales contact: Jesse Hartman  
(319) 754-4823

Prime coat:	Carbozinc 859, Organic Zinc-Rich Epoxy	(3.0 - 5.0 mils DFT)
Intermediate coat:	Carbomastic 15, Epoxy mastic	(3.0 - 5.0 mils DFT)
Finish coat:	Carboguard 890, Cycloaliphatic Amine Epoxy	(4.0 - 6.0 mils DFT)

**International**

Sales contact: Eric Shelton  
(785) 817-0150

<u>Devoe High Performance Coatings</u>		
Prime coat:	Catha-Coat 302H, Reinforced Inorganic Zinc	(3-5 mils DFT)
Intermediate coat:	Bar-Rust 231, Surface Tolerant Epoxy	(6-8 mils DFT)
Finish coat:	Bar-Rust 231, Surface Tolerant Epoxy	(6-8 mils DFT)

**Sherwin Williams Company**

Sales contact: Joe Wishard  
(402) 699-6994

Prime coat:	Corothane I - GalvaPac Zinc Primer – B65 series	(3.0 - 4.0 mils DFT)
Finish coat:	Polysiloxane XLE-80, Epoxy Siloxane	(5.0 - 7.0 mils DFT)

**PREPARATION OF BRIDGE AT STATION 222+84.87 LT & RT  
(G-24-1015)**

**Description**

Preparation of the existing bridge structure(s) shall be in accordance with the pertinent provisions of Section 704 of the Standard Specifications.

**Removal Items**

The work shall include all work prescribed in the plans necessary to prepare the existing bridge for repair including but not limited to any of the following that apply:

- a. The removal of existing concrete bridge components as shown in the plans
- b. The saw-cutting and breaking back of existing concrete structures to the limits shown in the plans
- c. The removal of the existing steel structures as indicated in the plans
- d. The removal of the existing bearing devices as indicated in the plans
- e. The cleaning and roughening of the existing concrete that comes into contact with the new work
- f. The cleaning, straightening and extending of the existing reinforcing steel into the new work
- g. The cleaning and removal of loose rusted areas of piling to be incorporated into the new work
- h. The removal of expansion devices and/or expansion joint material, if removal is not covered elsewhere in the contract documents or manufacturer's instructions

- i. Cutting down of bearing piles and sheet piles to 2'-0" below the finished grade, if applicable

### **Exclusions**

This provision shall not pertain to removals or preparation for some items of work that may be covered in other contract documents or manufacturer's installation instructions for those specific items.

### **Phasing**

The existing structure may be used to maintain traffic during the phased construction. In such case, the work shall be done in phases according to the details shown on the plans.

### **Handling and Disposal of Materials**

If there are lead plates under the existing steel rail posts, the lead plates shall be recycled in accordance with Subsection 203.01 Paragraph 3 (Environmental Requirements) of the Standard Specifications for Highway Construction, as prescribed for lead plates under existing bearings.

All other material resulting from the removal of specified bridge components; e.g., structural steel (painted or unpainted) shall become the property of the Contractor and shall be promptly removed from the right-of-way. It is the responsibility of the Contractor to handle materials that may contain toxic substances in accordance with federal, state and local regulations.

Extreme caution shall be exercised in removing the existing bridge components so that no material or debris falls or upon the roadway or into the channel (if so located) below the bridge. The Contractor shall take adequate precautions to protect all traffic and roadways.

### **Existing Reinforcing Encountered During Concrete Removal**

When existing reinforcing steel is broken or has a section loss greater than 20%, the Contractor shall lap splice the existing bar with a bar of matching size. Lap splices shall be as given in the following table:

Bar #	Non-epoxy Length (in.)	Epoxy Length (in.)
4	15	18
5	20	24
6	26	31
7	33	39
8	45	54
9	59	71
10	74	89
11	95	139

The bar used to splice, shall lap, by the length given above, with a portion of the existing bar of which 80% or more of the full section is present, on either side of a break or deteriorated or damaged segment.



All existing reinforcing steel exposed during removal of defective concrete shall be incorporated into the new work. Such bars shall be blast cleaned to remove all rust and corrosion. The bars shall be either reformed, as required, to assume their original (intended) shape or bent to allow placement into the new work. Bars that are required to be cut shall be left as long as possible, reformed if necessary and incorporated into the new work. Deviations from these instructions shall be allowed only when clearly indicated in the plans.

For any reinforcing bar that has more than 2/3 of its diameter exposed, the existing concrete shall be removed so that a minimum clearance of 3/4" is provided all around the bar for the placement of new concrete.

## **EXPANSION JOINT GAP EDGES**

### **Construction Methods**

Construction of expansion joint seats shall be done as shown in the plans.

All faces of the joint gap or seat shall be laid out in a straight line (shall not deviate from a straight line by more than 1/4 inch at any point). This is applicable to whatever method is used to construct the gap, whether it is saw cutting, concrete forming, placing nosing material, etc.

## **PORTLAND CEMENT CONCRETE (J-15-0615)**

Paragraph 1. of Subsection 1002.02 in the Standard Specifications is amended to include the following:

Concrete mixes will be in accordance of Table 1002.02.

Paragraph 3. of Subsection 1002.02 is void and superseded by the following:

3. Type IP and IT Interground/Blended cement shall be used for all classes of concrete except for pavement repair. Type IP and IT Interground/Blended cement shall meet all requirements of ASTM C 595. Pavement repair shall include Type I/II Portland Cement for Class PR1 Concrete and Type III Portland Cement shall be used in Class PR3 Concrete.

Tables 1002.02 and 1002.03 in Subsection 1002.02 are void and superseded by the following:

**ENGLISH  
TABLE 1002.02**

Class of Concrete (1)	Base Cement Type	Total Cementitious Materials Min. lb/cy	Total Aggregate		Air Content % Min.-Max. (2)	Ledge Rock (%)	Water/Cement Ratio Max. (3)	Required Strength Min. psi
			Min. lb/cy	Max. lb/cy				
47B**	IP/IT*	564	2850	3150	6.5 - 9.0	-	0.45	3500
47B***		564	2850	3150	6.0 - 8.5	-	0.45	3500
47BD		658	2500	3000	6.0 - 8.5	30+3	0.42	4000
47B-HE		752	2500	3000	6.0 - 8.5	30±3	0.40	3500
BX <sub>(4)</sub>		564	2850	3150	6.0 - 8.5	-	0.45	3500
47B-OL		564	2850	3200	5.0 - 7.0	30±3	0.36	4000
PR1	I/II	752	2500	2950	6.0 - 8.5	30±3	0.36	3500
PR3	III	799	2500	2950	6.0 - 8.5	30±3	0.45	3500
SF <sub>(5)</sub>	I/II	589	2850	3200	6.0 - 8.5	50±3	0.36	4000

- (1) Each class of concrete shall identify the minimum strength requirement, per plans and specifications.  
All classes of concrete shall be air-entrained and a water-reducing admixture shall be used per manufacture's recommendations.
- Class R Combined Aggregate shall use a mid-range water reducer admixture. The dosage shall be at the manufacture's recommendation and the Engineer may approve a low-range water reducer admixture.
- (2) As determined by ASTM C 138 or ASTM C 231.  
*FOR INFORMATION ONLY. The Contractor may develop a Quality Control Program to check the quantity of air content on any given project; such as, checking the air content behind the paver.*
- (3) The Contractor is responsible to adjust the water/cement ratio so that the concrete supplied achieves the required compressive strength without exceeding the maximum water/cement ratio. The minimum water/cement ratio for any slip form concrete pavement is 0.38, unless the Contractor requests approval from the Engineer in writing to change the minimum water/cement ratio to 0.36.
- (4) For temporary surfacing, Type I/II cement is allowed.
- (5) Minimum Portland Cement shall be 564 lbs/cyds and the total Silica Fume added shall be 25 lbs/cyds.
- (\*) Refer to Subsection 1004.02 for material characteristics.  
**Lithium Nitrate** may be used in place of Supplemental Cementitious Materials (SCMs), see Section 1007 of the Standard Specifications as modified in these Special Provisions.
- (\*\*) For slip form applications.
- (\*\*\*) For hand-pours and substructures applications.

<b>Table 1002.03</b>	
<b>Table of Acceptable Concrete Class Substitutions</b>	
Class Specified	Acceptable Class for Substitution
BX	47B, 47BD or 47B-HE
47B	47BD or 47B-HE

Paragraphs 5., 6., 7., 8., 9. and 10. of Subsection 1002.02 are void and superseded by the following:

5. Class PR1 and PR3 Concrete:
  - a. The calcium chloride for use in PR concrete shall be either:
    - (1) A commercially prepared solution with a concentration of approximately 32 percent by weight.
    - (2) A Contractor prepared solution made by dissolving 4.5 pounds of Grade 2 or 6.2 pounds of Grade 1 calcium chloride per gallon of water to provide a solution of approximately 32 percent by weight.
  - b. The 7.4 pounds of water in each gallon of solution shall be considered part of the total water per batch of concrete.
  - c. The calcium chloride solution shall be added, just prior to placement, at a rate of 0.375 gallons/100 pounds of cement (1.4 lb. calcium chloride per 100 lb. cement).
  - d. Class A, Flaked or Pellet Calcium Chloride shall be added at a rate not to exceed 2.0 percent of the weight of the cement for Grade 1, or 1.6 percent of the weight of the cement for Grade 2. Grade 1 Calcium Chloride purity is between 70 and 90 percent and Grade 2 Calcium Chloride is between 91 and 100 percent.
  - e. Where mixing trucks are used:
    - (1) For Class PR3 Concrete, calcium chloride shall be thoroughly mixed into the concrete before placement. The minimum mixing time is 2 minutes.
    - (2) For Class PR1 Concrete, calcium chloride shall be added first and then the concrete mixed at least 2 minutes or as required by manufacturer. Next, the Type F high range water-reducer admixture is added and the concrete is mixed an additional 5 minutes.
6. Class High Early (47B-HE) Concrete
  - a. High Early (47B-HE) concrete shall be cured as prescribed in Subsection 603.03, Paragraph 7. The Contractor shall take necessary curing measures so the required strength is achieved.
  - b. High Early concrete shall achieve a compressive strength of 3,500 psi at 48 hours after placement.

- c. The 48-hour compressive strengths shall be used to determine pay factor deductions for high early concrete in accordance with Table 603.03.
  - d. A non-calcium chloride accelerator shall be used when the ambient temperature at the time of the placement of concrete is 70°F or less.
  - e. When requested by the Contractor, the maturity method, as provided in NDR C 1074, may be used in lieu of the requirements of Subsection 603.03, Paragraphs 11.c. and d. to determine the strength of concrete pavement for the purpose of early opening to traffic and acceptance. Requests by the Contractor for use of the maturity method shall be on a project basis and shall be made in writing to the Engineer.
7. The yield of the concrete proportions shall be determined and adjusted by the Producer.
8. All Classes of Concrete with the exception of PR1 and PR3 shall have a Durability Factor not less than 70 and a mass loss not greater than five percent after 300 freeze/thaw cycles when tested in accordance with ASTM C 666. The freeze/thaw testing shall be conducted according to Procedure A.

Paragraphs 1. & 2. of Subsection 1002.03 are void and superseded by the following:

1. The Contractor shall identify the plant that will supply the concrete 14 days before use and be entirely responsible for its calibration, batching of concrete, aggregate and sampling of cement per NDR Sampling Guide.
- a. The Contractor shall be responsible for the following:
    - 1) Batching concrete.
    - 2) Contractor shall sample aggregate from the conveyor belt or stockpile. Gradations from a split sample shall be tested in accordance to Section 1033 and reported to the Engineer at the frequency required by the Materials Sampling Guide.
      - i. Contractor shall retain possession of the split samples on-site at the Contractor's facility until such a time as determined by the Engineer.
        - a. At the pre-construction meeting:
          - 1) Contractor shall determine the location of testing and report the names of the technician performing the sampling and testing.
          - 2) Engineer will notify the Contractor of the retrieval of the split samples.
        - ii. The Contractor shall split the sample, place the Department's split sample into a cloth bag and immediately seal the split sample with the provided security seal. The cloth sample bag shall be supplied by the Department.
        - iii. The sampling splitting and placement of the security seal of aggregate samples shall be witnessed by certified Department personnel.

- iv. Contractor shall secure the split sample using a consecutively numbered security seal of 75 pounds breaking strength provided by the Department. The Contractor shall use the consecutively numbered security seals to identify and track each Aggregate Class. Samples that are not consecutively numbered will be investigated for custody of the sample and the Engineer may cease production until it is determined what action will be required.
  - a. The Contractor shall report the security seal tracking number with the split sample gradation.
  - b. The following training shall be required for personnel who oversee the batching of the concrete:
    - 1) Concrete Technician Personnel
      - i. Concrete Plant Technician
    - 2) Portland Cement Sampler
      - i. NDR Portland Cement Sampler
- 2. Portland Cement Concrete shall be supplied by certified Ready Mix Plants that are in compliance with the requirements in the *Quality Control Manual*, Section 3, -- Certification of Ready Mixed Concrete Production Facilities published by the National Ready Mixed Concrete Association. Refer to NDR Material Sampling Guide for the policy on stationary and portable plants.

Paragraph 4. of Subsection 1002.03 is void and superseded by the following:

- 4. a. Mix times shall meet the requirements of ASTM C 94. Mixing time tests shall be repeated whenever the concrete appearance indicates that mixing was inadequate.
- b. Batch plants that are transporting the concrete in non-agitating trucks, the mixing time will not be less than 60 seconds, and for agitating trucks, the mixing time will not be less than 45 seconds.
- c. The Certification of stationary and portable ready mix plants will conform to the tests that are required in the NDR Materials Sampling Guide.

Paragraph 6. of Subsection 1002.03 is void and superseded by the following:

- 6. Batch tickets shall be prepared as prescribed in the National Ready Mixed Concrete Association's *Quality Control Manual*. The Contractor shall keep all gradations and batch tickets until final acceptance by the Department. Projects that have less than 200 cubic yards of concrete placed will be allowed to have hand written tickets. For projects greater than 200 cubic yards, hand written tickets will be at the Engineer's discretion. The concrete batch tickets shall show batch weights, aggregate moisture (shall be tested daily and moisture probes are allowed), admixtures used, water, and mix design calculations. A copy of the batch ticket shall be given to the Engineer upon delivery of concrete.

Paragraph 8. of Subsection 1002.03 is void and superseded by the following:

8. Coarse aggregate and aggregate from a dry pit shall be uniformly saturated with water before it is used. The wetting shall begin 24 hours prior to the concrete mixing to allow complete saturation.

Paragraph 13.a. of Subsection 1002.03 is void and superseded by the following:

13. a. The quantity of water shall be determined by the Contractor. The minimum quantity of water should be used which will produce required workability. Any additional water used to rinse the charging hopper and fins after the batching of concrete is allowed. This water must be estimated and recorded on the batch ticket.

Subsection 1002.04 is void and superseded by the following:

1. Class 47B Concrete Mix Design Submittal:
  - a. The Contractor shall submit the Concrete Mix Design Worksheet consisting of design mix proportions, testing of mix design from a minimum of 4 cubic yards and aggregate data for 47B class of concrete being placed on the project.
    - (1) All testing must be performed by a qualified laboratory found on the NDR's Material and Research website, under the *Nebraska Qualified Consultant & LPA Laboratories* and submitted to the Engineer.
    - (2) The Concrete Mix Design shall be submitted to the Engineer 4 weeks prior to any concrete being placed on the project.
    - (3) The Concrete Mix Design shall not be paid for directly by the Department and shall be subsidiary to items which direct payment is made.
    - (4) Concrete shall not be placed on the project before the Concrete Mix Design Worksheet has been reviewed and approved by the Engineer.
  - b. The Contractor shall submit the Concrete Mix Design Worksheet to the Engineer. Email submissions are preferred but will be accepted by fax or postal mail.
    - (1) Contractor's Mix Design Worksheet can be found on the Materials and Research website. The submitted Mix Design Worksheet shall include the following:
      - Contractor Name
      - Project Number
      - Date
      - Location of ready mix or central mix plant
      - Date submitted
      - Signature of Contractor representative

- (2) Material Source Information.
  - Cement Manufacturer
  - Type of Interground/Blended Cement
  - Type of Admixtures
  - Aggregate Pit and Quarry location
- (3) Specific Gravity of each individual aggregate source.
- (4) Sand Equivalent for dry pit sand-gravel aggregate.
- (5) Combined Aggregate percent passing as described on Table 1033.03C.
- (6) Contractor's Target combined aggregate gradation percent passing.
  - (i) The Contractor's required worksheet can be found on the Materials and Research website.
- (7) Testing of Mix Design:

The mix design shall show the weights of all ingredients including Interground/Blended cements, aggregates, water, admixtures types and water cement ratio.

- Temperature of concrete at time of sampling, ASTM C 1064.
  - The air content of plastic concrete, ASTM C 231.
  - Weight per cubic foot, Yield, ASTM C 138. The relative Yield shall be a minimum of 97%.
  - Compressive strength shall be performed with a minimum of three averaged specimens at 7-day and 28-day, ASTM C 39. The minimum 28-day compressive strength shall be 3500 psi.
- (8) Traditional 47B Mix Design is defined as an IP(25) cement, 70 percent Class B Aggregate and 30 percent Class E Aggregate may be exempt from the concrete testing described in Paragraph 1.(b)(7). All other requirements shall be included in the Concrete Mix Design Report.

- c. The PCC Engineer will notify the Contractor of the mix design approval for Class 47B Concrete. Approval of the mix design does not alleviate the Contractor of the responsibility of the in-place concrete. The Contractor may adjust admixtures, water cement ratio, vibrator frequency, etc., as needed in accordance to the specifications.
- d. The Contractor shall submit a new concrete mix design worksheet meeting the above requirements when a change occurs in the source, type, or proportions of cements or aggregates; unless otherwise approved by the Engineer.

2. The quantity of water to be used shall be determined by the Contractor. It shall not be varied without the Engineer's consent.
3. If the concrete mixture is excessively wet causing segregation, excessive bleeding, excessively dry or any other undesirable condition, the concrete shall be rejected. At the option of the Engineer, slump tests may be performed to determine the consistency.
4. Concrete which has developed initial set before it is consolidated and finished shall be rejected.
5.
  - a. If false set is encountered, the batching operation shall be stopped until the problem is resolved.
  - b. Each batch must be mixed or agitated for at least 3 additional minutes after observing the false set and the concrete must be of satisfactory consistency.
6. Compressive strength tests shall be made in accordance with ASTM C 39.
7. Concrete shall be sampled as prescribed in the NDR *Materials Sampling Guide*. Samples shall be taken at the point of placement, never before the discharge from the last conveyance.
8. Aggregate Acceptance, Verification, Sampling and Testing:
  - a. The aggregate will be accepted based on the Contractor's testing results except as noted below.
  - b. The aggregate verification sampling and testing by the Department will be randomly selected and tested according to subplot sizes in Table 1002.05.

Table 1002.05

Aggregate Class	Lot	Sublot
E and F	3000 tons	1000 tons
A,B and C	6000 tons	2000 tons
R	3000 tons	1000 tons

- c. The results of Contractor split sample will be verified by the Department's verification tests. Any samples outside of the tolerances as specified according to the Materials Sampling Guide, Section 28 under the *Acceptable Tolerance Limits for Independent Assurance* will result in an Independent Assurance (IA) review of testing and may result in the Department test results being applied.
    - d. On any given Lot, if the results of the gradation from the verification test are within Department's specification, the Contractor's results will be used for the entire lot. On any given Lot, if the gradations results from the verification test are outside Department's specification, further investigation will be initiated by the Engineer for that subplot. Any or all of



the remaining Department subplot samples may be tested and the Department subplot test results may be applied to the respective subplot and the acceptance will apply.

- e. When verification tests are within testing tolerance but results show a consistent pattern of deviation from the split sample results, the Engineer will exercise one or more of the following:
  - Cease production.
  - Request additional verification testing.
  - Initiate a complete IA review.
  
- f. Independent Assurance (IA) Review of Testing:
  - 1) The Contractor shall allow the Department personnel access to the Contractors' laboratory to conduct IA review of the technician testing procedures and apparatus. Any deficiencies discovered in the Contractor's testing procedures will be reported to the Contractor and corrected by the Contractor.
  
  - 2) During the IA review, the Department personnel and the Contractor shall split a sample for the purpose of IA testing. The samples selected will be tested in the Department's Branch Laboratory. Any IA test results found to be outside of defined testing tolerances as stated in Paragraph 8.c. of Subsection 1002.04 will be reported to the Contractor. The Contractor shall immediately correct any deficiencies found during the IA review.
  
  - 3) If the project personnel and the Contractor cannot reach agreement on the accuracy of the test results, the Department Central Laboratory will be asked to resolve the dispute, which will be final. All dispute resolutions will be in accordance with the Quality Assurance Program requirements in the NDR's Materials Sampling Guide.

## **PORTLAND AND INTERGROUND/BLENDED CEMENT (J-15-0214)**

Section 1004 in the Standard Specifications is void and superseded by the following:

### **1004.01 – Description**

- 1. Portland cement is the binder in concrete, locking the aggregate into a solid structure. It is manufactured from Lime, Silica, and Alumina (with a small amount of plaster of Gypsum).
  
- 2. Equivalent alkali referred to herein is hereby defined as the sum of the Sodium Oxide ( $\text{Na}_2\text{O}$ ) and the Potassium Oxide ( $\text{K}_2\text{O}$ ) calculated as Equivalent Alkali  $\text{Na}_2\text{O}_e = \text{Na}_2\text{O} + 0.658 \text{K}_2\text{O}$ .

3. Interground and Blended cements consist of intimate and uniform intergrinding or blending of Portland cement clinker, Slag cement, Pozzolan and/or Limestone.

#### **1004.02 – Material Characteristics**

1. Type I, Type II, Type I/II and Type III Portland cement shall conform to the requirements in ASTM C 150 with the following additional requirements:
  - a. Portland cement shall not contain more than 0.60 percent equivalent alkali.
  - b. Processing additions may be used in the manufacture of the cement, provided such materials have been shown to meet the requirements of ASTM C 465 and the total amount does not exceed 1 percent of the weight of Portland cement clinker.
2. Interground and Blended Cement shall conform to the requirements in ASTM C 595 with the following additional requirements:
  - a. Interground/Blended cement (Type IP)
    - (1) For Type IP(25) shall be composed of Class F fly ash or Class N pozzolan replacement shall be 25%  $\pm$  2%.
    - (2) For Type IP(20) shall be composed of Class F fly ash or Class N pozzolan replacement shall be 20% + 2%.
  - b. Interground/Blended cement (Type IT)
    - (1) For SCMs, Slag cement and Limestone, the maximum replacement by weight shall be 40%. The manufacturer has a production tolerance of  $\pm$  2% from the proposed replacement.
    - (2) For Slag Cement, the maximum replacement shall be 20% or less when incorporated into the final Interground/Blended cement.
    - (3) For Limestone cement, the replacement range shall be from 5.1% to 10.0% when incorporated into the final Interground/Blended cement.
  - c. No additional SCMs, Slag cement and Limestone will be added at the batch plant.

#### **1004.03 – Procedures**

1. The Contractor shall provide adequate protection for the Portland and Interground/Blended cement against dampness.
  - a. Portland and Interground/Blended cement shall be hauled or stored in railroad cars, dry bulk trailers or in suitable moisture-proof buildings.
  - b. The use of tarpaulins for the protection of the Portland and Interground/Blended cement against moisture will not be allowed.

2. No Portland and Interground/Blended cement which has become caked or lumpy shall be used.
3. Portland and Interground/Blended cement which has been spilled shall not be used.
4. Accepted Portland and Interground/Blended cement which has been held in storage at the concrete mix plant more than 90 days shall be retested.
5. Portland and Interground/Blended cement coming directly from the manufacturer shall not be used until the temperature is 150°F or less.
6. Portland cement having false set when tested in accordance with in ASTM C 150 will not be used.

#### **1004.04 – Acceptance Requirements**

1. For Department projects, Portland and Interground/Blended cements must be on the NDR Approved Product List (APL).
2. The Contractor shall submit any new Portland and Interground/Blended cements to the Engineer to be approved for the APL with the following:
  - a. Material source information:
    - 1) Mill Location
    - 2) Type of Portland and Interground/Blended cements
    - 3) Grinding Period
    - 4) Associated Manufacture Product Name
    - 5) Provide source and type of each SCMs and/or Slag Cement used for final product.
      - (i) The Department will allow the use of ASTM C 1697.
        - a. When two or more SCMs and/or Slag Cement are pre-blended, the Contractor shall report chemical composition analysis of the final blend.
        - b. The final blend shall be reported as per ASTM C 1697, Paragraph 4.
    - 6) Portland cement shall conform to ASTM C 150.
    - 7) Interground/blended cements shall conform to ASTM C 595.
    - 8) Provide total cementitious materials replacement per ASTM C 595.
    - 9) Report test results per ASTM C 1567 at 28-days.

3. Alkali Silica Reaction Requirements and Testing:
  - a. Interground/Blended cement shall be tested according to the provisions of ASTM C 1567.
    - (1) The mortar bars shall be composed of Type IP or IT Interground/blended cement and sand and gravel from an approved Platte River Valley-Saunders County source.
      - i. When Elkhorn River-Madison County source or an out of state aggregate source and type IP(20) or IT cement is being used on a project, the Elkhorn River or an out of state aggregate source shall be used in lieu of the Platte River Valley-Saunders County source.
      - ii. When Contractor proposes a change of aggregate source, then the new aggregate source shall be tested by ASTM C 1567.
    - (2) The mortar bars for the ASTM C 1567 shall not exceed 0.10% expansion at 28 days.
      - i. To accommodate precision within multi-laboratory testing, expansion up to and including 0.13% will be accepted for use. If the expansion is above 0.13%, the material is noncompliant. If tolerance problems are not corrected within 30 days following notification, the Interground/blended cement in question will be removed from the NDR's APL.
4. Portland and Interground/Blended cements will be placed on NDR's APL based on the conformance with the NDR's Acceptance Policy Portland and Interground/Blended Cements.

#### **1004.05 - Sampling and Testing Requirements**

1. All Portland and Interground/Blended cements shall be sampled and tested at the rate as described in the NDR's Materials Sampling Guide.
  - a. The Department will inform the Contractor when a sample is required.
  - b. A sample shall be taken by a Contractor's Certified Portland Cement Sampler and must be under the supervision of Department certified personnel.
  - c. The sample shall be taken at the plant from a bulk shipment of a rail car, dry bulk trailer, batch plant silo or from the line between the bulk truck and the silo. Upon sampling, the Department will take immediate custody of the sample.
  - d. When Elkhorn River aggregate- Madison County source or an out of state aggregate source and type IP(20) or IT cement is being used on a project, the Elkhorn River or an out of state aggregate source shall be used in lieu of the Platte River Valley aggregate source.
2. Noncompliant material from the mill, terminal or project will be temporarily removed from the Approved Products List pending further investigation.
3. If the noncompliant Portland or Interground/Blended cement is removed from the Approval Products List, all shipments from the supplier will be held until the investigation

of the failing samples have been completed by the NDR Materials and Research Division. These procedures shall be in accordance with this provision.

### **WATER FOR CONCRETE (J-15-0214)**

Section 1005 in the Standard Specifications is void and superseded by the following:

#### **1005.01 – Description**

1. Water shall be free from objectionable quantities of oil, acid, alkali, salt, organic matter, or other deleterious materials and shall not be used until the source of supply has been approved.
2. Wash water from the mixer washout may be used only with the Engineer's approval. Use of wash water will be discontinued if undesirable reaction with admixtures or aggregates occurs.

#### **1005.02 – Material Characteristics**

1. Water which contains more than 0.25 percent total solids by weight shall not be used.
2. When required by the Engineer, the quality of mixing water shall be determined by NDR C 114, NDR T 290, NDR D 512, NDR C 1602, ASTM C 31, ASTM C 109, ASTM C 191, and ASTM C 1603.
3. Upon written request by the concrete producer and approval by Materials and Research, the concrete producer may utilize up to 10% wash water for batching all classes of concrete with the following conditions:
  - a. Wash water shall conform to the requirements in NDR's Material Sampling Guide under Policy for Certification of Ready Mix Plants.
  - b. Wash water must be clarified wash water that has been passed through a settling pond system.
  - c. Wash water must be scalped off of a settling basin that has been undisturbed for a minimum of 12 hours.
  - d. Wash water must be metered into each load.
  - e. Wash water quantities shall be shown on the batch ticket.

### **CALCIUM CHLORIDE (J-15-0214)**

Section 1006 of the Standard Specifications is void and superseded by the following:

### **1006.01 – Description**

Calcium Chloride shall be Type S (Solid) or Type L (Liquid). Calcium Chloride can be used for; but not limited to, dust control and acceleration of the set of concrete.

### **1006.02 – Material Characteristics**

The requirements for calcium chloride shall be tested in accordance with ASTM D 98.

### **1006.03 – Acceptance Requirements**

Acceptance shall be based on requirements contained in the NDR Materials Sampling Guide.

## **SECTION 1007 -- CHEMICAL ADMIXTURES (J-15-0214)**

Section 1007 in the Standard Specifications is void and superseded by the following:

### **1007.01 -- Description**

1. Admixtures are materials added to Portland cement concrete to change characteristics such as workability, strength, permeability, freezing point, and curing.
2. The Department's concrete admixture types are:
  - a. Type A - Water-Reducing Admixture - An admixture that reduces the quantity of mixing water required to produce concrete of a given slump.
  - b. Type B - Retarding Admixture - An admixture that slows the setting of concrete.
  - c. Type C - Accelerating Admixture - An admixture that speeds the setting and early strength development of concrete.
  - d. Type D - Water-Reducing and Retarding Admixture - An admixture that reduces the quantity of mixing water required to produce concrete of a given slump and slows the setting of concrete.
  - e. Type E - Water-Reducing and Accelerating Admixture - An admixture that reduces the quantity of mixing water required to produce concrete of a given slump and speeds the setting and early strength development of concrete.
  - f. Type F - Water-Reducing, High Range Admixture - An admixture that reduces the quantity of mixing water required to produce concrete of a given slump by 12 percent or greater.
  - g. Type G - Water-Reducing, High Range and Retarding Admixture - An admixture that reduces the quantity of mixing water required to produce concrete of a given slump by 12 percent or greater and slows the setting of concrete.
  - h. Air-Entraining - An admixture that encapsulates air in the concrete.

- i. Lithium Nitrate – An admixture used to control the Akali Silica Reaction (ASR) in concrete.

**1007.02 -- Material Characteristics**

1. Type A through G admixtures shall meet the requirements in ASTM C 494.
2. Air-entraining admixtures shall meet the requirements in ASTM C 260.
3. Use of admixtures other than those cited may be requested by the Contractor.
4. Admixtures shall not contain more than 1 percent of chlorides calculated as calcium chloride unless specified otherwise in the Specification.
5. Admixtures shall be used at the manufacturer's recommended dosage rates.
6. The air-entraining admixture characteristics shall produce concrete with satisfactory workability and total air content as prescribed in Table 1002.02.
7.
  - a. When using the Lithium Nitrate admixture, the Contractor shall submit to the Engineer:
    - (i) A five pound sample of Portland cement that will be used on the project.
    - (ii) The Manufacturer's method for determining the recommendation for the required dose rate based on the equivalent alkali content.
    - (iii) Water content of the Lithium Nitrate admixture solution.
  - b. The Engineer will report the equivalent alkali content to the Contractor. The Contractor shall use the reported equivalent alkali content to determine the required dose rate based on the manufacturer's recommendation.

**1007.03 -- Procedures**

1. The process for adding admixtures to a ready mix truck on the project site involves positioning the load of concrete up to the truck chute, stopping short of discharge.
  - a. The admixture is then poured over the surface of the concrete and mixed for at least 5 minutes.
  - b. No more than 1.3 gallons of water shall be used to rinse the admixture from the fins and top chute. This water must be shown on the proportioning report and shall not exceed the water cement ratio.
  - c. When Lithium Nitrate is used, the portion of the admixture that is water will be shown on the proportioning report and shall not exceed the water cement ratio.
  - d. The Contractor is responsible for the addition of the admixture.
2.
  - a. If the air content is less than the minimum specified, addition of air-entraining admixtures is allowed.
  - b. The Contractor shall take measures based on manufacturer's recommendations, that are within compliance of NDR Specifications, to bring the load of concrete into NDR prescribed limits according to Table 1002.02.

- c. If the air content is then outside the limits in Table 1002.02, the load of concrete shall be rejected.

**1007.04 -- Acceptance Requirements**

1.
  - a. Approved chemical admixtures are shown on the NDR Approved Products List.
  - b. Admixture approval shall be based upon annual certifications and certified test results submitted to the NDR Materials and Research Division.
2. The admixture must be essentially identical in concentration, composition, and performance to the admixture tested for certification.
3. Admixtures not identified on the NDR Approved Products List may be used under the following conditions:
  - a. A certificate of compliance and certified test results must be submitted to the NDR Materials and Research Division and approval for use must be given by the NDR Materials and Research Division.

**SILICA FUME  
(J-15-0307)**

Paragraph 2 of Subsection 1009.03 in the Standard Specifications is void and superseded by the following:

2. Silica fume shall be protected from temperatures in excess of 90°F (32°C).

**LIQUID MEMBRANE-FORMING COMPOUNDS FOR CURING CONCRETE  
(J-15-0307)**

Subsection 1012.03 in the Standard Specifications is void and superseded by the following:

**1012.03 – Acceptance Requirements**

1. All curing compounds to be approved must be from the current calendar year with no carry-over from the previous years.
2. Approved compounds are on the NDR Approved Products List.
3. Products not on the NDR Approved Products List shall be sampled and tested in accordance with requirements of the NDR Materials Sampling Guide.

**BITUMINOUS LIQUID COMPOUNDS FOR CURING CONCRETE  
(J-15-0515)**

Section 1013 in the Standard Specifications is void and superseded by the following:



### **1013.01 – Description**

The compound shall consist essentially of an asphaltic base and shall be of a consistency suitable for spraying at temperatures existing at the time of construction operations. It shall form a continuous, uniform film. It shall be free of precipitated matter caused by conditions of storage or temperature. The compounds shall be relatively nontoxic.

### **1013.02 – Material Characteristics**

- a. When tested in accordance with AASHTO T 155, the loss of water shall not be more than 0.11 lb/ft<sup>2</sup> (0.55 kg/m<sup>2</sup>) of surface area at 3 days, unless otherwise specified by the Engineer.
- b. The Contractor has the option of using bituminous tack coat. The tack coat shall conform to all requirements of Section 504.
- c. The base material shall conform to Sections 1030, 1031 and 1032.

### **1013.03 – Acceptance Requirements**

Products shall be sampled and tested in accordance with requirements of the NDR Materials Sampling Guide.

## **JOINT AND CRACK SEALING FILLER (J-15-0813)**

Section 1014 in the Standard Specifications is void and superseded by the following:

### **1014.01 – Description**

Joint sealing filler shall be either a cold applied silicone product or an asphalt product (hot pour) conforming to the requirements of this Section. The type of joint filler to be used shall be as specified in the plans or special provisions. If not specified, any of the joint sealing fillers in this Section may be used.

Crack sealing filler shall be a hot pour sealer conforming to the requirements of this Section.

### **1014.02 -- Material Characteristics**

1. NE-3405 and NE-3405LM (hot pour)
  - a. NE-3405 joint and crack sealer shall conform to the requirements of ASTM D6690, Type II. The material shall conform to the requirements of Table 1 with the following exception:
    - (i) The test of Bond, non-immersed, ASTM D5329, 3 specimens through 3 cycles shall be run at 0°F (-18°C), 100% extension.
  - b. NE-3405LM (Low Modulus) joint and crack sealer shall conform to the requirements of ASTM D6690, Type IV. The material shall conform to the requirements of Table 1.

- c. The test of Bond, non-immersed, ASTM-D5329, will be tested on concrete blocks that will be constructed by the NDR Concrete Laboratory. The concrete blocks will be made of a 47B concrete mixture as prescribed in Section 1002 in the NDR Standard Specifications. The design is amended so that no fly ash is used in the mixture. All other specifications for Portland Cement Concrete apply.
- d. Sample conditioning, preparation and heating shall be in accordance with ASTM D 5167 with the following exceptions:
  - (i) The following sentence of Section 8.1.2, "Also, if present, remove container liner by cutting it away", is void and superseded by the following:

"Also, if present, as much of the polyethylene bag as possible, shall be removed by cutting it away. Wholly-meltable type container in contact with the sample section shall be left in place."
  - (ii) The last sentence of Section 8.1.2 "Solid Materials" is void and superseded by the following:

The entire vertical section which has been cut, shall be placed into the pot for melting.
  - (iii) The Section of 8.2.2.1 "Solid Materials" is void.
  - (iv) The Section of 8.2.3 is void and superseded by the following:

After the solid segment is added to the melter, the material shall be allowed to minimally melt to a uniform viscous state suitable for the installation of the stirrer or paddle. The sample shall then be stirred for one full hour. The oil bath temperature shall be regulated to bring the material to the maximum heating temperature within the one hour of stirring.
  - (v) The Section of 8.2.4.1 is void and superseded by the following:

During the one full hour of stirring, check the temperature of the material at maximum 15 minute intervals using a Type K thermocouple with the calibration verified in accordance with Section 6.1.7 to ensure conformance with specified temperature requirements. Stop the mechanical stirrer when measuring temperatures. If material temperatures ever exceed the maximum heating temperature, or ever drop below the minimum application temperature after the maximum heating temperature was reached, discard the sample and re-do the heating. Maintain appropriate records of times and temperatures to verify conformance with specification requirements.
  - (vi) The Section of 8.2.4.2 is void.

- e. ASTM D 5329 shall include the following changes:
    - (i) Sections 6.4 and 12.4 "Specimen Preparation" shall have the reference of "177 ml (6 oz.)" replaced with "3 oz."
    - (ii) Section 6 "Cone Penetration, Non-Immersed" shall be superseded with the following exceptions:
      - 1. Section 6.5 "Procedure" is void and superseded by the following:

Place the specimen in a water bath maintained at 77 +/- 0.2°F (25 +/- 0.1°C) for two hours immediately before testing. Remove the specimen from the bath and dry the surface by shaking gently to remove free water from the surface of the specimen. Using the apparatus described in Section 6.3, make one determination at or near the center of the specimen. Take care to ensure the cone point is placed on a point in the specimen that is representative of the material itself, and is free of dust, water, bubbles, or other foreign material.
      - 2. Section 6.6 "Report" is void and superseded by the following:

Record the value as penetration of the specimen in dmm units.
    - (iii) Section 12 "Resilience" shall be superseded with the following exceptions:
      - 1. Section 12.5 "Procedure", void the sentence "Make determinations at three points equally spaced from each other and less than 13mm (½ inch) from the container rim" and supersede with the sentence "Make one determination at or near the center of the tin."
      - 2. Section 12.6 "Report" is void.
- 2. Silicone Joint Sealer (cold applied)
    - a. Silicone joint sealers may be either self-leveling or non-sag and shall meet the requirements in Table 1014.01.

**Table 1014.01**

<b>Silicone Joint Sealer Requirement</b>		
<b>Property</b>	<b>Requirement</b>	<b>Test</b>
As supplied:		
Specific Gravity	1.010-1.515	ASTM D792
Work Time, minimum	10 minutes	
Tack-Free, at 25°C	20-360 minutes	
Cure Time, at 25°C, maximum	14 days	
Full Adhesion, maximum	21 days	
As cured, at 25°C + 1.5		
Elongation, minimum	800%	ASTM D412
Durometer		
Non-Sag, Shore A	10-25	ASTM D2240
Self-Leveling, Shore 00, minimum	40	ASTM D2240
Joint Movement Capacity	+100% to -50%	ASTM C719
Tensile Stress, at 150% Elongation	45 psi	ASTM D412

**1014.03 -- Packaging**

1. NE-3405 and NE-3405LM
  - a. The joint and crack sealer can be packaged in either cardboard box or wholly-meltable type containers.
    - (i) Cardboard box containers shall be manufactured from double wall kraft board producing a minimum bursting test certification of 350 PSI (241 N/cm<sup>2</sup>) and using water-resistant adhesives. The use of metal staples or fasteners of any kind will be prohibited for closing the lids of the boxes. Tape or other like material is acceptable.
      - a. The joint and crack sealer shall be in meltable [300°F (149°C)] polyethylene bag(s).
    - (ii) Wholly-meltable type containers, and any of their components, shall be fully meltable and integrational with the joint and crack sealer by the time the manufacturer's minimum application temperature is reached.
      - a. The wholly-melted and integrated container must not adversely affect the test specifications of the joint and crack sealer.
2. Silicone Joint Sealer
  - a. Each container shall include information regarding manufacturer and product name.

**1014.04 -- Acceptance Requirements**

1. NE-3405 and NE-3405LM
  - a. Acceptance of the manufactured material is based on pre-approval by either on or off-site sampling. Acceptable hot pour sealant lots are listed on the NDR Approved Products List.
    - (i) NDR on-site field sampling shall be in accordance with the NDR Materials Sampling Guide.

- (ii) Off-site (Proxy) sampling shall be in accordance with ASTM D 6690.
  - 1. Proxy sampling shall be overseen by an outside party approved by the NDR, preferably another DOT Agency. Proxy samples shall include a manufacturer's Certificate of Compliance. Proxy samples shall also include a dated signature of origin by the Representative that is not affiliated with the manufacturer, and can either be on the Certificate of Compliance, or separate letter.
  - 2. For convenience in both sampling and shipping samples, sample containers smaller than a manufacturer's usual production containers are allowed, as long as the sample is 1500 grams min.
  - 3. Samples shall be sent to the NDR Bituminous Laboratory, or alternatively, sent to an NDR-approved independent laboratory for testing which will be at no cost to the Department. If a NDR-approved independent laboratory will be used for testing purposes, the NDR Bituminous Laboratory must be notified so that NDR concrete blocks for Bond testing can be sent to it.

2. Silicone Joint Sealer

- a. Acceptance of applied silicone joint sealers shall be in accordance with the NDR *Materials Sampling Guide*.
- b. Acceptable silicone joint sealer manufacturer products are listed on the NDR Approved Products List.
  - (i) For products that are not listed, approval may be based upon test results from an independent laboratory submitted to the NDR Concrete Materials Section by the manufacturer, and testing by the NDR. Approval must be made prior to product use.

**EPOXY COMPOUNDS AND ADHESIVES  
(J-15-0308)**

Section 1018 in the Standard Specifications is void and superseded by the following:

**1018.01 – Description**

This specification provides requirements for two-component, epoxy-resin bonding systems for use in non-load bearing applications and resin adhesives for application to Portland cement concrete.

### 1018.02 – Material Characteristics

1. Epoxy-resin bonding systems shall conform to the requirements of ASTM C 881. Approved systems are shown on the NDR Approved Products List.
2. The classification of Epoxy-Resin Bonding Systems is as follows:
  - a. Type I For use in non-load bearing applications for bonding hardened concrete and other material to hardened concrete.
  - Type II For use in non-load bearing applications for bonding freshly mixed concrete to hardened concrete.
  - Type III For use in bonding skid resistant materials to hardened concrete, and as a binder in epoxy mortars or epoxy concretes.
  - b. Grade 1 Low viscosity.
  - Grade 2 Medium viscosity.
  - Grade 3 Non-sagging consistency.
  - c. Class A For use below 40°F (4°C); the lowest allowable temperature to be defined by the manufacturer of the product.
  - Class B For use between 40°F and 60°F (4°C and 15°C).
  - Class C For use above 60°F (15°C); the highest allowable temperature to be defined by the manufacturer of the product.
  - Class D For use between 40°F and 65°F (4°C and 18° C).
  - Class E For use between 60°F and 80°F (15°C and 26°C).
  - Class F For use between 75°F and 90°F (24°C and 32°C).

### 1018.03 – Procedures

1. The compounds shall be of the type and grade specified in the plans or as directed by the Engineer.
2. The class of the compounds shall be selected for use according to climatic conditions at the time of application.
3. All bonding surfaces shall be clean and free of all oil, dirt, grease, or any other materials which would prevent bonding.
4. Mixing and application shall be in strict accordance with the manufacturer's instructions.

#### **1018.04 – Acceptance Requirements**

1. Epoxy-resin bonding systems and resin adhesives approved for use are shown on the NDR Approved Products List.
2. Epoxy-resin bonding systems that are not on the NDR Approved Products List may be accepted based on a manufacturer's certificate of compliance.

#### **DEFORMED METAL CENTER JOINT AND METAL KEYWAY (J-15-0307)**

Paragraph 1 a. of Subsection 1027.01 in the Standard Specifications is void and superseded by the following:

a. **Metal Center Joint:**

Metal center joint sections shall be manufactured from sheets no less than 18 gauge [0.05 inch (1.3 mm)] thick and shall be of the size and trapezoidal shape shown in the plans. The sections shall be punched along the centerline of the narrow face of the trapezoid to admit the tie bars required by the plans and also at intervals of not greater than 2 feet (600 mm) to receive pins that are driven vertically into the subgrade to support the metal center joint.

#### **AGGREGATES (J-15-0914)**

Subsection 1033.01 is amended to include the following paragraphs and Subsection 1033.02, Paragraphs 1 and 3. of the Standard Specifications is void and superseded by the following:

#### **1033.01 – Description**

This combined aggregate gradation using Class R aggregate is to optimize aggregate blends utilizing more locally available materials.

Achieving a uniform gradation for Class R may require the use of two or more different aggregates. It is the responsibility of the contractor to consider additional material characteristics; such as, but not limited to particle shape, cubicity, angularity, etc., when designing a mix.

#### **1033.02 -- Material Characteristics**

##### **1. Sampling and Testing Procedures:**

All materials shall be sampled and tested in accordance with Table 1033.01. All material source locations and quarries must be approved by the Department for prior to use.

**Table 1033.01**

<b>Sampling and Testing Procedures</b>	
<b>Procedure</b>	<b>Method</b>
Sampling	NDR T 2
Sieve Analysis	NDR T 27
Clay Lumps, Shale, and Soft Particles	NDR T 504
Abrasion	AASHTO T 96
Freeze and Thaw Soundness	NDR T 103
Specific Gravity and Absorption (course aggregate)	AASHTO T 85
Specific Gravity and Absorption (fine aggregate)	AASHTO T 84
Total Evaporable Moisture Content of Aggregates by Drying	AASHTO T 255
Plastic Fines in Graded Aggregates and Soils by Use of the Sand Equivalent Test	AASHTO T 176
Sodium Sulfate Soundness	AASHTO T 104
Calcium Carbonate	NDR C 25
Organic Impurities	AASHTO T 21
Mortar-Making Properties	AASHTO T 71
Reducing Field Samples of Aggregate to Testing Size	AASHTO T 248

## 2. **Portland Cement Concrete Aggregates:**

### a. **Sand-Gravel Aggregate:**

- (1) Aggregate shall be washed and composed of clean, hard, durable and uncoated particles.
- (2) Aggregates produced from wet pits by pumping must be adequately washed by means approved by the Department.
- (3) Aggregates from dry pits shall be adequately washed by means approved by the Department and have a Sand Equivalent value not less than 90 in accordance with AASTHO T 176.
  - (i) If the Sand Equivalent is less than 90, the Engineer may elect to stop aggregate production until such a time ASTM C 109 has been completed. The aggregate, when subjected to the test for mortar-making properties, shall produce a mortar having a compressive strength at the age of 7 days equal to or greater than that developed by mortar of the same proportions and consistency made of the same cement and aggregate after the aggregate has been washed to a sand equivalent greater than 90. Materials failing to produce equal or greater strength shall be unacceptable.
- (4) Aggregate for concrete shall have a soundness loss of not more than 10% by weight at the end of 5 cycles using Sodium Sulfate Soundness test AASHTO T 104.
- (5) The weight of the aggregate shall not contain more than 0.5% clay lumps.



- (6) Aggregate subjected to the colorimetric test for organic impurities which produces a color darker than the standard shall be further tested for its mortar-making properties in accordance with AASHTO T 71. The Engineer may elect to stop aggregate production until such a time AASHTO T 71 testing has been completed.
  - (i) Aggregate, when subjected to the test for mortar-making properties, shall produce a mortar having a compressive strength at the age of 7 days equal to or greater than that developed by mortar of the same proportions and consistency made of the same cement and aggregate after the aggregate has been treated in a 3% solution of sodium hydroxide. Materials failing to produce equal or greater strength shall be unacceptable, except when determined to be acceptable under the provisions of Subsection 105.03.
- (7) Aggregate shall meet the requirement in Tables 1033.02A, 1033.02B and 1033.03C.

**Table 1033.02A**

		Percentage	Percent Passing									
			1½"	1"	¾"	½"	3/8"	No.4	No.10	No.20	No.30	No.200
AGGREGATE SPECIFICATION RANGE	Class A	Max	--	--	--	--	100	100	90	--	40	3
		Min	--	--	--	--	100	92	64	--	10	0
	Class B	Max	--	100	--	--	--	97	70	--	40	3
		Min	--	100	--	--	--	77	50	--	16	0
	Class C	Max	--	100	--	--	--	88	50	--	20	3
		Min	--	100	--	--	--	44	24	--	4	0

**Table 1033.02B**

Aggregate Classes and Uses	
Aggregate Class	Concrete Description
A	Overlay Concrete SF
B	47BD, 47B-HE, 47B-OL, PR 1 and PR 3
C	BX

**b. Ledge Rock Aggregate:**

- (1) Aggregate shall consist of Limestone, Quartzite, Dolomite, Gravel and Granite composed of clean, hard, durable, and uncoated particles.
- (2) The percent of clay lumps, shale, or soft particles shall not exceed the following amounts:

Clay Lumps .....	0.5%
Shale .....	1.0%
Soft Particles .....	3.5%

- (3) Any combination of clay lumps, shale, and soft particles shall not exceed 3.5%.
- (4) Aggregate for concrete shall be free of coatings that will inhibit bond and free of injurious quantities of loam, alkali, organic matter, thin or laminated pieces, chert, or other deleterious substances as determined by the Engineer.

- (5) Aggregate for concrete shall not have a soundness loss greater than 8.0% by weight at the completion of 16 cycles of alternate freezing and thawing.
- (6) Aggregates for concrete shall have a Los Angeles Abrasion loss percentage of not more than 40.
- (7) All fractions passing the No.4 sieve shall meet quality requirement of soundness loss of not more than 10% by weight at the end of 5 cycles using sodium sulfate solution.
- (8) The ledge rock shall be tested according to ASTM C 1260.
  - (a) The mortar bars for the ASTM C 1260 shall not exceed 0.10% expansion at 28 days.
    - (i) If the proposed ledge rock exceeds 0.10% expansion at 28 days, the ledge rock shall be tested in accordance to ASTM C 1567. If the expansion is greater than 0.10%, the ledge aggregate shall not be used.
      - a. The ASTM C 1567 mortar bars shall be composed of Type IP or IT Interground/blended cement and the proposed Ledge Rock aggregate.
      - b. To accommodate precision within multi-laboratory testing, expansion up to and including 0.13% will be accepted for use. If the expansion is above 0.13%, the material is noncompliant.
- (9) Aggregate shall meet the requirements in Tables 1033.03A, B, and C.

**Table 1033.03A**

AGGREGATE SPECIFICATION RANGE	Class	Percent	Percent Passing									
			1 1/2"	1"	3/4"	1/2"	3/8"	No.4	No.10	No.20	No.30	No.200
			Max	100	100	90	--	45	12	--	*4	--
Min		92	66		15	0		0		0		
Class F	Max	--	--	100	100	90	30	8	--	--	3	
	Min			96	40	4	0			0		

\*If the No. 200 sieve is less than 1.5% passing the No.20 sieve could be increased to maximum of 6% passing.

**Table 1033.03B**

Aggregate Classes and Uses	
Aggregate Class	Concrete Description
E	47BD, 47B-HE, PR 1 and PR 3
F	47B-OL, Overlay Concrete SF

**c. Combined Aggregates:**

- (1) The Contractor shall design and meet the specification requirements. It is the Contractor's responsibility to provide desirable mix properties; such as, but not limited to, workability, resistance to segregation, stable air void system, good finishing properties and good consolidation properties.
- (2) The combined blended aggregate shall meet the requirement in Table 1033.03C and 1033.03D.

**Table 1033.03C**

<b>*Class R - Combined Aggregate Gradation Limits (Percent Passing)</b>								
<b>Sieve Size</b>	<b>1 ½ inch</b>	<b>1 inch</b>	<b>¾ inch</b>	<b>No.4</b>	<b>No.10</b>	<b>No.30</b>	<b>No. 50</b>	<b>No.200</b>
Max	100	100	98.0	70.0	50.0	30.0	12.0	3.0
Min	-	92.0	85.0	45.0	31.0	8.0	2.0	0

\* Refer to Subsection 1002.04, Paragraph 1.b.(8) for the traditional 47B Mix Design

**Table 1033.03D**

<b>Aggregate Classes and Uses</b>	
<b>Aggregate Class</b>	<b>Concrete Description</b>
R	47B

**d. Aggregate Production and Testing:**

- (1) Any change greater than 3% in the original verified constituent percentage of the combined aggregates gradation will be considered non-compliant. Any change of the combined gradation targets must remain within the Combined Aggregate Gradation Limits in Table 1033.03C. The Contractor shall resubmit a new mix design if the material is deemed non-compliant in accordance with Subsection 1002.04, Paragraph 1.
- (2) The blended gradation tolerance ranges from the approved mix design are established in Table 1033.03E.
  - (i) The Contractor shall assume the responsibility to cease operations when the specifications are not met. Production shall not be started again without the approval of the Engineer.

**Table 1033.03E Blended Aggregate Production Tolerances**

<b>Sieve Size</b>	<b>Tolerances</b>
No. 4 or greater	± 5%
No. 10 to No. 30	± 4%
No. 50	± 3%
Minus No. 200	± 1%

- (3) Ledge rock and aggregate from a dry pit shall be uniformly saturated with water before it is used. The wetting shall begin 24 hours before concrete mixing to allow complete saturation.

**DOWEL BARS  
(J-15-0812)**

Paragraph 1.c. of Subsection 1022.01 in the Standard Specifications is void and superseded by the following:

1. c. Both Type A and Type B coated dowel bars shall be coated with a bond breaker shown on the NDR Approved Products List, dipped in asphalt or paraffin, or greased in accordance with the specified requirements as shown in the Standard Plans.

**EPOXY COATED REINFORCING STEEL  
(J-15-0509)**

Paragraph 5. of Subsection 1021.03 in the Standard Specifications is void and superseded by the following:

5. In order to protect the coated reinforcement from damage, the Contractor shall use padded or nonmetallic slings and padded straps. Bundled bars shall be handled in a manner which will prevent excessive sagging of bars which will damage the coating. If circumstances require storing coated steel reinforcing bars outdoors for more than two months, protective storage measures shall be implemented to protect the material from sunlight, salt spray and weather exposure. Coated steel reinforcing bars, whether individual bars or bundles of bars, or both, shall be covered with opaque polyethylene sheeting or other suitable opaque protective material. For stacked bundles, the protective covering shall be draped around the perimeter of the stack. The covering shall be secured adequately, and allow for air circulation around the bars to minimize condensation under the covering. Coated steel reinforcing bars, whether individual bars or bundles of bars, or both, shall be stored off the ground on protective cribbing. The bundled bars shall not be dropped or dragged. If, in the opinion of the Engineer, the coated bars have been extensively damaged, the material will be rejected. The Contractor may propose, for the approval of the Engineer, alternate precautionary measures.

**PROPOSAL GUARANTY  
(A-40-0307)**

As an evidence of good faith in submitting a bid for this work, the bidder shall indicate the type of bid bond applied to this project in accordance with the Proposal Guaranty Bid Bond Section of these Special Provisions.

\* \* \* \* \*

410INFNOV15

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CONTRACT ID: 4462X

PROJECT(S): STR-44-2(1009)

CALL ORDER NO.: 410

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS

SECTION 1 GROUP 6 BRIDGE AT STA. 222+84.87LT. 1 - 70'-0" & 2-17'-0" SPANS STEEL GIRDER WELDED PLATE BRIDGE - REPAIR

0001	0030.60	MOBILIZATION	LUMP		LUMP		.
0002	6005.33	PREFORMED EXPANSION JOINT, TYPE B	LF	83.200	.		.
0003	6010.26	CLASS 47BD-4000 CONCRETE FOR BRIDGE	CY	24.100	.		.
0004	6020.00	REINFORCING STEEL FOR BRIDGE	LB	3445.000	.		.
0005	6030.00	PREPARATION OF BRIDGE AT STATION 222+84.87 LT.	EACH	1.000	.		.
0006	6430.49	PAINTING STRUCTURE (ZONE COAT) AT STA. 222+84.87 LT.	LUMP		LUMP		.
0007	6430.50	PAINTING BEARINGS	EACH	12.000	.		.
0008	6617.25	CONCRETE REPAIR	SF	10.000	.		.
0009	6801.28	CRACK EPOXY INJECTION	LF	15.000	.		.
SECTION 1 TOTAL							.

SECTION 2 GROUP 6A BRIDGE AT STA. 222+84.87RT. 1 - 70'-0" & 2-17'-0" SPANS STEEL GIRDER WELDED PLATE BRIDGE - REPAIR

0010	0030.60	MOBILIZATION	LUMP		LUMP		.
0011	6005.33	PREFORMED EXPANSION JOINT, TYPE B	LF	83.200	.		.
0012	6010.26	CLASS 47BD-4000 CONCRETE FOR BRIDGE	CY	24.100	.		.
0013	6020.00	REINFORCING STEEL FOR BRIDGE	LB	3445.000	.		.

CONTRACT ID: 4462X

PROJECT(S): STR-44-2(1009)

CALL ORDER NO.: 410

LINE NO	ITEM DESCRIPTION		APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
				DOLLARS	CTS	DOLLARS	CTS
0014	6030.00	PREPARATION OF BRIDGE AT STATION 222+84.87 RT.	1.000 EACH	.		.	
0015	6430.49	PAINTING STRUCTURE (ZONE COAT) AT STA. 222+84.87 RT.	LUMP	LUMP		.	
0016	6430.50	PAINTING BEARINGS	12.000 EACH	.		.	
0017	6617.25	CONCRETE REPAIR	18.000 SF	.		.	
0018	6801.28	CRACK EPOXY INJECTION	8.000 LF	.		.	
SECTION 2 TOTAL						.	

SECTION 3 GROUP 8B ELECTRICAL

0019	0030.80	MOBILIZATION	LUMP	LUMP		.	
0020	A001.08	RELOCATE PULL BOX TYPE PB-1	1.000 EACH	.		.	
0021	A069.11	2-INCH CONDUIT ON STRUCTURE	114.000 LF	.		.	
0022	A077.13	3/C #14 AWG TRAFFIC SIGNAL CABLE	142.000 LF	.		.	
0023	A079.50	GROUNDING CONDUCTOR	142.000 LF	.		.	
SECTION 3 TOTAL						.	

SECTION 4 GROUP 10 GENERAL ITEMS

0024	0001.08	BARRICADE, TYPE II	13805.000 BDAY	0.50000		6,902.50	
0025	0001.10	BARRICADE, TYPE III	389.000 BDAY	.		.	



CONTRACT ID: 4462X

PROJECT(S): STR-44-2(1009)

CALL ORDER NO.: 410

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0026	0001.90 SIGN DAY	2198.000 EACH	.		.	
0027	0001.99 CONTRACTOR FURNISHED SIGN DAY	389.000 EACH	.		.	
0028	0002.28 TEMPORARY PAVEMENT MARKING REMOVAL	14000.000 LF	.		.	
0029	0002.30 PAVEMENT MARKING REMOVAL	1300.000 LF	.		.	
0030	0002.44 TEMPORARY PAVEMENT MARKING, TYPE PAINT	14000.000 LF	.		.	
0031	0002.47 TEMPORARY PAVEMENT MARKING SURFACE PREPARATION	14000.000 LF	.		.	
0032	0002.97 FLASHING ARROW PANEL	222.000 DAY	.		.	
0033	0003.50 CONCRETE PROTECTION BARRIER	950.000 LF	.		.	
0034	0003.56 RELOCATE CONCRETE PROTECTION BARRIER	950.000 LF	.		.	
0035	0003.57 RELOCATE INERTIAL BARRIER SYSTEM	2.000 EACH	.		.	
0036	0003.58 INERTIAL BARRIER SYSTEM	2.000 EACH	.		.	
0037	0003.64 REPLACEMENT MODULE	10.000 EACH	.		.	
0038	0005.10 TRAFFIC CONTROL MANAGEMENT	111.000 DAY	.		.	
0039	0030.00 MOBILIZATION	LUMP	LUMP		.	
0040	L860.50 ENVIRONMENTAL COMMITMENTS - CONTRACTOR COMPLIANCE	LUMP	LUMP		.	

CONTRACT ID: 4462X

PROJECT(S): STR-44-2(1009)

CALL ORDER NO.: 410

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
	SECTION 4 TOTAL				.	
	TOTAL BID				.	