

INFORMATIONAL PROPOSAL

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

NEBRASKA DEPARTMENT OF TRANSPORTATION

LETTING DATE: June 14, 2018

CALL ORDER: 200
CONTROL NO. SEQ. NO.: 21558 000

CONTRACT ID: 2558X
PROJECT NO.: S-30-6(1045)

TENTATIVE START DATE: 09/04/2018

CONTRACT TIME: 810 Calendar Days

LOCATION: US-30, ROGERS - NORTH BEND

IN COUNTY: DODGE

BIDDER

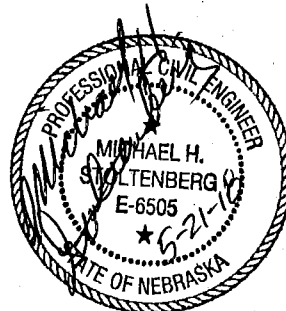
GROUP 1	GRADING
GROUP 3	CONCRETE PAVEMENT
GROUP 4	CULVERTS
GROUP 5	SEEDING
GROUP 6	BRIDGE AT STATION 207+04.88
GROUP 6A	BRIDGE AT STATION 207+54.52
GROUP 6B	BRIDGE AT STATION 611+42.74
GROUP 6C	BRIDGE AT STATION 612+19.48
GROUP 7	GUARDRAIL
GROUP 7B	FENCE
GROUP 8B	ELECTRICAL
GROUP 10	GENERAL ITEMS

SEE SPECIAL PROVISIONS FOR GROUP TIES

NOTES

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

THE NUMBER OF GROUP _____ CONTRACTS WHICH WILL BE
ACCEPTED IN THIS LETTING IS LIMITED TO _____



NOTICE TO ALL BIDDERS

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

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

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

LETTING QUESTIONS

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

**SPECIAL PROVISIONS
FOR
STATE
PROJECT NO. S-30-6(1045)**

GENERAL CONDITIONS

Bids for the work contemplated in this proposal form will be received at the office of the Nebraska Department of Transportation in Room 104 of the Central Office Building at 1500 Highway 2 at Lincoln, Nebraska, on June 14, 2018, until 1:30 P.M.

- a. Bids submitted by mail should be addressed to the Nebraska Department of Transportation, 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 2017 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 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.

GROUPS 1, 3, 4, 5, 6, 6A, 6B, 6C, 7, 7B, 8B, & 10 ARE TIED TOGETHER AND
BIDDING PROPOSAL FORMS FOR THIS WORK WILL BE ISSUED AND A CONTRACT
AWARDED TO A CONTRACTOR WHO IS QUALIFIED FOR GRADING OR CONCRETE
PAVEMENT.

**TRAINING SPECIAL PROVISIONS
(1-8-0618)**

This On-the-Job Training (OJT) Program was created by the Federal Highway Administration (FHWA) and the Nebraska Department of Transportation (NDOT) 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 NDOT Contractor-Specific On-the-Job Training (OJT) Program, OJT hours will be assigned to Contractors and will not be contract or project specific.
 - a. A Contractor who has received an OJT assignment will be allowed to provide training on any NDOT-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 NDOT.
 - b. This project does not have a contract-specific training requirement. NDOT has added 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, NDOT will allocate OJT assignments to Contractors based on the total average dollar amount of all work performed by a Contractor on NDOT-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 NDOT (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 NDOT-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. 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.
5. While trainees may be assigned to NDOT-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 NDOT.
6. The Contractor must use an OJT program approved by NDOT 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.

7. 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.
8. 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 NDOT regarding OJT information, documentation, and conflict resolution. If necessary, the EEO Officer may designate another individual to assist with the OJT monitoring responsibilities. NDOT must be provided the name and contact information for any such designee.
9. At least seven (7) days prior to commencing training, the Contractor must submit a "Request for Trainee Approval" form to NDOT 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.
10. If the Contractor submits a "Request for Trainee Approval" form to NDOT 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. NDOT 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.
11. Any training hours provided to a trainee prior to the Contractor receiving approval from NDOT will not be credited toward the Contractor's annual OJT assignment.
12. 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.)
13. 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 NDOT-let projects on which the Contractor is working.
14. At least one (1) day before all such transfers of trainees are made, the Contractor must provide NDOT 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.

15. Any training hours provided to a transferred trainee prior to the Contractor having notified NDOT of the transfer will not be credited toward the Contractor's annual OJT assignment.
16. 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 NDOT 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 NDOT will not be credited toward the Contractor's annual OJT assignment.

17. 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.
18. 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.
19. The Contractor will be reimbursed \$2.00 per each hour of training provided in accordance with an approved OJT program and the NDOT Training Special Provisions.
20. Contractors shall be allowed to transfer trainees or utilize trainees on other NDOT-let projects which do not contain the Training Special Provisions. NDOT will utilize a Change Order / Supplemental Agreement to incorporate the Training Special Provisions and the appropriate pay item into the contracts of such projects.
21. On all federally funded NDOT-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.

22. In order to document and evaluate a trainee's progress toward journey-level status, the Contractor must provide NDOT 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 NDOT.

23. 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.
24. Contractors must submit an annual summary report to NDOT 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.
25. 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. NDOT will make compliance determinations regarding the Training Special Provisions based upon either attainment of the annual goal or Good Faith Efforts to meet it.
26. 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. NDOT 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).

27. 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.)

28. NDOT 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 NDOT for a time period determined by the Director/State Engineer.

29. At the end of the calendar year, if the dollar amount of work the Contractor performed on NDOT-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.

30. 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 May 17, 2018.

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

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

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

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

Omaha Public Power District: Rehabilitation work to be performed prior to or concurrent with roadway construction. Conflicts are at the County Road crossings.
P.O.C. Steve Fanslau 402-636-3330.

Century Link: Rehabilitation work to be performed prior to or concurrent with roadway construction. Conflict only at County Road S intersections.
P.O.C Kim Jirovsky 402-721-9070

Great Plains Communications: Existing facilities are in the project area. Authorizations to proceed given April 2017. Relocation to start April 25, 2018.
POC Robert Marksmeier 402-533-4025

Northern Natural Gas: Facilities are located within the project limits, Ready to start construction July 17, 2018 with completion scheduled for approximately September 1, 2018.
P.O.C. Jeff Larson 402-398-7618.

Black Hills Energy: No Conflict

City of North Bend: No Conflict

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

CONDITIONAL STATUS OF RIGHT OF WAY

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

Unacquired Right-of-Way Tracts as follows:

Tract Number	Status of Tract	Hearing Date
5	The acquisition is complete, housing relocation benefits paid, & non-housing relocation benefits are ongoing. Do Not Disturb until Relocation Complete. (Personal Property)	N/A
9	The acquisition is complete, relocation benefits are still ongoing, & replacement home is being built. Do Not Disturb until Relocation Complete. (Residential)	N/A
30	The acquisition is contracts are signed, payment is being processed & housing relocation benefits are ongoing. Non-housing relocation benefits are ongoing. Do Not Disturb until Relocation Complete. (Payment)	N/A
30L	The acquisition is contracts are signed, payment is being processed & housing relocation benefits are ongoing. Non-housing relocation benefits are ongoing. Do Not Disturb until Relocation Complete. (Personal Property)	N/A

The Contractor will not be allowed to perform work on any tract listed as "Unacquired Right-of-Way Tracts" until legal and physical possession has been acquired by the State. If necessary, the Contractor will be granted an extension of time if a delay is caused because of the above tract(s) not being acquired.

- No encroachments on the old right of way.
- The right of way has been acquired in accordance with the current Federal Highway Administration directives covering the acquisition of real property.
- All necessary arrangements have been made for the right of way clearance to be undertaken and completed before physical construction begins.
- All necessary rights of way, including control of access rights when pertinent, have been acquired including legal and physical possession.
- Relocation of residential occupants has not been completed.
- Relocation assistance activities for business and moving personal property have not been completed.

SPECIAL PROSECUTION AND PROGRESS (Phasing)

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

The Contractor shall be required to coordinate with the Engineer prior to beginning any Phase 1 work to ensure that ROW conflicts on impacted tracts have been resolved (see STATUS OF RIGHT-OF-WAY).

US-30 and N-79 traffic shall be maintained at all times during this project as a two-lane two-way roadway by utilizing existing pavement, new pavement, temporary surfacing, and cross-overs as indicated in the plans.

The Contractor shall schedule their operations so that north-south county road traffic is maintained on every other county road at all times by utilizing either new gravel surface course/gravel embedment and/or new US-30 surfacing, as directed by the Engineer. County Road S shall not be closed until construction operations dictate, as directed by the Engineer.

The Contractor shall schedule their work so that the reconstruction of N-79 is completed and open to traffic prior to the placement of embankment from approximately Sta. 330+00 to Sta. 434+00 or the excavation of the new drainage ditch from Sta. 330+00 Lt to Sta. 434+00 Lt. The temporary roadway for N-79 traffic shall also be sufficiently removed to allow for positive drainage prior to beginning the earthwork described above. Phase 1, as shown in the plans, is amended to include the reconstruction of Highway N-79.

The removal of existing bridge structure(s) and the removal of existing structures on Tracts 5, 9, 10, 30 and 33 shall occur outside of the migratory bird nesting season, unless otherwise directed by the Engineer. All trees on the project have been topped except for Tracts 5, 9, 10, 25 and 30.

Access to farm fields, any residences or businesses located along the project shall be maintained at all times via temporary roads, county roads or other methods, as directed by the Engineer.

Upon completion of the project, the Department will be responsible for signage to indicate that the unused new paved portions of US-30 are closed to traffic.

SPECIAL PROSECUTION AND PROGRESS (Coordination with Others)

The Contractor for Project S-30-6(1045), CN 21558, Rogers – North Bend, shall be required to coordinate construction and signing activities with the Contractors for the following projects:

1. Project S-30-6(1046), CN 32033, Schuyler – Rogers. This project is currently under construction and consists of four lane divide roadway grading, culverts and concrete pavement along the existing alignment of US-30. Coordination will be required at the end point of the Schuyler-Rogers project and the beginning of the

Rogers – North Bend project. The estimated completion date of the pavement work is the end of 2018 and the estimated completion date of the Schuyler – Rogers project is May/June 2019.

2. Project S-30-6(1044), CN 20626, North Bend – Fremont. This project is tentatively scheduled to be let to contract in the July 2019 letting. This project will consist of four-lane grading, culverts, bridges and concrete pavement. Coordination will be required at the end point of the Rogers – North Bend project and the beginning of the North Bend – Fremont project.

SPECIAL PROSECUTION AND PROGRESS (Migratory Bird Responsibility)

The Contractor will be responsible for preventing migratory birds from nesting on this project until the Tentative Start or an approved, earlier, Contractor-requested start date, whichever occurs first, and throughout the duration of the project, in accordance with other provisions contained in the contract.

The Department will have the trees topped by others prior to April 1, 2018, where possible. Refer to **STATUS OF RIGHT-OF-WAY**.

The Department will issue the Contractor a Notice to Proceed for this migratory bird-related work, but the work can be performed without the charge of Working/Calendar Days prior to the tentative starting date shown in the Proposal or other mutually agreed upon date for the remainder of the work to commence --- or the actual date the remainder of the work commences --- whichever occurs first.

NOTICE TO BIDDERS (ELECTRONIC PLAN DATA)

General

This specification provides for the use of Electronic Plan Data for project construction. Use of Electronic Plan Data is intended for the contractor's convenience.

Disclaimer

The Department does not guarantee or warranty that the Electronic Plan Data accurately represents the contract plans. The paper copies of the letting plans represent the contract plans and will be used to decide any and all disputes. The governing hierarchy will be in accordance with Subsection 105.04 of the Standard Specifications. The Contractor assumes all risks for the use of the Electronic Plan Data.

Contractor

The Contractor has the option of using the Electronic Plan Data for project construction. The Contractor may use any type of equipment and software systems that result in achieving the requirements stipulated in the contract. The Contractor shall provide all equipment, software, technical support and Electronic Plan Data conversion required at no cost to the Department.

The Electronic Plan Data furnished by the Department attempts to represent the completed project. Segments of the project may not be represented by the Electronic Plan Data. The Contractor may be required to construct segments of the project, not represented by the Electronic Plan Data, using conventional methods at no additional cost to the Department.

The Contractor shall bear all costs for the correction of errors and reconstruction work that occurs due to software failure, equipment failure, ineffective satellite reception, errant Electronic Plan Data conversion or errors in the Electronic Plan Data.

Delays due to software failure, equipment failure, ineffective satellite reception, errant Electronic Plan Data conversion or errors in the Electronic Plan Data will not be justification for additional compensation or granting contract time extensions.

NDOT

The Department will make the Electronic Plan Data available for selected projects only. Upon the advertisement for bids, the Electronic Plan Data will be available on the NDOT Storefront website. The Electronic Plan Data was originally created with the computer software applications MicroStation (CADD Software) and GEOPAK (Civil Engineering Software). The Electronic Plan Data will be made available in the following formats.

1. Documentation File (metadata about the files provided, descriptions, etc.)
2. CAD Files (*.DGN format)
 - a. Alignment File(s)
 - b. Roadway Design Feature File(s)
 - c. ROW Feature File (as applicable)
 - d. Wetlands Feature File (as applicable)
 - e. Original Topography
 - f. Cross Sections (as applicable)
 - g. 3D Design Breakline File
3. Alignment Data
 - a. LandXML Format
4. Machine Control Surface Model Files (LandXML format)
 - a. Existing Ground
 - b. Proposed Finished Grade
 - c. Proposed Grading Surface
5. Superelevation Transition Diagrams
 - a. Shown in Plans (typically on 2-N, General Information Sheets)

- b. Word Document (unless a superelevation diagram is shown on the plans)

**NOTICE TO BIDDERS
(Granular Fill)**

Granular fill can only be placed at locations approved by the Materials and Research Geotechnical Engineer. Granular fill shall be drained to the foreslope at an elevation that is higher than the roadway ditch. If granular fill is used, it shall have an 8" cohesive topsoil cap for vegetation establishment.

**NOTICE TO BIDDERS
(Storm Water Pollution Prevention Plan)
(1-17-1217)**

The Contractor shall understand the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit that authorizes the storm water discharges associated with industrial activity from the construction site. For reference, the general permit is posted on the Department's website.

Additionally, the Contractor, as evidenced by their signature on this proposal, agrees and understands that, if awarded the contract on this project, he/she:

- 1) becomes a co-permittee, along with the owner(s), to the Nebraska Department of Environmental Quality NPDES General Permit for Storm Water Discharges from construction sites on this project;
- 2) is legally bound to comply with the Clean Water Act to ensure compliance with the terms and conditions of the storm water pollution prevention plan developed under the NPDES permit and the terms of the NPDES permit; and
- 3) will hold the owners harmless for damages or fines arising as a result of noncompliance with the terms of the storm water permits and authorizations associated with the work on this project.

**STORM WATER DISCHARGES
(1-43-1217)**

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 (1-43-1217)

All bidders must provide to the NDOT 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 NDOT 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.

WORKER VISIBILITY (1-43-1217)

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."

**SPECIAL PROSECUTION AND PROGRESS
(Federal Immigration Verification System)
(1-43-1217)**

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 NDOT 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.

**PROPOSAL GUARANTY BID BOND (BID BOND)
(1-43-1217)**

Paragraph 1.b. of Subsection 102.14 in the Standard Specifications is void.

**MEASUREMENT AND PAYMENT
(Partial Payment)
(1-43-0318A)**

Paragraph 6 of Subsection 109.07 of the Standard Specifications is void and superseded by the following:

6. When payrolls must be submitted, the Department may withhold partial payments if the Contractor does not provide all payrolls (including Subcontractor payrolls) within seven (7) days of each payroll ending date.

**WAGES AND CONDITIONS OF EMPLOYMENT
(Employment of Labor – Payrolls)
(1-43-0318A)**

Paragraph 3 of Subsection 110.03 of the Standard Specifications shall be amended to include the following:

- i. On projects requiring submittals of certified payrolls, NDOT encourages all Contractors to submit their payrolls electronically; however, until the December 2018 letting both paper and electronic submissions will be accepted. If a Contractor elects to submit electronic payroll records, the submittal shall meet the following requirements.
 - (1) Format – Portable Document Format (PDF)
 - (2) Size of file – Limited to 25 MB
 - (3) Signatures – A scanned copy of the original certified payroll or Adobe digitally signed.

Payrolls certified by the Prime Contractor must be emailed to the Project Manager within seven (7) days of the payment date thereof. Payrolls must be complete and accurate.

NDOT anticipates that beginning with the January 2019 letting that only electronic submissions of the payrolls will be accepted.

**LIABILITY INSURANCE
(1-49-0118)**

Paragraph 1.b.(5) of Subsection 107.15 in the Standard Specifications is void and superseded by the following:

- (5) Automobile liability coverage shall be obtained from an insurance carrier who is licensed in Nebraska and any other State in which the project is located.

Paragraph 1.c. of Subsection 107.15 is amended to include the following:

Limit: Statutory coverage for Nebraska and for any other State in which the project is located.

Paragraph 1.c.(3) of Subsection 107.15 is void and superseded by the following:

- (3) Workers' compensation coverage shall be obtained from an insurance carrier who is licensed in Nebraska and any other State in which the project is located.

Paragraph 1.f.(5) of Subsection 107.15 in the Standard Specifications is void and superseded by the following:

- (5) Prior to execution of the contract, Contractor shall provide the State of Nebraska, Department of Transportation evidence of such insurance coverage in effect in the form of an ACORD® (or equivalent) certificate of insurance executed by a licensed representative of the participating insurer(s). Certificates of insurance shall show the Nebraska Department of Transportation as the certificate holders.

Paragraph 1.f. of Subsection 107.15 is amended to include the following:

- (9) For so long as insurance coverage is required under this agreement, the Contractor shall have a duty to notify the State of Nebraska Department of Transportation (State) 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 State by mail (return receipt requested), hand-delivery, email, or facsimile transmission within 2 business days of receipt by Contractor of any such notice by an insurance carrier. Notice shall be sent to the State at the following address:

Nebraska Department of Transportation
Construction Division -- Insurance Section
1500 Highway 2, P.O. Box 94759
Lincoln, NE 68509-4759
Facsimile No. 402-479-4854
NDOT.ConstructionInsurance@nebraska.gov

CONSTRUCTION DETAILS

TEMPORARY WATER POLLUTION CONTROL (2-1-1217)

Section 204 in the Standard Specifications is void.

**CONSTRUCTION STORMWATER MANAGEMENT CONTROL
(2-1-1217)**

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
(2-1-1217)**

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
(2-1-1217)**

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 NDOT Erosion and Sediment Control Inspector Certification is obtained by completing an Erosion and Sediment Control Inspector Training Course provided by the Nebraska Department of Transportation 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
(2-1-1217)**

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 NDOT-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) (2-1-1217)

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 NDOT 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 NDOT's Avian Protection Plan located at:

<http://www.dot.nebraska.gov/media/3952/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
(2-1-1217)**

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 | Pay Unit |
| | Storm Event Restoration – Incentive | Each |
| | Storm Event Restoration – Disincentive | 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.

**HAZARDOUS MATERIALS MANAGEMENT
(2-1-1217)**

Description

This work shall consist of minimizing the exposure of the environment, including waters of the state, to hazardous materials. This specification also includes the requirements for clean-up of releases of hazardous materials.

Material Requirements

1. Prior to beginning work on the project, the Contractor shall prepare a Spill Prevention and Control Plan (SPCP) that clearly states measures to prevent a spill, contain a spill, clean up a spill, dispose of contaminated materials and train personnel to prevent and control spills. The plan shall include the notification contacts, as well as the processes and timeframes to address the situation in the event that a spill occurs. The following shall be included in the plan:
 - a. A site plan showing locations for loading of equipment and materials, storage of equipment and materials, equipment fueling and wash areas, portable toilet locations and waste disposal areas.
 - b. Descriptions of the following that may be used on projects:
 - i. Best Management Practices (BMPs) for secondary containment.

- ii. Description of spill response equipment and materials, including safety and clean up equipment.
 - iii. Preventative inspection and maintenance techniques for equipment to minimize leaks.
 - iv. Procedures for filling tanks and equipment to prevent spills.
 - v. Procedures for containing, diverting, isolating and cleaning up a spill.
 - vi. Procedures and BMPs to be administered at bridge and culvert sites to ensure that hazardous materials do not runoff.
 - (1) When water is present, immediate action to contain and remediate a spill is required.
 - (2) The Contractor shall notify the NDOT Project Manager and NDEQ upon release of any quantity of material to waters of the state. The NDOT Project Manager will notify the NDOT Environmental Section upon notification of a release.
 - vii. Spill training agenda and materials for the Contractor's staff and subcontractors.
- c. Identify individuals responsible for implementing the plan.
 - d. Specify how and when to notify appropriate authorities such as Nebraska Department of Environmental Quality and Nebraska State Patrol.
2. The Contractor shall provide and maintain a spill kit with appropriate materials to clean up minor spills on site as described in the Spill Prevention and Control Plan. A minor spill is defined as a release that is less than the reportable quantity for a given material and not entering waters of the state.
 3. Material Safety Data Sheets (MSDS) shall be maintained on site for all hazardous materials being used or stored for the project. The MSDS Sheets shall contain reportable quantities and spill response information.

Construction Methods

1. The Contractor shall store paints, solvents, pesticides, petroleum products, and other hazardous materials in areas with secondary containment.
2. Hazardous materials storage, including portable toilets, shall be restricted to specific areas away from:
 - a. vehicular traffic
 - b. restricted areas shown on the plans
 - c. waters of the state, including wetlands (50 feet minimum distance)

- d. Wellhead Protection Areas, unless designated in a Wellhead Protection Plan that has been approved by the local authority.
3. The Contractor shall inspect hazardous material containers weekly to ensure that all containers are clearly identified and that no leaks are present.
4. The Contractor shall inspect the site weekly to ensure that cleanup procedures are posted and that a spill kit is adequately stocked and readily available.
5. The Contractor shall verify and update the SPCP site maps as necessary during inspections to accommodate changes in the site.
6. A spill kit shall be readily available, in close proximity and appropriately stocked when applying petroleum based or other hazardous materials to bridge and culvert sites.
7. The Contractor shall develop, implement and maintain a training program regarding hazardous materials management. Training of the Contractor's staff and subcontractors shall be conducted to ensure that workers are knowledgeable of the procedures, materials and equipment outlined in the SPCP. The Contractor shall maintain a database of individuals that have been trained.
 - a. Specific hazardous materials and their handling procedures shall be discussed during safety briefings.
8. The Contractor shall maintain and provide to the Project Manager, upon request, a record of all spills occurring on site. This record shall include:
 - a. The circumstances leading to the spill
 - b. The date of the release
 - c. Measures taken to resolve the incident
 - d. Measures taken to prevent a recurrence
9. The Contractor shall follow NDEQ notification procedures for all spills in excess of a reportable quantity as defined by NDEQ Title 126 or the products MSDS Sheets. The NDOT Project Manager will notify the NDOT Environmental Section.
10. The Contractor shall follow all local, state and federal regulations associated with the release and/or cleanup, including disposal of the hazardous material.

Method of Measurement and Basis of Payment

1. Direct payment will not be made for work associated with Hazardous Materials Management, but is considered subsidiary to the items for which direct payment.
2. The Contractor shall solely bear all penalties and costs associate with the containment, cleanup, remediation and disposal of material associated with a spill.

**ACCEPTANCE TESTING OF SOILS BY USE OF THE LIGHT WEIGHT
DEFLECTOMETER (LWD) SCOPE
(2-2-1217)**

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

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

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

Option 1

A. Determination of DTV using a Test Strip

1. A test strip shall be constructed for each soil type to determine the deflection target value.
2. A new test strip shall be constructed when there is an observed change in material or as determined by the Engineer.
3. The test strip dimensions for roadway embankment and subgrades shall have a minimum length of 200 feet and a width equal to the embankment or roadway. The total thickness shall be no less than 6 inches for roadway subgrade and no less than 1 foot and no more than 3 feet for roadway embankment.
4. The test strip dimensions for trenches, culverts, and structures shall have a minimum length of 10 feet and a width equal to that of the excavation. The total thickness shall be no less than 1 foot and no more than 3 feet.
5. The optimum moisture of fine grained soils shall either be determined in the NDOT Branch Lab or Central Lab, and shall be based on a correlation with the Plastic Limit or determined from AASHTO T-99. A 10-lb sample of proposed material shall be submitted to the NDOT Branch Lab or Central Lab a minimum of 14 days prior to grading operations.
6. The moisture content for granular soils shall be "as necessary" to achieve proper compaction.
7. The moisture content limits of the soil shall follow the requirements provided in Table 1.
8. The test strip area construction shall be incidental to the embankment construction.
9. The testing rate during the test strip construction is provided in Table 2.

Table 1 - Moisture Requirements

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

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

Table 2 - Test Strip Testing Rate

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

* Number of passes with compaction equipment as described in paragraph 13c of Subsection 205.03 of the NDOT Standard Specifications for Highway Construction.

B. Test Strip Construction and Testing

1. Prior to placing the fill material for the test strip, the subgrade shall be scarified and re-compacted.
2. The fill material shall be placed with a lift thickness no greater than 8 inches uncompacted.
3. The test strip shall be constructed with uniform material and moisture content, and compaction; until it meets the requirements of numbers 3 or 4 of Section A of this provision.

4. The deflection target value is obtained when:
 - i. The moisture content is within the acceptable range.
 - ii. The average of the deflection test measurements for three consecutive passes of compaction equipment does not change by more than 10% with additional compaction. The DTV shall be based on the lowest average deflection test measurement from these passes.
5. A 10-lb sample of the test strip material shall be submitted to the NDOT Branch Lab or Materials and Research Soil Lab for index testing.
6. The DTV shall be re-evaluated when:
 - i. Deflection test measurements are consistently less than the DTV. (3 out of 5 consecutive deflection test measurements are less than 0.80 of the DTV).
 - ii. Failing test results are consistently occurring and adequate compaction is observed.

Option 2

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

1. Prior to construction a 10-lb bag of representative material shall be submitted to the nearest NDOT Branch Lab or Materials and Research Soil Lab for each different soil type no less than 21 days prior to grading operations.
2. From the laboratory testing NDOT will determine the Nebraska Group Index (NGI) for each soil type submitted and provide a correlated minimum DTV and optimum moisture content.
3. If no correlation data is available for an individual NGI, a test strip shall be used to determine the DTV as discussed in parts A and B in this provision.
4. The DTV shall be re-evaluated when:
 - i. Deflection test measurements are consistently less than the DTV. (More than 20% of the deflection test measurements are less than 0.80 of the DTV).
 - ii. Failing test results are consistently occurring and adequate compaction is observed.

Acceptance Testing

1. The Deflection Target Value for use as acceptance testing shall be:

DTV \leq 1.10 x average deflection value determined from Option 1, Part B, of this provision

DTV \leq Correlated DTV determined from the NGI correlation, Option 2, Part C
2. The testing frequency for moisture and deflection shall follow the NDOT Materials Sampling Guide.
3. The moisture content of soil shall be performed using NDOT's approved equipment and methods. Approved equipment includes: 1) hot plates, stove, or microwave, 2) Speedy Moisture Method, or 3) Laboratory oven method.
4. Moisture content results shall be reported to the nearest tenth of a percent.

GRANULAR/COHESIVE EMBANKMENT

Available geotechnical records indicate existing soils in the area consist of approximately 8 to 10 feet of cohesive soil over granular material. The use of Stabilized Subgrade Type Lime assumes cohesive soil will be used for roadway embankment. Granular embankment may be used in drainable areas as approved by the Geotechnical Engineer. Granular embankment must be capped with a minimum 10" of cohesive soil for compatibility with Stabilized Subgrade Type Lime. Cohesive soil will also be required at the bottom of the roadway embankment to a point 12 inches above the ditch bottom. All cohesive soil shall have a liquid limit of less than 50.

The Contractor shall maintain drainage of the mainline embankment during construction. Appropriate measures shall be taken so that roadway drainage is not impacted by the construction of any adjacent haul road. These drainage measures shall be considered subsidiary to items for which direct payment is made. Also refer to NOTICE TO BIDDERS (Granular Fill) provision in the Contract for additional information.

SALVAGING AND PLACING TOPSOIL

Subsection 207.01 in the Standard Specifications is amended to provide that the salvaged topsoil shall be placed 4 inches thick on all disturbed areas.

CONSTRUCTION AND OBLITERATION OF TEMPORARY ROADS

The culvert pipe for temporary roads will be furnished and installed by the grading contractor. The pipe need not be new, and will remain the property of the Contractor when no longer needed. Excavation and connection bands required to install the pipes will be subsidiary to the pipes.

The embankment required to construct the temporary road is included in the pay quantity of Earthwork Measured in Embankment shown in Group 1.

When the temporary road is no longer required, it shall be obliterated by the grading contractor. The surfacing shall be removed, the embankment removed, and the area graded to the original cross sections.

The removal of the temporary surfacing is included in the cost of the placing the temporary surfacing as prescribed elsewhere in these Special Provisions.

The work of obliterating the embankment shall be paid for as "Excavation (Established Quantity)".

The removal of the culvert pipes, will not be measured and paid for directly, but will be considered subsidiary to "Excavation (Established Quantity)".

BITUMINOUS FOUNDATION COURSE (3-1-0118)

Paragraph 2.b.(2)(i) of Subsection 307.02 in the Standard Specifications is void and superseded by the following:

- (i) If the salvaged bituminous material is to be obtained from existing stockpiles described in the contract, the salvaged bituminous material shall be screened to meet the requirements of Paragraph 2.b. prior to delivery to the roadway. Any oversized bituminous material remaining from the screening operation shall remain the property of the Department.

FOUNDATION COURSE 4"

The Contractor shall have the option of using either Aggregate Foundation Course-D, Crushed Concrete Foundation Course or Bituminous Foundation Course; and the Contractor shall bid the pay item "Foundation Course ____" accordingly.

These different foundation courses may be used interchangeably throughout the project, with the exception being that the same type of foundation course shall be used across the entire width of a pavement section to provide uniform drainage across that template. The Contractor shall make every attempt to use the same type of foundation course in long paving runs and any changes in foundation course type shall be approved by the Engineer.

Regardless of the type of material used it shall be obtained from Contractor sources, the cold milling operations or pavement removal operation on the project.

Regardless of the type of material used it shall be measured and paid for as Foundation Course 4”.

Method of Measurement

Foundation Course shall be measured as prescribed in Paragraph 2. of Subsection 307.04.

Paragraph 2. of Subsection 307.04 is amended to include the following:

Any increased depth Foundation Course of more than 4 inches will not be measured for payment. Payment for such increased depth shall be considered as included within payment for Foundation Course 4”.

Basis of Payment

Amend Subsection 307.05 of the Standard Specifications to include the following:

1.	Pay Item	Pay Unit
	Foundation Course_____	Square Yard

FOUNDATION COURSE

Amend Subsection 307.03 of the Standard Specifications to include:

Equipment

A minimum of one self-propelled double drum vibratory roller shall be required. The vibratory roller shall have a minimum operating weight of 18,000 pounds.

Compaction and Stiffness

The Department shall monitor the in-place stiffness by measuring the deflection of the foundation course by using a control strip by performing Light Weight Deflectometer measurements of the foundation course for acceptance. Refer to NDOT Test Method T 2835 for the proper operation of the Light Weight Deflectometer (LWD). The procedure for conducting Lightweight Deflectometer testing is as follows:

1. The deflection test is defined as the average of the fourth, fifth, and sixth drops of the deflectometer at one location.
2. The deflection value is defined as the average of 3 test locations.
3. The Deflection Target Value (DTV) is the lowest deflection value determined by using a control strip.

4. A single coverage is defined as the compacting of unbound material over a given point a single time.
5. A new control strip shall be constructed when there is an observed change in material or as determined by the Engineer.

A Control Strip shall be constructed for the purpose of determining the Deflection Target Value.

6. The control strip dimensions for roadway shall have a minimum length of 200 feet.
7. The control strip area construction shall be incidental to the pay item Foundation Course____.
8. During construction of the control strips, the Contractor shall make repeated compaction coverages. When the material is visibly densified, the Engineer will take deflection tests at 3 locations to get an average deflection value. Following each test, additional coverages shall be conducted and deflection tests taken until a Deflection Target Value is established.
9. The Deflection Target Value of the control strip shall be determined by compacting the foundation course to a point that three consecutive coverages do not change the deflection by more than 10%. The DTV shall be based on the lowest average deflection test. The roller procedure shall have a minimum of 6 consecutive coverages unless an alternate rolling pattern is approved by the Engineer.
10. The Deflection Target Value shall be re-evaluated when:
 - i. Deflection test measurements are consistently less than the DTV. (3 out of 5 consecutive deflection tests are less than 0.8 of the DTV).
 - ii. Failing test results are consistently occurring and adequate compaction is observed.

Acceptance Testing

A passing deflection test is defined as a deflection value that is less than $1.10 \times \text{DTV}$. The frequency of testing deflection is 1 test at one location for every 1500 square yards or less.

GRAVEL EMBEDMENT

Description

1. This work shall consist of spreading gravel over the surface of the roadbed, scarifying roadbed to blend the gravel into the subgrade soil followed by compacting the area to create a stable base for the Gravel Surface Course.

Materials

1. Gravel for embedment shall conform to the requirements of Gravel Surfacing in Paragraph 6. of Subsection 1033.02 of the Standard Specifications for Highway Construction.

Construction Method

1. A two-inch layer of gravel shall be uniformly spread over the surface of the roadbed that has been prepared in accordance with the Contract and Plans.
2. The gravel layer and roadbed shall be scarified to uniformly blend the gravel into the upper four inches of the subgrade soil.
 - a. Water shall be added as necessary to facilitate compaction.
3. This scarified and blended roadbed surface shall be compacted with a minimum number of 4 passes with a padfoot roller until firm and stable, as determined by the Engineer.
4. The scarification, blending and compaction work shall not alter the cross slope of the roadbed.
5. After the gravel embedment is completed, the Contractor shall place and spread one inch of Gravel Surface Course on the roadway.
6. Additional gravel shall be placed and spread during the life of the project at the Engineers discretion.

Method of Measurement

1. Gravel Embedment shall be measured by the Square Yard of completed and accepted work.
2. All gravel used to build the Gravel Embedment and Gravel Surface Course will be measured and paid as Gravel Surface Course in accordance with Section 310 of the Standard Specifications.
3. Water will not be measured and paid for but shall be considered subsidiary to the item "Gravel Embedment."

Basis of Payment

Pay Item	Pay Unit
1. Gravel Embedment	Square Yard (SY)
2. Gravel Surface Course	Cubic Yard (CY) or Ton (TN)
3. Payment is full compensation for all work prescribed in this Special Provision.	

STABILIZED SUBGRADE TYPE LIME

Description

The work of constructing the stabilized subgrade shall consist of reshaping the subgrade and constructing and compacting an 8 inch layer to the widths shown in the plans, of pulverized soil from the subgrade, hydrated lime and water to provide a firm, stable foundation for the subsequent construction. The stabilized subgrade shall be constructed in conformity with the lines, grades, quantity and material requirements, and typical cross section shown in the plans. The item "Stabilized Subgrade Type Lime" was established for this project assuming cohesive soils may be utilized for the subgrade material. Subgrade material shall be submitted to NDOT Materials and Research Division, Pavement Design Engineer, for evaluation prior to construction. If the NDOT Material and Research Division determines that the material is non-cohesive; then the items "Hydrated Lime", "Stabilized Subgrade Type Lime" and "Water" may be under-run in certain areas dependent upon the soil samples submitted for use in those areas.

Material Requirement

1. Pebble Quicklime or Hydrated lime shall conform to the requirements of ASTM C977. Pebble Quicklime may be used in lieu of Hydrated Lime if the dry placing method of application is used. If the Contractor elects to use Pebble Quicklime it shall be measured and paid as Hydrated Lime.
2. Water shall conform to the requirements of Section 1005 of the Standard Specifications.

Equipment

1. A recycler capable of pulverizing and mixing, to a homogeneous material, the subgrade soil with lime and water. The recyclers mixing chamber shall have a spray bar to incorporate water into the subgrade soil and lime.
2. Distributors used for applying water shall conform to the requirements of Subsection 301.02.
3. When hydrated lime slurry is used for the treatment, the Contractor shall furnish facilities for preparing the hydrated lime slurry and accurately determining the quantities of lime and water used in the mixer.

4. Equipment for use in trimming stabilized subgrade shall conform to the requirements of Section 302.
5. A minimum of one self-propelled pad foot compactor and one pneumatic roller shall be required. The pad foot compactor shall be vibratory and shall consist of one or more drums with pads or feet projecting no less than 6.5 in. The static load on the individual pads shall be no less than 200 psi exerted on a single row of pads or feet parallel to the axle of the drum.

Example: pad area = 4"x6" =24 in², 3 pads in a row make contact at one time, static load on drum is 16000 lbs., 16000 lbs. ÷ (24 in²x3) = 222 psi.

The pneumatic-tired roller shall have wide, smooth treads and uniform air pressure. The tires shall be staggered to provide complete coverage of the area. Sufficient weight is required to provide a minimum of 225 lbs. per inch of tire width. The tire pressure shall be no less than 60 psi with a tire variance no more than 5 psi.

Application of Hydrated Lime

1. Lime placement on the subgrade shall be accomplished by the methods hereinafter described as "Dry Placing", or "Slurry Placing" at the Contractor's option. Prior to the placement of the lime, the subgrade shall be adjusted to the typical cross section shown in the plans. The quantity of lime to be applied shall be determined by the Materials and Research Division Laboratory.
2. Dry Placing
 - a. After the subgrade has been adjusted to the typical cross section shown in the plans, the lime shall be placed on the surface of the subgrade and distributed in a layer of uniform thickness over the entire width of the area being treated. A spreading device for distribution of the lime shall be required if using a powdered lime. Powdered lime is defined as a lime with 100% passing the 3/8" sieve. The spreading device shall be capable of spreading the additive both laterally and longitudinally in an even and accurate manner. Spreading with a motorgrader will not be allowed when using powdered lime. The lime shall not be placed on the subgrade when the wind is blowing so that the loss of lime cannot be satisfactorily controlled. After the lime has been uniformly distributed, it shall be sprinkled with water. A motorgrader may be used to spread coarse lime if it can be spread laterally and longitudinally in an even and accurate manner to the satisfaction of the Engineer.
3. Slurry Placing
 - a. A slurry shall be prepared by combining hydrated lime and water in a ratio of approximately one ton of hydrated lime to 500 gallons of water, either in a central mixing tank or directly in the tanks used for distribution. The mixing tank shall be equipped with means of agitating the slurry to provide a uniform mixture and prevent the lime from settling after mixing. Water shall be measured with a calibrated meter and the hydrated lime shall be weighed on approved scales or the quantity determined by a count of bags used.

- b. After the subgrade has been adjusted to the typical cross section shown in the plans, the hydrated lime slurry shall be applied to the surface of the subgrade by means of distributors equipped with means of agitating the slurry during hauling and spreading. The number of applications and the rate of application shall be such that the total application of residual lime per square yard shall be uniformly deposited over the entire width of the area being treated and the quantity of slurry in any one application shall be such that run-off will not take place. The surface of the material being treated may be lightly scarified by use of a spike-tooth harrow or other comparable equipment closely following the distributor to facilitate absorption and prevent run-off.

Construction Methods

1. Materials and quantities used on the job shall be same used for the Mix Design. Any change in the quantities, quality or Suppliers shall be approved by the Materials and Research Pavement Design Engineer prior to its use on the project.
2. The Contractor shall provide adequate protection for the lime against moisture. Lime shall be hauled or stored in suitable moisture proof dry bulk trailers or containers. The use of tarpaulins for the protection of the lime will not be allowed. Lime which has become caked or lumpy shall not be used. Lime which has been spilled shall not be used.
3. The subgrade soil shall contain no frost and the atmospheric temperature shall be at least 40° F and rising.
4. The subgrade mixing procedure shall be the same for "Dry Placing" or "Slurry Placing" as hereinafter described.
5. The portion of the roadbed being treated shall be trimmed to within ½ inch of the finished elevation by use of conventional equipment, then scarified to loosen the subgrade soil to the full width and depth of the lime treated subgrade. If necessary the larger chunks or pieces of soil shall be broken down by the use of disc harrows, sheepsfoot rollers or other suitable equipment. If the plans show trimming of the subgrade to provide earth shoulder construction material, trimming shall be done prior to incorporating lime into the subgrade.
6. Preliminary mixing of lime and water shall be accomplished throughout the scarified material with a machine capable of pulverizing the existing subgrade to the depth required by these specifications and to a minimum width of not less than 8 feet in a single pass operation. The pulverizing machine shall be capable of blending and mixing, to a homogeneous material, the pulverized subgrade with the lime and water. The machine shall be equipped with standard automatic depth controls and be capable of maintaining a constant depth and width. Care shall also be taken to avoid mixing the lime with a greater quantity of the subgrade soil than is required to build the compacted thickness specified. During

the preliminary mixing, water shall be added to provide a moisture content of 3 to 5 percentage points greater than optimum moisture content. The optimum moisture content shall be determined by NDOT T 99. Preliminary mixing shall be continued until all chunks of soil have been reduced to a maximum of 2 inch in size.

7. The material shall than be bladed into approximately the final cross section and rolled with pneumatic-tired rollers to seal in the moisture and to insure against excessive wetting from rain. The material shall be cured in this condition for a period of 48 hours in order for the reaction of the lime and water to soften the remaining chunks of soil. The surface shall be lightly sprinkled during this period to compensate for evaporation loss.
8. Following the curing period, final mixing shall be performed with the pulverizing machine until the mixture is uniform throughout and chunks of soil and lime have been broken down to the extent that all will pass a 1-inch sieve and not more than 30 percent will be retained on the No. 4 sieve. The moisture content at the completion of the mixing shall be within plus or minus two percentage points of the optimum moisture percentage, determined by NDOT T 99.
9. After mixing, the material shall again be shaped to the proper cross section and compacted with padfoot rollers. Final shaping with a motor grader and final rolling with pneumatic-tired rollers will then be accomplished. Water may be added during the compaction and finishing operations to compensate for evaporation loss.
10.
 - a. After the required compaction has been attained, the subgrade shall be trimmed in accordance with the requirements of Subsection 302.03.
 - b. After the trimming operation has been completed, the surface of the stabilized subgrade shall be lightly sprinkled with water at frequent intervals to offset the effects of evaporation, for a period of 3 days. No construction traffic, except for water trucks, will be allowed on the surface of the stabilized subgrade during the curing period.
11. Any damage to the stabilized subgrade shall be repaired at the Contractors expense.

Maintenance of the Compacted Subgrade

Maintenance of the lime treated subgrade shall be the responsibility of the Contractor until the material for the subsequent construction has been placed. Water used to maintain the subgrade after the 3-day curing period and the work of maintaining the subgrade, prior to the subsequent construction will not be paid for directly but shall be considered to be subsidiary to any or all of the items for which the contract provides that direct payment is made.

Sampling and Testing

Sampling and testing shall be completed according to Section 10 of the Materials and Tests Division Material Sampling Guide.

A minimum of one 150 pound sample(s) of subgrade soil and a 15 pound sample of the lime shall be submitted for acceptance testing and mix design a minimum of 21 days prior to beginning the Stabilized Subgrade work. Additional subgrade soil samples shall be submitted for each type of soil used on the project.

If the Contractor intends to slake pebble lime to hydrated lime, the lime sample must indicate that quicklime will be slaked to hydrated lime in the field so this condition can be mimicked in the lab. In addition, inform the Pavement Design Engineer of the Contractor's intention to slake quicklime to hydrated lime so sample calculations are reported to the field.

Compaction and Soil Stiffness Requirements

The soil stiffness is an in-place measurement of the deflection of the Stabilized Subgrade measured by NDOT personnel performing Light Weight Deflectometer measurements on the processed material for acceptance. Refer to NDOT Test Method T 2835 for the proper operation of the Light Weight Deflectometer (LWD). The procedure for conducting Lightweight Deflectometer testing is as follows:

1. The Deflection test is defined as the average of the fourth, fifth, and sixth drops of the deflectometer at one location. The first 3 drops are to be used to seat the LWD.
2. The deflection value is defined as the average of 3 test locations.
3. The Deflection Target Value (DTV) is the lowest deflection value determined by using a control strip. A single coverage is defined as the compacting of unbound material over a given point a single time.
4. A new control strip shall be constructed when there is an observed change in material or as determined by the Engineer.

A Control Strip shall be constructed for the purpose of determining the Deflection Target Value.

5. The control strip dimensions have a minimum length of 200 feet.
6. The control strip construction shall be incidental to the pay item Stabilized Subgrade Type Lime.
7. The optimum moisture content shall be in an acceptable range of optimum moisture to plus 2%. The moisture content shall be determined by AASHTO T99 at the NDOT Materials & Research Central Lab.
8. During construction of the control strips, the Contractor shall make repeated compaction coverages. When the material is visibly densified, the engineer will take deflection tests at 3 locations to get an average deflection value. Following

each test, additional coverages shall be conducted and deflection tests taken until a Deflection Target Value is established.

9. The Deflection Target Value of the control strip shall be determined by compacting the processed material to a point that three consecutive coverages do not change the deflection by more than 10%. The DTV shall be based on the lowest average deflection test. The roller procedure shall have a minimum of 6 consecutive coverages unless an alternate rolling pattern is approved by the Engineer. A minimum of one pneumatic tire roller coverage is required.
10. The Deflection Target Value shall be re-evaluated when:
 - a. Deflection test measurements are consistently less than the DTV. (3 out of 5 consecutive deflection tests are less than 0.8 of the DTV).
 - b. Failing test results are consistently occurring and adequate compaction is observed.

Acceptance Testing

11. A passing deflection test is defined as a deflection value that is less than $1.10 \times \text{DTV}$.
12. The moisture content of soil shall be performed using NDOT approved equipment and methods. Approved equipment includes: 1) hot plates, stove, or microwave, 2) Speedy Moisture Method, or 3) Laboratory oven method. Moisture content results shall be reported to the nearest tenth of a percent.
13. The frequency of testing deflection and moisture content is 1 test at one location for every 1500 square yards or less.

Method of Measurement

1. Hydrated lime shall be measured by the ton of acceptable material used in the work. If the Contractor elects to deliver quicklime and slake it to a hydrated lime slurry, the calculated method will be used to determine the amount of hydrated lime delivered. The calculation method is based on the certified percent lime purity for each load and the relationship that Quicklime (CaO) $\times 1.32 =$ Hydrated Lime $\text{Ca}(\text{OH})_2$. Calculations are shown below:

Quicklime Delivered, tons \times % purity $\times 1.32 = A$

Quicklime Delivered, tons \times % inert material $\times 1.0 = B$

$A+B =$ Total Hydrated Lime Produced, tons (Pay Quantity)

2. Water used in preparing the slurry and water that is applied during preliminary mixing, curing and final mixing, or which is applied as directed by the Engineer, except water used for maintenance of the lime treated subgrade after the 3 day curing period, shall be paid for at the contract unit price per Mgallon for the item "Water".
3. "Stabilized Subgrade Type Lime" measured by the Square Yard is not measured directly. The overlying pavement is measured, and the pavement quantity is used as the stabilized subgrade quantity.

Basis of Payment

1. Hydrated lime that is used in the work, measured as provided herein, shall be paid for at the contract unit price per ton for the item, "Hydrated Lime". This price shall be full compensation for furnishing, delivering, and distributing the lime, for preparing the hydrated lime slurry, and for all equipment, labor, tools and incidentals necessary to complete the work.
2. Water used, measured as provided herein, shall be paid for at contract unit price per Mgallon for the item "Water".
3. Stabilized Subgrade measured as provided herein, shall be paid for at the contract unit price per Square Yard for the item, "Stabilized Subgrade Type Lime". This price shall be full compensation for reshaping and trimming the subgrade, scarifying and pulverizing the subgrade soil, drying, mixing, shaping, and compacting the lime treated subgrade and for all material and services required.

WORK ZONE TRAFFIC CONTROL SIGNS

(4-3-1217)

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).

LED ROADWAY LUMINAIRES

(4-10-0218)

Only LED roadway luminaires listed on the NDOT "Nebraska Qualified Material Vendors List" (NQMVL) will be considered for use on Nebraska highway lighting projects. The Nebraska Qualified Material Vendors List" can be found on the NDOT website. Each of the LED luminaires on this list represents an "Approved LED Roadway Luminaire Family". An "Approved LED Roadway Luminaire Family" shall be taken to mean a group of LED luminaires of the same type, design and manufacture and meeting the Nebraska Department of Transportation (NDOT)

Specifications for LED Roadway Luminaires. The NDOT Lighting Unit will inspect and evaluate for compliance with these specifications for each LED luminaire submitted for acceptance to the "NQMV L". The Materials and Research Division will place the names of accepted LED roadway luminaires on the Nebraska Qualified Material Vendors List.

Within an "Approved LED Luminaire Family" there may also exist a number of "LED Performance Packages". (A change in drive current and/or number of LED's constitutes a new LED performance package.) Being part of an "Approved LED Luminaire Family", a "LED Performance Package" is also considered as meeting NDOT specification requirements. In addition to being part of an "Approved LED Luminaire Family" and thereby meeting NDOT specification requirements, each "LED Performance Package" proposed for use on a highway lighting project must also meet the photometric requirements of the project on which it is to be used. The NDOT Lighting Unit will use lighting software, the luminaire's .ies photometric data as provided by the luminaire manufacturer and the project parameters as listed in Appendix "A" of this specification to determine if the luminaire complies with the project's photometric requirements.

The contractor shall submit, for review, the Appendix "B" form that was completed by the LED luminaire manufacturer along with any necessary supporting documentation to: NDOT.shopdrawings@nebraska.gov. The NDOT Lighting unit will verify, via computer simulation, that the LED luminaire meets the contract requirements.

Appendix "A" and Appendix "B" have been made a part of the project in an effort to help the lighting contractor obtain LED luminaires that meet project photometric performance requirements.

All LED luminaires furnished to a State of Nebraska project must be of one manufacture and must achieve the illumination levels and uniformity ratios as required by the project plans and/or special provisions.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

A new LED roadway luminaire, installed together with a pole, mast arm, break-a-way device and foundation as a complete new lighting unit, will not be paid for as individual items, but will be considered subsidiary to the item "Street Lighting Unit, Type ____" for which payment is being made.

A new LED roadway luminaire, installed and accepted as a replacement for an existing HID roadway luminaire, will be paid for at the contract unit price, per each, for the item "Replacement Luminaire, Type ____".

A new LED roadway luminaire, furnished and installed as part of a street lighting until relocation, will not be paid for as an individual unit but will be considered subsidiary to the item "Relocate Street Lighting Unit, Type ____" for which payment is being made.

APPENDIX "A"
NEBRASKA DEPARTMENT OF TRANSPORTATION
LED ROADWAY LUMINAIRE SPECIFICATION SUBMITTAL FORM
(TO BE COMPLETED BY LIGHTING DESIGNER)

PROJECT SITE PARAMETERS		
ROADWAY DATA	Median width (including curbs, gutters, and shoulders) (ft.)	32
	Total number of vehicular lanes (both sides of median)	2
	Width of one vehicular lane (ft.)	14
	Shoulder width (including gutter and curb) (ft.)	8
	IES Pavement class <input checked="" type="checkbox"/> R1 <input type="checkbox"/> R2 <input type="checkbox"/> R3 <input type="checkbox"/> R4	
LIGHT POLE DATA	Luminaire mounting height (ft.)	45
	Arm length (horizontal) (ft.)	12
	Luminaires per pole	1
	Pole set-back from curb (ft.)	N/A
	Pole set-back from edge of travelled way (ft.)	15
	Pole spacing in ft. (same side of roadway)	320
	Pole layout <input type="checkbox"/> One side <input type="checkbox"/> Opposite <input checked="" type="checkbox"/> Staggered <input type="checkbox"/> Median	
LED 40 LUMINAIRE CRITERIA		
FOR USE ON LIGHTING UNITS	Poles 1 thru 9 and 13 thru 17	
VOLTAGE	Nominal luminaire input voltage (or range as applicable)	240
CRI	Min. Color Rendering Index	70
EFFICACY	Min. No. lumens per watt	100
NOMINAL CCT	Rated correlated color temperature	4000 ± 300 K
BUG RATINGS	Maximum nominal (backlight) (uplight) (glare) ratings	B3 -U0 -G3
WEIGHT	Maximum luminaire weight	35 lbs.
EPA	Maximum effective projected area	1.2 ft ²
FINISH	Luminaire housing finish color	Gray
MOUNTING	Type: <input type="checkbox"/> Post-top <input type="checkbox"/> Side-arm <input type="checkbox"/> Trun./yoke Tenon <input type="checkbox"/> Swivel-Tenon	
	Tenon nominal pipe size (NPS)	2 inches
VIBRATION RATING	ANSI C136.31 3G (Level 2 Bridge/Overpass)	
ELECTRICAL IMMUNITY	ANSI C136.2 Enhanced Level	10 Kv/5Ka
CONTROL INTERFACE	ANSI C136.41 7 Pin receptacle with <input type="checkbox"/> Shorting Cap <input type="checkbox"/> Photo Control	
LED DRIVER	<input type="checkbox"/> Not dimmable <input checked="" type="checkbox"/> Dimmable, 0-10V <input type="checkbox"/> Dimmable, DALI	
LIGHT LOSS FACTOR	Use 0.83 as multiplier	
REQUIRED PHOTOMETRIC PERFORMANCE CRITERIA		
PHOTOPIC ILLUMINANCE	Average Maintained illumination level, Fc (min.)	.8
	Avg./min. uniformity ratio (max.)	3.5:1
	Max./min. uniformity ratio (max.)	7.0:1

This Appendix "A" form, as completed by the lighting designer, is being made available to the roadway lighting contractor to copy and submit to various LED luminaire manufactures for help in acquiring a LED luminaire suitable for the lighting parameters shown. This Appendix "A" form, when properly completed, contains all the information necessary for a manufacture to recommend a specific LED roadway luminaire from his/her product line that will meet project specifications. Each Appendix "A" form represents a new set of lighting parameters. The lighting designer shall determine the number of Appendix "A" forms required for a project. Each Appendix "A" form provided the LED luminaire manufacturer shall be accompanied by an Appendix "B" form.

APPENDIX "A"
NEBRASKA DEPARTMENT OF TRANSPORTATION
LED ROADWAY LUMINAIRE SPECIFICATION SUBMITTAL FORM
(TO BE COMPLETED BY LIGHTING DESIGNER)

PROJECT SITE PARAMETERS		
ROADWAY DATA	Median width (including curbs, gutters, and shoulders) (ft.)	N/A
	Total number of vehicular lanes	2
	Width of one vehicular lane (ft.)	14
	Shoulder width (including gutter and curb) (ft.)	N/A
	IES Pavement class <input checked="" type="checkbox"/> R1 <input type="checkbox"/> R2 <input type="checkbox"/> R3 <input type="checkbox"/> R4	
LIGHT POLE DATA	Luminaire mounting height (ft.)	40
	Arm length (horizontal) (ft.)	12
	Luminaires per pole	1
	Pole set-back from curb (ft.)	N/A
	Pole set-back from edge of travelled way (ft.)	15
	Pole spacing in ft. (same side of roadway)	320
	Pole layout <input type="checkbox"/> One side <input type="checkbox"/> Opposite <input checked="" type="checkbox"/> Staggered <input type="checkbox"/> Median	
LED 20 LUMINAIRE CRITERIA		
FOR USE ON LIGHTING UNITS	Poles 10 thru 12	
VOLTAGE	Nominal luminaire input voltage (or range as applicable)	240
CRI	Min. Color Rendering Index	70
EFFICACY	Min. No. lumens per watt	100
NOMINAL CCT	Rated correlated color temperature	4000 ± 300 K
BUG RATINGS	Maximum nominal (backlight) (uplight) (glare) ratings	B2 -U0 -G2
WEIGHT	Maximum luminaire weight	35 lbs.
EPA	Maximum effective projected area	1.2 ft ²
FINISH	Luminaire housing finish color	Gray
MOUNTING	Type: <input type="checkbox"/> Post-top <input checked="" type="checkbox"/> Side-arm <input type="checkbox"/> Trun./yoke Tenon <input type="checkbox"/> Swivel-Tenon	
	Tenon nominal pipe size (NPS)	2 inches
VIBRATION RATING	ANSI C136.31 3G (Level 2 Bridge/Overpass)	
ELECTRICAL IMMUNITY	ANSI C136.2 Enhanced Level	10 Kv/5Ka
CONTROL INTERFACE	ANSI C136.41 7 Pin receptacle with <input type="checkbox"/> Shorting Cap <input type="checkbox"/> Photo Control	
LED DRIVER	<input type="checkbox"/> Not dimmable <input checked="" type="checkbox"/> Dimmable, 0-10V <input type="checkbox"/> Dimmable, DALI	
LIGHT LOSS FACTOR	Use 0.83 as multiplier	
REQUIRED PHOTOMETRIC PERFORMANCE CRITERIA		
PHOTOPIC ILLUMINANCE	Average Maintained illumination level, Fc (min.)	.7
	Avg./min. uniformity ratio (max.)	3.5:1
	Max./min. uniformity ratio (max.)	7.0:1

This Appendix "A" form, as completed by the lighting designer, is being made available to the roadway lighting contractor to copy and submit to various LED luminaire manufactures for help in acquiring a LED luminaire suitable for the lighting parameters shown. This Appendix "A" form, when properly completed, contains all the information necessary for a manufacturer to recommend a specific LED roadway luminaire from his/her product line that will meet project specifications. Each Appendix "A" form represents a new set of lighting parameters. The lighting designer shall determine the number of Appendix "A" forms required for a project. Each Appendix "A" form provided the LED luminaire manufacturer shall be accompanied by an Appendix "B" form.

APPENDIX "B"
NEBRASKA DEPARTMENT OF TRANSPORTATION
PROPOSED LED ROADWAY LUMINAIRE SUBMITTAL FORM
(TO BE COMPLETED BY LUMINAIRE MANUFACTURER)

For Use on Lighting Units			
Luminaire manufacturer			
Proposed Luminaire designation			
Proposed Luminaire model number			
Housing finish color			
Tenon nominal pipe size (inches)			
Nominal Luminaire weight (lb)			
Nominal Luminaire EPA (ft ²)			
Nominal input voltage (volts)			
ANSI vibration test level	<input type="checkbox"/> Level 1 (Normal)	<input type="checkbox"/> Level 2 (bridge/overpass)	
Nominal IES TM-15 BUG ratings	B =	U =	G =
Make/model of LED light source(s)			
Make/model of LED driver(s)			
Dimmability	<input type="checkbox"/> Dimmable	<input type="checkbox"/> Not Dimmable	
Control signal interface			
Lumen maintenance life (hours) *			
Warranty period (years)			
	Nominal Value	Tolerance (%)	
Initial photopic output (lumens)			
Maintained light output (lumens)			
Initial input power (watts)			
Maintained input power (watts)			
Initial LED drive current (mA)			
Maintained LED drive current (mA)			
Drive current used			
CCT (°K)			
In-situ LED Tc (°C)			
Additional product description			

This Appendix "B" form is being made available to the roadway lighting contractor to copy and submit to various LED luminaire manufactures along with the Appendix "A" LED roadway luminaire specification submittal form. Provide an Appendix "B" form for each Appendix "A" form submitted to the luminaire manufacturer.

The LED luminaire proposed by the manufacturer shall meet the requirements listed in the accompanying Appendix "A" form. Attach supporting documentation as required.

* The LED luminaire shall maintain a minimum of 70% of its initial lumen output (L₇₀) after 100,000 hours of operation at 25° C (77° F).

UTILITY CONTACT

Paragraph 1. of Subsection 413.03 in the Standard Specifications is amended to include the following:

The utility contact person for this project is:

Mr. Robert “Bert” Adams, Utilities Coordinator Omaha Public Power District
(402) 636-3333

FLEXIBLE POST DELINEATOR, SURFACE MOUNT

Section 420 in the Standard Specifications is amended to include Flexible Post Delineator, Surface Mount. The surface mounted flexible delineator posts are shown on the Departments Approved Products List under Flexible Delineator Posts.

Paragraph 1. of Subsection 420.05 is amended to include the following:

Pay Item	Pay Unit
Flexible Post Delineator, Surface Mount	Each (ea)

PERMANENT PAVEMENT MARKING

Section 423 in the Standard Specifications is amended to provide that for the items “ ___ Permanent Pavement Marking” the following materials may be used.

I. Concrete Roadways

For pavement markings being placed on concrete surfaces, “Preformed Pavement Marking, Type 4, Grooved”, “Preformed Pavement Marking, Thermoplastic”, or “Polyurea, Grooved” may be used. Approved preformed pavement markings are shown on the NDOT Approved Products List. The material used shall be installed in accordance with the manufacturer’s specifications.

II. Asphalt Roadways

For pavement markings being placed on asphalt surfaces, “Preformed Pavement Marking, Type 4, Grooved”, “Preformed Pavement Marking, Thermoplastic”, “Thermoplastic, Grooved”, or “Polyurea, Grooved” may be used. Approved preformed pavement markings are shown on the NDOT Approved Products List. The material used shall be installed in accordance with the manufacturer’s specifications.

Paragraph 1. of Subsection 423.05 is amended to include the following:

Pay Item	Pay Unit
___ Permanent Pavement Marking	Linear Foot (LF)
___ Permanent Pavement Marking	Each (ea)

Regardless of the material used it shall be measured and paid for as “ ___ Permanent Pavement Marking”.

SURFACING UNDER GUARDRAIL (5-3-1217)

Amend Section 503 in the Standard Specifications to include Surfacing Under Guardrail.

At the Contractor's option, the surfacing may be constructed using Class "47B-3000" Concrete, Class "BX-3000" Concrete, Class "PR-3000" Concrete (Class 47B-20 Concrete, Class BX-20 Concrete, Class PR-20 Concrete), or any commercially produced hot mix asphaltic concrete, which has been approved by the Engineer. These materials may be used interchangeably during the course of the work except that surfacing at any individual location must be completed with the same material with which the work was begun.

If concrete is used in the surfacing, it shall reach a minimum strength of 3000 psi (20 Mpa) before opening to traffic.

If asphalt is used in the surfacing, the Contractor shall monitor the density through a combination of rolling pattern and field testing as deemed necessary by the Engineer.

The surfacing under guardrail may be placed in a single lift. If placing in multiple lifts, the lower lifts may be placed by means other than a paver, however, the final lift must be placed with a paver.

Amend Subsection 302.04 in the Standard Specifications to provide that the work of subgrade preparation for surfacing under guardrail will not be measured for payment, but shall be considered subsidiary to the item "Surfacing Under Guardrail".

Subsection 304.04 in the Standard Specifications is amended to provide that the work of earth shoulder construction associated with surfacing under guardrail will not be measured for payment, but shall be considered subsidiary to the item "Surfacing Under Guardrail."

Subsection 503.05 in the Standard Specifications is amended to provide that P.G. Binder used in the asphaltic concrete will not be measured for payment, but shall be considered subsidiary to the item "Surfacing Under Guardrail".

Subsection 504.04 in the Standard Specifications is amended to provide that the application of a tack coat, including furnishing emulsified asphalt, will not be measured for payment, but shall be considered subsidiary to the item "Surfacing Under Guardrail".

The work and materials required for any drainage curb placed on surfacing under guardrail will not be measured and paid for, but will be considered subsidiary to the item "Surfacing Under Guardrail".

The work and materials required for surfacing under guardrail will be paid for at the contract unit price per square yard (square meter) for the item "Surfacing Under Guardrail". Payment will be full compensation for the work prescribed in these Special Provisions and the Standard Specifications.

**RUMBLE STRIPS
(5-6-0318)**

This work consists of cutting rumble strips in pavements to the dimensions, spacing, and at the locations shown in the plans or directed by the Engineer. The cutting head shall have the cutting tips arranged in a pattern as to provide a smooth cut [approximately 1/16" (2 mm) between peaks and valleys].

Alignment of the edge of the pattern will be randomly checked by the Engineer. Any rumble strips misaligned [+/- 2 inches (+/-50 mm)] shall be re-cut.

The Contractor shall demonstrate to the Engineer on an initial 500 foot (150 m) test section that the equipment and method will provide the desired milled rumble strip and surface inside each depression without tearing, snagging, or chipping the pavement. If the desired results are not being provided, as determined by the Engineer, the Contractor shall provide new equipment or method, or make necessary adjustments to provide the desired results. If the initial 500 foot (150 m) section results are unsatisfactory it will be repaired or replaced as determined by the Engineer, at no additional cost to the Department.

Excess waste material resulting from the operation shall be removed on a daily basis by use of a power broom or other method approved by the Engineer. Excess waste material shall be removed prior to opening the adjacent lane to traffic.

Any joint that had been previously sealed and then was damaged due to the installation of the rumble strip shall be resealed as directed by the Engineer.

The Contractor shall not place rumble strips on bridge decks and bridge approach slabs.

Method of Measurement

Each shoulder receiving rumble strips shall be measured separately in stations of 100 feet (100 meters). Centerline rumble strips shall be placed left and right of centerline in one pass, as shown in the plans. Centerline rumble strips shall be measured in stations of 100 feet (100 meters). Stations shall be measured horizontally along the project centerline between the beginning and ending points. Deductions will be made for all areas where rumble strips are not required.

Basis of Payment

Pay Item	Pay Unit
Rumble Strips, Asphalt _____	Station (Sta) Station (StaM)
Rumble Strips, Concrete _____	Station (Sta) Station (StaM)
Centerline Rumble Strips _____	Station (Sta) Station (StaM)

Payment is full compensation for all work required to install the rumble strips, and resealing joints as required. No additional payment will be made for the test sections that were deemed unsatisfactory.

ASPHALTIC CONCRETE PLACEMENT

The 3-inch Asphaltic Concrete Type SLX overlay on the bridge shall be placed in multiple lifts as directed by the Engineer.

CONCRETE SURFACE MILLING

Subsection 510.04 of the Standard Specifications is amended to include the following:

The Contractor shall use waterblasting equipment operated with sufficient consistent pressure to effectively clean the pavement surface of all dirt, foreign materials, loose surfacing material, and any residue before placement of the asphaltic concrete overlay. Care shall be taken to prevent any debris or construction materials from directly entering or entering any inlets on the project that lead directly to:

1. waterways,
2. poorly-vegetated ditches, or
3. well-vegetated ditches having less than 200 feet between the conduit outlet and the point of discharge of the ditch into a waterway.

Inlets shall not be blocked or otherwise restricted in such a way to cause water to collect within an active traffic lane.

The concrete must be completely dry before placement of any asphaltic concrete on these areas.

Paragraph 10. of Subsection 510.04 of the Standard Specifications is void and superseded by the following:

10. All material salvaged from this operation shall become the property of the Contractor and shall be removed from the project.

SURFACING 6"

The work shall consist of the construction of the surfacing on this project in accordance with plans, Standard Specifications and these Special Provisions.

The finished surface shall not vary more than 1/8" as determined by using a ten foot straightedge, or other devices approved by the Engineer. The Contractor shall correct any depressions or high areas in excess of 1/8".

At the Contractor's option the Surfacing 6" may be constructed using Doweled Concrete Pavement, Class 47B-3500, Asphaltic Concrete Type SPR, SLX, or SPH (0.5). Longitudinal concrete joints shall be tied. Whatever option is chosen shall be used throughout the project unless approved in writing by the Engineer. When the Surfacing is for shoulders, dowel bars can be omitted.

Asphaltic Concrete used for surfacing shall meet all specifications and be sampled and tested as shown in the Standard Specifications or the Special Provisions. Any concrete or asphaltic concrete not meeting the specifications will be subject to removal.

Prior to placing the Surfacing, prepare the underlying subgrade in accordance with the requirements of Section 302 of the Standard Specifications.

Subsection 503.05 is amended to provide that Asphaltic Concrete and PG Binder used in the asphaltic concrete will not be measured for payment, but shall be considered subsidiary to the item Surfacing 6". Performance Graded Binder 58V-34 or 58E-34 shall be used if Asphaltic Concrete is chosen as the Surfacing 6". Performance Graded Binder 58H-34 may be used if the asphalt mix chosen contains a minimum of 40% RAP.

Subsection 504.04 is amended to provide that the application of a tack coat, including furnishing emulsified asphalt, will not be measured for payment, but shall be considered subsidiary to the item Surfacing 6".

Subsection 508.04 is amended to provide that the work of Joint Sealing -Asphalt to Concrete for Surfacing will not be measured for payment, but shall be considered subsidiary to the item Surfacing 6".

Hydrated Lime/Warm Mix Asphalt used for surfacing will not be measured and paid for but shall be considered subsidiary to the item Surfacing 6".

Subsection 603.04 is amended to provide that concrete pavement will not be measured for payment, but shall be considered subsidiary to the item Surfacing 6".

Measure surfacing by the square yard of completed and accepted work.

The work and materials required for the surfacing will be paid for at the contract unit price per square yard for the item Surfacing 6". Payment will be full compensation for the work prescribed in these Special Provisions and the Standard Specifications.

Surfacing 6" Thickness Cores

The Contractor will be required to core the Surfacing for final thickness determination. The cores will be cut prior to opening the surfacing to traffic. One core shall be taken for each 3500 square yards, or fraction thereof, of surfacing placed with a minimum of 1 core taken per project. The Engineer shall select the site where the core shall be taken. All work, materials and incidentals necessary to complete the work shall considered subsidiary to the item Surfacing 6".

TEMPORARY SURFACING 10"

The work shall consist of the construction of the Temporary Surfacing on this project in accordance with plans, Standard Specifications and these Special Provisions.

The finished surface shall not vary more than 1/8" as determined by using a ten foot straightedge, or other devices approved by the Engineer. The Contractor shall correct any depressions or high areas in excess of 1/8".

Prior to placing the Temporary Surfacing, prepare the underlying subgrade in accordance with the requirements of Section 302 of the Standard Specifications.

At the Contractor's option the Temporary Surfacing 10" may be constructed using Class 47B-3500 Concrete, Class BX-3500 Concrete or Asphaltic Concrete Type SPR, SPH, SLX or SRM. These materials may be used interchangeably during the course of the work except that surfacing at any individual location must be completed with the same material with which the work was begun.

Asphaltic Concrete used for surfacing shall meet all specifications and be sampled and tested as shown in the Standard Specifications or Special Provisions. Any concrete or asphaltic concrete not meeting the specifications will be subject to removal.

Subsection 302.04 is amended to provide that the work of Subgrade Preparation, as well as all water applied as directed by the Engineer, will not be measured for payment, but shall be considered subsidiary to the item Temporary Surfacing 10".

Subsection 304.04 is amended to provide that the work of Shoulder Construction, as well as all water applied as directed by the Engineer, will not be measured for payment, but shall be considered subsidiary to the item Temporary Surfacing 10".

Subsection 503.05 is amended to provide that Asphaltic Concrete and PG Binder used in the asphaltic concrete will not be measured for payment, but shall be considered subsidiary to the item Temporary Surfacing 10". Performance Graded Binder 58V-34 or 58E-34 shall be used if Asphaltic Concrete is chosen as the Temporary Surfacing 10". Performance Graded Binder 58H-34 may be used if the asphalt mix chosen contains a minimum of 40% RAP.

Subsection 504.04 is amended to provide that the application of a tack coat, including furnishing emulsified asphalt, will not be measured for payment, but shall be considered subsidiary to the item Temporary Surfacing 10".

Paragraph 15 of Subsection 603.03 is amended to provide that concrete used in the temporary surfacing, reach a minimum strength of 3000 psi before opening to traffic.

Subsection 603.04 is amended to provide that concrete pavement will not be measured for payment, but shall be considered subsidiary to the item Temporary Surfacing 10".

When the need for the temporary surfacing is no longer required the Contractor shall remove the temporary surfacing and it shall become the property of the Contractor and removed from the project. All the work necessary to accomplish this requirement is considered subsidiary to the item Temporary Surfacing 10".

Measure temporary surfacing by the square yard of completed and accepted work.

The work and materials required for temporary surfacing will be paid for at the contract unit price per square yard for the item Temporary Surfacing 10". Payment will be full compensation for the work prescribed in these Special Provisions and the Standard Specifications.

Temporary Surfacing Thickness Cores

The Contractor will be required to core the Temporary Surfacing for final thickness determination. The cores will be cut prior to opening the temporary surfacing to traffic. One core

shall be taken for each 3500 square yards, or fraction thereof, of temporary surfacing placed with a minimum of 1 core taken per project. The Engineer shall select the site where the core shall be taken. All work, materials and incidentals necessary to complete the work shall be considered subsidiary to the item Temporary Surfacing 10”.

CONCRETE BEVELED EDGE

The concrete beveled edge shall be omitted when it abuts a permanent or temporary surface so as to create a clean vertical edge.

The Contractor has the option to remove the beveled edge by sawing pavement at no additional cost to the Department or remove the bevel while the concrete is still plastic.

The beveled edge as shown in the Typical Cross-sections in the plans, is included in the computations for the 10” Doweled Concrete Pavement.

CONCRETE CONSTRUCTION (7-3-1217)

Paragraph 6.g.(3) of Subsection 704.03 in the Standard Specifications is void and superseded by the following:

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

Paragraphs 8.b. and c. of Subsection 704.05 in the Standard Specifications are void and superseded by the following:

8. Payment Deductions:
 - b. If the 28-day compressive strength is less than the design compressive strength by more than 500 psi, the Contractor may request approval to take cores at the Contractor’s expense.
 - (i) A minimum of two cores shall be taken within 45 days after the concrete was poured under the supervision of the Engineer.
 - (ii) The location of the cores shall be approved by the Engineer.
 - (iii) The Engineer will take immediate possession of the cores and take them to the nearest lab for testing.
 - (iv) Cores shall be taken in accordance with ASTM C42.

- (v) The average compressive strength of all the cores taken for a Group's class of concrete poured that day will be used.
- c. If the 28-day compressive strength of the cylinders or the average core compressive strength, whichever is greater, is less than the specified compressive strength and the Engineer determines that the concrete is acceptable for use, a pay factor will be applied to all pay items represented by that 28-day strength. The pay factors are as shown in table 704.03.

Table 704.03

Concrete Strength Pay Factor	
Amount Below Specified Compressive Strength (PSI)	Pay Factor
0 to 50	100
Greater than 50 to 100	99
Greater than 100 to 200	97
Greater than 200 to 300	93
Greater than 300 to 400	88
Greater than 400 to 500	80
Greater than 500	40 or Remove and Replace

**BRIDGE DECK CRACK SEALING
(7-3-1217)**

- 1. Prior to project acceptance, the contractor can end his responsibility to seal cracks at no cost provided that all cracks have been sealed in accordance with the following requirements:
 - a. The Contractor shall not seal any bridge deck cracks until after the following:
 - i. Concrete has reached a minimum age of 28-days.
 - ii. Work on all phases of the bridge is complete, excluding bump grinding and grooving,
 - iii. The bridge is no longer being used as a haul road for construction equipment
 - b. The Contractor shall clean the bridge to remove any asphalt, curing compound, or other materials that may impair the ability to identify cracks.
 - c. The Contractor shall wet the deck and mark all visible cracks as it dries.
 - d. The bridge deck shall be dry for 24 hours prior to installation of crack sealant.

- e. Crack sealing shall be performed in the presence of the Engineer.
 - f. The Contractor shall submit a letter certifying that all cracks have been sealed in accordance with the requirements above.
- 2. The sealing of any additional cracks which develop may be considered for payment as extra work.
 - 3. Bridge decks with excessive cracking will be evaluated by the engineer and may require additional sealing procedures.

PILES AND PILE DRIVING (7-4-1217)

Paragraph 2.a. (1) of Subsection 703.05 in the Standard Specifications is void and superseded by the following:

- 2. a. (1) Provided that the Contractor furnishes the Engineer signed purchase orders for bearing and sheet piling, authorized "cutoff" of bearing and sheet piling shall be made at the invoice price per linear foot (meter) of bearing piling, and per square foot (meter) of sheet piling.

DEBONDING PRESTRESSING STRANDS (7-6-1217)

General

Where shown, debond prestressing strands by encasing the strands in plastic sheathing along the entire length shown and sealing the ends of the sheathing with waterproof tape.

Materials

Sheathing must:

- 1. Be split or un-split flexible polymer plastic tubing
- 2. Have a minimum wall thickness of 0.025 inch
- 3. Have an inside diameter exceeding the maximum outside diameter of the strand by 0.025 to 0.14 inch
- 4. Not react with the concrete or steel

Split sheathing must have a minimum overlap of 3/8 inch.

Waterproofing tape must be flexible adhesive tape.

Construction

Distribute the debonded strands symmetrically about the vertical centerline of the girder. The debonded lengths of pairs of strands must be equal. Do not terminate debonding at any one cross section of the member for more than 40 percent of the debonded strands or 4 strands, whichever is greater. Do not debond the outside strands. Thoroughly seal the ends of the sheathing encasing the strand with waterproof tape before placing the concrete to prevent the intrusion of water or cement paste. Do not debond the extended strands.

Payment

Full compensation for Debonding Prestressing Strands shall be considered as included in the contract price paid for the Pay Item "Precast-Prestressed Concrete Superstructure at Sta ____", and no separate payment will be made.

BRIDGE JOINT NOSING (7-7-1217)

Description

This work shall include sawing, removals (including existing angle irons), forming, and placing of the bridge joint nosing materials required at the expansion joint locations, as specified in the plans. This provision applies to:

- New construction, such as when a new approach slab is being constructed
- Breaking out concrete bridge deck or approaches and building new expansion joint seat
- Saw cutting existing concrete to allow installation of a new expansion joint
- Repairing broken edges of expansion joint gaps such as with nosing material
- Asphalt overlays on bridge decks and approaches

Material Requirements

Products for repair of expansion joint seats or gap edges or used to enhance the durability of gap edges are known as nosing materials. Such materials are given on the Approved Products List as "Bridge Joint Nosing Materials". Products not shown on the Approved Products List may be used as allowed by Materials and Research Division.

Equipment

Appropriate equipment, in good working order shall be employed to ensure proper mixing and timely application of nosing materials.

Construction Methods

Construction of expansion joint seats shall be done as shown in the plans and compliant with all applicable Special Provisions.

All faces of the joint gap or seat shall be laid out in a straight line (shall not deviate from a straight line by more than ¼ inch at any point). This rule is applicable to whatever method is

used to construct the gap, whether it is saw cutting, concrete forming, placing nosing material, etc.

Nosing materials shall be used as prescribed by the manufacturer. In addition, or to augment the manufacturer's instructions as to preparation, all concrete surfaces against which repair or reconstruction material is to be placed, shall be thoroughly cleaned and free of all dust, laitance, moisture or any substances that may interfere with proper adhesion of the material to the concrete. Concrete against which nosing materials are applied shall have been cured for a period as specified by the nosing manufacturer.

Method of Measurement

The quantity of nosing for which payment will be made shall be computed by the Department in cubic feet from dimensions shown in the plans. No field measurement is required unless actual geometry deviates substantially from what is shown in the plans. No deduction shall be made for the amount of material displaced by reinforcement.

Basis of Payment

The Bridge Joint Nosing shall be paid by the cubic foot of the nosing installed and accepted by the Engineer. Preparation of the joint, including sawing, removals, sandblasting and forming will not be paid for directly but shall be considered subsidiary to the Bridge Joint Nosing.

Pay Item	Pay Unit
Bridge Joint Nosing	Cubic Feet (CF)

**BACKFILLING CULVERTS
(7-28-2017)**

Paragraph 10. of Subsection 107.07 in the Standard Specifications is void.

Paragraph 3.a. of Subsection 702.03 is amended to include the following:

- (13) Backfill for culverts shall not be placed on frozen soil.

**PREFORMED WATERPROOFING MEMBRANE TYPE 3
(7-31-1217)**

Description of Work

1. This work shall consist of preparation of new decks, slabs, and approaches or complete deck replacements, and providing and installing a roll type waterproofing membrane and tack coat prior to placement of an asphaltic concrete overlay.

Material Requirements

1. The Preformed Waterproofing Membrane shall be a preformed composite material composed of rubberized or modified-bitumen asphalt and heat resistant fabric reinforcement.
 - a. The waterproofing membrane shall meet physical requirements as specified in Table 1.
2. The Wick Drain shall be a composite material and shall meet the requirements specified in Table 2.

Table 1
Physical Requirements of Preformed Waterproofing Membrane

Property	Test Method	Rubberized Asphalt Type	Modified Bitumen Type
Minimum Total Thickness of membrane (mils)	ASTM D3767	65	70
Minimum Width (in)	not stated	36.00	36.00
Minimum Tensile Strength (lb/in)	ASTM D882-12	50	40
Minimum Percent Elongation at break (%)	ASTM D882	15	10
Minimum Softening Point, (°F)	ASTM D36	165	210
Pliability	ASTM D146	No cracks	No cracks

Table 2
Physical Requirements of Wick Drain

Fabric Properties	Value	Test Method
Material	Polypropylene	
Minimum Grab Tensile Strength (lb)	130	ASTM D-4632
Minimum Puncture Strength (lb)	41	ASTM D-4833
Minimum Trapezoidal Tear (lb)	60	ASTM D-4533
Minimum Elongation (%)	50	ASTM D-4632
EOS (AOS) (sieve size)	70	ASTM D-4751
Minimum Permittivity (1/sec)	0.8	ASTM D-4491
Minimum Flow Rate (gpm/sqft)	60	ASTM D-4491
Minimum UV Stability (%)	70	ASTM D-4355
Core Properties	Value	Test Method
Material	Polypropylene	
Minimum Tensile Strength (lb)	225	ASTM D-4595
Product Properties	Value	Test Method
Minimum Discharge Capacity (gpm)	1.6	ASTM D-4716
Roll width (in)	3 to 4.5	
Maximum total thickness (in)	0.5	

3. Products on the Approved Products List under “Preformed Waterproofing Membrane, Type 3” may be used without additional approval. Other products meeting the requirements of Table 1 may be submitted to the Engineer for approval.
 - a. NDOT may verify the membrane thickness from random samples obtained from membrane delivered to the site prior to placement on the bridge.
4. Products on the Approved Products List under “Wick Drains for Asphalt Overlays on Bridges” may be used without additional approval. Other products meeting the requirements of Table 2 may be submitted to the Engineer for approval.
5. Primer for use with the rubberized asphalt membrane shall be a neoprene-based material, and the primer for use with the modified-bitumen asphalt membrane shall be resin-or-solvent-based material. Primers shall be of a type recommended by the Manufacturer.
6. The mastic for use with rubberized asphalt membrane shall be rubberized asphalt cold-applied joint sealant. The mastic for use with modified-bitumen asphalt membrane shall be a blend of bituminous and synthetic resins.
7. A Materials Certification Letter shall be submitted by the Wick Drain Manufacturer to the Engineer before product delivery.
8. Manufacturer’s installation instructions for waterproofing membrane shall be provided to the Engineer in advance of any work on the bridge.

Construction Methods

1. Storage
 - a. All materials shall be shipped and stored in a dry shaded area between 35°F to 90°F and according to the manufacturer’s recommendations.
2. Preparation of the Surface to be covered by Waterproofing Membrane
 - a. Newly placed concrete shall be drag finished with wet burlap. The burlap finish shall create a uniform, fine-grained finish on the sealed concrete surface. No tining, grooving, brooming, or other texturing shall be used. Burlap finish may be omitted on newly placed concrete that will not be exposed to traffic.
 - b. The Engineer shall be contacted for guidance if ponding of water is observed on the concrete bridge deck before membrane is placed.

c. Smoothness Requirement:

Concrete surfaces shall be prepared for membrane placement by sand or shot blasting to remove all traces of paraffin type material or residue from white curing compound. The surfaces to be covered by Preformed Waterproofing Membrane shall have a concrete surface profile (CSP) of 4 or smoother as per the International Concrete Repair Institute (ICRI). Concrete surfaces that do not meet the above smoothness requirement shall be prepared to receive the membrane by mechanical methods approved by the Engineer.

d. All honeycombed areas and surface cavities and cracks wider than 1/16" shall be cleaned and filled with approved patching materials. Instead of patching, surface cavities may be ground to form a smooth transition across the deck surface if approved by the Engineer.

3. Cleaning of the Surface to be covered by Waterproofing Membrane

a. Surfaces shall be free of sand, clay, dust, salt deposits, bituminous or asphalt residue, grease, oil, pavement markings and other deleterious materials before application of primer or adhesive.

(1) The deck surface and 3 inches up the curb face shall be thoroughly cleaned by high pressure washing, and then blown clean with compressed air which is free of oil and water immediately before application of the primer or adhesive.

b. From the time the bridge deck is cleaned for the primer or adhesive coat until the placement of the asphaltic concrete overlay, the only traffic permitted on the area being treated shall be the necessary workers and equipment to perform the work required.

4. Weather and Moisture Conditions

a. Neither the Membrane, nor Primer or Adhesive shall be applied in wet weather or at ambient or surface temperatures of 32 °F or below. Special attention shall be given to assure that there is no moisture present at the interface between the membrane and deck and bridge curb. Membrane application shall occur only when the weather and atmospheric conditions are favorable for a drying period of at least four hours after completion of the application.

(1) The Contractor shall verify that surfaces to which primer or adhesive will be applied are sufficiently dry by the following method. No condensation shall be found by taping an 18 inch by 18 inch plastic sheet tightly to the surface of the concrete per ASTM D4263. The plastic sheet test shall be performed only when surface temperatures and ambient conditions are within the established parameters for application of the overlay system. In the event of rain, the concrete shall be allowed to air dry for a minimum of 24 hours before performing the plastic sheet test. This test shall be performed by the Contractor and observed by the Engineer. The Department will allow a 1 hour test duration instead of the 16 hours specified in ASTM D4263.

- b. Membrane shall not be applied if weather will not permit placement of the asphaltic concrete overlay on top of the membrane before rain.
5. Priming of the Surface to be covered by Waterproofing Membrane
- a. Areas of the deck that will later be covered by expansion devices other than Asphalt Plug Joints may be masked prior to application of the primer or adhesive to facilitate membrane removal.
 - b. Use of an asphalt leveling course is not allowed.
 - c. Primer or adhesive shall be spray applied or applied with a squeegee or deep nap roller that is resistant to breakdown.
 - d. Allow primer or adhesive to dry until tack free. Treated areas shall be covered by membrane within 8 hours or as specified by the product manufacturer.
 - e. Care shall be taken to avoid defacing adjacent surfaces with primer, adhesive or other materials.
 - f. Primer or adhesive shall be used on concrete or existing asphalt surfaces at the rate specified by the manufacturer.
6. Membrane Placement
- a. A 1/2 to 3/4 inch (13 to 20 mm) fillet of mastic shall be placed between any vertical face and the bridge deck or approach surface before placement of the membrane to prevent a void area where the membrane turns up the vertical face.
 - b. An extra 9 to 12 inch (225 to 305 mm) wide strip of preformed membrane shall be placed before the normal membrane coverage at all joints, areas around drains, all membrane junctions with curbs, end dams, protrusions, construction joints, cracks greater than .10 inch (2.5 mm), and at all inside corners.
 - c. Membrane shall be applied from low point to high point in both longitudinal and transverse directions and overlapped in shingle fashion.
 - d. Overlap and seal all seams and edges in accordance with product manufacturer's specification.
 - e. Stagger adjacent end-of-roll overlaps by a minimum of 6 feet.
 - f. All membrane rolls shall be placed manually and not by means of a tractor or automated fabric placer. Hand carts are allowed.
 - g. The membrane shall be installed straight and wrinkle free with no curled or uplifted edges.
 - h. Once placed, the membrane should be immediately hand rolled onto the surface to assure positive adhesion.

- i. The lips of drain openings and edges of open joints, deck slab, and other openings at deck level shall be completely sealed by extending the full waterproofing membrane over the lip or edge.
- j. Edge of membrane shall extend up the face of closed bridge rail and curbs to 1/2 inch below the height of the overlay surface. Mastic shall be tooled to extend upward along the base of closed bridge rail or curb to a height 1/2 inch higher than the final overlay surface. At open rails terminate membrane at face of rail. Seal all flat seams and outside edge terminations of the membrane with mastic.
- k. Any tears shall be patched with additional membrane, and edges of patches sealed with mastic. Before the overlay, all membrane repairs shall be inspected before covering.
- l. Wick Drains shall be placed at the face of low-side curbs extending longitudinally to terminate at deck drains or ends of closed bridge rail. Wick drains shall be placed as shown on the plans on a thin layer of tacky mastic on top of waterproofing membrane.

7. Asphalt Overlay

- a. Only rubber tired or rubber-tracked paving equipment shall be driven on the membrane.
- b. Tack coat and asphaltic concrete overlay shall be placed within 3 days of waterproofing membrane application.
- c. A minimum of 3 inches compacted overlay thickness is required.
- d. The temperature of the asphaltic concrete during placement shall be between 265 and 300°F.
- e. The use of a pickup machine and the dumping of asphaltic concrete directly on the membrane are not allowed unless a placement program is submitted for approval by the Engineer that minimizes heating of the membrane prior to spreading.
- f. Asphalt density shall be measured in place by non-destructive methods. Pay deductions will be made accordingly.
- g. A vibratory plate compactor shall be on site and used in areas that cannot be roller-compacted such as near the face of bridge rails.
- h. Tack coat shall be applied to the membrane surface to bond the asphaltic concrete to the membrane. The rate of application shall not be less than 0.1 gal/SY. Application rate will be verified during construction.

Method of Measurement

1. The unit of payment for the Preformed Waterproofing Membrane, Type 3 is by the Square Yard.
 - a. The area receiving the membrane system will not be measured directly, but will be plan dimension of the surface receiving the treatment.

Basis of Payment

Pay Item	Pay Unit
1. Preformed Waterproofing Membrane, Type 3	Square Yard (SY)
2. Payment is full compensation for all work prescribed in this Section.	

**CONCRETE BRIDGE FLOORS
(7-33-0218)**

Paragraph 8.c. of Subsection 706.03 in the Standard Specifications is void.

The first sentence of Paragraph 10.b. of Subsection 706.03 is void.

CONTRACTOR'S ACCESS BRIDGE

It will be the Contractor's option to use an access bridge for a temporary crossing to construct the bridges on this project.

For the bridges at Station 207+04.88 Lt. and Station 207+54.52 Rt., it shall be required that the absolute "low steel" for the Contractor's Access Bridge shall be above elevation 1288.5 (Note – Elevation should match elevation shown in Environmental documents.)

For the bridges at Station 611+42.74 Lt. and Station 612+19.48 Rt., it shall be required that the absolute "low steel" for the Contractor's Access Bridge shall be above elevation 1245.0 (Note – Elevation should match elevation shown in Environmental documents.)

It will be the Contractor's responsibility to submit a plan of the access bridge to the Department of Transportation Environmental Unit who will forward the plans to the Corps of Engineers for approval. Construction of the access bridge will not begin until written approval has been received from the Corps of Engineers. The Contractor should not expect to receive approval from the Corps of Engineers prior to the letting.

Bidders must submit a bid for the Pay Item "Access Bridge" in the schedule of items.

The Pay Item "Access Bridge" will be paid for as a lump sum. The bid price shall be considered full compensation for all work required for the Contractor to construct, maintain, and remove the access bridge. The Contractor will only be paid for this item if they construct the access bridge.

The Contractor will be paid 90% of the lump sum when the access bridge is installed. The remaining 10% of the lump sum will be paid when the access bridge is removed.

Crushed rock surfacing and erosion control items necessary for building and maintaining the approaches to the access bridge will not be paid for directly, but shall be considered subsidiary to the Pay Item "Access Bridge".

If the Contractor does not plan to utilize an access bridge, they shall bid the Pay Item "Access Bridge" at \$0. If the Contractor bids this item at \$0 and later decides to utilize an access bridge, it will be at the Contractor's expense.

No change orders will be approved to increase the cost of the "Access Bridge" item after award of the contract.

SEEDING

Subsection 801.02 in the Standard Specifications is amended to include the following:

Type "A"	Minimum Purity	Broadcast Application Rate in lb. of Pure Live Seed/Acre	Approved Mechanical Drill Application Rate in lb. of Pure Live Seed/Acre
Canada wildrye – NE or IA native, Mandan	85		4
Slender wheatgrass	85		3
Western wheatgrass – Barton, Flintlock	85		3
Switchgrass – Trailblazer, Blackwell, Cave-in Rock, Pathfinder	90		0.75
Indiangrass – Oto, NE-54, Holt	75		2
Little bluestem – Aldous, Blaze, Camper	60		2.5
Big bluestem – Pawnee, Roundtree, Bonanza	60		2.5
Sideoats grama – Butte, Trailway	75		3
Sand dropseed (<i>Sporobolus cryptandrus</i>)	85		0.3
Prairie cordgrass (<i>Spartina pectinata</i>)	85		0.5
Partridge pea – Platte, inoculated	90		0.05
Purple prairie clover – Kaneb, inoculated	90		0.15
Butterfly milkweed (<i>Asclepias tuberosa</i>)	75		0.3
Common milkweed (<i>Asclepias syriaca</i>)	75		0.2
Mexican red hat (<i>Ratibida columnifera</i> , red)	90		0.25
Pale purple coneflower (<i>Echinacea pallida</i>)	85		0.3
Shell leaf penstemon (<i>Penstemon grandiflora</i>)	75		0.15
Indian blanket (<i>Gaillardia pulchella</i>)	75		0.4
Blue flax (<i>Linum lewisii</i>)	90		1
Maximilian sunflower (<i>Helianthus maximiliani</i>)	85		0.25
Spiked gayfeather (<i>Liatris spicata</i>)	90		0.2
Plains coreopsis (<i>Coreopsis tinctoria</i>)	85		0.2
Oats/wheat*	90		14

*Wheat in the fall

All seeds shall be origin Nebraska, adjoining states, or as specified. A contractor proposing to use a substitute variety or origin shall submit for the Engineer's consideration a seed tag representing the seed, which shows the variety, origin and analysis of the seed.

Rate of application of commercial inorganic fertilizer shall be:

	Rate of Application per Acre (Minimum)
Available Nitrogen (N ₂)	19 or 36 lbs.
Available Phosphoric Acid (P ₂ O ₅)	0 lbs.

Rate of application of granular sulphur coated urea fertilizer shall be:

Nitrogen (Total Available)	0 lbs.
----------------------------	--------

The contractor may, at his option, apply granular urea formaldehyde in lieu of the sulphur coated urea fertilizer at the following rate:

Nitrogen (Total Available)	0 lbs.
----------------------------	--------

SEEDING

Subsection 801.02 in the Standard Specifications is amended to include the following:

Type "B"	Minimum Purity	Broadcast Application Rate in lb. of Pure Live Seed/Acre	Approved Mechanical Drill Application Rate in lb. of Pure Live Seed/Acre
Perennial ryegrass – Linn, Norlea, Amazon	85		8
Western wheatgrass – Flintlock, Barton	85		5
Slender wheatgrass	85		5
Kentucky fescue	85		8
Red fescue (Festuca rubra)	85		5
Blue grama – NE, KS, SD, CO, MN	30		2
Buffalograss – Sharp's Improved, Cody, Bison, Texoka	80		4
Inland saltgrass (Distichlis spicata)	75		0.4
Sand dropseed (Sporobolus cryptandrus)	90		0.4
Oats/wheat*	90		17

*wheat in the fall

All seeds shall be origin Nebraska, adjoining states, or as specified. A contractor proposing to use a substitute variety or origin shall submit for the Engineer's consideration a seed tag representing the seed, which shows the variety, origin and analysis of the seed.

Rate of application of commercial inorganic fertilizer shall be:

	Rate of Application per Acre (Minimum)
Available Nitrogen (N ₂)	19 or 36 lbs.
Available Phosphoric Acid (P ₂ O ₅)	92 or 96 lbs.

Rate of application of granular sulphur coated urea fertilizer shall be:

Nitrogen (Total Available)	0 lbs.
----------------------------	--------

The contractor may, at his option, apply granular urea formaldehyde in lieu of the sulphur coated urea fertilizer at the following rate:

Nitrogen (Total Available)	0 lbs.
----------------------------	--------

SEEDING

Subsection 801.02 in the Standard Specifications is amended to include the following:

Type "Wetland"	Minimum Purity	Broadcast Application Rate in lb. of Pure Live Seed/Acre	Approved Mechanical Drill Application Rate in lb. of Pure Live Seed/Acre
Virginia wildrye – Omaha, native	85	6	5.5
Big bluestem – Pawnee, Roundtree, Kaw, Bonanza	60	3	2
Inland saltgrass (Distichlis spicata)	85	0.7	0.6
Switchgrass – Pathfinder, Blackwell, Cave-in-Rock, Trailblazer	90	2	1.5
Spiked muhly (Muhlenbergia glomerata)	85	0.2	0.2
Prairie cordgrass (Spartina pectinata)	75	3	1.5
Fox sedge (Carex vulpinoidea)	85	0.7	0.5
Saltmarsh bulrush (Schoenoplectus maritimus)	80	1.5	1
Arrowhead (Sagittaria latifolia)	80	3	2.5
Water plantain (Alisma plantago-aquatica)	80	0.5	0.4
Swamp milkweed (Asclepias incarnata)	85	0.15	0.1
Ironweed (Vernonia fasciculata)	90	0.2	0.1
Oats/Wheat*	90	15	10

* Wheat in the fall

All seed shall be origin Nebraska, adjoining states, or as specified. A contractor proposing to use a substitute variety, or origin shall submit for the engineer's consideration a seed tag representing the seed which shows the variety, origin and analysis of the seed.

Rate of application of commercial inorganic fertilizer shall be:

	Rate of Application per Acre (Minimum)
Available Nitrogen (N ₂)	0 lbs.
Available Phosphoric Acid (P ₂ O ₅)	0 lbs.

Rate of application of granular sulphur coated urea fertilizer shall be:

Nitrogen (Total Available)	0 lbs.
----------------------------	--------

The contractor may, at his option, apply granular urea formaldehyde in lieu of the sulphur coated urea fertilizer at the following rate:

Nitrogen (Total Available)	0 lbs.
----------------------------	--------

SEEDING

Subsection 801.02 in the Standard Specifications is amended to include the following:

Type "Buffer"	Minimum Purity	Broadcast Application Rate in lb. of Pure Live Seed/Acre	Approved Mechanical Drill Application Rate in lb. of Pure Live Seed/Acre
Canada wildrye – Mandan, Homestead, Iowa or Nebraska native	85		4.5
Slender wheatgrass	85		4
Western wheatgrass – Flintlock, Barton	85		4
Virginia wildrye – Omaha, native	85		4.5
Indiangrass – NE-54, Oto, Holt	90		2
Big bluestem – Pawnee, Roundtree, Bonanza	60		3
Sideoats grama – Butte, El Reno, Trailway	75		3
Switchgrass – Blackwell, Pathfinder, Trailblazer	90		2
Little bluestem – Aldous, Blaze, Camper	60		2.5
Prairie cordgrass (Spartina pectinata)	75		0.75
Sand lovegrass – Nebraska 27, native	90		0.4
Blue flax (Linum lewisii)	85		0.5
Common milkweed (Asclepias syriaca)	85		0.3
New England aster (Aster novae-angliae)	85		0.05
Blackeyed Susan (Rudbeckia hirta)	85		0.3
Oats/Wheat*	90		16

* Wheat in the fall

All seed shall be origin Nebraska, adjoining states, or as specified. A contractor proposing to use a substitute variety, or origin shall submit for the engineer's consideration a seed tag representing the seed which shows the variety, origin and analysis of the seed.

Rate of application of commercial inorganic fertilizer shall be:

	Rate of Application per Acre (Minimum)
Available Nitrogen (N ₂)	0 lbs.
Available Phosphoric Acid (P ₂ O ₅)	0 lbs.

Rate of application of granular sulphur coated urea fertilizer shall be:

Nitrogen (Total Available)	0 lbs.
----------------------------	--------

The contractor may, at his option, apply granular urea formaldehyde in lieu of the sulphur coated urea fertilizer at the following rate:

Nitrogen (Total Available)	0 lbs.
----------------------------	--------

EROSION CONTROL

Subsection 810.02 in the Standard Specifications is amended to include the following:

	Minimum Purity (%)	Application rate in lb. of Pure Live Seed/1000 yd. ²
Perennial ryegrass – Linn, Norlea, Amazon	85	1.25
Western wheatgrass – Barton, Flintlock	85	1.25
Slender wheatgrass	85	1
Canada wildrye – Mandan, Homestead, NE native	85	1
K-31 fescue	85	0.7
Little bluestem – Aldous, Blaze, Camper	60	0.4
Sideoats grama – Butte, Trailway	75	0.75
Big bluestem – Pawnee, Roundtree, Bonanza	60	0.5
Switchgrass – Trailblazer, Blackwell, Cave-in-Rock, Pathfinder	90	0.3
Sand lovegrass – Nebraska-27, native	90	0.2
Oats/wheat (wheat in the fall)	90	7

All seeds shall be origin Nebraska, adjoining states, or as specified. A Contractor proposing to use a substitute variety or origin shall submit for the Engineer's consideration a seed tag representing the seed, which shows the variety, origin and analysis of the seed.

Rate of application of inorganic fertilizer shall be:

	Rate of Application Per 1000 yd. ² (Min.)
Available Nitrogen (N ₂) -----	4 or 9 lb.
Available Phosphoric Acid (P ₂ O ₅) -----	23 or 24 lb.

Rate of application of granular sulphur coated urea fertilizer or urea-formaldehyde fertilizer shall be:

	Rate of Application Per 1000 yd. ² (Min.)
Nitrogen (Total Available) -----	0 lb.

**COVERCROP SEEDING
(8-6-1217)**

Paragraph 3. of Subsection 802.02 in the Standard Specifications is void and superseded by the following:

Fertilizer is not required for covercrop seeding.

Paragraph 6. of Subsection 802.03 is void.

**TEMPORARY SEEDING
(8-7-0218)**

Paragraph 3. of Subsection 803.02 in the Standard Specifications is void and superseded by the following:

Fertilizer is not required for temporary seeding.

Paragraph 3.c. of Subsection 803.03 is void.

Paragraph 2. of Subsection 803.04 is void and superseded by the following:

The mulch will not be measured for payment, but shall be considered subsidiary to the item "Temporary Seeding".

**GUARDRAIL END TREATMENT, TYPE I
(9-1-1217)**

Section 902 in the Standard Specifications is amended to include "Guardrail End Treatment, Type I".

This work consists of furnishing and installing a guardrail end treatment system according to the details and at the locations shown in the plans.

The Contractor has the option of installing one of the following systems which meet NCHRP 350 or MASH TL-3:

- | | |
|----------------|---|
| 1.) SKT-SP-MGS | Manufactured by Road Systems, Inc.
3616 Old Howard County Airport
Big Springs, TX 79720
(915) 263-2435 |
| 2.) X-Tension | Manufactured by Lindsay Manufacturing
505 Crown Point Ave.
Omaha, NE 68110
(402) 210-4593 |
| 3.) Softstop | Manufactured by Trinity Industries, Inc.
2525 N. Stemmons Freeway
Dallas, TX 75207
(800) 644-7976 |
| 4.) ET-31 | Manufactured by Trinity Industries, Inc.
2525 N. Stemmons Freeway
Dallas, TX 75207
(800) 644-7976 |

The lengths of manufacturers' end treatments vary; the Contractor must install a total length of 53'-1.5", including the end treatment, to last post with curved end or rectangular "head" beyond the last post. The additional length required will be W-beam guardrail with Midwest Guardrail System 31" design.

The Contractor will be required to furnish two sets of shop plans to the Department of the system to be installed. The guardrail end treatment shall be installed in accordance with the recommendations of the manufacturer.

Payment shall be full compensation for all work required to provide and install the system.

GRANULAR SUBDRAINS

Subsection 915.02 of the Standard Specifications is void and superseded by the following:

Aggregate that is used in granular subdrains shall consist of crushed gravel or crushed rock and shall conform to the requirements of Paragraphs 1. and 2. of Subsection 1033.02.

Crushed gravel shall have a fine aggregate angularity value of 43.0 or greater. The specific gravity for calculation of the Fine Aggregate Angularity (FAA) shall be determined on a combined aggregate sample of the material passing the No. 8 (2.36 mm) sieve and retained on the No. 100 (150 µm) sieve as defined in AASHTO T 304 Method A, except the specific gravity material shall be washed over the No. 100 (150 µm) sieve. Gravel aggregate shall have a soundness loss of not more than 12 percent by weight at the end of 5 cycles using sodium sulfate solution.

Crushed rock shall consist of clean, hard particles of crushed limestone, quartzite, or dolomite. Crushed rock shall have a percent loss of not more than 14 at the end of 16 cycles of the freezing and thawing test.

The crushed gravel or crushed rock shall meet the following gradation requirements.

Granular Subdrains Gradation Requirements		
Sieve Size	Target Value (Percent Passing)	Tolerance
1 inch	100	0
No. 4	40	±20
No. 10	15	±15
No. 200	4	±4

Paragraph 5. of subsection 915.03 is void and superseded by the following:

Excavated material shall become the property of the Contractor and removed from the project or used for shoulder construction on the project. Excess material shall become the property of the Contractor and removed from the project.

Traffic will not be permitted to travel next to these trenched areas until the trench has been filled to top of the existing adjacent surfacing.

Earth Shoulder Construction shall be completed prior to granular subdrain installation.

VEHICLE GATES

The Contractor shall build vehicle gates as indicated in the plans and these Special Provisions. The gates shall be made of galvanized steel or aluminum, approximately 3" in diameter or similar tubular dimension, single or double swing, with a lock assembly, which will accept a padlock. The Contractor shall furnish two sets of shop drawings to the Engineer for approval prior to ordering materials. Installation of the gates shall be per manufacturer's instructions and to the approval of the Engineer. The Contractor shall furnish a padlock and two sets of keys for each gate. All padlocks shall be keyed alike. The Contractor shall deliver the padlocks and all keys to the Project Engineer. Vehicle gates shall be measured and paid for per each for the pay item "___' Vehicle Gate", and shall include all materials, shop drawings, equipment, and labor to properly install the gates as indicated in the plans and to the approval of the Engineer.

PERFORMANCE GRADED BINDER

The Performance Graded Binder to be used on this project shall be PG Binder 58V-34 supplied by a Certified Supplier.

**PERFORMANCE GRADED BINDER
(10-1-0318)**

Table 1029.03 of Subsection 1029.03 in the Standard Specifications is void and superseded by the following:

**Table 1029.03
PG + Pay Factor Table ¹**

AASHTO T350 Multiple Stress Creep Recovery (MSCR) @ 58°C Test and Specifications	Test Results	Pay Factor
AASHTO M332 Performance Grade 58H-34 Average % Recovery @ 3.2 kPa Min. 30%	> 29	1.00
	29	0.95
	28	0.90
	27	0.85
	< 27	0.70 or Reject
AASHTO M332 Performance Grade 58V-34 Average % Recovery @ 3.2 kPa Min. 55%	> 54	1.00
	54	0.95
	53	0.90
	52	0.85
	< 52	0.70 or Reject
AASHTO M332 Performance Grade 58E-34 Average % Recovery @ 3.2 kPa Min. 75%	> 74	1.00
	74	0.95
	73	0.90
	72	0.85
	< 72	0.70 or Reject

¹ If a lot sample has more than one test that results in a reduced pay factor (less than 1.00) from either or both of the above Pay Factor Tables, the single largest pay factor reduction will be the one used in determining the lot pay factor. If a lot sample passes all testing (1.00 or greater), and one or more test pay factors are 1.05, the pay factor of 1.05 will be the one used in determining the lot pay factor.

HYDRATED LIME FOR ASPHALT MIXTURES (10-3-1217)

1. General

Hydrated lime will be added to all aggregates (at the Contractor's option, limestone may be excluded) used for asphalt mixtures except Asphaltic Concrete used for Temporary Surfacing, and Asphaltic Concrete Type SPS, and SPL. Hydrated lime will be added to pre-moistened aggregates whether it is used directly into the mix or stockpiled for marinating purposes. The application of moisture and hydrated lime to the aggregates along with equipment calibration and procedures to prevent any "dusting" shall be documented and approved in the Contractor's Quality Control (QC) Plan.

2. Material Requirements

The lime shall meet the chemical and physical properties defined in AASHTO M 303 for Type I - High calcium-hydrated lime, or meet the requirements of ASTM 1097 for Type S Hydrated Lime.

The hydrated lime being used, whether for mix design or plant mix production, shall be stored in an enclosed container and must be used within 90 days. Stockpiles marinating shall also be used within 90 days. Lime that is stored over 90 days in a protected storage silo environment may be submitted for chemical analysis to verify that it meets the specification for use in the mix.

Water shall conform to the requirements of Section 1005.

3. Construction

Prior to the addition of hydrated lime the aggregates shall have a minimum moisture content of 3% by weight of aggregate. The surface of the aggregate shall be uniformly dampened by water.

If additional moisture is required it shall be added at the entry end of an enclosed pug mill mixer and prior to the addition of hydrated lime.

Hydrated Lime shall be added at a rate of 1.25 percent by weight of virgin aggregate, including the weight of the limestone.

4. Equipment

The addition of lime shall be plant controlled, and blended with an enclosed twin-shaft pug mill with a production capacity rating that exceeds the aggregate feed rate. It shall be capable of effective mixing in the full range of asphaltic concrete production rates.

The pug mill set up shall be located in the system at a location where the mixed material can be readily inspected on a belt prior to entry into the drum.

The pug mill shall be designed such that the mixture of aggregate and hydrated lime is moved in a near horizontal direction (within 20 degrees of horizontal) by the mixing paddles without the aid of conveyor belts for a distance of at least three feet (900 mm).

Mixing devices which permit the mixture of aggregate and hydrated lime to fall through the mixing blades onto a belt or chute are not acceptable.

A positive signal system and a limit switch device shall be installed in the plant at the point of introduction of the hydrated lime. The positive signal system shall be placed between a metering device and the drum plant, and utilized during production whereby an alarm is activated; alerting the plant that the hydrated lime is not being introduced into the mixture.

The hydrated lime storage silo shall have enough capacity for continuous production. The silo shall be replenished by pneumatic delivery from road tankers at a pressure that will not create dusting. Hydrated lime will be dispensed from the silo into the pug mill by a conventional vane feeder or a load cell pod system.

The mechanism for adding moisture to the aggregate will be configured and located to insure that all virgin aggregate is uniformly coated with moisture prior to the lime application.

5. Sampling and Testing

Hydrated lime shall be certified by the supplier stating its compliance to the specifications.

A physical inventory of hydrated lime usage will be required during mix production. A daily silo inventory, noting "beginning weight", "weight added during the day's production", and "end of day weight", will be recorded and made available for review by the Engineer. When a weigh pod system is used, an accumulative accounting method shall be used to calculate and review lime addition rates throughout production. When calculations indicate a hydrated lime usage of ± 0.15 percent from the design percentage the Contractor shall assume the responsibility to cease production and recalibrate the system prior to resuming mix production. Any asphaltic concrete placed having 0.15 percent below the design percentage shall be removed and replaced at no cost.

The percent of moisture shall be determined and documented: 1) from belt samples or 2) from stockpile samples, a minimum of once per day.

6. Mixture QC and Verification Testing

During an ignition oven burn off, lime will combine with the sulfur in the binder and produce ash. Therefore, when mix containing hydrated lime is being designed and produced a correction factor to the ignition oven burn off result of +0.30% shall be used. This correction factor shall be added to the ignition oven binder content reading in order for the actual binder content to be determined.

7. Method of Measurement:

Hydrated Lime shall be measured for payment by the unit of each for each ton of hot mix asphalt used and incorporated into the project, or for State Maintenance Patching.

Water applied shall not be measured and paid for but shall be considered subsidiary to the item "Hydrated Lime/Warm Mix Asphalt".

8. Basis of Payment:

Lime, measured as provided herein and incorporated into the project, shall be paid for at the contract unit price per each for the item "Hydrated Lime/Warm Mix Asphalt". Lime measured as provided herein and used for State Maintenance Patching shall be paid for at the contract unit price per each for the item "Hydrated Lime/Warm Mix Asphalt for State Maintenance Patching". This price shall be full compensation for furnishing, delivering, hauling, storing, all labor, equipment, tools and incidentals necessary to complete the work.

**HYDRATED LIME SLURRY FOR ASPHALT MIXTURES
(10-3-1217)**

1. **General** — The Contractor will have the option of using Hydrated Lime Slurry For Asphalt Mixtures or Hydrated Lime For Asphalt Mixtures. Hydrated lime slurry will be added to all aggregates (at the Contractor's option, limestone may be excluded) used for asphalt mixtures except Asphaltic Concrete used for Temporary Surfacing, and Asphaltic Concrete Type SPS and SPL. Hydrated lime slurry will be added to aggregates whether it is used directly into the mix or stockpiled for marinating purposes. The application of hydrated lime slurry to the aggregates along with equipment calibration and procedures shall be documented and approved in the Contractor's Quality Control (QC) Plan.
2. **Material Requirements** — The lime shall meet the chemical and physical properties defined in AASHTO M 303 for Type I - High calcium-hydrated lime, or meet the requirements of ASTM 1097 for Type S Hydrated Lime.

The dry hydrated lime being used, whether for mix design or plant mix production, shall be stored in an enclosed container and must be used within 90 days. Stockpiles marinating shall also be used within 90 days. Hydrated lime (dry or slurry) that is stored over 90 days in a protected storage silo or slurry tank may be submitted for chemical analysis to verify that it meets the specification for use in the mix.

Water shall conform to the requirements of Section 1005.

3. **Construction** — Hydrated Lime shall be added at a rate of 1.25 percent by weight of virgin aggregate, including the weight of the limestone.
4. **Equipment** — The addition of lime shall be plant controlled, and blended with an enclosed twin-shaft pug mill with a production capacity rating that exceeds the aggregate feed rate. It shall be capable of effective mixing in the full range of asphaltic concrete production rates.

The pug mill set up shall be located in the system at a location where the mixed material can be readily inspected on a belt prior to entry into the drum.

The pug mill shall be designed such that the mixture of aggregate and hydrated lime is moved in a near horizontal direction (within 20 degrees of horizontal) by the mixing paddles without the aid of conveyor belts for a distance of at least three feet (900 mm).

Mixing devices which permit the mixture of aggregate and hydrated lime to fall through the mixing blades onto a belt or chute are not acceptable.

A positive signal system and a limit switch device shall be installed in the plant at the point of introduction of the hydrated lime. The positive signal system shall be placed between a metering device and the drum plant, and utilized during production whereby an alarm is activated; alerting the plant that the hydrated lime is not being introduced into the mixture.

A minimum of two hydrated lime slurry tanks shall be used for blending and supply. Slurry shall be drawn for production from only one tank at a time. The hydrated lime slurry tanks shall have enough capacity for continuous production.

Hydrated lime slurry shall be dispensed from a slurry tank into the pug mill by a pressure regulated spray system having an electronic flow measurement system that has been calibrated to insure the proper application rates will be provided. Certificate of Calibration for the spray bar system should be provided by the Contractor with the calibration being performed by a third party every 12 months (minimum) or at the Engineer's request.

The electronic flow measurement system shall automatically record the flow rate of the lime slurry being fed to the pug mill. The data recorder system shall be capable of recording the flow rate (in gallons per minute) at intervals of not more than 5 minutes and shall have the capability of calculating the volume of lime slurry used each day, from each slurry tank, and shall be capable of printing a summary of the daily lime slurry usage for each tank. This printout of the daily lime slurry volumes shall be presented to the NDOT representative at the end of each day's production.

- 5. Blending and Supply Hydrated Lime Slurry** — The Contractor shall determine the target hydrated lime slurry concentration (percent solids) that will be used to produce the asphalt mixture. This target concentration value shall be provided to the Engineer prior to production of the asphalt mixture and shall not be less than 30 percent. The target concentration value shall not be modified without the approval of the Engineer. It is the Contractor's responsibility to control the concentration of the hydrated lime slurry.

Only valid weights of dry hydrated lime shall be added to the required quantity of water to provide uniform hydrated lime slurry having a dry solids content within ± 0.5 percent of the Contractor's target value. Water or dry hydrated lime shall not be added to a tank that is actively supplying hydrated lime slurry to the pug mill. Hydrated lime slurry shall not be drawn from a tank that is not completely blended in accordance with the manufacturer's recommendations.

The hydrated lime slurry in the active supply tank shall be agitated prior to and during production in accordance with the manufacturer's recommendations.

Dry hydrated lime shall be transferred at a pressure that will not create dusting.

- 5.1** If individual hydrated lime slurry tanks are dedicated to only blending or supply, then thoroughly mixed hydrated lime slurry may be added from the blending tank(s) to the supply tank during production, provided the concentrations are within ± 0.5 percent.

5.2 If the hydrated lime slurry tanks are used for both blending and supply, the tanks shall be plumbed such that hydrated lime slurry can be supplied to the pug mill from any of the blending/supply tanks without disruption of the slurry supply.

6. Sampling and Testing — Hydrated lime shall be certified by the supplier stating its compliance to the specifications.

The concentration of the lime slurry shall be controlled within ± 0.5 percent of the target hydrated lime slurry concentration (percent solids). The concentration of the hydrated lime shall be determined in accordance with Section 6.1. It is the Contractor's responsibility to halt production to make adjustments when the concentrations fall out of compliance.

The concentration of the lime slurry shall be determined and recorded by the Contractor immediately following blending each batch of lime slurry for the project. These records shall include date and time of test, sample collection information, and the unit weight, temperature and concentration of slurry. These records shall be made available to the Engineer upon request.

A physical inventory of hydrated lime usage will be required during mix production. This inventory shall be used to verify the lime application rate, and for payment of the hydrated lime. The concentration of the lime slurry shall be determined and recorded by the Contractor at the beginning and at approximately the mid-point of each day's production. The hydrated lime slurry samples shall be collected from the supply line leading to the pug mill. These records shall include date and time of test, sample collection information, and the unit weight, temperature and concentration of slurry. These records shall be presented to the NDOT representative at the end of each day's production.

When calculations indicate that the application rate of "dry" hydrated lime to the aggregate is ± 0.15 percent from the design percentage the Contractor shall assume the responsibility to cease production and recalibrate the system prior to resuming mix production. Any asphaltic concrete placed having a "dry" hydrated lime application rate (applied to aggregate) of 0.15 percent below the design percentage shall be removed and replaced at no cost.

6.1 The Contractor shall determine the solids content (concentration) of the hydrated lime slurry using Table 1, Table 2 and the Slurry Worksheet. The Contractor shall provide and use the standard weight per 83.205-ml Gardner cup meeting the requirements of ASTM D 244.

After a batch of lime slurry has been produced, use the following procedures to verify that the intended percent solids have been achieved.

1. Fill a quart container 3/4 full with lime slurry. Samples can be taken from ports located at either end of the vessel. Do not use glass.
2. Weigh a dry, empty Gardner (WPG) cup and cover to the nearest 0.01 of a gram. Record this weight.
3. Shake the lime slurry sample well. Immediately fill the WPG cup.

4. Tap the WPG cup lightly on an immovable object to allow for the escape of air bubbles.
 5. Slowly turn the cap of the WPG cup until it is completely seated. If the cover is pushed on quickly, lime slurry will squirt out through the hole in the center. Be sure to point the top of the WPG away from you (or others) while putting on the cap.
 6. Hold the WPG cup by the top and bottom with thumb and forefinger. Be sure to cover the hole in the cap.
 7. Rinse the WPG cup under running water to remove any lime from the outside of the cup.
 8. Dry the outside of the cup thoroughly.
 9. Weigh the dry, filled WPG cup to the nearest 0.01 of a gram. Record this weight.
 10. Promptly remove the cover, insert thermometer and record the temperature.
 11. Subtract the empty cup weight (from step 2) from the filled cup weight (step 9) and record the difference.
 12. Multiply the difference by 0.1. This number is the density (lbs./gallon) of the lime slurry. Record this number.
 13. Look up the temperature correction in Table 2 and record the value.
 14. Multiply the slurry density times the temperature correction value. This is the adjusted slurry density. Record the adjusted slurry density on the slurry worksheet.
 15. Find the nearest density to that recorded above on the "Slurry Solids Chart" on Table 1, Slurry Solids Chart - 24 degrees C. The corresponding number is the percent solids (concentration) of the lime slurry sample. Record on worksheet.
7. **Mixture QC and Verification Testing** — During an ignition oven burn off, lime will combine with the sulfur in the binder and produce ash. Therefore, when mix containing hydrated lime is being designed and produced a correction factor to the ignition oven burn off result of +0.30% shall be used. This correction factor shall be added to the ignition oven binder content reading in order for the actual binder content to be determined.
8. **Method of Measurement** — Hydrated Lime shall be measured for payment by the unit of each for each ton of hot mix asphalt used and incorporated into the project, or for State Maintenance Patching.

Water applied shall not be measured and paid for but shall be considered subsidiary to the item "Hydrated Lime/Warm Mix Asphalt".

9. **Basis of Payment** — Lime, measured as provided herein and incorporated into the project, shall be paid for at the contract unit price per each for the item "Hydrated Lime/Warm Mix Asphalt". Lime measured as provided herein and used for State Maintenance Patching shall be paid for at the contract unit price per each for the item "Hydrated Lime/Warm Mix Asphalt for State Maintenance Patching". This price shall be full compensation for furnishing, delivering, hauling, storing, all labor, equipment, tools and incidentals necessary to complete the work.

Table 1, Page 1
Slurry Solids Chart – 24°C

Density lbs./gal.	Slurry Solids %	Density lbs./gal.	Slurry Solids %	Density lbs./gal.	Slurry Solids %	Density lbs./gal.	Slurry Solids %
9.108	15.1	9.402	20.1	9.715	25.1	10.050	30.1
9.114	15.2	9.406	20.2	9.722	25.2	10.057	30.2
9.120	15.3	9.414	20.3	9.728	25.3	10.064	30.3
9.128	15.4	9.420	20.4	9.735	25.4	10.071	30.4
9.131	15.5	9.426	20.5	9.741	25.5	10.078	30.5
9.137	15.6	9.433	20.6	9.748	25.6	10.085	30.6
9.143	15.7	9.439	20.7	9.755	25.7	10.092	30.7
9.148	15.8	9.445	20.8	9.761	25.8	10.099	30.8
9.154	15.9	9.451	20.9	9.768	25.9	10.106	30.9
9.160	16.0	9.457	21.0	9.774	26.0	10.113	31.0
9.166	16.1	9.463	21.1	9.781	26.1	10.120	31.1
9.171	16.2	9.469	21.2	9.787	26.2	10.127	31.2
9.177	16.3	9.476	21.3	9.794	26.3	10.134	31.3
9.183	16.4	9.482	21.4	9.800	26.4	10.141	31.4
9.189	16.5	9.488	21.5	9.807	26.5	10.148	31.5
9.195	16.6	9.494	21.6	9.814	26.6	10.155	31.6
9.200	16.7	9.500	21.7	9.820	26.7	10.163	31.7
9.206	16.8	9.506	21.8	9.827	26.8	10.170	31.8
9.212	16.9	9.513	21.9	9.833	26.9	10.177	31.9
9.218	17.0	9.519	22.0	9.840	27.0	10.184	32.0
9.224	17.1	9.525	22.1	9.847	27.1	10.191	32.1
9.230	17.2	9.531	22.2	9.853	27.2	10.198	32.2
9.235	17.3	9.538	22.3	9.860	27.3	10.205	32.3
9.241	17.4	9.544	22.4	9.867	27.4	10.212	32.4
9.247	17.5	9.550	22.5	9.873	27.5	10.220	32.5
9.253	17.6	9.556	22.6	9.880	27.6	10.227	32.6
9.259	17.7	9.563	22.7	9.887	27.7	10.234	32.7
9.265	17.8	9.569	22.8	9.894	27.8	10.241	32.8
9.271	17.9	9.575	22.9	9.900	27.9	10.248	32.9
9.277	18.0	9.581	23.0	9.907	28.0	10.255	33.0
9.282	18.1	9.588	23.1	9.914	28.1	10.263	33.1
9.288	18.2	9.594	23.2	9.920	28.2	10.270	33.2
9.294	18.3	9.600	23.3	9.927	28.3	10.277	33.3
9.300	18.4	9.607	23.4	9.934	28.4	10.284	33.4
9.306	18.5	9.613	23.5	9.941	28.5	10.292	33.5
9.312	18.6	9.619	23.6	2.948	28.6	10.299	33.6
9.318	18.7	9.626	23.7	9.954	28.7	10.306	33.7
9.324	18.8	9.632	23.8	9.961	28.8	10.314	33.8
9.330	18.9	9.638	23.9	9.968	28.9	10.321	33.9
9.336	19.0	9.645	24.0	9.975	29.0	10.328	34.0
9.342	19.1	9.651	24.1	9.982	29.1	10.335	34.1
9.348	19.2	9.658	24.2	9.988	29.2	10.343	34.2
9.354	19.3	9.664	24.3	9.995	29.3	10.350	34.3
9.360	19.4	9.670	24.4	10.002	29.4	10.358	34.4
9.366	19.5	9.677	24.5	10.009	29.5	10.365	34.5
9.372	19.6	9.683	24.6	10.016	29.6	10.372	34.6
9.378	19.7	9.690	24.7	10.023	29.7	10.380	34.7
9.384	19.8	9.696	24.8	10.030	29.8	10.387	34.8
9.390	19.9	9.703	24.9	10.037	29.9	10.394	34.9
9.396	20.0	9.709	25.0	10.044	30.0	10.402	35.0

Table 1, Page 2
Slurry Solids Chart – 24°C

Density lbs./gal.	Slurry Solids %	Density lbs./gal.	Slurry Solids %	Density lbs./gal.	Slurry Solids %	Density lbs./gal.	Slurry Solids %
10.409	35.1	10.795	40.1	11.210	45.1	11.658	50.1
10.417	35.2	10.803	40.2	11.218	45.2	11.667	50.2
10.424	35.3	10.811	40.3	11.227	45.3	11.677	50.3
10.432	35.4	10.819	40.4	11.236	45.4	11.686	50.4
10.439	35.5	10.827	40.5	11.244	45.5	11.695	50.5
10.447	35.6	10.835	40.6	11.253	45.6	11.705	50.6
10.454	35.7	10.843	40.7	11.262	45.7	11.714	50.7
10.462	35.8	10.851	40.8	11.270	45.8	11.724	50.8
10.469	35.9	10.859	40.9	11.279	45.9	11.733	50.9
10.477	36.0	10.867	41.0	11.288	46.0	11.743	51.0
10.484	36.1	10.875	41.1	11.297	46.1	11.752	51.1
10.492	36.2	10.883	41.2	11.305	46.2	11.762	51.2
10.499	36.3	10.892	41.3	11.314	46.3	11.771	51.3
10.507	36.4	10.900	41.4	11.323	46.4	11.781	51.4
10.514	36.5	10.908	41.5	11.332	46.5	11.790	51.5
10.522	36.6	10.916	41.6	11.341	46.6	11.800	51.6
10.530	36.7	10.924	41.7	11.349	46.7	11.809	51.7
10.537	36.8	10.932	41.8	11.358	46.8	11.819	51.8
10.545	36.9	10.941	41.9	11.367	46.9	11.828	51.9
10.552	37.0	10.949	42.0	11.376	47.0	11.838	52.0
10.560	37.1	10.957	42.1	11.385	47.1	11.848	52.1
10.568	37.2	10.965	42.2	11.394	47.2	11.857	52.2
10.575	37.3	10.974	42.3	11.403	47.3	11.867	52.3
10.583	37.4	10.982	42.4	11.412	47.4	11.877	52.4
10.591	37.5	10.990	42.5	11.421	47.5	11.886	52.5
10.599	37.6	10.998	42.6	11.430	47.6	11.896	52.6
10.606	37.7	11.007	42.7	11.439	47.7	11.906	52.7
10.614	37.8	11.015	42.8	11.447	47.8	11.915	52.8
10.622	37.9	11.023	42.9	11.456	47.9	11.925	52.9
10.629	38.0	11.032	43.0	11.465	48.0	11.935	53.0
10.637	38.1	11.040	43.1	11.475	48.1	11.945	53.1
10.645	38.2	11.048	43.2	11.484	48.2	11.954	53.2
10.653	38.3	11.057	43.3	11.493	48.3	11.964	53.3
10.661	38.4	11.065	43.4	11.502	48.4	11.974	53.4
10.668	38.5	11.074	43.5	11.511	48.5	11.984	53.5
10.676	38.6	11.082	43.6	11.520	48.6	11.994	53.6
10.684	38.7	11.090	43.7	11.529	48.7	12.004	53.7
10.692	38.8	11.099	43.8	11.538	48.8	12.014	53.8
10.700	38.9	11.107	43.9	11.547	48.9	12.023	53.9
10.707	39.0	11.116	44.0	11.556	49.0	12.033	54.0
10.715	39.1	11.124	44.1	11.566	49.1	12.043	54.1
10.723	39.2	11.133	44.2	11.575	49.2	12.053	54.2
10.731	39.3	11.141	44.3	11.584	49.3	12.063	54.3
10.739	39.4	11.150	44.4	11.593	49.4	12.073	54.4
10.747	39.5	11.158	44.5	11.602	49.5	12.083	54.5
10.755	39.6	11.167	44.6	11.612	49.6	12.093	54.6
10.763	39.7	11.175	44.7	11.621	49.7	12.103	54.7
10.771	39.8	11.184	44.8	11.630	49.8	12.113	54.8
10.779	39.9	11.193	44.9	11.639	49.9	12.123	54.9
10.787	40.0	11.201	45.0	11.649	50.0	12.134	55.0

Table 2
Correction Factor to Adjust Slurry Densities for Temperature

Temp (C)	Factor	Temp (C)	Factor
20	0.99927	61	1.01176
21	0.99944	62	1.01218
22	0.99962	63	1.01262
23	0.99981	64	1.01305
24	1.00000	65	1.01349
25	1.00002	66	1.01394
26	1.00041	67	1.01439
27	1.00063	68	1.01485
28	1.00085	69	1.01531
29	1.00109	70	1.01578
30	1.00132	71	1.01626
31	1.00157	72	1.01673
32	1.00182	73	1.01722
33	1.00208	74	1.01770
34	1.00234	75	1.01820
35	1.00261	76	1.01870
36	1.00289	77	1.01920
37	1.00318	78	1.01971
38	1.00347	79	1.02022
39	1.00376	80	1.02074
40	1.00407	81	1.02126
41	1.00438	82	1.02179
42	1.00469	83	1.02232
43	1.00501	84	1.02286
44	1.00534	85	1.02341
45	1.00567	86	1.02395
46	1.00601	87	1.02451
47	1.00635	88	1.02506
48	1.00670	89	1.02563
49	1.00706	90	1.02619
50	1.00742	91	1.02677
51	1.00779	92	1.02734
52	1.00816	93	1.02793
53	1.00854	94	1.02851
54	1.00892	95	1.02911
55	1.00931	96	1.02970
56	1.00970	97	1.03031
57	1.01010	98	1.03091
58	1.01051	99	1.03152
59	1.01092	100	1.03214
60	1.01134	101	1.03276

**INCENTIVE PAYMENT FOR THE USE OF RECYCLED ASPHALTIC PAVEMENT
(RAP) FOR ASPHALTIC MIXTURES
(10-7-1217)**

General

This specification establishes a standard method for paying an incentive to use Recycled Asphaltic Pavement (RAP) in asphalt mixture types: SPH, SPS, SPR, SRM, SLX and LC. The intent of this specification is to provide an incentive for incorporating as much RAP into the asphalt mixtures as allowed by the respective mixture’s specification.

Method of Measurement

1. The RAP Incentive Payment shall be based on the actual total of asphalt production for the entire project. A RAP Incentive Payment shall be calculated for each eligible asphaltic concrete type.

2. The following formula will be used to calculate the “RAP Incentive Factor”.

$$\text{RAP Incentive Factor} = [(A-B) \div 100] \times C \times D$$

Where:

- A = State’s Established Percent Binder – based on gradation band.
- B = Actual Percentage of Binder – added to asphaltic mixture.
- C = Unit Bid price of Binder
- D = RAP Pay Factor

3. The State’s established percent binder values (‘A’ values) are as follows:

Asphaltic Concrete Types	‘A’ Value
SPH having 0.500-inch grading band	5.2% Binder
SPS, SPL, SPR and SPR (Fine)	5.2% Binder
SLX	5.5% Binder
SPH having 0.375-inch grading band	5.8% Binder
LC	6.2% Binder
SRM	4.8% Binder

Incentive payments will be made for only the mix types list in this table.

4. The actual percentage of binder added to the particular asphaltic mixture (‘B’ value) shall be calculated as follows:

$$B = (\text{Actual Pay Tons of Binder} \div \text{Actual Pay Tons of Asphaltic Concrete}) \times 100$$

5. The Unit Bid Price of Binder (‘C’ value) is the established contract price for the performance graded binder type used to produce the mix for which the incentive is being calculated.

6. The RAP Pay Factor ('D' value) shall be as follows:

RAP Source	'D' Value
Contractor supplied RAP	0.50
State supplied RAP coming from an OFF -project source	0.35
* RAP coming from an ON -project source	0.15

* RAP coming from an **ON**-project source shall be completely utilized before allowing RAP from any other source to be used in the asphalt production. An ON-project source shall be considered any asphaltic material removed on the project.

7. Contractor supplied RAP and RAP supplied from either off-project or on-project sources shall be stored, handled and used separately. Incentive payments for RAP from these three source types shall be paid separately. The Contractor may propose a RAP consumption plan that will use multiple RAP sources concurrently and will follow the utilization hierarchy (as detailed above) upon the completion of the project.
8. The Contractor has sole responsibility for determining the quality, quantity, and uniformity of the RAP material. The maintenance of any stockpiles and processing of the RAP material shall also be the sole responsibility of the Contractor.

Basis of Payment

- | | | |
|----|--|------------------------------|
| 1. | Pay Item
RAP Incentive Payment _____ | Pay Unit
Each (ea) |
|----|--|------------------------------|
2. The overall RAP Incentive Payments shall be full compensation for all RAP materials and all hauling, handling and processing necessary to complete the work described in this section.
3. The overall RAP Incentive Payments – for each eligible mix type and/or RAP source – shall be the RAP Incentive Factor multiplied by the total accepted tons of asphaltic concrete in which the RAP was incorporated.
4. RAP Incentive Payment is paid for as an “established” contract unit price which is shown in the bid proposal “Schedule of Items”.
5. The actual quantity for RAP Incentive Payment will be calculated based on the Method of Measurement stated above in this provision.

**BITUMINOUS LIQUID COMPOUNDS FOR CURING CONCRETE
(10-8-1217)**

Subsection 1013.02 in the Standard Specifications is amended to include the following:

2. The Contractor has the option of using bituminous tack coat. The tack coat shall conform to all requirements of Section 504.

**TIMBER AND LUMBER
(10-9-1217)**

Paragraph 2.b. of Subsection 1075.02 in the Standard Specifications is amended to include the following:

Minimum retentions for all timber and lumber shall conform to Use Category UC4C.
Minimum retentions for fence posts shall conform to Use Category UC4A.

**SUPERPAVE ASPHALTIC CONCRETE
(10-11-0218)**

Paragraph 8.d. of Subsection 1028.03 in the Standard Specifications is void and superseded by the following:

- d. Normally, 1 (one) sample for determination of density will be taken from each subplot at locations determined by the Engineer.

Table 1028.18 (SLX) of Subsection 1028.03 is void and superseded by the following:

**Table 1028.18 (SLX)
Acceptance Schedule
Air Voids – N_{des}**

Air voids test results for Asphaltic Concrete Type SLX	Pay Factor	
	Moving average of four	Single test
Less than 0.5%	50% or Reject	50% or Reject
0.5% to 0.9%	50% or Reject	50%
1.0% to 1.4%	50% or Reject	95%
1.5% to 1.9%	90%	95%
2.0% to 2.4%	100%	100%
2.5% to 3.5%	102%	104%
3.6% to 4.0%	100%	100%
4.1% to 4.5%	95%	95%
4.6% to 5.0%	90%	95%
5.1% to 5.5%	50% or Reject	90%
5.6% to 6.0%	50% or Reject	50%
6.1% and over	50% or Reject	50% or Reject

**PROPOSAL GUARANTY
(1-37-1217)**

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 Subsection 102.14 of the Standard Specifications.

200INFJUN18

INDEX

ACCEPTANCE TESTING OF SOILS BY USE OF THE LIGHT WEIGHT DEFLECTOMETER (LWD) SCOPE 34

ASPHALTIC CONCRETE PLACEMENT 56

BACKFILLING CULVERTS 63

BITUMINOUS FOUNDATION COURSE 38

BITUMINOUS LIQUID COMPOUNDS FOR CURING CONCRETE 91

BRIDGE DECK CRACK SEALING 60

BRIDGE JOINT NOSING 62

CONCRETE BEVELED EDGE 59

CONCRETE BRIDGE FLOORS 69

CONCRETE CONSTRUCTION 59

CONCRETE SURFACE MILLING 56

CONDITIONAL STATUS OF RIGHT OF WAY 11

CONSTRUCTION AND OBLITERATION OF TEMPORARY ROADS 38

CONSTRUCTION DETAILS 19

CONSTRUCTION METHODS 21

CONSTRUCTION STORMWATER MANAGEMENT CONTROL 20

CONTRACTOR’S ACCESS BRIDGE 69

COVERCROP SEEDING 75

DEBONDING PRESTRESSING STRANDS 61

ENVIRONMENTAL COMMITMENT DOCUMENT 23

ENVIRONMENTAL COMMITMENT ENFORCEMENT 26

EROSION CONTROL 74

FLEXIBLE POST DELINEATOR, SURFACE MOUNT 53

FOUNDATION COURSE 39

FOUNDATION COURSE 4” 38

GENERAL CONDITIONS 3

GRANULAR SUBDRAINS 76

GRANULAR/COHESIVE EMBANKMENT 37

GRAVEL EMBEDMENT 40

GUARDRAIL END TREATMENT, TYPE I 76

HAZARDOUS MATERIALS MANAGEMENT 31

HYDRATED LIME FOR ASPHALT MIXTURES 79

HYDRATED LIME SLURRY FOR ASPHALT MIXTURES 81

INCENTIVE PAYMENT FOR THE USE OF RECYCLED ASPHALTIC PAVEMENT (RAP) FOR ASPHALTIC MIXTURES 90

LED ROADWAY LUMINAIRES 48

LIABILITY INSURANCE 18

LIMITATION OF OPERATIONS 21

MEASUREMENT AND PAYMENT
(Partial Payment) 18

NOTICE TO BIDDERS
(ELECTRONIC PLAN DATA) 13
(Granular Fill)..... 15
NOTICE TO BIDDERS (Storm Water Pollution Prevention Plan) 15

PERFORMANCE GRADED BINDER..... 78
PERMANENT PAVEMENT MARKING..... 53
PILES AND PILE DRIVING 61
PREFORMED WATERPROOFING MEMBRANE TYPE 3 63
PROPOSAL GUARANTY..... 93
PROPOSAL GUARANTY BID BOND (BID BOND) 17

REQUIRED SUBCONTRACTOR/SUPPLIER QUOTATIONS LIST 16
RUMBLE STRIPS 55

SALVAGING AND PLACING TOPSOIL 37
SEEDING 70, 71, 72, 73
SPECIAL PROSECUTION AND PROGRESS
(Coordination with Others) 12
(Federal Immigration Verification System) 17
(Migratory Bird Responsibility) 13
(Phasing)..... 12
STABILIZED SUBGRADE TYPE LIME..... 42
STATUS OF UTILITIES..... 10
STORM WATER DISCHARGES 15
STORM WATER POLLUTION PREVENTION PLAN (SWPPP)..... 24
SUPERPAVE ASPHALTIC CONCRETE..... 92
SURFACING 6"..... 56
SURFACING UNDER GUARDRAIL..... 54

TEMPORARY SEEDING..... 75
TEMPORARY SURFACING 10" 57
TEMPORARY WATER POLLUTION CONTROL 19
TIMBER AND LUMBER 92
TRAINING SPECIAL PROVISIONS..... 3
AMENDMENT TO CONSTRUCTION TRAINING REPORT REQUIREMENTS..... 10

UTILITY CONTACT..... 53

VEHICLE GATES..... 77

WAGES AND CONDITIONS OF EMPLOYMENT
(Employment of Labor – Payrolls)..... 18
WORK ZONE TRAFFIC CONTROL SIGNS..... 48
WORKER VISIBILITY 16

