

CONTRACT NO. A16AV00510

**INDIAN SELF-DETERMINATION
INDIAN RESERVATION ROADS
CONSTRUCTION
CONTRACT AGREEMENT**

**ENTERED INTO UNDER THE AUTHORITY OF
TITLE I OF PUBLIC LAW 93-638 (AS AMENDED)**

BETWEEN

**NAVAJO ENGINEERING & CONSTRUCTION AUTHORITY
(NAVAJO NATION TRIBAL ORGANIZATION)**

AND

**THE UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS**

FOR

**CONSTRUCTION OF 1.082 MILES OF GRADE AND DRAINAGE,
PLACEMENT OF AGGREGATE BASE,
HOT ASPHALTIC CONCRETE PAVEMENT,
NEW FOUR SPAN PRECAST PRESTRESSED GIRDER BRIDGE,
AND OTHER MISCELLANEOUS CONSTRUCTION
IN ACCORDANCE WITH THE FP-03 SPECIFICATIONS AND
DESIGN DRAWINGS
FOR PROJECT N2007(1-1)1, 2, 4, NAVAJO, AZ
APACHE COUNTY, NEW LANDS**

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SECTION “A”

CONTRACT FORM

&

AGREEMENT

GENERAL TERMS, PROVISIONS AND CONDITIONS

GENERAL TERMS, PROVISIONS & CONDITIONS

**Agreement Between the Secretary of the Interior
And
NAVAJO ENGINEERING & CONSTRUCTION AUTHORITY
(Navajo Nation Tribal Organization)**

CONTRACT NUMBER: A16AV00510

1. AUTHORITY: This agreement, denoted as a Self-Determination Construction Contract (referred to in this agreement as the “Contract”), is entered into by the Secretary of the Interior (referred to in this agreement as the “Secretary”), for and on behalf of the United States of America, pursuant to Title I of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450 et. seq.), in accordance with Subpart J of 25 CFR Section 900, entitled the Indian Self-Determination and Education Assistance Act Amendments and by the authority of the **NAVAJO ENGINEERING & CONSTRUCTION AUTHORITY** (referred to in this agreement as the “Contractor”).

This Contract consists of the following road construction work:

The Contractor shall perform the Construction work for the Bureau of Indian Affairs Road Construction Project, **N2007(1-1)1, 2, 4, located in Navajo, AZ** in full accordance with the statement of work, program standards, and the terms, provisions, and conditions of the contract, on a firm-fixed unit price payment basis, for work performed by the Contractor, and accepted by the Government. A fair and reasonable price for the work to be performed under this contract will be negotiated between the Contractor and the Government in accordance with the provision of 25 CFR 900 Subpart J, Section 900.128.

2. PURPOSE: Each provision of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450 et seq.) and each provision of this Contract shall be liberally construed for the benefit of the Contractor, and transfer the funding for Construction of the Bureau of Indian Affairs Indian Reservation Road (IRR) Program and Indian Reservation Roads Bridge Program (IRRB) for approved road and bridge project activities on the Navajo Nation as identified in Section B of this contract.

This self-determination construction contract is a government-to-government agreement that transfers control of the construction project(s) to the contracting Indian tribe or tribal organization to facilitate effective and meaningful participation by the Indian tribe or tribal organization in planning, conducting, and administering the construction project(s), and so that the construction program is responsive to the true needs of the Indian Community.

3. CONTRACTORS OBLIGATION: The Contractor shall furnish the necessary qualified personnel, including licensed engineers and architects; material, equipment, facilities; and miscellaneous construction to perform Construction work for the Bureau of Indian Affairs Road Construction Project as identified in Section B entitled “Budget Control Schedule” which are located on the Navajo Nation, in full accordance with the Terms, Conditions, Program Standards, Program of Requirements, and all Provisions of this contract. **PRELIMINARY DESCRIPTION OF PROJECT: CONSTRUCTION OF 1.082 MILES OF GRADE AND DRAINAGE, PLACEMENT OF AGGREGATE BASE, HOT ASPHALT CONCRETE PAVEMENT, NEW FOUR SPAN PRECAST**

PRESTRESSED GIRDER BRIDGE, AND MISCELLANEOUS CONSTRUCTION IN ACCORDANCE WITH THE FP-03 SPECIFICATIONS AND DESIGN DRAWINGS.

4. CONTRACT TERM AND EFFECTIVE DATE: The term of this contract shall become effective from the date of execution of this contract by the Contractor and the Government. The Contractor agrees to complete the work under this contract by the expiration date of **600 calendar days from date of NTP** subject to such extensions as may be authorized by the terms of the contract and the specifications made as part thereof. The Contractor agrees to prepare and submit to the Government a progress schedule in accordance with Section 155 of the contract Supplemental Specifications, and agrees to provide Bond(s), Certificate(s) of Insurance, and Safety plan, Temporary Traffic Control Plan, Storm Water Pollution Prevention Plans, and Quality Control Plans for all items of work prior to commencement of any construction work and issuance of "Notice to Proceed" by the Government.

5. FUNDING AMOUNT: The total amount of this contract is stated in the Award/Contract document and is shown in Section B entitled "Budget Control Schedule" for project activities that have been approved in the Transportation Improvement Plan (TIP) located on or near the Navajo Nation. For performing this contract the Contractor shall be paid for its allowable and allocable direct costs not to exceed that total budget amount stated in the Award/Contract document which identifies the Construction work. The amount of this Contract may, during the life of this Contract, include sums which are based on tentative allocations of funds which the Bureau believe will be available. The actual allocation(s) of funds may be less than the tentative allocation(s) when the United States Congress makes appropriations. By signing this Contract, or any modifications thereto, the Contractor understands that all contract funds are subject to availability, the Contractor **acknowledges that: (1) The contract amount is based on a tentative allocation of funds; (2) that the actual allocation of funds may be less than the funds identified in the contract; and, (3) it may become necessary to modify the Contract to reflect the actual allocation and (4) that any such modification is required by law (25 U.S.C. 450j-1).**

6. PAYMENT: The total amount of this contract is stated in the Award/Contract document and is shown in Section B entitled "Budget/Control Schedule". The Contractor shall be paid for its allowable direct costs, **not to exceed the total amount negotiated (\$ 15,464,792.18)** between the Contractor and the Government for the Construction work identified in the Project Control Schedule and completed construction Bid Schedule. The contract payments shall be made upon presentation of pay Estimates of units of work actually performed. Each estimate shall contain an itemization of units completed by line item as stated in the Bid Schedule(s).

On the First (1st) and Fifteenth (15th) of each month or the following work day, should these dates fall on a weekend or holiday, the AOTR/SAOTR will prepare and submit a pay estimate to the Contractor for approval on a form acceptable to both the Contractor and the Government.

The pay estimate will be reviewed and approved (in writing) by both the Contractor's field representative and AOTR/SAOTR prior to submission to the Regional Office for approval and processing. **The approved pay estimate shall be the only document required for payment and no other action will be required on the part of the Contractor to obtain payment.** After the Awarding Official reviews and approves the progress estimate, it will be processed through the Automated Standard Application for Payment (ASAP) Payment System. The allowability of costs for this contract

and all subcontracts entered into under this contract shall be determined by 25 CFR SubPart J, Sec. 900.132, or if applicable OMB Circular A-87.

Notwithstanding any other payment provisions of this contract, failure of the Contractor to submit required reports when due will result in the withholding of payments. Failure to perform or deliver the required work, supplies or services will result in the withholding of payments under this contract in accordance with 25 USC SubPart L, Sec. 900.170; unless such failure is determined to be "excusable" by the Awarding Official under the terms, provisions, and conditions of the contract.

Except with respect to failures of subcontractors, the Contractor shall not be considered to have failed in performance of this contract if such failure arises out of causes beyond the control and without fault or negligence of the Contractor.

The Government shall promptly notify the Contractor in writing of its intention to withhold payment of any invoice or voucher submitted and provide for a reasonable time to correct the reason for withholding payment.

7. AWARDING OFFICIAL'S TECHNICAL REPRESENTATIVE: The Awarding Official's Technical Representative (AOTR) and the Subordinate Awarding Official's Technical Representative (SAOTR) will be designated by memorandum. Copies of memoranda designating the AOTR and SAOTR for this Contract will be forwarded to the Contractor.

8. TECHNICAL ASSISTANCE: Should performance deficiencies or disagreement arise during the performance of this contract, Government shall offer and provide technical assistance to the Contractor and may oversee and provide technical assistance to the Contractor to resolve any such occurrences prior to taking any action for termination of work.

9. FEDERAL ACQUISITION REGULATION (FAR) AND DEPARTMENT OF THE INTERIOR(DOI) CLAUSES: FAR and DOI clauses applicable to the contract any subcontract awarded under this contract are listed in Section I of this contract, and are incorporated into this contract by reference.

10. RESPONSIBILITIES OF CONTRACTOR: (a) The Contractor is responsible for the successful completion of project construction activities in accordance with the approved contract documents. (b) If the Contractor is contracting to perform project construction phase activities, the Contractor shall have the following responsibilities: (1) The Contractor shall subcontract with or provide the services of licensed and qualified engineers and other consultants as needed to accomplish the self-determination construction contract. (2) The Contractor shall administer and dispense funds provided through the contract in accordance with Subpart F, Section 900.42 through Section 900.45 and implement a property management system in accordance with Subpart F, Section 900.51 through Section 900.60. (3) The Contractor shall subcontract with or provide the services of construction contractors or provide its own forces to conduct construction activities in accordance with the project construction documents or as otherwise negotiated between and agreed to by the parties. (4) The Contractor shall direct the activities of project engineers, construction contractors, and other project consultants, facilitate the flow of information between the Indian tribe or tribal organization and its subcontractors, resolve disputes between itself and its subcontractors or between its subcontractors, and monitor the work produced by its subcontractors to assure compliance with the project plans and

specifications. (5) The Contractor shall manage or provide the management of day-to-day activities of the contract including the issuance of construction change orders to subcontractors except that, unless the Secretary agrees: (i) The Contractor may not issue a change order to a construction subcontractor that will cause the Contractor to exceed its self-determination contract budget; (ii) The Contractor may not issued a change order to a construction subcontractor that will cause the Contractor to exceed the performance period it its self-determination contract budget; or (iii) The Contractor may not issued to a construction subcontractor a change order that is a significant departure from the scope or objective of the project. (6) The Contractor shall direct the work of its subcontractors so that work produced is provided in accordance with the contract budget and performance period as negotiated between and agreed to by the parties. (7) The Contractor shall provide to the Secretary, progress and financial status reports. (i) The reports shall be provided quarterly, or as negotiated, and shall contain a narrative of the work accomplished, the percentage of the work completed, a report of funds expended during the reporting period, and total funds expended for the project. (ii) The Contractor shall also provide copies, for the information of the Secretary, of an initial schedule of values and updates as the may occur, and an initial construction schedule and updates as they occur. (iii) Provide a summary of problems encountered and identification of potential problems that could hinder individual project development. (8) The Contractor shall maintain on the job-site or project office, and make available to the Secretary during monitoring visits: contracts, major subcontracts, modifications construction documents, change orders, shop drawings, equipment cut sheets, inspection reports, testing reports, and current redline drawings. (c) Upon completion of the project, the Indian Contractor shall provide to the Secretary a reproducible copy of the record plans (As Built) and a contract closeout report. (d) For cost-reimbursable projects, the Contractor shall not be obligated to continue performance that requires an expenditure of more funds than were awarded under the contract. If the Contractor has a reason to believe that the total amount required for performance of the contract will be greater than the amount of funds awarded, it shall provide reasonable notice to the Secretary. If the Secretary does not increase the amount of funds awarded under the contract, the Contractor may suspend performance of the contract until sufficient additional funds are awarded.

11. OBLIGATION OF THE UNITED STATES: In General - The United States reaffirms the trust responsibility of the United States to the Navajo Nation (Navajo Engineering & Construction Authority – Navajo Nation Tribal Organization) to protect and conserve the trust resources of the Navajo Nation (Navajo Engineering & Construction Authority – Navajo Nation Tribal Organization) and the trust resources of individual Indians. Nothing in this Contract may be construed to terminate, waive, modify, or reduce the trust responsibility of the United States to the tribe(s) of individual Indians. The Secretary shall act in good faith in holding such trust responsibility. If the Contractor is contracting to perform construction phase activities, the Secretary shall have the responsibilities as outlined under 25 CFR, Part 900, Subpart J, Section 900.131(b).

The Government will provide representation at the Concept/Scoping meeting for project development. The Government will inform the Contractor regarding any changes to the programs based on law, regulation, or policy. The Government will consult with the Contractor and identify any projects that qualify as “standby projects” on the BIA DOT Control Schedule, and advise the Contractor of the availability of excess program funds that may become available for obligation to their projects during the fourth quarter.

12. DESIGNATED OFFICIALS: No later than the effective date of this contract, the United States shall provide to the Contractor, and the Contractor shall provide to the United States, a written

designation of a senior official to serve as a representative for notices, proposed amendments to the contract, and other purposes for this contract.

The Awarding Official's Technical Representative (AOTR) for this contract is:

NAME	PHONE
Lonnie Hammer, Highway Engineer	505-863-8250, Cell – 505-906-1230

The Subordinate Awarding Official's Technical Representative (SAOTR) this contract is:

NAME	PHONE
Jonathan Baldwin, Civil Engineer Technician	505-863-8280, Cell – 505-399-1747

The Official Representative to negotiate for the Contractor is:

NAME	PHONE
Mr. Cary Patterson, General Manager	(505) 368-5151

13. MODIFICATIONS OR AMENDMENTS: (A) This contract may be revised or amended by the Government as required to carry out the purpose of the project. The Government's right to order change within the scope of the contract is set forth in FAR Clause 52.243-4. In General-Except as provided above, and Public Law 93-638, Section 108, Section 1 (e)(2)(B), entitled "Exception", no modification to this Contract shall take effect unless such modification is made in the form of a written amendment to the Contract, and the Contractor and the Secretary provide written consent for the modification. **The Government and the Contractor agreed to the following markups and taxes to be used for contract modifications under this contract: Tribal Taxes = 5% on applicable materials and subcontracts; Profit = 8% of direct cost; Overhead = 52% of direct labor costs for NECA employees; and Bond = 1% of all costs inclusive of overhead and profit.**

14. ACCOUNTING CERTIFICATION: The Contractor agrees to provide certification by a licensed accountant that the bookkeeping and accounting procedures which the tribal organization presently uses meet the standards of 25 CFR Part 900, Subpart F. In place of the certification; the Contractor may submit a written agreement to establish a bookkeeping and accounting system that meets the standards of 25 CFR Part 900, Subpart F, and to have the bookkeeping and accounting system certified before the Bureau disburses any funds under a contract awarded as a result of this funding agreement. The accounting system shall provide for the accumulation of costs throughout the contract terms or performance period in such a manner as to facilitate audit or review of the financial records. Ultimate responsibility and accountability of the contracted project resides with the Contractor. By signing this contract, the Contractor certifies that its purchasing, financial and property systems fully meet the standards prescribed by 25 CFR Subpart F, and that staffing (including management and architectural/engineering resources) are adequate to satisfactorily perform the work required under this construction project. This certification does not limit BIA's authority to review the adequacy of Contractor's purchasing, financial, and property systems.

15. DRAWINGS AND OTHER DATA TO BECOME PROPERTY OF THE GOVERNMENT: All designs, drawings, specifications, notes, and other work developed in the performance of this Contract shall be and shall remain the sole property of the Government and may be used on any other work without additional compensation under this Contract. The Secretary reserves a royalty free, nonexclusive, and irrevocable license to reproduce, publish or otherwise use, for General government purposes, the copyright in any work developed under this contract or a subcontract under this contract

and any rights of copyright which the Contractor or subcontractor under this contract purchases ownership through this contract.

16. APPROVAL OF CONTRACT: Unless previously furnished to the Secretary, the resolution of the Navajo Nation authorizing the contracting of the programs, services, functions, and activities identified in this Contract is attached to this Contract under Section J.

17. PRIVACY ACT REQUIREMENTS: When a tribal contractor operates a system of records to accomplish a Bureau function, the contractor shall comply with Subpart D of 43 CFR Part 2 which implements the Privacy Act (5 U.S.C. 552a).

18. FREEDOM OF INFORMATION: Unless otherwise required by law, the Bureau shall not place restrictions on tribal contractors which will limit public access to the tribal contractor's records except when records must remain confidential. The Contractor shall make all reports and information concerning the contract available to the Indian people, which the contractor serves or represents.

19. AUDIT REQUIREMENTS: The Contractor agrees to arrange for, participate fully in, and respond promptly and fully to the recommendations of an annual single organization-wide audit as prescribed by the Single Audit Act of 1984, in the current Office of Management and Budget (OMB) Circular A-133 and in Title 43 Code of Federal Regulations, Part 12. The costs of such audit are allowable charges only if made in accordance with Circular provisions. Small and minority business audit firms shall be afforded maximum practicable opportunity to participate in contracts to fulfill the requirements herein. The preference requirements of Section 7(b), Public law 93-638, shall apply and are to be enforced. The Contractor agrees to participate fully in, and respond promptly and fully to any special audit of this contract, if requested by the Awarding Official.

20. PENALTIES: Any officer, director, agent, employee or such other person connected in any capacity with this contract or any subcontract thereunder that embezzles, willfully misapplies, steals or obtains by fraud any of the money, funds, assets or property provided through the contract shall be fined not more than \$10,000 or imprisoned for not more than two years; or both; provided that if the amount embezzled, misapplied, stolen, or obtained by fraud does not exceed \$100, such person shall be fined not more than \$1,000 or imprisoned not more than one year, or both. The Contractor agrees to insert this clause in all subcontracts.

21. RECORDS, MONITORING AND REPORTING: The Contractor shall maintain a record keeping system and, upon reasonable advance request, provide reasonable access to such records by BIA. At a minimum, such records shall include completed daily reports of construction activities appropriate to the type of construction being performed. The Contractor shall be responsible for managing the day-to-day operations conducted under this contract and for monitoring activities conducted under this contract to ensure compliance with the contract and applicable Federal requirements. With respect to the monitoring activities of Government, the monitoring visits/inspections shall include those jointly determined to be necessary to ensure compliance with the contract, including structural integrity of the project and compliance with safety, health, and environmental standards or requirements. Prior to beginning of construction the Contractor and Government will agree upon Government's process for monitoring the project activities. The Contractor shall maintain on the job-site or project office, and make available to the Secretary during monitoring visits; contracts, major

subcontracts, modifications, construction documents, change orders, shop drawings, equipment cut sheets, inspection reports, testing reports, and current redline drawings.

When contracting for construction services the Contractor shall provide the reports identified in CFR 900.130(c)(7). In addition to reports which may be required by various other clauses of this contract, the Contractor shall submit the following reports to the Subordinate Awarding Official's Technical Representative (SAOTR); (1) Daily Reports on Safety, (b) Annual Reports on Indian Employment, (c) Indian Hours Worked by craft, (d) Indian Wages, (e) Non-Indian Hours Worked, and Non-Indian Wages.

22. WITHHOLDING CONTRACT PAYMENTS: Withholding of Contract Payments shall be in strict compliance with 25 CFR Part 900, Section 900.132.

23. FURNISHING FACILITIES, EQUIPMENT, SUPPLIES AND SERVICES – BUDGETED COSTS: This contract does not require the furnishing of Facilities, Equipment, Supplies and Services as budgeted costs. All facilities, equipment, supplies and services required to perform the actual construction work are incidental to the item listed in the bid schedule(s).

24. BILLING FOR INDIRECT COST: Any indirect costs associated with this contract are to be included in the item unit bid price for Project Representative and/or the individual item unit bid price. No separate billing for indirect costs will be allowed.

25. OFFICE OF NAVAJO LABOR RELATIONS: Navajo Preference in Employment Act is applicable to this contract and to subcontracts pursuant to Section 7b and 7c of the Act.

26. ACCIDENT PREVENTION: The Contractor agrees to prepare an Accident Prevention Plan in accordance with FAR Clause 52-236.13 and submit to the Government prior to the commencement of construction work under this contract.

27. DISPUTES: This contract is subject to the Contract Disputes Act of 1978 (CDA 41 U.S.C. 601 as amended) and as outlined in CFR 900 Subpart N.

28. SUSPENSION OF WORK: The Secretary can require an Indian Contractor or Contractor's Organization to suspend work under a contract in accordance with this paragraph. The Secretary may suspend a contract no more than 30 days unless the Indian Contractor or Contractor's Organization has failed to correct the reason(s) for the suspension or unless the cause of the suspension cannot be resolved through either the efforts of the Secretary or the Indian Contractor's Organization. The following are reasons the Secretary may suspend work under a self-determination contract for construction: (a) Differing site conditions encountered upon commencement of construction activities that impact health or safety concerns or shall require an increase in the negotiated project budget; (b) The Secretary discovers materially non-compliant work; (c) Funds allocated for the project that is the subject of this contract are rescinded by Congressional action; or (d) Other Congressional actions occur that materially affect the subject matter of the contract. If the Secretary wishes to suspend the work, the Secretary shall first provide written notice and an opportunity for the Indian Contractor or Contractor's Organization to correct the problem. The Secretary may direct the Indian Contractor or Contractor's Organization to suspend temporarily work under a contract only after providing a minimum of 5 working days advance written notice to the Indian Contractor or Contractor's Organization describing the nature of the

performance deficiencies or imminent safety, health or environmental issues which are the cause for suspending the work. The Indian Contractor or Contractor's Organization shall be compensated for reasonable costs, including but not limited to overhead costs, incurred due to any suspension of work that occurred through no fault of the Indian Contractor or Contractor's Organization. Disputes arising as a result of a suspension of the work by Secretary shall be subject to the Contract Disputes Act or any other alternative disputes resolution mechanism as negotiated between and agreed to by the parties and contained in the contract.

29. TERMINATION OF WORK FOR CAUSE: The Secretary can terminate the project for cause in the event non-compliant work is not corrected through suspension process specified in paragraph 11 of 25 CFR Part 900, Section 900.131(b).

30. TERMINATION FOR CONVENIENCE: The Secretary retains the authority to terminate the project for convenience for the following reasons: (i) Termination for convenience is requested by the Indian Contractor or Contractor's Organization; (ii) Termination for convenience is requested by the Secretary and agreed to by the Indian Contractor or Contractor's Organization; (iii) Funds allocated for the project that is the subject of the contract are rescinded by Congressional action; (iv) Other Congressional actions take place that effect the subject matter of the contract; (v) If the Secretary terminates a self-determination construction contract for convenience, the Secretary shall provide the Indian Contractor or Contractor's Organization 21 days advance written notice of intent to terminate a contract for convenience; or (vi) The Indian Contractor or Contractor's Organization shall compensated for reasonable costs incurred due to termination of the contract.

31. SUBCONTRACTS: The Contractor shall solicit, award and administer subcontracts in accordance with the following provisions:

PROCUREMENT SCHEDULE: The Contractor's purchases/contracts shall be **Fixed Price** contracts as described by the Federal Acquisition Regulations. The Contractor's purchases/contracts shall only be made to responsible subcontractors possessing the ability to perform successfully under the terms and conditions of the proposed procurement. Consideration shall be given to such matters as subcontractor integrity, compliance with public policy, record of past performance, and financial and technical resources. The Contractor shall not make an award to any party which is debarred or suspended or is otherwise excluded from or ineligible for participation in Federal assistance programs under Executive Order 12549, "Debarment and Suspension".

The Contractor is solely responsible, in accordance with good administrative practice and sound business judgment, for the settlement of all contractual and administrative issues arising out of its procurement. These issues include but are not limited to, source evaluation, protests, disputes, and claims. The Contractor shall maintain a code of standards for conduct to ensure that no employee, officer or agent of the Contractor participates in selection, award, or administration of a subcontract if a conflict of interest (actual or apparent) would be involved. The Contractor shall ensure that personnel selected to perform or manage the construction project are qualified in accordance with generally accepted professional standards of the industry. Engineers, surveyors and other related construction professionals and related trade and craft practitioners shall be licensed under applicable state law or work under the direction of licensed engineers and surveyors, and meet appropriate qualifications and experience requirements for the type of work involved.

COMPETITION: Unless a preference is permitted by the Contractor for a tribal or Indian subcontractor, all major procurement transactions will be conducted in a manner which provides for maximum practicable competition in order to obtain fair and reasonable costs or pricing.

REQUIREMENTS: Each contract entered into under the Act by the Contractor with a third party in connection with performing the obligations of the Contractor under this contract shall at a minimum: (a) Be in writing; (b) Identify the interested parties their authorities and the purposes of the contract; (c) State the work to be performed under the contract; and (d) State the process for making any claims, the payments to be made, and the terms of the contract, which shall be fixed priced; (e) Be subject to Section 7(b) and (c) of the Act. **INDIAN PREFERENCE:** Pursuant to Section 7(b) of the Indian Self-Determination and Assistance Act, as amended, to the greatest extent feasible, this contract and any subcontracts awarded shall require Indian preferences and opportunities for training and employment in connection with the administration of such contract/ subcontracts. In addition, preference in the award of subcontracts shall be given to Indian organizations and to Indian-owned economic enterprises. Pursuant to Section 7(c) of the Indian Self-Determination and Assistance Act, as amended, the tribal employment or contract preference laws adopted by such Contractor shall govern with respect to the administration of the contract or portions of the contract.

REASONABLENESS OF PRICE: In order to determine price reasonableness, the Contractor shall ensure the reasonableness of price for every procurement action, including subcontract modifications.

SUBCONTRACT PROVISIONS: The *Contractor* will use its own procurement system and procedures to ensure that each subcontract includes clauses required by Federal statutes and executive orders and their implementing regulations and state and local laws and regulations. At a minimum, all subcontracts shall incorporate the following terms and conditions in order to ensure structural integrity, safety, and health, and satisfactory completion of the construction project: (a) administrative, contractual, or legal remedies in instances where subcontractors violate or breach subcontract terms, and provide for such sanctions and penalties as may be appropriate; (b) termination for cause and for convenience including the manner by which it will be effected and the basis for settlement; (c) compliance with the Copeland "Anti-Kickback" Act (18 USC 874) as supplemented in Department of Labor regulations (29 CFR Part 3); (d) except for the work performed by Tribal or Tribal Organization employees, compliance with Davis-Bacon Act (40 USC 276a to a-7) as supplemented by Department of Labor regulations (29 CFR Part 5); (e) compliance with Sections 103 and 107 of the Contract Work Hours and Safety Standards Act (40 USC 327-330) as supplemented by Department of Labor regulations (29 CFR Part 5); (f) compliance with Miller Act (40 USE 270a-270f) with regard to performance and payment bonds, at the Contractor's option; (g) notice of *Contractor's* requirements and regulations pertaining to reporting; (h) notice of *Contractor's* requirements and regulations pertaining to patent rights with respect to any discovery or invention which arises or is developed in the course of or under such subcontract; (i) notice of *Contractor's* requirements and regulations pertaining to copyrights and rights in data; (j) access by the *Contractor* or BIA, the Comptroller General of the United States, or any of their duly authorized representatives to any book, documents, papers, and records of the subcontractor which are directly pertinent to the subcontract for the purpose of making audit, examination, excerpts, and transcriptions; (k) retention of all required records for three (3) years after final payment and all other pending matters are closed; (l) compliance with all applicable standards, orders, or requirements issued under section 306 of the Clean Air Act (42 USC 1857(h)), section 508 of the Clean Water Act (33 USC 1368) Executive Order 11738, and Environmental Protection Agency regulations (40 CFR Part 15); (m) mandatory standards and policies relating to

energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Public Law 94-163); (n) warranty that delivery of items or work required will be free of asbestos in any form whatsoever except for the use of asbestos cement pipe; (o) compliance with Federal Standard No. 313 (including revisions adopted during the term of the contract) with regard to Hazardous Material Identification and Material Safety Data.

SUBCONTRACT ADMINISTRATION: The **Contractor** shall maintain a contract administration system which ensures that each subcontractor performs in accordance with the terms, conditions and specifications of its subcontract, including maintaining records which sufficiently detail the significant history of a subcontract. The **Contractor** has ultimate responsibility for the construction project and is not relieved of such responsibility by authorizing performance of the work by a subcontractor or BIA. Such responsibility includes but is not limited to:

(1) Providing adequate supervision, inspection, and materials testing to ensure that the project is completed in conformance with approved plans and specifications; (2) Efficiently and effectively administering subcontracts through the application of sound management practices and business judgment, including; (a) ensuring that program funds have been expended and accounted for consistent with underlying agreements and program objectives; (b) assuming responsibility for employing whatever form of organization and management that is necessary to assure proper and efficient administration; (c) obtaining all access rights, licenses, and permits when the project is located on lands where the **Contractor** does not have legal jurisdiction or when special conditions warrant. In such instances, the **Contractor** will not be relieved from overall project responsibility and should coordinate with the entity having jurisdiction to perform the work with its own forces or by subcontract; (d) settling all contractual and administrative issues arising from procurement. These issues include, but are not limited to source evaluation, protests, disputes, and claims. The **Contractor** will have protest procedures to handle and resolve disputes relating to their subcontracts and shall disclose information regarding the protest to the Awarding Official; and (3) Processing regular progress payments to subcontractors as work is accomplished. The **Contractor** is not authorized to make advance payments to subcontractors.

All subcontracts entered into under this contract shall contain the FAR clauses prescribed in Section I of this contract. The Contractor shall be responsible for the project site, regardless of the subcontract(s) contractual relationship to the Contractor. The Contractor shall cause to be removed from the work at the project site any subcontractor employee thereof whom the Awarding Official, in writing, finds to be incompetent, careless or otherwise objectionable. Failure of any subcontractor(s) to complete work described in its subcontract in a satisfactory manner, or without delay, will not excuse the Contractor from any delay in the completion of the entire contract except as provided in the applicable clause of the contract.

In connection with the performance of work under this contract, the Contractor shall, in accordance with FAR Clause 52.209-6, *Protecting the Government's Interests when Subcontracting with Contractors Debarred, Suspended, or Proposed for Debarment*, not subcontract with a subcontractor who, at the time of the subcontract award, is listed on the List of Parties Excluded from Federal Procurement and Non-procurement programs, unless otherwise authorized by the Government in accordance with Subpart 9.4 of the Federal Acquisition Regulations. A consolidated List of Debarred, Suspended, and Ineligible Contractor is available for inspection at the office of the Awarding Official. In the event of the Contractor's noncompliance with the foregoing requirements, the Government may take appropriate

action, including, but not limited to, requiring the Contractor to terminate any such subcontract and substitute an eligible subcontractor in lieu thereof, at no increase in the contract price or time for performance. The Contractor should note his responsibility to award all subcontracts in accordance with Section 7(b) of P.L. 93-638 which requires that to the greatest extent feasible, preferences and opportunities for training and employment in connection with the administration of this contract shall be given to Indians; and preference in the award of subcontracts in connection with the administration of this contract shall be given to Indian organizations and to Indian-owned economic enterprises as defined in Section 3 of the Indian Financing Act of 1974 (88 Stat. 77).

DAVIS BACON ACT (WAGES): All laborers and mechanic employed by subcontractors employed in the construction, alteration, or repair, including painting or decorating or buildings or other facilities in connection with subcontracts entered into under this contract shall be paid wages at not less than those prevailing on similar construction in the locality, as determined by the Government of Labor in accordance with Davis-Bacon Act of March 3, 1931 (46 Stat. 1494), as amended.

INSURANCE: The Contractor and it is recommended for any subcontractors who perform any of the projects identified in the contract shall secure, pay premiums for, and keep in force until the expiration of this contract, or subcontract under this contract, or any renewal thereof, the following insurance: (1) Workman Compensation Insurance, as required by the laws of the various states in which the contract is performed; (2) Owner's landlord's and tenant's bodily injury liability insurance with limits of not less than \$1,000,000 for each person, and \$5,000,000 for each accident; (3) Property Damage Liability Insurance with limits of not less than \$500,000 for each accident and a total limit of \$1,000,000 for damages arising out of bodily injuries to or death of two persons in any one accident. Other insurance not specifically mentioned in the above paragraph when required by law or other regulations. Each insurance company of the Contractor or subcontractor must hold a current Certificate of Authority issued by the Director State Department of Insurance authorizing it to transact the appropriate kind of insurance business in State. To be acceptable, the policy of the insurance must contain a provision committing the insurer to pay for covered acts and omissions regardless of the fact that the same acts or omissions by the Contractor or subcontractors, its agent and employees may be covered under the Federal Tort Claims Act. Each policy of insurance shall be obtained by the Contractor shall also name the United States of America as an additional insured party to the policy. If the insurer denies coverage of a claim, does not defend the claim or does not pay the claim, and the claimant sues the Contractor or the United States or both for the injury, the following will occur: The Contractor or the United States of America, will tender the defense to the insurance company. If the insurance carrier does not defend, and the Contractor or the United States of America defends or settles the claim, the insurer shall pay the insured party that pays the claim (Contractor or United States of America). The amount of payment by the insurer will be the amount of the claim plus the cost of the defense, up to, but not to exceed the policy limit. Each policy of insurance shall contain an endorsement providing that cancellation by the insurance company shall not be effective unless a copy of the cancellation is mailed (registered) to the appropriate official of the Contractor at least 30 days before the effective date of the cancellation notice received, immediately upon receipt. A certificate of each policy of insurance, and any changes therein, shall be furnished to the Awarding Official immediately upon receipt from the insurance company. Insurance companies of the Contractor must be satisfactory to the Awarding Official. When in the Awarding Official's opinion an insurance company is not satisfactory for reasons stated in writing, the Awarding Official may recommend the contractor obtain insurance through companies, which he/she deems satisfactory.

Each policy of insurance shall contain a provision that the insurance carrier waives any rights which it may have to raise as a defense the tribe's sovereign immunity from suit, but such waiver shall extend only to claims in the amount and nature of which are within the coverage and limits of the policy of insurance. The policy shall contain no provision, either express or implied, that will serve to authorize or empower, the insurance carrier to waiver or otherwise limit the tribe's sovereign immunity outside or beyond the coverage and limits of the policy of insurance.

BONDING: Performance and payment bonds with penal amounts equal to 100% of the amount of the contract are required by law when bid exceeds \$25,000. Such bonds are not required if all work performed under this contract is solely performed by the Tribe, or public non-profit corporations serving as a government instrumentality of the Tribe. Proof of public non-profit corporate status must be furnished to, and be satisfactory to the Awarding Official. All subcontractors performing work under this contract are subject to bonding requirements. The Contractor is encouraged to ensure that subcontractors provide performance and payment bonds as required with penal amounts equal to 100% of the amount of the contract. Subcontractors Bonds are to be made payable to the Contractor and the Government. Corporate sureties offered for bonds furnished with this contract must be original documents and must appear on the list contained in the Department of Treasury Circular 570, entitled "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and Acceptable Reinsuring Companies".

SECTION “B”

BUDGET/CONTROL SCHEDULE

- 1. SCHEDULE OF ALLOWABLE COSTS**
- 2. SUMMARY OF PROJECT(S) COSTS - BID SCHEDULE**
- 3. SCHEDULE OF PROJECT TARGET DATES**

CONTROL SCHEDULE
Schedule of Allowable Costs

Project Name: Navajo, AZ Project
Project I.D.: N2007(1-1)1, 2, 4 located in Navajo, AZ

Program Cost Code	Expenditure Account Description	FY 2013 Contract Funding Amount	Party Responsible For completing the work	Government Direct Service Estimated Amount
15XA8083HT AM61E0009.999900 AANN003700 AT.N0084100.00000 252i	Construction	\$1,486,018.25	Contractor	\$ 0.00
15XA8083HT AM61E0011.999900 AANN003700 AT.N0084100.00000 252i	Construction	\$1,766,880.43	Contractor	\$ 0.00
13XA8083HT A721E0012.999900 AANN003700 AT.N0084100.00000 252i	Construction	\$4,000,000.00	Contractor	\$ 0.00
12XA8083HT A721E0012.999900 AANN003700 AT.N0084100.00000 252i	Construction	\$6,050,987.63	Contractor	\$ 0.00
12XA8083HT A721E0009.999900 AANN003700 AT.N0084100.00000 252i	Construction	\$2,160,905.87	Contractor	\$ 0.00
TOTAL CONTRACT AMOUNT. \$ 15,464,792.18				

BID SCHEDULE*Revised: 6/15/2015***UNIT PRICE SCHEDULE**
SCOPE-OF-WORK.

The cost proposal must be submitted on the Unit Price Schedule without modification.

The proposed work consists of furnishing all labor, material, equipment and incidentals necessary for construction of 1.082 miles of grade and drainage, placement of aggregate base, hot asphaltic concrete pavement, new four span precast prestressed girder bridge, and miscellaneous construction in accordance with the specifications and design drawings for **Project N2007(1-1)1, 2, 4, Navajo, AZ.**

The quantities listed for each item is estimated and the Unit Price is applicable to each as given in the Bid Schedule below. The final pay quantity measurements shall be rounded to the significant figures given in this bid schedule for the final pay estimate.

Payment for work performed on Items furnished will be made in accordance with Sub-Section 109.05, Scope of Payments of **FP-03-English Units.**

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
10901-0000	Extra & Miscellaneous Work Authorized Under Section 109.02(m)	All Req'd	Lump Sum	\$	\$
15101-0000	Mobilization	All Req'd	Lump Sum	\$	\$
15201-0000	Construction Survey and Staking	All Req'd	Lump Sum	\$	\$
15301-0020	Contractor Quality Control	14,000	Man Hour	\$	\$
15708-1000	Temporary Erosion Control	All Req'd	Lump Sum	\$	\$
15714-0000	Temporary Straw Mulching	17.40	Acre	\$	\$
20102-0000	Clearing & Grubbing	All Req'd	Lump Sum	\$	\$
20304-1000	Removal of Structures & Obstructions	All Req'd	Lump Sum	\$	\$
20401-0000	Roadway Excavation	6,587	yd ³	\$	\$
20403-0000	Borrow Excavation	114,178	yd ³	\$	\$
20410-2000	Furrow Ditches & Ditch Block	500	L.F.	\$	\$
20425-2000	Channel Reshaping, 3.0 ft. wide	369	L.F.	\$	\$
20601-0000	Development of Water Supply	4.85	M-gal	\$	\$
25101-2000	Placed Rip rap, Class 2	66	yd ³	\$	\$
25112-3000	Articulated Concrete Block Revetment, CC20	2,846	yd ²	\$	\$
25302-1000	Gabions, Galvanized Coated, Class 2	721	yd ³	\$	\$
30101-2000	Aggregate Base, Grading "Special"	8,795	Ton	\$	\$

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ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
30413-1000	Aggregate Stabilization, Roadbond, EN-1	21,431	yd ²	\$	\$
40201-0500	Hot Asphaltic Concrete Pavement, Class B, Grade "B", Type III Smoothness	4,163	Ton	\$	\$
40502-0800	Asphalt Cement, Grade PG 58-28	250.0	Ton	\$	\$
41101-5000	Asphalt Prime Coat, Penetrating Emulsified Prime (PEP)	32.5	Ton	\$	\$
55201-0200	Structural Concrete, Class A(AE)	1,888	yd ³	\$	\$
55301-2000	Precast, Prestressed Structural Member, Type BT-72, 130'-5" Girder	12	Each	\$	\$
55301-2010	Precast, Prestressed Structural Member, Type BT-72, 129'-4" Girder	12	Each	\$	\$
55401-1000	Reinforcing Steel, Grade 60	186,034	Lb	\$	\$
55401-2000	Epoxy Coated, Reinforcing Steel, Grade 60	236,909	Lb	\$	\$
56501-0600	Drilled Shafts, 4'-0" Diameter	507	L.F.	\$	\$
56501-0800	Drilled Shaft, 5'-0" Diameter	407	L.F.	\$	\$
60201-0810	24-inch Corrugated Steel Pipe Culvert	178	L.F.	\$	\$
60201-0910	36-inch Corrugated Steel Pipe Culvert	212	L.F.	\$	\$
60202-0510	28-inch Span x 20-inch Rise CSPA	142	L.F.	\$	\$
60202-0610	35-inch Span x 24-inch Rise CSPA	70	L.F.	\$	\$
60210-0810	End Section for 24-inch CSPC	5	Each	\$	\$
60210-1010	End Section for 36-inch CSPC	2	Each	\$	\$
60211-0910	End Section for 28" x 20" CSPA	6	Each	\$	\$
60211-1010	End Section for 35" x 24" CSPA	1	Each	\$	\$
60701-1000	Remove, Clean & Stockpiling CSP	448	L.F.	\$	\$
60801-0500	Paved Waterway, Type V	1,514	Sq. Ft.	\$	\$
61701-1250	Guardrail System, SGR04b, Type PD02 with SKT-350 End Treatment	1,178	L.F.	\$	\$
61707-0000	Structural Transition Railing (three beam)	75	L.F.	\$	\$
61711-5000	Impact Attenuator, QUADGUARD	2	Each	\$	\$
61801-1000	Concrete Barrier	40	L.F.	\$	\$
61901-1000	Barbed Wire Fencing, 5-Strand	5,900	L.F.	\$	\$
61901-1300	Fence, Chain Link Pedestrian Fence Curved 6'-6" Height	552	L.F.	\$	\$

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ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
61901-1800	Fence, Chain Link Pedestrian Fence Straight 5'-0" Height	552	L.F.	\$	\$
61901-2100	Fence, Chain Link 7'-0" Height with 2-24 Ft. Swing Gates	150	L.F.	\$	\$
61901-3400	Temporary Safety Fence, HDPE Type	200	L.F.	\$	\$
61902-0010	16 Ft. Wide Turnout, No Gate	9	Each	\$	\$
61902-0020	24 Ft. Wide Turnout, No Gate	7	Each	\$	\$
61902-1300	14 Ft. Wide Turnout, with Type I Gate	2	Each	\$	\$
61902-1600	Gate, Type III, 20 Ft. Wide	1	Each	\$	\$
61903-0710	18 Ft. Type III Closure Gate	1	Each	\$	\$
61903-0810	40 Ft. Wide Turnout, No Gate	1	Each	\$	\$
61903-1210	4-Unit Cattleguard, without Gate	3	Each	\$	\$
61903-1100	3-Unit Cattleguard, with Type II Gate	1	Each	\$	\$
61921-0000	Remove and Reset Fencing	675	L.F.	\$	\$
62101-0000	Right-of-Way Monument	21	Each	\$	\$
62102-0000	Reference Marker	21	Each	\$	\$
62510-1000	Permanent Seeding, Dry Method	8.5	Acre	\$	\$
62901-1100	Erosion Control Matting, Type IV	2,723	yd ²	\$	\$
63302-1003	Sign Installation, 1 Post & Hardware: 2.75 lb/ft	38.0	Ft ²	\$	\$
63302-0010	Sign Installation, 2 Posts & Hardware: 2.00 lb/ft	41.7	Ft ²	\$	\$
63308-2000	Object Marker, Glass Fiber, "Type 2"	6	Each	\$	\$
63308-3000	Object Marker, "Type 3", 1-Post & Hardware: 2.00 lb/ft	4	Each	\$	\$
63309-0010	Delineator, Glass Fiber, Type "1a"	10	Each	\$	\$
63309-0020	Delineator, Glass Fiber, Type "1b"	5	Each	\$	\$
63318-1000	Milepost, 1-Post & Hardware: 2.00 lb/ft	4	Each	\$	\$
63401-1510	Pavement Markings, Type "H", Solid Yellow	2,906	L.F.	\$	\$
63401-1520	Pavement Markings, Type "H", Solid White	9,650	L.F.	\$	\$
63401-1610	Pavement Markings, Type "H", Broken Yellow	6,661	L.F.	\$	\$
63501-0000	Temporary Traffic Control	All Req'd	Lump Sum	\$	\$

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ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
63502-3000	Temporary Traffic Control, Raised Pavement Marker, Yellow	700	Each	\$	\$
63509-1000	Flagger	8,000	Man Hour	\$	\$
TOTAL BID AMOUNT: \$ _____					

CONTROL SCHEDULE <u>Schedule of Project Target Dates</u>			
Project Name	Estimated Construction Start Date	Estimated Construction Completion Date	Estimated Final Construction Acceptance Date
N2007(1-1)1, 2, 4 Navajo, AZ	As Specified on NTP	As Specified on NTP	When all the work called for in the contract is completed in compliance with all contract requirements

SECTION “C”

- 1. PROGRAM STANDARDS**
- 2. STATEMENT OF WORK**
- 3. SPECIAL CONTRACT REQUIREMENTS**
- 4. DEPARTMENT OF LABOR – GENERAL
DECISION**
- 5. PLANS & SPECIFICATIONS**
 - Revisions & Supplemental Specifications to
FP-03-English**

PROGRAM OF REQUIREMENTS

Program Standards

Except as specifically provided in the Indian Self-Determination and Education's Assistance Act (25 U.S.C. 450 et. seq.) the Contractor is not required to abide by Bureau program guidelines, manuals, or policy directives of the Secretary, unless otherwise agreed to by the Contractor and the Secretary, or otherwise required by law.

The Contractor agrees to provide the services, functions and activities (or portion thereof) listed in the attached Statement of Work and in conformity with the following standards:

Applicable Laws and Regulations: 23 USC, 23 CFR, 25 CFR 170, Roads of the Bureau of Indian Affairs, 25 CFR 169, Right-of-Way Over Indian Lands; 16 USC 470aa-11 Conversation; 25 USC 450, Indian Self-Determination and Education Assistance Act, P.L. 93-638 as amended, 25 CFR Part 900, Indian Self-Determination and Education Assistance Act Amendments, 36 CFR 800, regulations implementing Section 106 of the National Historic Preservation Act of 1996, as amended (P.L. 89-655); 40 CFR 1500-1508, regulations implementing the National Environmental Policy Act of 1969; 43 CFR 7, Protection of Archaeological Resources implementing the Archaeological Resources Protection Act of 1979 and other applicable laws and regulations which expressly apply to Indian Tribes.

Guidelines: The October 29, 1987 draft or most recent version of the 81 IAM; Chapter 6, Indian Reservation Roads of the Federal Aid Policy Guide; Indian Reservation Roads Program (IRRP) "Business Plan", January 2004; 30 BIAM, Supplemental 1 and 49 CFR 44T16, September 29, 1983 "Secretary of the Interior's Standards and Guidelines" for Archeology and Prehistoric Preservation are incorporated into this Contract. The construction shall be in accordance with the plans and engineering standards utilizing FHWA "Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects (FP-03).

Other Laws and Regulations: The Contractor agrees to comply with the "Wild and Scenic Rivers Act" of 1968, Section 102(a) of the "Flood Disaster Protection Act" of 1973 (P.L. 93-234). Title II and III of the "Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970", (P.L. 91-646), "Lead Based Paint Poisoning Prevention Act", 42 USC 4801 et. seq., Section 106 of the National Historic Preservation Act of 1996" as amended, and 42 USC 4321-4370D, the Public Health and Welfare.

Guidelines will be followed at the discretion of the Contractor, however, alternative guidelines must be consistent with or exceed the above referenced guidelines and shall be approved by the Secretary.

Background: The Indian Reservation Roads (IRR) Construction Program was established on May 26, 1928, by Public Law 520 [Codified at 25 USC 318(a)]. The P.L. 97-424, Surface Transportation Assistance Act of 1982, incorporated the IRR program into the Federal Lands Highway Program (FLHP) and provided funds for the Highway Trust Fund (HTF), with reauthorization in 1987 and subsequent modification under the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), (P.L. 102-240) and the Transportation Equity Act for the 21st Century 1998 (TEA21) (P.L. 105-178). The IRR construction program and the IRR Bridge program is authorized under the

Federal Land Highway (FLH) program, 23 USC 144, 204. The current IRR and HBRRP programs are jointly administered by the Bureau of Indian Affairs (BIA) and the Federal Highway Administration (FHWA) through a Memorandum of Agreement. P.L. 93-638, "Indian Self-Determination and Education's Assistance Act, as amended, provides for tribal governments to enter into Self-Determination contracts with the Secretary of the Interior to plan, conduct, and administer non-inherent Federal functions, including construction programs administered by the Secretary of the Interior for the benefit of Indians for which appropriations are made to agencies other than the Department of Health and Human Services or the Department of the Interior. The purpose of the IRR Construction Program is to provide safe and adequate transportation and public road access to and within Indian reservations, Indian lands and communities for Native Americans, visitors, recreationists, resource uses and others while contributing to economic development, Self-Determination, and employment of Native Americans. {Indian Reservation Roads Business Plan, January 2004}.

The Regional Director of the Bureau of Indian Affairs establishes the policy within their respective Region's of how their Bureau IRR projects are selected and scheduled for construction and funding. Only those projects that have been approved by the Bureau and FHWA on the IRR Transportation Improvement Program (TIP) are eligible for funding under TEA21.

Performance Requirements: The Contractor shall, in accordance with the Terms, Provisions, and Conditions of the Contract, applicable laws and regulations, and utilizing appropriate guidelines as stipulated in the program standards, perform the Non-Inherent Federal Contractible Functions, Services and Activities for those respective projects as identified in the contract. The Non-Inherent Federal Contractible Functions, Services and Activities are to be performed for the IRR Construction Program and the IRR Bridge Program for those projects as identified and approved on the Bureau's TIP. As provided under Section 900-12 of Subpart J of 25 CFR Part 900, the design phase, including geotechnical services, shall be accomplished by licensed design and geotechnical professionals.

STATEMENT OF WORK

Construction

The Contractor shall perform the Construction for the Bureau of Indian Affairs Roads Construction Projects, **Project N2007(1-1)1, 2, 4, Navajo, Arizona** in full accordance with the statement of work, program standards, plans and specifications, and the terms, provisions, and conditions of the contract, on a firm-fixed unit price, payment basis, for work performed by the Contractor, and accepted by the Government.

The project documents, including plans and specifications, as prepared and authorized by the Government, are hereby incorporated into this contract through this reference.

The Contractor agrees to perform the construction in accordance with this contract and all applicable laws and regulations. The phrase, "applicable laws and regulations" means applicable provisions of 23 USC and 23 CFR, 25 CFR 170, 25 USC 450, PL 93-638 as amended, 25 CFR 900, 36 CFR 800, 40 CFR 1500-1508, 18 USC 874, 40 USC 276c, 327-333, 41 USC 401, 42 USC 4801, Titles II and III of PL 91-646, Section 102(a) of PL 93-234, 16 USC 1271, Section 1065 of the National Historic Preservation Act of 1966, 16 USC 469a-1, & 470, EO 11593, other applicable laws and regulations which expressly apply to Tribal Organizations.

Governing Specifications: The Contractor shall utilize FHWA "Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects (FP-03-English), and the following specifications, requirements, standards, and schedules which are hereby incorporated into the contract (The list below is not in a governing order):

1. Plans
2. Specifications, Supplemental Specifications, Detail Drawings
3. Bid Schedule
4. Program of Requirements (POR)
5. Statement of Work (SOW)
6. Labor Standards
7. Special Contract Requirements

NEPA/NHPA Compliance Requirements: Federal law prohibits the excavation, removal, damage, alteration or defacement of any archaeological resource on Federal or Indian lands. The contractor shall control the action of its employees and subcontractor at the job site to ensure that any protected sites will not be disturbed or damaged. It is the obligation of the contractor to ensure those employees and subcontractors cease work in the event of a newly discovered site until further authorization is obtained. If any previously unknown archaeological or historic sites, artifacts, objects, or other remains of potential archaeological interest are discovered in the course of this undertaking, work in the immediate vicinity is to stop, and a reasonable effort must be made to protect the discovery pending review by the BIA, appropriate tribal officials and the Awarding Official (36 CFR 800.111). The Contractor shall be solely responsible for obtaining all permits and documents required by the National Environmental Policy Act (NEPA) before occupying or disturbing any area outside of the project right-of-way established in this contract. Activities requiring NEPA and NHPA compliance include, but are not

limited to, contractor furnished borrow and aggregate material sources; construction and use of haul roads to and from borrow and aggregate material sources; disposal and stockpiling of material; use and staging areas and equipment yards; establishment of a plant for crushing or processing base and/or surfacing materials; and construction of detours. The Contractor is responsible for all activities related to this construction project that occur within or outside the project right-of-way established in this contract and must ensure all activities comply with the following public laws:

Archaeological Resources Protection Act of 1979 (16 USC 470; 43 CFR Part 7; 25 CFR Part 262);

National Environmental Policy Act of 1969, as amended (42 USC 4247; 40 CFR 1500-1508);

National Historic Preservation Act of 1966, as amended (16 USC 470; 36 CFR Part 800);

Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001-3013; 43 CFR Part 10)

For construction projects where more than 1 acre is being disturbed, a site-specific Storm Water Pollution Prevention Plan (SWPPP), which meets all applicable State, Federal and Tribal standards, shall be prepared by the Contractor for this project and copy of the SWPPP shall be onsite and available for inspection during all times of construction activity. A Notice of Intent (NOI) form (EPA Form 3510-9) shall be completed and submitted to the US Environmental Protection Agency (USEPA). EPA Form 3510-9 constitutes notice that the contractor intends to be authorized by a National Pollution Discharge Elimination System (NPDES) permit issued for storm water discharges associated with the project's construction activity as well as meeting all other applicable provisions included on the permit form.

(Also see Special Contract Requirements)

SPECIAL CONTRACT REQUIREMENTS

1. Requirements for Execution of Surety Bonds

Each surety company bond (performance and payment) which purports to have been executed by an agent or attorney-in-fact, for the corporate surety, is required to have submitted with it a power of attorney to the signatory agent or attorney-in-fact, and executed by the corporate surety upon a date reasonably approximate to the date to the bond. Such power of attorney shall in each instance be retained with the bond.

2. Modification Proposal - Cost Breakdown

The Contractor, in connection with any proposal he makes for a contract modification, shall upon request furnish a price breakdown, itemized as required by the Awarding Official (AO) along with a complete breakdown of the original unit bid price as requested by the AO. Unless otherwise directed, the breakdown shall be in sufficient detail to permit an analysis of all material, labor, equipment, subcontract, and overhead costs, as well as profit, and shall cover all work involved in the modification, whether such work was deleted, added, or changed. Any amount claimed for subcontractors shall be supported by a similar price breakdown. In addition, if the proposal includes a time extension, a justification thereof shall also be furnished. The proposal, together with the price breakdown and time extension justification, shall be furnished by the date specified by the AO.

3. Contractor Safety Program Requirements

The Contractor shall establish a safety program, which shall include at a minimum the following requirements:

A) Safety Program Submittal:

Within 30 days following the awarding of a contract, the Contractor shall submit in writing to the Awarding Official's Technical Representative (AOTR) a proposed comprehensive safety program (in accordance with 48 CFR , Clause 52.236-13) for review for contract compliance. The Contractor's safety program shall show detail policies, procedures and plans that will be implemented to ensure the safety and health of employees and visitors at the job site. The Contractor shall prepare a list of major hazards associated with the contract work and provide in the safety program means to minimize the hazards.

B) Pre-Construction Safety Meeting:

A representative of the Contractor shall meet with AOTR and staff prior to the start of construction to review the safety program and discuss implementation of health and safety provisions pertinent to the work under contract. The Contractor should be prepared to discuss, in detail, the measures to be taken to control the hazards associated with the major phases of the work under contract. This meeting shall be devoted mainly to a discussion of the manner in which the Contractor intends to administer the health and safety program, delegation of responsibility for implementing the program, and a determination of what shall be presented in the written safety program.

C) Contractor Housekeeping Requirement:

Good housekeeping, including provision and facilities for routine scrap removal, shall be maintained in all areas within the Contractor's scope of operation. Any and all garbage shall be stored and removed to a certified landfill off the reservation.

D) Contractor Contamination Requirement:

Handling, storage, and disposal of hazardous materials of any nature shall be carried out in a manner so as not to contaminate or pollute public and/or private property, water supplies, rivers, lakes, reservoirs, streams, or the atmosphere. Disposal of all materials, including waste, garbage, and sewage, shall comply with all local, tribal, state, and federal regulations.

4. Hours and Days of Work

- A. The performance time allowed under this contract is based on a forty-hour workweek. The Contractor shall provide a minimum **14**-calendar day **written** advance notice to the AO of the actual work schedule, affording adequate opportunity to respond and to schedule Government personnel. Work on Saturdays, Sundays, Government and/ or Tribal holidays is not contemplated, however the Contractor shall make every effort to inform (**in writing**) the Government of his intentions concerning work on weekends and/or holidays (at least 14 calendar days in advance) so that the Government may accommodate the work (requiring inspection and/or oversight) or respond otherwise.

The Contractor is required to update his construction schedule and submit (to the AO) for review and approval if the work outside the normal 40 hours workweek exceeds 2 weeks and it must be approved prior to the work beginning. Any approved accelerated work schedules submitted where the Contractor intends to complete all the work before the contract end date but fails to do so

- B. In no case shall work be performed on holidays and/or weekends without the approval of the AO. The Contractor shall be allowed to work on items of this contract that do not require government inspection and/or oversight at any time including Saturdays, Sundays, and holidays during the construction period shown herein provided the Contractor inform the AO **in writing** within the time frame specified above. Any costs associated with government inspections and/or oversight on weekends and holidays or as a result of contractor induced delays or mistakes in the work, shall be deducted from the progress payments in accordance with 4(C) below. The Contractor may dispute the deductions, in writing, to the Awarding Official in accordance with 4(C).

Any quantities of work (as reflected in the bid schedule) that is completed outside the normal work week shall be measured and paid for at the contract unit price bid provided the work meets the requirements of this contract. However, with respect to the quality control item unless agreed to by the AO in writing quality control hours incurred as a result of contractor induced delays or mistakes will not be paid for.

- C. The AOTR shall prepare a detailed breakdown of government expenses incurred as a result of government personnel working in excess of the normal 40 hour work week to accommodate the contractor and shall submit this report to the AO (with a copy to the contractor) for reimbursement through a progress payment adjustment. The AO shall notify the contractor 10 working days in advance of making the adjustment in the next progress payment so that the Contractor is given the opportunity to review the report and any expenses claimed. Should the Contractor dispute the government expense report, the disputed items shall be submitted to the

AO in writing within the time frame given by the AO and the AO shall make a final determination (within 20 working days of receipt of the disputed items).

- D. The Contractor shall submit to the AO the name and legal address of each supervisor to be employed under this contract prior to his entrance on duty. Copies shall be provided to the AO for their records.

5. **Water**

Water sources used for this project shall be subject to the laws and regulations imposed by the permitting agency. Any costs associated with obtaining such permits shall be borne by the Contractor. A copy of this permit shall be furnished to the AOTR prior to construction. In no case may sewer lagoon water be used until the Contractor can show that the water will comply with the requirements of the Navajo EPA and the Clean Water Act and that a testing procedure to follow is outlined in the overall safety plan to insure compliance.

6. **Borrow and Aggregate Materials**

Contractor Furnished Source:

The Contractor shall be solely responsible for the location, surveying, permits, and associated costs for all borrow and aggregate material sources either within or outside of any Indian Reservation. The Contractor shall provide copies of all permits to the AO through the AOTR for their records. All activities associated with borrow and aggregate material sources on the Navajo Reservation shall be subject to applicable Federal and Tribal laws. The Government is not responsible for the lack of material within the source to complete the items of work in this contract. All expenses associated with obtaining necessary permits shall be the contractor's responsibility. The contract time shall only be extended (under a negotiated written modification) if the Contractor in obtaining permits requiring Federal Government review and/or approval, which delays the Contractor. A delay caused by Tribal or other State or local permitting processes is the responsibility of the Contractor. Written proof is required to substantiate any delays as a result in obtaining any material sources for the project.

The Contractor shall perform aggregate quality tests on three (3) representative sample. (i.e. 3 samples for the Contractor and 3 for the Government) for each proposed source and for each change in source. A source is defined as the land area from which material will be removed and represented by the aggregate quality samples. The selection of samples representing the source shall be the responsibility of the Contractor including all associated equipment, and labor. The Contractor shall notify the AOTR before opening the test hole within the source so that the AOTR or his elected representative will have the opportunity to observe the test hole opening and subsequent sampling. The AOTR may perform verification testing on the Government's split samples, the costs of which shall be the responsibility of the Government.

The material sampled shall be tested by an AASHTO certified testing laboratory. The Contractor shall submit the test results to the AOTR. The cost of all sampling and testing shall be considered an incidental obligation of the Contractor. The AOTR may direct the contractor to re-test the material source based on government test results. The costs of any re-testing shall be borne by the Contractor, unless such tests substantiate the Contractor's original results, in which case the Government will reimburse the Contractor for the costs of re-testing.

The Contractor shall be responsible for all testing during the crushing and screening operations.

Should the source contain insufficient material to meet the contract needs or should it become necessary for the Contractor, to change and/or select a new source, the Contractor shall be solely responsible for all costs and delays to the contract, unless such change is due to negligent actions of the Government.

The Contractor shall be solely responsible for obtaining archeological and environmental clearances for his haul roads, material sources, staging areas, and construction yard including all permits and associated costs. The Contractor shall be responsible for providing adequate traffic control on all haul roads in accordance with the MUTCD latest edition. The Contractor shall construct and/or maintain all haul roads into and from the source to the project as required by the owner. Any existing Government owned roads damaged by the Contractor's negligence or failure to abide by load restrictions shall be restored to original condition at the Contractor's expense. All haul road construction, maintenance (including dust control), traffic control including flaggers, and improvements will not be measured for payment but shall be considered a subsidiary obligation of the Contractor under the contract items requiring borrow and/or aggregate material.

The Contractor shall be solely responsible for obtaining archeological and environmental clearances for his plant site, haul roads, and construction yard including all necessary permits. The plant, haul roads, and construction yard development and maintenance shall not be measured for payment but shall be considered a subsidiary obligation of the Contractor under other contract items. Copies of such clearances and permits shall be furnished upon request of the AO.

Commercial and/or other Material Source:

The Contractor shall adhere to the requirements under these "Special Contract Requirements" with the following stipulations applied:

- A. The Contractor shall advise the AOTR (at least 5 working days in advance) of materials to be furnished from commercial sources.
- B. The Contractor shall, upon request, furnish aggregate quality test results from the proposed commercial source. This requirement will be considered fulfilled if the submittals for the product supplied contain the required information. The AOTR shall be afforded the opportunity to obtain verification test samples if requested.

7. Payment to Contractor

Payments to the Contractor shall be made within fourteen (14) calendar days after each invoice is approved by the AOTR. The invoice must include copies of the actual receiving report for each item of work requesting payment on, for verification by the AOTR. It is the responsibility of the Contractor (Superintendent) and AOTR to agree upon the amount of work and/or quantities in place (i.e. the receiving report) which will be the basis of progress payment invoicing (see section 109 of FP-03 supplemental specification). The Contractor (Superintendent) shall prepare a progress payment invoice, sign the estimate, and forward to the AOTR. The AOTR will verify the invoice by signing and forwarding the estimate to the Awarding Official within 3 working days of receipt. If the AOTR or Regional DOT Manager cannot validate the invoice, then the invoice shall be returned back to the Contractor for corrections and a new invoice prepared and submitted. After the Awarding Official

reviews and approves the progress estimate, it will be processed through the Automated Standard Application for Payment (ASAP) Payment System.

8. **Determination and Extension of Contract Time**

The **600 calendar** days allowed for the performance of the contract is based on the work to be performed and weather conditions that are normally anticipated in the area that may prevent work. The **600 calendar** days required to complete the work, as specified, takes into consideration **150** calendar days for weather conditions normal to the project area and provides adequate time for shutdowns during normal weather conditions including **2** winter suspension(s), and holidays. Time extensions because of weather conditions shall not be granted except in cases of unusually severe weather or "Acts of Nature" unanticipated by this contract.

The Contractor shall be required to obtain and submit, to the AO, climatological data for the area of the project, covering at least a ten year period, to receive consideration for any contention of unusually severe weather and time extension.

9. **Certifications and Shop Drawings**

Certifications: The Contractor will be required to furnish certificate(s) of compliance (i.e. production certification) along with valid test reports, for all cements, fly ash, precast products, PVC pipe, corrugated steel, structural steel and hardware, reinforcing steel, asphaltic materials, wood posts and hardware for guardrail, all permanent timber materials, aluminum signing materials, pavement markings and paints, traffic sign paint, paints and coatings for structural steel, high strength bolts, seed, piling, and other materials calling for painted surfaces, any other materials which require fabrication or materials taken from outside of the project limits, and for materials specifically requiring certificates of compliance by the construction plans or specifications. The Contractor shall be responsible to assure that the certificates of compliance have the following minimum requirements prior to submittal:

- the name and address of the manufacturer and/or supplier,
- the material production date,
- the project number (may be indicated on Contractor's cover letter),
- the contract number (may be indicated on Contractor's cover letter),
- a printed or written description of the end product or end use (as shown in the Construction plans, specifications, or approved shop drawings),
- applicable sizes or dimensions of materials,
- printed or written statements as to what Contract specification the material is in conformance to (as specified in the FP-03, Contract plans and specifications, and/or approved shop drawings) with proper AASHTO or equivalent ASTM test results, heat numbers, and specified limits.

Certificates of compliance for material that do not conform to the specified AASHTO or equivalent ASTM specification shall not be submitted under the Submittal Transmittal Review and Approval Form, but shall be submitted by the Contractor under a Letter of Request for Substitution with justification to include a comparison of the proposed substitute material specification to the specified material specification showing equal to or better performance. The materials may not be used on the project until such time as the submission has been reviewed and accepted, in writing, by the Regional DOT Manager,

through the AO as an equivalent substitution. The certificates of compliance shall be submitted directly from the supplier, through the Prime Contractor, to the Regional DOT Manager (via the AOTR) for review and approval prior to the materials being incorporated into the work. Certificates of compliance not containing all of the minimum requirements listed above, or certificates of compliance not conforming to the specified material specifications (ie; substitutions) which are submitted under the Submittal Transmittal Review and Approval Form, will not be reviewed by the Government and will be returned to the Contractor as DISAPPROVED. Full payment will not be made for work incorporating materials that require certificates of compliance until the material supplied on the project is matched by heat number or other identifying number to approved certificates of compliance by Quality Control subcontractor and AOTR. Materials supplied on the project that cannot be matched by heat number or other identifying number to approved certificates of compliance, or that are incorporated into the work prior to certificate of compliance approval, shall not be paid for.

The Contractor shall furnish product certifications for all other small quantity items which include fencing items, sign posts, delineators, object markers, reflective tabs, pavement markers, air entraining agents, concrete additives, joint materials, fertilizer, erosion control items, geotextiles, and any other products purchased off the shelf from a supplier. The certificates of compliance shall clearly identify the AASHTO/ASTM/or other specified standard test each product meets (as called for in the contract) as issued by the manufacturer.

Electrical items meeting UL approval, and underground utility materials meeting ASTM or AWWA specifications and so certified or stamped on the product, will require no further certificates of compliance.

The Contractor may furnish material purchased in bulk or left over from previous projects by submitting a product certification or certificate of compliance for the current project as outlined above.

The Contractor shall be responsible for verifying that material furnished and/or installed on the project site, or contained in items fabricated off site and shipped to the project site, are the same materials that are shown on the approved certifications. Verification shall be made by heat number, lot number, traceable paperwork, markings or other industry standard methods of material identification showing that the material is the same material shown on the approved certifications. Work containing material that is not verifiable as being covered by approved certifications may be disapproved and/or may be subject to non-payment. Verification shall be documented in the project record files.

Shop Drawings: The Contractor shall provide three (3) sets of shop drawings (Architectural D size) and one set of electronic files in AUTOCAD 2012 or Microstation V8i compatible (PDF) format on CD for all bridge structural members and hardware, guardrail and barriers, cattleguards and hardware, wing bracing, retained earth walls, and any pre-cast or fabricated concrete or steel materials called for in the contract for review and approval prior to fabrication directly to the Regional DOT Manager. The Contractor shall allow at least four (4) weeks, from the time the shop drawings are received, for review and approval. The Regional DOT Manager shall reply to the Contractor's shop plans either as "Approved for Fabrication," "Approved as Marked," or "Resubmit/Disapproved".

Approval of any and all shop plans or drawings is rendered as a service only and is not considered a guarantee of measurements, quantities, and/or dimensions, nor shall it be considered as relieving the Contractor from complying with the contract specification and design plans.

10. Furnishing of a Contractor Field Testing Laboratory

The Contractor shall furnish, at a location convenient to the project site or asphalt plant site, a field laboratory equipped with all necessary test equipment with accessories and all incidentals including utilities and sanitary facilities to satisfy the testing and inspection services required by this contract.

Use equipment that has been calibrated within the last 6 months of issuance of this contract, and that is applicable to the contract requirements. Tag all necessary equipment indicating the date of last inspection, inspector, and calibration number.

The laboratory, utilities (including all associated monthly costs), accessories, and all equipment required by the contract requirements including furnishing of a laboratory site shall be included in the unit price bid for mobilization or applicable bid item for quality control sampling, testing, and inspection as reflected in the bid schedule.

No work requiring testing shall be permitted until the Contractor has furnished the above and the laboratory is ready to accept samples for testing by furnishing the following:

1. Description of the calibrated equipment including calibration number, model number, serial number and/or other acceptable identification.
2. Identification of the individual(s) who performed the calibration of the equipment.
3. Description of the procedure used to calibrate all the equipment to be used on this contract.

11. Furnishing of Field Office and Sanitary Facilities

The Contractor shall furnish, at locations convenient to the project site, one weatherproof building for the exclusive use of Government personnel for use as a field office. The building shall have, as a minimum, outside dimensions of 2.4m (8 feet) in width by 9.14m (30 feet) in length having a minimum ceiling height of 2.13m (7 feet), at least two operable windows and two lockable doors, and adequate supply of 110 volt, 60 cycle electricity and phone service with fax capability for lighting, operating of office and computer equipment, and shall be heated and air-conditioned. Portable toilet facilities, serviced at least weekly, shall be furnished by the Contractor and removed when no longer required. In addition to the above general requirements for the building, the Contractor shall furnish a water supply for drinking, which shall be delivered either in a continuous pressurized system or an elevated gravity flow system of adequate capacity to fully support the facility being provided. The furnishing of the above facility (including utilities) shall be included in the unit price bid for mobilization.

12. Asphalt Shipments

All asphalt shipments to the project shall be in sealed tankers and this seal shall only be removed by an authorized representative of the Quality Control Manager. Any tanker with a broken seal or no seal shall be rejected and removed from the project.

When the bid schedule calls for payment of bituminous materials by the ton, the quantity used shall be determined by certified weight tickets accompanying each load subject to correction when bituminous material has been lost, wasted, or otherwise not incorporated into the work. Asphalt shipments shall be weighed across the project scales before and after unloading when requested by the AOTR. Should the project scales determine a weight less than the certified weight tickets show, the lesser quantity will be the pay quantity. Each weight ticket shall be clearly referenced to accompanying bill of lading and certified laboratory analysis report.

13. Load Restrictions

The total gross vehicle weight imposed on this project under this contract or any other Navajo Area route by any vehicle or combination of vehicles shall be as follows:

The Navajo Tribe has adopted vehicle weight limits that are more restrictive than those in the states of New Mexico, Utah, and Arizona. The weight limits of the Navajo Tribe shall apply to all BIA Navajo Regional roads and bridges within the Navajo Reservation unless a lesser limit is posted; then the lesser limit shall apply regardless of when the lesser limit was posted. Under certain circumstances, these limits may be exceeded, but only when the Contractor has applied for and received an approved permit to do so issued by the BIA Navajo Regional Office, Division of Transportation. The Contractor may make application for a permit to exceed weight limits from the Regional Road Maintenance Engineer.

The State and Counties respective laws set the weight limits for roads under the jurisdiction of the counties and states. The Contractor is required to haul within these limits unless he has a permit from the applicable jurisdiction to haul above those limits. The Contractor shall be solely responsible for all damages to roads and bridges caused by hauling above the legal limits including any Subcontractors under this contract. All damages, regardless of jurisdiction, shall be repaired at the Contractor's expense to the satisfaction of the owner's standards and/or directives.

Title 14 - Chapter 4, Sections 607 & 608 of the Navajo Tribal Code as it relates to vehicle load limits is referenced (in metric) herein for the Contractor's convenience.

Section 607. Load limits on Single-axles, wheels and tires

- a) The gross weight imposed on the highway by the wheels of any one (1) axle of any one (1) axle of a vehicle shall not exceed 9809 kg, nor shall any one (1) wheel carry a load in excess of 4995 kg. A tandem axle cannot carry load in excess of 15,585 kg.
- b) No wheel equipped with pneumatic, solid rubber, or cushion tires shall carry a load in excess of 272 kg for every 25mm of tire width. The width of pneumatic tires shall be

taken at the manufacturer's rating. The width of solid rubber and cushion tires shall be measured at the flange of the rim.

Section 608. Gross weight of vehicles and loads

- (a) Subject to the weight limits imposed in section 607, the total gross weight with load of a vehicle or combination of vehicles with two or more consecutive axles shall not exceed the gross weight given for the respective distance between the first and last axles of measured longitudinally to the nearest 0.3 meters, as set forth in the following table:

Distance (D)	Load (L)	Distance (D)	Load (L)	Distance (D)	Load (L)
1.2	14,512	2.7	15,419	4.3	19,592
1.5	14,512	3.0	15,873	4.6	19,955
1.8	14,512	3.3	16,190	4.9	20,317
2.1	14,512	3.7	16,508	5.2	20,680
2.4	14,966	4.0	16,825	5.5	21,043

D = Distance in meters (m) between first and last axles of group of axles.

L = Allowable load in kilograms (kg) on group of axles.

- (b) The total gross weight with load imposed on the highway by any vehicle or combination of vehicles where the distance between the first and last axles is more than 5.45 meters shall not exceed that given for the respective distance given in the following table:

Distance (D)	Load (L)	Distance (D)	Load (L)	Distance (D)	Load (L)
5.8	21,406	8.8	26,599	11.9	30,839
6.1	21,769	9.1	26,984	12.2	31,746
6.4	22,131	9.4	27,370	12.5	32,653
6.7	22,494	9.7	27,755	12.8 – 15.5	32,780
7.0	22,857	10.0	28,140	15.8	33,379
7.3	23,220	10.4	28,526	16.1	33,741
7.6	25,057	10.7	28,911	16.4	34,104
7.9	25,442	11.0	29,297	16.8	34,467
8.2	25,828	11.3	29,682	17.0 & over	34,830
8.5	26,213	11.6	30,068		

D = Distance in meters (m) between first and last axles of vehicle.

L = Allowable load in kilograms (kg) of vehicle.

- (c) The distance between axles shall be measured to the nearest (0.3m). When a fraction is exactly one-half foot (152mm) the next larger whole number shall be used.

The Contractor shall be responsible for all damages caused by his or her supplier's hauling units on any State and Bureau owned highway. All damages shall be repaired at the Contractor's expense to their original condition.

14. Plans and Specifications

Due to excessive costs incurred by the Government in printing, the Government will no longer be providing plans and specifications for its projects to suppliers and/or subcontractors. Only one set of C size plans and contract specifications will be provided to each bidder. The Government shall provide a maximum of 5 full size (Architectural D size) or 5 half size (Architectural C size) sets of plans upon request to the Contractor who is awarded a contract. In addition or in lieu of plans sets, the Government shall furnish one full sized and/or one half-size set of reproducible or electronic media in Acrobat (*.PDF) or AutoCAD Release 2012 format from which the Contractor may produce hard copy drawings.

Any Prime Contractor bidding on Government contracts is responsible for providing its Subcontractors and Suppliers with information relating to their respective disciplines for cost proposals. Any misinterpretation or incorrect bids made to the Prime Contractor by the Subcontractor or Suppliers will not relieve the prime Contractor of his obligation to honor the contract and bid proposal.

15. Archeological Requirements

The Contractor shall be responsible for all environmental and archaeological requirements as outlined in the design plans. Archeological sites shown on the plans are not to be disturbed by any construction equipment. The Contractor shall insure that no equipment comes within 5 meters of any known sites identified on the plans. Any mitigation measures that may be called for in this contract (excluding hiring of an archeologist for construction oversight) to protect archeological sites and/or environmental concerns during construction shall be paid for under the appropriate bid items shown. For those archaeological sites that are within the roadway right-of-way (i.e. refer to design plans) the Contractor may have to conduct the grading operations ONLY with an archeologist present. The Contractor shall coordinate such work with the AOTR and Regional DOT office so that an archaeologist can be present during construction if the designs call for such. If any unknown arch sites are discovered during construction, it will be the responsibility of the government to mitigate in accordance with section 106 of the NHPA and section 109.02(m) of the FP-03-English. All work within the area of the discovered site shall cease until the site is mitigated. Additional contract time only will be negotiated if the situation arises.

16. Construction Requirements:

- A. The contractor is not permitted to park heavy equipment within 15 meters of existing drainage washes to prevent the leakage of oils or other toxic materials from entering the waters of the United States. The contractor is required to inspect all heavy construction equipment each day to insure all equipment is free of leaks and have a mitigation plan in place in case a toxic spill does occur. Any inadvertent discharge of toxic materials by the contractor's equipment and operations shall result in an immediate halt of work until the Contractor cleans up all spills and/or leaks in accordance with the EPA regulations at his entire expense. The Contractor shall also be required to immediately notify the BIA Safety Officer and Navajo Regional Environmental Scientist when such spills or leaks occur.
- B. All pipe installations shall be performed during low to no flow periods of runoff to minimize water quality impacts to the fullest extent possible.

- C. In no case shall any grading or pipe installation or other ground disturbing work begin until the contractor's Storm Water Pollution Prevention Plan has been reviewed, accepted through the AO and implemented by the Contractor. The Contractor is required to file a Notice of Intent with USEPA on the forms provided in Section J, Attachments, 1. Environmental & Archeological Clearance Requirements R/W Terms & Conditions and as discussed in paragraph (17) below. The Contractor shall provide copies of the approved SWPPP to the Navajo Nation Environmental Protection Agency (NNEPA).
- D. Waste concrete and/or hot mix shall be disposed of in accordance with EPA regulations off the project site. In no case shall any wasting or stockpiling of concrete and/or hot mix be allowed within the project limits.
- E. The Contractor shall provide a parking area for employee's private vehicles. Private vehicles are not to be parked within the road right-of-way that is open to public traffic nor shall they be parked within 15 meters of drainage washes or known archeological sites. Vehicles may be parked outside the right-of-way limits provided the Contractor is given permission by the land user or tribe or may park the vehicles within the Contractor's construction yard.
- F. No work involving testing and inspection may take place until the Contractor's Quality Control Plan is reviewed and accepted by the AOTR & Regional DOT Manager.
- G. The Contractor shall coordinate all work with the utility companies and adjoining ranchers who have buried water and phone lines within the right-of-way in accordance with Section 107.02 as incidental obligations under this contract.
- H. The Contractor shall stockpile the existing top soil for use in re-vegetation of borrow pits and roadway slopes to the fullest extent possible when required in the bid schedule or other permit requirements issued under the permitting office.
- I. The Contractor's camp site and construction yard shall be kept clean and free of litter at all times to prevent debris and litter from entering bodies of water. All trash will be disposed of in accordance with EPA regulations and all camp sites and construction yards shall be restored to their pre-construction condition or better at project completion in conformance with the permit requirements and tribal, state, and federal laws.
- J. Oils, lubricant, fuel, and hydraulic fluids shall be stored in sealed containers or in facilities that meet EPA regulations for prevention of environmental contamination.
- K. Any welding called for (except tack welding) on any structural member (member designed to carry or resist traffic or pedestrian loads) shall be subject to visual inspection and magnetic particle testing by an AWS Certified Welding Inspector, and shall pass testing prior to acceptance of the work unless otherwise directed by the AO. All inspection, equipment, materials and incidentals required for the testing, inspection, and reporting by an AWS Certified Welding Inspector shall be included in the unit price bid for Bid Item 15301-0000.

- L. Other requirements as outlined in Section J, Attachments, 1. Environmental & Archeological Clearance Requirements R/W Terms & Conditions of this contract.
- M. **Substantial Completion** will ONLY be given by the AO when the project is complete such that it can be safely and effectively used by the public without further delays, disruption, or other impediments as recommended by the AOTR during a substantial completion inspection. For conventional bridge and highway work, this is the point at which all road grading, pavement structure, shoulder, drainage, permanent signing and markings, traffic barrier, safety appurtenance, utility work is complete and meets all the contract requirements.
- N. **Final Acceptance** will be given when all work is completed (including any punch list of items) and the AOTR determines and schedules a final acceptance inspection with the Contractor, AO, and Regional DOT Representatives as appropriate. With the exception of any work accepted as final, in writing by the AO, the Contractor is still responsible for all the work until a final acceptance is given by the AO based on recommendations from the AOTR.

17. **Environmental Requirements:**

Certain environmental clearances and permits are attached in Section J, Attachments, 1. Environmental & Archeological Clearance Requirements R/W Terms & Conditions of these contract documents as reflected in the design plans in accordance with section 107.01. The Government shall be responsible for those mitigation measures required by the NEPA documents that are not covered in this contract. The Contractor is responsible for all environmental permits associated with the Contractor's construction operations.

Both the Contractor and AOTR are jointly responsible for filing **Notice of Intent** (unless otherwise directed by the AO or as defined elsewhere in this contract) under the National Pollution Discharge Elimination System (NPDES) permit requirements to USEPA. Under this permit process the contractor is required to and shall:

- A. Prepare for review and approval, by the AOTR & Regional DOT Manager, a Storm Water Pollution Prevention Plan (SWPPP) per section 157 and the requirements in Section J, Attachments, 1. Environmental & Archeological Clearance Requirements R/W Terms & Conditions.
- B. When the SWPPP is approved, the AOTR will file **Notice of Intent** as the owner and a copy of the notice shall be provided to the contractor to file with his Notice.
- C. Once the Contractor receives notice that his SWPPP is approved, he shall, with assistance from the AOTR, prepare the contractor NPDES Permit **Notice of Intent** form in Section J, Attachments, 1. Environmental & Archeological Clearance Requirements R/W Terms & Conditions and shall mail to the USEPA along with the AOTR's **Notice of Intent** form no later than 48 hours prior to beginning of actual construction. The address is as follows:

Regular U.S. Mail Delivery
Storm Water Notice of Intent
Mail Code 4203M
U.S. EPA
1200 Pennsylvania Avenue
Washington, DC 20460

Overnight/Express Mail Delivery
Storm Water Notice of Intent
Room 7329
U.S. EPA
1201 Constitution Avenue
Washington, DC 20004

The USEPA will mail back a copy of the permit for the project and a copy shall be furnished to the AOTR and Regional DOT Manager to insure compliance.

- D. At completion of the project and final inspection has been performed, the Contractor shall then prepare and submit to the USEPA a **Notice of Termination** with a copy submitted to the AOTR and Regional DOT Manager to insure compliance.

(Note: The above forms can also be obtained from the USEPA's home page on the Internet: <http://www.epa.gov/npdes/stormwater/cgp>)

- E. Work may not take place (**between October 1st through December 31st**) of each year due to high volume of train traffic. If activities are required during the dates above, it must be approved by the railroad company in writing through the AO and must be an emergency or necessary maintenance of the work during the shutdowns. The Contractor must coordinate the work in these areas of the project closely with the AOTR, the Regional DOT office. The Regional DOT Planning & Design Branch will coordinate with Burlington Northern Santa Fe Railroad (BNSF) personnel on addressing the issues.
- F. No work or other activities involving drainage or that may impact the waters of the US or the New Lands property may take place until the Section 401, 402 & 404 permits, with construction requirements, is acquired, and the Contractor posts them on their construction bulletin board on the project site.
18. The NRDOT Contractor(s) must submit four (4) copies of any plans (including two sets of calculations in English Units) for proposed shoring, falsework or cribbing to be used over, under, or adjacent to BNSF's tracks to BNSF's Manager of Public Projects for approval. The shoring, falsework or cribbing used by Government's contractor shall comply with the BNSF Bridge Requirements set forth on Exhibit F of section 107 of the specifications and all applicable requirements promulgated by federal agencies, departments, commissions and other legislative bodies.
19. The following provisions are required for all Contractor(s) performing work on this contract:

(a) The Contractor is placed on notice that fiber optic, communication and other cable lines and systems (collectively, the "Lines") owned by various telecommunications companies may be buried on BNSF's property or in its right-of-way. The locations of these Lines have been included on the plans based on information from the telecommunications companies. The contractor will be responsible for contacting BNSF's OneCall (telephone number (800)-533-2891) and the telecommunications companies and notifying them of any work that may damage these Lines or facilities and/or interfere with their service. The contractor must also mark all Lines, which are shown on the plans, in the field in order to verify their locations. The contractor must also use all reasonable methods when working in the BNSF right-of-way or on BNSF property to determine if any other Lines (fiber optic, cable, communication or otherwise) may exist by coordinating all work with all utility companies.

(b) Failure to mark or identify these Lines will be sufficient cause for Government's representative to stop construction at the request of BNSF, at no cost to the Government or BNSF, until these items are completed.

(c) In addition to the liability terms contained elsewhere in this Government's contract with its Contractor, hereby indemnifies, defends and holds harmless BNSF for, from and against all cost, liability, and expense whatsoever (including, without limitation, attorney's fees and court costs and expenses) arising out of or in any way contributed to by any act or omission of Contractor, its subcontractors, agents and/or employees that cause or in any way or degree contribute to (1) any damage to or destruction of any Lines by Contractor, and/or its subcontractors, agents and/or employees, on BNSF's property or within BNSF's right-of-way, (2) any injury to or death of any person employed by or on behalf of any telecommunications company, and/or its contractor, agents and/or employees, on BNSF's property or within BNSF's right-of-way, and/or (3) any claim or cause of action for alleged loss of profits or revenue by, or loss of service by a customer or user of such telecommunication company(ies).

(d) The Contractor, in full cooperation with the utility companies, will be responsible for the rearrangement of any utility facilities or Lines determined to interfere with the construction in accordance with section 109.02(m) of the supplemental specifications.

20. All construction work performed hereunder must comply with the following:

(a) All work performed under this contract within the limits of BNSF's right-of-way must be performed in a good and workmanlike manner in accordance with plans and specifications approved by BNSF;

(b) Changes or modifications during construction that affect safety or BNSF operations must be subject to BNSF's timely approval;

(c) No work will be commenced within BNSF's right-of-way until each of the prime contractors employed in connection with said work have (i) executed and delivered to BNSF an agreement in the form of Exhibit C-I, and (ii) delivered to and secured BNSF's approval of the required insurance; and

(d) If it is in Government's best interest, if at any time, in the opinion of Government, the contractor has failed to prosecute with diligence the work specified in and by the terms of said contract, Government may terminate its contract with the contractor and take control over the work and proceed to complete the same by employing another contractor(s), provided; however, that any contractor(s) replacing the original contractor(s) must comply with the obligations in favor of BNSF set forth above and, provided further, that if such construction is performed by another contractor, Government will, at no expense to BNSF, insure that any and all replacement contractors procure and maintain on behalf of BNSF the insurance required by Exhibit C-1.

(e) To facilitate scheduling for the Project, the Contractor shall give BNSF's representative (505-767-6826) thirty (30) days advance notice of the proposed times and dates for work windows. BNSF and Government's contractor will establish mutually agreeable work windows for the Project. BNSF has the right at any time to revise or change the work windows due to train operations or service obligations. BNSF will not be responsible for any additional costs and expenses resulting from a change in work windows. BNSF will take every practicable measure to provide work windows that once granted and started, will not be changed or closed without allowing the government or its Contractor sufficient time to complete on-going critical construction activities.

21. All contractor(s) must reasonably adhere to the Project's construction schedule for all Project work, subject to Acts of Nature, agreed-to changes in the work which adds time to the Project, and other excusable delays not the fault of the contractor(s). The Government & BNSF hereto mutually agree that BNSF's failure to complete the required railroad work in accordance with the construction schedule due to inclement weather or unforeseen railroad emergencies will not constitute a breach of this contract or the overpass agreement between BNSF and the government or any other party and will not subject BNSF or any other party to any liability. Any costs incurred on the part of the contractor shall be evaluated in accordance with section 109.02(m) of the supplemental specifications. Regardless of the requirements of the construction schedule, BNSF reserves the right to reallocate the labor forces assigned to complete the railroad work in the event of an emergency to provide for the immediate restoration of railroad operations of either (BNSF or its related railroads,) or to protect persons or property on or near any BNSF owned property. BNSF will not be liable for any additional costs or expenses resulting from any such reallocation of its labor forces. Any failure of BNSF to meet the construction schedule, which in turn delays the Government and/or its contractor(s), shall be cause, if requested by the Government, for BNSF to extend the overpass agreement and any construction permits, licenses, etc., for an equal amount of time that BNSF delays completion of Project at no additional cost to the government and its contractor.

22. BNSF will have the right to stop construction work on the Project if any of the following events take place: (i) the Government (or any of its contractors) performs the Project work (within BNSF property) in a manner contrary to the plans and specifications approved by BNSF (including any modifications); (ii) the Government (or any of its contractors), in BNSF's opinion, prosecutes the Project work in a manner that is hazardous to BNSF property, facilities or the safe and expeditious movement of railroad traffic; or (iii) the insurance described in the attached Exhibit C-1 is canceled during the course of the Project. The work stoppage will continue until all necessary actions are taken by Government or its contractor to rectify the situation to the

satisfaction of BNSF's Division Engineer or until proof of additional insurance has been delivered to and accepted by BNSF. Any such work stoppage under this provision will not give rise to any liability on the part of BNSF. BNSF's right to stop the work is in addition to any other rights BNSF may have including, but not limited to, actions or suits for damages or lost profits. In the event that BNSF desires to stop construction work on the Project, BNSF agrees to immediately notify the Government Awarding Official.

DEPARTMENT OF LABOR

**GENERAL DECISION NO.:
AZ150009 01/02/2015 AZ9**

ARIZONA - HIGHWAY

P. L. 93-638 Construction Contract

Bureau of Indian Affairs

General Decision Number: AZ150009 01/02/2015 AZ9

Superseded General Decision Number: AZ20140009

State: Arizona

Construction Type: Highway

Counties: Apache, Cochise, Gila, Graham, Greenlee, Navajo and Santa Cruz Counties in Arizona.

HIGHWAY CONSTRUCTION PROJECTS

Note: Executive Order (EO) 13658 establishes an minimum wage of \$10.10 for 2015 that applies to all contracts to the Davis-Bacon Act for which the solicitation or after January 1, 2015. If this contract is covered by EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.10 applicable wage rate listed on this wage determination (if it is higher) for all hours spent performing on the contract. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protection under the EO is available at www.dol.gov/whd/govcontract

Modification Number Publication Date
0 01/02/2015

CARP0408-007 07/01/2013

APACHE, COCHISE & SANTA CRUZ COUNTIES

Rates

CARPENTER (Including Cement
Form Work).....\$ 24.03

* ENGI0428-004 06/01/2014

Rates

POWER EQUIPMENT OPERATOR
Oiler Driver.....\$ 25.36

IRON0075-006 01/01/2014

Apache, Cochise, Gila, Graham, Greenlee, La Paz, Navajo, Pima, Pinal, Santa Cruz, Yavapai, Yuma

P. L. 93-638 Construction Contract

Bureau of Indian Affairs

	Rates	Fringes
Ironworker, Rebar.....	\$ 26.52	21.02
Zone 1: 0 to 50 miles from City Hall in Phoenix or Tucson		
Zone 2: 050 to 100 miles - Add \$4.00		
Zone 3: 100 to 150 miles - Add \$5.00		
Zone 4: 150 miles & over - Add \$6.50		

 SUAZ2009-002 04/23/2009

	Rates	Fringes
CARPENTER		
Gila, Graham, Greenlee, La		
Paz & Navajo.....	\$ 21.71	3.82
CEMENT MASON.....	\$ 17.74	3.59
ELECTRICIAN.....	\$ 24.43	5.38
IRONWORKER, Rebar		
Santa Cruz county.....	\$ 21.75	13.59
LABORER		
Asphalt Raker.....	\$ 14.97	5.88
Concrete Worker.....	\$ 13.38	4.50
Fence Builder.....	\$ 12.20	3.84
Flagger.....	\$ 12.31	3.96
General/Cleanup.....	\$ 12.78	2.50
Guard Rail Installer.....	\$ 12.20	3.84
Landscape Laborer.....	\$ 11.02	
Water Blaster.....	\$ 14.90	2.90
OPERATOR: Power Equipment		
Backhoe < 1 cu yd.....	\$ 17.76	3.89
Compactor Self Propelled		
(with blade-grade operation..	\$ 22.53	6.57
Compactor Small Self		
Propelled (with blade-		
backfill, ditch operation)..	\$ 22.29	6.31
Concrete Pump.....	\$ 20.31	6.48
Crane (under 15 tons).....	\$ 22.98	4.26
Drilling Machine		
(including wells).....	\$ 21.79	4.10
Grade Checker.....	\$ 23.41	6.54
Hydrographic Seeder.....	\$ 19.73	5.40
Mass Excavator.....	\$ 23.33	6.98
Milling Machine/Rotomill....	\$ 21.87	6.84
Power Sweeper.....	\$ 19.33	4.85

P. L. 93-638 Construction Contract

Bureau of Indian Affairs

Roller (all types asphalt)..\$	17.46	5.58
Roller (excluding asphalt)..\$	19.23	5.09
Scraper (pneumatic tire)....\$	22.41	6.90
Screed.....\$	20.90	6.72
Skip Loader (all types 3 < 6 cu yd).....\$	20.91	7.35
Skip Loader (all types 6 < 10 cu yd).....\$	22.24	6.83
Skip Loader < 3 cu yd.....\$	17.97	6.60
Tractor (dozer, pusher- all).....\$	22.53	6.47
Tractor (wheel type).....\$	24.62	7.57
PAINTER.....\$	13.94	2.56
TRUCK DRIVER		
2 or 3 axle Dump or Flatrack.....\$	16.17	4.24
Oil Tanker Bootman.....\$	21.94	
Pickup.....\$	12.88	1.73
Water Truck < 2500 gal.....\$	19.59	5.90
Water Truck > 3900 gal.....\$	18.70	4.79
Water Truck 2500 < 3900 gal.....\$	17.13	

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material,

etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

PLANS & SPECIFICATIONS

**REVISIONS & SUPPLEMENTAL SPECIFICATIONS
TO DIVISION 100 THROUGH 700 OF:**

**“STANDARD SPECIFICATIONS FOR
CONSTRUCTION OF ROADS AND BRIDGES
ON FEDERAL HIGHWAY PROJECTS”**

(FP-03-English)

SECTION 101 - TERMS, FORMAT, AND DEFINITIONS

101. 04 **Definitions:** Add and/or replace the following terms with their respective definitions:

Awarding Official's Technical Representative (AOTR).-- The AOTR is the duly authorized representative of the Awarding Officer (AO), and will act for the AO in administering the contract. The AOTR's duties and responsibilities are delineated by letter from the AO to the AOTR with a copy sent to the Contractor. The AOTR does not have any authority to make changes to the contract, only those duties and responsibilities called for that do not affect the contract time, contract amounts, or contract terms as authorized by the AO and/or as provided for in the contract documents.

Engineer. -- Wherever the term "Engineer" is used in Division 100, the construction plans, or elsewhere in the specifications, it is changed to read "AOTR".

NRDOT. -- Wherever the term "NRDOT" is used in the FP-03 supplemental specifications or other contract documents, it refers to the "BIA Navajo Region Division of Transportation".

Subordinate Awarding Official's Technical Representative (SAOTR).-- The SAOTR is the assistant field representative (Project Engineer/ Project Manager) of the AOTR whose duties and responsibilities are delineated by letter from the AO to the SAOTR with a copy sent to the Contractor. The SAOTR does not have any authority to make changes to the contract documents or to make any decisions concerning the work.

Major Floods. Major floods are define as wide spread flooding encompassing and inundating an area of 1300 hectares or more with water and debris within and adjacent to the project site.

Substantial Completion. Substantial Completion Will ONLY be given by the AO when the project is complete such that it can be safely and effectively used by the public without further delays, disruption, or other impediments as recommended by the AOTR during a substantial completion inspection. For conventional bridge and highway work, this is the point at which all road grading, bridge deck, parapet, pavement structure, shoulder, drainage, sidewalk, permanent signing and markings, traffic barrier, safety appurtenance, utility, and lighting work is complete and meets all the contract requirements.

Final Acceptance. Will be given when all work is completed (including any punch list of items) and the AOTR determines and schedules a final acceptance inspection with the Contractor, AO, and Regional DOT Representatives as appropriate. With the exception of any work accepted as final, in writing by the AO, the Contractor is still responsible for all the work until a final acceptance is given by the AO based on recommendations from the AOTR.

The definition for the word "Unsuitable" is superseded with the following:

Unsuitable or Deleterious Material - Material not capable of creating stable foundations, embankments, drainage structure installations, retaining wall construction, or roadbeds.

Unsuitable material may include muck, sod, or soils with high organic and/or high PH (low resistivity) contents depending upon the materials proposed use on the project.

Staked Limits – Staked limits is the final subgrade catch points as reflected on the government furnished staking notes and adjusted by the surveyor to fit actual field conditions.

REV:3/21/14

SECTION 103- SCOPE OF WORK

Subsection 103.03 is superseded with the following:

103.03 Changes, Differing Site Conditions, and Variation in Estimated Quantities.

The following FAR Clauses are supplemented with the following:

Any adjustments in contract time and cost because of changes, differing site conditions, or variation in estimated quantities shall be in accordance with section 108.03 for the following:

Changes. - See Contract Clause 52.243-4.

Differing Site Conditions. - See Contract Clause 52.236-2

Variation in Estimated Quantities. - See Contract Clause 52.211-18

103.05 Partnering.

The third paragraph is superseded with the following:

If the partnering offer is accepted, mutually agree with the Government on the level of organizational involvement and the need for a professional to facilitate the partnering process. The Contractor shall engage a qualified facilitator and other resources for key Contractor and Government staff to attend a partnership development and team-building workshop at least 30 days prior to given "Notice to Proceed". Hold additional progress meetings upon mutual agreement.

To insure that all the work under this contract including any special contract requirements are adequately addressed and properly coordinated, attendance at the first partnering meeting shall include the Contractor's Construction Manager, Project Superintendent, Project Foremen, Sub-contractor representatives, and Supplier representatives, QCM, Alternate QCM, Contractor Surveyors, and QC Inspectors/Technicians. The Government key personnel that may attend the first partnering meeting are AOTR, Agency monitoring crew, Regional staff engineers and/or technicians. The above key personnel shall attend any other subsequent meeting(s) deemed necessary by both parties.

The Government may invite utility owners, environmental and archeological staff to the first partnering meeting and/or any other subsequent meeting(s) deemed necessary.

Add the following new subsection:

103.06 Value Engineering. Follow the requirements of FAR Clause 52.248-3 Value Engineering Construction.

Before undertaking significant expenditures, provide the AO with a written description of the value engineering change proposal (VECP) concept. Within 14 days, the AO will inform the Contractor as to whether the concept and/or materials substitution appears to be viable or if the concept or materials are unacceptable. If the AO indicates (in writing) that the concept appears to be viable, prepare and submit the formal VECP proposal. Off the shelf-product substitutions are not considered a VECP. These include, but not limited

to, drainage structures, paints, structural members for bridges and other highway structures, signs, posts, protective coatings, cattleguards, fencing, gates, and other highway products or materials readily available on the market.

rev:03/21/14

SECTION 104 - CONTROL OF WORK

104.04 Coordination of Contract Documents:

The last sentence is superseded with the following:

The contract documents govern in the following order:

- (a) 25 CFR Part 900, Subpart J
- (b) Federal Acquisition Regulations
- (c) 25 CFR Part 170, as amended
- (c) Special Contract Requirements
- (d) Supplemental Specifications
- (e) Standard Specifications
- (f) Plans

SECTION 106 - ACCEPTANCE OF WORK

106.01 Conformity with Contract Requirements.

Add the following:

All applicable sections in the latest edition (as referenced in the FP-03) with updates of the Federal Lands Highway, Field Materials Manual (FLHFM) shall apply to the work under this contract. If any requirements in the FLHFM conflict in either the FP-03, or these supplemental specifications, then the FP-03 and these supplemental specifications shall prevail.

106.04 Measured or Tested Conformance.

The second paragraph of this section is superseded with the following:

Results from Contractor inspection or testing shall have values within the specified tolerances or specification limits. Results from Government verification testing and inspection (as specified in the contract) shall be used to support or reject the work incorporated into the project as specified within the tolerances and/or specified limits within the contract. When no tolerance values are identified in the contract, the work shall be inspected, tested, and accepted based on customary manufacturing and construction standards.

106.05 Statistical Evaluation of Work for Acceptance and Determination of Pay Factor (Value of Work).

The first sentence of paragraph (a) is superseded with the following:

- (a) **General.** For work accepted based on statistical evaluation, both the Government and Contractor assume some risk. Unless otherwise specified in the contract, it is the responsibility of the AOTR and/or (NRDOT) Manager to conduct the analysis described, and to provide the Contractor with the results that shall be used for determination of acceptance of the work and pay factors based under this section.

SECTION 107 - LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

107.02 Protection and Restoration of Property and Landscape.

Add the following to paragraph three:

Unless otherwise modified in writing by the AO, the construction clearing limits shall be (depending upon the type of project) the cut or fill limits shown on the plan and profile drawings, or staking notes provided plus 3 meters, or the new Typical Section width plus 3 meters for pavement rehabilitation projects. At bridges, culverts, furrow ditches, turnouts, existing road obliteration, fencing or other structures the limits shall be the minimum needed to construct the improvement as determined by the AOTR. In no case shall any work be done outside the right-of-way limits (not already called for in the design plans) without prior approval from the NRDOT Manager and AO.

Only remove vegetation that is necessary to construct the project and all its features. The Contractor shall use due care in his clearing and grubbing operations so as not to destroy vegetation that is not required for removal to the fullest extent possible.

107.04 Railroad Protection:

Subsection 107.04(a) is superseded with the following:

- (a) All work performed under this contract within the limits of BNSF's right-of-way must be performed in a good and workmanlike manner in accordance with plans and specifications approved by BNSF;
- (b) Changes or modifications during construction that affect safety or BNSF operations must be subject to BNSF's timely approval;
- (c) No work will be commenced within BNSF's right-of-way until the Prime Contractor employed in connection with said work have (i) executed and delivered to BNSF an agreement in the form of Exhibit C-1, and (ii) delivered to and secured BNSF's approval of the required insurance; and
- (d) If it is in Government's best interest, if at any time, in the opinion of Government, the contractor has failed to prosecute with diligence the work specified in and by the terms of said contract, Government may terminate its contract with the contractor and take control over the work and proceed to complete the same by employing another contractor(s), provided; however, that any contractor(s) replacing the original contractor(s) must comply with the obligations in favor of BNSF set forth above and, provided further, that if such construction is performed by another contractor, Government will, at no expense to BNSF, insure that any and all replacement contractors procure and maintain on behalf of BNSF the insurance required by Exhibit C-1.
- (e) To facilitate scheduling for the Project, Government shall have its contractor give BNSF's representative (505-767-6826) thirty (30) days advance notice of the proposed times and dates for work windows. BNSF and Government's contractor will establish mutually agreeable work windows for the Project. BNSF has the right at any time to revise or change the work windows due to train operations or service obligations. BNSF will not be responsible for any additional costs and expenses resulting from a change in work windows. BNSF will take every practicable measure to provide work windows that once granted and started, will not be changed or closed without allowing the government or its Contractor sufficient time to complete on-going critical construction activities.

- (f) The work must further comply with the Requirements set forth on Exhibits C, C-1& F herein.

EXHIBIT "C"**CONTRACTOR REQUIREMENTS****1.01 General:**

- **1.01.01** The Contractor must cooperate with **BNSF RAILWAY COMPANY**, hereinafter referred to as "**Railway**" where work is over or under on or adjacent to Railway property and/or right-of-way, hereafter referred to as "Railway Property", during the construction of the Navajo Road Overpass on BNSF Railway's Gallup Subdivision, US DOT# 025011J, MP 213.13.
- **1.01.02** The Contractor must execute and deliver to the Railway duplicate copies of the Exhibit "C-1" Agreement, in the form attached hereto, obligating the Contractor to provide and maintain in full force and affect the insurance called for under Section 3 of said Exhibit "C-1". Questions regarding procurement of the Railroad Protective Liability Insurance should be directed to Rosa Martinez at Marsh, USA, 214-303-8519.
- **1.01.03** The Contractor must plan, schedule and conduct all work activities so as not to interfere with the movement of any trains on Railway Property.
- **1.01.04** The Contractor's right to enter Railway's Property is subject to the absolute right of Railway to cause the Contractor's work on Railway's Property to cease if, in the opinion of Railway, Contractor's activities create a hazard to Railway's Property, employees, and/or operations. Railway will have the right to stop construction work on the Project if any of the following events take place: (i) Contractor (or any of its subcontractors) performs the Project work in a manner contrary to the plans and specifications approved by Railway; (ii) Contractor (or any of its subcontractors), in Railway's opinion, prosecutes the Project work in a manner which is hazardous to Railway property, facilities or the safe and expeditious movement of railroad traffic; (iii) the insurance described in the attached Exhibit C-1 is canceled during the course of the Project; or (iv) Contractor fails to pay Railway for the Temporary Construction License or the Easement. The work stoppage will continue until all necessary actions are taken by Contractor or its subcontractor to rectify the situation to the satisfaction of Railway's Division Engineer or until additional insurance has been delivered to and accepted by Railway. In the event of a breach of (i) this Agreement, (ii) the Temporary Construction License, or (iii) the Easement, Railway may immediately terminate the Temporary Construction License or the Easement. Any such work stoppage under this provision will not give rise to any liability on the part of Railway. Railway's right to stop the work is in addition to any other rights Railway may have including, but not limited to, actions or suits for damages or lost profits. In the event that Railway desires to stop construction work on the Project, Railway agrees to immediately notify the following individual in writing:

Frances Price or Ray Slim
Awarding Officials

- **1.01.05** The Contractor is responsible for determining and complying with all Federal, State and Local Governmental laws and regulations, including, but not limited to environmental laws and regulations (including but not limited to the Resource Conservation and Recovery Act, as amended; the Clean Water Act, the Oil Pollution Act, the Hazardous Materials Transportation Act, CERCLA), and health and safety laws and regulations. The Contractor hereby indemnifies, defends and holds harmless Railway for, from and against all fines or penalties imposed or assessed by Federal, State

and Local Governmental Agencies against the Railway which arise out of Contractor's work under this Agreement.

- **1.01.06** The Contractor must notify **Government Awarding Official, 505-863-8524** and Railway's Manager Public Projects, telephone number **909-386-4472** at least thirty (30) calendar days before commencing any work on Railway Property. Contractor's notification to Railway must refer to Railway's file **BF10004308**.
- **1.01.07** For any bridge demolition and/or falsework above any tracks or any excavations located with any part of the excavations located within, whichever is greater, twenty-five (25) feet of the nearest track or intersecting a slope from the plane of the top of rail on a 2 horizontal to 1 vertical slope beginning at eleven (11) feet from centerline of the nearest track, both measured perpendicular to center line of track, the Contractor must furnish the Railway five sets of working drawings showing details of construction affecting Railway Property and tracks. The working drawing must include the proposed method of installation and removal of falsework, shoring or cribbing, not included in the contract plans and two sets of structural calculations of any falsework, shoring or cribbing. For all excavation and shoring submittal plans, the current "BNSF-UPRR Guidelines for Temporary Shoring" must be used for determining the design loading conditions to be used in shoring design, and all calculations and submittals must be in accordance with the current "BNSF-UPRR Guidelines for Temporary Shoring". All submittal drawings and calculations must be stamped by a registered professional engineer licensed to practice in the state the project is located. All calculations must take into consideration railway surcharge loading and must be designed to meet American Railway Engineering and Maintenance-of-Way Association (previously known as American Railway Engineering Association) Coopers E-80 live loading standard. All drawings and calculations must be stamped by a registered professional engineer licensed to practice in the state the project is located. The Contractor must not begin work until notified by the Railway that plans have been approved. The Contractor will be required to use lifting devices such as, cranes and/or winches to place or to remove any falsework over Railway's tracks. In no case will the Contractor be relieved of responsibility for results obtained by the implementation of said approved plans.
- **1.01.08** Subject to the movement of Railway's trains, Railway will cooperate with the Contractor such that the work may be handled and performed in an efficient manner. The Contractor will have no claim whatsoever for any type of damages or for extra or additional compensation in the event his work is delayed by the Railway.

1.02 Contractor Safety Orientation

- **1.02.01** No employee of the Contractor, its subcontractors, agents or invitees may enter Railway Property without first having completed Railway's Engineering Contractor Safety Orientation, found on the web site **www.contractororientation.com**. The Contractor must ensure that each of its employees, subcontractors, agents or invitees completes Railway's Engineering Contractor Safety Orientation through internet sessions before any work is performed on the Project. Additionally, the Contractor must ensure that each and every one of its employees, subcontractors, agents or invitees possesses a card certifying completion of the Railway Contractor Safety Orientation before entering Railway Property. The Contractor is responsible for the cost of the Railway Contractor Safety Orientation. The Contractor must renew the Railway Contractor Safety Orientation annually. Further clarification can be found on the web site or from the Railway's Representative.

1.03 Railway Requirements

- **1.03.01** The Contractor must take protective measures as are necessary to keep railway facilities, including track ballast, free of sand, debris, and other foreign objects and materials resulting from his operations. Any damage to railway facilities resulting from Contractor's operations will be repaired or replaced by Railway and the cost of such repairs or replacement must be paid for by the Government Contractor and at no additional cost to the government.
- **1.03.02** The Contractor must notify the Railway's Division Engineer at 909-386-4504 at and provide blasting plans to the Railway for review seven (7) calendar days prior to conducting any blasting operations adjacent to or on Railway's Property.
- **1.03.03** The Contractor must abide by the following temporary clearances during construction:
 - 15'-0" Horizontally from centerline of nearest track
 - 21'-6" Vertically above top of rail
 - 27'-0" Vertically above top of rail for electric wires carrying less than 750 volts
 - 28'-0" Vertically above top of rail for electric wires carrying 750 volts to 15,000 volts
 - 30'-0" Vertically above top of rail for electric wires carrying 15,000 volts to 20,000 volts
 - 34'-0" Vertically above top of rail for electric wires carrying more than 20,000 volts
- **1.03.04** Upon completion of construction, the following clearances shall be maintained:
 - 25' Horizontally from centerline of nearest track
 - 24' 6" Vertically above top of rail
- **1.03.05** Any infringement within State statutory clearances due to the Contractor's operations must be submitted to the Railway and to the Government and must not be undertaken until approved in writing by the Railway, and until the Government has obtained any necessary authorization from the State Regulatory Authority for the infringement. No extra compensation will be allowed in the event the Contractor's work is delayed pending Railway approval, and/or the State Regulatory Authority's approval.
- **1.03.06** In the case of impaired vertical clearance above top of rail, Railway will have the option of installing tell-tales or other protective devices Railway deems necessary for protection of Railway operations. The cost of tell-tales or protective devices will be borne by the Agency.
- **1.03.07** The details of construction affecting the Railway's Property and tracks not included in the contract plans must be submitted to the Railway by Government for approval before work is undertaken and this work must not be undertaken until approved by the Railway.
- **1.03.08** At other than public road crossings, the Contractor must not move any equipment or materials across Railway's tracks until permission has been obtained from the Railway. The Contractor must obtain a "Temporary Construction Crossing Agreement" from the Railway prior to moving his equipment or materials across the Railways tracks. The temporary crossing must be gated and locked at all times when not required for use by the Contractor. The temporary crossing for use of the Contractor will be constructed and, at the completion of the project, removed at the expense of the Contractor.
- **1.03.09** Discharge, release or spill on the Railway Property of any hazardous substances, oil,

petroleum, constituents, pollutants, contaminants, or any hazardous waste is prohibited and Contractor must immediately notify the Railway's Resource Operations Center at 1(800) 832-5452, and the Government Navajo Region Safety Officer (505)863-8316 of any discharge, release or spills in excess of a reportable quantity. Contractor must not allow Railway Property to become a treatment, storage or transfer facility as those terms are defined in the Resource Conservation and Recovery Act or any state analogue.

- **1.03.10** The Contractor upon completion of the work covered by this contract, must promptly remove from the Railway's Property all of Contractor's tools, equipment, implements and other materials, whether brought upon said property by said Contractor or any Subcontractor, employee or agent of Contractor or of any Subcontractor, and must cause Railway's Property to be left in a condition acceptable to the Railway's representative.

1.04 Contractor Roadway Worker on Track Safety Program and Safety Action Plan:

- **1.04.01** Each Contractor that will perform work within 25 feet of the centerline of a track must develop and implement a Roadway Worker Protection/On Track Safety Program and work with Railway Project Representative to develop an on track safety strategy as described in the guidelines listed in the on track safety portion of the Safety Orientation. This Program must provide Roadway Worker protection/on track training for all employees of the Contractor, its subcontractors, agents or invitees. This training is reinforced at the job site through job safety briefings. Additionally, each Contractor must develop and implement the Safety Action Plan, as provided for on the web site www.contractororientation.com, which will be made available to Railway prior to commencement of any work on Railway Property. During the performance of work, the Contractor must audit its work activities. The Contractor must designate an on-site Project Supervisor who will serve as the contact person for the Railway and who will maintain a copy of the Safety Action Plan, safety audits, and Material Safety Datasheets (MSDS), at the job site.
- **1.04.02** Contractor shall have a background investigation performed on all of its employees, subcontractors and agents who will be performing any services for Railroad under this Agreement which are determined by Railroad in its sole discretion a) to be on Railroad's property, or b) that require access to Railroad Critical Infrastructure, Railroad Critical Information Systems, Railroad's Employees, Hazardous Materials on Railroad's property or is being transported by or otherwise in the custody of Railroad, or Freight in Transit involving Railroad.

The required background screening shall at a minimum meet the rail industry background screening criteria defined by the e-RAILSAFE Program as outlined at <http://www.e-railsafe.com>, in addition to any other applicable regulatory requirements.

Contractor shall obtain written consent from all its employees, subcontractors or agents screened in compliance with the e-RAILSAFE Program to participate in the Program on their behalf and to release completed background information to Railroad's designee. Contractor shall be subject to periodic audit to ensure compliance.

Contractor subject to the e-RAILSAFE Program hereunder shall not permit any of its employees, subcontractors or agents to perform services hereunder who are not first approved under e-RAILSAFE Program standards. Railroad shall have the right to deny entry onto its premises or access as described in this section above to any of Contractor's employees, subcontractors or agents who do not display the authorized identification badge issued by a background screening service

meeting the standards set forth in the e-RAILSAFE Program, or who in Railroad's opinion, which may not be unreasonable, may pose a threat to the safety or security of Railroad's operations, assets or personnel.

Contractors shall be responsible for ensuring that its employees, subcontractors and agents are United States citizens or legally working in the United States under a lawful and appropriate work VISA or other work authorization.

1.05 Railway Flagger Services:

- **1.05.01** The Contractor must give Railway's **Roadmaster (telephone (623)-463-4103)** a minimum of thirty (30) calendar days advance notice when flagging services will be required so that the Roadmaster can make appropriate arrangements (i.e., bulletin the flagger's position). If flagging services are scheduled in advance by the Contractor and it is subsequently determined by the parties hereto that such services are no longer necessary, the Contractor must give the Roadmaster five (5) working days advance notice so that appropriate arrangements can be made to abolish the position pursuant to union requirements.
- **1.05.02** Unless determined otherwise by Railway's Project Representative, Railway flagger will be required and furnished when Contractor's work activities are located over, under and/or within twenty-five (25) feet measured horizontally from centerline of the nearest track and when cranes or similar equipment positioned beyond 25-feet from the track centerline could foul the track in the event of tip over or other catastrophic occurrence, but not limited thereto for the following conditions:
 - **1.05.02a** When, upon inspection by Railway's Representative, other conditions warrant.
 - **1.05.02b** When any excavation is performed below the bottom of tie elevation, if, in the opinion of Railway's representative, track or other Railway facilities may be subject to movement or settlement.
 - **1.05.02c** When work in any way interferes with the safe operation of trains at timetable speeds.
 - **1.05.02d** When any hazard is presented to Railway track, communications, signal, electrical, or other facilities either due to persons, material, equipment or blasting in the vicinity.
 - **1.05.02e** Special permission must be obtained from the Railway before moving heavy or cumbersome objects or equipment which might result in making the track impassable.
- **1.05.03** Flagging services will be performed by qualified Railway flaggers.
 - **1.05.03a** Flagging crew generally consists of one employee. However, additional personnel may be required to protect Railway Property and operations, if deemed necessary by the Railways Representative.
 - **1.05.03b** Each time a flagger is called, the minimum period for billing will be the eight (8) hour basic day.
 - **1.05.03c** The cost of flagger services provided by the Railway will be borne by **(Government)**. The estimated cost for one (1) flagger is approximately between \$800.00-\$1,600.00 for an eight (8) hour basic day with time and one-half or double time for overtime, rest days and holidays. The estimated

cost for each flagger includes vacation allowance, paid holidays, Railway and unemployment insurance, public liability and property damage insurance, health and welfare benefits, vehicle, transportation, meals, lodging, radio, equipment, supervision and other costs incidental to performing flagging services. Negotiations for Railway labor or collective bargaining agreements and rate changes authorized by appropriate Federal authorities may increase actual or estimated flagging rates.

THE FLAGGING RATE IN EFFECT AT THE TIME OF PERFORMANCE BY THE CONTRACTOR HEREUNDER WILL BE USED TO CALCULATE THE ACTUAL COSTS OF FLAGGING PURSUANT TO THIS PARAGRAPH.

- **1.05.03d** The average train traffic on this route is 105 freight trains per 24-hour period at a timetable speed 79 MPH and 2 passenger trains at a timetable speed of 79 MPH.

1.06 Contractor General Safety Requirements

- **1.06.01** Work in the proximity of railway track(s) is potentially hazardous where movement of trains and equipment can occur at any time and in any direction. All work performed by contractors within 25 feet of any track must be in compliance with FRA Roadway Worker Protection Regulations.
- **1.06.02** Before beginning any task on Railway Property, a thorough job safety briefing must be conducted with all personnel involved with the task and repeated when the personnel or task changes. If the task is within 25 feet of any track, the job briefing must include the Railway's flagger, as applicable, and include the procedures the Contractor will use to protect its employees, subcontractors, agents or invitees from moving any equipment adjacent to or across any Railway track(s).
- **1.06.03** Workers must not work within 25 feet of the centerline of any track without an on track safety strategy approved by the Railway's Project Representative. When authority is provided, every contractor employee must know: (1) who the Railway flagger is, and how to contact the flagger, (2) limits of the authority, (3) the method of communication to stop and resume work, and (4) location of the designated places of safety. Persons or equipment entering flag/work limits that were not previously job briefed, must notify the flagger immediately, and be given a job briefing when working within 25 feet of the center line of track.
- **1.06.04** When Contractor employees are required to work on the Railway Property after normal working hours or on weekends; the Railway's representative in charge of the project must be notified. A minimum of two employees must be present at all times.
- **1.06.05** Any employees, agents or invitees of Contractor or its subcontractors under suspicion of being under the influence of drugs or alcohol, or in the possession of same, will be removed from the Railway's Property and subsequently released to the custody of a representative of Contractor management. Future access to the Railway's Property by that employee will be denied.
- **1.06.06** Any damage to Railway Property, or any hazard noticed on passing trains must be reported immediately to the Railway's representative in charge of the project. Any vehicle or machine which may come in contact with track, signal equipment, or structure (bridge) and could result in a train derailment must be reported immediately to the Railway representative in charge of the project and to the Railway's Resource Operations Center at 1(800) 832-5452. Local emergency numbers are to be obtained from the Railway representative in charge of the project prior to the start of any work and must be posted at the job site.

- **1.06.07** For safety reasons and except for normal highway/bridge construction tools, all persons are prohibited from having pocket knives, firearms or other deadly weapons in their possession while working on Railway's Property.
- **1.06.08** All personnel protective equipment (PPE) used on Railway Property must meet applicable OSHA and ANSI specifications. Current Railway personnel protective equipment requirements are listed on the web site, <http://www.contractororientation.com>, however, a partial list of the requirements include: a) safety glasses with permanently affixed side shields (no yellow lenses); b) hard hats; c) safety shoe with: hardened toes, above-the-ankle lace-up and a defined heel; and d) high visibility retro-reflective work wear. The Railway's representative in charge of the project is to be contacted regarding local specifications for meeting requirements relating to hi-visibility work wear. Hearing protection, fall protection, gloves, and respirators must be worn as required by State and Federal regulations. **(NOTE – Should there be a discrepancy between the information contained on the web site and the information in this paragraph, the web site will govern.)**
- **1.06.09 THE CONTRACTOR MUST NOT PILE OR STORE ANY MATERIALS, MACHINERY OR EQUIPMENT CLOSER THAN 25'-0" TO THE CENTER LINE OF THE NEAREST RAILWAY TRACK. MATERIALS, MACHINERY OR EQUIPMENT MUST NOT BE STORED OR LEFT WITHIN 250 FEET OF ANY HIGHWAY/RAIL AT-GRADE CROSSINGS OR TEMPORARY CONSTRUCTION CROSSING, WHERE STORAGE OF THE SAME WILL OBSTRUCT THE VIEW OF A TRAIN APPROACHING THE CROSSING. PRIOR TO BEGINNING WORK, THE CONTRACTOR MUST ESTABLISH A STORAGE AREA WITH CONCURRENCE OF THE RAILWAY'S REPRESENTATIVE.**
- **1.06.10** Machines or vehicles must not be left unattended with the engine running. Parked machines or equipment must be in gear with brakes set and if equipped with blade, pan or bucket, they must be lowered to the ground. All machinery and equipment left unattended on Railway's Property must be left inoperable and secured against movement. (See internet Engineering Contractor Safety Orientation program for more detailed specifications)
- **1.06.11** Workers must not create and leave any conditions at the work site that would interfere with water drainage. Any work performed over water must meet all Federal, State and Local regulations.
- **1.06.12** All power line wires must be considered dangerous and of high voltage unless informed to the contrary by proper authority. For all power lines the minimum clearance between the lines and any part of the equipment or load must be; 200 KV or below - 15 feet; 200 to 350 KV - 20 feet; 350 to 500 KV - 25 feet; 500 to 750 KV - 35 feet; and 750 to 1000 KV - 45 feet. If capacity of the line is not known, a minimum clearance of 45 feet must be maintained. A person must be designated to observe clearance of the equipment and give a timely warning for all operations where it is difficult for an operator to maintain the desired clearance by visual means.

1.07 Excavation:

- **1.07.01** Before excavating, the Contractor must determine whether any underground pipe lines, electric wires, or cables, including fiber optic cable systems are present and located within the Project work area. The Contractor must determine whether excavation on Railway's Property could cause damage to buried cables resulting in delay to Railway traffic and disruption of service to users. Delays and disruptions to service may cause business interruptions involving loss of revenue and

profits. Before commencing excavation, the Contractor must contact BNSF's Field Engineering Representative, Richard Barnitz, 505-767-6826 and BNSF's OneCall telephone number 800-533-2891. All underground and overhead wires will be considered HIGH VOLTAGE and dangerous until verified with the company having ownership of the line. **It is the Contractor's responsibility to notify any other companies that have underground utilities in the area and arrange for the location of all underground utilities before excavating.**

- **1.07.02** The Contractor must cease all work and notify the Railway immediately before continuing excavation in the area if obstructions are encountered which do not appear on drawings. If the obstruction is a utility and the owner of the utility can be identified, then the Contractor must also notify the owner immediately. If there is any doubt about the location of underground cables or lines of any kind, no work must be performed until the exact location has been determined. There will be no exceptions to these instructions.
- **1.07.03** All excavations must be conducted in compliance with applicable OSHA regulations and, regardless of depth, must be shored where there is any danger to tracks, structures or personnel.
- **1.07.04** Any excavations, holes or trenches on the Railway's Property must be covered, guarded and/or protected when not being worked on. When leaving work site areas at night and over weekends, the areas must be secured and left in a condition that will ensure that Railway employees and other personnel who may be working or passing through the area are protected from all hazards. All excavations must be back filled as soon as possible.

1.08 Hazardous Waste, Substances and Material Reporting:

- **1.08.01** If Contractor discovers any hazardous waste, hazardous substance, petroleum or other deleterious material, including but not limited to any non-containerized commodity or material, on or adjacent to Railway's Property, in or near any surface water, swamp, wetlands or waterways, while performing any work under this Agreement, Contractor must immediately: (a) notify the Railway's Resource Operations Center at 1(800) 832-5452, of such discovery; (b) take safeguards necessary to protect its employees, subcontractors, agents and/or third parties; and (c) exercise due care with respect to the release, including the taking of any appropriate measure to minimize the impact of such release.

1.09 Personal Injury Reporting

- **1.09.01** The Railway is required to report certain injuries as a part of compliance with Federal Railroad Administration (FRA) reporting requirements. Any personal injury sustained by an employee of the Contractor, subcontractor or Contractor's invitees while on the Railway's Property must be reported immediately (by phone mail if unable to contact in person) to the Railway's representative in charge of the project. The Non-Employee Personal Injury Data Collection Form contained herein is to be completed and sent by Fax to the Railway at 1(817) 352-7595 and to the Railway's Project Representative no later than the close of shift on the date of the injury.

**NON-EMPLOYEE PERSONAL INJURY DATA COLLECTION**

(If injuries are in connection with rail equipment accident/incident, highway rail grade crossing accident or automobile accident, ensure that appropriate information is obtained, forms completed and that data entry personnel are aware that injuries relate to that specific event.)

Injured Person Type:

☐ Passenger on train

☐ Non-employee (N)

(i.e., emp of another railroad, or, non-BNSF emp involved in vehicle accident, including company vehicles)

☐ Contractor/safety

☐ Contractor/non-safety sensitive (G)

☐ Volunteer/safety sensitive (H)

☐ Volunteer/other non-safety sensitive (I)

☐ Non-trespasser (D) - to include highway users involved in highway rail grade crossing accidents who did not go around or through gates

☐ Trespasser (E) - to include highway users involved in highway rail grade crossing accidents who went around or through gates

☐ Non-trespasser (J) - Off railroad property

If train involved, Train ID:

Transmit attached information to Accident/Incident Reporting Center by:

Fax 1-817-352-7595 or by Phone 1-800-697-6736 or email to: Accident-Reporting.Center@BNSF.com

Officer Providing Information:

(Name)

(Employee No.)

(Phone #)

REPORT PREPARED TO COMPLY WITH FEDERAL ACCIDENT REPORTING REQUIREMENTS AND PROTECTED FROM DISCLOSURE PURSUANT TO 49 U.S.C. 20903 AND 83 U.S.C. 490

EXHIBIT "C-1"

**Agreement Between
BNSF RAILWAY COMPANY**

And the

CONTRACTOR- Navajo Engineering & Construction Authority

BNSF RAILWAY COMPANY

Attention: Manager Public Projects

Railway File: BF10004310

Agency Project: Navajo Road Overpass – Navajo, AZ

The undersigned (hereinafter called, the "Contractor", has entered into a contract (the "Contract") dated _____, 20__, with Department of the Interior Bureau of Indian Affairs Navajo Regional Office Division of Transportation (BIANRDOT) for the performance of certain work in connection with the following project: **Construction of the Navajo Road Overpass on BNSF's Gallup Subdivision, MP 213.13, US DOT# 025011J.** Performance of such work will necessarily require Contractor to enter **BNSF RAILWAY COMPANY** ("Railway") right of way and property ("Railway Property"). The Contract provides that no work will be commenced within Railway Property until the Contractor employed in connection with said work for **BIANRDOT** (i) executes and delivers to Railway an Agreement in the form hereof, and (ii) provides insurance of the coverage and limits specified in such Agreement and Section 3 herein. If this Agreement is executed by a party who is not the Owner, General Partner, President or Vice President of Contractor, Contractor must furnish evidence to Railway certifying that the signatory is empowered to execute this Agreement on behalf of Contractor.

Accordingly, in consideration of Railway granting permission to Contractor to enter upon Railway Property and as an inducement for such entry, Contractor, effective on the date of the Contract, has agreed and does hereby agree with Railway as follows:

Section 1. RELEASE OF LIABILITY AND INDEMNITY

Contractor hereby waives, releases, indemnifies, defends and holds harmless Railway for all judgments, awards, claims, demands, and expenses (including attorneys' fees), for injury or death to all persons, including Railway's and Contractor's officers and employees, and for loss and damage to property belonging to any person, arising in any manner from Contractor's or any of Contractor's subcontractors' acts or omissions or any work performed on or about Railway's property or right-of-way. **THE LIABILITY ASSUMED BY CONTRACTOR WILL NOT BE AFFECTED BY THE FACT, IF IT IS A FACT, THAT THE DESTRUCTION, DAMAGE, DEATH, OR INJURY WAS OCCASIONED BY OR CONTRIBUTED TO BY THE NEGLIGENCE OF RAILWAY, ITS AGENTS, SERVANTS, EMPLOYEES OR OTHERWISE, EXCEPT TO THE EXTENT THAT SUCH CLAIMS ARE PROXIMATELY CAUSED BY THE INTENTIONAL MISCONDUCT OR GROSS NEGLIGENCE OF RAILWAY.**

THE INDEMNIFICATION OBLIGATION ASSUMED BY CONTRACTOR INCLUDES ANY CLAIMS, SUITS OR JUDGMENTS BROUGHT AGAINST RAILWAY UNDER THE FEDERAL EMPLOYEE'S LIABILITY ACT, INCLUDING CLAIMS FOR STRICT LIABILITY UNDER THE SAFETY APPLIANCE ACT OR THE LOCOMOTIVE INSPECTION ACT, WHENEVER SO CLAIMED.

Contractor further agrees, at its expense, in the name and on behalf of Railway, that it will adjust and settle all claims made against Railway, and will, at Railway's discretion, appear and defend any suits or actions of law or in equity brought against Railway on any claim or cause of action arising or growing out of or in any manner connected with any liability assumed by Contractor under this Agreement for which Railway is liable or is alleged to be liable. Railway will give notice to Contractor, in writing, of the receipt or dependency of such claims and thereupon Contractor must proceed to adjust and handle to a conclusion such claims, and in the event of a suit being brought against Railway, Railway may forward summons and complaint or other process in connection therewith to Contractor, and Contractor, at Railway's discretion, must defend, adjust, or settle such suits and protect, indemnify, and save harmless Railway from and against all damages, judgments, decrees, attorney's fees, costs, and expenses growing out of or resulting from or incident to any such claims or suits.

In addition to any other provision of this Agreement, in the event that all or any portion of this Article shall be deemed to be inapplicable for any reason, including without limitation as a result of a decision of an applicable court, legislative enactment or regulatory order, the parties agree that this Article shall be interpreted as requiring Contractor to indemnify Railway to the fullest extent permitted by applicable law. **THROUGH THIS AGREEMENT THE PARTIES EXPRESSLY INTEND FOR CONTRACTOR TO INDEMNIFY RAILWAY FOR RAILWAY'S ACTS OF NEGLIGENCE.**

It is mutually understood and agreed that the assumption of liabilities and indemnification provided for in this Agreement survive any termination of this Agreement.

Section 2. TERM

This Agreement is effective from the date of the Contract until (i) the completion of the project set forth herein, and (ii) full and complete payment to Railway of any and all sums or other amounts owing and due hereunder.

Section 3. INSURANCE

Contractor shall, at its sole cost and expense, procure and maintain during the life of this Agreement the following insurance coverage:

- A. Commercial General Liability insurance. This insurance shall contain broad form contractual liability with a combined single limit of a minimum of \$5,000,000 each occurrence and an aggregate limit of at least \$10,000,000 but in no event less than the amount otherwise carried by the Contractor. Coverage must be purchased on a post 2004 ISO occurrence form or equivalent and include coverage for, but not limit to the following:

- ◆ Bodily Injury and Property Damage
- ◆ Personal Injury and Advertising Injury
- ◆ Fire legal liability
- ◆ Products and completed operations

This policy shall also contain the following endorsements, which shall be indicated on the certificate of insurance:

- ◆ The definition of insured contract shall be amended to remove any exclusion or other limitation for any work being done within 50 feet of railroad property.
- ◆ Waiver of subrogation in favor of and acceptable to Railway.
- ◆ Additional insured endorsement in favor of and acceptable to Railway.
- ◆ Separation of insureds.
- ◆ The policy shall be primary and non-contributing with respect to any insurance carried by Railway.

It is agreed that the workers' compensation and employers' liability related exclusions in the Commercial General Liability insurance policy(s) required herein are intended to apply to employees of the policy holder and shall not apply to *Railway* employees.

No other endorsements limiting coverage as respects obligations under this Agreement may be included on the policy with regard to the work being performed under this agreement.

B. Business Automobile Insurance. This insurance shall contain a combined single limit of at least \$1,000,000 per occurrence, and include coverage for, but not limited to the following:

- ◆ Bodily injury and property damage
- ◆ Any and all vehicles owned, used or hired

The policy shall also contain the following endorsements or language, which shall be indicated on the certificate of insurance:

- ◆ Waiver of subrogation in favor of and acceptable to Railway.
- ◆ Additional insured endorsement in favor of and acceptable to Railway.
- ◆ Separation of insured's.
- ◆ The policy shall be primary and non-contributing with respect to any insurance carried by Railway.

C. Workers Compensation and Employers Liability insurance including coverage for, but not limited to:

- ◆ Contractor's statutory liability under the worker's compensation laws of the state(s) in which the work is to be performed. If optional under State law, the insurance must cover all employees anyway.

- ◆ Employers' Liability (Part B) with limits of at least \$500,000 each accident, \$500,000 by disease policy limit, \$500,000 by disease each employee.

This policy shall also contain the following endorsements or language, which shall be indicated on the certificate of insurance:

- ◆ Waiver of subrogation in favor of and acceptable to Railway.
- D. Railroad Protective Liability insurance naming only the **Railway** as the Insured with coverage of at least \$5,000,000 per occurrence and \$10,000,000 in the aggregate. The policy Must be issued on a standard ISO form CG 00 35 12 04 and include the following:
- ◆ Endorsed to include the Pollution Exclusion Amendment
 - ◆ Endorsed to include the Limited Seepage and Pollution Endorsement.
 - ◆ Endorsed to remove any exclusion for punitive damages.
 - ◆ No other endorsements restricting coverage may be added.
 - ◆ The original policy must be provided to the **Railway** prior to performing any work or services under this Agreement
 - ◆ Definition of "Physical Damage to Property" shall be endorsed to read: "means direct and accidental loss of or damage to all property owned by any named insured and all property in any named insured' care, custody, and control arising out of the acts or omissions of the contractor named on the Declarations.

In lieu of providing a Railroad Protective Liability Policy, Licensee may participate (if available) in Railway's Blanket Railroad Protective Liability Insurance Policy.

Other Requirements:

Where allowable by law, all policies (applying to coverage listed above) shall contain no exclusion for punitive damages.

Contractor agrees to waive its right of recovery against **Railway** for all claims and suits against **Railway**. In addition, its insurers, through the terms of the policy or policy endorsement, waive their right of subrogation against **Railway** for all claims and suits. Contractor further waives its right of recovery, and its insurers also waive their right of subrogation against **Railway** for loss of its owned or leased property or property under Contractor's care, custody, or control.

Allocated Loss Expense shall be in addition to all policy limits for coverages referenced above.

Contractor is not allowed to self-insure without the prior written consent of **Railway**. If granted by **Railway**, self-insured retention or other financial responsibility for claims shall be covered directly by Contractor in lieu of insurance. Any and all **Railway** liabilities that would otherwise, in accordance with the provisions of this **Agreement**, be covered by Contractor's insurance will be covered as if Contractor elected not to include a deductible, self-insured retention or other financial responsibility for claims.

Prior to commencing the Work, Contractor shall furnish to **Railway** an acceptable certificate(s) of insurance from an authorized representative evidencing the required coverage(s), endorsements, and amendments. The certificate should be directed to the following addresses:

BNSF Railway Company
c/o CertFocus
P.O. Box 140528
Kansas City, MO 64114
Toll Free: 877-576-2378
Fax number: 817-840-7487
Email: BNSF@certfocus.com
www.certfocus.com

Contractor shall notify **Railway** in writing at least 30 days prior to any cancellation, non-renewal, substitution, or material alteration.

Any insurance policy must be written by a reputable insurance company acceptable to **Railway** or with a current Best's Guide Rating of A- and Class VII or better, and authorized to do business in the state(s) in which the service is to be provide.

If coverage is purchased on a "claims made" basis, Contractor hereby agrees to maintain coverage in force for a minimum of three years after expiration, cancellation or termination of this contract. Annually, Contractor agrees to provide evidence of such coverage as required hereunder.

Contractor represents that this **Agreement** has been thoroughly reviewed by Contractor's insurance agent(s)/broker(s), who have been instructed by Contractor to procure the insurance coverage required by this **Agreement**.

Not more frequently than once every five years, **Railway** may reasonably modify the required insurance coverage to reflect then-current risk management practices in the railroad industry and underwriting practices in the insurance industry.

If any portion of the operation is to be subcontracted by Contractor, Contractor shall require that the subcontractor shall provide and maintain the insurance coverage(s) set forth herein, naming **Railway** as an additional insured, and shall require that the subcontractor shall release, defend, and indemnify **Railway** to the same extent and under the same terms and conditions as Contractor is required to release, defend, and indemnify **Railway** herein.

Failure to provide evidence as required by this section shall entitle, but not require, **Railway** to terminate this **Agreement** immediately. Acceptance of a certificate that does not comply with this section shall not operate as a waiver of Contractor's obligations hereunder.

The fact that insurance (including, without limitation, self-insurance) is obtained by Contractor shall not be deemed to release or diminish the liability of Contractor including, without limitation, liability under

the indemnity provisions of this *Agreement*. Damages recoverable by *Railway* shall not be limited by the amount of the required insurance coverage.

In the event of a claim or lawsuit involving *Railway* arising out of this agreement, Contractor will make available any required policy covering such claim or lawsuit.

These insurance provisions are intended to be a separate and distinct obligation on the part of the Contractor. Therefore, these provisions shall be enforceable and Contractor shall be bound thereby regardless of whether or not indemnity provisions are determined to be enforceable in the jurisdiction in which the work covered hereunder is performed.

For purposes of this section, *Railway* means "Burlington Northern Santa Fe LLC", "BNSF RAILWAY COMPANY" and the subsidiaries, successors, assigns and affiliates of each.

Section 4. EXHIBIT "C" CONTRACTOR REQUIREMENTS

The Contractor must observe and comply with all provisions, obligations, requirements and limitations contained in the Contract, and the Contractor Requirements set forth on Exhibit "C" attached to the Contract and this Agreement, , including, but not be limited to, payment of all costs incurred for any damages to Railway roadbed, tracks, and/or appurtenances thereto, resulting from use, occupancy, or presence of its employees, representatives, or agents or subcontractors on or about the construction site.

Section 5. TRAIN DELAY

Contractor is responsible for and hereby indemnifies and holds harmless Railway (including its affiliated railway companies, and its tenants) for, from and against all damages arising from any unscheduled delay to a freight or passenger train which affects Railway's ability to fully utilize its equipment and to meet customer service and contract obligations. Contractor will be billed, as further provided below, for the economic losses arising from loss of use of equipment, contractual loss of incentive pay and bonuses and contractual penalties resulting from train delays, whether caused by Contractor, or subcontractors, or by the Railway performing work under this Agreement. Railway agrees that it will not perform any act to unnecessarily cause train delay.

For loss of use of equipment, Contractor will be billed the current freight train hour rate per train as determined from Railway's records. Any disruption to train traffic may cause delays to multiple trains at the same time for the same period.

Additionally, the parties acknowledge that passenger, U.S. mail trains and certain other grain, intermodal, coal and freight trains operate under incentive/penalty contracts between Railway and its customer(s). Under these arrangements, if Railway does not meet its contract service commitments, Railway may suffer loss of performance or incentive pay and/or be subject to penalty payments. Contractor is responsible for any train performance and incentive penalties or other contractual economic losses actually incurred by Railway which are attributable to a train delay caused by Contractor or its subcontractors.

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The contractual relationship between Railway and its customers is proprietary and confidential. In the event of a train delay covered by this Agreement, Railway will share information relevant to any train delay to the extent consistent with Railway confidentiality obligations. **THE RATE THEN IN EFFECT AT THE TIME OF PERFORMANCE BY THE CONTRACTOR HEREUNDER WILL BE USED TO CALCULATE THE ACTUAL COSTS OF TRAIN DELAY PURSUANT TO THIS AGREEMENT.**

Contractor and its subcontractors must give Railway's representative (Richard Barnitz, 505-767-6826) four (4) weeks advance notice of the times and dates for proposed work windows. Railway and Contractor will establish mutually agreeable work windows for the project. Railway has the right at any time to revise or change the work windows due to train operations or service obligations pursuant to Article III, section 13(e) of the Overpass Agreement below. Railway will not be responsible for any additional costs or expenses resulting from a change in work windows. Additional costs or expenses resulting from a change in work windows shall be accounted for in Contractor's expenses for the project.

Contractor and subcontractors must plan, schedule, coordinate and conduct all Contractor's work so as to not cause any delays to any trains.

Kindly acknowledge receipt of this letter by signing and returning to the Railway two original copies of this document, which, upon execution by Railway, will constitute an Agreement between us.

Contractor

By: _____
Contractor General Manager

Printed Name: _____

Title: _____

Contact Person: _____

Address: _____

City: _____

State: _____ Zip: _____

Fax: _____

Phone: _____

E-mail: _____

BNSF Railway Company

By: _____
Manager Public Projects

Name: _____

Accepted and effective this _____ day of 201

Exhibit F**BNSF Bridge Construction Requirements****BRIDGE DESIGN, PLANS & SPECIFICATIONS:**

Except for the design of temporary falsework and shoring, BNSF review of the Structure plans will be limited to the vertical and horizontal clearances, sight distance for existing train signals, foundation dimensions and drainage characteristics as they relate to existing and future tracks. BNSF will not review structural design calculations for the permanent Structure unless a member or members are influenced by railroad live loads.

Temporary falsework and shoring plans and calculations must be reviewed and approved by BNSF prior to beginning construction. The Government shall perform an independent review of the design calculations for temporary falsework and shoring prior to submitting them to BNSF for approval. Temporary construction clearances must be no less than 15 feet measured horizontally from the centerline of the nearest track and 21 feet-6inches measured vertically from the top of rail of the most elevated track to the bottom of lowest temporary falsework member. State regulatory agencies may have more restrictive requirements for temporary railroad clearances.

For the permanent Structure, the Government will submit plans showing the least horizontal distance from the centerline of existing and future tracks to the face of the nearest member of the proposed Structure. The location of the least horizontal distance must be accurately described such that BNSF can determine where it will occur in both the horizontal and vertical plane. If the permanent member is within 25 feet of the nearest track (or future track), collision walls shall be incorporated into the permanent Structure design according to American Railway Engineering and Maintenance Association Manual of Recommended Practice - Chapter 8 - Article 2.1.5.

For the permanent Structure, the Government will submit plans showing the least vertical clearance from top of the most elevated rail of existing and future tracks to the lowest point of the proposed Structure. A profile of the existing top of rail elevation shall be plotted on the bridge plans. The profile shall extend for 500 feet in each direction of the proposed overpass and a separate profile shall be plotted for each track. If the existing top of rail profile(s) is not uniform such that a sag exists in the vicinity of the proposed Structure, the permanent Structure vertical clearance shall be increased sufficiently to accommodate a raise in the track profile to remove the sag. Prior to beginning construction of the permanent Structure, the top of rail elevations should be checked and verified that they have not changed from the assumed elevations utilized for the design of the bridge.

Prior to issuing any invitation to bid on construction of the Structure, the Government will conduct a pre-bid meeting where prospective Contractors have the opportunity to communicate with BNSF personnel regarding site specific train speeds, train density, and general safety requirements for men and equipment working near live tracks. Any invitation to bid and specifications for the Structure must be submitted to BNSF for review comment prior to letting of bids for the Project. BNSF must approve the plans and specifications before any construction contract may be awarded.

BRIDGE CONSTRUCTION:

After awarding the contract, but prior to the Contractor entering BNSF's right-of-way or property, the Government shall conduct a pre-construction meeting with BNSF personnel in attendance to reiterate the safety requirements of construction activity adjacent to live tracks.

During construction, BNSF may require an independent engineering inspector to be present during certain critical activities of the Project, including but not limited to: driving foundation piles, erecting falsework, construction of shoring and retaining walls, placing concrete, placing soil backfill and compaction processes. Within 90 days of the conclusion of the Project and final acceptance by BNSF, the Government will provide BNSF with a complete electronic set of the bridge plans labeled "As Built". Those plans will reflect any and all deviations from the original plans that occurred during construction. The "As Built" plans will be submitted in Micro Station *.dgn electronic format (preferred) or AutoCAD *.dwg format. Electronic plans are to be submitted in the original format used for CAD plan preparation and not converted to another format prior to submission. Actual measured "as constructed" clearances shall be shown as well as depth, size and location of all foundation components. The plans shall show dimensioned locations of existing and relocated utilities.

BRIDGE MAINTENANCE:

The Government will be responsible for maintenance and repair of the Structure including the earth retention components, embankment slopes, erosion control, surface drainage, fencing, deck drains, landscaping, paint, walkways, handrails, lighting, and other improvements associated with the Project.

Fencing and other pedestrian access controls within BNSF's right-of-way and incorporated into the Project shall be designed and maintained by the Government. When trespass issues are known or suspected by the Grantor, the Grantor shall notify the Grantee in writing. The Grantee shall then file a complaint with the local law enforcement agency. Graffiti removal will be the responsibility of the Government.

Such Government maintenance does not include any maintenance to BNSF facilities that were repaired, replaced, relocated, or built to accommodate the Structure and approach roadway of BIA Route N2007 or for convenient access to BNSF facilities within or outside government right-of-way. This includes BNSF maintenance yard, chain link fencing and gates of such yard, relocation of existing barbed wire fence that lies outside government N2007 road right-of-way, the asphalt paved access road to BNSF maintenance facility with adjacent drainage features, drainage channels between the bridge abutment #1 and the railroad tracks, and any other improvements or relocations done outside the N2007 roadway right-of-way.

BRIDGE INSPECTION:

The Government will conduct routine structural inspections every two years as required by law and regulation. In the event of an earthquake, fire, flood, damage from vehicular impacts or other emergent situations, the Government will provide an immediate inspection by qualified personnel and notify BNSF of damage that may affect safe passage of trains. If necessary the Government will embargo weights or provide lane closures or other such measures to protect the structural integrity of the Structure such that there can be continuous safe passage of trains until repairs are made.

BRIDGE ALTERATIONS:

Except as provided otherwise by the Overpass Agreement, dated _____, 2014 there will be no alterations made to the Structure that will alter the railroad vertical or horizontal clearances provided by the original design. Pipelines will be not added or attached to the Structure without first submitting plans and calculations to BNSF for review and approval.

107.06

Contractor's Responsibility for Work.

The third paragraph is superseded with the following:

The Government will only be responsible for losses, injuries, and damage cause by declared enemies and terrorists of the United States Government and cataclysmic natural phenomenon such as tornadoes, earthquakes, major floods, and other federally declared

natural disasters by the United States Government. The Government will only be responsible for costs attributable to repairing or replacing damaged work. The Government will not be responsible for delay costs, impact costs, or extended overhead costs.

rev:09/01/14

SECTION 108 - PROSECUTION AND PROGRESS

108.04 Failure to Complete Work on Time.

Add the following to Paragraph two:

The Contractor shall subject the Liquidated Damages Clauses on all their subcontracts as a result of the actions or inactions on the part of their subcontractors in the amount specified in Table 108-1 for each day beyond the time allowed to complete the contract work, until final acceptance of the work is given. The Liquidated Damages shall be assessed when the entire project work cannot be completed due to delays as a result of any actions, or inactions taken by the Contractor's sub-contractors including failure to complete all the work by the contract end date. The liquidated damages assessed shall be reflected in the progress payments as a savings to the contract equal to half the amount of damages the Contractor received from the sub-contractor(s).

108.05 Stop Order.

Paragraph two is superseded with the following:

No adjustment in contract time or amount will be made for stop work orders issued under (a) or (b). An adjustment in contract time, as provided by FAR Clause 52.249-10 Default (Fixed-Price Construction) may be made when the Contractor is able to demonstrate that the weather was unusually severe based on the most recent 10 years of certified historical data provided by the Contractor.

SECTION 109 - MEASUREMENT AND PAYMENT

109. 01 Measurement of Work.

Add the following:

The metric unit of measure shall prevail in both measurement and payment of items as shown in the bid schedule. However this does not preclude the contractor from furnishing the English units equivalent for materials incorporated into the work from suppliers. The contractor shall be responsible for any misalignment and any other problems arising out of such conversions.

109.02 Measurement Terms and Definitions.

Subparagraph (a) is superseded with the following:

(a) Contract quantity. The quantity to be paid is the quantity shown in the bid schedule (designated as "CQ") and is the final quantity to be paid. The contract quantity will be adjusted for authorized changes that affect the quantity or for errors made in computing this quantity. If there is evidence that a quantity specified as a "*contract quantity*" is incorrect, submit calculations, drawings, or other evidence indicating why the quantity is in error and request, in writing, that the quantity be adjusted.

Subparagraph (b)(1)(a) is superseded with the following:

(a) Take cross sections of original ground for government comparison to the design models. **Do Not** collect data outside the designated slope stake limits.

Add the following subsection:

(m) Contingent sum. Perform the work only when authorized by written change order. The work will be measured and paid for at agreed unit prices, lump sum prices, or force account as established in the order authorizing the work. When the unit bid price is designated "contingent sum", the quantity is designated as "All".

109. 03 Weighing Procedures and Devices.

Add the following:

All scales shall be re-certified annually or after each time they are moved, or as directed in writing by the AO. Provide current scale certification documents to the AOTR or SAOTR.

The first sentence of subparagraph (c) is superseded with the following:

Furnish, erect, and maintain acceptable scales.

Paragraphs 6 and 7 of subparagraph (c) are superseded with the following:

For pay quantities based on weight, an automatic printer hooked up to the scales shall be provided that shall provide the following information for each weighing, or manually weigh and record masses with the same information below:

- (1) Project Number
- (2) Item number and description
- (3) Date
- (4) Time
- (5) Ticket number
- (6) Haul unit number
- (7) Gross Weight (haul unit and mass); to the nearest 110lbs (50 kilograms)
- (8) Tare Weight (haul unit); to the nearest 110lbs (50 kilograms)
- (9) Net Weight (mass); to the nearest 110lbs (50 kilograms)
- (10) Accumulated total net mass for all haul units since the beginning of the shift

The Contractor shall weigh the empty weight of vehicles with full fuel tanks hauling materials weighed on platform scales at the start of the day's operations, then at noon time. If the vehicle is replaced with another one during the operations, then the new vehicle shall be weighed empty with full fuel tanks and at the end of the day's operations.

Paragraph 8, in subparagraph (c) is superseded with the following:

Furnish competent scale operator(s) to operate the system when materials are Contractor-furnished from his own pit/source. Otherwise, the Contractor's commercial supplier shall furnish a competent scale operator(s) when materials are furnished from a commercial pit/source.

Add the following to paragraph 10 in subparagraph (c):

The Contractor's QCM shall furnish the certified Accumulated Total Net Mass record to the AOTR the following workday.

109.04

Receiving Procedures.

The last paragraph is superseded with the following:

Use an approved format/form for the delivery record(s), which must be part of the Quality Control Plan. Furnish the original record(s) and a written certification of the delivery to the QCM with a copy to the AOTR or SAOTR at the end of each shift. If any delivery report(s) does not contain the signature of the spread person or missing delivery report(s) cannot be found, or missing loads cannot be accounted for, the material shall not be paid for.

109.05 Scope of Payment.

Add the following to subparagraph (b):

This also includes work that is identified in the contract specifications as being incidental to other items of work or work called for in the specifications for which a bid items is not provided.

109.06 Price of Adjustments.

Paragraph (b)(2) – **Overhead** is superseded with the following:

(2) Overhead. The overhead rate(s) that apply to the prime Contractor under this contract cannot exceed 52% of the total direct labor costs. For all prime and subcontract work, identify overhead rate(s) and provide supporting data, which justifies the rate(s). List the types of costs, which are included in overhead. Identify the cost pool(s) to which overhead is applied. Apply the overhead to the appropriate pool.

Limit Contractor overhead applied to subcontractor payments to 5 percent of such payments unless a higher percentage is justified.

Paragraph (b)(3)-**Profit** is superseded with the following:

(3) Profit. Except when precluded by the FAR, the profit shall be 8% of the total direct costs reflecting the efficiency and economy of the Contractor and subcontractors in performing the work, the contract risk type, the work difficulty, and management effectiveness and diversity.

For work priced after all or most of the work is performed, profit is limited by statute to 10% of the total direct cost provided this rate can be justified.

Add the following paragraph to subparagraph (b) **Postwork pricing**:

(4) Bonding. The rate charged by any Contractor or subcontractor under this contract is capped at 1% of the total cost of the work or any modification work unless a higher rate can be justified.

Paragraph 109.06(b)(1)c is superseded with the following:

(c) Equipment. Provide a complete descriptive listing of equipment including the make, model, and year of manufacture. Support rented or leased equipment costs with invoices. Determine allowable ownership and operating costs for contractor- and sub-contractor-owned equipment as follows:

(1) Use actual equipment cost data when such data can be acceptably determined from the Contractor's or sub-Contractor's ownership and operating cost records taking into account depreciation.

(2) When actual costs cannot be determined, use the rates shown in the "CE00ES" or "Green Book" (where applicable) published by The Army Corps of Engineers, or

Equipment Watch, for the area where costs are incurred. Adjust the rates for used equipment and for other variable parameters used in the schedules. Provide copies of data sheets taken from these rates books with your submission. DO NOT use a combination of rates from these sources.

(3) Compute proposed standby costs from acceptable ownership records or when actual costs cannot be determined, according to the Green Books. Do not exceed 8 hours in any 24-hour period or 40 hours in any calendar week. Do not include standby for periods when the equipment would have otherwise been in an idle status or for equipment that was not in operational condition. Do not include standby when equipment was moved off the project and used on other projects.

Add subparagraph (c) as follows:

(c) Construction Price adjustments. The AO will consider price adjustments for material (petroleum product – oil and gasoline only) price increases during the life of the contract. The Contractor shall provide along with its request for price adjustment, a justification including information that substantiates its request. The approval of the Contractor's request shall be subject to the Navajo Nation, Navajo Division of Transportation's approval.

109.08

Progress Payments.

Subparagraph (b) is superseded with the following:

(b) Closing date and invoice submittal date. On the first (1st) of each month or the following work day should the date fall on a weekend or holiday, the Contractor may elect (in accordance with the special contract requirements) to have the AOTR prepare and submit a pay estimate to the Contractor, based on the receiving report, for approval on a form acceptable to both the Contractor and Government. However, no invoice payment can be submitted to the billing office without the AOTR agreeing with the work accepted in place and the quantities reviewed and approved by the AOTR for use in the progress payment preparation as outlined in subparagraph (c) & (d). The pay estimate must be signed by the AOTR and Contractor representative before an invoice can be submitted.

Subparagraph (c)

Add the following subparagraph (c)(9):

(9) The pay estimate will be reviewed and approved (in writing) by both the Contractor's and government's field representative (AOTR) prior to the

Contractor submission of any invoice to the Awarding Official for approval and processing. Any errors found in the pay estimate shall result in the progress pay estimate being returned to the Contractor for corrections and re-submission. A copy of the pay estimate must be included with the Contractor's invoice.

Subparagraph (c)(2) is superseded with the following:

(2) A tabulation of total quantities, applicable calculations, and unit prices of work accomplished or completed, and accepted, on each pay item as of the closing date shall be provided to the AOTR or SAOTR to validate (by closing date) the pay estimate request. Do not include any quantities unless field note documentation and calculations for those quantities was submitted by the closing date. Do not include quantities of work involving material for which test reports required under Sections 153 or 154 or certifications required by Subsection 106.03 are, or will be, past due as of the closing date unless otherwise agreed to by the AOTR.

Subparagraph (d) is superseded with the following:

(d) **Government's receiving report.** The Government's receiving report will be developed using the measurement notes received by the QCM and determined acceptable by the AOTR. Within 7 days after the closing date, the AO and/or AOTR will be available by appointment at the Government's designated office to advise the Contractor of quantities and unit prices appearing on the Government's receiving report.

Progress payments may include partial payment for material to be incorporated in the work, provided the material meets the requirements of the contract and that the Contractor includes in his request, a signed statement from the AOTR that the materials have been inspected and appear to meet the project specifications and match the quantities given in the pay estimate.

Add the following to subparagraph (f) **Partial payments**:

For stockpiled aggregates, the Contractor's request must include test results indicating compliance with the specifications to verify the request. The materials must be delivered on or in the vicinity of the project site and/or stored in acceptable (secured) storage places to be considered for partial payment.

109.09

Final Payment.

Add the following to paragraph two (2):

Final payment of the contract should be made no later than **120 days** from the date of **Final Acceptance** and verification of final pay records.

SECTION 152 - CONSTRUCTION SURVEY AND STAKING

152.01 Description:

The following sentence supersedes the first sentence of the second paragraph:

Personnel, equipment, material, and survey notes shall conform to the following:

Subparagraph (a) is superseded with the following:

- (a) **Personnel.** Furnish a technically qualified survey crew capable of performing the work in a timely and accurate manner. The survey crew shall be under the supervision of a Registered Land Surveyor (RLS) with a survey crew supervisor having at least 10 years of experience in highway construction survey and staking. The survey crew supervisor shall be on the project at all times during the survey and staking of each item of work and during the measurement of each pay item. The Contractor shall furnish résumé's on all members of the survey crew and the RLS to the NRDOT Division Manager, through the AOTR for review and approval prior to any survey work being performed.

If the AOTR finds that the survey crew supervisor is not on the project when surveying work is in progress, he shall stop the work until such time when the survey crew supervisor is back on the project overseeing the work. The government will reduce the overall bid cost for the construction survey bid item by taking the number of lost days of survey work due to the survey crew supervisor not being on the project divided by the total number of working days the survey sub-contractor is supposed to be on site for the project duration times the unit price bid for the work.

Add subparagraph (d) to the second paragraph:

- (d) **Survey Notes.** Furnish survey notes for the Survey and Staking Requirements:

(1) **Roadway cross-sections.** Furnish the original and final cross-sections taken of the roadway excavation and embankment, channel, parking areas, and borrow areas, in final position in electronic format with the feature label coding table file used (if the government furnished coding .xin file table format is not used). The Contractor shall submit the cross section and staked alignment survey data in ASCII format consisting of Point Number, Northing, Easting, Elevation, and Feature Code (P, N, E, Z, C) that identifies

ground points, break lines, and centerline alignment strings with the Digital Terrain Model (*.DTM or *.XML) file capable of being read in the InRoads V8i S3 software. The Contractor shall prepare graphical planimetric and cross section plots of both the original and final cross-section data in AutoCAD 2005 (*.DWG) or Microstation V8 (*.DGN) file format and review them AND ALL SURVEY DATA for errors before submitting all the data to the AOTR.

Under no circumstance shall any original ground disturbing activities or base course placement be allowed until all the ORIGINAL ground cross-section data has been collected, reviewed, and accepted in writing by the AOTR through the AO.

(2) Slope stakes and references. Furnish slope staking and reference notes in hand written field books or electronic files in the same format provided to the Contractor by the government. Slope stake notes shall be provided in accordance with section 152.03(c).

(3) Drainage structures. The Contractor shall submit for approval graphical plots of the revised drainage structure lengths to fit the existing field conditions on maximum size 279 mm x 432 mm (11" x 17") sheets as well as in AutoCAD 2012 (*.DWG) or Microstation V8 (*.DGN) file format.

(4) Other survey and staking requirements. Furnish other survey and staking notes in hand written field books in an agreed upon format with the AOTR and the QCM.

152.02**General:**

Add the following paragraph after the first paragraph:

The Contractor is authorized to proceed with construction survey and staking prior to approval of the overall Quality Control Plan. The Contractor shall conduct all survey and staking per the Surveying QCP attached and these specifications. The work may be in the presences of a representative of the AO. A QCP must be submitted for the survey work for review and approval before any survey work begins. The Contractor shall notify the AOTR/AO at least one week before the actual surveying is to begin to allow the government time to have a representative on site.

The following sentence supersedes the first sentence of the fifth paragraph:

Before surveying or staking, discuss and coordinate the following with the AOTR:

The sixth paragraph is superseded with the following:

Survey and establish controls within the tolerances shown in Table 152-1. The Contractor shall recheck all government furnished control point data prior to staking the alignment and other features. A report shall be provided to the AOTR on the control point checks in a format and method agreed to with the AOTR and NRDOT P&D Branch Surveyor. Once the control point data is verified, and within the tolerances, the alignment can then be staked and the data furnished in the (*.alg) Inroads format to the AOTR, with all the cross section, staking, and DTM data. During Construction, any survey data that does not meet the tolerance requirements or is not in close conformance with the government furnished staking notes **MUST** be immediately reported to the AOTR for further direction to resolve the problem.

The following paragraph supersedes the seventh paragraph:

The Contractor shall prepare field notes in an agreed upon format with the AOTR and the Quality Control Manager (QCM) for the various bid items requiring survey measurements. The RLS shall review and certify the original copies of all survey notes at least weekly unless otherwise directed in writing by the AOTR. All original survey notes (certified by the RLS) shall be submitted through the QCM to the AOTR and become the property of the Government upon completion of project.

The Government will withhold payment in the event the Contractor fails to furnish survey notes and calculations that measure and demonstrate work performed. The Contractor's submittal of their survey notes should have no errors outside the specified tolerances otherwise; the Government will send back the submittal for corrections at the entire expense of the Contractor.

152.03

Survey and Staking Requirements:

Add the following paragraphs to subparagraph (b) Roadway cross-sections:

During roadway slope staking, the Contractor shall field survey the **original** ground cross-sections, and/or existing pavement surface between centerline alignment and the proposed and/or existing right-of-way limits, to the maximum interval station and point spacing specified under 152.03(b) and Table 152-1. The

Contractor shall QC check the data and submit the **original** ground cross-section survey data, with the RLS certification to the AOTR for review and approval.

Perform the same procedure as outlined above for the **final** as-built subgrade cross-sections (subgrade blue-top), up to the construction catchpoint limits (including all cut/fill slope sections) prior to placement of aggregate base course material. The data must exclude any waste or other stock piles within the right-of-way limits. The Contractor shall furnish the final as-built subgrade cross-section survey data with the RLS certification to the AOTR for review and acceptance. Do not begin any ABC or paving work until the survey data is reviewed and accepted by the government in writing through the AO.

(c) Slope stakes and references. Add the following to subparagraph:

When earthwork is called for in the contract documents, submit the revised, government furnished, hard copy slope stake notes at completion of the slope staking operations to the AOTR & QCM for review and approval. The slope stake notes shall reflect the actual measurements in the field in red pencil or pen unless otherwise agreed to in writing between the Contractor and AOTR.

For machine grade control grading, the Contractor shall submit a details plan, for review and approval, on how they will carry out the work including setting up of local control points, model file formats needed, to insure the work complies with the tolerances in table 152-1.

Any substantial deviations in the staking from what is shown on the government furnished staking notes must **immediately** be reported to the AOTR for corrective measures to be taken.

Add the following to Subsection (f):

It is recommended to set the red top stakes for finish subgrade $\frac{1}{4}$ " (5mm) above the slope stake notes elevations provided to compensate for compaction and to achieve the proper crown. This will still allow for the finish subgrade to be within the $\pm \frac{3}{8}$ " (10mm) tolerance shown on table 152-1. Set the blue top stakes for finish Aggregate Base Course (ABC) to the elevations provided in the slope stake notes for blue topping making sure the required uniform design thickness of ABC is achieved to insure the design template geometry is maintained (i.e. crown, hinge points, driving lanes, etc.).

Subparagraph (g) is superseded with the following:

(g) Drainage structures.

The Contractor shall stake drainage structures to fit existing field conditions. The location of the structures may differ from that shown on the design plans. Perform the following:

- (a) Slope stake the entire project according to **Subsection 152.03(c)**. The AOTR and Contractor Quality Control Manager (QCM), shall review with the surveyor, the slope stakes at each drainage structure locations to verify the inlet and outlet locations, elevations, and skew of the proposed drainage structure (insuring that the drainage structures are not below the existing flow-line).
- (b) After the AOTR and QCM agree with the location geometry, obtain the original ground profile along centerline of each structure including a distance of 60 feet (20 meters) upstream and downstream along the flow-line.
- (c) Using engineering software (i.e. AutoCAD, MicroStation, etc.) plot the original ground cross-section and overlay the "as staked" roadway template with the appropriate skew on top of the original ground cross-section. Based upon these combined cross-sections, determine the structure invert elevations at the inlet and outlet. Plot the structure profile on the combined cross-section drawing. Calculate the total length of structure required and round up to the nearest 2ft (610 mm) increment along the skew angle. When calculating pipe invert elevations and lengths, the lengths of any pipe end sections shall be subtracted from the total required pipe length per NRDOT guidelines furnished upon written request.
- (d) Perform the same procedure as outlined in (3) above for drainage pipes under the turnouts and driveways.

Plot the final structure profiles on to the existing ground/proposed roadway template cross-sections for all drainage structures. These profiles shall be on maximum size (11" x 17") 279 mm x 432 mm sheets to a scale provided by the AOTR. Assemble all pertinent structure information, into a spreadsheet acceptable to the AOTR, from the profiles, including station, length without end section(s), number of end sections, size of structure, number of structures per station, skew, invert elevations at inlet, roadway centerline, and outlet, roadway template distances and elevations, project number, contract number, current date, and name of person who prepared the document. Submit the

complete revised structure list spreadsheet, including the final structure profiles signed by the Prime Contractor, to the NRDOT Manager, through the AOTR for review and approval.

(6) After the revised structure list is approved by the AO and prior to installing the drainage structures, the Contractor shall stake the final structure location and give the AOTR three (3) business days to review the locations. Any structure location problems noted as a result of survey errors by the AOTR shall be corrected at no additional cost to the government.

Add the following subparagraph:

(m) For rehabilitation projects, the Contractor shall re-locate all existing right-of-way monuments (as reflected in the **existing** right-of-way map) and insure the “*English*” stationing is placed on the reference markers (i.e. angle irons) as defined in the bid schedule. For new road construction projects, and if bid items are shown in the bid schedule for installation of new right-of-way monuments and/or reference markers, stake the right-of-way monuments as shown in the design plans and label the reference markers with stationing in metric. Stamp or furnish the true state plane coordinates and elevations (to 3 significant figures) on the brass caps for all right-of-way monuments in metric regardless of the type of project unless directed otherwise by the AOTR.

152.04 Acceptance:

Add the following paragraph:

The Contractor’s quality control inspection personnel shall make all the computations (with detailed and clear sketches as determined by the AOTR and/or SAOTR) for any items of work requiring measurements based on the survey data provided (except for the final earthwork items as outlined in Subsection 204.16) or for periods for which progress payments are requested and record these calculations and sketches in bound inspection books. These calculations shall be reviewed and certified by the QCM and two copies forwarded to the AOTR for further review and processing.

152.05 Measurement:

Add the following paragraph:

All work outlined and required in this section, including surveying for roadway construction, bridge construction, slope staking, retaining walls, reference and

clearing and grubbing staking, centerline re-establishment, blue topping, drainage structure survey and staking, grade finishing stakes (subgrade and aggregate base), right-of-way monument and marker location surveying and staking, quantity measurements, and miscellaneous surveying and staking shall be measured by the lump sum.

152.06**Payment:**

This section is superseded with the following:

The accepted quantities, measured as provided in Section 152.05, Measurement, above, will be paid at the contract price per unit of measurement for the pay item listed below and as shown in the bid schedule beginning with the Notice to Proceed issued. Payment will be full compensation for the work prescribed in Section 152, Construction Survey and Staking.

When the bid schedule does not contain a bid item for Construction Survey and Staking, then it shall be considered incidental obligations to completion of the items of work described in the bid schedule.

Item 15201, as measured above, will be paid as follows:

- (a) 40% of the lump sum will be paid following completion of the control point and alignment data verification with reports submitted, existing cross-section survey data submitted, and slope staking work and furnish copies of these marked up staking notes to the AOTR hard copy and electronic format through the QCM for review and approval before payment is made.
- (b) An additional 25% of the lump sum will be paid following complete staking of the drainage structures and approval of the revised drainage structure list submittal in accordance with the outline under **Subsection 152.03(g) Drainage structures**.
- (c) An additional 25% of the lump sum will be paid following completion of the final subgrade cross-sections taken and furnished the survey data to the AOTR in the format outlined under **Subsection 152.01(d) Survey Notes**. Once reviewed and approved by the government, payment shall be made.
- (d) The remaining 10% of the lump sum will be paid when the staking and surveying needed for all other items of work are completed and the Contractor submits all the original survey field books to the AOTR.

Payment will be made under:

Pay Item		Pay Unit
15201-0000	Construction Survey and Staking	Lump Sum

rev:09/01/14

Survey Quality Control Plan
BIA Project N2007(1-1)1,2&4 Navajo, AZ

The Construction Surveyor/ Party Chief ("Surveyor"), shall furnish technically qualified surveyors capable of performing the work in a timely, accurate and professional manner. The field crews shall be under the supervision of a Professional Land Surveyor with a minimum of 10 years' experience in highway & Bridge construction staking. Each member of the survey crew will have highway construction knowledge in performing GEOMETRIC computations. Crew members will assist and check the party chief in performing calculations and interpretations of the plans. Construction survey and staking will be performed within the tolerances specified in Table 152-1, and in accordance with section 152 of the FP-03 and the contract documents. All survey information will be forwarded to the BIA and critical attention be made to any potential changed to the construction plans.

Check shots on the horizontal and vertical control points will be taken, at a minimum, at the beginning and end of each instrument setup, or GPS session. This procedure will minimize errors due to installment "setting" and/or "drifting" satellite progression, or simple identifying the wrong point. Each instrument set-up will be verified by checking into two vertical benchmarks to ensure that the proper benchmark and elevation is being utilized and by measuring the distance to the "backsite" and one other control point to insure horizontal accuracy. All survey instruments will be well maintained and checked for proper adjustment on a regular basis.

The "Surveyor" shall develop a reporting form to ensure the Government and CONTRACTOR that all of the survey data in conformance to the contract requirements. This form will be signed by the Field Supervisor and submitted along with the weekly reports and survey notes to the AOTR and the QCM on a weekly basis for review and approval.

At the beginning of each instrument set-up, or GPS session, "Surveyor" will spot check previously established positions for horizontal and vertical accuracy. This will provide an independent check on both the previously staked and the position and instrument session. Miscellaneous items such as cattle guards, turnouts, guardrail, paved waterways' etc. will be checked by station/offset.

Independent checks by BIA agency supervisors will check the accuracy and reinforce this Quality Control Plan. "Surveyor" will schedule locations for BIA perform the independent checks. Any variation, between the "Surveyor" and BIA surveys should be brought to the attention of our field supervisor or party chief. Any discrepancies shall first be discussed among "Surveyor" and BIA. Discrepancies should be resolved in the field if all possible.

This Quality Control Plan has been written to correspond with Section 152 of the specifications. Various sections of the specifications are discussed with specifics related to this project.

Section 152.02 Requirements:

Before any work begins, the Surveyor shall discuss and coordinate with the AOTR :

1. Surveying & Staking methods to be used;

2. Stake markings and their meaning;
3. Grade control for each course of material;
4. Referencing and project control points (bench marks);
5. Structure control; and
6. Any other procedures, calibrations, and controls necessary for the work to be carried out

Prior to the beginning of construction, the centerline alignment, horizontal and vertical control and design grade initially provided by the Government will be field checked and confirmed prior to beginning any other survey work with a verification report provided to the AOTR and the BIA Regional Surveyor. "SURVEYOR" will notify CONTRACTOR and the Government immediately if the said references do not meet the required tolerances in Table 152-1. No further staking will be performed until the Government has approved the verification report.

The "SURVEYOR" will collect all existing ground and (if required) existing ground on borrow pits and field check all data using GPS and/or conventional field equipment and process the survey data with surveying software into files that can be encoded in the AutoCad 2012 platform and InRoads v8i format per section 152.01(d). All duplicate points and lines shall be cleaned up prior to generating a digital terrain model of the existing and final subgrade/ground. The "Surveyor" will perform conventional optical differential level loops on all vertical benchmarks (i.e. control point data) furnished by the Government to verify that the reported elevations fall within the tolerances. The "SURVEYOR" will hold all control point elevations furnished by the Government, provided it meets the tolerances of plus or minus ten millimeters (10mm).

GPS equipment will be used for horizontal verification and staking out of the sub grade. This work will include an independent network check using Government provided control points and one National Geodetic Survey (NGS) control monuments. Once the network is complete, a minimum of a six point horizontal: vertical calibration will be developed not exceeding 13,123 ft (4 kilometers) for localizing from grid to ground. All Calibrations will be recorded electronically and a hard copy will be provided to the Government.

All vertical BMs will be verified by performing optical differential levels. A tolerance of plus or minus 3/8" (10 mm) will be allowed. In the course of running differential levels, a daily collimation test (peg test) will be run to avoid errors.

When using conventional and total station equipment, the "Surveyor" will perform weekly collimation tests which shall consist of a Compensator test, HA/HV test, and Trunnion Axis Tilt test using the manufactures specification.

Any inconsistency with the Government's alignment, control and or grade shall be brought to the attention of CONTRACTOR and the Government (AOTR) prior to continuing any surveys or construction.

Bi-monthly meetings (during construction) shall be scheduled with Contractor and the AOTR to discuss all surveying activities and changes in activities as listed in Section 152.02(a) through (f), and the Tolerances listed in Table 152- 1. All field notes shall be scanned to PDF format and also submitted in

hard copy. All field notes shall be marked in red for changes made in the field for adjustment to fit actual field ground conditions.

The project will be divided into multiple sections and field staked according to the Government furnished slope staking notes. All subgrade staking (red top) shall be staked by GPS, conventional total station and/or optical level surveying equipment in accordance with Table 152-1. All finish grades (blue top) shall be staked by conventional total station and/or optical level surveying equipment accordance with Table 152-1. A Governmental field check shall be scheduled for the slope staking and to resolve any non-tolerance issues. In the event that issues are not resolved, no field survey work will continue until arrangements have been made with the Government.

Section 152-03 Surveying and Staking Requirements:

(a) Control Points:

Horizontal and vertical BIA control points will be located upon the start of the project. The points will be verified to within acceptable limits per table 152-1 and a detailed summary submitted for review. This also includes temporary benchmarks established along the project area.

The "Surveyor" shall perform all horizontal and vertical construction and control surveys in a professional manner utilizing "self-checking" procedures (i.e. use of conventional total station or GPS setting up on one known control point and fore sighting or back sighting another known control point). Horizontal control and layout surveys will utilize a minimum of two control points. A GPS calibration will be developed initially using Government supplied horizontal and vertical control points utilizing a minimum of six (6) horizontal and six (6) vertical control points. Prior to establishing this calibration, vertical and horizontal control points will be checked and referenced off of the project site. Once an acceptable GPS calibration is developed, it will be used exclusively for the remainder of the project.

Any update to control datum will comply with Table 152-1.

P. L. 93-638 Construction Contract

Bureau of Indian Affairs

SAMPLE OF RTK FIELD CONTROL CHECK: THIS EXHIBIT SHOWS THE RESULTS OF A FIELD CHECK OF OUR LOCALIZATION COMPUTATIONS.

PT	BIA North(m)	BIA East(m)	BIA Elev(m)	PT	RTK North(m)	RTK East(m)	RTK Elev(m)	North Diff	East Diff	Height Diff	CODE
23	562986.4	238585.3	1844.246	70	562986.4	238585.3	1844.257	0	0	-0.011	SCP301
10	562884	238631	1844.967	68	562884	238631	1844.974	0.026	0	-0.007	SCP3000
10	562884	238631	1844.967	480	562884	238631	1844.985	0.025	0.003	-0.018	CK_68
22	562881.5	238716.5	1843.5	60	562881.5	238716.5	1843.432	0.022	0.007	0.068	SCP300
11	562836.1	238659.2	1844.517	66	562836.1	238659.2	1844.513	0.019	0.005	0.004	SCP1
12	562827.4	238556.1	1846.781	72	562827.4	238556.1	1846.778	0.006	0.005	0.003	SCP2
13	562740.2	238538.4	1846.486	74	562740.2	238538.3	1846.492	-0.008	0.018	-0.006	SCP2A
14	562725.2	238482	1847.754	76	562725.2	238482	1847.757	0.011	0.018	-0.003	SCP3
15	562674.9	238497.8	1847.671	78	562674.8	238497.8	1847.672	0.012	0.009	-0.001	SCP4
20	562619.3	238477.4	1849.218	84	562619.3	238477.4	1849.218	0	0	0	SCP5
20	562619.3	238477.4	1849.218	148	562619.3	238477.4	1849.23	0.01	0.007	-0.012	CK_84

SAMPLE OF RTK FIELD CENTERLINE CONTROL CHECK: THIS EXHIBIT SHOWS THE RESULTS OF A FIELD CHECK OF OUR LOCALIZATION COMPUTATIONS.

Point	Ground North(m)	Ground East(m)	Action	Point	BIA North(m)	BIA East(m)	North Diff	East Diff	Center Sta
161	562896.1	238652.6	SET	1	562896.1	238652.6	-0.005	-0.01	POB 0+000.000
159	562880.7	238639.9	SET	2	562880.7	238639.9	-0.004	-0.002	BOP 0+019.980
157	562828.5	238597.2	SET	3	562828.5	238597.2	0.002	-0.007	PC 0+087.400
155	562767.5	238551.6	SET	5	562767.5	238551.6	0.003	-0.007	PT 0+163.590
154	562634.8	238461	SET	6	562634.8	238461	-0.004	0.007	PC 0+324.290
152	562611.8	238462.5	SET	8	562611.8	238462.5	-0.005	0.001	PT 0+3493.090
150	562591.1	238480.9	SET	9	562591.1	238480.9	-0.007	-0.001	POE 0+376.770

SAMPLE OF DIFFERENTIAL LEVEL LOOP CONTROL CHECK:

RTK PT#	RTK Elevation (m)	BIA PT#	BIA Elevation (m)	RTK Height Difference	RTK PT#	SL Elevation (m)	SL Height Difference	RTK VS SL Height Difference
84	1849.218	SCP5	1849.218	0	20	1849.218	0	0
82	1849.497	SCP200	1849.483	0.014	19	1849.484	-0.001	0.013
80	1849.617	SCP6	1849.626	-0.009	18	1849.625	0.001	-0.008
90	1849.742	BASE			90	1849.746		-0.004
78	1847.672	SCP4	1847.671	0.001	15	1847.663	0.008	0.009
76	1847.757	SCP3	1847.754	0.003	14	1847.744	0.01	0.013
74	1846.492	SCP2A	1846.486	0.006	13	1846.476	0.01	0.016
72	1846.778	SCP2	1846.781	-0.003	12	1846.768	0.013	0.01
68	1844.974	SCP3000	1844.967	0.007	10	1844.965	0.002	0.009
66	1844.513	SCP1	1844.517	-0.004	11	1844.498	0.019	0.015
60	1843.432	SCP300	1843.5	-0.068	22	1843.481	0.019	-0.049
70	1844.257	SCP301	1844.246	0.011	23	1844.23	0.016	0.027

(b) Roadway Cross-Sections:

Roadway cross sections will be taken at a maximum spacing of 65 feet (20 meters) along tangent of roadway and every 10 meters along curve of roadway sections. Each cross section shall be located based on known control points with all breaks or changes noted.

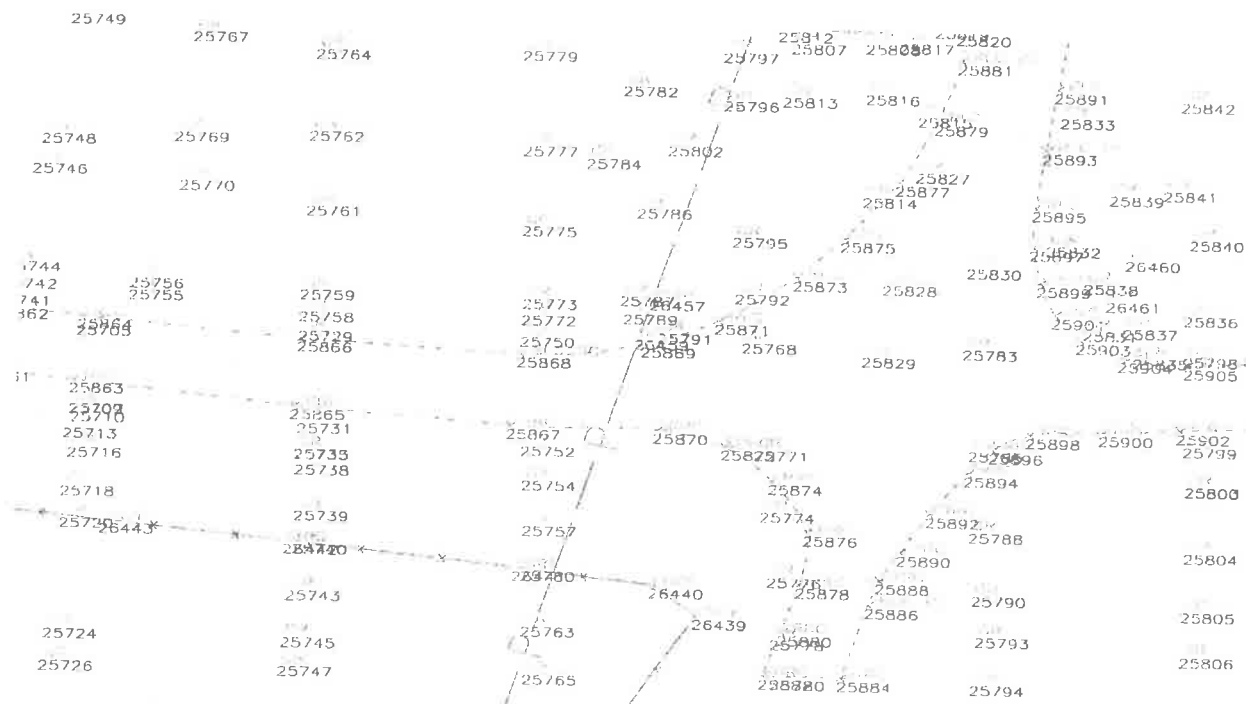
All topographic terrain breaks will be classified as break lines and all topographic flat surfaces will be classified as ground points. All break lines will be measured and recorded in a continuous pattern. The data points will be numbered in a sequential order and all break lines will be coded to best describe feature and stringed separately (i.e. TW, BB, DL, FL, etc.). Any topographic breaks within 16 ft (5 meters) of the 65 ft (20 meter) station increment will be measured and recorded. The project will be treated as single DTM with regards to data processing. All cross section data shall be formatted in an ASCII delimited point file (Point Number, Northing, Easting, Elevation and Code) and submitted to the Government along with an electronic copy of the survey raw data file. A complete description of the feature codes used for the breaklines and other point data will be provided to the Government in a Microsoft Word or Excel file that encompasses the entire feature code library. All survey data will be converted into a DTM using Bentley InRoads Survey V8i or equivalent. A planimetric drawing for plan and profile and cross

sections in 20m increments shall be prepared using AutoCad Map 3D 2012 or equivalent to check the data (i.e. breaklines and other point features) before submission. The drawing will be used to correct any common geometry errors resulting from duplicate line features and survey data points in the data files.

SAMPLE OF SURVEY CROSS SECTION DATA IN ASCII FORMAT

5009,562748.586,226201.669,1907.62,TOEL ST
5016,562761.356,226177.938,1907.86,TOEL
5019,562766.636,226156.843,1907.74,TOEL
5025,562773.642,226134.921,1907.98,TOEL
5047,562793.013,226045.727,1907.98,TOEL ST
5048,562788.462,226063.213,1907.87,TOEL
5049,562786.385,226076.845,1907.61,TOEL
5050,562784.637,226083.787,1907.39,TOEL
5051,562779.541,226099.846,1907.32,TOEL
5052,562768.373,226102.379,1907.31,TOEL
5053,562765.775,226104.285,1906.96,TOEL
5054,562761.967,226114.021,1906.78,TOEL
5055,562770.319,226105.855,1906.68,TOEL ST
5056,562773.88,226108.926,1906.38,TOEL
5064,562781.127,226106.864,1907.7,TOEL ST
5065,562785.257,226090.849,1907.68,TOEL
5068,562789.308,226075.723,1907.85,TOEL
5069,562792.694,226060.411,1907.96,TOEL
5072,562795.618,226046.363,1908.1,TOEL
5116,562796.318,226045.005,1908.17,TOEL ST
5118,562799.192,226025.045,1908.35,TOEL
5127,562801.807,226007.887,1908.62,TOEL
5130,562803.345,225989.244,1908.84,TOEL
5137,562806.272,225961.669,1909.49,TOEL
5140,562805.696,225940.881,1909.71,TOEL
5145,562805.533,225921.438,1909.84,TOEL

SAMPLE OF SURVEY CROSS SECTION DATA PROCESSED IN TGO.INROADS, OR OTHER EQUIVALENT SOFTWARE:



(c) Slope Stakes and References:

The "Surveyor" shall field stake the project according to the Government's slope stake notes. In the event that field stakes require field adjustments due to terrain changes, the "SURVEYOR" will make the necessary field adjustments and redline all changes in their slope stake field book and on the Government furnished staking notes. If field adjustments become too extreme (i.e. catch points exceeding one foot (305 mm) from the reported slope stake notes, elevations exceeding 4 inches (100mm), or slopes exceed the typical section slope for a given height criteria), the "Surveyor" will notify CONTRACTOR and the Government (AOTR) immediately for direction prior to continuing any more field surveying.

For machine control grading using the design model files, the Contractor shall submit a separate Survey Quality Control Plan for this work and submit with a formal letter to the AO for review including a request for the digital data in the specified format needed with sample.

The "Surveyor" will reset all slopes staking that may have been removed or is in conflict with construction activities.

All subgrade staking will be staked by GPS, conventional total station and/or optical level surveying equipment meeting the tolerances of Table 152-1. All finish grades will be staked by conventional total station and/or optical level surveying equipment meeting the tolerances of Table 152-1.

Sample Government Marked up Staking Notes:

Station: 38+120.000									
Feature		LFill 1	LSP	L_Subgr	Subgr_CL	R_Subgr	RSP	RFill1	
Elevation	F 0.625	1909.783	1910.408	1910.853	1911.435	1911.900	1911.455	1910.034	F 1.421
Offset	@ 2.499	13.251	10.752	8.082	0.000	6.465	9.135	14.819	@ 5.684
Slope	-25.00%	-25.00%	-16.67%	-7.20%		7.20%	-16.67%	-25.00%	-25.00%
Station: 38+140.000									
Feature		LFill 1	LSP	L_Subgr	Subgr_CL	R_Subgr	RSP	RFill1	
Elevation	F 0.705	1909.934	1910.639	1911.084	1911.666	1912.131	1911.686	1910.839	F 0.846
Offset	@ 2.818	13.570	10.752	8.082	0.000	6.465	9.135	12.521	@ 3.386
Slope	-25.00%	-25.00%	-16.67%	-7.20%		7.20%	-16.67%	-25.00%	-25.00%
Station: 38+160.000									
Feature		LFill 1	LSP	L_Subgr	Subgr_CL	R_Subgr	RSP	RFill1	
Elevation	F 0.734	1910.135	1910.869	1911.314	1911.896	1912.361	1911.916	1910.654	F 1.263
Offset	@ 2.935	13.687	10.752	8.082	0.000	6.465	9.135	14.186	@ 5.051
Slope	-25.00%	-25.00%	-16.67%	-7.20%		7.20%	-16.67%	-25.00%	-25.00%
Station: 38+180.000									
Feature		LFill 1	LSP	L_Subgr	Subgr_CL	R_Subgr	RSP	RFill1	
Elevation	F 0.912	1910.180	1911.097	1911.542	1912.124	1912.590	1912.145	1910.769	F 1.375
Offset	@ 3.647	14.400	10.752	8.082	0.000	6.465	9.135	14.636	@ 5.501
Slope	-25.00%	-25.00%	-16.67%	-7.20%		7.20%	-16.67%	-25.00%	-25.00%
Station: 38+200.000									
Feature		LFill 1	LSP	L_Subgr	Subgr_CL	R_Subgr	RSP	RFill1	
Elevation	F 0.968	1910.305	1911.274	1911.719	1912.300	1912.766	1912.321	1910.950	F 1.371
Offset	@ 3.873	14.625	10.752	8.082	0.000	6.465	9.135	14.619	@ 5.484
Slope	-25.00%	-25.00%	-16.67%	-7.20%		7.20%	-16.67%	-25.00%	-25.00%
Station: 38+220.000									
Feature		LFill 1	LSP	L_Subgr	Subgr_CL	R_Subgr	RSP	RFill1	
Elevation	F 0.921	1910.456	1911.377	1911.822	1912.404	1912.870	1912.425	1910.983	F 1.442
Offset	@ 3.684	14.437	10.752	8.082	0.000	6.465	9.135	14.902	@ 5.767
Slope	-25.00%	-25.00%	-16.67%	-7.20%		7.20%	-16.67%	-25.00%	-25.00%

(d) Clearing and Grubbing Limits:

Clearing and grubbing limits will be staked in conjunction with determining the existing right-of-way lines along the project. The clearing/grubbing limits (catch point location plus one meter) will be staked in accordance Section 201 of the FP 03. The right-of-way will be staked with flagging (lath) on (3ft) wooden stake during the cross section survey based on the data provided

by the government from the right-of-way plats. All clearing and grubbing will be staked based on established control and calibration procedures.

Any potential project encroachment outside the right-of-way for culverts, cut or fill slopes shall be brought to the attention of the BIA if not already noted in the design plans. No construction outside of the right-of-way will occur without specific authorization from the BIA.

(e) Centerline Reestablishment:

Upon the Government acceptance of the "Surveyor" centerline alignment verification, the "Surveyor" will field stake the centerline using wooden stakes and lath to properly identify the alignment. Stakes will be set every 25 feet (7.6 meter) interval along the horizontal alignment curvatures and every 50 feet (15 meter) interval along the horizontal alignment tangents.

(f) Grade Finishing Stakes:

The "SURVEYOR" will field stake all finish grades in accordance with the grades provided by the Government (i.e. P&P sheets and slope staking notes). All finish grades will be staked by conventional total station and/or optical level surveying equipment (see below for machine control) in accordance with Table 152-1. The "Surveyor" will use standard wood pegs and brushes to mark the subgrade and the top of aggregate. Stakes will be set at 25 foot intervals along the curved alignments and at 50 foot intervals along the horizontal alignment tangents.

For machine control grading, the Contractor, AOTR, and regional P&D staff will meet to come up with a grading procedure that will meet the tolerances, super elevations, and profile required for the finish subgrade and surfacing and still maintain the proper base course and surfacing thickness and crown. The Contractor will submit a separate QCP for the machine control that outlines the process and the controls to be used to insure the tolerances are being met for review and approval at least 14 calendar days before carrying out any machine control grading.

(g) Culverts:

The "Surveyor" will stake all culvert locations in accordance to the grades provided by the Government's slope staking notes following the BIA NRDOT Planning & Design Branch guidelines. Due to terrain changes caused by seasonal runoff, the culvert size and location may change. Prior to any pipe staking, the "SURVEYOR" will conduct the following:

- 1) Reference the topographic cross section survey and reestablish a ground profile from the culvert centerline extending 60 feet beyond the preliminary design inlet and outlet.
- 2) Field stake the catch points at the 50 foot station interval before and after the pipe location and at each inlet and outlet culvert pipe.
- 3) Set reference points to determine pipe skew, length and depth. The length is measured from the top of the pipe at the point where the fill slope intercepts the top

of the pipe at both ends unless otherwise shown on the design plans or directed by the AOTR.

- 4) Create a standard profile and cross section along the culvert centerline skew in 6 or 8 equal distances (20 to 50 feet apart) beginning 50 feet from the inlet and ending 50 feet from the outlet of the culvert location. The "SURVEYOR" will label the culvert size, length, grade, embankment slopes, elevations, and degree of skew.
- 5) Create a detailed drawing to scale in AutoCad 2012 or above illustrating the profile and cross sections for each culvert pipe location on 11" X 17" format conforming to section 152.03(g) of the FP-03 and submit to the Government for approval. The complete typical section details shall be reflected on the drawing. Submit the drawings with the "as staked" revised pipe listing.
- 6) Upon the Government's acceptance, the "SURVEYOR" will provide all surveying stakes on the ground and all referencing data for the drainage, controls, and culvert inlet and outlet locations for the Contractor.

(g) Bridges: (When Required)

The "Surveyor" will set a minimum of four No. 5 rebar for horizontal and vertical control to construct the bridge structure and superstructure components to the tolerances in table 152-1. Bridge staking will be performed with a 3 to 5 second total station and differential levels, to ensure the tight tolerances that bridges (prefab iron and concrete structures, ie. pier, bent and abutment) require. Set the centerline for all piers, bents, and abutments. All piers, bents and abutment corners will be cross checked with a steel tape adjusted for temperature correction for horizontal accuracy. All elevations associated with the bridge will be determined by differential elevations to ensure the vertical accuracy and tolerance. Pier cap cutoff elevations will be performed with a differential level. The outside face of concrete on the abutments will be staked on offsets with cuts and fills to the top and bottom of the structures. The pier wall at the center of the bridge will be staked on offsets with cuts and fills to the top and bottom of the structure.

The toe of the riprap will be staked and "as-built" with a total station to determine both horizontal and vertical location before backfilling begins. The bridge beams will be staked with offsets to each end of the beams for proper alignment, once the bearing pads and beams are in place the diaphragm locations will be marked on the top of the beams.

The "as-builts" (other than those done during road construction) will be updated to reflect the "as-built" geometric location of the bridge.

(h) Retaining Walls: (When Required)

The "SURVEYOR" will set a No. 5 rebar for all horizontal and vertical control datum to construct the retaining wall. Survey and record profile measurements along the face of the proposed wall, 5 feet in front of the wall face, and 15 feet along the length of the wall. The "SURVEYOR" shall survey and record cross sections 15 feet apart at every major terrain break.

(i) Borrow and Waste Sites:

All horizontal and vertical control points will be established prior to any excavations or spoil displacements. The General Contractor **must** clear and grub the borrow limits prior to measuring and recording all topographical cross section data.

The "SURVEYOR" will set at least two (2) No. 5 rebar for all horizontal and vertical control datum to survey and record the initial baseline, site limits, clearing limits and cross section grid points. The "SURVEYOR" shall survey and record initial and final grid cross sections for the project and follow the same procedure as Section 152.03 for verifying the data before submission to the Government.

(j) Permanent Monuments and Markers:

The "SURVEYOR" will set 4 initial swing-tie reference points for each location of all permanent monuments. The "SURVEYOR" will stake out and mark each monument at the centerline point using GPS and/or conventional survey equipment using the coordinates provided by the Government. The "SURVEYOR" will measure and record (in bound survey books) each centerline point. All measurements will be in accordance with Section 152, Table 152-1. The data will then be provided to the Government for future reference.

(l) Miscellaneous Survey Staking:

The "SURVEYOR" will perform all surveying, staking, and recording of data for establishing the layout and control of the following (but not limited to);

- 1) Approach roads and trails;
- 2) Curb and gutter;
- 3) Waterways;
- 4) Parking areas;
- 5) Special ditches;
- 6) Turf or seeding and mulching limits;
- 7) Signs, delineators and object markers;
- 8) Pavement markers.
- 9) Utilities
- 10) Ditches
- 11) Guard rails

The "Surveyor" will consult with the AOTR and the BIA regional office on issues arising that require assistance beyond the Surveyor's control.

The Contractor shall submit all survey data submissions by letter to the AO. The "Submittal, Transmittal, Review and Approval Form" is NOT to be used for such submission nor shall the data be sent by email unless directed by the AO/AOTR.

SECTION 153- CONTRACTOR QUALITY CONTROL

153.01 Description.

This paragraph is superseded with the following:

This work consists of the Contractor furnishing an AASHTO certified laboratory to obtain samples for quality control testing, perform tests for Contractor quality control, provide construction inspections, enforce contract specifications, ensure construction plans are followed and exercise management control to ensure that all items of work conform to the contract requirements. This Section supplements FAR Clause 52.246-12, Inspection of Construction.

153.02 Contractor Quality Control Plan.

The first paragraph is superseded with the following:

Twenty-one (21) calendar days prior to construction work, the Contractor shall submit a written Quality Control Plan (QCP), which includes all subcontractors, and suppliers/fabricators of major construction components, and subcontracted surveying services for review and approval. The Contractor shall not be allowed to begin construction on major items of work until the Navajo Region Division of Transportation (NRDOT) Manager has approved all QCP's. With prior approval, submission of a quality control plan for major items of work not immediately scheduled to begin may be deferred. Subsequent submission of deferred QCP major items shall require 14 days for review and approval.

The only construction work that is authorized to proceed prior to the approval of the QCP is mobilization of storage and office trailers, temporary utilities, and any other work that does not require sampling, testing, and/or inspection.

The Contractor shall not interfere with the work that is being carried out under this section by the materials lab and lab employees assigned to carry out the QCP. The AO has the right to remove any Contractor personnel, based on the AOTR recommendations, found to be interfering in the QC activities. Any issues the Contractor has with QC personnel shall be brought to the attention of the AOTR for action.

(a) Process control testing.

This subparagraph is superseded with the following:

A Testing Plan and Log (examples shall be provided upon request) that includes the tests required, referenced by the FP specification section number and paragraph number requiring the test, the frequency, and the person responsible for each test.

Provide the name(s) of the person(s) in the QC organization authorized to review and certify submittals prior to approval by the AO.

(b) Inspection/control procedures.

The first sentence is superseded with the following:

Provide a comprehensive and detailed inspection plan for each item of work showing each construction requirement criteria by phase, with cross-references to the contract drawings and specifications, and the results from the action taken by the Quality Control Manager. A sample of an acceptable format for providing the information required shall be provided upon request. While use of this specific format is not required, any other format used shall contain the same information. Address each of the following subjects in each phase of construction for each item of work:

(3) Production phase. Add the following subparagraph (d):

(d) Inspect materials and/or assemblies accepted under subsection 106.03 Certification to ensure that the materials comply with all contract requirements. Furnish the results of the inspection, along with the production certifications or commercial certifications (as applicable) to the NRDOT Manager and AOTR prior to incorporating the materials into the work. This requirement includes fabrication of bridge girders, concrete or steel cattleguards, steel corrugated pipes, steel guardrail sections, etc.

(d) Personnel qualifications.

Subparagraph (1) and (2) of this subsection are superseded with the following:

(1)

- a. **Quality Control Manager.** Designate a qualified Quality Control Manager (QCM). **A QCM shall be at the project site at all times to manage and carry out the Quality Control Plan (QCP).** The QCM shall be a full time employee of the Contractor's independent accredited testing laboratory who will work with and take direction from the AOTR. The duties and responsibility the QCM shall have on this contract is managing, monitoring, implementing and as necessary, adjusting the processes to assure quality of the QCP. The QCM may perform inspection and testing on a periodic basis, verifying quantities for progress payments, and issuing of written non-conformance orders to the Contractor. The QCM is required to attend and participate in the preconstruction meetings, partnering meetings, conduct the QC meetings for the work at least once weekly, perform the three phases of control, perform submittal review, ensure testing and inspections are performed, ensure construction plans are followed, review construction plans for errors or conflicts that may arise with testing and inspection procedures, and prepare QC certifications and documentation required in this contract. The QCM shall report (through a written non-compliance order) any deficiencies in the work directly to an officer of the

Contractor's firm and the government AOTR or Sub-AOTR. Furthermore, it is the QCMs responsibility to enforce all "non-compliance orders" issued by the AOTR to the contractor and/or QCM. The QCM shall also stop work for the purpose of unsafe conditions. **The QCM shall not be the same individual as, nor be subordinate to, the Contractor project superintendent or the Contractor's project manager.**

The QCM shall be a graduate of a two to four year accredited engineering technology program in an Engineering discipline with a minimum of five (5) years experience as a highway construction superintendent, inspector, project manager, or construction manager and one year experience as a QCM on similar size and type construction contracts which included the major trades that are part of this contract as reflected in the person's resume to be included in the QCP. Or a civil engineering technician with at least 8 years of progressive experience in highway/bridge construction which includes basic surveying knowledge (i.e. read slope-stakes, use of a hand level, etc.), basic sampling and testing of materials, project record keeping, interpretation of plans and specifications, performed inspections on various components in highway/bridge construction, basic knowledge of traffic safety and the MUTCD, first aid, performed final measurement(s) of contract items, prepared as-built plans, knowledge of OSHA and other safety requirements and be currently certified by the National Institute for Certification in Engineering Technologies (NICET), Level III or higher in the subfield of Highway Materials or Highway Construction or an equivalent certification program as reflected in the person's resume to be included in the QCP.

Designate a "stand-in QCM" to act on behalf and serve only in the absence of the QCM at the project site for **no more** than two (2) working days due to unforeseen circumstances. The qualifications for the "stand-in QCM" must meet the requirements for an inspector and must be an approved inspector assigned to the project.

Designate an Alternate QCM for the project. The qualification requirements for the Alternate QCM shall be the same as for the QCM. The Designated Alternate QCM shall only act on behalf and perform the duties of the QCM during his/her absence from the project site for a period not to exceed two weeks due to unforeseen circumstances. If the original QCM cannot return to the project site after one week; a new "stand-in" QCM shall immediately be submitted for approval to take over the QCM responsibilities.

By being designated the "stand-in" QCM or Designated Alternate QCM does not mean the person can freely come onto the project site and conduct any testing and/or inspection. They must properly submit a completed **"Submittal, Transmittal, Review and Approval Form"** with current certifications & résumé to the NRDOT Manager for review and approval if they are to perform and conduct any testing and/or inspection work. Such testing and inspection work must be in the field for which the person is certified ONLY.

As a part of the QCP, provide a letter signed by an officer of the Contractor's firm appointing the QCM, "stand-in QCM", and Alternate QCM stating that he/she is responsible for managing and implementing the QC plan as

described in this contract. Include in this letter the QCM, "stand-in QCM", and Alternate QCM authority to reject and direct the removal and replacement of non-conforming work and materials and to stop work for the purpose of unsafe conditions.

- b. **Bridge Inspection Engineer.** Designate a registered bridge engineer to oversee the construction of the railroad overpass bridge in close coordination with the QCM and AOTR. The engineer must have at least 10 years of bridge construction experience in the type and size of bridge to be built under this contract and must be registered as a Professional Engineer through a state board of registration, preferably in Arizona. Provide the person's current resume and board of registration certificate for review.
- c. **Geotechnical Engineer.** Designate a registered Geotechnical Engineer to oversee the construction of the railroad overpass bridge drilled shaft foundations in close coordination with the QCM and AOTR. The engineer must have at least 10 years of bridge construction experience with emphasis in the type and size of drilled shafts to be built under this contract and must be registered as a Professional Engineer through a state board of registration, preferably in Arizona. Provide the person's current resume and board of registration certificate for review.

(2) The Contractor shall provide for approval the names, authorities, résumé's, and relevant experience of all personnel directly responsible for the testing and inspection. **The Contractor shall work cooperatively with the QC personnel to accommodate the inspection and testing requirements and not interfere with the inspection and testing process.** The inspectors, record keeper, and testing technicians must meet the following:

(a) **Inspector.** Inspectors who perform inspection work shall be civil engineering technicians with at least 2 year of experience in inspection of highway/bridge construction or similar construction which includes basic sampling and field testing of materials, welding, basic surveying, use highway/bridge plans and specifications, read topographic maps and be currently certified by NICET, Level I (or equivalent certification program) or higher in the sub-field of Highway Construction. The Inspector is responsible for performing daily inspection and testing (i.e. compaction tests, paint & sign reflectivity, sampling of materials, etc) of the work in place that he/she is **certified** for (i.e. structural welding, false work, embankment construction, pipe installations, nuclear gage operation, etc.) and prepares inspection and testing reports as outlined in the QCP. The Inspector is further responsible for reporting any deficiencies back to the QCM and Sub-AOTR. The Inspector shall not be allowed to inspect more items of work at one time than can be adequately accomplished in a day without sacrificing quality of the inspections and/or testing.

(b) Record Keeper. A record keeper who performs record keeping shall be person with at least one (1) year of experience, preferably in construction project filing; Be computer literate (Excel, Word, etc.); have basic knowledge in mathematics (computation of lengths, areas, etc.) unit conversion (English to Metric), ability to prepare agendas, minutes, track quantity estimates, update quantities daily and log data accurately into project records; **thoroughly knowledgeable in the government's records management requirements** through on-the-job training from the AOTR/SAOTR. The record keeper shall also distribute records to the appropriate personnel on this project.

(c) Quality Testing Technician (Soils & Aggregates). Quality Testing Technicians who perform actual sampling and testing of soils and aggregates shall have 2 years or more of recent job experience and the following:

- (1) Certified under a State DOT "Technician Training and Certification Program (TTCP)" in the field of soils and aggregates or other state/industry certification program in the field of soils and aggregates or;

(d) Quality Testing Technician (Hot Mix). Quality Testing Technicians who perform actual sampling and testing of hot asphaltic concrete shall have 3 years or more of recent job experience and the following:

- (1) Certified under a State DOT "Technician Training and Certification Program (TTCP)" in the field of asphalt/asphaltic concrete.

(e) Quality Testing Technician (Concrete). Quality Testing Technicians who perform actual sampling and testing of concrete shall have 1 year or more of recent job experience and the following:

- (1) Certified under the American Concrete Institute (ACI), "Concrete Field Testing Technician, Grade I".

(f) Quality Testing Technician (striping & signs). Quality Testing Technician who uses specialized equipment to measure the reflectivity of the sign or painted striping and the thickness of the paint to conform to the contract requirements. This person must have at least one year experience in this field using such equipment as the Roadvista 922 for signs and StripMaster 2 reflectometers or equivalent for striping.

The Testing Technician, under the direction of the QCM, is solely responsible for testing of materials **within their expertise**. Under no circumstance shall a Testing Technician/QC Inspector be performing tests outside their qualifications. Should the QCP identify a Testing Technician and/or Inspector to be performing both testing and inspection, they shall not perform outside their qualifications.

Add the following subparagraphs:

(e) Submittal transmittal, review, approval, and record keeping. Procedural requirements for transmittal, review, approval, and record keeping of submittals (Log of Submittals) shall be the responsibility of the Contractor consistent with the NRDOT

format that shall be provided upon request. While use of the NRDOT specific forms and/or formats is not required, any other format used shall contain the same information.

This form shall only be used for material certifications, shop drawings, mix designs, test/inspection reports, and résumé's for QCP staff.

The Contractor or his elected representative shall prepare, in accordance with FAR 52.236-21, *Specifications and Drawings for Construction*, and Special Contract Requirements, 3 hard copies of all Shop Drawings and one electronic copy (AutoCAD 2004 or compatible software programs as per NRDOT requirements) with Certifications and submit to the NRDOT Manager through the AOTR for approval (unless otherwise instructed). Each submittal shall be accompanied with a Transmittal, Review, and Approval form (sample of acceptable form may be provided upon request) signed by the Contractor. Clearly mark each item proposed to be incorporated into the contract and identify in the submittals, with cross-references to the contract specifications and drawings, so as to identify clearly the use for which it is intended. Each submittal shall be certified by the Contractor. The Contractor's certification shall be worded as follows:

"It is hereby certified, to the best of my knowledge, that the (document) (equipment) (material) shown and marked in this submittal is that proposed to be incorporated into Contract Number _____, and is in compliance with the Contract specifications and drawings, and is submitted for Government approval."

Certified by _____ Date _____

The person signing the certification shall be the Project Superintendent or one who is designated in writing by the Contractor as having the authority. The signature shall be in original ink. Stamped signatures are not acceptable.

(g) Manpower needs. The QCM shall coordinate with the AOTR/Sub-AOTR and Project Superintendent and agree on the level of inspection and testing man power needed for each week's work or operation in order for the AOTR to measure and pay for the testing and inspection work under this section.

The AO reserves the right to require changes in the QCP, QC personnel, and operations as necessary to ensure the specified quality of work to be performed in a safe manner at no additional cost to the government. The Contractor can propose changes to the QC personnel by submitting a completed "**Submittal, Transmittal, Review and Approval Form**" herein, along with complete résumé's of personnel to be added or replaced on the QC staff to the NRDOT Manager, **a minimum of seven (7) calendar days prior to a proposed change**. The resume and any proposed changes must be approved by the NRDOT Manager prior to implementation. Non-compliance with this requirement shall result in no payment for the hours claimed.

(h) Resumes. A résumé of all QC staff shall be included in the QCP and must be very specific and detailed on the duration/dates of past and current education, work

experience, duties and current certifications that relate to field of work that is specified in this contract. Copies of current certifications shall be included with the resume. The resume of any proposed Quality Control Manager, Inspector, Record Keeper and/or Quality Control Testing Technician shall meet the requirements as outlined in this section.

The Government reserves the right to contact past employers and/or interview any member of the QC organization at any time in order to verify his/her submitted resume and/or qualifications.

To minimize project disruption, and to maintain harmony, communication and project record keeping, the designated QCM, Inspectors, and Quality Control Testing Technicians shall stay with their assigned task/work until their respective task/work and records are completed to the satisfaction of the AOTR. No QC personnel shall perform work on any other project/contract without the express written consent of the AOTR.

All QC personnel whose duties require them to drive a vehicle during their assigned duties, under this contract, must comply with a driving policy consistent with the BIA's driving policies and must possess a valid State driver's license. The AOTR shall check the QC personnel driver's license at the beginning of construction and at any time thereafter to insure compliance. All Contractor employees and that of their subcontractors must take the on-line safety training from BNSF and acquire a certification to work on BNSF property.

153.03**Testing.**

Add the following subparagraphs:

(a) Quality Control Laboratory.

Provide an AASHTO accredited testing laboratory qualified to perform sampling, testing, and inspection required by this contract. Only the AASHTO accredited testing laboratory identified and approved in the Contractor's Quality Control Plan shall perform sampling, testing and inspection on the project.

(b) Accredited Laboratories

The acceptable accreditation programs are the American Association of State Highway and Transportation Officials (AASHTO) program, and the Cement and Concrete Reference Laboratory (CCRL). Furnish to the NRDOT Manager Accreditation documentation including, a copy of the Certificate of Accreditation, and Scope of Accreditation. The scope of the laboratory's accreditation shall include the test methods required by the contract.

(c) Inspection of Testing Laboratories

The testing laboratory facilities and records may be subject to inspection by the Awarding Officer and/or NRDOT Manager. Records subject to inspection include equipment inventory, equipment calibration dates and procedures, library of test

procedures, audit and inspection reports by agencies conducting laboratory evaluations and certifications, testing and management personnel qualifications, test report forms, and the internal QC procedures.

(d) Test Results

Cite applicable contract requirements, tests or analytical procedures used. Provide **all original** actual test results and **worksheets**. Include a statement that the item tested or analyzed conforms or fails to conform to specified requirements. Conspicuously stamp the cover sheet for each report in large red letters "CONFORMS" or "DOES NOT CONFORM" to the specification requirements, whichever is applicable. Test results shall be signed by a testing laboratory representative authorized to sign certified test reports. Furnish the **original** signed reports, certifications, and other documentation to the AOTR/SAOTR within one (1) calendar day after the performance of the test. Furnish a summary report of field tests at the end of each week in a format to the satisfaction of the AOTR/SAOTR. Attach a copy of the weekly summary report to the last daily Contractor Quality Control Report of each month.

If an Inspector or Quality Control Testing Technician performs work, but has not been approved on the QCP personnel list, all test results and/or inspection work performed and hours claimed by the non-approved Inspector or Quality Control Testing Technician shall be rejected. The rejected work shall comply with Section 106-Acceptance of Work, Subsection 106.01 Conformity with Contract Requirements. The work hours claimed shall not be paid for.

153.04

Records.

Add the following to the first paragraph:

In accordance with the Government's Records Management requirements, the QCM and Contractor Superintendent shall be **responsible** for the measurement of quantities (including all verification of calculations, sketches, etc.) of all items of work in accordance with **Subsection 109.01** and these measurements (quantities and calculations) kept in chronological order and in bound record books (bound books can be the steel strapped press board type or survey/lab grade) in a format agreed to by both the QCM and AOTR/SAOTR. **These record books shall be updated daily throughout the life of this contract.** The measurements for accepted work shall be based on material certifications, testing reports, inspection reports, and any other appropriate documents that have been reviewed and verified by the AOTR/SAOTR in writing. Copies of material measurements shall be furnished to the AOTR/SAOTR and Contractor for review, approval, and preparation of progress pay estimates. Any **errors/mistakes** found by the AOTR/SAOTR shall be corrected immediately by the QCM as outlined in this subsection and in accordance with the Special Contract Requirements 4(b) unless the Contractor can clearly show documentation otherwise.

The quantities, sketches, calculations entered into the quantity books shall be done in a neat and legible fashion. Any mistakes shall be scratched out with one red ink line and corrections shown above or below the figure, red lined out, with the writer initializing off

and dating the corrections. **Under no circumstance shall erasure of errors or white out corrections be made in any book.**

The QCM is also responsible for all inspection reports, test records, correspondence, material certifications, as-builts, etc. in accordance with the BIA Record's Management policies, procedures, and requirements. These records must be kept in and approved format and secured bound book (i.e. survey quality note books). **No 3 ring binders allowed. Under no circumstances shall any QC personnel alter any previous report(s) without notifying the AOTR/SAOTR first and the AOTR initials off on the corrections.**

Allow unrestricted access by the government for inspection and review of the quantity and other record book(s) at all times.

Revise the certification statement by adding "*by the Contractor*" between the words "*certified*" and "*that*".

Add the following subparagraph:

(a) As-built drawings. The QCM is required to keep the as-built drawings up dated on a daily basis and accurately marked to show all deviations, which have been made from the original contract drawings. The QCM shall initial each deviation and each revision.

The QCM shall maintain, at the job site, one set of full-size contract drawings labeled "***As-Built***" (either in AutoCAD 2013 format or red lined Acrobat PDF) marked in legible red pencil to show any deviations which have been made to the contract drawings, including buried or concealed construction and utility features revealed during the course of construction. The QCM shall record horizontal and vertical locations of buried utilities that differ from the contract drawings. Show the size, manufacturer's name, model number, capacity, and electrical power characteristics of the equipment installed. These drawings shall be available for review by the AO and/or AOTR/Sub-AOTR at all times. **No progress payment(s) shall be considered for item 15301-0020 if marked prints are not shown to be current and request for final contract payments shall not be approved until the required drawings are delivered to the AOTR/SAOTR in electronic Acrobat PDF or AutoCAD 2012 format within three (3) calendar days after the Final Inspection date.**

Upon submittal of the as-built plans to the AOTR/Sub-AOTR, the QCM shall provide a certification statement to the following:

"It is hereby certified, to the best of my knowledge, that the As-Built Plans marked and documented are accurate and herein complies with the requirements in Contract Number _____, and are in compliance with the Contract specifications and are submitted for Government review and approval."

Certified by _____ Date _____

(b) Project Records for Audit. The QCM and AOTR/SAOTR shall jointly determine a format for project record keeping while being consistent with the BIA Records

Management requirements. This format must include contract item quantities, material certifications, and any other information deemed necessary and related to the contract item for audit purposes and conform to the BIA records management requirements. The QCM shall review all project documents and final quantities for each item of work in this

contract and submit the final **original** quantity books, inspection records, material certifications, test records, log of submittals, etc. and the "As-Built" construction plans to the AOTR/SAOTR for final audit purposes within **3** calendar days **after** the Final Inspection date or just prior to the final acceptance inspection if agreed to by the AOTR. The AOTR (in conjunction with the BIA Audit Engineer) will review the final quantity books and all other records for completeness within 30 days of receiving such documents. As an incidental obligation of the Contractor, the QCM shall be made available for meeting with the AOTR and/or BIA NRDOT Construction Branch Chief to answer any questions relating to the final quantities and/or project records. Any project file records (quantity book(s), "As-Built" construction plans, inspection reports, material certifications, etc.) that are found to be incomplete or lacking information shall be returned to the QCM and Contractor for corrections at the entire expense of the Contractor. The QCM shall be available and in contact with the BIA Audit Engineer during this review stage to insure compliance with audit requirements until the audit has been completed.

153.06**Measurement**

Supersede this subsection as follows:

Measure Contractor Quality Control, including sampling, testing, and inspection by the Man Hours or Lump Sum as shown on the bid schedule.

Measurement by the Man-Hour for payment shall include the following:

1. A detailed daily confirmation report prepared by the QCM indicating the number of hours worked each day on the project of all QC staff subject to the review and approved by the AOTR. This report shall be submitted to the AOTR/Sub-AOTR at the end of each day's work with a weekly summary.
2. Only those authorized Inspectors/Testing Technicians and QCM actually on the project performing work (or work at a fabrication plant) under this section during the contract time period based on the date of the Notice to Proceed notice issued by the AO.

Man-hours **not measured** for payment include the following:

1. QC inspection and testing man-hours during period(s) of project shutdowns, period after "Contract Ending" date, time outside the normal work day used in performing retesting of work due to QC personnel mistakes (i.e. improper testing methods, defective equipment, or improper use of equipment) or lack of keeping all records current as outlined herein (for example catch-up paperwork from previous work day(s) or correcting mistakes).

2. Any other testing and/or inspection of Contractor's work beyond the Final Inspection date shall be considered incidental obligations of the Contractor and those QC hours shall not be measured for payment.
3. The project records and "As-Built" construction plans shall be released to the AOTR/Sub-AOTR within 3 calendar days after the Final Inspection date who will forward an electronic copy to the NRDOT P&D Branch for archiving. Measurement of QC hours shall cease upon the Final Inspection date.
4. Travel time for each inspector/tester and QCM (i.e. from the main office to the project or from temporary living quarters to the project and return) including travel time for an inspector, tester or QCM to deliver samples to the central laboratory and back to the project site or temporary living quarters shall be considered incidental obligations under terms of this contract.
5. All other QC Central Laboratory/Office personnel performing indirect work on this project (i.e. such as administrative staff, Materials Engineers, Project Manager, other geotechnical staff, etc.) shall be considered incidental obligations under the terms of this contract unless specifically addressed in a contract modification for purposes of addressing a specific problem unknown to both the contractor and government.
6. QC Central Laboratory personnel performing any quality tests (including but not limited to) aggregate base coarse, mineral aggregate, aggregate gradations, soil classifications, PIs, lime stabilization mix designs, hot mix designs, and concrete mix designs. Concrete cylinder breaks, TSR's and any other test(s) that are more cost effective to the government to be performed elsewhere or required inspections of structural members at fabrication plants will not be measured for payment unless otherwise agreed to in writing between the NRDOT Manager and Contractor and that such work is specifically and clearly identified in the approved QCP. Project QC personnel performing any quality sampling and testing (i.e. borrow pits, aggregate pits, etc.) during the contract period shall be considered incidental obligations under the terms of this contract.
7. Any QC personnel that are not identified on the approved QCP or subsequent revised and approved QCPs.
8. No "stand-by time" shall be paid but shall be considered incidental obligations under the terms of this contract. Stand-by time shall be defined as time when the Contractor is shut-down or work delayed due to weather, equipment break-down, supplier's delivery delayed (i.e. concrete, ABC, hot mix, etc.) or any other work delay(s).

Add the following subsection:

153.07

Payment

The accepted quantity, measured as provided above, will be paid at the contract price per unit of measurement for the pay item listed below that is shown in the bid schedule.

Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

When the Contractor Quality Control is based by the "lump sum" including sampling, testing, and inspection then it shall be paid as follows:

(a) 10 percent of the lump sum, not to exceed 0.5 percent of the original contract amount, will be paid after all the Contractor Quality Control Plan is approved and all the testing and inspection facilities are in place, qualified sampling, testing and inspection personnel are identified, and the work being tested has started.

(b) Payment for the remaining portion of the lump sum will be prorated based on the total work of all other bid items completed.

When the Contractor Quality Control is based on Man-Hours, the AOTR will make progress payments, in accordance with section 153.06, at the contract price per unit of measurement for the pay items listed below and as shown on the bid schedule. Any hours claimed for work beyond the contract ending date as shown in these contract documents (including any extensions approved by the AO) shall not be measured for payment. If the contract time is extended then this action by the AO will be taken into consideration when establishing the new contract ending date so that valid QC hours would be paid for during this extended period. It is only after this time expires that the QC hours will not be measured for payment as technically the contract is ended.

Payment will be full compensation for the work prescribed in this section unless otherwise described herein and in the special contract requirements.

Payment for all or part of this item of work may be retained, if the Government cannot agree on the hours claimed, or verification testing or inspection invalidates the Contractor testing or inspection work.

Payment will be made under one of the following as reflected in the bid schedule:

Pay Item	Pay Unit
15301-0020 Contractor Quality Control	Man-Hrs
15302-0021 Contractor Quality Control	Lump Sum

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SECTION 154--CONTRACTOR SAMPLING AND TESTING

154.01 Description.

This paragraph is superseded with the following:

This work consists of obtaining samples for testing and reporting required test results. There is no contract pay item for this work. This work does not include Contractor quality control testing required under Section 153. However, include the work required under this Section in the Section 153 Quality Control Plan (QCP).

154.02 Sampling.

The second sentence of the first paragraph is superseded with the following:

The sampling schedules and times shall be determined and provided by the Contractor's QCM using a random number system. Provide the schedules at least seven (7) calendar days before the work begins.

The first sentence of the second paragraph is superseded with the following:

The Contractor's QCP shall include a very specifically written method of sampling materials from a final processed windrow on the roadway, aggregate stockpile(s), behind a "jersey spreader", behind a chip spreader, out of a haul truck or any other acceptable method the Contractor is using to place or spread aggregate materials. Include sampling aggregates at the crushing site and/or hot plant site.

Add the following:

Splitting: A riffle sample splitter shall be used that meets AASHTO T-248. The QCP shall include a very specific written method of splitting and the number of splits the aggregate materials will take. Immediately perform splits of samples upon receiving the material. Furnish approved containers for the Navajo Region Division of Transportation's (NRDOT) portion of split samples. Label NRDOT samples to include project number, contract number, pay item number, material type, sample number, date sampled, time sampled, station location, distance left or right of centerline location, name of person sampling, name of person witnessing sampling and type of test required on sample. The SAOTR will take possession of the BIA samples.

Allow the AOTR/SAOTR and/or Regional NRDOT staff engineer/technician the opportunity to witness all sampling and splitting.

154.03 Testing.

This subsection is superseded with the following:

The Contractor's Quality Control Testing Technician or Inspector shall perform all tests required by the Sampling and Testing Tables for all applicable work. Allow the AOTR/Sub-AOTR and/or NRDOT staff the opportunity to witness all testing. Testing of trial samples may be required to demonstrate testing competence.

Use equipment that is calibrated and meets the applicable testing requirements of the contract. Tag all necessary equipment indicating the date of last inspection, inspector, and calibration number.

The AOTR may check equipment to verify condition and calibration. The Contractor shall repair or replace equipment not meeting applicable requirements.

Submit documentation supporting the calibration of all necessary equipment **before actual testing**. Include the following:

1. Description of the equipment calibrated or verified, including model number, serial number, or other acceptable identification.
2. Identification of the individual performing the calibration or verification.
3. Identification of the calibration or verification procedure used.
4. The calibration number for each calibration.

154.04**Records.**

This subsection is superseded with the following:

Record test results on approved acceptable forms containing all the information as required in 154.02. Furnish to the AOTR/Sub-AOTR all original completed forms with original test results and work sheets. When tests are on material being incorporated in the work, report all test result(s) and original completed form(s) within 24 hours of date of test. **Payment for work will be delayed or work suspended until test results are provided.**

154.06**Measurement.**

This paragraph is superseded with the following:

Do not measure Contractor sampling and testing for payment.

154.07**Payment.**

This subsection is deleted in its entirety.

SECTION 155 -SCHEDULES FOR CONSTRUCTION CONTRACTS

155.02 General.

The first sentence of the third paragraph is superseded with the following:

Use the Bar Chart Method (BCM) as described below to develop the construction schedule for the total contracted work.

155.03 Bar Chart Method (BCM).

Add the following subparagraph (c):

(c) Submit **3 copies** of the construction schedule at the preconstruction conference. Allow **14 days** for acceptance or rejection of the construction schedule or a revised schedule. If rejected, submit a revised schedule within 5 days. **Do not begin work**, except mobilization, survey staking, and traffic control work, without an accepted construction schedule. The Contractor shall update this Construction Schedule as necessary (during the life of the project) to reflect any delays, change in schedules, and revisions to activities shown and furnish a copy to the AO/SAOTR and/or NRDOT Manager when necessary for review and approval/disapproval back to the Contractor through the AO. The preparing, furnishing and updating of this bar chart schedule shall not be measured for payment but shall be a subsidiary obligation of the Contractor. Failure to provide the government with an updated construction schedule, for review and acceptance prior to continuation of work, may result in the AO issuing a stop work order.

Review and acceptance of any and all construction schedules is rendered as a service only and is not considered a guarantee of the work being completed within the time shown on the schedule or will not result in delays as a result of the work under the schedule(s), nor shall it be considered as relieving the Contractor from complying with the specifications and other requirements in this contract.

Accelerated construction schedules, where the Contractor plans to complete all the work well within the contract time may be permissible, but cannot be used by the Contractor in any delay claim against the government. The AO will enforce the contract time given and if the Contractor fails to complete all the work within that time, the Contractor shall be subject to liquidated damages under section 108.04 where applicable.

155.04 Critical Path Method (CPM). This subsection is deleted in its entirety.**155.09 Payment.**

This subsection is superseded with the following:

The development and updating of the construction schedule will not be measured for payment but shall be considered an incidental obligation of the Contractor under this contract.

rev:04/05/13

SECTION 156 -PUBLIC TRAFFIC

156.03 Accommodating Traffic During Work.

The first paragraph is superseded with the following:

The Contractor shall prepare a Traffic Control Plan (TCP) in accordance with Section 635, the MUTCD latest edition, and the details shown in the construction drawings and submit for review and acceptance. Accommodate traffic according to the approved TCP, the MUTCD, Section 635, and this section.

156.08 Traffic and Safety Supervisor.

The first sentence of the first paragraph is superseded with the following:

Provide a traffic and safety supervisor who is certified by a federal or other acceptable certification program. Provide current copies of the certifications to the AOTR for review and approval.

Section 157. - SOIL EROSION CONTROL

157.01 Description.

This paragraph is superseded with the following:

This work consists of developing a **Storm Water Pollution Prevention Plan (SWPPP)**, implementing and maintaining this plan to control erosion, pollution, sediment, and runoff during the construction of the project, use of borrow pit, haul roads, construction yards, and aggregate/soil stockpiles.

157.03 General.

The second paragraph is superseded with the following:

The storm water pollution, erosion, sediment, and runoff control details in the contract plans reflect special measures to be considered in the SWPPP for the project. The Contractor shall prepare and submit to the NRDOT Manager a SWPPP in compliance with all 401, 402, and NPDES permit applicable requirements (in full details, hand sketches not allowed) and reflecting the requirements in the contract plans and specifications in such detail that the plan will adequately address the potential for erosion of soil and other pollutants into the waters of the USA, on the entire project, due to each phase of the Contractor's grading and drainage operations. The SWPPP must be prepared by a **qualified registered professional engineer or a qualified storm water pollution prevention specialist** with the current certificates and registration incorporated into the SWPPP. The SWPPP shall show measures to control erosion, runoff, sediment, and pollutants and shall further address the following:

1. Measures to be taken at the toe of fill slopes (i.e. silt fencing, straw bales, etc.) that have the potential of eroding into the waters of the USA. This includes all slopes steeper than 1:3. However, this does not preclude the use of erosion control measures taken on slopes flatter than 1:3 depending upon the soil type and its erosive potential.
2. Measures to be taken in cut sections to preserve the back slopes and shoulder ditches from eroding into the waters of the USA. This includes placement of silt fencing spaced every 200 feet (60 meters) maximum (or as shown on the approved SWPPP) in the cut ditches. Place straw bales along the upper ridge lines of the cut slopes or use of wattles to redirect runoff away from cut slopes. **The use of straw bales in cut ditches is not permitted.** See also subsection 157.04(H).
3. Measures to be taken to protect all live streams, lakes, ponds, creeks, and wetlands from sediment infiltration in accordance with the contract plans and 401, 402/404 permit and other environmental requirements.
4. Details of sediment control structures (facilities) and locations where runoff is temporarily being diverted from its natural course;
 - A. Structures utilizing compacted earth material shall be composed of material free of roots, woody vegetation, excessive rocks, and other objectionable materials. The construction shall be in accordance with section 157.06(b).

B. The slopes of any settling basin shall be 1:3 or flatter. All settling basins shall have safety fence (1.2 meters in height snow fence or equivalent) enclosing them.

C. Measures for maintaining all sediment control facilities at all times of the day and night.

5. Measures for diversion dikes to be constructed at the end of each day's operation, as necessary, around all drop inlets to divert runoff into existing sediment basins (traps) or into outfall chutes.

6. Measures to install permanent erosion and sediment controls as soon as practical when sections of final grading and drainage work are complete.

7. Other erosion and pollution control measures and permits required due to the nature of the contractor's construction sequencing and procedures including temporary turf establishment, temporary mulching, type of erosion control materials to be used, and installation procedures for such things as (but not limited to) :

- A) protection of soil and aggregate stockpiles.
- B) protection of temporary cut and fill slopes
- C) protection for detour roads.
- D) temporary watering ponds.
- E) protection of top soils.
- F) protection of waters from pollutants

8. A **Construction Sequencing Plan (CSP)** that addresses each phase and location of the grubbing, grading, and drainage work to take place over the course of the contract.

The erosion and pollution control measures installed shall remain in place and be continuously maintained until the permanent measures (i.e. seeding and mulching of slopes, outlet protections, channel lining, etc) are completed. The Contractor can remove any SWPPP features at their discretion once all the permanent erosion control features are in place and accepted for those completed areas of the project as long as the adjustments are still in compliance with the 401 and 404 permit terms and conditions. Failure to properly maintain the SWPPP may result in a violation of the Clean Water Act with possible fines levied by the ACOE & NNEPA/AZ. The Contractor shall have 5 working days from given notice of non-compliance to correct the problems. Failure to bring the work under this section into compliance within 5 working days of non-compliance notice will be cause for the Government to suspend the approved share of progress payments for this work from the bid item in the contract for each day the work is in non-compliance until compliance is met including any all fines levied against the Contractor.

If field conditions change as a result of the Contractor's construction operations which causes the SWPPP to be ineffective, then the Contractor shall revise the SWPPP and submit for review and approval. No work within the areas of deficiencies, identified by the OIA Inspector and AOTR, shall be allowed until the revised SWPPP is approved and implemented.

Any deviations to the approved SWPPP shall be requested in writing at least 14 calendar days before implementation for review and approval. Minor adjustments in the approved SWPPP are allowed to meet actual field conditions. Any major deviation from the approved SWPPP will

result in a notice of violation of the Clean Water Act where fines may be levied by the ACOE and NNEPA.

If the AOTR finds that the SWPPP is not providing sufficient erosion control protection, the Contractor shall be required to stop all work in the area and revise his SWPPP to address the problems immediately and when the revised SWPPP is approved, immediately implement the changes. Such changes and revisions of the SWPPP is at the entire cost of the Contractor.

Allow 30 calendar days for review and approval of the initial SWPPP in accordance with Subsection 104.03.

157.04

Controls and Limitations on Work.

The first paragraph is superseded with the following:

Before grubbing and grading work begin, the contractor shall construct all pollution, erosion, and sediment control measures around the area to be worked on including any perimeter erosion and sediment control measures. This shall include the construction of sediment traps, filter barriers, diversion dikes, silt fencing, and settling structures as required by the approved SWPPP.

Paragraph three is superseded with the following:

Construct erosion control and sediment control measures as follows:

- A) Construct temporary erosion controls in incremental stages as construction proceeds in accordance with the **Construction Sequencing Plan (CSP)** and section 157.04, paragraph (2).
- B) Construct temporary slope drains, diversion channels, and earth berms to protect disturbed areas and slopes as reflected in the approved erosion control plan.
- C) Apply permanent turf establishment (i.e. seeding & mulching) in accordance with section 625 on sections of completed slopes and other disturbed areas within 10 days of final grading.
- D) Construct temporary outlet protection on all new and existing culverts and other drainage structures in accordance with the details shown in the contract plans and the approved SWPPP.
- E) Construct permanent erosion controls (as shown in the contract plans and specifications) including waterway linings, slope treatments, gabions, riprap, and permanent sediment traps within 20 days of completion of the roadbed and/or drainage structures.
- F) Apply permanent turf establishment and landscaping to finished slopes and ditches according to section 624 through 629 as required.
- G) Construct and maintain erosion controls on and around all soil and aggregate stockpiles within the project limits to prevent soil loss into the waters of the USA.

H) During each day's grading operations, shape and roughen all embankment slopes to minimize and control erosion from storm runoff as follows:

1. For cut and fill slopes run a bulldozer or other approved track equipment up and down the slope to create grouser tracks parallel to the roadway leaving small, approximately 2 inch (51mm) in depth valleys in which water can be trapped (see design drawings for further details). This work is an incidental obligation of the contractor under item 15701-0000.
2. Place straw mulch under bid item 15708-1000 (as required) to cover all completed slopes (and other disturbed areas) that cannot be track walked under (1) above. Crimp the mulch by running a crimping tiller up and down the slope or use a polymer tacifier if crimping is not possible. This method of slope protection shall also be used when permanent seeding, under bid item 62510-1000, cannot be completed within 10 days of final grading. Placing of straw mulch, tacifier, and crimping shall be an incidental obligation of the Contractor under item 15708-1000. The mulch shall be applied at a rate of 4016lbs/Ac (4500kg/ha). Apply tacifier at a rate of between 40-60lbs/Ac (44-67kg/ha) or as recommended by the manufacturer.

157.12

Inspection and Reporting.

The first paragraph is superseded with the following:

The qualified Erosion Control Representative (ECR) assigned by the Contractor in writing, responsible for implementation of the SWPPP shall inspect, and report on all erosion control features and facilities at least once every week, within 24 hours after more than 3/8" (10mm) of rain event in a 24-hour period, and as required by the approved SWPPP and/or US EPA permitting requirements. The Contractor Erosion Control Specialist responsible for the preparation of the SWPPP shall perform monthly inspections with the AOTR and ECR of the project and provide a report of his findings to the AOTR within 3 days after the inspection.

157.13

Maintenance and Cleanup. The third paragraph is superseded with the following:

Remove and dispose of all remaining temporary erosion control measures (SWPPP) two weeks prior to final inspection and clean up all debris. Remove and dispose of erosion control measures according to subsection 203.05.

157.15

Measurement.

Add the following:

It is estimated that approximately **300 feet (100meters)** of silt fence, and **100 feet (30meters)** of straw bales and/or wattles or sand bags will be required for the project. However, this does not preclude the Contractor from using any or all of the other measures shown in the design plan details and/or other measures required in the Contractor's SWPPP as a result of the construction sequencing. All those measures required by the approved Contractor's SWPPP shall be included in the unit price bid for Temporary Erosion Control.

Temporary straw mulching shall be measured by the hectare (ha) in place. Any secondary applications or touch ups as directed by the AOTR shall not be measured for payment but shall be incidental obligations under this item of work.

157.16

Payments.

Add the following:

When the bid schedule does not contain a bid item for this work, it shall be considered incidental obligations of the contractor under other bid items of work where no additional payment shall be made.

When soil erosion control is bid by the Lump Sum, payment shall be made as follows:

(A) 25 percent of the Lump Sum, not to exceed 0.5% of the original contract amount shall be paid after all required erosion control measures sufficient to begin construction as determined by the AOTR are in place.

(B) Payment for the remaining portion of the Lump Sum shall be prorated based on the total work completed, provided the additional and necessary erosion control measures are constructed, maintained, and accepted.

Payment will be made under:

Pay Item**Pay Unit**

15708-0000 Temporary Erosion Control.....	Lump Sum
15708-1000 Temporary Straw Mulching.....	Acre (Ac)

rev:09/01/14

SECTION 203.- REMOVAL OF STRUCTURES & OBSTRUCTIONS

203.01 Description.

Add the following paragraph:

This work shall include the complete removal of structures as shown in the design plans, including all appurtenances.

203.03 Salvaging Material.

The third paragraph is superseded with the following:

Stockpile salvageable material in a location as directed by the AOTR or SAOTR for BIA Agency Road Maintenance or landowner pickup unless otherwise specified in the design plans. Unsalvageable material shall be disposed of in accordance with section 203.05 of the Standard Specifications and as modified below.

All existing pipe culverts and/or pipe arches, cattle guards, and fencing shall be removed, cleaned, and stockpiled in a location designated in the design plans. This work shall be included in the unit price bid under the appropriate bid items shown in the bid schedule.

203. 04 Removing Material.

The first paragraph is superseded with the following:

Saw cut pavement (full depth), and structures when partial removal is required. All saw cut edges shall be protected until the new material is placed up against the exposed edges. If the saw cut edges are damaged (i.e. chipped, broken, crumbling, or loses its underlying support) shall, as an incidental obligation, be repairs by the Contractor by saw cutting the damaged edges/sections again to a smooth clean face to accept the new material .

Add the following to the end of the second paragraph:

Miscellaneous structures designated for removal shall be removed at the locations and to the depths shown in the design plans and/or as directed by the AOTR. These structures shall be disposed of in accordance with section 203.05 (as applicable) and as directed in the design plans.

Any existing pavement may be broken up to minus 1" (25mm) size, reprocess with other base course material for roadway construction requiring base course material. Any excess or pulverized pavement materials can be used as part of the embankment construction as directed by the AOTR provided the milled material is graded to minus 3-6" (75-152mm) size and used in the lower layers of the approach embankment construction outside the BNSF right-of-way.

Any concrete foundation bases from any and all existing fence posts called for removal shall be removed and disposed of in accordance with section 203.05 (as applicable).

203. 05 Disposing of Material.

The first paragraph of subparagraph (c) is superseded with the following:

(c) **Bury.** DO NOT bury any and all types of construction debris in trenches or pits within approved ROW or BNSF property. Do not bury debris near underground utilities, beneath drainage ditches, or in any areas subject to free flowing water or in areas that drain to the waters of the USA. All waste from any bathroom facilities shall be hauled off to a sanitary facility off the project. Slashing, stumps, and timber removed during the clearing and grubbing shall be removed to an approved dump site off the project. This work shall be considered incidental obligations under bid item 20102-0000 & 20304-1000.

Add the following sub-section:

(e) **Utilization.** Hardened Stone, masonry, asphalt pavement and/or concrete debris may be incorporated into embankments provided the material is broken into minus 6 inches, 152mm (longest dimension) pieces and placed in the lower layers of the new subgrade embankment surface outside BNSF right-of-way. Stone, masonry, asphalt pavement and/or concrete debris shall not be place in embankment where drilled shafts or piling is to be installed.

Removal of hazardous materials that were not identified in the design plans or specifications shall be disposed of in accordance with section 109.02(m). Removal of Contractor generated hazardous materials shall be considered an incidental obligation of the Contractor.

rev:09/03/14

SECTION 204- EXCAVATION AND EMBANKMENT

204.04 Preparation for Roadway Excavation and Embankment Construction.

Add the following:

Earthwork construction requiring compaction shall not be performed unless the air temperature is 4° C and rising (taking into account the wind chill factor) and the top 12" (305mm) of ground and/or roadway embankment (including all backfill previously placed) temperature is a minimum of 4°C in the shade. The AOTR shall make the final determination (in writing) as to whether earthwork construction can proceed or not.

204. 07 Subexcavation:

The first sentence is superseded with the following:

Excavate unsuitable material and replace with select borrow meeting the requirements of section 704.07 to a depth of 2 feet (610mm) from existing subgrade or natural ground, and to the limits designated by the AOTR. The sub-excavation work shall be measured and paid for at the contract unit price for Roadway Excavation, item 20401-0000, as applicable. The select borrow shall be measured and paid for at contract price for item 20403-0000 as applicable. When items for roadway excavation or select borrow is not in the bid schedule, measurement and payment shall be in accordance with section 109.02(m).

204. 10 Embankment Construction:

(b) Embankment Construction within the roadway prism.

The first sentence, in the first paragraph, is superseded with the following:

Within the roadway prism, place earth embankment in horizontal layers not exceeding one foot (300mm) loose measurement.

Add the following:

In no case shall any embankment lift material be placed upon frozen, muddy, or unstable natural ground or existing embankment. If existing subgrade or natural ground is wet and/or unstable due to conditions not attributable to the contractor's operations, it shall be plowed and/or scarified to a depth of 18 inches (457mm) and aerated before compacting (in accordance with section 204.11) as directed by the AOTR. This work shall be measured and paid for under the roadway excavation items in the bid schedule. When items for roadway excavation is not in the bid schedule, measurement and payment shall be in accordance with section 109.02(m) or other approved methods. Any subgrade and/or natural ground that is wet or unstable as a result of the contractor's construction operations shall be stabilized as described above at the Contractor's entire expense.

204.11 Compaction:

Add the following to 204.11(b):

The contractor shall compact the following materials listed below until a uniform density of not less than 95% of maximum density is obtained as determined in accordance with 204.11(a), (b), or (c) :

(1) Material placed in all embankment layers in accordance with section 204.10.

(2) Scarified material in the upper layer of existing ground in accordance with section 204.06 and 204.09 respectively:

(1) Under the subgrade in cut sections.

(2) Under embankments in fill sections.

204.13 Sloping, Shaping, and Finishing:

The first 3 sentences of subsection 204.13(d) are superseded with the following:

Remove all material larger than 6" (150mm) from the top foot (305 mm) of finished roadbed and replace it as required with suitable material. The top surface of the finished subgrade shall not vary more than finished red top staking required in section 152.03(f) in both transverse (full width of roadway) and longitudinal directions (every 50 foot station maximum) and be continuously maintained in accordance with section 156 for public traffic until project completion. Continuously maintain all roadside ditches for proper drainage until final acceptance of project.

204.15 Acceptance: Add the following to the second paragraph:

All government computed final earthwork quantities shall be based on approved Contractor furnished final cross sections taken on the roadway subgrade, channel, borrow areas, and roadway prism cut and embankment sections in the final position. Any over built roadway typical embankments and/or cuts (not authorized by the AO) shall be deducted from the final earthwork quantities per section 109.02(b). The NRDOT Planning & Design Branch will take the Contractor's final survey data to determine the final earthwork quantities and furnish the results to the AOTR and Contractor through the AO.

204.16 Measurement:

Subparagraph (c)(1) is superseded with the following:

(1) Include the following volumes in embankment construction:

Roadway embankments that are in reasonable close conformance with the contract typical sections.

Material used to backfill sub-excavated areas, holes, pits, and other depressions authorized.

Material used to restore obliterated roadbeds to original contours.

Material used for dikes, turnouts, and ditch blocks not paid under separate bid items.

204.17**Payment:**

Add the following paragraph:

For periodic progress payment purposes, contract bid items for roadway excavation and borrow can be done by an **approved** load count method as agreed to (**in writing**) by the Contractor and AOTR and NRDOT Division Manager.

Table 204-1, Sampling and Testing Requirements shall be used as written, except the requirements for the "Top of Subgrade" material is superseded with the following:

Table 204-1
Sampling and Testing Requirements

Material or Product	Type of Acceptance (Subsection)	Characteristic	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time
Top of Subgrade (204.11)	Measured and tested for conformance (106.04)	Compaction	AASHTO T 310 or other approved procedures	1 per 2500 yd ²	In-place	-	Before placing next layer
		Classification	AASHTO M 145	1 per 500ft	Top 305mm	Yes, when requested	Before placing next layer
		Sulfate Content ⁽²⁾	AASHTO T 290	1 per 500ft	Center of lane; staggered	Yes, when requested	Before placing next layer

(2) Determine the sulfate content of all soils with soil classification of A-6 and A-7 when lime stabilization work is called for in the plans. If the soils have sulfate content of 2500 ppm or more, the Contractor shall take additional soil samples to determine limits of the high sulfate content soil area(s). The soils with high sulfate content shall be used to determine a lime/soil mix design under Section 213.

SECTION 205- ROCK BLASTING

205.01 Description.

The first paragraph is superseded with the following:

The work consists of fracturing rock and constructing stable final rock cut faces using controlled and/or production blasting and non-blasting techniques as may be required by environmental requirements.

205.08 Blasting.

Add the following subparagraph:

(e) non-Blasting. Free each drill hole of obstructions for the entire depth. Place non-toxic expansive chemical agent into each hole and cover with approved stemming material.

Use non-toxic type expansive chemical agents to fracture the rock in accordance with the manufacturer's recommendations.

205.11 Measurement.

Add the following:

If no item is shown in the bid schedule for rock blasting, then all rock blasting shall be considered incidental to the earthwork items shown under section 204.

SECTION 206- WATERING

Add this new section as follows:

206.01**Description.**

This work shall consist of developing an adequate water supply and applying water for all contract items that require water, hauling, and applying water including turf establishment. This work shall also include furnishing and applying water for the control of dust caused by the contractor's operations and public traffic within the construction zones only and in a conservative manner (i.e. only apply water for dust control caused by the contractor's operations and public traffic use in those location on the project as identified and directed by the AOTR in accordance with section 158). Any dust control on Contractor haul or detour routes (outside the right-of-way limits) is considered an incidental obligation of the Contractor and no direct payment shall be made.

206.03**General.**

Water shall be applied at the project locations, in the amounts, and during the hours, including nights, and approved shutdowns, as directed by the AOTR and in a conservative manner. Water shall be applied by means of a pressure-type distributor or pipe lines equipped with a spray system that will insure a uniform application of water in the quantities necessary.

206.05**Measurement.**

No measurement of quantities will be made when the Bid Schedule contains a lump sum pay item for the development of water supply.

When the bid schedule contains quantities based by the M-Gal(1,000,000 gallons) then the actual verified quantity used per pay estimate shall be paid for. Measurement for payment shall be based upon a load count method where each water truck to be used on the project shall be weighed (by certified scales) empty and full to determine the capacity of each truck in liters. The scale man shall certify the volume of the trucks and provide a certification with volume calculations to the AOTR for review and approval prior to each truck used on the project. The Contractor shall then provide the QCM and AOTR with daily load counts of water used on the project. Any truck left (at the end of each day) with water in the tank shall not be measured for payment until all the water is used on work the following day. Only water actually used on the project shall be measured for payment that was authorized by the AOTR.

206. 06 Payment.

The contract lump sum amount will be paid in accordance with the following partial payments when the bid schedule contains a "Lump Sum" item:

A) 50 percent of the total contract lump sum bid amount will be paid for developing an adequate water supply.

B) The remaining 50 percent of the total contract lump sum bid amount will be paid on a prorated basis in accordance with the job progress.

When the Bid Schedule does not contain an Item for Watering, then Watering shall be considered incidental to the earthwork, road reconditioning, and/or paving items shown and no additional payment shall be made.

Payment will not be made for watering not directed by the AOTR.

Payment will be made under:

Pay Item

Pay unit

20601-0000 Development of Water Supply..... M-Gal

SECTION 209- STRUCTURE EXCAVATION AND BACKFILL

209.04 General.

The last sentence is superseded with the following:

Compact the foundation in accordance to Subsection 209.11.

209.09 Bedding.

Add the following:

Soil classification reports shall be submitted to the AOTR for review and approval prior to use of the bedding material.

209. 10 Backfill.

(b) Pipe culverts.

Add the following:

Soil classification reports shall be submitted to the AOTR for review and approval prior to use of the backfill material. Backfilling and compaction shall meet the temperature requirements of section 204.04.

Table 209-1 is superseded with the following:

Table 209-1
Sampling and Testing Requirements

Material or Product	Type of Acceptance (Subsection)	Characteristic	Test Methods Specifications	Sampling Frequency	Point of Sampling	Reporting Time
Backfill material (704.03)	Measured and tested for conformance (106.04)	Gradation/Soil classification	AASHTO T27 & T11/ AASHTO M 145	1 per soil type	Source of material	Before using in work
		Moisture-density	AASHTO T 99, method C	1 proctor curve per week or installation; to be determined by COTR/Sub-COTR	Source of material	Before using in work
		Compaction	AASHTO T 310 or other approved procedures	3 per lift	In-place	Before placing next layer
		Resistivity ²	AASHTO T 288	1 per soil type	Source of material	Before using in work
Bedding material (704.02)	Measured and tested for conformance (106.04)	Gradation/Soil classification	AASHTO T27 & T11/ AASHTO M 145	1 per soil type	Source of material	Before using in work
		Moisture-density	AASHTO T99, method C	1 proctor curve per week or installation; to be determined by AOTR	Source of material	Before using in work
		Compaction	AASHTO T 310 or other approved procedures	3 per lift	In-place	Before placing next layer
		Resistivity ²	AASHTO T 288	1 per soil type	Source of material	Before using in work
Foundation fill (704.01)	Measured and tested for conformance (106.04)	Gradation/Soil classification	AASHTO T27 & T11/ AASHTO M 145	1 per soil type	Source of material	Before using in work
		Moisture-density	AASHTO T99, method C	1 proctor curve per week or installation; to be determined by AOTR	Source of material	Before using in work
		Compaction	AASHTO T 310 or other approved procedures	3 per lift	In-place	Before placing next layer
Unclassified borrow (704.06)	Measured and tested for conformance (106.04)	Gradation/Soil classification	AASHTO T27 & T11/ AASHTO M 145	1 per soil type	Source of material	Before using in work
		Moisture-density	AASHTO T99, method C ⁽¹⁾	1 proctor curve per week or installation; to be determined by AOTR	Source of material	Before using in work
		Compaction	AASHTO T 310 or other approved procedures	3 per lift	In-place	Before placing next layer
		Resistivity ²	AASHTO T 288	1 per soil type	Source of material	Before using in work

(1) Minimum of 5 points per proctor. (2) Only required for backfill of steel drainage structures called for in the bid schedule in accordance with section 704. rev:04/06/13

SECTION 211-ROADWAY OBLITERATION

211.01 **Description.**

Add the following subparagraph:

Roadway obliterations shall be performed within and outside the right-of-way limits as called for on the approved construction plans or specifications. The Contractor shall coordinate all roadway obliterations outside the right-of-way with the AOTR once the new roadway is ready for traffic.

211.05 **Measurement.**

Add the following:

When the bid schedule contains no item for Roadway Obliteration, then this work shall be incidental to the earthwork and seeding items shown.

SECTION 251 - RIP RAP

251.03 General.

Add the following:

Steel stakes, for wire enclosed riprap, shall be fabricated to the required lengths from L4x4x3/8 inch angles as shown on the plans for minor drainage structures. All bridge embankment riprap shall also be anchored with the L4x4x3/8 inch angles.

Tie wire shall be 3.8mm wire with Medium Temper Class 3 coating. Hexagonal woven mesh and wire ties shall conform to ASTM A 641/A 641M specifications with Class 3 zinc coating.

251.04 Placed Riprap.

Add the following definition:

Placed riprap shall also be defined as "loose riprap".

Subsection 251.07 is superseded with the following:

251.07 Wire-Enclosed Riprap.

Wire enclosed riprap shall consist of mats or baskets fabricated from wire mesh, filled with stone, connected together and anchored to the slope or channel.

A foundation bed shall be excavated in accordance with section 209, and in accordance with the plans or as directed by the AOTR.

Embankment construction for wire enclosed riprap shall be in accordance with section 204.

Wire fabric shall be laid and rock shall be laid on the wire fabric in close contact to avoid excessive voids. The thickness and dimensions shall conform to the details shown on the plans.

The wire fabric shall be stretched over the top of the rock with the top and bottom of the wire fabric laced through the rock with galvanized wire ties to obtain a tight fitting mat. The wire fabric shall consist of woven fencing material having a Class 3 zinc coating in conformance with section 710.02.

All open spaces between the trench walls and the wire enclosed riprap mat shall be backfilled with the excavated material from the trench. This backfill material shall be thoroughly tamped to 95% in accordance with AASHTO T-99, method C.

The finished surfaces of the riprap shall be in reasonably close conformity with the lines and grades shown on the construction plans as adjusted in the field by the AOTR.

Any unsuitable or unstable material encountered during foundation bed preparation (not attributable to the contractor's operations) shall be replaced as directed by the AOTR. This work shall be paid for in accordance with section 204.07.

Subsection 251.08 is superseded with the following:

251.08

Acceptance.

See Table 251-1 for sampling and testing requirements.

Rock for riprap will be evaluated under Subsection 106.02 and 106.03.

Rock placement for riprap will be evaluated under Subsections 106.02 and 106.04.

Structure excavation and backfill will be evaluated under Section 209.

Geotextile will be evaluated under Section 207.

Material for grout will be evaluated under Subsections 106.02 and 106.03. Grout will be evaluated under Subsections 106.02 and 106.04. Grout placement will be evaluated under Subsection 106.02.

Subsection 251.09 is superseded with the following:

251.09

Measurement.

Measure the Section 251 items listed in the bid schedule according to Subsection 109.02 and the following as applicable.

All wire mesh, steel stakes, tie wire, and installation described in section 251.07 above shall be included in the unit price bid for Wire Enclosed Riprap.

Foundation bed excavation shall be considered incidental obligations of the Contractor except as otherwise defined under section 251.07.

Embankment construction shall be measured and paid for in accordance with section 204 and the appropriate bid items shown in the bid schedule.

Measure all types of riprap by the cubic meter in place.

Add the following new subsection:

251.10

Payment.

The accepted quantities will be paid at the contract unit price per unit of measurement for the Section 251 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

Table 251-1
Sampling and Testing Requirements

Material or Product	Type of Acceptance (Subsection)	Characteristic	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time
Riprap (705.02)	Measured and tested for conformance (106.04)	Apparent specific gravity & absorption	AASHTO T 85	1 per material type	Source of material	Yes, when requested	Before using in work
		Coarse durability index	AASHTO T 210	"	"	"	"
		Sodium sulfate soundness	AASHTO T 104	"	"	"	"
		LA abrasion	AASHTO T 96	"	"	"	"
		Gradation	AASHTO T 27 & T 11 or other methods	1 per material type	Source of material	"	Before using in work
		Gradation	AASHTO T27 & T11 or other methods	1 per 500yd ³	Plan location(s)	Yes, when requested	Following work day after test
Grout	Measured and tested for conformance (106.04)	Making test specimens Compressive strength ²	AASHTO T 22 & T 23	1 sample per installation ¹	Plan location(s)	Yes, when requested	2 work days after tests

1. Sample consists of two (2) test specimens.

2. The compressive strength shall be the average of two (2) test specimens.

SECTION 301--UNTREATED AGGREGATE COURSES

301.03 General.

Paragraph one is superseded with the following:

Seven (7) calendar days before the placement of any aggregate base material, the Contractor shall notify the AOTR or SAOTR in writing advising the area(s) and location(s) where the base material will be placed. Immediately, prepare the final roadbed surface according to Section 204 or 303 as applicable. The AOTR and/or SAOTR, QCM, and Contractor shall jointly check the final roadbed surface area(s) and location(s) for any defects. If defective areas are noted, correct all areas with moisture/density control. The above construction personnel shall recheck the entire final roadbed surface area(s). When approved and accepted by the government, the Contractor can place aggregate base material. The Contractor shall place aggregate base material only at government approved area(s) and location(s).

Paragraph two and three are deleted.

301.04 Mixing and Spreading.

Add the following:

The aggregate base material shall be placed on an approved, firm and stable roadbed in a continuous uniform layer or windrow. The layer or windrow shall be of such size that when spread and compacted the thickness of the finished layer shall conform to the nominal thickness shown on the plans or a thickness determined by the AOTR or SAOTR.

Aggregate base shall be constructed on a dry, unfrozen surface where the air temperature is 40°F (4° C) and rising (taking into account the wind chill factor) and the top 12" (305mm) of finished subgrade must be 40°F (4°C) minimum in the shade. The AOTR shall make the final determination as to whether the work can proceed.

When the weather conditions (just prior to aggregate base placement) is projected to be foggy, showers, rain, snow, or the surface temperature drops below 4° C such that the ground is freezing (i.e. appearance of frost), no aggregate base course materials shall be placed.

Where aggregate base course is placed on geotextile materials, in order to prevent damage to the geotextile materials, the Contractor shall not process the bottom 51mm (2-inches) of the lower lift.

301.06 Surface Tolerance.

The first paragraph is superseded with the following:

Grade finishing stakes are required during the placement process unless machine grading is allowed. Finish the final surface to within $\pm 3/8"$ (10mm) from staked line and grade elevations and plan thickness. The surface tolerance shall be checked by the string line method and depth stick. Defective areas or surface deviations that do not meet the above tolerance and crown shall be corrected. If spot dumping of base material is necessary to meet the staked line and grade elevation(s), this material shall be added to the existing base material by scarifying down 3-inches (76mm) mix, blend, and process with moisture/density control (as required under subsection 301.05). Finish to the staked lines and grade elevation(s) and recheck for surface tolerance. This work shall be considered incidental obligations of the Contractor.

301.07 Maintenance.

Add the following:

This work shall be performed during construction and periods of suspended work as required under Subsection 107.06.

If the roadway with aggregate base course in place is used by traffic before the final surfacing is placed, it shall be maintained in a safe and adequate manner as directed by the AOTR. Prior to the placement of the next base course layer, pavement layer or application of the prime coat, the aggregate base course in-place shall be checked (by QCM, AOTR/SAOTR and Contractor) for defective areas. If defective areas are found, these areas shall be corrected to meet the requirements of subsections 301.05 and 301.06. This work shall be incidental obligations of the Contractor and no additional payment shall be made.

301.08 Acceptance.

The second paragraph is superseded with the following:

Aggregate gradation and surface course plasticity index shall be evaluated under Subsection 106.04 Measured or Tested Conformance. Other aggregate quality properties will be evaluated under Subsection 106.02 and 106.04.

Subparagraph (a) is superseded with the following:

(a) Aggregate gradation. The upper and lower specification limits are the values shown in Grading Special, Table 703-2 as modified in these supplemental specifications.

Materials, which fail to meet the aggregate gradation specification limits, shall be corrected by the Contractor by adding coarse and/or fine aggregate to bring the material into specification limits. The Contractor's Quality Control Testing Technician shall sample and test the corrected processed material. Repeat the corrective work until the aggregate base course gradation is within the upper and lower specification limits under

Grading (D). Once the Contractor can show compliance with the contract requirements, then the material on the roadway, including any added aggregates shall be paid for at the full contract unit price. No separate payment for the added labor, overhead, traffic control, and equipment costs for adding coarse and/or fine aggregates shall be made but shall be an incidental obligation of the Contractor to bring the aggregate base course into contract aggregate gradation specification.

(b) Plasticity index. See table 301-1 for acceptance quality characteristics category.

301.09**Measurement.**

Add the following:

When the bid schedule calls for the aggregate base course to be measured by the metric ton, only the natural moisture in the material will be included for payment. Should the Contractor add water before weighing (prewet), then the weight of the added moisture shall be deducted by the AOTR and QCM before payment is made.

No separate measurement or payment for the corrective work (i.e. additional labor, overhead, traffic control, and equipment costs) shall be made but shall be an incidental obligation of the Contractor to bring the aggregate base course into contract aggregate gradation specification. Once the material has been corrected to meet the specifications, then the material on the roadway shall be measured for payment at full contract price.

Any aggregate base material that is wasted, wasted along the shoulders, used for over-built roadway prism sections, material not used on the project and/or is not a part of the aggregate base course design roadway typical shall not be measured for payment. The AOTR and QCM shall determine and use a method of measuring the waste; measure any aggregate base used on over-built roadway sections and make the appropriate adjustments in the quantities before payments are made.

Any base course materials use to correct for crown resulting in thicker base course, will not be measured for payment.

301.10**Payment.**

The first paragraph is superseded with the following:

The accepted quantities, measured as provided above, will be paid at the contract unit price bid of which price and payment will be full compensation for the work prescribed in this section. See Subsection 109.05.

Roadbed preparation/reconditioning will be measured and paid for as specified under Section 204, 212, and/or 303, and/or 408 as applicable and as specified in the design plans. If there is no pay item in the bid schedule for roadbed preparation/reconditioning, then this work shall be considered incidental to completion of the project and no additional payment will be made.

Table 301-1, Sampling and Testing is superseded with the following:

Table 301-1
Sampling and Testing Requirements

Material or Product	Type of Acceptance Subsection)	Characteristic	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time
Aggregate source quality 703.05 (a) & (b) or 703.05 (a) & (c)	Measured and tested for conformance (106.04)	LA abrasion (coarse)	AASHTO T 96	1 per type & source of material	Source of material	Yes, when requested	Before using in work
		Sodium sulfate soundness loss (coarse & fine)	AASHTO T 104	"	"	"	"
			AASHTO T 210	"	"	"	"
			ASTM D 5821	"	"	"	"
		Durability index (coarse & fine)		1 per type & source of material	Source of material	Yes, when requested	Before using in work
		Fractured faces					
Base course grading C, D & E or Subbase grading A & B or Surface course aggregate	Measured and tested for conformance (106.04)	Gradation	AASHTO T 27 & T 11	1 per 400T	From windrow or roadbed after processing	Yes	Before using in work
		Liquid limit	AASHTO T 89 AASHTO T 90	1 per 400T	"		Before using in work
		Plasticity index ¹	AASHTO T 180, method D ²	1 per 400T	"		Before using in work
		Moisture-density (max. density)		1 per week	"		Before using in work
		Compaction	AASHTO T 310, direct transmission	1 per 400T	In-place ³		Before using in work
		Fractured faces	ASTM D 5821				Before placing next layer
		Final thickness	Appropriate test by Contractor	1 per 1000T	From windrow or roadbed after processing		Before using in work
				1 per 400T	From windrow or roadbed after processing		Before placing next layer

1. The plasticity index shall be tested on the surface course aggregates only.

2. Minimum of 5 points per proctor.

3. At least one compaction test for all Corrected areas and turnouts shall be required. These tests shall meet the requirements under Section 301.

**SECTION 402. - HOT ASPHALT CONCRETE PAVEMENT BY HVEEM OR MARSHALL
MIX DESIGN METHOD**

402.01 Description.

Add to the first paragraph:

This work shall include repairing and patching any potholes or irregularities in the existing surface as delineated and directed by the AOTR. Remove and dispose of unsuitable material to a depth of 2 inches (50mm); patch with hot asphalt concrete pavement.

The last paragraph is superseded with the following:

Antistrip additive shall be Type 3, Hydrated Lime as referenced in Subsection 702.08.

402.03 Composition of Mixture (Job-Mix Formula).

The first paragraph is superseded by the following:

Furnish mixtures of aggregate, asphalt, and antistrip additive (if required) that meet the applicable aggregate gradation in Table 703-4 and design parameters provided under Table 402-1, as amended below and is capable of being placed and compacted as specified.

(b) Submission.

The first paragraph is superseded by the following:

Submit written job-mix formula and three (3) copies of asphaltic concrete mix design in accordance with AASHTO T 245 - Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus, compacted at 50 blows, for review and approval at least 28 calendar days before production. Include the location of all commercial mixing plants to be used and a separate job-mix formula, if applicable. Include a signed statement prepared by the testing laboratory that certifies the proposed job-mix formula meets the requirements of the contract and can be compacted in the field during production to meet contract requirements.

The percentage of asphalt binder, by weight, to be added to the aggregate shall be between 5 to 7% of the total weight of the asphaltic concrete mixture. The percentage of hydrated lime to be added to the aggregate shall be between 1-2% by dry weight of aggregate. The mix design shall include graphs which contain at least four (4) asphalt contents versus the air voids, voids in mineral aggregate (VMA), flow, Marshall stability, maximum theoretical unit weight, Marshall unit weight, and voids filled with asphalt. For each job-mix formula submits the following:

**Table 402-1
Asphalt Concrete Mix Requirements**

Marshall - AASHTO T 245

1. Stability, N (lbs.)
2. Flow, 0.25 mm (0.01 inch)
3. Percent Air Voids¹
4. Voids in Mineral Aggregate, % Minimum
5. Compaction, number of blows each end of test specimen

CLASS B
8896 (2000)
1.5 -3.8 (6-15)
3 - 5
See Table 402-2
50

Root-Tunnicliff - ASTM D 4867

1. Tensile Strength Ratio, % minimum

70
0.6--1.3

Dust-Asphalt Ratio²

¹ The percent of air voids are based on AASHTO T 166, AASHTO T 209, and AASHTO T 269. Maximum density will be based on AASHTO T 209. If the water absorption test value is greater than 2.0%, the Rice density must be determined using the "dry-back" method.

² Dust-asphalt ratio is defined as the percent of material passing the 75 :m sieve divided by the percent of asphalt (Calculated by weight of mix).

402.03 (1) Aggregate and mineral filler.

Add the following:

(f) All worksheets for all the aggregate specific gravity data (individual and combined), coarse and fine durability, sand equivalent (AASHTO T-176) on the untreated composite sample, absorption, and asphalt absorption.

(g) Worksheet of Root-Tunnicliff tensile strength ratio test per ASTM D 4867.

(h) The percentage of mineral filler to be added into the mix based on the dry weight of aggregate.

(i) Material safety data sheets for the mineral filler.

402.03 (2) Asphalt binder.

Add the following under 401.03(b) (2):

(f) The specific gravity of the asphalt cement.

402.03 (c) Verification.

(1) Aggregate gradations.

Add the following under 401.03 (c)(1):

The Contractor's aggregate quality is verified if the AO's results are above the minimum specification limits.

Add the following subparagraph:

(7) Tensile strength ratio (TSR). The Contractor's percent retained strength result is verified if the AO's result is above the minimum specification value as shown in Table 402-1.

402.03 (d) Changes and re-submissions.

This subsection is superseded with the following:

If approved, the Government will issue **Job-Mix Formula No.1** (with an effective date) and a target value for the percent passing each sieve size for the aggregate blend, target value for the asphalt cement content, the mixing and compaction temperature ranges, and the asphalt concrete mix requirements as specified under Table 402-1.

Approval of the job mix formula, by the Government, does not relieve the Contractor of his obligation to furnish a quality mix that meets the specifications and other contract requirements. This includes the addition or lack thereof of antistripping additives or mineral filler as submitted in the Contractor's mix design.

If the job-mix formula and mix design is rejected or a material source is changed, submit a new mix design and job-mix formula for acceptance. The AOTR will review the new job-mix formula and/or mix design and may perform verification testing as specified under Subsection 402.03 (c).

Changes to an approved job-mix formula or target value(s) require approval before production. Up to 21 calendar days will be required to evaluate a change.

Approved changes in target value(s) or job-mix formula will result in issuance of a new **Job-Mix Formula Number** with an effective date. The maximum number of changes in target value(s) or job-mix formula is **three (3)**. Any requested changes above three (3) shall require submittal of a complete new mix design as described under 401.03 and Table 401-1 of the supplemental specifications and will be subject to verification testing as specified under 402.03 (c).

Add the following new subsection:

(f) Control of asphaltic concrete mixtures during construction.

The Contractor's hot asphaltic concrete pavement mixture placed each day shall be tested, evaluated and accepted in accordance with Subsection 402.17. The AOTR will perform verification testing. If the Contractor's test results do not meet the requirements under Subsection 402.17 and/or fails to submit test results to the AOTR on the first acceptance sample within one (1) day after the sample is taken, the Contractor shall suspend all work on this portion of the contract until a written corrective action plan is submitted for approval to the AO and/or the test results are submitted to the AOTR.

If the AOTR's test results do not verify the Contractor's test results, the AOTR's test results will be used for acceptance in accordance with Subsection 406.04 and Subsection 402.17. If the asphaltic concrete pavement mixture is rejected, the mixture shall be removed from the project site. Failure or refusal of the Contractor to remove the mixture shall be grounds for the AO to either withhold any and all progress payments or suspend the contract and/or Default of contract.

The Contractor's QC laboratory shall determine the maximum theoretical density (AASHTO T-209), air voids, voids in mineral aggregate (VMA), and Marshall unit weight on the **second acceptance sample**. The sample shall be taken within one (1) week of production beginning with the first day of production. The maximum theoretical density specimen shall be included in this test method. Test results shall be given to the AOTR within one (1) day after the sample is taken.

The Contractor's QC laboratory shall determine the Tensile Strength Ratio (TSR) test on the **second acceptance sample**. The test shall be completed within one (1) week of production beginning with the first day of production. The results shall be given to the AOTR within **three (3)** days after sample.

402.04

Mixing Plant.

Add:

The requirements under Subsection 402.03 (c) is superseded with the following:

Aggregate shall be separated by size into **three (3)** stockpiles.

402.07

Weather Limitations.

The requirements under Subsection 401.07 are superseded with the following:

Place hot asphalt concrete pavement **March 1 to December 1** of the calendar year only, unless the AO approves the Contractor's written request to place hot mix before or after the above dates. The Contractor must provide a written justification with his request. Approval by the Contracting Officer will be on a weekly basis. Place hot asphalt concrete pavement on a dry, unfrozen surface when the air temperature in the shade is above 5°C (40°F) and rising and the temperature of the road surface in the shade conforms to Table 401-2, as amended:

Table 401-2
Asphalt Concrete Mix Placement Temperature

Compacted Lift Thickness ≤ 50mm (2")	
Road Surface Temperature, °F (°C)	Minimum Lay-Down Temperature ⁽¹⁾ °F (°C)
< 50 (10)	(2)
50 (10)	295 (146)
60 (16)	285 (141)
70 (21)	280 (138)
80 (27)	270 (132)
≥ 90 (32)	265 (129)

(1) In no case shall the asphalt concrete mix be heated above the temperature specified in the approved mix design.

(2) PAVING NOT ALLOWED.

402.08

Asphalt Preparation.

The second paragraph under Subsection 401.08 is **deleted**.

402.09

Aggregate Preparation.

The requirements, under Subsection 401.09, are superseded with the following:

The first paragraph is superseded with the following:

When hydrated lime is used, it shall be added to and mixed with damp aggregates in a pugmill before entering the dryer drum. The combined cold feed aggregate shall contain a minimum of two (2) percent moisture above SSD at the time the lime is mixed with the aggregates. The pugmill shall be a twin shaft, have a minimum length of 8 feet (2.4 m) and the shaft paddles shall have a minimum diameter of 2 feet (610 mm). The bottom of the pugmill shall conform to the configuration of the shaft. The hydrated lime shall be added to the aggregates such that loss of lime is minimal or non-existent. Placement of the lime on an open conveyor belt shall not be permitted. Placement of the lime on an enclosed conveyor belt that does not permit blowing or loss of the lime is acceptable.

The lime shall be weighed across a weight belt or an approved alternative weighing system, with a weigh totalizing system before entry into the pugmill. The pugmill shall be located in the aggregate delivery system at a location where the mixed material can be readily inspected on a belt

before entry into the drum. The pugmill shall be capable of effective mixing in the full range of the asphaltic concrete production rates.

A positive signal system and a limit switch device shall be installed in the plant at the point of introduction of the lime. The positive signal system shall be placed between the metering device and the dryer drum and utilized during production whereby the mixing shall automatically be stopped if the lime is not being introduced into the mixture.

Regardless of the weighing system used, the lime metering system or device shall be provided with a means for continuous automatic recording and a log or printout shall be given to the AOTR on a daily basis for each day's asphaltic concrete production.

402.12**Production Start Up Procedures.**

The second paragraph under Subsection 401.12 (b) Control strip is superseded with the following:

On the first day of production, produce nine (9) truck loads of mix to construct a control strip, one-lane wide, and at the designated lift thickness. Construct the control strip on the project at an approved location.

Subparagraphs (1) and (2) in paragraph three are superseded with the following:

The control strip is accepted at a pay factor of 1.00 if all test results as outlined under (1), (2) and (3) are within specification limits:

(1)Asphalt content and aggregate gradation. The Contractor's QC laboratory technician shall sample the 3rd, 5th and 7th truck load. These acceptance samples shall be tested and evaluated according to Subsection 402.17. The asphalt content upper and lower specification limits are the approved job- mix formula target value \pm 0.4 percent. The aggregate gradation upper and lower specification limits are the approved job-mix formula target values plus or minus the allowable deviations shown in Table 703-4.

(2)Compaction. Take nuclear density readings behind each roller pass to determine the roller pattern necessary to achieve required density without damaging the mix. At a minimum of 10 locations within the control strip, take nuclear density readings, cut 5 core samples according to AASHTO T230, Method B. Test cores and evaluate the density test results according to Subsection 402.17. The density lower specification limit is 92% of the maximum specific gravity (density). Furnish the AOTR with the nuclear gauge readings and correlations of the readings to the core specific gravities.

(3)Marshall air voids, stability, flow, VMA, Root-Tunnicliff tensile strength ratio (TSR), sand equivalent, and Rice testing. Determine the specific gravity, stability, flow, air voids, VMA, maximum density (Rice), TSR (includes the Freeze/Thaw cycle), and dust/asphalt ratio on an acceptance sample from the control strip. The sand equivalent shall be determined in accordance with Table 402-1. The Marshall air voids, stability, flow, VMA, Root-Tunnicliff tensile strength ratio, sand equivalent test results will be evaluated according to Subsection 402.17.

The fourth paragraph of 401.12(b) is superseded with the following:

If the control strip does not meet the above requirements under (1), (2) and (3); the control strip will be rejected by the AOTR in accordance with Subsection 402.17. If rejected, the rejected control strip shall be removed immediately off the project site. Failure or refusal of the Contractor to remove the rejected control strip shall be grounds for the AO to either withhold any and all progress payments under the contract and/or Default of contract. Once the control strip is removed the Contractor can construct another control strip in the same location as the previous

control strip. No other control strip can be constructed until the rejected control strip is completely removed off the project site. An accepted control strip will remain in place and will be accepted and measured as a part of the completed pavement. Tests used for accepted control strip will not be included in the evaluation for payment according to Subsection 106.05. The NRDOT Manager will make a recommendation to the AOTR for acceptance/non-acceptance of a control strip based on test data. When a control strip is accepted, full production can begin.

402.13 Placing and Finishing.

Add the following under Subsection 401.13:

(a) Segregation. The bituminous mixture shall be transported and placed on the roadway without segregation. All segregated areas behind the paver shall be removed immediately upon discovery and replaced with specification material. If more than 4.6 square meter (50 square feet) of segregated pavement is ordered removed and replaced in any one continuous 152 meter (500 linear feet) of paver width, laydown operations shall be discontinued until the source of segregation has been found and corrected.

The AOTR and QCM will determine the extent of segregated areas. The bituminous mixture shall be determined to be segregated when the percent passing the 4.75mm (No.4) sieve varies from the percent specified in the JMF by more than 9%. Segregated areas shall be corrected at the Contractor's own expense (this includes the QC Testing Technician sampling and testing the segregated area(s) for contract compliance).

402.14 Compacting.

The second sentence of the second paragraph under Subsection 401.14 is superseded with the following:

Compact to a pavement specific gravity (density) that is no less than 92.0% of the maximum specific gravity (density) determined according to AASHTO T 209.

402.16 Pavement Smoothness/Roughness.

(b) International roughness index (IRI).

The first paragraph is superseded with the following:

For Type III or Type IV pavement roughness, furnish an inertial profiler conforming to AASHTO PP 50 and validated according to AASHTO PP 51. At least 21 days before use, submit results showing the inertial profiler conforms to AASHTO PP 51. Furnish personnel to operate the inertial profiler according to AASHTO PP 52. The AOTR will observe its operation. Take measurements in the middle portion of each lane; Submit raw data files to the NRDOT Manager.

(d) Defective area correction.

The first paragraph is superseded with the following:

The Contractor's profiler subcontractor shall locate all the corrective areas using the data from the Contractor's profilograph. The Contractor shall correct defective areas from (a) (b) and (c) above. Corrective action shall consist of one or more of the following as determined by the AOTR and Government Engineers. **The corrective work shall be at no cost to the Government:**

1. Remove and replace the surface course.

2. Place an asphaltic concrete overlay course at least 2 times as thick as the maximum sized aggregate in the asphaltic mixture.

3. Grind the pavement surface with equipment that is diamond-tipped saw blades on a horizontal grinding head which cuts or grinds asphalt concrete leaving a corduroy surface behind. The type of equipment to be used shall be submitted in writing to the AO for approval. The thickness of the remaining pavement shall not be less than 3/8" (9.5 mm) less than the lift thickness. Cores may be required to verify the remaining thickness at no cost to the Government. The final pavement surface shall be uniform in appearance to the surrounding pavement. A fog seal or micro slurry seal may be required to protect the pavement surface; the AOTR and Government Engineers will make final determination.

Upon completion of corrective work, re-measure corrected areas according to (b) above. The roughness value obtained will replace the original. Submit the raw data to the NRDOT Manager.

402.17

Acceptance.

The third paragraph is superseded with the following:

Asphalt binder will be evaluated and accepted under Subsections 106.03(a), 106.04 (as amended) and 702.09 (as amended).

(b) Aggregate gradation. Add the following:

When hydrated lime is used in the approved job-mix formula, the final aggregate gradation shall include the lime. Cold-feed samples shall be taken at the hot plant for aggregate gradation. AASHTO T 27 is modified for cold-feed aggregate samples that contain lime. The cold-feed sample with lime shall not be oven dried. Immediately, the sample shall be split into two or three smaller test samples. Determine the initial wet mass of a split sample. Using a separate split sample, determine the moisture content. The dry mass (before sieve analysis testing) shall be determined by the following equation:

$$\text{Dry Mass} = \frac{\text{Wet Mass}}{[1 + (\% \text{ Moisture})] \times 100}$$

(c) Density. This subparagraph is superseded with the following:

The lower specification limit is 92% of the maximum specific gravity (density) determined according to AASHTO T 166 and AASHTO T 209 as part of the job-mix formula evaluation specified in Subsection 402.03.

The Government may elect to accept the pavement density by the use of a properly calibrated nuclear gauge in accordance with ASTM D2950. If this method is chosen by the Government, the Contractor shall be advised.

Using the cores, determine and report the pavement thickness in accordance with ASTM D 3549. Label and deliver the cores to the AOTR after testing.

Add the following new subparagraph to Subsection 402.17:

(e) Root-Tunnicliff tensile strength ratio test. The Root-Tunnicliff tensile strength ratio test will be evaluated under Subsection 106.04. See Table 402-3, of the contract supplemental specifications, for minimum sampling and testing requirements. The lower acceptance limit is 70%.

(f) **VMA.** The lower specification limit is the value shown in Table 402-2.

(g) **Marshall air voids, stability, and flow.** The upper and lower specification limits for the air voids and flow are the values shown in Table 402-1. The lower specification limit for the stability is the value shown in Table 402-1.

(h) **Sand equivalent.** The lower specification limit is 55%.

Add the following to Subsection 401.17:

The hot asphaltic concrete pavement will not be accepted under any acceptance provisions of Subsection 106.02 to 106.05 if any of the following conditions exist:

1. The asphalt cement pay factor(s) are in the "No Pay or Remove Category" or;
2. The Root-Tunnicliff tensile strength ratio test does not meet the minimum acceptance limit of 70% and the Marshall air voids, VMA, flow and stability do not meet the upper and/or lower specification limits as shown in Table 402-1 or;
3. Any of the pay factors for the asphalt content, gradation, density and pavement smoothness are less than 0.75; the materials shall be removed and rejected. Any asphalt binder, antistrip additive, and/or mineral filler in asphaltic concrete pavement, that has been rejected, shall also be subject to rejection regardless of whether the material meets specification or not.
4. Control strip(s) and/or any hot asphaltic concrete pavement placed that is rejected shall be removed immediately off the project site. Any asphalt cement, antistrip additive and/or mineral filler in the asphaltic concrete pavement mixture shall also be rejected regardless of whether the material meets specification or not.

402.18

Measurement.

Add the following:

When the bid schedule does not contain a bid item for asphalt binder, antistrip additive, and/or mineral filler, then these items of work shall be considered incidental to item 40201.

Asphalt binder will be measured by the metric ton. Measurement shall be based on the Contractor's daily tank stab volume measurements at 15°C (60°F) or correct the volume used to 15°C (60°F) using recognized standard correction factors. Only asphalt binder used and accepted in the hot asphaltic concrete pavement mixture shall be measured for payment.

Hot asphaltic concrete pavement mixture used for repairing and patching any potholes or irregularities on the existing surface shall not be measured for payment but shall be considered a subsidiary obligation of the Contractor under this Section.

402.19

Payment.

Add the following:

The accepted quantities of asphalt binder, measured as provided above, will be paid at the contract unit bid price.

The accepted quantities will be paid at the contract price per unit of measurement for the Section 402 pay items listed in the bid schedule except the hot asphalt concrete pavement contract unit bid price will be adjusted according to Subsections 106.05 and 402.16. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

Payment for hot asphalt concrete pavement will be made at a price determined by multiplying the contract unit bid price by the material pay factor. The material pay factor is the lowest single pay factor determined for asphalt content, specific gravity (density), or any individual sieve of the aggregate gradation

A separate pay adjustment will be made for the pavement smoothness. The dollar amount of the adjustment will be determined by summing the pay adjustment factors determined in Subsection 402.16 for each 0.1-kilometer and multiplying that sum by the contract unit bid price.

Table 402-3
Sampling and Testing Requirements

Material or Product	Type of Acceptance (Subsection)	Characteristic	Category	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time
Aggregate source quality	Measured and tested for conformance (106.04)	LA abrasion (coarse)	—	AASHTO T 96	1 per type & source of material	Source of Material	Yes	Before Producing
		Sodium sulfate soundness loss (coarse & fine)	—	AASHTO T 104	“	“	“	“
		Sand equivalent	—	AASHTO T 176, alternate method no. 2, reference method	“	“	“	“
Asphalt concrete (mix design)	Measured and tested for conformance (106.04)	Gradation	—	AASHTO T 27 & T 11	1 per submitted mix design	Stockpiles	Yes	28 days before producing
		Voids	—	AASHTO T 209	“	“	“	“
		TSR	—	ASTM D 48867	“	“	“	“
Aggregates (production)	Measured and tested for conformance (106.04)	Gradation	—	AASHTO T 27 & T 11	1 per 6 hours of production but not less than 2 per day	Flowing aggregate stream (bin or belt discharge) or off of conveyor belt	Yes, when requested	End of shift
		Sand equivalent	—	AASHTO T 176, alternate method no. 2, reference method, ASTM 5821	1 per type & source of material	“	“	“
		Fractured faces Sample for job-mix formula verification	—	Subsection 401.03	1 per aggregate stockpile	“	—	21 days before approval of job-mix formula

Table 402-3 (continued)
Sampling and Testing Requirements

Material or Product	Type of Acceptance (Subsection)	Characteristic	Category	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time
Asphalt binder	Measured and tested for conformance (106.04)	Quality	—	Subsection 702.01	1 per submitted source & mix design First 4 loads; every 25 th load thereafter	In line between tank & mixing plant	2 – 1-L samples provided to the government	—
Asphalt concrete mixture (all)	Measured and tested for conformance (106.04) & Section 105	Mix temperature	—	—	First load & every other load thereafter	Hauling vehicle before dumping or windrow before picking up	—	Upon completing test
Hot asphalt concrete pavement (control strip)	Statistical (106.05)	Gradation		AASHTO T 11, & T 27	3 minimum	Cold-feed belt at Hot Plant	Yes	4 hours
		TSR		ASTM D4867	Subsection 402.03 (f)	Ditto	—	Upon completion
		Marshall properties		AASHTO T 245	Subsection 402.03 (f)	Ditto	—	Upon completion
		4.75 mm	I					
		2.36 mm	I					
		300 µm	I					
		75 µm	I					
		Other specified sieves	II					
		Asphalt content	I	AASHTO T 287				

Table 402-3 (continued)
Sampling and Testing Requirements

Material or Product	Type of Acceptance (Subsection)	Characteristic	Category	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time
Hot asphalt concrete pavement (control strip)	Statistical (106.05)	Core density ⁽¹⁾	I	AASHTO T 166 & T 209	At least 5 samples per control strip	In-place	Cores to AOTR after determining specific gravity & compaction	—
Hot asphalt concrete pavement (production)	Statistical (106.05)	Gradation		AASHTO T 287, T 11, & T 27	1 per 700 t	Cold-feed belt at Hot Plant	Yes	4 hours
		TSR		ASTM D 4867	Subsection 402.03 (f)	Ditto	—	Upon completion
		Marshall properties		AASHTO T 245	Subsection 402.03 (f)	Ditto	—	
		4.75 mm	I					
		2.36 mm	I					
		300 µm	I					
		75 µm	I					
		Other specified sieves	II					
		Asphalt content	I					
		Core density ⁽¹⁾	I	AASHTO T 166 & T 209		In-place	Cores to AOTR after determining specific gravity	24 hours
Hot asphalt concrete mixture (final surface)	Statistical (106.05)	Type I & II smoothness	I	FLH T 504	See Subsection 401.16 & 402.16	See Subsection 401.16 & 402.16	—	14 days after final paving

Table 402-3 (continued)
Sampling and Testing Requirements

Material or Product	Type of Acceptance (Subsection)	Characteristic	Category	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time
Hot asphalt concrete pavement (final surface)	Measured and tested for conformance (106.04)	Type III & IV Roughness	—	AASHTO PP 50, PP 51, & PP 52	See Subsection 401.16	See Subsection 401.16	—	14 days after final paving

(1) Cut core sample from the compacted pavement according to AASHTO T 230, method B. Fill and compact the sample holes with asphalt concrete mixture. Cores shall be 102 millimeters in diameter. Perform specific gravity and thickness tests on cores and deliver to AOTR/ after testing is completed. Label cores and protect from damage due to handling or alteration due to temperature during storage or transfer.

SECTION 411 - ASPHALT PRIME COAT

411.01 Description.

Add:

The Contractor shall allow themselves enough time to complete the prime coat and sand blotting work (if needed) **before the end of the normal work day and/or 40 hour work week** so that local and public traffic will travel and use the primed section of roadway without any delay and damage to the primed surface.

411.03 Equipment.

This subsection is superseded with the following:

(a) Asphalt Distributor. Furnish an asphalt distributor as follows:

- (1) Capable of heating asphalt evenly.
- (2) Adjustable full circulating spray bar up to 4.6 m (15 ft) width. Bar extensions shall be full circulating. Test spray bar at various heights to establish proper rate of application. The spray bar shall maintain the set height within 20 mm (13/16 in) during each spray run.
- (3) Apply uniform unbroken spread of asphalt and positive acting control valves that quickly open and close in one operation. Uniformly apply asphalt over the full width within 0.08 L/m^2 (0.02 gal/yd^2) of the target spread rate. The distributor shall be equipped with hand hose and nozzle attachment to be used for inaccessible spotting areas.
- (4) Thermometer for measuring the asphalt temperature in the tank.
- (5) Bitumeter that registers rate of travel in feet per minute, trip and total distance in feet.
- (6) Pump for circulating the asphalt material in the spray bar, tank and for pumping the material through the spray bar or hand spray.
- (7) Pressure gage, pump, calibrated tachometer or other approved device for controlling the application rate of asphalt material. Furnish a certification of the calibrated tachometer to the AOTR. The certification must be current and shall not be more than (1) year old from the date and month when the Contractor plans to use the asphalt distributor.
- (8) Calibrated tank with gage or other approved means of accurately determining the quantity of asphalt material in the tank. Furnish a certification and/or properly calibrated chart of the tank to the AOTR. The certification must be current and shall not be more than (1) year old from the date and month when the Contractor plans to use the asphalt distributor.
- (9) Maintenance of distributor and booster tanks such that no dripping of asphalt material shall occur from any part of the equipment.

The AOTR and/or QCM shall order the use of any distributor truck discontinued that does not comply with the above requirements or that fails to produce a satisfactory application of asphalt material as specified herein.

411.04 Surface Preparation.

This subsection is superseded with the following:

Seven (7) calendar days before the placement of the prime coat, the Contractor shall notify the AOTR (in writing) advising the area(s) and location(s) where the prime coat will be placed. Immediately, prepare the final surface to be primed according to Subsection 301.04, 301.05, 301.06 and 301.07 and **Table 301-1**. The AOTR, QCM and Contractor's Superintendent shall jointly check the final surface area(s) before the placement of the prime coat. If defective areas are noted, correct all areas. The above same project personnel shall recheck the entire final surface area(s). When approved and accepted by the AOTR, the Contractor can place the prime coat. The Contractor shall place prime coat only at the AOTR approved area(s) and location(s).

411.05 Weather Limitations.

This subsection is superseded with the following:

The prime coat shall be applied only when the surface to be treated is not frozen, dry, or slightly damp, when the atmospheric temperature in the shade is 10°C (50°F) or more for a constant period of 30 minutes; when the weather is not foggy or rainy; when no sandstorms are present; and when the wind velocity is less than 24kph (15mph) as determined by the AOTR. When the atmospheric and surface temperature is below 10°C (50°F) for a constant period of 30 minutes, no prime coat work shall be performed.

411.06 Asphalt Application.

The first and second paragraphs are superseded with the following:

Before the prime coat is applied, the Contractor shall apply water to the surface to aid the penetration of the prime coat. Apply prime coat according to Subsection 409 at a rate of 0.45 (0.10gal/sy) to 2.25 (0.30gal/sy) liters per square meter for optimum penetration. The QCM and AOTR shall jointly determine the optimum application rate based upon test section(s). Unless otherwise shown on the design plans or directed by the AOTR, the prime coat shall be applied to the surface of the aggregate base course from hinge point to hinge point of roadway including all turnouts.

The Contractor shall maintain one-way traffic on the un-primed portion of the roadway with flaggers, and when necessary with pilot car(s) including driver. The traffic shall be allowed through the construction zone at a speed not to exceed 32kph (20mph).

The Contractor shall be required to furnish and maintain a traffic control plan including Type II barricades, warning signs, and any other traffic control devices (as required by the MUTCD manual, latest edition) for both daytime and nighttime one-way traffic. The cost for the traffic control shall be included in the unit price bid for Item 63501.

The applied prime coat shall be allowed time to penetrate (to a minimum time period determined jointly by the AOTR and QCM); which includes locations impossible to

detour (i.e. turnouts, cross roads with no alternate detour, etc.). No traffic shall be permitted on the primed surface and no blotter material shall be applied during the initial penetration cure period. Care shall be taken to prevent the accumulation of dust or soil on the freshly applied prime coat.

After the initial cure period, traffic may be allowed (as determined jointly by the AOTR and QCM) to be routed over the primed portion of roadway provided a blotter material is spread uniformly across the surface at a rate of 2.7kg/m^2 (5 lb/sy) to cover any unabsorbed or excess bitumen so as to prevent pickup by vehicles, or to minimize damage by rain before complete penetration. The blotter material shall be spread with a mechanical spreader if hand methods cannot achieve a uniform distribution of blotter material as directed by the AOTR. Blotter material shall be spread in such a manner that no truck wheel(s) shall travel on wet, unabsorbed or excess bitumen.

At locations that are impossible to detour, sufficient time shall be allowed for the prime coat to penetrate and cure. The determination of "sufficient time" shall be jointly determined by the QCM and AOTR. Blotter material shall only be permitted and applied after the QCM and AOTR have jointly determined the "sufficient time" for the initial cure period.

411.07 Acceptance.

The fourth paragraph is superseded with the following:

Surface preparation shall be performed and evaluated under Section 301.

411.08 Measurement.

This subsection is superseded with the following:

Measure the prime coat asphalt by the metric ton or by the liter.

When certified project weigh scales are available, each distributor truckload shall be weighed across the project scales before and after each load application(s). For payment purposes, a weight ticket shall be made for each distributor truck load.

When certified project weigh scales are not available, measurement of prime coat shall be by the liter or gallon as required under **Subsection 109.02 Measurement Terms and Definitions (h) Liter (L) or Gallon (Gal), FP-2003** and converted to metric tons using appropriate conversion factors and/or certified weight ticket (s) from the refinery.

Regardless of which measurement is used above, the QCM shall determine daily quantity used, wasted, and/or used elsewhere-including application rates, which shall be part of the project records. Wasted quantities and those quantities used elsewhere shall not be measured for payment.

No measurement for traffic control (which includes pilot car(s) with driver) shall be made but shall be included in the contract unit price for contract Item 63501. Flaggers will be paid for under a separate bid item shown in the bid schedule.

No measurement for blotter material, equipment, labor and incidentals shall be made but shall be considered incidental to contract Item 41101.

rev:04/06/13

SECTION 412 - ASPHALT TACK COAT

412.03 Equipment.

This subsection is superseded with the following:

(a) Asphalt Distributor. Furnish an asphalt distributor as follows:

- (1) Capable of heating asphalt evenly.
- (2) Adjustable full circulating spray bar up to 4.6 m (15 ft) width. Bar extensions shall be full circulating. Test spray bar at various heights to establish proper rate of application. The spray bar shall maintain the set height within 20 mm (13/16 in) during each spray run.
- (3) Apply uniform unbroken spread of asphalt and positive acting control valves that quickly open and close in one operation. Uniformly apply asphalt over the full width within 0.08 L/m²(0.02 gal/sy) of the target spread rate. The distributor shall be equipped with hand hose and nozzle attachment to be used for inaccessible spotting areas.
- (4) Thermometer for measuring the asphalt temperature in the tank.
- (5) Bitumeter that registers rate of travel in feet per minute, trip and total distance in feet.
- (6) Pump for circulating the asphalt material in the spray bar, tank and for pumping the material through the spray bar or hand spray.
- (7) Pressure gage, pump, tachometer or other approved device for controlling the application rate of asphalt material.
- (8) Calibrated tank with gage or other approved means of accurately determining the quantity of asphalt material in the tank.
- (9) Maintenance of distributor and booster tanks such that no dripping of asphalt material shall occur from any part of the equipment.

The AOTR and/or QCM shall order the use of any distributor truck discontinued that does not comply with the above requirements or that fails to produce a satisfactory application of asphalt material as specified herein.

412.05 Weather Limitations.

This subsection is superseded with the following:

The prime coat shall be applied only when the surface to be treated is not frozen, dry, or slightly damp, when the atmospheric temperature in the shade is 2°C (35°F) or more; when the weather is not foggy or rainy; when no sandstorms are present; or when the wind velocity is less than 24kph (15mph) as determined by the AOTR.

412.08 Measurement.

This subsection is superseded with the following:

measure emulsified asphalt tack coat by the metric ton **excluding** the water added for dilution.

When certified project weigh scales are available, each distributor truck load shall be weighed across the project scales before and after each load application(s). For payment purposes, a weight ticket shall be made for each distributor truck load of **undiluted** tack coat.

When certified project weigh scales are not available, measurement of tack coat shall be by the Gallon as required under **Subsection 109.02(b) Measurement Terms and Definitions (e) Gallon (Gal), FP-2003** and converted to Tons using appropriate asphalt conversion factors and/or certified weight ticket (s) from the refinery.

Regardless of which measurement is used above, the QCM shall determine daily quantity used, wasted, and used elsewhere including application rates which shall be part of the project records. Wasted quantities and those quantities used elsewhere shall not be measured for payment.

SECTION 552. - STRUCTURAL CONCRETE

552.03 Composition (Concrete Mix Design).

Per the FP-03, Section 552.03, the Concrete Mix Design is to be submitted on FHWA Form 1608. FHWA Form 1608 is provided at the end of this Supplemental Specification.

Add to subparagraph (r):

Material certifications for fly ash when used in a concrete mix design.

552.08 Delivery.

Add the following:

If the time limits provided in Table 552-4 cannot be met, the Contractor shall deliver by the dry batch method or utilize a portable batch plant on site in order to achieve the time limits specified. Extended time limits may be considered on a case by case basis provide that supporting data and case histories showing conformance to all contract specifications for similar class and strength concrete delivered to similar remote locations are submitted for review and approval.

552.09 Quality Control of Mix.

(b) Delivery and sampling.

Add to subparagraph (4):

Care and curing of concrete cylinders for compressive strength testing shall conform to AASHTO T23.

552.11 Handling and Placing Concrete.

(a) General.

Add the following to this subparagraph:

Concrete shall not be placed next to adjacent previous concrete placements until 24 hours has elapsed.

(b) Sequence of placement:

Add the following to subparagraph (3) Superstructures:

When cast in place concrete bridge decks are specified, the Contractor shall develop and submit to the AO for review and approval by the NRO-DOT Division Manager, a bridge deck placement plan addressing all applicable requirements within the contract. No concrete shall be placed in the bridge deck until the bridge deck placement plan is approved in writing by the CO/AO and/or NRO-DOT Manager.

552.13 Expansion and Contraction Joints.

Add the following subparagraph:

(f) Bridge Deck Expansion Joints. The Contractor shall submit to the AO for review approval by the NRO-DOT Division Manager shop drawings for manufactured expansion/contraction joints to be placed at expansion joints in the bridge deck. The shop drawings shall conform to Subsection 104.03 of the Standard Specifications and the details shown in the plans. Expansion joint installation shall not begin until approval of the shop drawings has been given in writing by the AO and/or NRO-DOT Manager. An expansion joint manufacturer's representative shall be present during installation procedures.

The Contractor shall submit for approval material certifications in accordance with Section 106 of the Standard Specifications for all materials incorporated into manufactured expansion/contraction joints. The material certifications shall certify conformance of material to specified requirements of this contract.

552.14 Finishing Plastic Concrete.**(a) Striking off and floating**

Add the following to this subparagraph:

The finishing machine, unless otherwise shown on the plans or approved in writing by the AO, shall be operated with the skew. The finishing machine shall not be allowed to travel over in-place concrete after initial set takes place, or on forms supporting concrete or support rails for the finishing machine, until the previously placed concrete has cured for at least 3 days.

When float finishing is provided by hand, the float finishing shall commence immediately after the finishing machine.

(b) Straight edging.

Add the following to the first paragraph:

Check all abutment cap, pier cap, back wall and wing wall top surfaces where elevations are given on the construction plans. Check the entire surface from given elevation to given elevation in all directions.

(c) Texturing,(1) Grooved finish

Add the following to this subparagraph:

When tining grooves are provided by tining float, the tining groove placement operations shall begin immediately after the finishing machine and float finishing are completed.

(d) Surface underneath bearings

Add the following to this subparagraph:

Alternatively, the concrete area beneath bearing devices may be finished to the exact elevation and/or grade specified on the plans, by using a steel trowel. The surface produced shall be a smooth and uniform plane.

Add the following subsection:

(f) Abutment Caps and Pier Caps.

Finish the tops of abutment caps and pier caps to within 5 millimeters of the plan elevations. When tops of abutment caps and pier caps are to be bearing surfaces for prestressed box beams, provide straight edging in accordance with Section 552.14 (b), including supplemental specifications, and finish with a steel trowel to produce a smooth surface free of bleed water.

552.15 Curing Concrete.**(a) Forms in-place method**

Add the following to this subparagraph:

All joints in the forms and the joints between the end of forms and concrete shall be kept moisture tight during the curing period. Cracks in the forms and cracks between

the forms and the concrete shall be resealed by methods subject to the approval of the AO and/or NRO-DOT Manager.

552.17 Concrete Anchorage Devices.

Add the following:

The Contractor shall submit (to the NRO-DOT Manager) for approval shop drawings for fabricated devices (such as guard angles) other than reinforcing steel to be inserted or cast in structural concrete. The shop drawings shall conform to Subsection 104.03.

The Contractor shall submit for approval material certifications in accordance to Section 106 of the Standard Specifications for all materials incorporated into fabricated devices to be inserted or cast in structural concrete. The material certifications shall certify conformance of material to specified requirements of this contract.

Add the following re-sections:

552.19 Sealing Existing Concrete Surface.

552.20 Acceptance.

552.21 Measurement

552.22 Payment.

552.19 Sealing Existing Concrete Surface.

When specified in the plans, existing bridge decks and all approach slabs shall receive a sealer using a High Molecular Weight Methacrylate (HMWM) concrete sealant. The sealant shall be placed in accordance with the construction plans and manufacturer recommendations. Prior to placement of sealant, the Contractor shall:

A. Prepare a complete work plan addressing all aspects of the sealant work including:

1. Preparation
2. Method of placement
3. Application rates
4. Curing methods
5. Cleanup
6. Traffic Control
7. Brand name of the product proposed with manufacturers requirements

8. Environmental compliance procedures

No work on sealant placement may proceed until the work plan has been reviewed by the AOTR and approved.

- B. Insure that all required personnel and traffic control is in place at the time of sealant placement.
- C. Delineate the application area and insure that enough sealant material is on hand as required by the manufacturer.
- D. Clean the bridge deck and approach slabs by either high pressure air blasting or high pressure water at least two hours before the application is to take place unless the manufacturer recommends otherwise in writing.
- E. Insure that all environmental requirements are adhered to throughout the sealant placement process.
- F. Apply anti-skid material (i.e. such as clean sand) as recommended by the manufacturer prior to curing.
- G. Do not allow traffic onto the sealed areas until curing is completed or unless otherwise directed by the manufacturer in writing.

552.20 Acceptance.

Add the following:

Acceptance of structural concrete shall be based on the sampling, testing and results obtained by the Contractor in accordance with subsection 552.09 of the Standard Specifications and as modified by these Supplemental Specifications.

Table 552-9 is superseded with the following:

Table 552-9
Sampling and Testing Requirements

Material or Product	Type of Acceptance (Subsection)	Characteristic	Category	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time
Aggregate source quality (703.02)	Measured and tested for conformance (106.04 & 105)	Quality	—	AASHTO M 80	1 per material type	Source of material	Yes, when requested	Before producing
Concrete composition (mix design)	Measured and tested for conformance (106.04 & 105)	All	—	Subsection 552.03	1 per mix design	Source of material	Submit to NRDOT Manager	Before producing
Produced aggregate (fine & coarse)	Measured and tested for conformance (106.04)	Gradation	—	AASHTO T 27 & T11	1 per day	Flowing aggregate stream (bin, belt, discharge conveyor belt, or stockpile)	Yes, when requested	Before batching
		Fineness modulus	—	AASHTO T 27	1 per day	“	“	“
		Moisture test	—	AASHTO T 225	1 per day	“	“	“

Table 552-9
Sampling and Testing Requirements

Material or Product	Type of Acceptance (Subsection)	Characteristic	Category	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time
Concrete (552.09(b)(3))	Measured and tested for conformance (106.04)	Slump	--	AASHTO T 119	1 per load ⁽²⁾	Point of discharge ⁽¹⁾	—	Upon completing tests
		Air content	--	AASHTO T 152 or AASHTO T 196	1 per load ⁽²⁾	"	—	"
		Unit mass	--	AASHTO T 121		"	—	"
		Temperature	--	Thermometer	1 per load ⁽²⁾	"	—	"
		Yield	--	AASHTO T 121 & approved mix design	1 per load First 3 loads; Note (4)	Point of discharge ⁽¹⁾	—	Upon completing tests
Structural concrete (552.09(b)(3))	Statistical (106.05)	Compressive strength	II	AASHTO T 22 & T23	1 set per 30yd ³ but not less than 1 per day	Discharge stream at point of placing	Note 5	See Subsection 552.09(b)(4)

(1) Sample according to AASHTO T 141 except composite samples are not required.

(2) Cast at least 4 compressive strength test cylinders and carefully transport the cylinders to the job site curing facility.

(3) A single compressive strength test result is the average result from 2 cylinders cast from the same load and tested at 28 days.

(4) The yield of the concrete shall be determined by taking the total weight of the batch divided by the average unit weight of the first three (3) concrete truck loads. If the yield value is "under-yield" (less than 0.765 cubic meters or 27 cubic feet per cubic yard); the Contractor and his supplier shall make an adjustment to the concrete mix design. Once the adjustment is made, the Contractor shall check the yield again to ensure the yield is at 0.765 cubic meters or more.

(5) Deliver cylinders to designated laboratory for test.



U.S. Department of Transportation
Federal Highway Administration
Federal Lands Highway Office

552 STRUCTURAL CONCRETE MIX DESIGN SUBMITTAL

Project: _____ Date: _____

Contractor: _____ Concrete for _____ Concrete producer: _____

Class of concrete: _____ Exposure Class: _____ Producer Mix designation: _____

☐ METRIC ☐ ENGLISH

SPECIFIED CONCRETE COMPRESSIVE STRENGTH (@ 28 Days)..... (f'c) _____

Required average concrete compressive strength used for mixture proportion selection¹ (f'cr) _____

MIXTURE PROPORTIONS

Material	Specific Gravity	Mass	Absolute Volume	Tolerance % (±)	Admixtures	Dosage
Cement (Portland or Blended)	_____	_____	_____	1	Air entraining	_____
Fly Ash (Class F or C)	_____	_____	_____	1	Type A (Water Reducer - WR)	_____
Water	1.0	_____	_____	1	Type B (Set Retarder - SR)	_____
Coarse aggregate (SSD)	_____	_____	_____	2	Type C (Set Accelerator - SA)	_____
Fine aggregate (SSD)	_____	_____	_____	2	Type D (WR & SR)	_____
Fibers	_____	_____	_____	3	Type E (WR & SA)	_____
Color Pigments	_____	_____	_____	3	Type F (High Range WR)	_____
Other _____	_____	_____	_____		Type G (High Range WR & SR)	_____
Total air _____					Hydration Stabilizer (B or D)	_____
Totals		0.0	0		Other _____	_____

FRESH CONCRETE PROPERTIES

Water/cementitious materials ratio (by mass)² _____

Measured unit mass (AASHTO T 121): _____

Concrete Temperature (AASHTO T 309): _____

Theoretical unit mass: _____

Measured air content (AASHTO T 152 or T 196): _____%

Measured slump (AASHTO T 119): _____

HARDENED CONCRETE PROPERTIES

Average 28-day strength designated in specifications, _____

: _____ Average 7-day strength, _____

If the concrete is subjected to elevated temperature curing, note the maximum curing temperature: _____

Water-soluble chloride-ion (Cl⁻) in hardened concrete by weight of cement: _____ %³

Signature _____ Print Name _____ Date _____

¹ Design in accordance with FP and specified ACI standards found in the contract.

² The ratio of the mass of water, exclusive only of that absorbed by the aggregate, to the combined mass of cementitious materials (i.e. cement, fly ash, silica fume and ground granulated blast furnace slag (GGBFS)).

³ Provide for reinforced and prestressed concrete when required in accordance with contract specifications.

552 STRUCTURAL CONCRETE MIX DESIGN SUBMITTAL (Continued)CEMENT (AASHTO M 85 - TYPES I, IA, II, IIA, III, IIIA or V OR AASHTO M 240 - TYPES I(PM), IP, P, I(SM) or IS)⁴Certification attached: ☐ Yes ☐ NoFLY ASH (AASHTO M 295 - CLASS C or F)⁴Certification attached: ☐ Yes ☐ NoSILICA FUME (AASHTO M 307 - RAW, SLURRIED OR DENSIFIED)⁴Certification attached: ☐ Yes ☐ NoGROUND GRANULATED BLAST FURNACE SLAG (GGBFS) (AASHTO M 302 - GRADE 100 or 120)⁴Certification attached: ☐ Yes ☐ No**WATER (AASHTO M 157 AND AASHTO T 26)**Reclaimed water or water of questionable quality will be used? ☐ Yes ☐ NoWill water be added at the discharge site? ☐ Yes ☐ No If yes, how much? _____**CHEMICAL, COLOR PIGMENTS, FIBERS AND OTHER ADMIXTURES⁴**

Admixture Type ⁵	Point Admixture Added ⁶	Certification checked
Air entraining (AASHTO M 154)	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No
Type A - Water reducing	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No
Type B - Set Retarding (AASHTO M 194)	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No
Type C - Set Accelerating (AASHTO M 194)	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No
Type D - Water Reducing and Set Retarding (AASHTO M 194)	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No
Type E - Water Reducing and Set Accelerating (AASHTO M 194)	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No
Type F - High Range Water Reducing (AASHTO M 194)	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No
Type G - High Range Water Reducing and Set Retarding (AASHTO M 194)	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No
Type B - Hydration Stabilizing (AASHTO M 194) _____ hours	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No
Type D - Hydration Stabilizing (AASHTO M 194) _____ hours	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No
Color Pigments (ASTM C 979)	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No
Fibers (ASTM C 1116) Type: _____	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No
Other _____	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No

⁴ Certifications documentation is required prior to approval of a mix design.⁵ Admixtures must be compatible and of the same type as those used in the mixtures from which strength data were obtained. Do not use chloride accelerators. Do not use set accelerating admixtures with Class P (Prestressed Concrete).⁶ Each point where admixture is added must be noted (i.e. concrete batching facilities, project site, etc) as well as the corresponding dosage.

552 STRUCTURAL CONCRETE MIX DESIGN SUBMITTAL (Continued)**FINE AGGREGATE (FP SECTION 703.01 AND AASHTO M 6, CLASS B)**

Name and phone number of fine aggregate supplier/producer: _____

Location of material source: _____

Material type: Manufactured sand ☐ % Natural sand ☐ % Blend ☐ %

Sieve Analysis: (AASHTO T 27)			Property	Specification	Specification	Value
Sieve Size	% Passing (P) (Specification)	Cumulative % Retained (CPR)	(1) Clay lumps and friable particles	AASHTO T 112	3.0% max	
	(100)		(2) Coal and lignite	AASHTO T 113	1.0% max	
	(95-100)		(3) Minus	AASHTO T 11	3.0% max	
	(80-100)		(4) Organic Impurities	AASHTO T 21	Color not darker than standard	<input type="checkbox"/> Yes <input type="checkbox"/> No
	(50-85)		(5) Sodium sulfate soundness, 5 cycles	AASHTO T 104	10% max	
	(25-60)		(6) Sand Equivalent, Alt method 2, referee method	AASHTO T 176	75% min	
	(10-30)		(7) Bulk specific gravity	AASHTO T 84	--	
	(2-10)		(8) Bulk SSD specific gravity	AASHTO T 84	--	
Fineness modulus ($\Sigma \text{CPR}/100$)			(9) Absorption	AASHTO T 84	--	
			(10) Alkali Silica Reactivity ⁷	Select/Enter		

COARSE AGGREGATE (FP SECTION 703.02 AND AASHTO M 80, CLASS A)

Name and phone number of coarse aggregate supplier/producer: _____

Grading number (AASHTO M43) Select _____ Location of material source: _____

Material type: _____

Sieve Analysis: (AASHTO T 27)			Property	Specification	Specification	Value
Sieve Size	Percent Passing	AASHTO M 43 Specification ⁴	(1) Clay lumps and friable particles	AASHTO T 112	2.0% max	
			(2) Deleterious chert	AASHTO T 113	3.0% max	
			(3) Σ (1) + (2)	AASHTO T 112 & T 113	3.0% max	
			(4) Minus	AASHTO T 11	1.0 or 1.5% max	
			(5) Coal and lignite	AASHTO T 113	0.5% max	
			(6) LA abrasion Grading _____	AASHTO T 96	40% max	
			(7) Sodium sulfate soundness, 5 cycles	AASHTO T 104	12% max	
			(8) Adherent coating	ASTM D 5711	1.0% max	
			(9) Dry rodded unit mass	AASHTO T 19	--	
			(10) Mass of insoluble residue (bridge decks or surface courses)	ASTM D 3042	25% min	
			(11) Bulk specific gravity	AASHTO T 85	--	
			(12) Bulk SSD specific gravity	AASHTO T 85	--	
			(13) Absorption	AASHTO T 85	--	
			(14) Alkali Silica Reactivity ⁷	Select/Enter		176

⁷ See specific contract requirements for ASR test methods and limits.

552 STRUCTURAL CONCRETE MIX DESIGN (Continued)
DATA FOR COMPUTING THE STANDARD DEVIATION

Cylinder Size: ☐or ☐1 Test Record^a ☐ or 2 Test Records ☐

Consecutive Strength Test	Date Batched ^b	Compressive Strength - at 28 days			
		Cylinder 1	Cylinder 2	Cylinder 3	Strength Test X _i ^c
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

$$\bar{X} = \frac{\sum X_i}{n} = \frac{\quad}{\quad} = \quad$$

For One Test Record:

$$s_s = \sqrt{\frac{\sum (X_i - \bar{X})^2}{(n - 1)}} = \quad$$

For Two Test Records:

$$\bar{s}_s = \sqrt{\frac{(n_1 - 1)(s_{s1})^2 + (n_2 - 1)(s_{s2})^2}{(n_1 + n_2 - 2)}} = \quad$$

Where:

\bar{X} = average of n strength test results n = number of consecutive strength tests s_{s1}, s_{s2} = sample standard deviations (1 & 2)
 X_i = individual strength tests s_s = sample standard deviation, n_1, n_2 = number of tests in each test record
 \bar{s}_s = statistical average standard deviation where two test records are used to estimate the sample standard deviation.

^a The test records must be no more than 12 months old and consist of at least 30 consecutive tests or two groups of consecutive tests totaling at least 30 tests. If 15 to 29 consecutive test records are provided, they must represent a single record of consecutive tests that span a period of not less than 45 calendar days. All test records must also represent materials, quality control procedures and conditions similar to those expected and changes in materials and proportions within the test records must not have been more restricted than those for proposed work. In addition, they must represent concrete produced to meet a specified strength or strengths within of f'c.
^b A strength test shall be the average of at least two 6 by 12-inch cylinders or at least three 4 by 8-inch cylinders made from the same sample of concrete and tested at 28 days or at test age designated in the specification for f'c.

552 STRUCTURAL CONCRETE MIX DESIGN SUBMITTAL (Continued)
DETERMINATION OF REQUIRED AVERAGE COMPRESSIVE STRENGTH

REQUIRED AVERAGE COMPRESSIVE STRENGTH (f_{cr})¹⁰

☐ **Case 1 – Required Average Compressive Strength with Test Records of 30 or More Consecutive Tests:**

Table 1	
Specified Compressive Strength, f_c	Required Average Compressive Strength ⁺ f_{cr}
$f_c \leq$	Use the larger value computed from the following equations: $f_{cr} = f_c + 1.34k\sigma_s$ (1) $f_{cr} = f_c + 2.33k\sigma_s$ – (2)
$f_c >$	Use the larger value computed from the following equations: $f_{cr} = f_c + 1.34k\sigma_s$ (1) $f_{cr} = 0.90f_c + 2.33k\sigma_s$ (3)

* k is equal to 1.00 if the total number of tests are greater than or equal to 30

$f_{cr} =$ _____

$\bar{X} =$ _____

$\bar{X} \geq f_{cr}$ ☐ Yes ☐ No

☐ **Case 2 – Required Average Compressive Strength with Test Records of 15 to 29 Consecutive Tests:**

Table 2 (k-modification Factor for use in Table 1)	
Number of Tests [*]	k-modification Factor for Sample Standard Deviation ⁺
15	1.16
20	1.08
25	1.03
30 or more	1.00

*Interpolate for intermediate numbers of tests
⁺k-modified sample standard deviation used to determine required average strength f_{cr} in Table 1

$f_{cr} =$ _____

$\bar{X} =$ _____

$\bar{X} \geq f_{cr}$ ☐ Yes ☐ No

☒ **Case 3 – Required Average Compressive Strength with Test Records less than 15 Consecutive Tests:**

Table 3	
	Required Average Compressive Strength
$f_c <$	$f_{cr} = f_c +$
$\leq f_c \leq$	$f_{cr} = f_c +$
$f_c >$	$f_{cr} = 1.10f_c +$

$f_{cr} =$ _____

$\bar{X} =$ _____

$\bar{X} \geq f_{cr}$ ☐ Yes ☐ No

¹⁰ Required concrete proportions may be established by interpolation between strengths and proportions of two or more test records. When an acceptable record of field test results is not available, concrete proportions shall be established from trial mixtures or based upon experience or information, if approved by the Materials Engineer. Submit documentation of test records, trial mixtures or information.

SECTION 553. - PRESTRESSED CONCRETE

553.07 Pretensioned Members.

Add the following:

Prepare and submit shop drawings (to the NRDOT Manager) for the required pretensioned members for review and approval according to subsection 104.03 and Special Contract Requirement #9.

Show full detailed dimensions and sizes of manufactured or fabricated components of the prestressed member and details of all miscellaneous and incidental parts (such as pre-stressing strands, reinforcing steel, inserts, bearing pads, restrainer devices, bearing plates, lifting devices, etc.) on shop drawings for prestressed concrete members. Submit shop drawings at least 4 weeks prior to fabrication. Fabrication shall not begin prior to written approval of prestressed member shop drawings.

Identify on the shop drawings the specification, type, grade, class and/or other specified characteristic, as stated in the plans and specifications, of all materials and parts indicated above where applicable.

Identify on the shop drawings the individual members required by the contract by separate mark suitable for use as reference during inspection, transportation and erection.

553.08 Storing, Transporting and Erecting.

Add the following:

Use plastic, wooden, (or other material that will not damage or discolor precast beams) corner protectors for securing precast beams during transporting so that corners and edges of precast members are not damaged by tie down chains.

When erecting prestressed concrete box beams, begin placement of the first member at the centerline of roadway and proceed outwards on each side of centerline (in an alternating fashion) in order to assure all members are properly centered on the bridge centerline.

When box beams are designed to be tied together by tie rods, place box beams in direct contact with adjacent beams during erection operations. Do not rely on tie rod tensioning to produce beam contact.

553.11 Acceptance.

Add the following:

The Contractor shall submit for approval material certifications in accordance with Section 106 and Special Contract Requirements for all materials incorporated into fabricated precast prestressed members and for the bearing devices. The material certifications shall certify conformance of material to specified requirements of this contract.

rev: 01/05/10

SECTION 554 - REINFORCING STEEL

554.08 Placing and Fastening:

Delete the first sentence of the first paragraph and substitute the following:

Reinforcing bars shall be supported on metal (Class 1 or Class 2, Type B) supports for concrete placements against forms or false work. Support reinforcing bars on concrete (mortar) block supports only for concrete placements against compacted soil.

554.09 Splices:

Add the following:

Splices added for the convenience of the Contractor (i.e. splices not shown on the plans) shall be requested in writing by the Contractor and be approved in writing by the Regional DOT Manager prior to utilization. Material required for splices for the convenience of the Contractor shall not be measured for payment but shall be provided at the entire expense of the Contractor.

Delete the third and fourth paragraphs and substitute the following:

Welding of splices shall not be permitted.

SECTION 556. - BRIDGE RAILING

556.03 General.

Add the following:

The Contractor shall submit shop drawings (to the NRDOT Manager) for review and approval fabricated bridge railing or parts thereof. The shop drawings shall conform to Subsection 104.03 and Special Contract Requirement (9). Shop drawings shall convey the layout and dimensions shown in the construction plans.

The Contractor shall submit for approval material certifications in accordance with Section 106 and the Special Contract Requirement (9) for all materials incorporated into fabricated bridge railing or parts thereof. The material certifications shall certify conformance of material to specified requirements of this contract.

SECTION 562 - TEMPORARY WORKS

562.02 Material:

Add the following:

When permanent steel (stay in place) deck forms are permitted by the Contract, all material and elements of the permanent steel deck form units shall be fabricated from steel conforming to ASTM A 653M (A653) Grades 275 (40) or 340 (50). Coating shall be a minimum of Class Z500 (G165). Thickness and grade of form sheets and form supports shall be designated on the shop drawings as such, and shall be submitted for review and approval of the AO. In no case shall thickness be less than 0.85 mm (22 gauge) and 1.61 mm (16 gauge) for sheets and form supports, respectively.

562.03 Design Requirements:

Delete the last sentence in this Section and add the following:

Use permanent steel (stay in place) deck forms shall be used only when permitted by the Contract design plans. Permanent steel forms shall not be used in decks where longitudinal deck slab construction joints are located between stringers.

Permanent steel forms shall be designed to support superimposed dead loads of the forming system, reinforcement, plastic concrete, and a live load of 2.4 kPa (50 psf). Unit working stresses shall not exceed $0.725 f_y$ (72.5%) of the specified minimum yield strength of the material furnished or 248 MPa (36 ksi), whichever is less.

Maximum deflections under the weight of the plastic concrete, reinforcement, and form system, shall not exceed $1/240$ of the form span, or 13 mm (1/2 in.), whichever is less. In no case shall the loading used to compute the deflection be less than 5.8 kPa (120 psf). The form span for design and deflection shall be the clear distance between the flanges of the supporting beams or girders minus 50 mm (2 in.), measured parallel to the form flutes.

The increase in dead load due to the use of permanent steel deck forms shall be limited to 0.7 kPa (15 lbs/ft²). If this limit is exceeded, the Contractor shall show that the effects of the additional load on the bridge will not be detrimental, or shall strengthen the structure as will be necessary to accommodate the extra load, at the Contractors expense.

Physical design properties of the forming system shall be computed in accordance with requirements of the American Iron and Steel Institute Specification for the Design of Cold-Formed Steel Structural Members, latest published edition. The Contractor shall design the permanent steel deck forms so that the deck slab laterally supports the beam or girder top flanges in compression, except where shear connectors are provided.

562.06 Construction:

Add the following:

When permanent steel (stay in place) deck forms are permitted by the Contract, install forms according to fabrication and erection drawings that have been approved for the specific project by the AO.

Form sheets shall not be permitted to rest directly on the top of the stringer, diaphragms or floor beam flanges. Sheets shall be securely fastened to form supports and shall have a minimum bearing width parallel to the beam or girder of 25 mm (1 in.) at each end. Form supports shall be placed in direct contact with the flange of beams or girders. All attachments shall be made by welds, bolts, clips or other approved method. Welding directly to steel girder or beam flanges shall not be permitted. Other methods of attachment for steel girders or beams shall be used. Welding to steel clips embedded into precast concrete girders or beams is permitted.

Clean, wire brush, and paint with 2 coats of zinc dust zinc-oxide primer (FSS TT-P-641 Type II, no color added) any permanently exposed form metal where the galvanized coating has been damaged. Minor heat discoloration, as determined by the AOTR, in areas of welds need not be touched up.

All bottom reinforcement shall have a minimum cover of 25 mm (1 in.). Except in cases where reinforcing bars are not parallel to form corrugations, bars in the bottom layer of the main reinforcement shall be approximately centered over the valleys of the forms when necessary to achieve the required concrete cover. The distance from the top of the slab to the bottom layer of main slab reinforcement shall not be less than the originally designed dimension shown in the contract.

Locate transverse construction joints in slabs, when approved or allowed, in line with the bottom of a flute. Field drill six ¼" (6) millimeter diameter weeps holes at not less than 12 inches (300 millimeters) on center along the line of the transverse construction joint.

562.07 Maintenance and Inspection:

Add the following:

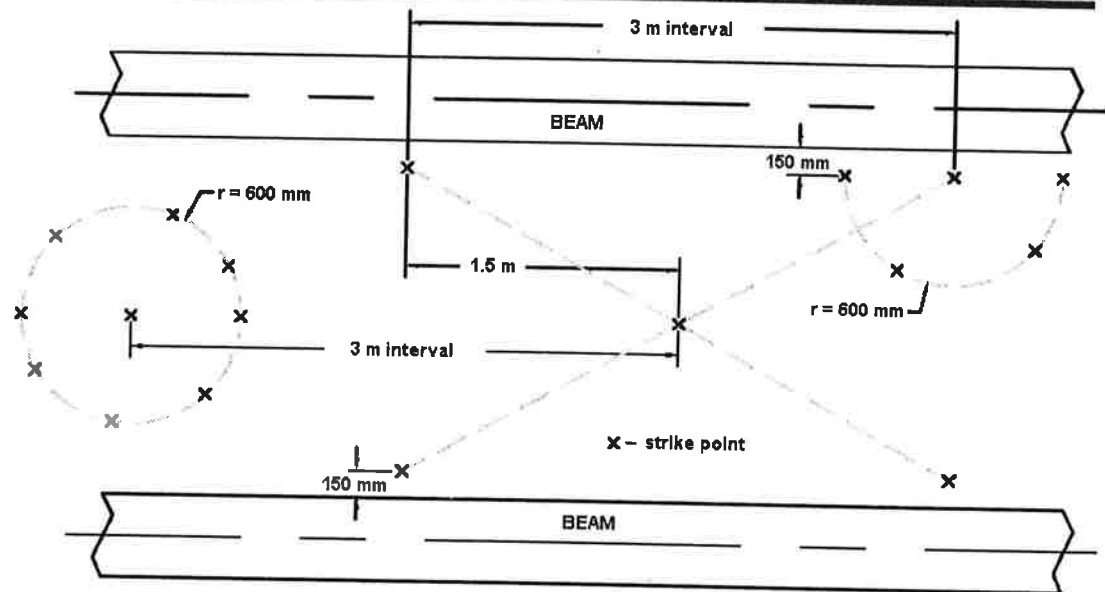
When permanent steel (stay in place) deck forms are permitted by the Contract, proper vibration of the concrete shall be provided to avoid honeycombs and voids, especially

at construction joints, expansion joints, and valleys and ends of form sheets. If during the placement of the deck concrete there is evidence provided by the AOTR to question the consolidation of the concrete, the procedure outlined below shall apply. The Contractor shall furnish suitable facilities to provide safe access to the work for the purpose of inspection. A minimum of two days after the deck concrete has been placed one or more from the following inspection procedures may be followed:

- (a) The forms shall be tested for soundness of the concrete and bonding of the forms to the concrete by striking the forms a sharp blow with a geologist hammer as detailed below and as instructed by the AOTR. The geologist hammer shall be furnished by the Contractor.
- (b) As a minimum, the forms shall be struck at 3 m (10 ft) intervals parallel to and 150 mm (6 in.) from the edge of the beam or girder flanges and at 3 m (10 ft) intervals along the centerline of each bay between the beams or girders in an X pattern with those along the beams or girders. Forms shall also be struck at random points on a semicircle or circle of about a 600 mm (2 ft) radius from the above points. See figure below for minimum strike pattern. Forms shall be struck in other places as directed by the AOTR to define suspicious or defective areas.



10ft



- (c) The cost of the inspection including providing access shall be measured and paid under bid Item 15301-0020, Contractor Quality Control. If areas of voids, honey combs, water pockets, or other defects are discovered, they shall be replaced or repaired to the satisfaction of the AOTR at the expense of the Contractor.

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SECTION 564. - BEARING DEVICES

564.11 Measurement.

This paragraph is superseded with the following:

Any bearing devices, including elastomeric bearing pads, specified in the design plans shall not be measured for payment but shall be considered incidental to the Steel Girder members and/or Prestressed Concrete Structural Members furnished under the appropriate bid items.

SECTION 601 - MINOR CONCRETE STRUCTURES

601.03 Concrete Composition.

Subparagraph (g) is superseded with the following:

(g) Target values for concrete air content. Include the proposed range of air content for concrete to be incorporated into the work. Describe the methods by which air content will be monitored and controlled. Provide acceptable documentation that the slump and compressive strength of the concrete are within specified limits throughout the full range of proposed air content.

Add:

(j) Unit weight of concrete.

The compressive strength in table 601-1 is superseded with the following:

Minimum 28-day compressive strength, 3000psi (20.7 MPa)

601.07 Acceptance.

The third and last paragraphs are superseded with the following:

Portland cement concrete shall be evaluated for acceptance based on the concrete mixture's slump, air content, unit mass, and temperature per subsection 106.04.

Concrete compressive strength shall be evaluated under Subsection 106.05 for 30 cubic yards (25 cubic meters) or more concrete placed and subsection 106.04 for less than 25 cubic meters of concrete placed. The lower specification limit is the minimum required compressive strength at 28 days specified in the contract.

Construction (including batching, placing, finishing, and curing concrete) will be evaluated under Subsections 106.02 and 106.04.

601.08 Measurement.

Add:

Reinforcing steel will not be measured for payment but shall be considered incidental to the work described in this section.

Table 601-2 is superseded with the following:

Table 601-2
Sampling and Testing Requirements

Material or Product	Property or Characteristic	Category	Test Methods or Specifications	Frequency	Sampling Point
Concrete	Slump	--	AASHTO T 119	1 per load ⁽²⁾	Discharge stream at point of placement ⁽¹⁾
	Air content	--	AASHTO T 152 or AASHTO T 196	1 per load ⁽²⁾	Discharge stream at point of placement ⁽¹⁾
	Unit weight	--	AASHTO T 121	1 per load ⁽²⁾	Discharge stream at point of placement ⁽¹⁾
	Temperature	--	Thermometer	First load	Discharge stream at point of placement ⁽¹⁾
	Making test specimens Compressive strength ⁽⁴⁾	II	AASHTO T 23 AASHTO T 22	1 set per 30yd ³ 25 m ³ but not less than 1 set each day ⁽³⁾	Discharge stream at point of placement ⁽¹⁾

(1) Sample according to AASHTO T 141 except composite samples is not required.

(2) See Subsection 552.09(b) (3).

(3) Cast at least 4 compressive strength test cylinders and carefully transport the cylinders to the job site curing facility.

(4) A single compressive strength test result is the average result from 2 cylinders cast from the same load and tested at 28 days.

SECTION 602 - CULVERTS AND DRAINS

602.01**Description:**

This section is superseded with the following:

This work consists of constructing culverts, drains, and cast-in-placed and precast Concrete Box Culverts.

602.02**Material:**

Add the following:

Concrete for cast-in-placed and precast box culverts552
Corrugated Steel (metal) Pipe culverts.....707.02

602.03**Construction Requirements:**

Add the following:

Aluminum coated pipe shall meet the requirements of AASHTO M 274 Type II. All Aluminum structural plate pipe shall meet the requirements of AASHTO M 219M.

Precast Concrete Box Culvert sections shall be fabricated in a plant certified by the National Precast Concrete Association (NCPA) or equivalent certification. Precast concrete box culvert sections shall be fabricated with mechanical connections at the top and bottom of the vertical sides.

Preparation for Placement of Precast Concrete Box Culvert Sections. In addition to the requirements of Section 209 of the FP-03, perform the following:

- The bedding under the box culvert must be able to support the full load of the installed box culvert, its contents, and the loading above the box culvert.
- Control surface and subsurface water and moisture so dry conditions are present during excavation and site preparation. Dewatering shall be performed to produce dry conditions during foundation construction and section joining operations.
- Compaction of foundation and bedding shall be provided in accordance with Section 209.11 of the FP-03.
- The minimum thickness of bedding material conforming to Section 704.02 of the FP-03 shall be 6 inches (150 mm).
- Final grading of bedding material prior to placement of precast concrete box culvert sections shall be performed by screed board or other approved methods.

Lift holes and mechanical connections holes cast into sections of precast concrete box culverts shall be filled with an approved non-shrink grout and allowed to cure prior to backfilling.

A representative of the precast concrete box culvert manufacturer shall be present during the all phases of installation of the precast concrete box culvert sections.

602.04

Add the following:

(c) Joints for Precast Concrete Box Culvert Sections; Joints for precast sections shall be tongue and groove type. Joint surfaces shall be protected from mud, silt gravel or other foreign material prior to and during the joining procedures. Joints shall be sealed with preformed flexible joint seals conforming to ASTM C 990. Use the joint seal manufacturer's recommended primer for applicable conditions during joining of the precast sections. Remove and replace joint seals that become disturbed, displaced or contaminated. Sides and top surfaces of precast concrete box culvert section joints shall be further sealed with an exterior joint wrap conforming to ASTM C 990.

Precast concrete box culvert sections shall be joined by a method recommended by the manufacturer that does not cause any damage to the sections. Do not drive or ram sections by hand or machinery.

602.08

Acceptance:

The first paragraph is superseded with the following:

Material for culverts, drains, and cast-in-place concrete box culverts furnished will be evaluated under Subsections 106.02 and 106.03.

The second paragraph is superseded with the following:

Installation for culverts, drains, and cast-in-placed Concrete Box Culverts will be evaluated under Subsections 106.02 and 106.04.

602.09

Measurement

Add the following:

Unless otherwise shown on the design plans, the wing walls, aprons, and baffles for the cast-in-placed Concrete Box Culverts will not be measured for payment but shall be considered a subsidiary obligation of the Contractor covered under the work for this section.

602.10

Payment

Add the following:

<u>Pay Item</u>	<u>Description</u>	<u>Pay Unit</u>
60221-3200	Span, Rise cast-in-place concrete box single barrel	feet
60221-3250	3.66m Span, 2.44 Rise pre-cast concrete box single barrel With wingwalls & footings	feet
60221-3260	3.66m Span, 3.05m Rise precast concrete box single barrel With wingwalls & footings	feet
60223-1000	2.44m Span, 1.82m Rise precast concrete box double barrel With wingwalls & footings	feet

rev:09/04/14

**SECTION 607 - CLEANING, RECONDITIONING AND
REPAIRING EXISTING DRAINAGE STRUCTURES**

607.06 Reconditioning Drainage Structures:

Add the following:

When called for in the design plans, the Contractor shall remove sections of existing multi-plate culvert, in a neat manner such that any new extensions will fit with clean straight lines. Dispose of all removed sections to an approved dumpsite off the project limits.

607.07 Acceptance:

Add the following:

The Contractor shall not be paid for removed, cleaned and stockpiled culverts that were damaged, during removal, in a negligent manner. It is the Contractor's responsibility to show that due care was taken during the removal, cleaning, and stockpiling of existing culverts which shall include an inspection, with the AOTR, prior to removal of culverts so that both the AOTR and Contractor can agree in writing on what actual culverts can be removed without damage. Those culverts that cannot be removed without damage will be extracted in the most cost effective means possible, as determined by the Contractor, and a price reduction for item 60701 shall be submitted and negotiated through the AO.

SECTION 617. - GUARDRAIL

617.05 Terminal Sections.

Add the following:

Use ET-Plus or equivalent breakaway terminals only for guardrail installations.

617.10 Measurement.

The second paragraph is superseded with the following:

Guardrail for roadway shoulders (including asphaltic curbing where applicable) shall be measured by the linear meter beginning at the centerline of the first terminal connector post to the last terminal connector post of the guard railing at the opposite end complete in-place and accepted including the breakaway terminal section assembly, ET-2000 Plus or equivalent, SGR04b, Type PDE02.

Add the following:

Approach guardrail for bridges (including asphaltic curbing where applicable) shall be measured by the linear meter, from the centerline of the first post of the breakaway terminal section to the beginning of the bridge railing complete in-place and accepted, including the breakaway terminal section assembly, Rubrail and Rubrail connection hardware and all W-Beam connection hardware to the concrete barrier, unless otherwise noted on the contract plans or bid schedule.

SECTION 619 - FENCES, GATES, AND CATTLE GUARDS

619.03 Fences and Gates:

Add the following:

The Contractor shall remove and replace existing fence at locations specified on the design plans and/or as designated by the AOTR and replace with new fence material. Salvage fence material, as determined by the AOTR, shall be cleaned (including the removal of any concrete from posts) and stockpile/deliver to a storage site as may be called for in the design plans unless otherwise directed by the AOTR.

When the design plans call for cutting of an existing fence, the Contractor shall install end posts, as per the fencing details, at ends of existing fence, which are to remain unless there are existing end posts, in-place, that can retain the wire tension as directed by the AOTR. These end posts are to be installed and wire securely attached, prior to cutting the existing fence, regardless of whether or not the fence will be reinstalled or not. This will prevent lose in tension of the remaining fence.

619.04 Grounding Fences.

Add the following:

Grounding of fence line at all overhead power lines crossings shall be done only after the Contractor has notified the utility owner at least 10 days in advance of work.

Paragraph two is superseded with the following:

Where electric lines run parallel or nearly parallel and within 6 meters of the fence line, ground the fence at each end or gate post or at intervals not to exceed 250 meters.

619.05 Remove and Reset Fence.

Add the following:

The location and length of fencing to be removed and/or reset shall be as called for in the design plans. Otherwise the AOTR will determine the location and lengths during construction where applicable. The Contractor shall supply new materials to replace removed and un-reusable existing fencing and/or posts as required to reattach new fence line to its new or existing position in accordance with section 109.02(m).

619.07 Cattle Guards.

(d) Painting

Add the following to this subparagraph:

The top coat of paint for all cattle guards shall be Highway Safety Yellow or equivalent, as approved by the AOTR and NRDOT Division Manager.

619.09

Acceptance.

Add the following:

Temporary fence construction for livestock control shall be considered incidental to completion of the project and no separate payment shall be made.

619.10

Measurement.

Add the following:

When the bid schedule does not provide a bid item for temporary fence and/or the work described in this section, then the work shall be considered incidental to completion of the project and no measurement shall be made.

Installation of ground wires under 619.04 shall be included in the unit price bid for the fencing items shown in the bid schedule.

SECTION 625 -TURF ESTABLISHMENT

625.02 Material.

Add the following:

The **WEED FREE** seed shall be delivered to the project site in standard, sealed, undamaged containers. Each container shall be labeled in accordance with the U.S. Department of Agriculture rules and regulations under the Federal Seed Act. Labels shall indicate the variety or strain of seed, the percentage of germination, purity and weed content, and the date of analysis which shall not be more than nine (9) months prior to the delivery date.

Seed shall consist of the type shown in section 625.07 below. Application rates of seed as specified are for Pure Live Seed (PLS). PLS is determined by multiplying the sum of the germination and hard or dormant seed by the purity.

625.03 Turf Establishment Season.

Add the following:

Seeding and mulching shall be performed immediately following final slope grading to the fullest extent possible. If seeding cannot be performed at final grading, then refer to section 157.04, subparagraph (H.2) for further requirements. In no case shall permanent non-dormant seeding and mulching be performed during the months of **November 15 through March 15**. Dormant seeding may take place during **November 1st to December 15th**.

625.04 Preparing Seedbed.

The second sentence of the first paragraph is superseded with the following:

Remove all weeds, sticks, high stone concentration areas with stones of 3 inches (75mm) in size or larger, and other debris detrimental to application, growth, or maintenance of the turf. If there is a substantial amount of rock/stone larger than 3 inches (75mm) in size that requires removal prior to seeding, then this additional work shall be compensable in accordance with section 109.02(m).

Add the following:

Seedbed preparation shall be accomplished with a disc harrow, chiseling tool or with other equipment, which will provide an even mixture of fertilizer into the soil.

Tillage will not be required on slopes of 2:1 or steeper. However, such slopes shall be fertilized, seeded and mulched as required. Tillage operation shall be performed so as to produce a soil surface that is rough, firm and free of clods.

Tillage shall be performed across the slope when practical. No work shall be done when the moisture content of the soil is unfavorable.

In areas, which, in the opinion of the AOTR, are too rocky to till without drastically disturbing the completed roadway sections, the AOTR will approve a reduction of tillage accordingly.

625.05 Watering.

This section is superseded with the following:

Watering is not required for the seeding on this project.

625.06 Fertilizing.

Add the following:

All areas to be seeded shall have ammonium phosphate, at a rate of 56 kg per Ha, uniformly applied to the surfaces to be seeded and tilled into a minimum of 76mm of the surface.

625.07 Seeding.

Add the following:

Seeding shall be accomplished by the Dry Method.

After the tillage is completed and accepted by the AOTR, seed shall be planted by drill, except that on slopes too steep or rocky, seed may be broadcast provided that it is covered by dragging, hand raking or other approved methods. The type of seed and pure live seed rate is as follows:

Species	Cultivar	Kg PLS per Hectares
Western Wheatgrass	Arriba	3.37 (3.0lbs/Ac)
Crested Wheatgrass	Hycrest	3.37 (3.0lbs/Ac)
Pubescent Wheatgrass	Luna	3.37 (3.0lbs/Ac)
Indian Ricegrass	Paloma	2.25 (2.0lbs/Ac)
Blanket flower	Red, Yellow	0.56 (0.5lbs/Ac)
Red Mexican Hat	Red w/Yellow Tips	0.56 (0.5lbs/Ac)
Total:		13.48 (12.03lbs/Ac)

Seed shall be planted approximately 6mm deep, with a maximum depth of ½" (13mm). The distance between the drilled furrows shall not be more than 8" (203mm). If the furrow openers on the drill exceed 8" (203 mm) the area shall be drilled twice. Seeding shall be done with grass seeding equipment with double disc openers, depth bands, packer wheels or drag chains, rate control attachments, seed boxes with agitators and separate boxes for small seed.

Seed of different sizes shall be sowed from at least two separate boxes adjusted or set to provide the seeding rate specified above.

625.08 Mulching:

The first sentence is superseded with the following:

Apply **WEED FREE** straw mulch at a rate of 4014lbs/Ac (4500kg/Ha) after seeding by the following methods:

625.11 Method of Measurement.

The first sentence is superseded with the following:

Measure the seeding by the hectare, on the ground surface, or by the slurry. Fertilizer and mulching shall not be measured for payment but shall be considered a subsidiary obligation of the Contractor covered under the work for this section.

<u>Bid Item</u>	<u>Description</u>	<u>Units</u>
62510-1000	Seeding, dry method	Acre

SECTION 633. - PERMANENT TRAFFIC CONTROL

633.01 Description.

The second paragraph is superseded with the following:

All permanent traffic control signs shall be fabricated out of aluminum only.

633.03 General.

Add the following:

Any existing signs which require removal (prior to the installation of the permanent signs) due to construction activity shall be temporarily reset as directed by the AOTR. The Contractor shall notify the AOTR three (3) working days prior to sign removal. This work shall be incidental to the construction bid item to which the sign removal was required.

633. 06 Delineators and Object Markers.

Add the following:

Delineator posts and all Type II object markers shall be flexible type fabricated out of reinforced fiber glass, and able to withstand repeated vehicular impact and provide resistance to ultraviolet light. The posts shall be as shown on the design plans. Type II object markers and signs shall be fabricated in accordance with the manufacturers specifications.

Type III object markers shall be mounted on 2.98kg/m steel posts with the marker fabricated out of aluminum.

633.09 Measurement.

Add the following:

The Type 1a & 1b delineators, Type II, and Type III object markers and posts shall be measured as a sign system, respectively.

The milepost markers shall be measured as a sign system.

Section 634.- PERMANENT PAVEMENT MARKINGS

634.01 Description.

Add the following:

The Contractor shall provide temporary traffic control in accordance with Section 635.-Temporary Traffic Control and the approved traffic control plan.

634.03 General.

Add the following:

Permanent pavement markings **shall begin no earlier than 5 days and no later than (2) weeks after completion** of the asphalt pavement, fog seal, and/or chipseal work unless otherwise agreed to by the AOTR in writing. If the Contractor fails to comply with the above, the AO will withhold all pending and future progress payments under this contract until the Contractor complies with this requirement.

Do not place pavement markings when the wind speed is greater than **5mph** and/or when the pavement is wet or dirty.

The third paragraph is superseded with the following:

At least **7 days** before applying pavement markings, furnish a written copy of the markings manufacturer's recommendations for use. A field demonstration shall be conducted **before** the Contractor is authorized to place permanent pavement markings to verify the adequacy of the manufacturer's recommendations, equipment compliance, application rates of the traffic markings and beads. The field demonstration shall be 100 feet (30 meter) for the white traffic markings with glass beads and 200 feet (60 meter) for the yellow markings with glass beads meeting the contract requirements under this section. Cease demonstration after placement of pavement markings until the demonstration is evaluated and accepted.

The field demonstration is accepted if the manufacturer's recommendations are verified and the application rates, mil thickness of the traffic markings, and glass beads are within the contract specification limits.

Repeat the field demonstration until an acceptable demonstration is produced. See Subsection 106.01 for the disposition of material in unacceptable demonstration(s). Accepted field demonstrations shall remain in place and will be accepted and measured as a part of the completed work. When a field demonstration is accepted, full production may begin.

If the Contractor changes manufacturer or if the marking operation is producing unsatisfactory results, the field demonstration procedures shall be repeated as necessary until the desired results are achieved.

The Contractor shall ensure that all paint and other markings sampling and handling procedures are performed in accordance with the following where applicable:

1. Drums of markings shall have tamper proof seals as required under Subparagraph **634.03(b) DrumSeals**;
2. The markings and bead tanks on the striping machine shall be empty, unless the Contractor provides a *Letter of Transfer for Markings* from a previous BIA /State project as required under Subparagraph **634.03(f) Letter of Transfer for Markings**;
3. Settled pigment shall be re-disbursed before loading markings as required under Subparagraph **634.03(a) Re-disbursement of Settled Markings**;
4. The Contractor shall strap the tanks as described in Subparagraph **634.03(e) Volume Control Requirements**.

Add the following subparagraphs:

(a) Re-disbursement of Settled Markings. When markings have settled excessively, the Contractor shall re-disburse the settled pigments at the bottom of the markings drums with a mixing device before pumping or loading into the striping unit so that excess pigments are not left on the bottom of the markings drums. Thinner shall not be allowed to be pumped into the markings tanks.

(b) Drum Seals. Drums or blocks of markings used on Government projects shall be sealed at the point of manufacture and consecutively numbered with tamper proof seals. These seals shall only be removed with the AOTR present at the time of actual use. Drums or blocks with broken seals shall not be accepted.

(c) Equipment. The traffic markings and beads shall be placed on the pavement by a spray type, self propelled pavement marking machine, except that temporary striping during construction may be placed with other equipment designed for application of markings, or beads.

The machine shall be capable of applying clear-cut 4 inch (102mm) lines. The machine shall be equipped with an air-operated glass bead drop-in dispenser controlled by the spray gun mechanism. The machine shall be equipped with a mechanical device capable of placing a broken reflectorized centerline stripe having a 10foot (3.0 meter) length and 30 foot (9 meter) gap between stripes.

The dispenser shall be capable of placing the glass spheres immediately into the markings line as it is applied to the pavement in such a manner as to provide satisfactory marking and delineation.

(d) Measurement Devices. A method of measuring the actual volume of markings and beads in the tanks shall be provided on the tanks either by strap measurement or other externally approved gaging methods.

The Contractor shall provide current certification of calibration of all marking equipment at least 7 calendar days before the field demonstration for review and approval.

(e) Volume Control Requirements. The volume of markings and glass beads in place shall be measured by the quantity per 3300 feet (one kilometer) method or by the use of markings and beads gauges.

The Contractor shall strap the tanks before beginning striping operations and again after 3300 feet (**1 kilometer**) has been striped or if the striping machine is equipped with air atomized spray units (not airless) and markings and bead gauges, the volume may be determined by said gauges.

The volume shall be measured again at the beginning and end of each day. This information shall be given to the AOTR.

(f) Letter of Transfer for Markings. The markings and bead tanks of the striper must be **empty** before filling for the beginning of the striping operations for the project, unless a *Letter of Transfer for Markings* has been obtained.

Paint markings or glass beads left over in the striping truck tank can be transferred from one BIA project by providing a *Letter of Transfer for Markings* which shall include the following information:

1. The quantity left in the tanks;
2. The BIA project it is coming from, including the termini and project name;
3. The project it is going to;
4. The date;
5. The batch number the markings came from;
6. The seal numbers of the markings in the tank;
7. The previous AOTR's signature.

(g) Tolerance Requirements for Placing Markings & Beads. The finished lines shall be smooth, aesthetically acceptable and free from undue waviness. The finished marking material shall be rectangular in shape with well defined edges.

(h) Repair & Replacement of Unacceptable or Damaged Striping. If the markings are not adhering to the existing pavement, the Contractor shall **REMOVE** the striping (under an approved method) and shall **RESTRIPE** the existing pavement. All damage to the pavement markings because of the Contractor's negligence or failure to maintain traffic control shall be **repaired at no additional cost to the Government.**

634.08 Thermoplastic Markings (Type H and I).

Add the following:

When thermoplastic paint is applied to concrete surfaces, the concrete surface shall be primed and sealed in accordance with the paint manufactures recommendations prior to application of the paint. A copy of the primer and sealer material specifications shall be provided to the AOTR for review and approval prior to application.

634.13 Measurement.

This subsection is superseded with the following:

Measure the Section 634 items listed in the bid schedule according to Subsection 109.02 and the following.

Measure pavement markings by the meter. The number of meters of lines applied will be measured along the centerline of each 4 inch (102mm) wide line applied regardless of color. Broken or dotted pavement lines will be measured from end to end of the line including gaps. Solid pavement lines will be measured from end to end of each continuous line. For line widths other than 4 inch (102mm) the

measured length of line is adjusted in the ratio of the required width to 4 inch (102mm).

rev:09/04/14

SECTION 635 - TEMPORARY TRAFFIC CONTROL

635.03**General.**

Add the following:

The construction plans will show Temporary Traffic Control Details of general requirements. After award of contract, the Contractor shall be required to develop his Traffic Control Plan (TCP) in accordance with the details shown in the design plans and the *Manual on Uniform Traffic Control Devices for Streets and Highways*, latest edition, and amendments.

The Contractor shall submit (at least 21 calendar days prior to the **Notice to Proceed**) his TCP in full professionally developed details using the Government's traffic control details as a guide, to the AOTR and NRDOT Division Manager for review. Neat hand drawn sketches will be accepted for emergency addendums to the original TCP ONLY with written justification. The Contractor assumes full responsibility and expense for errors and/or omissions in the TCP regardless of whether the plan was reviewed by the Government before the errors and/or omissions were discovered or after. The Contractor is also responsible for insuring a TCP that meets the contract requirements is in hand before construction begins. Failure to insure the TCP meets the contract requirements may result in a "Stop Work Order" to be filed with the Contractor.

The NRDOT Division Manager will review and return the TCP within 14 calendar days, after receipt of the new TCP from the Contractor, stating either "Accepted", "Accepted as Noted", or "Resubmit".

Once the NRDOT Division Manager has notified the Contractor that the TCP has been accepted for use on the project, it will be the responsibility of the Contractor to implement and maintain the TCP prior to construction so as to accommodate traffic safely. The TCP shall be in force at all times during construction and at all locations where construction equipment is being used within the roadway prism. This shall include the area 457 meters (1500 feet) preceding the beginning of project and 457 meters (1500 feet) beyond the end of project.

Should the Contractor elect to perform other minor shoulder or corrective work outside the zone of the accepted TCP, or at various other work zones, it will be the Contractor's responsibility to provide additional traffic control (warning signs, barrels, barricades, flaggers, etc.) to direct traffic in a safe manner in accordance with the MUTCD manual as directed by the AOTR. Any additional traffic control required shall be considered incidental to completion of project and no additional payment shall be made.

The latest edition of the MUTCD manual is incorporated by reference into the Contractor's TCP. In cases of inconsistencies between the Contractor's TCP and what the MUTCD manual requires, the provisions of the MUTCD shall govern.

The Bureau of Indian Affairs (BIA) Safety Manager and/or the Awarding Official's Representative will make periodic inspections of the project and report to the Contracting Officer regarding the Contractor's compliance with his TCP.

Failure by the Contractor to comply with his TCP, or perform work which could be dangerous to the safety of the traveling public (without proper traffic control devices) shall be just cause for the Awarding Officer to issue a "Stop Work Order" per section 108.05 for immediate corrective action to be taken. See section 107 for additional requirements when working around railroad tracks.

When the Contractor has taken satisfactory corrective action, a written order to resume work shall be issued as required. The Contractor shall not be entitled to any extension of contract time; any claims for damages or to any excess cost by reason of the stop order and/or suspension orders. Failure of the Contracting officer to order suspension of any or all work in progress shall not relieve the Contractor of his responsibilities or obligations defined herein.

Flagging, signing, and any other traffic control required on haul routes from material pits and all detour roads shall not be measured for payment, but shall be considered a subsidiary obligation of the Contractor where the cost shall be included in the appropriate bid items.

Add the following subparagraphs:

(j) Any existing side routes (i.e. roads outside the project r/w) used as detours for road and drainage structure construction shall be properly signed and maintained (in a safe manner) at least twice per week in accordance with sections 212, 107 and 156. These existing side routes proposed for use as detour roads shall not be modified without the Contractor first obtaining proper permits to do so. The use and maintenance of these side routes shall be included in the unit price bid for item 63501-0000.

(k) Any proposed detour roads (within the project r/w) as shown on the contractor's TCP shall be constructed, maintained, and signed in accordance with sections 212, 107.01, and 156. It shall be the responsibility of the contractor to adequately design and install any and all drainage structures for such detour roads that cross existing washes including obtaining all necessary permits. All proposed temporary drainage structures shall be shown on the contractor's TCP and ECP. The construction, maintenance, and subsequent removal and restoration work of proposed detour roads shall be included in the unit price bid for item 63501-0000.

635.07.1 Construction Signs:

Add the following:

All sign sheeting shall have a reflectivity in accordance with section 718.01 as modified in these supplemental specifications.

635.09 Flaggers.

Add the following:

Copies of the Flaggers certifications must be current (in accordance with the certification program criteria) and provided to the AOTR for review and acceptance at the time the NTP is given. Flaggers that have current certification from other federally approved flagger certification programs (i.e. states, counties, and tribal safety programs) may be allowed provided the Contractor submits documentation that the program is recognized and approved by either the FHWA, TRB, or ATSSA. Flaggers with training certificates are not allowed.

635.25 Acceptance.

Add the following:

Any damaged traffic control devices used on the project that is considered ineffective for its intended use (by the AOTR) shall be replaced at the Contractor's expense. Should the Contractor neglect or refuse to replace any traffic control device that the AOTR considers damaged to the extent that it no longer serves as an effective traffic control device (through a "noncompliance work order"), then the AO shall issue a "stop work order" in accordance with section 108.05 until the Contractor has complied with the AO/AOTR directive.

635.26 Measurement.

The sixth paragraph is superseded with the following:

Measure flaggers by the Man-Hours for each hour the flagger(s) are actually performing flagging work within the project limits. Round portions of an hour up to the half hour for pay estimates. Flagger hours in excess of 40 hours in a week will not be measured for payment unless approved in writing by the AOTR& AO in advance. Hours of flaggers attending meetings not related to traffic safety, haul roads, or attending to placement or removal of traffic control devices shall not be measured for payment.

SECTION 638- SELECTIVE/NON-SELECTIVE HERBICIDE APPLICATION**638.01 Description.**

This work consists of furnishing all labor, equipment, herbicide, materials, and all incidentals necessary for placing approved herbicide on the subgrade to kill noxious weeds prior to any earthwork activities and after the subgrade is completed in compliance with these specifications and the requirements and locations as maybe shown in the construction plans per section 109.02m.

The Contractor shall store, handle, mix and apply all herbicide(s) as specifically stipulated in the manufacture's label and in compliance with Federal, State and local laws and regulations.

638.02 Materials.

The herbicide shall conform to the following:

Non-selective pre-emergents herbicide shall be Glyphosate (Roundup®) containing the active ingredient metsulfuron (Escort® or Ally®) or an approved equal and may include 2,4-D applied at 1.1-2.2 kg per hectare to young plants in the spring prior to the bloom stage. The herbicide shall be approved for invasive weeds including Camelthorn (*Alhagipseudalhagi*) and Halogeton (*Halogeton glomeratus*).

638.03 Construction Requirements:**(a) Mixing, Loading, and storage.**

The Contractor shall keep all livestock, pets, and persons away from the herbicide including the mixing thereof and loading. The Contractor shall ensure that the mixing area is well ventilated. In no case shall any herbicides be mixed or loaded at night and all instructions and warning labels shall be followed during the mixing and loading to protect against spills, splash, and wind-drift. Protective equipment and clothing shall be worn during the mixing, loading and applying of mix.

The herbicide manufacture, through the Contractor, must provide appropriate specimen and manufacturer's labels, Material Safety Data Sheets, technical bulletins, toxicity ratings, and EPA registration numbers to the AO and AOTR, a minimum of 14 days before using the chemical(s).

All herbicides shall be stored in strict accordance with applicable manufacturer's labels and requirements as well as other federal, state and tribal rules and regulations.

(b) Certification of Applicators.

The Contractor shall ensure that all herbicide(s) are applied by an appropriately licensed and certified applicator. The Applicator shall be licensed as a Commercial Applicator, in the State in which the herbicide will be applied, and certified in the application of the specified herbicide. Verification of licensing, training and testing in the safe and effective handling and use of herbicide(s) shall be submitted to the AO and the AOTR, a minimum of 14 days before using the chemical(s). Verification shall, at a minimum, include a copy the Applicator's license and current safety/testing certifications.

Application of the herbicide shall cover the width of the finished subgrade, fill, and cut slopes to the right-of-way limits between stations TO BE DETERMINED during construction left and right just prior to Halogeton blooming usually in the spring. The herbicide applicator shall work with the AOTR in determining the exact time to initiate the application of the herbicide. The AOTR will specify the exact beginning and ending locations, at the time of application. Repeat treatments will be necessary to control any flushes emerging later in the season. The subgrade shall meet the requirements of FP-2003, Section 204 at the time of the herbicide application.

Application shall include the existing and new subgrades of all shoulder ditch areas, all fill, and all cut slopes within the road right of way, including turnouts. Areas outside the road right of way shall not be included. The application of the herbicide(s) shall be within any maximum /minimum manufacturer's recommended time frames as related to seasonal times. The opening of sprayed areas to traffic/public shall also follow the manufacturer's recommendations.

The AO, upon recommendation from the AOTR, reserves the right to reject any herbicide related equipment on the basis of suitability; safety to the environment, the traveling public, the Contractor's employees, and employees of the government. Approved equipment shall be equipment meeting the applicable requirements of the U.S. Occupational Safety and Health Administration, the U.S. Department of Transportation, and applicable State Departments/Agencies.

(c) Safety Guidelines.

The Contractor shall be familiar with all the pertinent information printed on the labels with special attention given to the precautionary statements regarding potential hazards to humans, animals, and the environment. Physical and chemical hazards that the product may have including fire, explosion, or chemical reactions to other products shall be properly addressed before use. Strict compliance with the labeling requirements shall be maintained by the Contractor.

No herbicide shall be applied upon frozen or unstable subgrade or base coarse surface. The Contractor shall avoid spraying the product near ditches, channels, or irrigation channels where damage to adjacent property or livestock can occur. No spraying shall be done when the wind speed exceeds 20km/hr unless otherwise approved by the manufacturer.

The application width shall be as stated in the design plans and as directed by the AOTR. The application rate shall be in accordance with the manufacturer's recommendations.

All spray trucks and equipment shall be properly licensed and shall carry the appropriate plaques of registration as required by state and local laws.

(d) Records and Documentation.

The QCM shall be required to keep a daily record of the herbicide application showing the:

- A. Date of application;
- B. Types and application rates of herbicides applied;
- C. Time of day of application;
- D. Air temperature;
- E. Wind velocity;
- F. Area covered;
- G. Location(s) of areas treated; and
- H. Equipment calibration information.

The AOTR shall verify the QCM's daily herbicide record.

Copies of all daily herbicide records shall be submitted to the AO, through the AOTR, within 7 days of the application.

(e) SAMPLES AND INSPECTIONS.

Tank samples shall be furnished to the AOTR upon request. The Federal Government reserves the right to inspect the tank mix and/or equipment at any point before, during or after the application process.

638.04

Acceptance.

Application of herbicides shall be evaluated in accordance with section 106.02 through 106.04.

638.05 Measurement.

Measure the herbicide by the lump sum in place.

SECTION 702.- ASPHALT MATERIAL

702.09 Evaluation Procedures for Asphalt.

(c) Sampling procedures.

Paragraph (2) is superseded with the following:

(2) Asphalt initially discharged into storage tanks on the project.

Take one 4 liter sample from the line between shipping container (tanker) and the storage tank to be tested under (d) below only.

Add the following:

(d) Testing. The testing of performance grade asphalt binder shall be under AASHTO M320.

(1) The first **four (4) delivery loads** and for **each 25th load thereafter** shall be tested for **all of the properties** and reported to the AOTR within 14 calendar days after the sample date.

(e) Acceptance. Acceptance of the asphalt binder is when all the specified properties for the asphalt binder in AASHTO M 320 are met.

Section 703.- AGGREGATE

703.05 Subbase, Base, and Surface Course Aggregate.**(b) Subbase or base aggregate.**

(1) Gradation Table 703-2

Table 703-2 is superseded with the following:

Table 703-2
Aggregate Base Gradation Special

Sieve Size	Percent by Mass Passing Designated Sieve, AASHTO T 27 & T11
37.5mm (1½-inch)	100
25mm (1-inch)	80 – 100
19mm (¾-inch)	65 – 80
9.5mm (3/8-inch)	40 – 65
4.75mm (No.4)	30 – 50
425µm (No.40)	8 – 30
75µm (No.200)	2 – 12

(c) Surface course aggregate.

The statistical procedures and allowable deviations do not apply.

703.07 Hot Asphalt Concrete Pavement Aggregate.**(a) Coarse aggregate (retained on a (3/16"-#4) 4.75-millimeter sieve).**

Add:

(5) Adherent coating on the aggregate,
FLH T 512 0.5% maximum

(6) Percent Carbonates in Aggregate,
Arizona Test Method ARIZ 238a Maximum 75%

The last paragraph is deleted.

703.10 Asphalt Surface Treatment Aggregate.

Add:

(i) Density, AASHTO T 19M Min. 1100 kg/m³ (70 lbs./ft³)

- (j) Coating and stripping of bitumen-aggregate Mixtures, AASHTO T 182 Min. 95%

Table 703-7 is superseded with the following:

Table 703-7
Target Value Ranges for
Single and Multiple Course Surface Treatment Grading Special

Sieve Size	Percent by Mass Designated Sieve (AASHTO T 27 & T 11)
	Grading Designation – Special
12.5mm (1/2-inch)	100 (1)
9.5mm (3/8-inch)	70-85 (3)
6.3mm (1/4-inch)	0-15 (5)
4.75mm (No.4)	0-5 (3)
2.36mm (No.8)	0-2 (1)
75µm (No.200)	0-1 (1)

(1) Statistical procedures do not apply.

() The value in the parentheses is the allowable deviation (\pm) from the target values.

703.13

Blotter.

This subsection is superseded with the following:

Furnish sound durable particles of sand, gravel or crushed stone conforming to the following:

Table 703-13
Blotter Material Gradation

Sieve Size	Percent Passing by Weight, AASHTO T 27 & T 11
9.5mm (3/8-inch)	100
1.18mm (No.16)	40 – 80
75µm (No.200)	0 – 10

(a) Plastic limit, AASHTO T90 Non-plastic

(b) Free of organic matter and clay balls.

**PERCENT CARBONATES IN AGGREGATE
(An Arizona Method)**

SCOPE:

1. (a) This test method describes the procedure for determining the percentage of carbonates in aggregate. A combination of hydrogen peroxide and nitric acid is used to react with the carbonates.

(b) This test method involves hazardous material, operations, and equipment. This test method does not purport to address all of the safety concerns associated with its use. It is the responsibility of the user to consult and establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

(c) Metric (SI) units and values are shown in this test method with English units and values following in parentheses. Values given for metric and English units may be numerically equivalent (soft converted) for the associated units, or they may be given as rounded or rationalized values (hard converted). Either the metric or English units along with their corresponding values shall be used in accordance with the applicable specifications. See Appendix A2 of the Arizona Materials Testing Manual for additional information on the metric system.

(d) See Appendix A1 of the Arizona Materials Testing Manual for information regarding the procedure to be used for rounding numbers to the required degree of accuracy.

APPARATUS AND MATERIALS:

2. Requirements for the frequency of equipment calibration and verification are found in Appendix A3 of the Arizona Materials Testing Manual. Apparatus and materials for this test procedure shall consist of the following:
 - (a) Drying apparatus--Any suitable device capable of drying samples at a temperature of 110°C plus or minus 5°C (230°F plus or minus 9°F).
 - (b) 100 mL (3.38oz) heavy duty beaker.
 - (c) Hydrogen Peroxide (3% solution) - H_2O_2 .
 - (d) Nitric Acid (concentrated)-- HNO_3 .
 - (e) Distilled water.
 - (f) A balance or scale capable of measuring the maximum weight to be determined and conforming to the requirements of AASHTO M 231, except the readability and sensitivity

of any balance or scale utilized shall be at least 0.1 gram (0.0035oz).

(g) Neutral Litmus Paper.

(h) Glass or Plastic Stirring Rod.

SAMPLE PREPARATION:

3. Prepare the sample according to the following:

(a) For material samples from stockpile(s), obtain a representative 10.6oz (300 gram plus or minus 10 gram) sample of plus 4.75 mm (No.4) material. Wash the sample over a 4.75 mm (No.4) sieve and discard minus 4.75 mm (No.4) material.

(b) For uncrushed material samples, obtain a representative sample and crush to appropriate grading. Obtain a representative 10.6oz (300 gram plus or minus 10 gram sample) of plus 4.75 mm (No.4) material.

(c) The prepared sample shall be oven dried to constant weight at 110°C plus or minus 5°C (230°F plus or minus 9°F).

TEST PROCEDURE:

4. (a) Allow sample to cool and place in a tared 33.8oz (1000 mL) beaker. Weigh and record the weight of aggregate as the "weight of original sample" or "A" to the nearest 0.1 gram (0.0035oz).

(b) Under a fume hood, add approximately 10.14oz (300 mL) of H₂O₂ (3% solution) and stir. When the bubbling subsides, begin adding small amounts (approximately 0.34oz -10 mL) of concentrated HNO₃ to the beaker. Bubbling will be vigorous as the carbonates are being dissolved. Stir occasionally.

(c) When the bubbling has ceased and addition of HNO₃ causes no more bubbles, begin to wash by decantation, using distilled water. Care shall be taken not to lose any of the coarse aggregate. Wash by decantation at least 4 times. At this point, neutral litmus paper in the water should show only slight pink.

(d) Decant the water and oven dry to constant weight at 110°C plus or minus 5°C (230°F plus or minus 9°F).

(e) Let cool, weigh, and record the weight of aggregate as the "weight of non-reactive aggregate" or "B" to the nearest 0.1 gram (0.0035oz).

CALCULATIONS:

5. (a) Calculate the percent of carbonates as follows:

$$\text{Percent of Carbonates} = \frac{A-B}{A} \times 100$$

Where: A = weight of original sample

B = weight of non-reactive aggregate

- (b) Report the percent of carbonates to the nearest 1%.

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Section 704.- SOIL

704.02 Bedding Material.

Add the following subparagraph:

- | | |
|-------------------------------|--------------------------|
| (c) Resistivity, AASHTO T 288 | ≥ 2000 ohm-cm, Min. |
| (d) pH, AASHTO T289 | ≥ 6.0 |

Volcanic ash type material for bedding shall not be used.

704.03 Backfill Material.

- (a) For all structures and pipes other than plastic pipes.

Add the following to this subparagraph:

- | | |
|-------------------------------|--------------------------|
| (c) Resistivity, AASHTO T 288 | ≥ 2000 ohm-cm, Min. |
| (d) pH, AASHTO T289 | ≥ 6.0 |

Volcanic ash type material for backfill shall not be used.

704.06 Unclassified Borrow.

This subsection is superseded with the following:

Furnish granular material free of excess moisture, muck, frozen lumps, roots, sod, or other deleterious material. Material composed of lava or volcanic cinder is disallowed as borrow material. Material shall conform to the following:

- | | |
|---------------------------------------|--------------------|
| (a) Maximum dimension | 600 mm (2ft) |
| (b) Soil classification, AASHTO M 145 | A-1, A-3, or A-2-4 |

If unclassified borrow is used as bedding and/or backfill material under Section 209, the material shall also conform to 704.02 and 704.03.

Section 705. - ROCK

705.02.1 Riprap Rock.

This subsection is superseded with the following:

Furnish hard, durable, angular rock that is resistant to weathering and water action and free of organic or other unsuitable material. Do not use shale, rock with shale seams, or other fissile or fissured rock that may break into smaller pieces in the process of handling and placing. Conform to the following unless the material is coming from a source previously tested for and met the quality requirements for other contract items:

- | | |
|--|-------------|
| (a) Apparent specific gravity, AASHTO T 85 | 2.50 min. |
| (b) Absorption, AASHTO T 85 | 4.2% max. |
| (c) Coarse durability index, AASHTO T 210 | 50 min. |
| (d) Gradation for the class specified | Table 705-1 |

SECTION 710 - FENCE AND GUARDRAILS

710.01 Barbed Wire:

Add the following:

Stays for barbed wire fences shall conform to the requirements of ASTM A 641, and shall have a coated diameter of at least 0.142 inch (3.6 mm), shall be class 1, and soft temper.

Tie wire, wire fasteners or wire clips for fastening barbed wire to steel posts shall have a coated diameter of 0.120 inch (3.0 mm) or greater and shall be Class 1, soft temper, and meet the requirements of ASTM A 641.

All woven wire shall conform to the requirements of AASHTO M 279 Design 832-6-14 1/2, grade 125.

710.04 Fence Posts and Bollards

Add the following to paragraph (c) Steel:

- 1) Powder Coated post will be evaluated under Subsection 106.03. Furnish a commercial certification including the name of the manufacturer, product name, style number, chemical composition, and other pertinent information to fully describe the product.
 - a) Hardness ASTM D3363 Min 2H
 - b) Adhesion ASTM D3359 5B
 - c) Impact Resistance ASTM D2794
 - d) Direct Impact ASTM D2794

Section 713 - ROADSIDE IMPROVEMENT MATERIAL**713.13 Bales.**

This section is superseded with the following:

(a) Straw bales. Furnish bales tied with either commercial quality baling wire or string. Conform to the following:

- (1) Straw Subsection 713.05(a)
- (2) Approximate length 1 meter
- (3) Shape rectangular
- (4) Approximate mass 30 kilograms

(b) Wood excelsior bales. Furnish bales of curled wood excelsior. Tie the bales with either a commercial baling wire, plastic, or string. Conform to the following:

- (1) Approximate dimensions 400 by 450 by 900 mm
- (2) Approximate mass 33 kilograms

The straw bales must be furnished weed free.

713.16 Silt Fence.

This section is superseded with the following:

Furnish a combination of the following material constructed as specified and in close conformance with the design plans. If approved, variations may be furnished to accommodate pre-manufactured fences and field conditions and accepted practices.

- (a) Posts. Furnish 75-millimeter diameter wood or 1.86-kilogram per meter steel fence posts.
- (b) Supports. Furnish 2.03-millimeter steel wire with a mesh spacing of 150 by 150 millimeters or a prefabricated polymeric mesh of equivalent strength.
- (c) Geotextile. Conform to Subsection 714.01 and Table 714-5 as applicable.
- (d) Height. Minimum height above the ground is 760 millimeters. Minimum embedment depth is 150 millimeters.

SECTION 718. - TRAFFIC SIGNING AND MARKING MATERIAL

718.01 Retro reflective Sheeting.

Add the following:

Retroreflective sheeting materials proposed shall be Type III Prismatic or better per Table 718-3 below, with certifications, for all signs shall be submitted for review and approval prior to ordering the materials.

718.08 Signposts.

Furnish wood, steel, or aluminum signposts as specified.

Subsection (b) is superseded with the following:

(b) Steel posts. Furnish posts that are straight, smooth, and free from defects affecting strength, durability, or appearance. Conform to the following:

(1) U-channel steel posts. Furnish flanged, channel, galvanized steel posts conforming to ASTM A 499, grade 60, and the following:

(a) Dimensions of U cross-section

- (1) Width of opened end of U 75 – 90 mm (3.5”) including flanges
- (2) Width of closed end of U 25 – 40 mm (1.5”)
- (3) Depth of U 25 – 50 mm (2”)
- (4) Thickness of steel 3 – 5 mm (1/8- 3/16”)

(b) Punching shall be performed prior to coating. Starting (1”) 25 millimeters from the top and extending the full length of the post, drill or punch 3/8” (10-millimeter) holes on 1” (25-millimeter) centers along the centerline of the bottom of the U. Remove all burrs and sharp edges.

(c) Coating

- (1) Galvanized coated post according to AASHTO M 111M
- (2) Powder Coat will be evaluated under Subsection 106.03. Furnish a commercial certification including the name of the manufacturer, product name, style number, chemical composition, and other pertinent information to fully describe the product.
 - a) Hardness ASTM D3363 Min 2H
 - b) Adhesion ASTM D3359 5B
 - c) Impact Resistance ASTM D2794
 - d) Direct Impact ASTM D2794

(2) Square tubular steel posts. Furnish square tubular galvanized steel posts conforming to ASTM A 1011M, grade 55, or ASTM A 715, grade 60, and the following:

(a) Dimensions

(1) Outside dimensions 1 3/4" x 1 3/4" (44.5 mm by 44.5 mm) or 2" x 2" (50.8 mm by 50.8 mm)

(2) Wall thickness 1/16" (2.1 mm)

(3) Mass 1.68lb/ft – 2.01lb/ft (2.5 – 3.0 kg/m)

(b) Punching. Starting 25 millimeters from the top and extending the full length of the post, drill or punch 11-millimeter holes on 25-millimeter centers along the centerline of all four sides, in true alignment and opposite each other directly and diagonally. Remove all burrs and sharp edges.

(c) Coating

1) Galvanizing after punching ASTM A 635M, (inside and outside of post) coating Z275 designation

2) Powder Coat after punching. Powder Coat will be evaluated under Subsection 106.03. Furnish a commercial certification including the name of the manufacturer, product name, style number, chemical composition, and other pertinent information to fully describe the product.

a) Hardness ASTM D3363 Min 2H

b) Adhesion ASTM D3359 5B

c) Impact Resistance ASTM D2794

d) Direct Impact ASTM D2794

718.11 Letters, Numerals, Arrows, Symbols, and Borders.

Add the following:

The letters, numerals, arrows, symbols, borders, etc. shall be applied in accordance with subsection 718.11 (b) Type L-3 (Direct Applied Characters) having a Class 2 adhesive, and as shown on the design plans.

Table 718-3

Sign Color	Sheeting Type (ASTM D 4956) ¹				Additional Criteria
	Beaded Sheeting			Prismatic Sheeting	
	I	II	III		
White on Green	W*; G≥7	W*; G≥15	W*; G≥25	W≥250; G≥25	Overhead
	W*; G≥7	W≥120; G≥15			Ground Mounted
Black on Yellow or	Y*; O*	Y≥50; O≥50			2
Black on Orange	Y*; O*	Y≥75; O≥75			3
White on Red	W≥35; R≥7				4
Black on White	W≥50				

- 1) The minimum maintained retroreflectivity levels shown in this table are in units of cd/lx/m² measured at an observation angle of 0.2° and an entrance angle of -4.0°
- 2) For test and fine symbol signs measuring at least 1200 mm (48 in) and for all sizes of bold symbol signs
- 3) For test and fine symbol signs measuring less than 1200 mm (48 in)
- 4) Minimum Sign Contrast Ratio $\geq 3:1$ (white retroreflectivity \div red retroreflectivity)

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SECTION “E”

INSPECTION AND ACCEPTANCE

STATEMENT OF WORK

Inspection and Acceptance

INSPECTION

In General: In carrying out the responsibilities of Section 900.131, and specifically carrying out the review, comment, and approval functions under this section, the Secretary shall provide full tribal participation in the decision making process and shall honor tribal preference and recommendation to the greatest extent feasible. This includes promptly notifying the Indian tribe or tribal organization if any concerns or issues in writing that may lead to disapproval, meeting with the Indian tribe or tribal organization to discuss these concerns and issues and to share relevant information documents, and making a good effort to resolve all issues and concerns of the Indian tribe or tribal organization. The time allowed for Secretarial review, comment, and approval shall be no more than 21 days per review unless a different time period is negotiated and specified in individual contracts. The 21-day time period may be extended if the Indian tribe or tribal organization agrees to the extension in writing. Disagreements over the Secretary's decisions in carry out these responsibilities shall be handled under the Provisions of the Contract Disputes Act.

Contract Monitoring: Contract monitoring shall be performed by the Awarding Official or/and the AOTR to ensure the continuing trust, programmatic, and fiscal responsibilities are adequately maintained by the Contractor.

Monitoring visits shall be made as needed by the Awarding Official and/or the AOTR to assure that the work is being performed in accordance with the terms and conditions of the contract or if the Awarding Official determines there is reasonable cause to believe that grounds for reassumption of the contract, suspension of contract payments, or other serious contract performance deficiency may exist. Prior to any visit to the Contractor's site, the Awarding Official and/or the AOTR shall provide a reasonable advance notice to the Contractor that includes a description of the required visit.

Project/Program Review: The Awarding Official or the AOTR may conduct daily on-site monitoring visits, or alternatively if negotiated with the Contractor, critical milestone on-site visits. Program and project activities shall be reviewed for general contract compliance and written comments shall be provided to the Contractor of any deficiencies identified. The Awarding Official or AOTR retains the right to conduct final project inspections and audit of contract records to accept completed projects. If the Awarding Official or AOTR identifies problems during final inspection, the information shall be provided to the Contractor and shall be limited to items that are materially non-compliant.

SECTION “F”

DELIVERIES OF PERFORMANCE

STATEMENT OF WORK**DELIVERABLES OF PERFORMANCE**

Contract Term: The Contractor shall commence work under this contract upon effective date of the Notice to Proceed and complete the work for the project in accordance with the Schedule of Project Target Dates, as shown in Section B.

Schedule for Deliverables

Administration and Planning: In accordance with 25 CFR Part 900, Subpart J, Section 900.130(c)(7), the Contractor shall submit annual Progress Report(s) and Federal Finance Report(s) to the Awarding Official. The Progress Reports shall contain a narrative of the work accomplished, and the percentage of work completed. A Federal Finance Report(s) shall contain a report of funds expended during the reporting period and total funds expended for the project.

As negotiated, NECA's Progress Pay Estimates contain the data required in Federal Finance Reports; therefore, NECA will be required to submit only Progress Pay Estimates along with a progress report that contains a narrative of the work accomplished and the percentage of work completed which will satisfy the condition as required by 25 CFR Part 900, Subpart J, Section 900.130(c)(7).

The Contractor will submit a copy of their Quarterly Construction Operation Report within 30 days after the end of each quarter.

SECTION "I"

FAR CLAUSES APPLICABLE TO THIS CONTRACT AND ALL SUBCONTRACTS UNDER THIS CONTRACT

52.252-2 Clauses Incorporated by Reference. (Feb 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this address: <http://www.arnet.gov/far/>

Clause No.	Title
FAR 52.202-01	Definitions. (JUL 2004)
FAR 52.203-05	Covenant Against Contingent Fees. (APR 1984) [APPLICABLE TO SUBCONTRACTORS ONLY] (ATSO)
FAR 52.203-10	Price or Fee Adjustment for Illegal or improper Activity. (JAN 1997) (ATSO)
FAR 52.203-12	Limitation on Payments to Influence Certain Federal Transactions. (SEPT 2005)
FAR 52.204-01	Approval of Contracts. (DEC 1989)
FAR 52.209-06	Protecting the Government's Interest when Subcontracting with Contractors Debarred, Suspended, or Proposed for Debarment. (JAN 2005)
FAR 52.211-10	Commencement, Prosecution, and Completion of Work. (APR 1984)
FAR 52.211-12	Liquidated Damages--Construction. (SEPT 2000) (ATSO)
FAR 52.211-18	Variation in Estimated Quantity. (APR 1984)
FAR 52.219-14	Limitation on Subcontracting. (DEC 1996) (ATSO)
FAR 52.222-03	Convict Labor. (JUN 2003)
FAR 52.222-04	Contract Work Hours and Safety Standards Act - Overtime Compensation. (JUL 2005)
FAR 52.222-06	Davis-Bacon Act. (JUL 2005) (ATSO)
FAR 52.222-07	Withholding of Funds. (FEB 1988) (ATSO)
FAR 52.222-08	Payrolls and Basic Records. (FEB 1988) (ATSO)
FAR 52.222-10	Compliance With Copeland Act Requirements. (FEB 1988) (ATSO)
FAR 52.222-11	Subcontracts (Labor Standards). (JUL 2005)
FAR 52.222-13	Compliance with Davis-Bacon & Related Act Regulations. (FEB 1988) (ATSO)
FAR 52.222-14	Disputes Concerning Labor Standards. (FEB 1988) (ATSO)
FAR 52.222-15	Certification of Eligibility. (FEB 1988) (ATSO)
FAR 52.222-26	Equal Opportunity. (APR 2002) (ATSO)
FAR 52.223-03	Hazardous Material Identification and Material Safety Data. (JAN 1997)
FAR 52.223-06	Drug-Free Workplace. (MAY 2001) (ATSO)
FAR 52.225-09	Buy American Act - Construction Materials. (JUN 1997) (ATSO)
FAR 52.225-13	Restriction on Certain Foreign Purchases. (FEB 2006) (ATSO)
FAR 52.227-04	Patent Indemnity - Construction Contracts. (APR 1984)
FAR 52.228-05	Insurance--Work on Government Installation. (JAN 1997)
FAR 52.228-15	Performance and Payment Bonds--Construction. (SEPT 2005) (ATSO)
FAR 52.229-03	Federal, State, and Local Taxes. (APR 2003) (ATSO)
FAR 52.232-18	Availability of Funds. (APR 1984)
FAR 52.232-23	Assignment of Claims. (JAN 1986)
FAR 52.232-27	Prompt Payment for Construction Contracts. (JUN 1997)
FAR 52.232-33	Payment by Electronic Funds Transfer--Central Contractor Registration. (OCT 2003)
FAR 52.236-02	Differing Site Conditions. (APR 1984)
FAR 52.236-03	Site Investigation and Conditions Affecting the Work. (APR 1984)
FAR 52.236-04	Physical Data. (APR 1984)
FAR 52.236-05	Material and Workmanship. (APR 1984)
FAR 52.236-06	Superintendence by the Contractor. (APR 1984)
FAR 52.236-07	Permits and Responsibilities. (NOV 1991)
FAR 52.236-08	Other Contracts. (APR 1984)

FAR 52.236-09	Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements. (APR 1984)
FAR 52.236-10	Operations and Storage Areas. (APR 1984)
FAR 52.236-11	Use and Possession Prior to Completion. (APR 1984)
FAR 52.236-12	Cleaning Up. (APR 1984)
FAR 52.236-13	Accident Prevention. (NOV 1991) – Alternate I (NOV 1991)
FAR 52.236-17	Layout of Work. (APR 1984)
FAR 52.236-21	Specifications and Drawings for Construction. (FEB 1997)
FAR 52.243-04	Changes. (AUG 1987)
FAR 52.246-12	Inspection of Construction. (AUG 1996)
FAR 52.246-21	Warranty of Construction. (APR 1984)
FAR 52.248-03	Value Engineering - Construction. (MAR 1989)

DEPARTMENT OF THE INTERIOR CLAUSES

DIAR 1452.204-70	Release of Claims – Department of the Interior. (MAY 1996)
DIAR 1452.225-70	Buy American Act Notice – Department of the Interior. (APR 1984)
DIAR 1452.228-70	Liability Insurance – Department of the Interior. (JUL 1995)

OFFICE OF MANAGEMENT AND BUDGET CIRCULAR

OMB Circular No. A-128 (Audits of State and Local Governments) – Policies, procedures and guidelines to implement the 1984 Single Act. Applies to fiscal periods beginning on or before June 30, 1996.

OMB Circular No. A-133 (Audits of States, Local Governments and Non-Profit Organizations) – Policies, procedures, and guidelines to implement the Single Audit Act amendments of 1996, includes new forms needed for submission of audit to the Single Audit Clearinghouse. Applies to fiscal periods beginning on or after July 1, 1996.

OMB Circular No. A-87 (Cost Principles for State and Local Government).

NAVAJO NATION TRIBAL CODE

15 NTC (Navajo Nation Tribal Code), Chapter 7, §1-19, Navajo Preference in Employment Act.

2 NTC, §3802, Preference in Employment for Navajo Veterans.

5 NTC, §201-216, Navajo Business Opportunity Act.

SECTION “J”

ATTACHMENTS:

- 1. Environmental & Archeological Clearance Requirements
R/W Terms & Conditions**
- 2. Preliminary Engineer’s Estimate**
- 3. Tribal Resolution**

**ENVIRONMENTAL & ARCHEOLOGICAL
CLEARANCE REQUIREMENTS –
R/W TERMS & CONDITIONS**

**Project N2007(1-1)1,2&4
Best Management Practices
Navajo Regional Division of Transportation**

In order to avoid, reduce, or mitigate potentially adverse impacts during the construction of this project, the Navajo Regional Division of Transportation Contractor will incorporate the following best management practices (to the fullest extent).

1. Construct the project in accordance with the Manual for Standard Specifications for Construction of roads on Federal Highway Projects (FP-03), and in compliance with all applicable Navajo Tribal and Federal laws, codes, safety regulations, and executive orders.
2. The BIA Contractor will avoid any increase in sedimentation of bodies of water on or near the project by preparing and implementing a Storm Water Pollution Prevention Plan (SWPPP). The Contractor will implement the SWPPP prior to any ground-disturbing activities. Adjustments in the SWPPP, during construction, shall be coordinated with the AOTR to insure compliance with the Clean Water Act.
3. The BIA Contractor shall stockpile the existing topsoil for uses in re-vegetation of borrow pits and roadway slopes, where feasible in accordance with the FP-03 and contract specifications.
4. The cut and fill volumes will be balanced as much as possible to avoid the use of borrow sources and all slopes shall be rounded to blend into the existing terrain. All disturbed ground on the project will be disked, seeded, mulched, and re-vegetated as described in section 625 of the supplemental specifications.
5. The following BMPs will be followed for all structural improvements, including any pipelines, storage tanks, and troughs:
 - Any existing pipelines shall be protected in-place unless otherwise stated in the design plans. All existing trash shall be removed from project site, and no trash will be allowed on BNSF property.
 - All equipment brought in from off the site will be power washed before entering the site to avoid the possible introduction and invasion of noxious and invasive weeds. All construction debris, falsework, forms, and equipment would be removed from project site at the end of each day unless specifically authorized in writing by BNSF.
 - Ground disturbance from the heavy equipment would be re-seeded with a certified weed free seed mix. The seed would be suitable to area and match existing native species.

- If an archeological site is encountered, construction must cease in the area, and the AOTR and BIA Regional DOT office must be notified immediately.
- If at anytime, populations of noxious weeds are encountered, construction must cease and measures must be taken to clear the right of way. The problem area would be sprayed with the appropriate herbicide. By law, the target weed must be listed on the label of the herbicide being applied, and the rate applied must be in accordance with the manufacturer's recommendations in accordance with section 109.02(m) of the supplemental specifications for this project.

6. Construction hours will be between 6:00 am and 8:00 pm, Monday through Saturday, (weather permitting). In high wildlife use areas, an alternate construction schedule may be used in consultation with the Navajo Fish and Wildlife Department and/or U.S. Fish and Wildlife Service.

7. The Contractor's camp and equipment storage area will be kept clean and free of oils, waste materials, and other litter at all times, to prevent such materials from entering bodies of water. All trash will be disposed of in accordance with EPA regulations and all camp sites and equipment storage areas will be restored to their natural condition at project completion (in accordance with permit requirements). Acquiring of permits shall be closely coordinated with the AOTR.

8. The Contractor will inspect daily all construction equipment for leaks and notify the BIA AOTR/Project Manager on the removal of leaking equipment from the project site until the leaking equipment is repaired and spills cleaned up to the satisfaction of the Project Manager and Environmental Quality Office. Equipment will be washed down in a designated area to prevent transport of mud, noxious weeds, and other debris from leaving the project limits when transporting equipment off the project site. Such debris will be collected and hauled off to a disposal site by the Contractor. The Contractor must have a spill prevention plan in place to contain spills, mitigate the spills, and remove all the pollutants off the project to an approved waste repository.

9. **Noxious weed control Standard Operating Procedures** for work on New Lands will be as follows:

- Ensure equipment involved in land disturbing actions, be clean of noxious weed seeds or propagative parts prior to entry on site. When working in areas with noxious weeds equipment should be cleaned prior to moving off site.
- Survey and inventory proposed work areas for noxious weeds; take reasonable measures to avoid spread of noxious weeds found (ie - cleaning equipment with pressure washers, stockpiling overburden material for later treatment, avoiding driving through weed patches). Consult with the BIA regional DOT office on any known species of noxious weeds in the project area before construction begins.

- Use only certified weed free erosion control and re-vegetation materials (eg. mulch, seed, natural fiber mats).
- If fill dirt or gravel will be required, the source needs to be noxious weed free to the fullest extent possible.
- The site should be monitored for the life of the project for the presence of noxious weeds (includes maintenance & construction activities). If weeds are found the AOTR will be notified and the AOTR will determine the best method for the control of the particular weed species in consultation with the Regional DOT office.

Reclamation and re-vegetation of the work site will use species specified by the specifications. All seed should be certified weed free. The area will be monitored to determine the success of the re-vegetation, and re-vegetation may have to be continued until successful.

Any need for noxious weeds treatment shall be in accordance with section 109.02(m) of the FP-2003.

10. All oils, fuels, lubricants, and hydraulic fluids will be kept in sealed storage containers and or facilities that meet EPA regulations for preventing contamination of the environment. Again a spill prevention plan must be in place.

11. Damage to trees and shrubs outside of the construction limits will be replaced by the Contractor at his expense as directed by the AOTR.

12. Parking and staging areas will be limited to the construction limits. Existing roads will be used for detours, storage of equipment, and the hauling of materials and water to the fullest extent possible. The Contractor shall cooperatively work with BNSF in the construction and maintenance of the detour road and relocation of railroad signal lights. Storage areas within the construction limits will utilize existing disturbed areas and be kept as small as possible as authorized in writing by BNSF.

13. The installation of drainage structures will be undertaken in such fashion so as to minimize soil erosion and to provide for a minimum of 610 mm of cover over the pipe as measured from the roadway shoulder.

14. Structural replacements will be performed during periods of low- or no-flow periods to minimize water quality impacts. The Contractor shall install Lined waste pits for concrete or asphalt on the project in a level ground at least 100 feet away from any drainage and outside the construction limits. If these pits are to be located on BNSF property, the Contractor must get permission in writing from BNSF. No dumping of waste concrete will be allowed on the project site except in the lined pits which will immediately be removed from the project once the concrete or asphalt work is finished.

Any and all excess concrete and asphalt materials will be disposed of (off site) in accordance to EPA regulations and the FP-2003.

15. The Contractor will acquire water-use and aggregate material permits through the BIA and land owners, and follow all requirements of such permits, including royalties and environmental protection.

16. The Navajo Regional Division of Transportation and construction Contractor will acquire and comply with the following regulations regarding the Federal Clean Water Act:

- a) Section 404 permit
- b) Water Quality (Section 402) Certification
- c) National Pollution Discharge Elimination System (NPDES) permit and the Storm Water Pollution Prevention Plan

Notice to Proceed with work that may impact the waters of the US or Navajo Nation will be NOT issued until the 401, 402, 404 and other project permits are in place and the requirements are reviewed and discussed with the contractor.

17. Comply with all mitigation requirements concerning archaeological sites on or near the project site as defined in the compliance documents.

COE Section 404
Permit #14. Linear Transportation Projects

2002 Nationwide Permit General Conditions:

- 1. Navigation.** No activity may cause more than a minimal adverse effect on navigation.
- 2. Proper Maintenance.** Any structure or fill authorized shall be properly maintained, including maintenance to ensure public safety.
- 3. Soil Erosion and Sediment Controls.** Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.
- 4. Aquatic Life Movements.** No activity may substantially disrupt the necessary life-cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. Culverts placed in streams must be installed to maintain low flow conditions.
- 5. Equipment.** Heavy equipment working in wetlands must be placed on mats, or other measures must be taken to minimize soil disturbance.
- 6. Regional and Case-By-Case Conditions.** The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state or tribe in its Section 401 Water Quality Certification and Coastal Zone Management Act consistency determination.
- 7. Wild and Scenic Rivers.** No activity may occur in a component of the National Wild and Scenic River System; or in a river officially designated by Congress as a "study river" for possible inclusion in the system, while the river is in an official study status; unless the appropriate Federal agency, with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation, or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency in the area (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).
- 8. Tribal Rights.** No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.
- 9. Water Quality.** (a) In certain states and tribal lands an individual 401 Water Quality Certification must be obtained or waived (See 33 CFR 330.4(c)).

(b) For NWP's 12, 14, 17, 18, 32, 39, 40, 42, 43, and 44, where the state or tribal 401 certification (either generically or individually) does not require or approve water quality management measures, the permittee must provide water quality management measures that will ensure that the authorized work does not result in more than minimal degradation of water quality (or the Corps determines that compliance with state or local standards, where applicable, will ensure no more than minimal adverse effect on water quality). An important component of water quality management includes stormwater management that minimizes degradation of the downstream aquatic system, including water quality (refer to General Condition 21 for stormwater management requirements). Another

important component of water quality management is the establishment and maintenance of vegetated buffers next to open waters, including streams (refer to General Condition 19 for vegetated buffer requirements for the NWP).

This condition is only applicable to projects that have the potential to affect water quality. While appropriate measures must be taken, in most cases it is not necessary to conduct detailed studies to identify such measures or to require monitoring.

10. Coastal Zone Management. In certain states, an individual state coastal zone management consistency concurrence must be obtained or waived (see 33 CFR 330.4(d)).

11. Endangered Species. (a) No activity is authorized under any NWP which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will destroy or adversely modify the critical habitat of such species. Non-federal permittees shall notify the District Engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or is located in the designated critical habitat and shall not begin work on the activity until notified by the District Engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that may affect Federally-listed endangered or threatened species or designated critical habitat, the notification must include the name(s) of the endangered or threatened species that may be affected by the proposed work or that utilize the designated critical habitat that may be affected by the proposed work. As a result of formal or informal consultation with the FWS or NMFS the District Engineer may add species-specific regional endangered species conditions to the NWPs.

(b) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the USFWS or the NMFS, both lethal and non-lethal "takes" of protected species are in violation of the ESA. Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the USFWS and NMFS or their world wide web pages at <http://www.fws.gov/r9endspp/endspp.html> and http://www.nfms.noaa.gov/prot_res/overview/es.html respectively.

12. Historic Properties. No activity which may affect historic properties listed, or eligible for listing, in the National Register of Historic Places is authorized, until the District Engineer has complied with the provisions of 33 CFR part 325, Appendix C. The prospective permittee must notify the District Engineer if the authorized activity may affect any historic properties listed, determined to be eligible, or which the prospective permittee has reason to believe may be eligible for listing on the National Register of Historic Places, and shall not begin the activity until notified by the District Engineer that the requirements of the National Historic Preservation Act have been satisfied and that the activity is authorized. Information on the location and existence of historic resources can be obtained from the State Historic Preservation Office and the National Register of Historic Places (see 33 CFR 330.4(g)). For activities that may affect historic properties listed in, or eligible for listing in, the National Register of Historic Places, the notification must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property.

13. Notification. (a) Timing; where required by the terms of the NWP, the prospective permittee must notify the District Engineer with a preconstruction notification (PCN) as early as possible. The District Engineer must determine if the notification is complete within 30 days of the date of receipt and can request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the District Engineer will notify the prospective permittee that the notification is still incomplete and the PCN review process will not commence until all of the requested information has been received by the District Engineer. The prospective permittee shall not begin the activity:

(1) Until notified in writing by the District Engineer that the activity may proceed under the NWP with any special conditions imposed by the District or Division Engineer; or

(2) If notified in writing by the District or Division Engineer that an Individual Permit is required; or

(3) Unless 45 days have passed from the District Engineer's receipt of the complete notification and the prospective permittee has not received written notice from the District or Division Engineer. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Notification: The notification must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed project;

(3) Brief description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause; any other NWP(s), Regional General Permit(s), or Individual Permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP (Sketches usually clarify the project and when provided result in a quicker decision.);

(4) For NWPs 7, 12, 14, 18, 21, 34, 38, 39, 40, 41, 42, and 43, the PCN must also include a delineation of affected special aquatic sites, including wetlands, vegetated shallows (e.g., submerged aquatic vegetation, seagrass beds), and riffle and pool complexes (see paragraph 13(f));

(5) For NWP 7 (Outfall Structures and Maintenance), the PCN must include information regarding the original design capacities and configurations of those areas of the facility where maintenance dredging or excavation is proposed;

(6) For NWP 14 (Linear Transportation Projects), the PCN must include a compensatory mitigation proposal to offset permanent losses of waters of the US and a statement describing how temporary losses of waters of the US will be minimized to the maximum extent practicable;

(7) For NWP 21 (Surface Coal Mining Activities), the PCN must include an Office of Surface Mining (OSM) or state-approved mitigation plan, if applicable. To be authorized by this NWP, the District Engineer must determine that the activity complies with the terms and conditions of the NWP and that the adverse environmental effects are minimal both individually and cumulatively and must notify the project sponsor of this determination in writing;

(8) For NWP 27 (Stream and Wetland Restoration Activities), the PCN must include documentation of the prior condition of the site that will be reverted by the permittee;

(9) For NWP 29 (Single-Family Housing), the PCN must also include:

(i) Any past use of this NWP by the Individual Permittee and/or the permittee's spouse;

(ii) A statement that the single-family housing activity is for a personal residence of the permittee;

(iii) A description of the entire parcel, including its size, and a delineation of wetlands. For the purpose of this NWP, parcels of land measuring 1/4-acre or less will not require a formal on-site delineation. However, the applicant shall provide an indication of where the wetlands are and the amount of wetlands that exists on the property. For parcels greater than 1/4-acre in size, a formal wetland delineation must be prepared in accordance with the current method required by the Corps. (See paragraph 13(f));

(iv) A written description of all land (including, if available, legal descriptions) owned by the prospective permittee and/or the prospective permittee's spouse, within a one mile radius of the parcel, in any form of ownership (including any land owned as a partner, corporation, joint tenant, co-tenant, or as a tenant-by-the-entirety) and any land on which a purchase and sale agreement or other contract for sale or purchase has been executed;

(10) For NWP 31 (Maintenance of Existing Flood Control Facilities), the prospective permittee must either notify the District Engineer with a PCN prior to each maintenance activity or submit a five year (or less) maintenance plan. In addition, the PCN must include all of the following:

(i) Sufficient baseline information identifying the approved channel depths and configurations and existing facilities. Minor deviations are authorized, provided the approved flood control protection or drainage is not increased;

(ii) A delineation of any affected special aquatic sites, including wetlands; and,

(iii) Location of the dredged material disposal site;

(11) For NWP 33 (Temporary Construction, Access, and Dewatering), the PCN must also include a restoration plan of reasonable measures to avoid and minimize adverse effects to aquatic resources;

(12) For NWPs 39, 43 and 44, the PCN must also include a written statement to the District Engineer explaining how avoidance and minimization for losses of waters of the US were achieved on the project site;

(13) For NWP 39 and NWP 42, the PCN must include a compensatory mitigation proposal to offset losses of waters of the US or justification explaining why compensatory mitigation should not be required. For discharges that cause the loss of greater than 300 linear feet of an intermittent stream bed, to be authorized, the District Engineer must determine that the activity complies with the other terms and conditions of the NWP, determine adverse environmental effects are minimal both individually and cumulatively, and waive the limitation on stream impacts in writing before the permittee may proceed;

(14) For NWP 40 (Agricultural Activities), the PCN must include a compensatory mitigation proposal to offset losses of waters of the US. This NWP does not authorize the relocation of greater than 300 linear-feet of existing serviceable drainage ditches constructed in non-tidal streams unless, for drainage ditches constructed in intermittent non-tidal streams, the District Engineer waives this criterion in writing, and the District Engineer has determined that the project complies with all terms and conditions of this NWP, and that any adverse impacts of the project on the aquatic environment are minimal, both individually and cumulatively;

(15) For NWP 43 (Stormwater Management Facilities), the PCN must include, for the construction of new stormwater management facilities, a maintenance plan (in accordance with state and local requirements, if applicable) and a compensatory mitigation proposal to offset losses of waters of the US. For discharges that cause the loss of greater than 300 linear feet of an intermittent stream bed, to be authorized, the District Engineer must determine that the activity complies with the other terms and conditions of the NWP, determine adverse environmental effects are minimal both individually and cumulatively, and waive the limitation on stream impacts in writing before the permittee may proceed;

(16) For NWP 44 (Mining Activities), the PCN must include a description of all waters of the US adversely affected by the project, a description of measures taken to minimize adverse effects to waters of the US, a description of measures taken to comply with the criteria of the NWP, and a reclamation plan (for all aggregate mining activities in isolated waters and non-tidal wetlands adjacent to headwaters and any hard rock/mineral mining activities);

(17) For activities that may adversely affect Federally-listed endangered or threatened species, the PCN must include the name(s) of those endangered or threatened species that may be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work; and

(18) For activities that may affect historic properties listed in, or eligible for listing in, the National Register of Historic Places, the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property.

(c) Form of Notification: The standard Individual Permit application form (Form ENG 4345) may be used as the notification but must clearly indicate that it is a PCN and must include all of the information required in (b) (1)-(18) of General Condition 13. A letter containing the requisite information may also be used.

(d) District Engineer's Decision: In reviewing the PCN for the proposed activity, the District Engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. The prospective permittee may submit a proposed mitigation plan with the PCN to expedite the process. The District Engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse

environmental effects to the aquatic environment of the proposed work are minimal. If the District Engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the District Engineer will notify the permittee and include any conditions the District Engineer deems necessary. The District Engineer must approve any compensatory mitigation proposal before the permittee commences work. If the prospective permittee is required to submit a compensatory mitigation proposal with the PCN, the proposal may be either conceptual or detailed. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the District Engineer will expeditiously review the proposed compensatory mitigation plan. The District Engineer must review the plan within 45 days of receiving a complete PCN and determine whether the conceptual or specific proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the District Engineer to be minimal, the District Engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP. If the District Engineer determines that the adverse effects of the proposed work are more than minimal, then the District Engineer will notify the applicant either:

(1) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an Individual Permit;

(2) that the project is authorized under the NWP subject to the applicant's submission of a mitigation proposal that would reduce the adverse effects on the aquatic environment to the minimal level; or

(3) that the project is authorized under the NWP with specific modifications or conditions. Where the District Engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period. The authorization will include the necessary conceptual or specific mitigation or a requirement that the applicant submit a mitigation proposal that would reduce the adverse effects on the aquatic environment to the minimal level. When conceptual mitigation is included, or a mitigation plan is required under item (2) above, no work in waters of the US will occur until the District Engineer has approved a specific mitigation plan.

(e) Agency Coordination: The District Engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

For activities requiring notification to the District Engineer that result in the loss of greater than 1/2-acre of waters of the US, the District Engineer will provide immediately (e.g., via facsimile transmission, overnight mail, or other expeditious manner) a copy to the appropriate Federal or state offices (USFWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will then have 10 calendar days from the date the material is transmitted to telephone or fax the District Engineer notice that they intend to provide substantive, site-specific comments. If so contacted by an agency, the District Engineer will wait an additional 15 calendar days before making a decision on the notification. The District Engineer will fully consider agency comments received within the specified time frame, but will provide no response to the resource agency, except as provided below. The District Engineer will indicate in the administrative record associated with each notification that the resource agencies' concerns were considered. As required by section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act, the District Engineer will provide a response to NMFS within 30 days of receipt of any Essential Fish Habitat conservation recommendations. Applicants are encouraged to provide the Corps multiple copies of notifications to expedite agency notification.

(f) Wetland Delineations: Wetland delineations must be prepared in accordance with the current method required by the Corps (For NWP 29 see paragraph (b)(9)(iii) for parcels less than 1/4-acre in size). The permittee may ask the Corps to delineate the special aquatic site. There may be some delay if the Corps does the delineation. Furthermore, the 45-day period will not start until the wetland delineation has been completed and submitted to the Corps, where appropriate.

14. Compliance Certification. Every permittee who has received NWP verification from the Corps will submit a signed certification regarding the completed work and any required mitigation. The certification will be forwarded by the Corps with the authorization letter and will include:

- (a) A statement that the authorized work was done in accordance with the Corps authorization, including any general or specific conditions;
- (b) A statement that any required mitigation was completed in accordance with the permit conditions; and
- (c) The signature of the permittee certifying the completion of the work and mitigation.

15. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the US authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit (e.g. if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the US for the total project cannot exceed 1/3-acre).

16. Water Supply Intakes. No activity, including structures and work in navigable waters of the US or discharges of dredged or fill material, may occur in the proximity of a public water supply intake except where the activity is for repair of the public water supply intake structures or adjacent bank stabilization.

17. Shellfish Beds. No activity, including structures and work in navigable waters of the US or discharges of dredged or fill material, may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWP 4.

18. Suitable Material. No activity, including structures and work in navigable waters of the US or discharges of dredged or fill material, may consist of unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.) and material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the CWA).

19. Mitigation. The District Engineer will consider the factors discussed below when determining the acceptability of appropriate and practicable mitigation necessary to offset adverse effects on the aquatic environment that are more than minimal.

(a) The project must be designed and constructed to avoid and minimize adverse effects to waters of the US to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing or compensating) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland impacts requiring a PCN, unless the District Engineer determines in writing that some other form of mitigation would be more environmentally appropriate and provides a project-specific waiver of this requirement. Consistent with National policy, the District Engineer will establish a preference for restoration of wetlands as compensatory mitigation, with preservation used only in exceptional circumstances.

(d) Compensatory mitigation (i.e., replacement or substitution of aquatic resources for those impacted) will not be used to increase the acreage losses allowed by the acreage limits of some of the NWPs. For example, 1/4-acre of wetlands cannot be created to change a 3/4-acre loss of wetlands to a 1/2-acre loss associated with NWP 39 verification. However, 1/2-acre of created wetlands can be used to reduce the impacts of a 1/2-acre loss of wetlands to the minimum impact level in order to meet the minimal impact requirement associated with NWPs.

(e) To be practicable, the mitigation must be available and capable of being done considering costs, existing technology, and logistics in light of the overall project purposes. Examples of mitigation that may be appropriate and practicable include, but are not limited to: reducing the size of the project; establishing and maintaining wetland or upland vegetated buffers to protect open waters such as streams; and replacing losses of aquatic resource functions and values by creating, restoring, enhancing, or preserving similar functions and values, preferably in the same watershed.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the establishment, maintenance, and legal protection (e.g., easements, deed restrictions) of vegetated buffers to open waters. In many cases, vegetated buffers will be the only compensatory mitigation

required. Vegetated buffers should consist of native species. The width of the vegetated buffers required will address documented water quality or aquatic habitat loss concerns. Normally, the vegetated buffer will be 25 to 50 feet wide on each side of the stream, but the District Engineers may require slightly wider vegetated buffers to address documented water quality or habitat loss concerns. Where both wetlands and open waters exist on the project site, the Corps will determine the appropriate compensatory mitigation (e.g., stream buffers or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where vegetated buffers are determined to be the most appropriate form of compensatory mitigation, the District Engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland impacts.

(g) Compensatory mitigation proposals submitted with the "notification" may be either conceptual or detailed. If conceptual plans are approved under the verification, then the Corps will condition the verification to require detailed plans be submitted and approved by the Corps prior to construction of the authorized activity in waters of the U.S.

(h) Permittees may propose the use of mitigation banks, in-lieu fee arrangements or separate activity-specific compensatory mitigation. In all cases that require compensatory mitigation, the mitigation provisions will specify the party responsible for accomplishing and/or complying with the mitigation plan.

20. Spawning Areas. Activities, including structures and work in navigable waters of the US or discharges of dredged or fill material, in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., excavate, fill, or smother downstream by substantial turbidity) of an important spawning area are not authorized.

21. Management of Water Flows. To the maximum extent practicable, the activity must be designed to maintain preconstruction downstream flow conditions (e.g., location, capacity, and flow rates). Furthermore, the activity must not permanently restrict or impede the passage of normal or expected high flows (unless the primary purpose of the fill is to impound waters) and the structure or discharge of dredged or fill material must withstand expected high flows. The activity must, to the maximum extent practicable, provide for retaining excess flows from the site, provide for maintaining surface flow rates from the site similar to preconstruction conditions, and provide for not increasing water flows from the project site, relocating water, or redirecting water flow beyond preconstruction conditions. Stream channelizing will be reduced to the minimal amount necessary, and the activity must, to the maximum extent practicable, reduce adverse effects such as flooding or erosion downstream and upstream of the project site, unless the activity is part of a larger system designed to manage water flows. In most cases, it will not be a requirement to conduct detailed studies and monitoring of water flow.

This condition is only applicable to projects that have the potential to affect waterflows. While appropriate measures must be taken, it is not necessary to conduct detailed studies to identify such measures or require monitoring to ensure their effectiveness. Normally, the Corps will defer to state and local authorities regarding management of water flow.

22. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to the acceleration of the passage of water, and/or the restricting its flow shall be minimized to the maximum extent practicable. This includes structures and work in navigable waters of the US, or discharges of dredged or fill material.

23. Waterfowl Breeding Areas. Activities, including structures and work in navigable waters of the US or discharges of dredged or fill material, into breeding areas for migratory waterfowl must be avoided to the maximum extent practicable.

24. Removal of Temporary Fills. Any temporary fills must be removed in their entirety and the affected areas returned to their preexisting elevation.

25. Designated Critical Resource Waters. Critical resource waters include, NOAA-designated marine sanctuaries, National Estuarine Research Reserves, National Wild and Scenic Rivers, critical habitat for Federally listed threatened and endangered species, coral reefs, state natural heritage sites, and outstanding national resource waters or other waters officially designated by a state as having particular environmental or ecological significance

and identified by the District Engineer after notice and opportunity for public comment. The District Engineer may also designate additional critical resource waters after notice and opportunity for comment.

(a) Except as noted below, discharges of dredged or fill material into waters of the US are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, and 44 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters. Discharges of dredged or fill materials into waters of the US may be authorized by the above NWPs in National Wild and Scenic Rivers if the activity complies with General Condition 7. Further, such discharges may be authorized in designated critical habitat for Federally listed threatened or endangered species if the activity complies with General Condition 11 and the USFWS or the NMFS has concurred in a determination of compliance with this condition.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with General Condition 13, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The District Engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

26. Fills Within 100-Year Floodplains. For purposes of this General Condition, 100-year floodplains will be identified through the existing Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps or FEMA-approved local floodplain maps.

(a) Discharges in Floodplain; Below Headwaters. Discharges of dredged or fill material into waters of the US within the mapped 100-year floodplain, below headwaters (i.e. five cfs), resulting in permanent above-grade fills, are not authorized by NWPs 39, 40, 42, 43, and 44.

(b) Discharges in Floodway; Above Headwaters. Discharges of dredged or fill material into waters of the US within the FEMA or locally mapped floodway, resulting in permanent above-grade fills, are not authorized by NWPs 39, 40, 42, and 44.

(c) The permittee must comply with any applicable FEMA-approved state or local floodplain management requirements.

27. Construction Period. For activities that have not been verified by the Corps and the project was commenced or under contract to commence by the expiration date of the NWP (or modification or revocation date), the work must be completed within 12-months after such date (including any modification that affects the project).

For activities that have been verified and the project was commenced or under contract to commence within the verification period, the work must be completed by the date determined by the Corps. For projects that have been verified by the Corps, an extension of a Corps approved completion date maybe requested. This request must be submitted at least one month before the previously approved completion date.

Permit #14. Linear Transportation Projects:

Activities required for the construction, expansion, modification, or improvement of linear transportation projects (e.g., roads, highways, railways, trails, airport runways, and taxiways) in waters of the United States. For linear transportation projects in non-tidalwaters, the discharge cannot cause the loss of greater than 1/2-acre of waters of the United States. For linear transportation projects in tidal waters, the discharge cannot cause the loss of greater than 1/3-acre of waters of the United States. Any stream channelmodification, including bank stabilization, is limited to the minimum necessary to construct or protect the linear transportation project; such modifications must be in the immediate vicinity of the project. This NWP also authorizes temporary structures, fills, and work necessary to construct the linear transportation project. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to preconstruction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

This NWP cannot be used to authorize non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if:

- (1) The loss of waters of the United States exceeds 1/10 acre; or
- (2) there is a discharge in a special aquatic site, including wetlands. (See general condition 27.) (Sections 10 and 404)

Note: Some discharges for the construction of farm roads or forest roads, or temporary roads for moving mining equipment, may qualify for an exemption under Section 404(f) of the Clean Water Act (see 33 CFR 323.4).

Any work proposed by the Contractor within drainage washes leading to the Waters of the US that is not consistent and allowed under the above requirements or 401/404 permits issued, shall be coordinated with the AOTR and the regulatory agencies prior to commencement of the work. Such work may require an amendment to the existing permits issued for this project or a separate permit prepared.



UNITED STATES GOVERNMENT
OFFICE OF NAVAJO AND HOPI INDIAN RELOCATION

Carl J. Kunasek
Commissioner

CULTURAL RESOURCES COMPLIANCE
DATE: June 6, 1994

Christopher J. Bavasi
Executive Director

MEMORANDUM

NH- 383 (HPD-94-252)

TO: Tim Varner, New Lands Manager.

FROM: Robert York, Cultural Resources Manager. *RY*

SUBJECT: Notification of Completion of Cultural Resources Compliance Process for Project: Temporary construction yard for Navajo- Rio Puerco Bridge & Road N2007 Realignment (NH-383):

This memo with attachments is your notification that the Cultural Resources Compliance Process has been completed for the subject undertaking/project.

It will be your responsibility to comply with "Conditions For Compliance" -- as given in attached Cultural Resources Compliance Form/Agreement and Report. Please ensure that personnel working on this project understand and comply with these requirements.

If project monitoring or other services of a Cultural Resources Specialist (e.g., archaeologist) are required (will be specified in attachments), please give this office adequate notice (at least one week preferably more) of the need for these services. *

If for any reason you cannot comply with the required conditions, immediately notify this department to that effect. In this event DO NOT initiate any action on the subject project until further CRM Compliance review is completed.

If you have questions or need further assistance do not hesitate to contact us. Please reference the above NH number when contacting this office.

Attachment(s): 1) NH-383 Compliance Form/Agreement.
2) NH-383 Map (p. 34) from LAC Report 9407 showing area that can be used for const. yard. & areas to avoid.

cc: G. Bair

COMMENTS: G. Bair will need to be involved to help define yard area.



NH- 383

ACRES CRM SURVEYED: 35.

PROJECT LOCATION: Map reference: USGS Navajo South, AZ, 7.5'.
T. 20 N, R. 26 E, Section 24, E 1/2. The survey block is located
on the south side of the Rio Puerco, ca. .6 mile SE of the Rio
Puerco Bridge at Navajo, AZ., along Road N2007.

PROJECT DESCRIPTION: Use of a 10 acre area as a temporary construction
yard to support construction of the new Rio Puerco Bridge and re-
alignment of Road N2007.

CULTURAL RESOURCES LOCATED: 13 archaeological sites & 14 IO's. See
report for details.

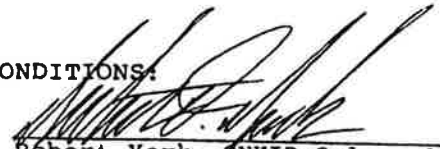
NRHP ELIGIBLE PROPERTIES: All 13 archaeological sites are considered
NRHP eligible. See report for details.

OTHER IMPORTANT CULTURAL RESOURCES (See CSTL-PA, Attachment A):
None.

DIRECT EFFECTS MITIGATION & COMPLIANCE CONDITIONS (per CSTL-PA,
Stipulation I.A.3.): The ONHIR will restrict use of the area to the
10 acre parcel indicated by LAC (Figure 18, page 34) to be free of
significant cultural properties. Additionally, we agree with LAC's
recommendations (pages 33 & 34) and will comply.

CRM REPORT/PROJECT APPROVED WITH CONDITIONS:

YES: XX NO: _____


Robert York, ONHIR Cultural
Resources Manager

May 5, 1994
Date Signed

Encl: Report NH- 383

NH- 383


CC: G. Bair

COMMENTS:

CONSULTING/CONCURRING PARTY SIGNATURE:

RE: NH- 383 ONHIR Compliance dated May 5, 1994.

AGREE: _____ AGREE WITH ADDED CONDITIONS (SPECIFY): ☒
DO NOT AGREE (EXPLAIN): _____

SIGNATURE: 
DATE SIGNED: 5/27/94
NAME (PRINTED): _____
TITLE: _____
AGENCY: NNHPD

CULTURAL RESOURCES COMPLIANCE FORM
HISTORIC PRESERVATION DEPARTMENT
P O BOX 4950
WINDOW ROCK, ARIZONA 86514

ROUTING:	COPIES TO	NNHPD NO. <u>94-252</u>
<u>X</u>	SHPO	OTHER PROJECT NO.
<u> </u>	ACHP	<u>LAC 9407</u>
<u>X</u>	REAL PROPERTY MGT/330	<u>ONHIR# NH-383</u>
<u> </u>	NNAD	<u> </u>
<u>X</u>	<u>La Plata & CSTL Pgm.</u>	<u> </u>

PROJECT TITLE: A Cultural Resources Survey of a Proposed Temporary Construction Yard, Southeast of Navajo Navajo New Lands Apache County, Arizona

LEAD AGENCY: ONHIR

SPONSOR: ONHIR

PROJECT DESCRIPTION: A ten acre temporary construction yard will be cleared and fenced, entailing extensive ground disturbance.

LAND STATUS: Tribal Trust

CHAPTER: Nahat'a' Dził

LOCATION: Apache County, Arizona, T20N R26E, Section 24

PROJECT ARCHAEOLOGIST: Fred Harden

NAVAJO ANTIQUITIES PERMIT NO.: B9411

DATE INSPECTED: March 1 to April 27, 1994

DATE OF REPORT: April 29, 1994

TOTAL ACREAGE INSPECTED: 35

METHOD OF INVESTIGATION: Class III pedestrian inventory with transects spaced 15 m apart.

LIST OF CULTURAL RESOURCES FOUND:

AZ-P-61-214

AZ-P-61-215

AZ-P-61-216

AZ-P-61-217

AZ-P-61-218

AZ-P-61-219

AZ-P-61-220

Previously Recorded Sites:

N2007-2

AZ-P-61-68

AZ-P-61-69

AZ-P-61-70

AZ-P-61-183

AZ-P-61-184

Fourteen isolated occurrences

One in-use site

LIST OF ELIGIBLE PROPERTIES:

AZ-P-61-68
AZ-P-61-69
AZ-P-61-70
AZ-P-61-183
AZ-P-61-184
AZ-P-61-214
AZ-P-61-215
AZ-P-61-216
AZ-P-61-217
AZ-P-61-218 (eligible under criterion d, not "a" as stated on p. 32 of report).
AZ-P-61-219
AZ-P-61-220

LIST OF NON-ELIGIBLE PROPERTIES:

Fourteen isolated occurrences
One in-use site

LIST OF ARCHAEOLOGICAL RESOURCES:

AZ-P-61-68
AZ-P-61-69
AZ-P-61-70
AZ-P-61-183
AZ-P-61-184
AZ-P-61-214
AZ-P-61-215
AZ-P-61-216
AZ-P-61-217
AZ-P-61-218

EFFECT/CONDITIONS OF COMPLIANCE: The proposed undertaking will have no effect on significant cultural resources provided that:

The boundary of N2007-2 is flagged and fenced between the construction yard and the site, under the direction of a qualified archaeologist.

The boundary of AZ-P-61-68 is flagged and fenced between the construction yard and the site, under the direction of a qualified archaeologist.

The boundary of AZ-P-61-69 is flagged and fenced between the construction yard and the site, under the direction of a qualified archaeologist.

The boundary of AZ-P-61-70 is flagged and fenced between the construction yard and the site, under the direction of a qualified archaeologist.

The boundary of AZ-P-61-183 is flagged and fenced between the construction yard and the site, under the direction of a qualified archaeologist.

The boundary of AZ-P-61-214 is flagged and fenced between the construction yard and the site, under the direction of a qualified archaeologist.

The boundary of AZ-P-61-216 is flagged and fenced between the construction yard and the site, under the direction of a qualified archaeologist.

All ground disturbing activities during the mechanical clearing of the construction yard will be monitored by a qualified archaeologist due to the possibility of buried components of sites located within the area of potential effects. The results of monitoring will be described in a brief letter report that will be provided to HPD within 30 days of completion of project construction.

A copy of this form has been sent to the SHPO notifying them of compliance with CMY-19-88 (Navajo Nation Cultural Resources Protection ACT, CRPA), however, it is the responsibility of the lead agency to comply with Section 106.

In the event of a discovery ["discovery" means any previously unidentified or incorrectly identified cultural resources including but not limited to archaeological deposits, human remains, or locations reportedly associated with Native American religious/traditional beliefs or practices], all operations in the immediate vicinity of the discovery must cease and the Navajo Nation Historic Preservation Department must be notified at (602)-871-7132.

FORM PREPARED BY: Chad Smith
FINALIZED: 5/24/94

Notification to

Proceed Recommended:


Yes XX

No

Conditions:

Yes XX

No


Alan Downer
Navajo Nation Historic
Preservation Officer

5/27/94
Date

**Preliminary
ENGINEER'S ESTIMATE**

**TRIBAL RESOLUTION
AUTHORIZING CONTRACT**

**RESOLUTION OF THE
BOARD OF DIRECTORS OF
NAVAJO ENGINEERING AND CONSTRUCTION AUTHORITY**

**Delegating to the Navajo Engineering and Construction Authority
General Manager the Authority to Negotiate and Execute
Contracts for Such Projects
Under Public Law 93-638**

WHEREAS:

1. The Navajo Engineering and Construction Authority (NECA) is an enterprise of the Navajo Nation organized to engage in general engineering and the heavy construction industry, train Navajo people, provide employment to Navajo tribal members, be the premier heavy construction contractor serving the Navajo Nation; and to do everything necessary and proper to accomplish the purposes of NECA, 5 N.T.C. §1972(a), as amended; and
2. The Navajo Engineering and Construction Authority's Plan of Operation, specifically 5 N.T.C. §1972 (b)(12), authorizes the NECA Board of Directors to enter into, make, perform, and carry out or cancel or rescind contracts, for any lawful purpose set forth in 5 N.T.C. §1972 and to delegate as much of this authority as may be advisable to the General Manager or to the President of the Board of Directors, and
3. The contracting of projects under Public Law 93-638 (Indian Self-Determination and Education Assistance Act) helps fulfill the purposes for which the Navajo Engineering and Construction Authority was organized as well as the stated purposes of the Act itself, and
4. Several projects will be available for negotiation in the near future.

NOW THEREFORE BE IT RESOLVED THAT:

1. The Navajo Engineering and Construction Authority Board of Directors hereby delegates the authority to the Navajo Engineering and Construction Authority's General Manager the Authority to

negotiate and execute contracts for such projects pursuant to Public Law 93-638.

2. The authority granted under this resolution shall remain in effect until rescinded by resolution of the Navajo Engineering and Construction Authority Board of Directors.

3. The Navajo Engineering and Construction Authority General Manager shall report to the Navajo Engineering and Construction Authority Board of Directors on a quarterly basis as to the status of all negotiations and the progress of all PL 93-638 projects under contract.

4. The Navajo Engineering and Construction Authority Board of Directors further directs and authorizes the President of the Board of Directors and Navajo Engineering and Construction Authority's Legal Counsel to do any and all things necessary and proper to ensure that NECA secures contracts under Public Law 93-638.

CERTIFICATION

I hereby certify that the foregoing resolution was duly considered by the Board of Directors of the Navajo Engineering and Construction Authority, at a duly called meeting at Phoenix, Arizona, at which a quorum was present and that same was passed by a vote of 8 in favor, 0 opposed this 11th day of December, 1992.


Ernest Hubbell, President,
Board of Directors, Navajo Engineering
and Construction Authority

IGRAP-76-93

Class "C" Resolution
No BIA Action Required.

RESOLUTION OF THE
INTERGOVERNMENTAL RELATIONS COMMITTEE
OF THE NAVAJO NATION COUNCIL

Recognizing the Navajo Engineering and Construction Authority's Authority to Contract With the United States Government Pursuant to Public Law 93-638 and Other Federal Laws for Construction Projects Within the Navajo Nation; Recognizing the Clarification of the Navajo Engineering and Construction Authority Plan of Operation Clarifying the Navajo Engineering and Construction Authority's Contracting Authority

WHEREAS:

1. The Intergovernmental Relations Committee of the Navajo Nation Council is empowered by 2 N.T.C., Section 824 (b) (4), as amended, to authorize, review, approve and accept any and all contracts, grants and associated budgets for the implementation of Public Law 93-638; and
2. The Navajo Engineering and Construction Authority (NECA) was established as an enterprise of the Navajo Nation, by Resolution CJN-56-72, and a Plan of Operation was adopted delegating certain authorities, including contracting authority to NECA; and
3. By Navajo Tribal Council Resolution CJN-37-75, the Bureau of Indian Affairs was requested to contract with NECA pursuant to Public Law 93-638 any construction contracts. Resolution CJN-37-75 further authorized the NECA to negotiate and enter into contracts pursuant to Public Law 93-638 for construction projects within the Navajo Nation. A copy of Resolution CJN-37-75 is attached hereto and incorporated herein as Exhibit "A"; and
4. By Resolution CN-67-89, the Navajo Nation Council amended the Plan of Operation for NECA and continued to grant broad contracting authority to NECA, 5 N.T.C., Section 1972 (b) (12); and
5. The delegation broad contracting authority granted by Resolution CN-67-89 and Resolution CJN-37-75 remain unchanged and unaffected by the Title 2 Amendments of 1989; and

6. The delegation of authority to the Intergovernmental Relations Committee of the Navajo Nation Council, by 2 N.T.C., Section 824 (b) (4), is for the purpose of authorizing review, approval and acceptance of contracts, grants and associated budgets for the Navajo Nation assumption of Bureau of Indian Affairs programs or functions; and

7. The type of construction contracts entered into and negotiated by the NECA with the Bureau of Indian Affairs is different than an attempt by the Navajo Nation to assume a Bureau of Indian Affairs program and function; and

8. The Navajo Area Director, Walter R. Mills, has by letter dated August 7, 1991, required the responsible Navajo Nation Council oversight committee to reauthorize Public Law 93-638 contracting authority of NECA in spite of 5 N.T.C., Section 1972 (b) (12). There is no federal authority which requires periodic reauthorization of P.L. 93-638 contracting authority. A copy of Area Director Mills' letter is attached hereto and incorporated herein as Exhibit "B"; and

9. The intent of 5 N.T.C., Section 1972 (b) (12) and the purpose of NECA are to run NECA as a business, thereby eliminating the need for tribal approval of each and every contract with the United States Government; and

10. The NECA contracting of construction projects with the United States Government is consistent with the intent and purpose of Public Law 93-638; and

11. The Economic Development Committee of the Navajo Nation Council, pursuant to its authority to amend the NECA Plan of Operation, 5 N.T.C., Section 1981, and its legislative oversight authority, 2 N.T.C., Section 724 (e), by Resolution EDCD-118-92 clarified that NECA grant of broad contracting authority does not require prior or subsequent Navajo Nation approval. A copy of Resolution EDCD-118-92 is attached hereto and incorporated herein as Exhibit "C"; and

12. It is in the best interest of the Navajo Nation and NECA that the contracting authority granted to NECA for Public Law 93-638 contracts and other contracts with the United States Government for construction of projects within the Navajo Nation be reaffirmed and that the amendments approved by the Economic Development Committee of the Navajo Nation Council, Resolution EDCD-118-92, be affirmed to clarify the scope of NECA's contracting authority.

NOW THEREFORE BE IT RESOLVED THAT:

1. The Intergovernmental Relations Committee of the Navajo Nation Council hereby recognizes Navajo Tribal Council Resolution CJN-37-75 and authorizes the Navajo Engineering and Construction Authority the authority to negotiate and execute contracts with the United States Government pursuant to Public Law 93-638 and other federal laws for construction projects within the Navajo Nation without prior or subsequent Navajo Nation approval.

2. The Intergovernmental Relations Committee of the Navajo Nation Council further approves the information attached hereto and incorporated herein as Exhibit "D" for purposes of satisfying 25 C.F.R., Section 271.18 (c) (2).

CERTIFICATION

I hereby certify that the foregoing resolution was duly considered by the Intergovernmental Relations Committee of the Navajo Nation Council at a duly called meeting at Window Rock, Navajo Nation (Arizona), at which a quorum was present and that same was passed by a vote of 8 in favor, 0 opposed and 1 abstained, this 26th day of April, 1993.



Chairman

Intergovernmental Relations Committee