

INFORMATIONAL PROPOSAL

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

NEBRASKA DEPARTMENT OF ROADS

LETTING DATE: May 18, 2017

CALL ORDER: 200
CONTROL NO. SEQ. NO.: M2031 000

CONTRACT ID: M2031
PROJECT NO.: M2031

TENTATIVE START DATE: 09/25/2017
LOCATION: ELKHORN VIADUCT, N-31

CONTRACT TIME: 20 Working Days

IN COUNTY: DOUGLAS

BIDDER

GROUP 6 BRIDGE AT STA 278+98.95

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. M2031**

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 May 18, 2017, 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.

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 percent of the contractors in the same business or field of endeavor as the contractor filing this proposal.

TRAINING SPECIAL PROVISIONS

This On-the-Job Training (OJT) Program was created by the Federal Highway Administration (FHWA) and the Nebraska Department of Roads (NDOR) to fulfill the Training Special Provisions requirements of federal-aid construction contracts (23 CFR 230, Appendix B to Subpart A). The purpose of the provision is to address the under-representation of minority and female workers in the construction trades through the assignment of OJT training goals. Therefore, the training and upgrading of minorities and women toward journeyman status is a primary objective of this Training Special Provision.

Accordingly, the Contractor shall make every effort to enroll minority and women trainees (e.g., by conducting systematic and direct recruitment through public and private sources likely to yield minority and women trainees) to the extent that such persons are available within a reasonable area of recruitment.

All Contractors will be responsible for demonstrating the steps that they have taken to recruit minority and women trainees prior to a determination as to whether the Contractor is in compliance with this Training Special Provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not. The Contractor shall provide on-the-job training aimed at developing full

journey-level status in the type of trade or job classification involved. The number of training hours under this Training Special Provision will be assigned to each Contractor as set forth below.

1. Under the NDOR Contractor-Specific On-the-Job Training (OJT) Program, OJT hours will be assigned to Contractors and will not be contract or project specific, except as noted in paragraph "a." below.
 - a. Contractors who **have not** received an OJT assignment and are awarded a federally funded project let by NDOR will be required to fulfill the number of OJT hours as identified in each contract. The number of training hours to be provided under this contract shall be: 0 hours.

A Contractor who has received an OJT assignment will be allowed to provide training on any NDOR-let project on which the Contractor is working as either a Prime Contractor or a subcontractor. A Contractor will have the flexibility to transfer trainees from one project to another after providing notification of the transfer to NDOR.
 - b. If this project does not have a contract-specific training requirement, or if the number of training hours is set at zero (0), NDOR will add a training pay item with a nominal 100-hour quantity, that may overrun or underrun, which will be utilized only if the Contractor elects to provide training on this contract.
2. In January each year, NDOR will allocate OJT assignments to Contractors based on the total average dollar amount of all work performed by a Contractor on NDOR-let projects during the previous three (3) calendar years. The total dollar amount will consist of:
 - a. The total dollar amount of the Contractor's prime contracts let by NDOR (both federal and state funded) minus the total dollar amount of the work subcontracted out to others, and
 - b. The total dollar amount of the subcontract work the Contractor performed for others on NDOR-let projects.

The Contractor’s average dollar amount for the previous three calendar years will be calculated, and training hours will then be assigned as follows:

<u>Three Year Average</u>	<u>Training Assignments</u>
Under \$2,500,000	0 hours
\$2,500,000 to 5,000,000	1,000 hours
Over \$5,000,000 to 7,500,000	1,500 hours
Over \$7,500,000 to 10,000,000	2,000 hours
Over \$10,000,000 to 15,000,000	3,000 hours
Over \$15,000,000 to 20,000,000	4,000 hours
Over \$20,000,000 to 25,000,000	5,000 hours
Over \$25,000,000 to 30,000,000	6,000 hours
Over \$30,000,000 to 40,000,000	8,000 hours
Over \$40,000,000 to 50,000,000	10,000 hours
Over \$50,000,000 to 60,000,000	12,000 hours
Over \$60,000,000	15,000 hours

Example: Contractor A, who averaged \$28.66 million, would be assigned 6,000 hours of OJT. Contractor B, who averaged \$10.33 million, would be assigned 3,000 hours of OJT. Contractor C, who averaged \$2.26 million, would not be assigned any OJT hours.

	2011	2012	2013	3 Year Average	2014 OJT Assignment
Contractor A	24.3	33.4	28.3	28.66	6,000 hours
Contractor B	9.3	11.9	9.8	10.33	3,000 hours
Contractor C	2.3	1.4	3.1	2.26	0 hours

3. The OJT hours assigned to a Contractor in January are to be completed during that calendar year (e.g., OJT hours assigned in January of 2014 are to be completed during the period of January 1, 2014 thru December 31, 2014).
 - a. If a Contractor exceeds the number of OJT hours assigned for a calendar year, the Contractor may request to bank up to 30 percent of the excess hours. Banked hours may then be credited toward the Contractor’s OJT assignment for the next calendar year.
4. A Contractor who has not received an annual OJT assignment and is required to provide OJT on a contract-specific basis cannot receive credit for any OJT hours provided by any other Contractor working on the project who has received a Contractor-specific OJT assignment.
5. Completion of the annual OJT assignment is the Contractor’s responsibility. The Contractor is not allowed to assign any of the OJT hours to any other Contractor. The Contractor must make a Good Faith Effort to enroll an adequate number of trainees and provide the trainees a sufficient number of hours training to achieve the Contractor’s annual OJT assignment.
6. While trainees may be assigned to NDOR-let federally or state funded projects, the Contractor should attempt to schedule and assign trainees so that at least 50 percent of a trainee’s hours are earned on federally funded projects - unless otherwise approved in advance by NDOR.

7. The Contractor must use an OJT program approved by NDOR and/or the FHWA. An OJT program shall be approved if it is reasonably calculated to meet the equal employment opportunity obligations of the Contractor and qualify the average trainee for journey-level status in the job classification concerned by the end of the training period. An approved OJT program must specify the number of hours required for a trainee to achieve journey-level status in each job classification. Furthermore, apprenticeship programs registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau and training programs approved but not necessarily sponsored by the U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training, shall also be considered acceptable provided they are being administered in a manner consistent with the equal employment obligations of federal-aid highway construction contracts.
8. The Contractor shall furnish each trainee a copy of the OJT Program he/she will follow in providing the training. The Contractor shall also provide each trainee with a certification showing the type and length of training satisfactorily completed.
9. The Contractor's Equal Employment Opportunity (EEO) Officer shall be responsible for administering the Contractor's OJT and monitoring the trainees' progress. The EEO Officer shall serve as the point of contact for NDOR regarding OJT information, documentation, and conflict resolution. If necessary, the EEO Officer may designate another individual to assist with the OJT monitoring responsibilities. NDOR must be provided the name and contact information for any such designee.
10. At least seven (7) days prior to commencing training, the Contractor must submit a "Request for Trainee Approval" form to NDOR for each individual to be enrolled as a trainee and a tentative list of the projects to which the trainee will be assigned. Requests for Trainee Approval may be submitted by mail, fax, or email.
11. If the Contractor submits a "Request for Trainee Approval" form to NDOR for an individual who is not a minority or female, or cannot replace departing trainees with minorities or females, the Contractor must also produce sufficient Good Faith Efforts documentation of the type set forth below. NDOR may reject non-minority male trainees for entry into the program if it determines that a Contractor failed to make sufficient Good Faith Efforts to hire minorities or female trainees and/or the Contractor failed to document or submit evidence of its Good Faith Efforts to do so.
12. Any training hours provided to a trainee prior to the Contractor receiving approval from NDOR will not be credited toward the Contractor's annual OJT assignment.
13. When an individual is first enrolled as a trainee, the individual will be approved for the number of hours of OJT required to achieve journey-level status in the classification for which the individual is to receive training. (A Contractor will not be penalized if a trainee does not achieve the full number of hours for which the trainee is approved.)
14. If the Contractor is unable to provide a trainee the full number of training hours required to achieve journey-level status on one project, the trainee should be transferred to other NDOR-let projects on which the Contractor is working.

15. At least one (1) day before all such transfers of trainees are made, the Contractor must provide NDOR in writing the name of the trainee and current project, the project to which the trainee will be transferred, and when the transfer is to take place. Notifications of trainee transfers may be submitted by mail, fax, or email.
16. Any training hours provided to a transferred trainee prior to the Contractor having notified NDOR of the transfer will not be credited toward the Contractor's annual OJT assignment.
17. No individual may be employed as a trainee in any classification in which they have successfully completed training leading to journey-level status or in which they have been employed at journey-level. No individual may be employed as a trainee in any classification with a lower skill level than any classification in which they have successfully completed training leading to journey-level status or in which they have been employed at journey-level (e.g., an individual who has achieved journey-level status as an equipment operator may not be trained as a laborer). The Contractor should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used, the Contractor's records should document the findings in each case.

An individual may be trained in multiple classifications that require relatively equal skill levels but different skill sets (e.g., an individual who has received training as a milling machine operator may also receive training as a roller operator, or a scraper operator, etc.). Preferably, an individual should have achieved journey-level status in a classification before beginning training in another classification.

The Contractor must request and receive approval from NDOR for an individual to receive training in a classification other than the classification for which the individual was originally approved. Any training hours provided prior to receiving approval from NDOR will not be credited toward the Contractor's annual OJT assignment.

18. Training shall be provided in construction crafts rather than clerk-typist or secretarial-type positions. Training is permissible in positions that are not assigned to a specific project such as office engineers, estimators, timekeepers, shop mechanics, etc., if the selected OJT program includes these classifications. Training in such positions will not be eligible for reimbursement, but will be eligible to be credited toward the Contractor's annual OJT assignment.
19. Some off-site training is permissible as long as the training is an integral part of an approved OJT program and does not comprise a significant part of the overall training (e.g., 16 hours training per trainee per year in areas such as jobsite safety or accident response would be permissible). A copy of a training certificate, agenda, or curriculum must be provided to verify off-site training.
20. The Contractor will be reimbursed \$2.00 per each hour of training provided in accordance with an approved OJT program and the NDOR Training Special Provisions.
21. Contractors shall be allowed to transfer trainees or utilize trainees on other NDOR-let projects which do not contain the Training Special Provisions. NDOR will utilize a Change Order / Supplemental Agreement to incorporate the Training Special Provisions and the appropriate pay item into the contracts of such projects.

22. On all federally funded NDOR-let projects, trainees must be paid at least 60 percent of the appropriate minimum journey-level rate specified in the contract for the first half of the training period, 75 percent for the third quarter, and 90 percent for the last quarter of the training period - or the appropriate rates approved by the U.S. Department of Labor or the U.S. Department of Transportation in connection with the program in which the trainee is enrolled.
23. In order to document and evaluate a trainee's progress toward journey-level status, the Contractor must provide NDOR at the end of each month a "Special Training Provision Monthly On-The-Job Training Report" listing each trainee, the number of hours trained during the month, and the total number of hours trained as of the date of the report.

NOTE: The monthly reporting requirements may change if/when on-line reporting is implemented by NDOR.

24. If a trainee's employment is terminated for any reason prior to completion of the number of OJT hours for which the individual was approved, the Contractor must make Good Faith Efforts to replace the trainee with another minority or female.
25. Contractors must submit an annual summary report to NDOR by January 15th each year giving an account of all trainee hours provided during the previous year. The report shall show a breakdown of training provided on each project and/or contract.
26. Contractors will have fulfilled their OJT responsibilities if they have provided acceptable training for the number of hours assigned, or have demonstrated that they made a Good Faith Effort to provide the number of OJT hours assigned. Where a Contractor cannot meet his or her annual training hour goal with females and minorities, the Contractor remains responsible for demonstrating the Good Faith Efforts taken in pursuance of the goal. Examples of what actions constitute Good Faith Efforts are set forth below. NDOR will make compliance determinations regarding the Training Special Provisions based upon either attainment of the annual goal or Good Faith Efforts to meet it.
27. Good Faith Efforts are those designed to achieve equal opportunity through positive, aggressive, and continuous results-oriented measures (23 CFR § 230.409(g)(4)). Good Faith Efforts should be taken as trainee hiring opportunities arise and when minorities and women are under-represented in the Contractor's workforce. NDOR will consider all Contractors' documentation of Good Faith Efforts on a case-by-case basis and take into account the following:
 - a. Availability of minorities, females, and disadvantaged persons for training;
 - b. The potential for effective training;
 - c. Duration of the contract;
 - d. Dollar value of the contract;
 - e. Total normal work force that the average Contractor could be expected to use;
 - f. Geographic location;

- g. Type of work;
- h. The need for journey level individuals in the area.

Good Faith Efforts may include, but are not limited to, documentation of efforts to:

- Contact minority and female employees to gain referrals on other minority and female applicants;
 - Refer specific minorities and females to training programs and specifically request these trainees by name in the future;
 - Upgrade minority and female unskilled workers into the skilled classifications when possible;
 - Accept applications at the project site or at the Contractor's home office;
 - Review and follow up on previously received applications from minorities and females when hiring opportunities arise;
 - Maintain monthly evaluations that monitor efforts made to achieve diversity in the Contractor's workforce in general (i.e., significant numbers of minorities and females employed on a company-wide basis);
 - Provide incentives for project management personnel or superintendents when hiring goals are met on a project (i.e., similar to performance bonuses paid when a job is completed in a timely manner and under budget).
28. Liquidated damages will be assessed the Contractor for failure to demonstrate a Good Faith Effort to achieve their full OJT assignment or for failure to demonstrate a Good Faith Effort to achieve their full OJT assignment with minority and women trainees.
- Liquidated damages will be assessed at the rate of \$4.00 per hour for the number of OJT hours not achieved or, even if achieved, the number of OJT hours in which the Contractor fails to demonstrate Good Faith Efforts to hire minorities and women. (e.g., if the Contractor was assigned 3,000 hours but only achieved 2,000 hours and did not demonstrate a Good Faith Effort, the liquidated damages would be assessed at 1,000 hours x \$4.00 = \$4,000.00.)
29. NDOR will invoice a Contractor for liquidated damages assessed as a result of the Contractor's failure to demonstrate a Good Faith Effort to achieve the number of OJT hours assigned.
- The Contractor's failure to promptly pay any invoice for liquidated damages may result in the Contractor being disqualified to bid work with NDOR for a time period determined by the Director/State Engineer.
30. At the end of the calendar year, if the dollar amount of work the Contractor performed on NDOR-let projects is substantially below the three-year average upon which the Contractor's OJT assignment was based, the Contractor's OJT goal for that year may be adjusted according to the table in Paragraph 2. above.

31. The established per hour unit price for the item "Training" shall be full compensation for all costs incurred, which includes but is not limited to providing the necessary supervision, labor, equipment, tools and material. Any additional costs due to payment of wages in excess of the minimum rates specified and for the payment of any fringe benefits shall not be paid for directly, but shall be considered subsidiary to the items for which direct payment is made.

AMENDMENT TO CONSTRUCTION TRAINING REPORT REQUIREMENTS

The last sentence under Paragraph C., on Page 5 of the Standard Federal Equal Employment Opportunity Construction Contract Specifications, dated November 3, 1980, is void.

FHWA Form 1409 "Federal-aid Highway Construction Contractor's Semi-Annual Training Report" is not required.

STATUS OF UTILITIES

The following information is current as of February 2, 2017.

At this time, no utilities have been required to relocate their facilities.

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

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

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

Any work necessary will be concurrent with construction.

STATUS OF RIGHT-OF-WAY

All work is to be performed within the existing Right of Way as located by the Engineer.

SPECIAL PROSECUTION AND PROGRESS (General Requirements)

The following requirements shall apply to this project.

1. Lane closures shall be limited to the length required for the work being performed.

Although the Department will not unreasonably prevent the Contractor from utilizing a lane closure of the maximum length, lane closures shall not be established for lengths greater than necessary. The Contractor is directed to schedule the placement of traffic control devices to accommodate each day's closure to the extent practical. Accordingly, the Department will only pay for those traffic control devices considered reasonably necessary to protect the actual work area.

2. A lane closure shall not be installed or removed during nighttime hours. Nighttime hours shall be defined as being from ½ hour before sunset to ½ hour after sunrise.
3. The Project Manager will develop a traffic control plan for the project that will include signing for pedestrians using the sidewalks within the project limits that will direct the pedestrians to accessible routes. All sidewalk signing, as directed by the Engineer, will be accomplished using standard Type II barricades (not cones) and Contractor supplied signs attached to the Type II barricades. The bid items for this sidewalk signing will be Sign Day and Barricade, Type II.
4. Any damage done to the sidewalk shall be the responsibility of the Contractor.

ENVIRONMENTAL COMMITMENT

Bid No.: _____ **Control/Contract No.:** M2031

Maintenance Activity: Bridge Pier Repair

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. The NDOR District Environmental Coordinator and District Maintenance Superintendent(s) will serve as an NDOR point of contact.

Wetlands

The Contractor shall not stage, store, waste or stockpile materials and equipment 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.

Threatened & Endangered Species

District 2 is within the range of multiple State and Federally Listed Threatened & Endangered Species. Range maps and County Lists for these species can be found on the Nebraska Game and Parks Commission website (found below).

Bridge pier repair as outlined below is allowed with the following General Conservation Conditions.

General Conservation Conditions

Threatened and Endangered Species. The Contractor shall reference 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 maintenance operations. These guidance documents can be found at:

- <http://outdoornebraska.gov/atriskspecies/>

If federal or state listed species are observed during maintenance operations, stop work and contact the NDOR District Environmental Coordinator and District Maintenance Superintendent to determine action required prior to resuming work. Coordination with NDOR Environmental Section will be required if Night-Time work is needed.

Refueling. The Contractor shall conduct refueling only within non-wetland and non-stream locations. Areas adjacent to wetlands and/or streams will be avoided. Spills shall be reported to the NDOR District Environmental Coordinator and District Maintenance Superintendent. The contractor shall be responsible for cleanup of spilled fuel or any other Hazardous Materials, such as engine oil, hydraulic fluid, antifreeze, etc. used in the contract specified maintenance activity. 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 applicable laws.

The District Environmental Coordinator shall be responsible for recording and tracking of the spill event through NDOR's DIRK Database.

<http://www.transportation.nebraska.gov/ref-man/specbook-2007.pdf>

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.

- Construction debris waste disposal areas
- Asphalt plants
- Haul roads
- Stockpiling areas
- Staging areas
- Material storage sites

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)

Encountering Unexpected Waste

If contaminated soils and/or water or hazardous materials are encountered, then all work within the immediate area of the discovered hazardous material shall stop until NDOR/FHWA is notified and a plan to dispose of the Hazardous Materials has been developed. Then NDEQ shall be consulted and a remediation plan shall be developed for this project. The potential exists to have contaminants present resulting from minor spillage during fueling and service associated with 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 applicable laws. (Contractor)

Ground Disturbance

Any and all ground disturbance shall be limited to fill material locations only, with any fill material disturbances not to exceed the depth of the fill material. (Contractor)

Unmarked Human Burial Sites

The contractor shall comply with the Nebraska Unmarked Human Burial Sites and Skeletal Remains Protection Act, Sections 12-1201 – 12-1212. If human skeletal remains or burial goods associated with an unmarked human burial in the ground or on the ground are discovered, then all work in the immediate area of the discovery shall stop and the contractor shall contact the NDOR District Environmental Coordinator. The NDOR District Environmental Coordinator will then comply with Section 12-1205, notification of local law enforcement in the county in which the remains or burial goods are found. The NDOR District Environmental Coordinator will promptly consult with the appropriate federal, state, and tribal agencies to determine if further field investigations are required before maintenance operations may resume. Pertinent legal authorities covering such discoveries include: the National Historic Preservation Act, the Native American Graves Protection and Repatriation Act, the Archeological Resources Protection Act, the Nebraska Unmarked Burial Sites and Skeletal Remains Protection Act, and the Nebraska Archeological Resources Protection Act.

Any discovered archeological or paleontological objects or deposits are not the property of the Contractor. The NDOR Environmental Coordinator will consult with appropriate federal, state, or tribal agencies to determine the proper disposition of such remains.

**SPECIAL PROSECUTION AND PROGRESS
(Migratory Birds)
(A-42-0417)**

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) or NDOR Environmental Section staff. 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) 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.

**PLANS AND PROPOSALS
(A-43-0117)**

Paragraphs 3. and 4. of Subsection 111.01 in the Standard Specifications are void and superseded by the following:

Plans and Proposals are available for purchase on the NDOR Storefront website.

**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 m²) 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 1st or after September 1st
 - ii. Tree removal prior to April 1st or after September 1st
 - iii. Clearing empty nests on structures prior to April 1st
 - 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-3-1215)**

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 (7th) calendar day after the Initial Notice Date or within an approved extension, a Shut-Down Notice will be issued on the eighth (8th) 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 (8th) 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. | Pay Item
Storm Event Restoration – Incentive
Storm Event Restoration – Disincentive | Pay Unit
Each
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 person’s, carrion removal, 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. | Pay Item
Environmental Commitments – Contractor Compliance | Pay Unit
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.

**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).

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-5-0916)

The following Special Provision applies to concrete decks and approaches on girder and slab bridges for new bridges and complete deck replacements. Bridge deck widenings, partial deck replacements, and deck and joint repairs shall be cured in accordance with Section 706 of the specifications. Approaches that are not part of a new bridge or complete deck replacement 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°F during the 10-day wet curing period.
- (1) The temperature of the concrete shall not be less than 50°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°F and 100°F for the first 72 hours after the concrete has been placed, and at a temperature of between 40°F and 100°F for the next 168 hours.
 - (3) After 240 hours of curing is complete, the concrete temperature shall not decrease at a rate faster than 5°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 not 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. Only equipment necessary for forming and pouring the bridge rail shall be allowed on the deck during the 7 days of white pigment curing.

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. The Contractor shall 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 include both bridge and paving approaches. 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 3 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. Burlap with Polyethylene backing will not be allowed on decks unless allowed by the Engineer.
 - (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 at least 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 elsewhere in these Special Provisions 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.	Pay Item Bridge Deck Grooving	Pay Unit Square Yards (SY)
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**PREPARATION OF BRIDGE AT STATION 278+98.95
(G-24-0416)**

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

Jackhammer Requirements

This paragraph shall apply to concrete removals for which specifications have not been provided elsewhere in the contract documents: When breaking existing concrete, the use of a 15 lb. maximum hammer applied at a 45° angle is required to chip along the edges of removal, and a 30 lb. maximum hammer applied at a 45 ° angle is required for all other concrete removal.

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.

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 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.

**ASPHALT PLUG JOINT SYSTEM
(G-31-1015)**

Description

The system used may be one of the following: Matrix 501 or Matrix 502 by Crafc0, Matrix 502 by D. S. Brown, Wabo Expandex by Watson Bowman Acme. Other products as appear on the Approved Products List (APL) may be used. Suppliers and manufacturers are encouraged to apply to be listed on the APL. Products may be used if they are compliant with material requirements below and approved by Materials and Research Division.

The general configuration of these systems is illustrated in the plans. Essential components shall include a steel "bridging" plate to cover the existing gap and a flexible segment of overlay material above to fill a gap in the asphalt within a range of widths determined by the manufacturer. The bridging plate shall span the joint gap in the deck, approach slab or at the end of floor. The joint material above the bridging plate, extending to the driving surface, shall be comprised of binder and aggregate filler. Component dimensions and features shall be per the manufacturer's instructions.

Some systems, in addition to the above described components, may include joint seals for the existing gap in the structure being overlaid.

Material Requirements for Binder

Table 01 shows requirements for binder. In case of uncertainty of the suitability of a product, consult Materials and Research Division.

Table 01

Test Name	ASTM Test Method	ASTM D6297 Requirement
Cone Penetration, 77°F	D3407, D5329	7.5 mm max., 75 units
Resilience, 77°F	D3407, D5329	40-70%
Bond @ 0° F, 100% ext.	D5329	Pass 5 cycles
Flow @ 140°F, 5hrs.	D3407, D5329	3.0 mm max.
Asphalt Compatibility	D3407, D5329	Pass
Ductility @ 77°F	D113	400 mm min.
Softening Point	D36	182°F min.
Tensile Adhesion	D5329	700% min.
Low Temperature Cone Penetration, 0°F, 200g, 60s	D6297, Sec. 9.1	10 unit min., 1 mm min.
Recommended Installation Temperature		360-390°F
Bond, 20°F, 100% ext.	D3407, D5329	Pass 3 cycles
Flexibility @ -10°F	D5329	Pass

Aggregate Requirements:

Aggregate shall either be supplied by the manufacturer or composition and gradation shall be as prescribed by the manufacturer. It is frequently necessary to place plug joint material in layers; it may be necessary to remove the larger sized aggregate from the mix to achieve workability of the top layer.

Materials and Equipment

Material and equipment shall be as recommended by the manufacturer, appropriate for the job and in good working order. A melting kettle (generally double jacketed), rotating drum mixer or a combination thereof, of sufficient capacity to allow efficient placement of the joint material, shall be employed. Air compressors, saws, abrasive blasters, pneumatic hammers, rakes, trowels and assorted hand tools, as necessary to perform the work, shall be at the site and meet the approval of the Engineer. All materials prescribed for use, e.g. primer type, shall be used.

Construction Methods

The manufacturer's instructions and requirements shall be followed in regard to the installation. Material shall be as prescribed. Preparation of the joint shall be thorough and as outlined in the manufacturer's instructions. Concrete contacting applied joint materials shall have cured for 14 days. Protect surrounding surfaces with plastic sheets. The general procedure is outlined in the following:

1. Saw cut the surfacing layer to the required depth (usually a minimum of 2" or full depth). Saw cuts shall be straight within $\frac{1}{4}$ inch and parallel. Block-out widths shall generally be between 20" and 24".
2. Break out and remove all material between the saw cuts, including waterproofing membrane, if require by the manufacturer, to the deck surface. Remove all laitance. Abrasive blast, if required.
3. Remove all dust and moisture with hot compressed air. All surfaces shall be thoroughly clean and dry or retreatment shall be required.
4. Prime all surfaces in the cutout with the prescribed primer and allow it to cure.
5. If system employs a backer rod, install at this point. Place backer rod to correct depth. Fill the gap above the backer rod with the prescribed sealer.
6. Place bridging plates before the sealer sets and center over expansion gap using centering pins. Joints where plates come together shall be tight and not overlap.
7. All surfaces of the cutout and top of bridging plate shall be coated with the binder material, if required by the manufacturer.
8. Place correct proportions of binder and aggregate into the mixer and heat to the temperature prescribed by the manufacturer.
9. Place the mixture of binder and aggregate into cutout in layers as instructed by the manufacturer. Flood with binder between layers, if instructed by the manufacturer.
10. On the last layer, slightly overfill the cutout and compact to surface level.
11. Seal and finish the surface of the plug joint, with heat or otherwise, as instructed by the manufacturer.
12. Apply aggregate to the surface of the joint, if instructed by the manufacturer. Sweep off excess when surface has cooled.

Method of Measurement

The plan quantity of "ASPHALT PLUG JOINT SYSTEM" shall be paid for by the linear foot (LF).

Basis of Payment

Payment shall be considered full compensation for all labor, equipment, tools and material required for asphalt joint system installation. Payment shall be made at the contract unit price by the linear foot (LF) of "ASPHALT PLUG JOINT SYSTEM" shown in the plan quantities.

PIER REPAIR

The item "Pier Repair" will be measured and paid for by the Each. Payment shall be considered full compensation for all work prescribed.

**PORTLAND CEMENT CONCRETE
(J-15-0216)**

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, IS and IT Interground/Blended cement shall be used for all classes of concrete except for pavement repair. Type IP, IS 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)	Coarse Aggregate (%)	Water/Cement Ratio Max. (3)	Required Strength Min. psi
			Min. lb/cy	Max. lb/cy				
47B**	IP/IS/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(4)		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(5)	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.

(****) When IP using Class N pozzolan, the maximum water/cement ratio is 0.41.

Table 1002.03	
Table of Acceptable Concrete Class Substitutions	
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 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 a 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	6000 tons	2000 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-15-0216)

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 (Na_2O) and the Potassium Oxide (K_2O) 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.
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 IS)
 - (1) For Slag Cement, the maximum replacement shall be 35% +5 when incorporated into the final Interground/Blended cement.
- c. 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 Limestone cement, the replacement range shall be from 5.1% to 10.0% when incorporated into the final Interground/Blended cement.
- d. 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, IS 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 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.

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.
2. Noncompliant material shall be tested in accordance with ASTM C 1567 and in accordance with Section 1004.04, Paragraph 3.a. (1).
 - i. The mortar bars for the ASTM C 1567 shall not exceed 0.10% expansion at 28 days.
 - ii. If the expansion is greater than 0.10% at 28 days, then the Interground/Blended cement shall be subject to removal, 40% pay and/or removal from NDR's APL in accordance with NDR's Acceptance Policy on Portland and Interground/Blended Cements.
3. Noncompliant material from the mill, terminal or project will be temporarily removed from the Approved Products List pending further investigation.
4. 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.

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/ft² (0.55 kg/m²) 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

Silicone Joint Sealer Requirement		
Property	Requirement	Test
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 of 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/cm²) 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-15-0616)

Subsection 1033.01 is amended to include the following paragraphs and Subsection 1033.02, Paragraphs 1., 2. and 3. of the Standard Specifications are 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

Sampling and Testing Procedures	
Procedure	Method
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
Lightweight Pieces in Aggregates	NDR T 113

2. General Aggregate Properties:

- a. Aggregates shall be free from injurious quantities of dust, soft or flaky particles, loams, alkali, organic matter, paper, wood or other deleterious matter as determined by the Engineer.
- b. Dolomite as herein defined is a magnesium limestone containing calcium carbonate and magnesium carbonate in approximately a 4 to 3 ratio.
- c. The calcium carbonate content of limestone shall be at least 80 percent (computed as CaCO_3 from the value determined for CaO).
- d. Fine Sand shall have at least 95 percent of its particles pass the No. 10 (2.0 mm) sieve and no more than 25 percent pass the No. 200 (75 μm) sieve. This definition applies to sodium sulfate soundness test.
- e. Once an aggregate's soundness and abrasion quality has been determined, additional quality testing for soundness and abrasion loss will be at the Engineer's discretion.
- f. All aggregates or combine aggregates that have been washed or coming from a wet pit shall be stockpiled for a minimum of 48 hours before being introduced into concrete.

3. Portland Cement Concrete Aggregates:

a. Fine 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.
- (8) Lightweight pieces (measured by percent by volume values) shall not exceed 3.5%. For Class R aggregate, fine aggregate is defined as any material passing a No. 4 sieve.

Table 1033.02A

		Percentage	Percent Passing									
			1 1/2"	1"	3/4"	1/2"	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. Coarse 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, soft particles or lightweight pieces shall not exceed the following amounts:

Clay Lumps	0.5%
Shale	1.0%
Soft Particles	3.5%
Lightweight Pieces	3.5%

- (3) Any combination of clay lumps, shale and soft particles (all percent by weight values), plus the lightweight pieces (a percent by volume value) shall not exceed 3.5%. For Class R aggregate, coarse aggregate is defined as any materials retained on a No. 4 sieve.
- (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 coarse aggregate 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 coarse aggregate exceeds 0.10% expansion at 28 days, the aggregate proportions used on the project shall be tested in accordance to ASTM C 1567.
 - a. The ASTM C 1567 mortar bars shall be composed of Interground/blended cement being used on the project.
 - b. If the expansion is greater than 0.10%, the coarse aggregate shall not be used.
- (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	90	66	--	45	12	--	*4	--
Min	100	92	66	--	15	0	--	0	--	0		
Max	Class F	Max	--	--	100	100	90	30	8	--	--	3
Min	Class F	Min	--	--	100	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

*Class R - Combined Aggregate Gradation Limits (Percent Passing)								
Sieve Size	1 ½ inch	1 inch	¾ inch	No.4	No.10	No.30	No. 50	No.200
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

Aggregate Classes and Uses	
Aggregate Class	Concrete Description
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

Sieve Size	Tolerances
No. 4 or greater	+ 5%
No. 10 to No. 30	+ 4%
No. 50	+ 3%
Minus No. 200	+ 1%

- (3) Coarse 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.

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