

CONTRACT NO. _____

**INDIAN SELF-DETERMINATION
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 4.026 KILOMETERS OF
GRADE, DRAINAGE, PLACEMENT OF AGGREGATE BASE SURFACING, TWO SPAN
STEEL BEAM WITH COMPOSITE CONCRETE DECK BRIDGE AND
MISCELLANEOUS CONSTRUCTION
IN ACCORDANCE WITH THE FP-03 SPECIFICATIONS AND DESIGN DRAWINGS
FOR PROJECT N46(1)1,2&4 AND N9(13)2&4 LOCATED IN AND NEAR
PUEBLO PINTADO, NEW MEXICO
McKINLEY COUNTY, NAVAJO NATION**

TABLE OF CONTENTS

**SECTION A – CONTRACT FORM AND AGREEMENT – General
Terms, Provisions, and Conditions**

1. Authority
2. Purpose
3. Contractors Obligations
4. Contract Term and Effective Date
5. Funding Amount
6. Payment
7. Awarding Official's Representative
8. Technical Assistance
9. Federal Acquisition Regulation (FAR) Clauses
10. Responsibilities of the Contractor
11. Obligation of the Government
12. Designated Officials
13. Modification and Amendments
14. Accounting Certification
15. Drawings and other Data to Become Property of the Government
16. Approval of the Contract (Tribal Resolution)
17. Privacy Act Requirements
18. Freedom of Information
19. Audit Requirements
20. Penalties
21. Records, Monitoring and Reporting
22. Withholding Contract Payments
23. Furnishing Facilities, Equipment, Supplies, Services-Budgeted Costs
24. Billing for Indirect Cost
25. Office of Navajo Labor Relation Office
26. Accident Prevention
27. Disputes
28. Suspension of Work
29. Termination of Work for Cause
30. Termination for Convenience
31. Subcontracts

SECTION B – BUDGET/CONTROL SCHEDULE

1. Schedule of Allowable Costs
2. Summary of Project(s) Costs – Bid Schedule
3. Schedule of Project Target Dates

SECTION C – PROGRAM STANDARDS AND STATEMENT OF WORK

1. Program Standards
2. Statements of Work
3. Special Contract Requirements
4. Department of Labor – General Decision
5. Plans & Specifications

SECTION E – INSPECTION AND ACCEPTANCE

1. Contract Monitoring
2. Project/Program Review

SECTION F – DELIVERIES OF PERFORMANCE

1. Contract Term
2. Schedule of Deliverables

SECTION I – FAR CLAUSES APPLICABLE TO THIS CONTRACT AND ALL SUBCONTRACTS UNDER THIS CONTRACT.

SECTION J – ATTACHMENTS

1. Environmental & Archeological Clearance Requirements – R/W Terms & Conditions
1. Preliminary Engineer's Estimate (Construction)
2. Tribal Resolution Authorizing this Contract

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: _____

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, **Project N46(1)1,2&4 and N9(13)2&4 located in and near Pueblo Pintado, New Mexico** 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 (IRRBP) 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 4.026 KILOMETERS OF GRADE, DRAINAGE, PLACEMENT OF AGGREGATE BASE SURFACING, TWO SPAN STEEL BEAM WITH COMPOSITE CONCRETE DECK 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 (\$) 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 partial 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 transmitted to the Regional Approving Official for ACH payments for processing through the PL 93-638 ACH 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

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

NAME	PHONE

The Official Representative to negotiate for the Contractor is:

NAME	PHONE
Mr. Cary Patterson	(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 be 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 = 4% on applicable materials and subcontracts; Profit = 8% of direct cost; Overhead = 30% 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 (SubAOTR); (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 waive 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 <u>Schedule of Allowable Costs</u>				
Project Name: Pueblo Pintado Bridge Project Project I.D.: N46(1)1,2&4 and N9(13)2&4, located in and near Pueblo Pintado, NM				
Program Cost Code	Expenditure Account Description	FY 2010 Contract Funding Amount	Party Responsible For completing the work	Government Direct Service Estimated Amount
<i>TO BE INSERTED</i>	Construction	\$	Contractor	\$ 0.00
TOTAL CONTRACT AMOUNT.....\$				

BID SCHEDULE

BID SCHEDULE

December 12, 2009

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 4.026 kilometers of grade, drainage, placement of aggregate base surfacing, two span steel beam with composite concrete deck bridge and miscellaneous construction in accordance with the FP-03 specifications and design drawings for Project N46(1)1,2&4 and N9(13)2&4 located in and near Pueblo Pintado, NM.

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.

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
10901-0000	Extra & Miscellaneous Work Authorized Under Section 109.02(m)	All Req'd	Lump Sum	\$ 100,000.00	\$ 100,000.00
15101-0000	Mobilization	All Req'd	Lump Sum	\$	\$
15201-0000	Construction Survey and Staking	All Req'd	Lump Sum	\$	\$
15301-0000	Contractor Quality Control	8,275	Man Hour	\$	\$
15701-0000	Soil Erosion Control	All Req'd	Lump Sum	\$	\$
15708-1000	Soil Erosion Control Temporary Straw Mulching	6.68	Hectare	\$	\$
20102-0000	Clearing & Grubbing	All Req'd	Lump Sum	\$	\$
20304-1000	Removal of Structures & Obstructions	All Req'd	Lump Sum	\$	\$
20401-0000	Roadway Excavation	55,498	Cubic Meter	\$	\$
20425-2000	Ditch Excavation, Furrow Ditch	244	Meter	\$	\$
20443-2000	Earthen Berm, Type B, Ditch Block	8	Meter	\$	\$
20601-0000	Development of Water Supply	17.3	M-Liter	\$	\$
21101-2000	Roadway Obliteration, Method 2	2,130	Square Meter	\$	\$

P. L. 93-638 Construction Contract

Bureau of Indian Affairs

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
25101-2000	Placed Riprap, Class 2	460	Cubic Meter	\$	\$
25112-2000	Wire Enclosed Riprap, Class 2	1,173	Cubic Meter	\$	\$
30101-2000	Aggregate Base, Grade "D"	13,782	Metric Ton	\$	\$
40201-0500	Hot Asphaltic Concrete Pavement, Marshall Test Class B, Grade B	8,380	Metric Ton	\$	\$
40502-1200	Asphalt Binder PG 64-28	472	Metric Ton	\$	\$
41101-5000	Prime Coat, Grade MC-70	58	Metric Ton	\$	\$
41201-1000	Asphalt Tack Coat, Grade SS-1, Emulsified Cement	1	Metric Ton	\$	\$
55101-1800	HP 360 x 108 Steel Piles, In Place	307	Meter	\$	\$
55115-1000	Preboring	194	Meter	\$	\$
55120-0000	HP 360 x 108 Steel Test Piles, In Place	71	Meter	\$	\$
55201-0200	Structural Concrete Class A(AE), 27.6 MPa	358	Cubic Meter	\$	\$
55401-1000	Reinforcing Steel, Grade 420	10,212	Kilogram	\$	\$
55401-2000	Epoxy Coated Reinforcing Steel, Grade 420	31,540	Kilogram	\$	\$
55502-0000	Structural Steel, Bolts, Steel Diaphragm and Misc. Steel Plates Furnished, Fabricated, and Erected	81,625	Kilogram	\$	\$
55601-0900	Steel Bridge Rail	118	Meter	\$	\$
56302-2000	Painting HP 360 x 108 Steel Piles	6	Square Meter	\$	\$
60201-0810	610 millimeter Pipe Culvert	46	Meter	\$	\$
60201-0910	762 millimeter Pipe Culvert	24	Meter	\$	\$
60202-0510	711 millimeter Span, 508 millimeter Rise Pipe Arch Culvert	123	Meter	\$	\$
60202-0610	889 millimeter Span, 610 millimeter Rise Pipe Arch Culvert	40	Meter	\$	\$
60202-0710	1067 millimeter Span, 737 millimeter Rise Pipe Arch Culvert	46	Meter	\$	\$
60210-0810	End Section for 610 millimeter Pipe Culvert	3	Each	\$	\$
60210-0910	End Section for 762 millimeter Pipe Culvert	1	Each	\$	\$
60211-0910	End Section for 711 millimeter Span, 508 millimeter Rise Pipe Arch Culvert	12	Each	\$	\$
60211-1010	End Section for 889 millimeter Span, 610 millimeter Rise Pipe Arch Culvert	1	Each	\$	\$

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
60211-1110	End Section for 1067 millimeter Span, 737 millimeter Rise Pipe Arch Culvert	2	Each	\$	\$
60701-1000	Remove, Cleaning and Stockpiling Culvert	145	Meter	\$	\$
61501-0100	Sidewalk, Concrete, 100 mm Dept, 1.5 m Wide	184	Square Meter	\$	\$
61701-5000	Guardrail System SGR-04b Type PDE 02 w/ ET-Plus End Treatment	99	Meter	\$	\$
61901-1000	Fence, Barbed Wire, 5-Strand	6,794	Meter	\$	\$
61901-1300	Pedestrian Fencing, Chain Link	114	Meter	\$	\$
61903-0310	Cattleguard, 4900 mm with Type II Gate	5	Each	\$	\$
61903-0710	Cattleguard, 7190 mm with Type II Gate	2	Each	\$	\$
61903-1210	Cattleguard, 11770 mm with Type II Gate	1	Each	\$	\$
62101-0000	ROW Monument	58	Each	\$	\$
62102-0000	Reference Market	57	Each	\$	\$
62510-1000	Seeding, Dry Method	6.68	Hectare	\$	\$
62901-1100	Rolled Erosion Control Product, Type 4	937	Square Meter	\$	\$
63302-0001	Sign Installation, 1 Post & Hardware: 2.98 kg/m	0.56	Square Meter	\$	\$
63302-0003	Sign Installation, 1 Post & Hardware: 4.10 kg/m	8.32	Square Meter	\$	\$
63302-0010	Sign Installation, 2 Posts & Hardware: 2.98 kg/m	17.37	Square Meter	\$	\$
63302-0012	Sign Installation, 2 Posts & Hardware: 4.10 kg/m	7.39	Square Meter	\$	\$
63308-2000	Object Markers, Flexible, Type 2	12	Each	\$	\$
63308-3000	Object Markers, Type 3 with 1 Post and Hardware: 2.98 kg/m	4	Each	\$	\$
63309-0020	Delineator, Glass Fiber, Type 1b	64	Each	\$	\$
63401-1510	Pavement Markings, Type "H", Solid Yellow	5,232	Meter	\$	\$
63401-1520	Pavement Markings, Type "H", Solid White	7,698	Meter	\$	\$
63401-1610	Pavement Markings, Type "H", Broken Yellow	1,706	Meter	\$	\$
63405-2900	Pavement Markings, Type "H", Turn Arrow	4	Each	\$	\$

P. L. 93-638 Construction Contract

Bureau of Indian Affairs

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
63405-2950	Pavement Markings, Type "H", Straight Arrow	4	Each	\$	\$
63405-3050	Pavement Markings, Type "H", Word "ONLY"	4	Each	\$	\$
63405-3260	Pavement Markings, "STOP Bar", Type "H", Solid White	5	Each	\$	\$
63501-0000	Temporary Traffic Control	All Req'd	Lump Sum	\$	\$
63502-3000	Temporary Traffic Control, Raised Pavement Markers	288	Each	\$	\$
63506-0500	Temporary Traffic Control, Flagger	12,966	Man Hour	\$	\$
63801-0000	Herbicide Application, Type: Glyphosate (Roundup®)	All Req'd	Lump Sum	\$	\$
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
N46(1)1,2&4 and N9(13)2&4	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**

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 57 BIAM; 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 (FLFP) 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 N46(1)1,2&4 and N9(13)2&4, located in and near Pueblo Pintado, NM** 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), 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

SPECIAL CONTRACT REQUIREMENTS

rev: August 17, 2009

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.

- 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 AO 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 Government review and/or approval, which delays the Contractor. A delay caused by Tribal or other local permitting processes is the responsibility of the Contractor. Written proof is required to substantiate any contractor delays.

The Contractor shall perform aggregate quality tests on three (3) representative samples (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 borne by 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, and construction yards 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. 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 progress pay estimate is approved by the AO. The progress pay estimate must include copies of the actual field

book measurements taken, for each item of work requesting payment on, for verification by the AOTR. Unless other methods of payment are agreed to in writing, it is the responsibility of the Contractor (Superintendent) and AOTR to agree upon the amount of work and/or quantities in place which will be the basis of progress payment invoicing (see section 109 of FP-03 supplemental specification). The Contractor (Superintendent) shall prepare a progress pay estimate, sign the estimate, and forward the estimate reflecting the agreed upon work for a given pay period to the AOTR. The AOTR will verify the pay estimate by signing and forwarding the estimate to the AO within 3 working days of receipt. If the AOTR or Regional DOT Manager cannot validate the estimate, then the estimate shall be returned back to the Contractor for corrections and a new invoice prepared and submitted.

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 120 calendar days for weather conditions normal to the project area and provides adequate time for shutdowns during normal weather conditions including 1 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 guardrailing, 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 compliances 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 (i.e.; 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, traceable paperwork, markings or other industry standard methods of material identifications 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 2005 or Microstation V8 2004 compatible 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 8 feet in width by 30 feet in length having a minimum ceiling height of 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 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:

<u>Distance (D)</u>	<u>Load (L)</u>	<u>Distance (D)</u>	<u>Load (L)</u>	<u>Distance (D)</u>	<u>Load (L)</u>
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 sized (Architectural D size) or 5 half sized (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 2005 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 both the Navajo Nation Historic Preservation (HPD) Office Programmatic Agreement for archeological discovery procedures, and NEPA regulations as may be described in this contract and/or shown on 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 shall conduct the grading operations ONLY with an HPD archeologist present. The contractor shall contact Mrs. Marie Dineyazhe, HPD Roads Archeology Manager, prior to any construction within the area of the site(s), so that an HPD archaeologist can be present during

construction. For further information, the Contractor shall call the HPD office at (928)871-7688. 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.

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, 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 utility relocations (where applicable) with the utility owners 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 tribal regulations.
- I. The Contractor's camp site and construction yard shall be kept clean and free of litter at all time 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 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 (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 labor, equipment, materials and work required for testing by an AWS Certified Welding Inspector shall be considered incidental to the Bid Schedule Item under which the structural member is to be paid for.
- L. Other requirements as outlined in Section J, *Attachments, 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, 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.
- 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, 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, 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, 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>)

DEPARTMENT OF LABOR

**GENERAL DECISION NO.:
NM080002 07/24/2009 NM2**

NEW MEXICO - HIGHWAY

P. L. 93-638 Construction Contract

Bureau of Indian Affairs

General Decision Number: NM080002 07/24/2009 NM2

Superseded General Decision Number: NM20070002

State: New Mexico

Construction Type: Highway

Counties: Catron, Chaves, Cibola, Colfax, Curry, De Baca, Eddy, Grant, Guadalupe, Harding, Hidalgo, Lea, Lincoln, Luna, McKinley, Mora, Otero, Quay, Rio Arriba, Roosevelt, San Juan, San Miguel, Sandoval, Sierra, Socorro, Taos, Torrance, Union and Valencia Counties in New Mexico.

STREETS, HIGHWAY, UTILITY AND LIGHT ENGINEERING: Construction shall include the construction, alteration, repair and demolition of roads, streets, highways, alleys, sidewalks, curbs, gutters, guard rails, fences, parkways, parking areas, airports (other than building thereon), bridle paths, athletic fields, highway bridges, median channel and grade separation involving highways; parks, golf courses, viaducts; uncovered reservoirs and uncovered sewage and water treatment facilities; canals, ditches and channels (including lining other than concrete linings); earth dams under one million (1,000,000) cubic yards; well drilling, telephone and electrical transmission lines and site preparations which are part of streets, highway, utility and light engineering projects; and shall include construction, alteration, repair, and demolition of utilities such as sanitary sewers, water lines, gas lines, including appurtenances thereto such as lift stations, inlets, manholes, sewer lagoons, septic tanks and service outlets (stubouts) providing such utility construction is outside the property line or five (5) feet from a building or heavy engineering structure, including the Navajo Indian Reservation.

Modification Number	Publication Date
0	02/08/2008
1	07/25/2008
2	07/24/2009

* SUNM1992-001 10/21/1992

Rates

Fringes

P. L. 93-638 Construction Contract

Bureau of Indian Affairs

CARPENTER.....	\$ 8.11	.44
CEMENT MASON/CONCRETE FINISHER....	\$ 8.18	.26
ELECTRICIAN.....	\$ 17.00	2.35
IRONWORKER, REINFORCING.....	\$ 7.96	.50
IRONWORKER, STRUCTURAL.....	\$ 9.36	1.29

LABORER

GROUP 1

Common laborer; carpenter tender; concrete buggy op. (hand); concrete workers.....	\$ 7.25	.35
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GROUP 2

Air & power tool man; asphalt heaterman; asphalt jointman; asphalt raker; batching plant scaleman; tenders (to cement mason & plasterer); chain sawman; concrete power buggyman; concrete touchup man; concrete sawman; curbing machine, asphalt or cement; cutting torchman; metal form setter-road; grade setter; hod carrier; mortar mixer & mason tender; powderman or blaster tender; sandblaster; scaler; Vibratorman (hand type); vibrator compactor (hand type); wagon air tract, drill & diamond driller (outside) & tender.....	\$ 7.25	.35
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GROUP 3

Guniting pumpcrete & nozzleman; multiplate setter; manhold builder; pipelayer; powderman- blaster-make-up.....	\$ 7.25	.35
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LINE CONSTRUCTION: Cable

P. L. 93-638 Construction Contract

Bureau of Indian Affairs

Splicer

AREA A

Zone I.....	\$ 19.47	2.70+3.75%
Zone II.....	\$ 21.06	2.70+3.75%
Zone III.....	\$ 22.13	2.70+3.75%
Zone IV.....	\$ 24.07	2.70+3.75%

AREA B

Zone I.....	\$ 15.49	1.80+3.75%
Zone II.....	\$ 17.54	1.80+3.75%

AREA C

Zone I.....	\$ 16.78	2.25+3.75%
Zone II.....	\$ 17.23	2.25+3.75%
Zone III.....	\$ 17.38	2.25+3.75%
Zone IV.....	\$ 17.63	2.25+3.75%

COMMERCIAL LINE WORK

LINE CONSTRUCTION: Equipment
Operator (includes helicopter
operator)

AREA A

Zone I.....	\$ 16.81	2.70+3.75%
Zone II.....	\$ 18.40	2.70+3.75%
Zone III.....	\$ 19.47	2.70+3.75%
Zone IV.....	\$ 21.41	2.70+3.75%

COMMERCIAL LINE WORK

LINE CONSTRUCTION: Groundman

AREA A

Zone I.....	\$ 12.57	2.70+3.75%
Zone II.....	\$ 14.16	2.70+3.75%
Zone III.....	\$ 15.23	2.70+3.75%
Zone IV.....	\$ 17.17	2.70+3.75%

AREA C

Zone I.....	\$ 11.68	2.25+3.75%
Zone II.....	\$ 12.13	2.25+3.75%
Zone III.....	\$ 12.28	2.25+3.75%
Zone IV.....	\$ 12.53	2.25+3.75%

COMMERCIAL LINE WORK

Line Construction: Equipment
Mechanic (includes helicopter
mechanic)

AREA A

Zone I.....	\$ 16.81	2.70+3.75%
Zone II.....	\$ 18.40	2.70+3.75%
Zone III.....	\$ 19.47	2.70+3.75%
Zone IV.....	\$ 21.41	2.70+3.75%

P. L. 93-638 Construction Contract

Bureau of Indian Affairs

AREA B

Zone I.....	\$ 12.83	1.80+3.75%
Zone II.....	\$ 14.53	1.80+3.75%

COMMERCIAL LINE WORK

Line Construction: Equipment
Operator and Mechanic
(includes helicopter operator
& mechanic)

AREA C

Zone I.....	\$ 14.31	2.25+3.75%
Zone II.....	\$ 14.76	2.25+3.75%
Zone III.....	\$ 14.91	2.25+3.75%
Zone IV.....	\$ 15.16	2.25+3.75%

COMMERCIAL LINE WORK

Line Construction:
Groundman-Jackhammer

AREA B

Zone I.....	\$ 10.47	1.80+3.75%
Zone II.....	\$ 11.86	1.80+3.75%

COMMERCIAL LINE WORK

Line Construction:
Lineman/Line Technician

AREA A

Zone I.....	\$ 17.70	2.70+3.75%
Zone II.....	\$ 19.29	2.70+3.75%
Zone III.....	\$ 20.36	2.70+3.75%
Zone IV.....	\$ 22.30	2.70+3.75%

AREA B

Zone I.....	\$ 15.05	1.80+3.75%
Zone II.....	\$ 17.03	1.80+3.75%

AREA C

Zone I.....	\$ 16.45	2.25+3.75%
Zone II.....	\$ 16.90	2.25+3.75%
Zone III.....	\$ 17.05	2.25+3.75%
Zone IV.....	\$ 17.30	2.25+3.75%

COMMERCIAL LINE WORK

Line Construction: Powderman

AREA A

Zone I.....	\$ 15.40	2.70+3.75%
Zone II.....	\$ 16.99	2.70+3.75%
Zone III.....	\$ 18.06	2.70+3.75%
Zone IV.....	\$ 20.00	2.70+3.75%

AREA B

P. L. 93-638 Construction Contract

Bureau of Indian Affairs

Zone I.....	\$ 12.39	1.80+3.75%
Zone II.....	\$ 14.03	1.80+3.75%
AREA C		
Zone I.....	\$ 13.82	2.25+3.75%
Zone II.....	\$ 14.27	2.25+3.75%
Zone III.....	\$ 14.42	2.25+3.75%
Zone IV.....	\$ 14.67	2.25+3.75%
COMMERCIAL LINE WORK		
Line Construction		
UTILITY FOR ELECTRIC & TELEPHONE UTILITIES, REA CO-OPS, RAILROADS & MUNICIPALITIES		
Cable Splicer.....	\$ 18.75	2.95+3.75%
Equipment Operator & Mechanic (includes helicopter operator and mechanic).....	\$ 15.24	2.95+3.75%
Groundman - Jackhammer.....	\$ 11.91	2.95+3.75%
Lineman/Technician.....	\$ 17.52	2.95+3.75%
Powderman.....	\$ 14.72	2.95+3.75%
PAINTER		
Brush.....	\$ 8.64	.91
Spray.....	\$ 9.09	.20
Plumbers and Pipefitters		
All irrigation & lawn sprinkler work.....		
AREA I.....	\$ 7.80	3.09
Specific Area.....	\$ 17.94	4.99
	\$ 18.74	4.99
Power Equipment Operator		
GROUP 1		
Concrete paving curing machine.....	\$ 8.06	.26
GROUP 10		
Pipemobile op., mole op.....	\$ 10.51	.26
GROUP 2		
Belt type conveyors (material & concrete); broom (self-propelled); fork lift; grease truck op.; head oiler; hydro life; tractor (under 50 drawbar HP with or		

without attachment);
 industrial locomotive
 brakeman; front end
 loader (2 CY or less);
 fireman; oiler;

screedman; roller (pull
 type); mulching machine;
 roller (self-propelled).....\$ 8.26 .26

GROUP 3

Concrete paving form
 grader; concrete paving
 gang vibrator; concrete
 paving joint or saw
 machine; concrete paving
 subgrader; tractor with
 backhoe attachment;
 subgrade or base
 finisher; power plant
 (electric, general or
 welding machine).....\$ 8.84 .26

GROUP 4

Bulldozer (including self-
 propelled roller with
 dozer attachment; batch
 or continuous mix plant
 (concrete soil-cement or
 asphalt); roller (steel
 wheel) front end loader
 (2 CY through 10 cy);
 scraper; motor grader.....\$ 8.86 .26

GROUP 5

Asphalt distributor;
 asphalt paving or laydown
 machine; asphalt retort
 heater; mixer, heavy
 duty, asphalt or soil
 cement; trenching
 machine; clam-type
 shaftmucker; backhoe,
 clamshell, dragline,
 gradall, shovel (under
 3/4 CY); elevating grader
 or belt loader; cranes
 (crawler or mobile) under
 20 ton; air compressor
 (300 CFM 7 over);
 crushing screening &

washing plants; drilling machine (cable, core or rotary); mixer, concrete (1 CY & less); pump (6" intake or over); winch truck; hoist (1 drum);		
industrial locomotive motorman, lumber stacker; tractor (50 drawbar HP or over).....	\$ 8.86	.26
GROUP 6		
Concrete paver mixer; hoist (2 drum & over); side boom; traveling crane; piledriver; backhoe, clamshell, dragline, gradall, shovel (3/4 CY to 3 CY); cranes (crawler or mobile) 20 ton to 40 ton; front end loader (over 10 CY); mixer concrete (over 1 CY); mechanic and/or welder.....	\$ 9.01	.26
GROUP 7		
Concrete slip-form paving machine; concrete paving finishing machine; concrete paving longitudinal float; guniting machines; refrigerator; jumbo form or drilling; stage; slusher; concrete paving spreader; pumpcrete machine; grout pump op.....	\$ 9.06	.26
GROUP 8		
Mine hoist; bulldozer (multiple units); scraper (multiple units); mucking machines; backhoe, clamshell, dragline, gradall, shovel (over 3 CY); cranes (crawler or mobile).....	\$ 9.21	.26
GROUP 9		
Belt loader (CMI type)		

P. L. 93-638 Construction Contract

Bureau of Indian Affairs

op.; derrick cableway.....\$ 9.71 .26

TRUCK DRIVER

Diesel-powered transport;
lowboy heavy equipment.....\$ 7.35 .26
Distributor (asphalt;
transit-mix; lowboy, light

equipment; off-high
hauler; dump truck over 16
cubic yards; trailer semi-
trailer dump.....\$ 7.25 .26

Dump truck, 8 to 16 cubic
yards; flat bed over 1 1/2
ton.....\$ 7.25 .26

Pick-up truck 3/4 ton or
under; warehouseman; dump
truck under 8 cubic yards;
flat bed, 1 1/2 ton or
under.....\$ 7.25 .26

AREA AND ZONE DEFINITIONS COMMERCIAL LINE WORK (excluding
work done for electric & telephone utilities, REA co-ops,
railroad & municipalities);

AREA A - Also applies to switching stations & substations
adjacent to power plants. Catron, Chaves, Cibola, Colfax,
Curry, Debaca, Grant, Guadalupe, Harding, Lincoln,
Mckinley, Mora, Quay, Rio Arriba, Roosevelt, Sandoval, San
Juan, San Miguel, Sierra, Socorro, Taos, Torrance, Union,
Valencia, and those portions of White Sands Missile Range
and Fort Bliss in Otero County, New Mexico

ZONE 1 - Cities & Towns Basing Points & Miles from Main Post
Office

Roswell - 12 miles
Ruidoso - 12 miles
Las Vegas - 8 miles
Portales - 12 miles
Farmington - 6 miles
Carrizozo - 12 miles
Raton - 6 miles
Clovis - 12 miles
Tucumcari - 6 miles
Gallup - 10 miles

ZONE II - Extending up to 20 miles beyond Zone I, EXCEPT
ALBUQUERQUE, rates per hour shall be increased by 9% of the

journeyman rate of Zone I

ZONE III - Extending up to 30 miles beyond Zone I, EXCEPT ALBUQUERQUE rates per hour shall be increased by 15% of the journeyman rate of Zone I

ZONE IV - Anything beyond 30 miles from Zone I, EXCEPT ALBUQUERQUE rates per hour shall be increased by 26% of the

journeyman rate for Zone I.

For establishing the outlying free zones from the Albuquerque free zone only, Zone II shall extend up to 10 miles beyond Zone I, Zone III shall extend up to 20 miles beyond Zone I and Zone IV anything beyond 20 miles from Zone I.

AREA B - Applies to switching stations & substations adjacent to power plants in Zone I & Zone II in Luna, Dona Ana, Otero & Hidalgo Counties, exclusive of those portions of White Sands Missile Range and Fort Bliss in Dona Ana County, New Mexico.

ZONE I - that area within 25 miles radius from the downtown Office of El Paso, Texas, Fort Bliss & Biggs Field; the area within a 5 mile radius of any city, town or municipality within which an employer establishes or maintains his place of business; the area within 10 mile radius from the Post Office in Alamogordo, New Mexico.

ZONE II - all other areas of the jurisdiction except those specified in Zone I.

AREA C - Applies to switching stations adjacent to power plants in Eddy & Lea Counties; the following zones listed shall be designated from the Main Post Office of Artesia, Carlsbad, Hobbs & Lovington:

Zone I - 0 to 12 miles

Zone II - 12 to 22 miles

Zone III - 22 to 40 miles

Zone IV - 40 miles & beyond

PLUMBERS & PIPEFITTERS AREA DEFINITIONS:

AREA I: Alamogordo, Artesia, Belen, Bernalillo, Carlsbad, Clovis, Deming, Espanola, Estancio, Farmington, Gallup, Grant, Hobbs, Las Vegas, Lordsburg, Los Lunas, Lovington, Moriarty, Portales, Raton, Rio Rancho, Ruidoso, Silver City, Santa Rosa, Santa Teresa, Socorro, Taos, Tucumcari,

Truth or Consequence, Artesia, Carlsbad, Hobbs, and Lovington.

AREA I - SHALL INCLUDE A DISTANCE OF ELEVEN (11) ROAD MILES INCLUSIVE BEYOND THE CITY OR TOWN LIMITS FOR THE CITIES OR TOWNS LISTED ABOVE AS BASING POINTS.

Specific Area: Los Alamos, White Rock, South Mesa, McGregor Range, White Sands Missile Range and/or Proving Grounds

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)).

In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

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.

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)

SECTION 101 - TERMS, FORMAT, AND DEFINITIONS

101.04

Definitions: Add and/or replace the following terms with their respective definitions:

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

Awarding Official (AO). The AO is the duly authorized representative of the government who is authorized to enter into contracts and agreements and is responsible for awarding of P.L. 93-638 construction contracts and the administering thereof including determination of findings, issuing cure notices, contract terminations, and stop work order. Under P.L. 93-638 contracts, the term CO/AO referred to in the FP-2003 means the AO.

Awarding Official's Technical Representative (AOTR).-- The AOTR is the duly authorized representative of the AO, and will act for the AO in administering the P.L. 93-638 contract through written delegation. The AOTR's duties and responsibilities are delineated by letter from the AO to the AOTR with a copy sent to the Contractor. Under P.L. 93-638 contracts, the term "AOTR" referred to in the FP-2003, Special Contract Requirements, supplemental specification, and construction plans means the Awarding Official's Technical Representative.

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.

rev:01/05/10

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:

- (a) Changes - See Contract Clause 52.243-4.
- (b) Differing Site Conditions - See Contract Clause 52.236-2
- (c) 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, Supplier representatives, QCM, Alternate QCM and QC Inspectors/Technicians. The Government key personnel that may attend the first partnering meeting are Awarding Official, AOTR Project Manager, 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 will 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 appears to be viable or if the concept is unacceptable. If the AO indicates that the concept appears to be viable, prepare and submit the formal VECF proposal.

rev:03/29/09

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) P.L. 93-638 Part 900 Subpart J
- (b) 25 CFR Part 170, as amended
- (c) Federal Acquisition Regulations
- (d) Special Contract Requirements
- (e) Supplemental Specifications
- (f) Standard Specifications
- (g) Plans

rev:04/22/09

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 Navajo Region Division of Transportation (NRDOT) Manager to conduct the analysis described and furnish 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 without prior approval from the Navajo Region Division of Transportation (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.

107.06 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.

SECTION 108 - PROSECUTION AND PROGRESS

108.04 Failure to Complete Work on Time.

Add the following to Paragraph two:

Under this P. L. 93-638 contract, the Contractor shall include Liquidated Damages Clauses in their subcontracts and assess Liquidated Damages in the amount specified in Table 108-1 to any sub-contractor 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 any sub-contractor. The Government's share of these damages shall be paid (through a contract modification adjustment) to offset the costs incurred as a result of the delays. The Government's share shall be based on government project expenditures reports furnished by the AOTR through the AO.

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.

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 50 kilograms
- (8) Tare Weight (haul unit); to the nearest 50 kilograms
- (9) Net Weight (mass); to the nearest 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 is 30% of the total direct labor costs. For all 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 percent 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 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 "*Blue*" or "*Green Book*" (where applicable) published by Data Quest for the area where costs are incurred. Adjust the rates for used equipment and for other variable parameters used in the schedules.

(3) Compute proposed standby costs from acceptable ownership records or when actual costs cannot be determined, according to the Blue or 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.

Add subparagraph (c) as follows:

(c) Construction Price adjustments. The AO will consider price adjustments for material and other subcontractor price increases during the life of the contract based on a detailed price adjustment written request from the Contractor with supporting documentation.

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 for approval on a form acceptable to both the Contractor and Government. However, no 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) below.

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 submission to the NRDOT Office for approval and processing. Any errors found in the pay estimate by NRDOT staff shall result in the progress pay estimate being returned to the Contractor and/or AOTR for corrections and re-submission.

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.

rev:01/05/10

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.

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 8.8 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 ground disturbing activities or base course be allowed until all the 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 2005 (*.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 during the presences of a representative of the AO and submit a QCP for the survey work for review and approval before work begins.

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 (*.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.

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.

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:

- (d) 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).
- (e) After the AOTR and QCM agree with the location geometry, obtain the original ground profile along centerline of each structure including a distance of 20 meters upstream and downstream along the flow-line.
- (f) 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 610 mm (2 ft) 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.
- (g) Perform the same procedure as outlined in (3) above for drainage pipes under the turnouts and driveways.
- (h) 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 279 mm x 432 mm (11" x 17") 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.

152.05

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, existing cross-section surveys, and slope staking work and furnish copies of these staking notes to the AOTR hard copy and electronic format through the QCM for review and approval before payment is made.

(b) An additional 20% 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 20% of the lump sum, will be paid following completion of the final subgrade cross-sections taken and furnished the survey data to 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 20% 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

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.

(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) 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 SAOTR. 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 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 can not 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**" and current certifications 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.

(2) The Contractor shall provide for approval the names, authorities, resume'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.** 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 simple plans and specifications, read topographic maps or be currently certified by NICET, Level I (or equivalent certification program) or higher in the sub-field of Highway Construction or an equivalent certification program. The Inspector is responsible for performing daily inspection and testing (i.e. compaction tests) 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 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".

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:

(f) **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.

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/SAOTR 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. The Contractor can propose changes to the QC personnel by submitting a completed "Submittal, Transmittal, Review and Approval Form", along with complete resume'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 resume 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/SAOTR. No QC personnel shall perform work on any other project/contract without the express written consent of the AOTR/SAOTR.

All QC personnel whose duties requires them to drive a vehicle during there 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.

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 Official 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 kept in bound record books 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 updated 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 format or red lined hard copy) 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/SAOTR at all times. **No progress payment(s) shall be considered for item 15301 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 hard copy or electronic AutoCad format within three (3) calendar days after the Final Inspection date.

Upon submittal of the as-built plans to the AOTR/SAOTR, 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 Audit Engineer 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/SAOTR. This report shall be submitted to the AOTR/SAOTR at the end of each days work with a weekly summary.
2. Only those 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/SAOTR within 3 calendar days **after** the Final Inspection date. 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 perform 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.

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:

Pay Item	Pay Unit
15301-0000 Contractor Quality Control	Man-Hrs
15302-0021 Contractor Quality Control	Lump Sum

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 Ajersey 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/SAOTR 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/SAOTR 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 AOTR 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 contract time 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.

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.

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 certificates and registration incorporated into the SWPPP. The SWPPP shall show measures to control erosion, runoff, sediment, and pollutants (to the fullest extent possible) 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 as directed by the AOTR.
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 60 meters maximum (or as shown on the plans) 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 404 wetland permit and EA 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. Failure to properly maintain the SWPPP may result in a violation of the Clean Water Act with possible fines levied by the USEPA. 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 begin deducting the prorated progress payments for this work from the contract.

If field conditions change as a result of the contractor's construction operation which causes the SWPPP to be ineffective, then the Contractor shall revise the SWPPP and resubmit for review and approval. No work within the areas of deficiencies, identified by the QC inspector's and/or BIA project management personnel, 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 USEPA.

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.

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)**.
- 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 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 traced 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 4500kg/ha. Apply tacifier at a rate of between 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 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 100 meters of silt fence, and 50 meters 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 plans and/or measures required in the Contractor's SWPPP as a result of the construction sequencing. Those measures required by the Contractor's SWPPP shall be included in the unit price bid for 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
15701-0000 Soil Erosion Control.....	Lump Sum
15708-1000 Temporary Straw Mulching.....	Hectare

rev:01/05/10

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 Collage maintenance 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 sidewalks, curbs, pavements, 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 PCC curbing shall be broken up to minus 152mm size, reprocess with other embankment material for shoulder and/or roadway construction requiring additional embankment material. Any excess or pulverized pavement materials can be used as part of the embankment construction or used for turnout construction as directed by the AOTR provided the milled material is grades to minus 75mm size.

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).

When bridge removal is required under this contract, remove the existing piles to 1 meter below the flow line at the piers unless the existing piles interfere with the new construction; in which case the piles must be removed to the extent necessary to allow for the new construction. All existing abutment piles shall be removed to the extent necessary to allow for the new construction without interference. Salvage bridge material designated by the AOTR/SAOTR and stockpile in a location, on the project, convenient for BIA maintenance pickup unless otherwise noted in the design plans. Remove all concrete walls and exposed footings to natural ground.

203. 05 Disposing of Material.

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

(c) Bury. Bury non-hazardous debris in trenches or pits in approved areas within the ROW. Do not bury debris near underground utilities, beneath drainage ditches, or in any areas subject to free flowing water.

Add the following sub-section:

(e) Utilization. Stone, masonry, asphalt pavement and/or concrete debris may be incorporated into embankment provided the material is broken into minus 152mm (longest dimension) pieces and placed at least 1 meter below the subgrade surface. Stone, masonry, asphalt pavement and/or concrete debris shall not be place in embankment where piling is to be driven.

Stone, masonry, and/or concrete debris may be incorporated into riprap provided the material meets the requirements of riprap rock, including hardness and gradation.

Removal of hazardous materials not identified in the design plans or specifications shall be in accordance with section 109.02(m).

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 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 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) or other approved methods.

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 300 millimeters 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 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 150mm from the top 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 +/-15mm from finished blue top staking in both transverse (full width of roadway) and longitudinal directions (every 20 meter 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, channel, borrow areas, and roadway prism cut and embankment sections in the final position shown graphically and in electronic printouts and data files specified in section 152. Any over built roadway typical embankments and/or cuts (not authorized by the AO) shall be deducted from the final earthwork quantities. The NRDOT Highway Design Section 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:

(i) Roadway embankments that are in reasonable close conformance with the contract

typical sections.

- (j) Material used to backfill sub-excavated areas, holes, pits, and other depressions.
- (k) Material used to restore obliterated roadbeds to original contours.
- (l) 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 2000 m ²	In-place	-	Before placing next layer
		Classification	AASHTO M 145	1 per 152 m	Top 305mm	Yes, when requested	Before placing next layer
		Sulfate Content ²	AASHTO T 290	1 per 152 m	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.

rev:01/05/10

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).

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-liter (1,000,000 liters) 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:

<u>Pay Item</u>	<u>Pay unit</u>
20601-0000 Development of Water Supply.....	M-Liter

rev:04/05/09

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	1 proctor curve per week or installation; to be determined by COR/AOTR/Sub-COR/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
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	1 proctor curve per week or installation; to be determined by COR/AOTR/Sub-COR/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	1 proctor curve per week or installation; to be determined by COR/AOTR/Sub-COR/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 COR/AOTR/Sub-COR/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.

SECTION 211-ROADWAY OBLITERATION

211.01 Description.

Add the following subparagraph:

All roadway obliterations shall be performed within the right-of-way limits unless otherwise directed by the construction plans or specifications.

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 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 L102x102x10mm angles as shown on the plans for minor drainage structures. All bridge embankment riprap shall also be anchored with the L102x102x10mm 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 COR/AOTR. This work shall be paid for in accordance with section 109.02(m).

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 T 27 & T 11 or other methods	1 per 200m 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 4° C and rising (taking into account the wind chill factor) and the top 305mm of finished subgrade must be 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. Finish the final surface to within 10mm from staked line and grade elevations. The surface tolerance shall be checked

by the string line method. Defective areas or surface deviations that do not meet the above tolerance 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 76mm (3-inches), 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/SAOTR. 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 (D), 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.

SECTION 211-ROADWAY OBLITERATION

211.01 Description.

Add the following subparagraph:

All roadway obliterations shall be performed within the right-of-way limits unless otherwise directed by the construction plans or specifications.

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 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 L102x102x10mm angles as shown on the plans for minor drainage structures. All bridge embankment riprap shall also be anchored with the L102x102x10mm 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 COR/AOTR. This work shall be paid for in accordance with section 109.02(m).

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 T 27 & T 11 or other methods	1 per 200m 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 4° C and rising (taking into account the wind chill factor) and the top 305mm of finished subgrade must be 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. Finish the final surface to within 10mm from staked line and grade elevations. The surface tolerance shall be checked by the string line method. Defective areas or surface deviations that do not meet the above tolerance 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 76mm (3-inches), 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/SAOTR. 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 (D), 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.

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	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 ASTM D 5821	1 per 400t	In-place ³		Before placing next layer
		Fractured faces		1 per 1000t	From windrow or roadbed after processing		Before using in work
		Final thickness	Appropriate test by Contractor	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 AOTRrected 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 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 submit 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

CLASS B
8896 (2000)
1.5 -3.8 (6-15)
3 - 5

4. Voids in Mineral Aggregate, % Minimum
5. Compaction, number of blows each end of test specimen

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 CO's/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 AO 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 AO 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 AO's test results do not verify the Contractor's test results, the AO's test results will be used for acceptance in accordance with Subsection 106.04 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 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.

The Contractor's QC laboratory shall determine the maximum theoretical density (AASHTO T-209), air voids, voids in mineral aggregate (VMA), flow, Marshall stability, and Marshall unit weight on the **second acceptance sample**. The sample shall be taken every other day within one (1) weeks production beginning with the first day of full production. "Dry back" test method on maximum theoretical density specimen shall be performed if the approved hot mix design included 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 Root-Tunnicliff tensile strength ratio (TSR) test on the **second acceptance sample**. The sample shall be taken every other day within one (1) weeks production beginning with the first day of full production. Test results shall be given to the AOTR

within three (3) days after sampling.

402.04 Mixing Plant.

Add:

The requirements under Subsection 401.04 (b) (2) Stockpiling procedures is superseded with the following:

Aggregate shall be separated by size into at least three (3) separate stockpiles.

402.07 Weather Limitations.

The requirements under Subsection 401.07 are superseded with the following:

Place hot asphalt concrete pavement between **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 Awarding Official 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	
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 2.4 m and the shaft paddles shall have a minimum diameter of 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 weigh 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 91% of the maximum specific gravity (density). Furnish the

COR/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/nonacceptance 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 91.0% 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/SAOTR will observe its operation. Measure 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. 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 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 91% 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, antistripping 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, antistripping 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.

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,	1 per type & source of material	"	"	"
		Fractured faces Sample for job-mix formula verification	—	ASTM 5821 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 COR/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	"	"	"	"	"
Hot asphalt concrete mixture (final surface)	Statistical (106.05)	Asphalt content	I	"	"	"	"	"
		Core density ⁽¹⁾	I	AASHTO T 166 & T 209	"	In-place	Cores to COR/AOTR after determining specific gravity	24 hours
		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/Sub-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. No prime coat work shall be allowed after 1:00 p.m.

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/m⁵ (0.02gal/yd⁵) 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 COR/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/y⁵) to 2.25 (0.30gal/y⁵) 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 as required under **Subsection 109.02 Measurement Terms and Definitions (h) Liter (L), 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:03/29/09

SECTION 551 - PILING

551.02 Material:

Add the following:

Reinforced pile tips for H-Piles shall conform to ASTM A27 and shall be specifically fabricated for the type and size of pile shown in the plans.

551.03 Pile Driving Equipment:

Subsection (a) (4) is superseded with the following:

Air or steam hammers shall not be used.

Subsection (b), second paragraph, the first and second sentences are superseded with the following:

Approval of the pile driving equipment will be based on a wave equation analysis of the proposed system, including the specific pile type(s) shown in the plans and the subsurface profile indicated by the geotechnical investigation. **The wave equation analysis shall be developed by the Contractor and submitted for review and approval.** Approval will be given when the wave equation analysis shows that the driving stresses produced by proposed pile driving system on the specified piles will not exceed the allowable pile driving stresses indicated by AASHTO Standard Specification for Highway Bridges, Section 4.5.11.

Subsection (b) (1), first paragraph, the second sentence is superseded with the following:

Include a wave equation analysis of the proposed pile driving system in accordance with Subsection (b) and (b) (2).

551.04 Pile Lengths:

Add the following:

The pile quantities and pile lengths shown on the plans are estimated based on available geotechnical investigations and preliminary design analysis. The actual pile lengths necessary to meet the contract requirements shall be determined in the field based on the actual driving operations while meeting the contract requirements, and from the results of the test pile program if required in the Contract.

551.05 Test Piles:

The first paragraph is superseded with the following:

Install test piles when specified in the Contract. Excavate the ground or construct embankment at the foundation element (abutment or pier) to the elevation of the bottom of the footing before piles are driven, unless otherwise approved. Excavation shall be in accordance with Section 208 including any supplemental specifications. Embankment construction shall be in accordance with Section 204 including any supplemental specifications. Furnish all piling material for test piles in the longest practical, full, unspliced commercially available lengths not less than 12.2 m. Pile driving equipment shall be the same as that used to install production piles.

The last paragraph is superseded with the following:

Test piles shall be utilized for the following purposes;

- to verify and supplement information provided by the geotechnical investigation(s);
- to verify that the Contractor's proposed method(s) of pile installation is adequate for installation of piling to the Contract requirements;
- to verify and/or aid in determining the lengths of production piling required for each foundation element, including the need and location of splices;
- to assure that piles will not be damaged during installation by the proposed methods;
- to evaluate the effectiveness of procedures and documentation of pile installation quality control inspection to be utilized during the production pile installation.

The Contractor shall install one test pile at each foundation element as indicated in the Contract, or as determined by the AOTR. The test pile in each foundation element shall be at or near the center of the pile group. Test piles are to be installed in accordance with the plans and specifications pertaining to production piles utilizing the same equipment as proposed for the production piles. The first section of test piles driven shall be full length unspliced lengths driven until the ultimate bearing capacity (R_u) is reached or until the full length is driven. If the ultimate bearing capacity (R_u) is not reached in the first full length section of test pile driven, another full length section shall be spliced onto the previously driven section and the driving continued until the ultimate bearing capacity (R_u) is reached. Full length pile sections shall be used in this fashion until the ultimate bearing capacity (R_u) is attained. Test piles shall not be "pre-spliced" prior to driving. The remaining production pile lengths in each foundation element shall be estimated based on the test pile length with consideration of the anticipated sloping of the founding surface.

At his option the Contractor may propose an alternate method of pile installation in order to better attain the ultimate bearing capacities, minimum pile tip elevations, and other contract requirements. Alternate methods shall be based on the Contractor's or subcontractor's pile installation experience and careful and complete review of the plans, specifications and geotechnical investigation reports (provided upon request). Detailed plans and procedures for alternate methods of pile installation shall be submitted with justification as to why the proposed change(s) should be considered. Alternate methods of pile installation, including detailed cost information, shall be reviewed and approved by the AO prior to implementation.

Test piles shall be documented on the Test Pile Record or equivalent form, which will be furnished upon request. Legible copies of results and documentation of test pile installations shall be provided to the AOTR as soon as possible, but no later than 9:00 AM the next working day after installation of the subject test pile.

An acceptable test pile shall be one that satisfies the all of the following requirements:

- achieve or exceed the minimum tip elevation specified on the plans, and
- achieve or exceed the ultimate bearing capacity (R_u), and
- address the test pile purposes indicated above, and
- achieve or exceed the all other contract requirements for pile installation.

When ultimate bearing capacity (R_u) is reached above the minimum tip elevation preboring, additional preboring, or other method of pile advancement to the minimum tip elevation shall be required. The required quantity of preboring, additional preboring, or other method of pile advancement to reach the minimum tip elevation shall be determined by the Contractor, and shall be utilized to install adjacent production piles to the required minimum tip elevations specified. Any test piles achieving ultimate bearing capacity above the minimum tip elevation will be evaluated on a case by case basis based on anticipated scour depth and other structural stability factors, and will be deemed either approved or unacceptable as a production pile by the AO after such evaluation. Preboring or other method of pile advancement shall be paid under the applicable item shown in the bid schedule, or if not shown shall be included as an incidental obligation under Item 55120-0000.

Approved test piles will be accepted as planned production piles when all Contract requirements are met, or as determined by the AO. Approved test piles will be paid for under Item 55120-0000. **Installation of production piles representative of an acceptable test pile within an abutment or pier shall be performed with the same equipment and methods as the approved test pile, and shall not begin until notification of the test pile approval is provided by the AOTR.**

Unacceptable test piles shall be removed and replaced with another test pile in which the installation method or equipment is revised or modified to produce an approved test pile, or may be modified in a manner approved by the AO to be acceptable as a production pile, all at the Contractor's expense.

All work, materials, equipment and labor required for Test Piles shall be measured and paid for under bid Item 55120-0000, Test Piles.

551.07 Preboring:

Add the following:

The Contractor shall use casing if necessary to stabilize the sides of the prebore hole in order to advance the prebore hole to the required depth. Casing shall be removed after the required depth of the prebore hole is achieved. Casing of the prebore hole and all work and

materials involved, if necessary, shall be considered as incidental to the completion of Item 55115-1000, Preboring.

551.08 Preparation & Driving:

Add the following to the second paragraph:

The plan location tolerances stated herein are allowable horizontal deviations from the planned location of the in place pile measured at the cutoff elevation.

Furthermore, the axial alignment tolerances shall be measured from the planned location of the top of the pile at the cutoff elevation and proceed downward while maintaining the plan location tolerances stated above. Piles not meeting the tolerances specified herein shall be corrected by the Contractor in a manner approved by the AO and at the Contractor's expense.

Subsection (b), the first paragraph is superseded with the following:

The Contractor shall order and furnish pile lengths on site so that in place piles of 12 m or less are full unspliced lengths; in place piles greater than 12 m but less than 25 m have no more than one splice; in place piles greater than 25 m have no more than two splices; unless otherwise specifically approved by the AO. When test piles or first piles driven show that splices will be required, the Contractor shall make every effort to place the splice in the lower half of the production or subsequent piles. The Contractor shall also order and furnish pile lengths on site so that splice lengths of less than 3 meters not utilized unless specifically approved by the AO on a case by case basis.

551.09 Splices:

Delete the first paragraph and insert the following:

Splices shall be as detailed on the plans. Align and connect pile sections so the axis of the spliced pile is straight.

Subsection (a), last paragraph, delete the last sentence and add the following:

All field welding (splices and other connections to piling) shall be tested for structural integrity by magnetic particle testing in accordance with AASHTO/AWS D 1.5 Welding Code by a certified welding inspector. The welding inspector's certification shall be submitted for review and approval prior to any testing. All welds shall pass the magnetic particle test or be removed and re-welded. If additional driving of a pile is required after a splice is made, the splice shall be tested and approved prior to further driving of the pile.

SECTION 552. - STRUCTURAL CONCRETE

552.03 Composition (Concrete Mix Design).

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 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) Straightedging.

Add the following to the first paragraph:

Check all abutment cap, pier cap, backwall and wingwall 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 straightedging 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 Seal 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	C	AASHTO T 119	1 per load ⁽²⁾	Point of discharge ⁽¹⁾	—	Upon completing tests
		Air content	C	AASHTO T 152 or AASHTO T 196	1 per load ⁽²⁾	"	—	"
		Unit mass	C	AASHTO T 121	1 per load ⁽²⁾	"	—	"
		Temperature	C	Thermometer		"	—	"
		Yield	C	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 25m; 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.

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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 prestressing 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 for 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.

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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 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 564. - BEARING DEVICES

564.11 Measurement.

This paragraph is superseded with the following:

Bearing devices, including elastomeric bearing pads, specified in the 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, Mpa.....20.7

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 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 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-place concrete box culverts.

602.02 Material:

Add the following:

Concrete for cast-in-place box culverts552
 Corrugated Steel (metal) Pipe culverts.....707.02

602.03 General:

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.

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-place concrete box culverts will be evaluated under Subsections 106.02 and 106.04.

602.09 Measurement

Add the following:

Wing walls for the cast-in-place concrete box culverts will not be measured for payment but will be considered a subsidiary obligation of the Contractor covered under the work for this section.

602.10 Payment**Pay Item****Pay Unit**

60205-0000 ____ Span, ____ Rise cast-in place concrete box
 Culvert Meter

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**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.

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SECTION 619 - FENCES, GATES, AND CATTLE GUARDS

619.03 Fences and Gates:

Add the following:

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 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 fence line to its new or existing position under 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:

the

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

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 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.

Weed content shall not exceed 0.5%.

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 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 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:

<u>Hectares</u>	<u>Species</u>	<u>Cultivar</u>	<u>Kg PLS per</u>
	Western Wheatgrass	Arriba	3.37
	Crested Wheatgrass	Hycrest	3.37
	Pubescent Wheatgrass	Luna	3.37
	Indian Ricegrass	Paloma	2.25
	Blanketflower	Red, Yellow	0.56
	Red Mexican Hat	Red w/Yellow Tips	0.56

Total: 13.48

Seed shall be planted approximately 6mm deep, with a maximum depth of 13mm. The distance between the drilled furrows shall not be more than 203mm. If the furrow openers on the drill exceed 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 straw mulch at a rate of 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	Hectare

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.

The third paragraph is superceded 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 30 meter for the white traffic markings with glass beads and 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 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) Drum Seals**;
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 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 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 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

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 1+252 to 2+270 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.

638.06 Basis of Payment.

The Pay Item and the Pay Unit shall be superseded with the following:

Pay Item

Pay Unit

63801-0000 Herbicide Application, Type: Glyphosate (Roundup®) Lump Sum

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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

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 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 Aggregate Gradation

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 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.
 - (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 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 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 1000 mL beaker. Weigh and record the weight of aggregate as the "weight of original sample" or "A" to the nearest 0.1 gram.

(b) Under a fume hood, add approximately 300 mL of H₂O₂ (3% solution) and stir. When the bubbling subsides, begin adding small amounts (approximately 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.

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 |
| (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 and/or rounded 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 |

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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 $\frac{1}{2}$, grade 125.

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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 to the fullest extent possible given the available sources.

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 715 - PILING

715.06 Steel H-Piles:

In the first paragraph:

Delete the specification "ASTM A 36M" and insert specification "AASHTO M270M, Grade 345".

Add the following:

- (a) Manufactured or prefabricated reinforced pile tips shall conform to ASTM A27 and shall be made expressly for the size and type of pile specified in the Contract.

715.09 Splices:

Delete the specification "ASTM A 36M" and insert specification "AASHTO M270M, Grade 345".

SECTION 720 – STRUCTURAL WALL AND STABILIZED EMBANKMENT MATERIAL

720.02 Gabion and Revet Mattress Material.

Add the following to subparagraph (a)(1)(a) - *Twisted wire mesh*:

Wire:

All test on the wire mesh must be performed prior to manufacturing the mesh.

Tensile strength: both the wire used for the manufacture of gabions and the lacing wire, shall have a tensile strength of 54,000 to 70,000 psi (38-48 kg/mm²), in accordance with ASTM A641-97.

Elongation: the test must be carried out on a sample at least 12 in. (30cm) long. Elongation shall not be less than 12%, in accordance with ASTM A370-92.

Zinc coating: minimum quantities of zinc according to ASTM A641-97, class III soft temper coating.

Adhesion of zinc coating: the adhesion of the zinc coating to the wire shall be such that, when the wire is wrapped six turns around a mandrel having four times the diameter of the wire, it does not flake or crack when rubbing it with the bare fingers, in accordance with ASTM A641-97.

Galvanized (zinc coated) woven wire mesh gabions (8 x 10 mesh type):

Wire mesh: Diameter – 0.120 inches (30.5 mm)

Selvedge Wire: Diameter – 0.153 inches (3.90 mm)

Mesh opening: Nominal Dimension D= 3.25 inches (82.5 mm)

(b) Permanent fasteners.

Subparagraphs (b1) and (b3) of subparagraph (b) is superseded with the following:

(1) Lacing wire. Galvanized (zinc coated) lacing wire and internal stiffeners:

Lacing wire: Diameter – 0.087 inches (2.20 mm)

Stiffener's wire: Diameter – 0.087 inches (2.20 mm)

(3) Spenax Fasteners (Overlapping Fasteners).

Overlapping fasteners may be used in lieu of lacing wire for basket assembly and installation. The spacing of the fasteners during all phases of assembly and installation shall be in accordance with spacing based on 1,400 lbs. (6228 newton) pull apart resistance for galvanized mesh, with a nominal spacing of 4-inches (100 mm), and not to exceed 6-inches (150 mm).

Galvanized Fasteners shall meet the following: Diameter = 0.120 inch (3.05 mm), according to ASTM A313, Type 302, Class 1. Tensile strength: 230,000 to 273,000 psi (162-192 kg/mm²) in accordance with ASTM A764-93.

Proper installation of rings: A properly formed Spenax fasteners shall have a nominal overlap of one (1) inch after closure.

Add the following:

Wire: Zinc coating, in accordance with ASTM A641-97, Class III soft temper coating.

Gabion sizes: $\pm 5\%$ on the length, width, and height.

Mesh opening: Tolerances on the hexagonal, double twisted wire mesh opening shall not exceed $\pm 10\%$ on the nominal dimension D values.

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SECTION 718. - TRAFFIC SIGNING AND MARKING MATERIAL

718.01 Retroreflective Sheeting.

Add the following:

Retroreflective sheeting materials proposed shall be Type II or better per Table 718-3 below, with certifications, for all signs shall be submitted for review and approval prior to ordering the materials.

718.11 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 ≥ 3:1 (white retroreflectivity ÷ red retroreflectivity)

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SECTION "E"

INSPECTION AND ACCEPTANCE

STATEMENT OF WORKInspection and AcceptanceINSPECTION

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 Contactor, 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 Financial Status Report(s) to the Awarding Official. The Progress Reports shall be submitted within twenty (20) days before the end of the calendar year (January 1 to December 31) and shall contain a narrative of the work accomplished, and the percentage of work completed. A financial Status Report(s) shall be submitted within 30 calendar days after the end of the calendar year and shall contain a report of funds expended during the reporting period and total funds expended for the project. 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.