

CONTRACT BOOK

FOR

N5012(1)1,2&4

**GRADE, DRAIN, AGGREGATE BASE COURSE, DOUBLE
CHIP SEAL PAVEMENT, BRIDGE WORK and
MISCELLANEOUS CONSTRUCTION FOR LENGTH OF
0.644 MILES OF ROADWAY LOCATED IN SANOSTEE,
NM, SAN JUAN COUNTY, NAVAJO NATION**

July 2021



**Navajo Division of Transportation
Navajo Transportation Complex
#16 Old Coal Mine Road
Mentmore, NM 87319
Phone (505) 371-8300**

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**AGREEMENT BETWEEN GOVERNMENT AND CONTRACTOR
FOR CONSTRUCTION CONTRACT (FIXED PRICE)**

BUSINESS UNIT #'S & AMOUNTS: xxxxxx HTF \$ xxxxxx

CONTRACT NOT TO EXCEED: \$
(Amount to encumber)

BEGINNING DATE OF CONTRACT: mm/dd/yyyy

ENDING DATE OF CONTRACT: mm/dd/yyyy after Notice To Proceed

IDENTIFICATION OF THE PARTIES; PROJECT. This Contract is entered into by and between the Navajo Nation who is hereinafter referred to as "Government" and John Doe Contractors, who is hereinafter referred to as "Contractor." The Navajo Nation and Contractor are herein jointly referred to as "Parties." The authorized representatives for both Parties are named in the Primary Contract. The Project that is the subject of this Contract is the "N5012(1)1,2&4 Road Project" Sanostee, NM hereinafter referred to as "the Project."

ARTICLE 1 – PRIMARY WORK LOCATION

1.1 In the performance of work or provision of services pursuant to this Contract the Contractor is authorized to travel at Contractor's sole expense. The work to be performed and/or services to be provided shall be primarily in Sanostee Chapter area of the Navajo Nation, state of New Mexico.

ARTICLE 2 – THE PROJECT

2.1 *Contract Number*

Upon contract execution, the Government shall assign a Contract Number which shall be shown in the Administrative Purposes box on page 1 herein. All invoices submitted by Contractor for payment shall reference said Contract Number, including the Project Name and Business Unit Number.

2.2 The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows: Project N5012(1)1,2&4 Includes:

Grading and subgrade treatment, placement of aggregate base course, placement of double chip seal pavement; installation of drainage structures, fencing, cattleguards, gates, signs, striping, bridge construction, guardrail, and other miscellaneous work as called for in the design plans and specifications for this project.

ARTICLE 3 – ENGINEER; GOVERNMENT AND CONTRACTOR'S REPRESENTATIVE

3.1 The Project has been designed by Wilson & Company, herein referred to as "Engineer of Record".

- 3.2 The Government's representative [Contracting Officer (CO)] is Jonathan Nez, Navajo Nation President whose phone number is (928) 871-7000 and will assume all duties and responsibilities, and have the rights and authority assigned to insure the completion of the Work in accordance with the Contract Documents.
- 3.3 The Contractor's representative is John Doe whose phone number is (xxx) xxx-xxxx.

ARTICLE 4 – CONTRACT TIMES

4.1 *Time of the Essence*

All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.2 *Dates for Substantial Completion and Final Payment*

The Work will be substantially completed on or before dd/mm/yyyy, and completed and ready for final payment in accordance with Paragraph 14.7 of the Standard General Conditions on or before.

4.3 *Days to Achieve Substantial Completion and Final Payment*

The Work will be substantially completed within 200 working days after the date when the Contract Times commence (Notice to Proceed) to run as provided in Paragraph 2.3 of the Standard General Conditions, and completed and ready for final payment in accordance with Paragraph 14.7 of the Standard General Conditions within 220 working days after the date when the Contract Times commence to run.

Please note that the above durations do not take into consideration non-working days for weather conditions, shutdowns during winter suspension(s) and holidays. See Article 12.3 of Standard General Conditions, Exhibit A for requirements related to Delay claims.

4.4 *Liquidated Damages*

Contractor and Government recognize that time is of the essence as stated in Paragraph 4.1 above and that Government will suffer financial loss if the Work is not completed within the times specified in Paragraph 4.2 above, plus any extensions thereof allowed in accordance with Article 12 of the Standard General Conditions. The contractor shall pay Government the amounts, as reflected in Table 108-1 of Section 108 in the FP-2014 for each day that expires after the time specified in Paragraph 4.2 above until the Work is substantially complete. After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by Government, Contractor shall continue to pay damages for each day that expires after the time specified in Paragraph 4.2 above for completion and readiness for final payment until the Work is completed and ready for final payment.

ARTICLE 5 – CONTRACT PRICE

5.1 *Original Contract Amount:*

(\$xx,xxx,xxx.xx) which amount is the Original Contract Amount. Any modification of this amount shall comply with Article 12 of the Standard General Conditions. The Contractor hereby acknowledges and agrees that said payment constitutes the full and adequate consideration for all work fully and satisfactorily performed, for all applicable taxes, permit fees, licensing fees, registration fees, bonding and surety costs, insurance or any other expenses necessary or convenient for the Contractor to perform under this Contract

5.2 Government shall pay Contractor for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the amounts determined pursuant to Paragraphs 5.2.A, 5.2.B, or 5.2.C below as applicable:

- A. For all work other than Unit Price Work, a total sum of: \$0 in accordance with the Contractor's Schedule of Values, attached as Exhibit D.
- B. For all Unit Price Work, an amount equal to the sum of the established unit price for each separately identified item of Unit Price Work times the actual quantity of that bid item, attached as Exhibit D.

The Bid prices for Unit Price Work set forth as of the Effective Date of the Agreement are based on estimated quantities. As provided in Paragraph 11.3 of the Standard General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by the Construction Manager.

- C. For all Work, at the prices stated in Contractor's Bid, attached hereto as Exhibit D.

ARTICLE 6 – PAYMENT PROCEDURES

6.1 *Submittal and Processing of Payments*

- A. **Payment approval required.** No payment shall be authorized or remitted to the Contractor unless and until the Government's representative, or his/her successor or designee, approves in writing in advance the work performed or services provided under this Contract, and has given prior written approval of invoice(s), billing(s), or payment application(s) submitted to the Government. All invoices must be supported by adequate verification, documentation, and itemization of all required Project deliverables received by the Government.
- B. **Subcontractor Expenses.** The Contractor shall be solely responsible for all consideration, compensation, taxes, fees or any other expenses whatsoever, related to the Contractor's use of any subcontractors, agents, representatives, employees or consultants in the performance of Contractor's obligation under this Contract.
- C. Contractor shall submit Applications for Payment in accordance with Article 14 of the Standard General Conditions. Applications for Payment will be processed by Construction Manager as provided in the Standard General Conditions.

6.2 *Progress Payments; Retainage*

- A. Government shall make progress payments on account of the Contract Price on the basis of Contractor's application for payment on or about the 1st day of each month during performance of the work as provided for in Article 14 of Exhibit A and Section 109.08 of Exhibit F.
- B. Retainage shall be applied to each progress payment as provided for in Article 14, Paragraph 14.2.D of Exhibit A.

6.3 *Final Payment*

Upon final completion and acceptance of the Work in accordance with Paragraph 14.7 of the Standard General Conditions, Government shall pay the remainder of the Contract Price as recommended by Construction Manager as provided in said Paragraph 14.7.

6.4 *Availability of Funds*

- A. Appropriations required. Pursuant to 2 N.N.C. §223 A, the obligation of the Government to pay Contractor the entire Original Contract Amount, or any portion thereof as invoiced, or any amounts under any and all contract modifications, or amendments to this Contract, shall be contingent upon the availability of funds, from whatever source, for the Project which is the subject of this Contract.
- B. Subsequent fiscal periods. Pursuant to 12 N.N.C. §350 D, if funds adequate to support continuation of performance under this Contract are not appropriated or otherwise become unavailable during any fiscal period(s) subsequent to that period in which this Contract is entered into, then this Contract may, at the sole discretion of the Government, be cancelled and Contractor shall be reimbursed only for the reasonable value of any non-recurring costs incurred as a direct result of work performed under this Contract.

ARTICLE 7 – INTEREST

- 7.1 All moneys not paid when due as provided in Article 14 of the Standard General Conditions shall bear interest at the rate of **5%** percent per annum.

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

- 8.1 In order to induce Government to enter into this Agreement, Contractor makes the following representations:
 - A. Contractor has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.
 - B. Contractor has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work, including but not limited to (1) conditions bearing upon transportation, disposal, handling, and storage of materials; (2) the availability of labor, water, electric power, and roads; (3) uncertainties of weather, river stages, or similar physical conditions at the site; (4) the conformation and conditions of the ground; and (5) the character of equipment and facilities needed preliminary to and during work performance. The Contractor also acknowledges that it has satisfied itself as to the character, quality,

and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory work done by the Government, as well as from the drawings and specifications made a part of this contract. Any failure of the Contractor to take the actions described and acknowledged in this paragraph will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to the Government.

- C. Contractor is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities), if any, that have been identified in Paragraph 4.2 of the Standard General Conditions as containing reliable "technical data," and (2) reports and drawings of Hazardous Environmental Conditions, if any, at the Site that have been identified in Paragraph 4.6 of the Standard General Conditions as containing reliable "technical data."

The Government assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the Government. Nor does the Government assume responsibility for any understanding reached or representation made concerning conditions which can affect the work by any of its Engineer, officers, or agents before the execution of this contract, unless that understanding or representation is expressly stated in this contract.

- E. Contractor has considered the information known to Contractor; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Contract Documents; and (3) Contractor's safety precautions and programs.
- F. Based on the information and observations referred to in Paragraph 8.1.E above, Contractor does not consider that further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.
- G. Contractor is aware of the general nature of work to be performed by Government and others at the Site that relates to the Work as indicated in the Contract Documents.
- H. Contractor has given Government written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
- I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms

and conditions for performance and furnishing of the Work.

ARTICLE 9 – CONTRACT DOCUMENTS

9.1 Documents Constituting the Contract

Agreement between Government and Contractor for Construction Contract (Fixed Price)

Exhibit A - Standard General Conditions

Exhibit B - Project Specific Supplemental General Conditions

Exhibit C – Special Contract Requirements

Exhibit D - Bid Instructions and Schedule

Exhibit E - Required Contract Forms

Exhibit F - Standard Specifications for Construction of Roads & Bridges **FP-2014** & Supplemental Specifications

Exhibit G - Project Design Plans

Exhibit H - Davis Bacon Wage Rate Determination

Exhibit I - Environmental Requirements & Permits

The above are to be considered collectively as one agreement/contract and the term "Contract" whenever used herein shall be deemed to include all such documents.

- 9.2 Contract Documents: The Parties hereby acknowledge and agree that the written provisions contained in the documents listed in Article 9.1 herein constitute the complete understanding of the Parties with respect to the subject matter of this Contract, and that there are no promises or representations between the Parties other than those set forth herein. Any conflict between any provision(s) contained in the Contract documents shall be resolved by reference to and interpretation of the provision(s) contained in the Agreement, Standard General Conditions and Project Specific Supplemental General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.1 *Terms*

Terms used in this Agreement will have the meanings stated in the General Conditions.

10.2 *Assignment of Contract*

A. *Assignment Restricted.* The Contractor shall not in any manner whatsoever assign, convey, transfer, or sublet any rights to this Contract or any interest therein including any amendments or modifications thereto, any work product resulting from the work performed or services provided under this Contract including any amendments or modifications thereto, or any monetary claims against the Government relating to this Contract or any amendments or modifications thereto, without the prior written consent of the Government. Any attempted assignment without such prior consent shall be void; said consent may be granted, granted upon conditions, or withheld, at the Government's sole discretion.

B. *No Third Party Beneficiaries.* Notwithstanding any provision of Navajo Nation law, codified or uncodified, or any Navajo Nation common or fundamental law, no provision of this Contract shall be construed as conferring any rights to, and may not be invoked by or for the benefit of, any other

person or entity that is not one of the signatory Parties hereto.

10.3 *Successors and Assigns*

Partners, Successors, Subcontractors. All provisions, conditions and covenants contained in the Contract Documents shall extend to and be binding upon each of the Contractor's owners, partners, team members, successors, heirs, assigns, executors, administrators, employees, officials and agents, including all of the Contractor's subcontractors, and the Contractor expressly agrees that the term "Contractor" whenever used herein, or in any other Contract document, shall be deemed to include all such owners, partners, team members, successors, heirs, assigns, executors, administrators, employees, designees, consultants, officials, agents, and subcontractors.

10.4 *Severability*

Severability. If any provision of this Contract is determined, by a court of competent jurisdiction arbitration decision, to be invalid, illegal or incapable of being enforced under any rule of law, all other conditions and provisions of this Contract shall nevertheless remain in full force and effect.

10.5 *Contractor's Certifications*

A. Contractor agrees to submit an "Affidavit of Non-Collusion" prior to the Government's execution of this Contract. The Contractor shall certify (see Required Contract Forms in Exhibit E) that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.5:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;
2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Government, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Government of the benefits of free and open competition;
3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Government, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

10.6 *Right to Refuse Contract*

A. *Right to Refuse Contract.* The Government reserves its right to refuse to execute this Contract upon a written determination that any of the following has occurred prior to the Nation's execution of this Contract:

1. *faulty procurement*; a document, procedure, decision, action, or other event pertaining to the procurement of this Contract, or to any related pre-procurement activities, is in violation of any applicable Navajo Nation, federal, or state laws or regulations governing said procurement; or
2. *ancillary firm(s)*; an ancillary firm is ineligible for the award of this Contract or is unavailable to perform on the Project, for any reason; in such case, the Government may, in its discretion, either (1) reject the selected Proposal containing the ancillary firm's qualifications and refuse to execute this Contract; or (2) decide not to reject the Proposal and consider only the license and relevant qualifications of the Contractor standing alone; or (3) decide not to reject the Proposal and permit another equally/more qualified firm to perform those Contract services that would have been performed by the ineligible or unavailable firm; or
3. *lack of funding availability*; when funding for the Scope of Work has become wholly or partially unavailable; or
4. *change to SOW or other requirements*; the Scope of Work or any other mandatory requirement is required to be changed significantly; or
5. *change to Budget/MFP*; there has been a revision (whether increase or decrease) of the budget or Maximum Feasible Price that was originally established by the Government prior to the initiation of the procurement process for this Contract; or
6. *protest filed*; a protest has been timely filed in accordance with 12 N.N.C. §360(A), unless a determination has been made to proceed with a Contract award pursuant to 12 N.N.C. §360(F); or
7. *other reasons cited in Regulations*; any of the following pertains to this procurement:
 - A. inadequate or ambiguous specifications were cited in the RFP/RSQ;
 - B. the services contemplated under this Contract are no longer required;
 - C. the RFP/RSQ did not provide for consideration of all factors of cost to the Government
 - D. all Proposals received indicate that the needs of the Government can be satisfied by a less expensive service differing from that described in the RFP/RSQ;
 - E. all fee Proposals received exceed the Maximum Feasible Price after opportunity for negotiation pursuant to 12 N.N.C. §346(D);
 - F. the selected Proposal was collusive, contained fraudulent statements or information, contained any material misrepresentation, or was submitted in bad faith; and
 - G. Cancellation of proposed Contract serves in the best interest of the Government.

10.7 *Private Contractor*

Private Contractor. The Contractor shall perform and conduct all activities under this Contract as a private independent Contractor and shall not be considered an employee of the Government or receive any benefits to which the Government's employees are entitled.

10.8 *Requests for Information*

Requests for Information. When requested by the Government, Contractor shall submit proper verification of invoices, pay applications, reports, documents or any other information related to this Contract within fourteen (14) calendar days of the date of the request.

IN WITNESS WHEREOF, Government and Contractor have signed this Agreement. Counterparts have been delivered to Government and Contractor. All portions of the Contract Documents have been signed or have been identified by Government and Contractor or on their behalf.

This Agreement will be effective on mm/dd/yyyy which is the Effective Date of the Agreement.

**Notice To Proceed Date, which will be given once contract is fully reviewed (164 Review Process), encumbered and assigned a contract number by NN Division of Finance.*

NOTE TO USER: The Effective Date of the Agreement and the dates of any Construction Performance Bond and Construction Payment Bond (Exhibit E) should be the same, if possible. In no case may the date of any bonds be earlier than the Effective Date of the Agreement.

GOVERNMENT:

The Navajo Nation

By: Jonathan Nez

Title: President

(If Government is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)

Attest: _____

Title: _____

Address for giving notices:

P.O. Box # 7440

Window Rock, Az. 86515

CONTRACTOR:

By: _____

Title: _____

(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest: _____

Title: _____

Address for giving notices:

License No.: _____

(Where Applicable)

Contract has been reviewed and determined to be in accordance with Navajo Nation Law.

Agent for service of process: _____

EXHIBIT A
STANDARD GENERAL CONDITIONS

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.1 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agreement*—The written instrument which is evidence of the agreement between Government and Contractor covering the Work.
 3. *Application for Payment*—The form acceptable to Construction Manager which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Asbestos*—Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.
 5. *Bid*—The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 6. *Bidder*—The individual or entity who submits a Bid directly to Government.
 7. *Bidding Documents*—The Bidding Requirements and the proposed Contract Documents (including all Addenda).
 8. *Bidding Requirements*—The advertisement or request for proposals, Instructions to Bidders, Bid security of acceptable form, if any, and the Bid Form with any supplements.
 9. *Contract Modification*—A document recommended by Construction Manager which is signed by Contractor and Government and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.
 10. *Claim*—A demand or assertion by Government or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.
 11. *Construction Manager (CM)*—The Government’s field project representative (as further

defined in Supplemental Specification Section 101.04).

12. *Contract*—The entire and integrated written agreement between the Government and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.
13. *Contract Documents*— Those items so designated in Article 9 of the Agreement.
14. *Original Contract Amount*— The moneys payable by Government to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement.
15. *Contract Times*—See Article 4 of the Agreement.
16. *Contractor*—The individual or entity with whom Government has entered into the Agreement.
17. *Cost of the Work*— See Paragraph 11.1 for definition.
18. *Drawings*—That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.
19. *Effective Date of the Agreement*—The date indicated in the Agreement on which it becomes effective.
20. *Engineer of Record (or Engineer)*—The Government’s representative who is responsible for the project designs/plans/Drawings (as further defined in Supplemental Specification Section 101.04).
21. *Change Order*—A written order issued by the Construction Manager which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.
22. *General Requirements*—Various Articles of these Standard General Conditions of the Construction Contract.
23. *Government*—The Navajo Nation acting through the Contracting Officer (CO), the person designated from the Navajo Nation with the authority to enter into, administer, and/or terminate contracts and make related determinations and findings (as further defined in Supplemental Specification Section 101.04).
24. *Hazardous Environmental Condition*—The presence at the Site of asbestos, PCBs, petroleum, hazardous waste, or radioactive material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto.

25. *Hazardous Waste*—The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.
26. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
27. *Liens*—Charges, security interests, or encumbrances upon Project funds, real property, or personal property.
28. *Milestone*—A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.
29. *Notice of Award*—The written notice by Government to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Government will sign and deliver the Agreement.
30. *Notice to Proceed*—A written notice given by Government to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.
31. *Owner*— The entity/agency who holds the easement for which the project is being constructed on.
32. *PCBs*—Polychlorinated biphenyls.
33. *Petroleum*—Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-hazardous waste and crude oils.
34. *Progress Schedule*—A construction schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.
35. *Project*—The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.
36. *Project Manual*—The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.
37. *Radioactive Material*—Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

38. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.
39. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.
40. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.
41. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.
42. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Government which are designated for the use of Contractor.
43. *Specifications*—That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.
44. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.
45. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Construction Manager, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.
46. *Successful Bidder*—The Bidder submitting a responsive Bid to whom Government makes an award.
47. *Supplementary Conditions*—That part of the Contract Documents which amends or supplements these Standard General Conditions, including the Project Specific Supplemental General Conditions, Exhibit B.
48. *Supplier*—A manufacturer, fabricator, supplier, distributor, material man, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or Subcontractor.

49. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
50. *Unit Price Work*—Work to be paid for on the basis of unit prices.
51. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents. See Article 1 of the Agreement.
52. *Work Change Directive*—A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Government and recommended by Engineer of Record ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive is evidence that the parties expect that the change ordered or documented will be incorporated in a subsequently issued Contract Modification following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

1.2 Terminology

- A. The words and terms discussed in Paragraph 1.2.B through F are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:*
1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.9 or any other provision of the Contract Documents.

C. *Day:*

1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

D. *Defective:*

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
 - a. does not conform to the Contract Documents; or
 - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
 - c. has been damaged prior to Construction Manager’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Government at Substantial Completion in accordance with Paragraph 14.4 or 14.5).

E. *Furnish, Install, Perform, Provide:*

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
4. When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, “provide” is implied.

- F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 – PRELIMINARY MATTERS

2.1 *Delivery of Bonds and Evidence of Insurance*

- A. *Bonding Requirement:* See Article 5 herein.
- B. *Evidence of Insurance:* See Article 5 herein.

2.2 *Copies of Documents*

- A. Due to excessive costs incurred by the Government in printing, the Government will no longer be providing plans and specifications for its projects to the Contractor, suppliers and/or subcontractors. The Government shall furnish electronic media in Acrobat (*.PDF) 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 submitted.

2.3 *Commencement of Contract Times; Notice to Proceed*

- A. *Effective Date; Term, Notice to Proceed Required.* The effective beginning and ending date of this Contract are as shown on the first page of the Agreement. The Contractor shall not commence any work until the Government issues a formal "Notice to Proceed" for the Project; notwithstanding, the Contractor shall not commence any work until the effective date of all insurance required by Article 5 herein. This Contract shall expire on the date shown unless earlier terminated or extended by modification in accordance with Article 12 herein.

2.4 *Starting the Work*

- A. The Contractor shall be required to (a) commence work under this contract within **ten [10]** calendar days after the date the Contractor receives the notice to proceed, (b) prosecute the work diligently, and (c) complete the entire work ready for use not later than the final date shown on the Contract Agreement. The time stated for completion shall include final cleanup of the premises.

2.5 *Before Starting Construction*

- A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in Paragraph 2.6), Contractor shall submit to Construction Manager for timely review:

1. a preliminary Construction Schedule (including each bid item of work) indicating

the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents (the performance time allowed under this contract is based on a forty-hour workweek);

2. a preliminary Schedule of various Submittals including shop drawings, materials certifications, etc; and
3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit, taxes, bonding, and direct unit costs applicable to each item of Work.

2.6 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Government, Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.5.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.
- B. At this conference Government and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit instructions, receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party. The Authorized Representatives shall be listed in Article 3 of the Agreement.
- C. The Contractor shall furnish the following documents at this conference to the Government for review and approval prior to giving the notice to proceed:
 1. Temporary Traffic Control Plan (TTCP)
 2. Safety Plan
 3. Quality Control Plan (QCP)
 4. Storm Water Pollution Prevention Plan (SWPPP)
 5. Construction Schedule

2.7 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Construction Manager, and others as appropriate will be held to review for acceptability to Construction Manager as provided below the revised construction schedules submitted in accordance with Paragraph 2.5.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Construction

Manager.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. The Contract Time allowed is based on a 40-hour work week and work on Saturdays, Sundays, Government and/or Tribal Holidays is not contemplated. Any work proposed during the weekends, holidays or beyond a 40-hour work week must be formally requested by the Contractor and approved (in writing) by the Government (see Article 6.2 herein for additional requirements regarding Working Hours). Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
2. Contractor's Schedule of Submittals will be acceptable to Construction Manager if it provides a workable arrangement for reviewing and processing the required submittals.
3. Contractor's Schedule of Values will be acceptable to Construction Manager as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.1 *Intent*

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all; except see Article 9 of Agreement.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that reasonably may be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the indicated result will be provided whether or not specifically called for, at no additional cost to Government.
- C. Clarifications and interpretations of the Contract Documents shall be issued by Construction Manager or Engineer as provided in Article 9.

3.2 *Reference Standards*

- A. *Standards, Specifications, Codes, Laws, and Regulations*
 1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the

Contract Documents.

2. No provision of any such standard, specification, manual, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Government, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Government, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.3 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies:*

1. *Contractor's Review of Contract Documents Before Starting Work:* Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Construction Manager any conflict, error, ambiguity, or discrepancy which Contractor discovers, or has actual knowledge of, and shall obtain a written interpretation or clarification from Construction Manager before proceeding with any Work affected thereby.
2. *Contractor's Review of Contract Documents During Performance of Work:* If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) any standard, specification, manual, or code, or (c) any instruction of any Supplier, then Contractor shall promptly report it to Construction Manager in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.4.
3. The Government assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the Government. Nor does the Government assume responsibility for any understanding reached or representation made concerning conditions which can affect the work by any of its officers or agents before the execution of this contract, unless that understanding or representation is expressly stated in this contract.

B. *Resolving Discrepancies:*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

- a. the provisions of any standard, specification, manual, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference in the Contract Documents); or
- b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.4 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by a Contract Modification.
- B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the work may be authorized, by one or more of the following ways, provided that any such additions, deletions, revisions or modifications shall be duly approved in accordance with Article 12 herein:
 1. A Change Order;
 2. Engineer's approval of a contractor submittal, Shop Drawing or Sample (subject to the provisions of Paragraph 6.17.D.3); or
 3. A response to a Request for Information (RFI).

3.5 *Reuse of Documents*

- A. Contractor and any Subcontractor or Supplier shall not:
 1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions; or
 2. reuse of any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Government and Engineer and specific written verification or adaptation by Engineer.
- B. The prohibitions of this Paragraph 3.5 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

3.6 *Electronic Data*

- A. Unless otherwise stated in the Supplementary Conditions, the data furnished by Government or Engineer to Contractor, or by Contractor to Government or Engineer, that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic

media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.

- B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party.
- C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

ARTICLE 4 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

4.1 Availability of Lands

- A. Owner shall furnish the Site. Government shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities as required. If Contractor and Government are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in Government's furnishing the Site or a part thereof, Contractor may make a Claim therefor as provided in Paragraph 10.5.
- B. Upon reasonable written request, Government shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and Government's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.2 Subsurface and Physical Conditions

- A. *Reports and Drawings:* The Supplementary Conditions identify:
 - 1. those reports known to Government of explorations and tests of subsurface conditions at or contiguous to the Site; and

2. those drawings known to Government of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the “technical data” contained in such reports and drawings, and response to questions, but such reports and drawings are not Contract Documents. Such “technical data” is identified in the Supplementary Conditions. Except for such reliance on such “technical data,” Contractor may not rely upon or make any claim against Government or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

1. the completeness of such reports and drawings for Contractor’s purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
3. any Contractor interpretation of or conclusion drawn from any “technical data” or any such other data, interpretations, opinions, or information.

4.3 *Differing Subsurface or Physical Conditions*

A. *Notice:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed either:

1. is of such a nature as to establish that any “technical data” on which Contractor is entitled to rely as provided in Paragraph 4.2 is materially inaccurate; or
2. is of such a nature as to require a change in the Contract Documents; or
3. differs materially from that shown or indicated in the Contract Documents; or
4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Government and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *Government’s and Engineer’s Review:* After receipt of written notice as required by Paragraph 4.3.A, Government and Engineer will promptly review the pertinent condition, determine the necessity obtaining additional exploration or tests with respect thereto, and advise Contractor

in writing of their findings and conclusions.

C. *Possible Price and Times Adjustments:*

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. such condition must meet any one or more of the categories described in Paragraph 4.3.A; and
 - b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.7 and 11.3.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:
 - a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Government with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or
 - b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or
 - c. Contractor failed to give the written notice as required by Paragraph 4.3.A.
3. If Government and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.5. However, neither Government or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

4.4 *Underground Facilities*

- A. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Government or Engineer by the owners of such Underground Facilities, including Government, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. Government and Engineer shall not be responsible for the accuracy or completeness of any such information or data provided by others; and
2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
 - a. reviewing and checking all such information and data;
 - b. locating all Underground Facilities shown or indicated in the Contract Documents;
 - c. coordination of the Work with the owners of such Underground Facilities, including Government, during construction; and
 - d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. Not Shown or Indicated:

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Government and Engineer. Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
2. If Engineer and Construction Manager concludes that a change in the Contract Documents is required, a Work Change Directive or a Contract Modification will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Government and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, Government or Contractor may make a Claim therefor as provided in Paragraph 10.5.

4.5 *Reference Points*

- A. Government shall provide engineering surveys to establish reference points for construction

which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Government. Contractor shall report to Construction Manager whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.6 *Hazardous Environmental Condition at Site*

- A. *Reports and Drawings:* The Supplementary Conditions identify those reports and drawings known to Government relating to Hazardous Environmental Conditions that have been identified at the Site.
- B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Government or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:
 - 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
 - 2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
 - 3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.
- D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) notify Government and Engineer (and promptly

thereafter confirm such notice in writing). Government shall promptly consult with Engineer concerning the necessity for Government to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Government shall take such actions as are necessary to permit Government to timely obtain required permits and provide Contractor the written notice required by Paragraph 4.6.E.

- E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Government has obtained any required permits related thereto and delivered written notice to Contractor: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Government and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.5.
- F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Government may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Government and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.5. Government may have such deleted portion of the Work performed by Government's own forces or others in accordance with Article 7.
- G. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Government and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.6.G shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- H. The provisions of Paragraphs 4.2, 4.3, and 4.4 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 – BONDS AND INSURANCE

5.1 *Performance, Payment, and Other Bonds (see Exhibit E for Required Contract Forms)*

- A. *Performance Bond.* The Contractor shall provide to the Government a Performance Bond underwritten and executed by a surety company that guarantees the Contractor's complete and satisfactory performance under the Contract. The Performance Bond shall be equal to one-hundred percent (100%) of the Original Contract Amount, unless otherwise provided

in Paragraph 5.1.C herein.

- B. *Payment Bond.* The Contractor shall provide to the Government a Payment Bond underwritten and executed by a surety company that will protect all persons, subcontractors, or other entities supplying labor and material to the Contractor or its subcontractors for the performance under this Contract. The Payment Bond shall be in an amount equal to one-hundred percent (100%) of the Original Contract Amount, unless otherwise provided in Paragraph 5.1.C herein. The Payment Bond must be provided in addition to the Performance Bond required in Paragraph 5.1.A herein.
- C. *Lesser Bond amounts.* The Government, with the concurrence of the Government Controller or his/her designee, may allow the Contractor to provide a Performance Bond or a Payment Bond, or both, in an amount equal to fifty percent (50%) of the Original Contract Amount, so long as either (1) the Government withholds, as retainage, fifty percent (50%) of each invoiced amount; or, (2) the Contractor provides an irrevocable Letter of Credit in amount equal to fifty percent (50%) of the Original Contract Amount. In no case shall a Performance Bond or Payment Bond be in an amount less than fifty percent (50%) of the Original Contract Amount.
- D. *Bid Guarantee/Security.* Bid security shall be required for all competitive sealed bidding for construction contracts. Bid security shall be a bond provided by a surety company authorized to do business within the Navajo Nation, or the equivalent in cash, or otherwise supplied in a form satisfactory to the Navajo Nation. Bid security shall be in an amount equal to at least 10% of the amount of the bid.

5.2 *Licensed Sureties and Insurers*

- A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Government and/or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required.
- B. 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.

5.3 *Insurance Requirements*

- A. The Contractor shall, at its sole expense, procure and maintain adequate and sufficient insurance for all of Contractor's potential liabilities, in accordance with this Article, relating to any claims by any party for any injury to persons or damage to property arising out of or connected with any work performed or services provided under this Contract by the Contractor.

B. *Minimum Insurance Coverages.* The Contractor shall obtain and maintain for the duration of performance under this Contract, the minimum insurance coverages shown below:

- (1) Commercial General Liability - ISO CG 0001 Form or equivalent. Coverages shall include:
 - Premises and Operations
 - Personal/Advertising Injury
 - Products/Completed Operations
 - Liability assumed under an Insured Contract (including defense costs assumed under contract)
 - Broad Form Property Damage
 - Independent Contractors/Consultants

- (2) Automobile Liability including all:
 - Contractor-Owned Vehicles
 - Non-owned Vehicles
 - Rented/Hired Vehicles
 - Personal injury Protection (where applicable)

- (3) Workers' Compensation:
 - Statutory Benefits (Coverage A)
 - Employers Liability (Coverage B)

C. *Limits required.* Contractor shall carry the limits of liability as required below (where "State Law" is indicated, such limits shall be in accordance with the laws and regulations of the State wherein this Contract shall be primarily performed):

COMMERCIAL GENERAL LIABILITY	
GENERAL AGGREGATE	\$ 2,000,000
PRODUCTS/COMPLETED OPERATIONS	\$ 2,000,000
OCCURRENCE BASIS/ PER EACH OCCURRENCE	\$ 1,000,000
PERSONAL/ADVERTISING INJURY	\$ 1,000,000
FIRE DAMAGE (ANY ONE FIRE)	\$ 50,000
MEDICAL PAYMENTS (ANY ONE PERSON)	\$ 5,000
AUTOMOBILE LIABILITY	
BODILY INJURY/PROPERTY DAMAGE (EACH	\$ 1,000,000
PERSONAL INJURY PROTECTION (IF	BY STATE LAW
WORKERS' COMPENSATION	
COVERAGE A (WORKERS' COMPENSATION)	BY STATE LAW
COVERAGE B (EMPLOYERS LIABILITY)	\$ 500,000

D. All policies must be written on a "per-occurrence" basis, unless otherwise approved by the Navajo Nation Risk Management Program.

E. *Claims-made basis.* In the event that Contractor's liability insurance required by this Contract is written on a claims-made basis, the Contractor shall warrant that any retroactive date under the policy shall precede the effective date of this Contract, and that either

continuous coverage will be maintained or an extended discovery period will be exercised for a period of two (2) years beginning as of the date that performance under this Contract is completed.

- F. *Primary coverage basis.* For payment of any claims, Contractor's insurance coverage shall be on a primary, non-contributory basis with any other insurance coverages and/or self-insurance carried by the Government or all other available sources.
- G. *Required language.* The Contractor's General Liability and Umbrella Liability policy shall be endorsed to include the following language: "The Navajo Nation, its elected officials, employees, agents, and volunteers are named as an Additional Insured with respect to liability arising out of the activities performed by the Insured [the Contractor] pursuant to a Contract with the Navajo Nation." (ISO Forms CG 2010 and CG 20 37 "Additional Insured-Governments, Lessees or Contractors-Completed Operations, 2004 Editions or equivalent).
- H. *Waiver of subrogation.* All Contractor's policies shall contain a waiver of subrogation in favor of the Government, its divisions, departments, offices, agencies, boards, commissions, committees, enterprises and its employees, officers, officials, and agents for losses arising from work performed or services provided by the Contractor pursuant to a Contract with the Government.
- I. *Separation of Insureds.* The Contractor's policy shall include a "Separation of Insureds" clause (Cross Liability).
- J. *Insurer rating.* The Contractor's insurance policy shall be issued by a licensed or approved insurer with an "A.M. Best" rating of not less than A- VII. The Government in no way warrants that the above-required minimum insurer rating is sufficient to protect the Contractor from potential insurer insolvency.
- K. *Certificates of insurance.* The Contractor shall provide to the Government certificates of insurance as required by this Contract. The certificates for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. Each insurance policy required by this Contract must be in effect upon, or prior to, commencement of performance under this Contract and shall remain in effect until such time as all of its obligations under this Contract or any subsequent modifications have been fully and satisfactorily completed. Insurance certificates shall be sent to the Navajo Nation Department of Risk Management, P.O. Box 1690, Window Rock, Arizona, 86515. The Contract Number and a description of the work performed or services provided thereunder shall be indicated on such certificates.
- L. *Subcontractors.* The Contractor's subcontractors, if any, shall be included as insureds under the Contractor's policy, or the Contractor shall provide to the Government separate certificates and endorsements for each of its subcontractors holding separate policies. All coverages for subcontractors shall be subject to the minimum policy amounts shown herein.
- M. *Notification of change required.* The insurance policy required herein shall provide the

required coverage and shall not be suspended, voided, canceled, or reduced in coverage or in limits except after thirty (30) calendar days prior written notice has been given to the Government. Such notice shall be sent in accordance with Paragraph 17.1 herein.

- N. *Approval of modifications.* Any modification of the insurance requirements set forth herein shall be approved by the Navajo Nation Risk Management Program, whose decision shall be final. Such modification shall not require a formal Contract modification, but may be approved by administrative action of the Risk Management Program. The Contractor may request, for itself or its subcontractors, that the insurance requirements shown herein be modified, provided that such request be delivered in writing to the Risk Management Program at least ten days prior to the solicitation due date or, if not a solicitation, prior to contract execution or modification. The Contractor shall include with such request a justification for the modification with supporting documentation. Any modifications approved shall on a case-by-case basis and shall not affect the insurance requirements of other subcontractors for whom modifications have not been approved. Any deviations from the standard types and coverages set forth herein shall be approved by the Navajo Nation Risk Management Program prior to the issuance of a Notice to Proceed.
- O. *Government disclaimers.* The insurance requirements and coverages set forth herein are minimum requirements only and in no way limit the indemnity covenants contained in this Contract. The Government in no way warrants that the minimum limits herein are sufficient to protect the Contractor or its' subcontractors from any liabilities that might arise from the work performed or services provided under this contract, and the Contractor and its subcontractors are free to purchase additional insurance. By requiring such minimum insurance, the Government shall not be deemed to have assessed the risk that may be applicable to the Contractor under the Contract. The Contractor shall assess its own risks and if it deems appropriate and/or prudent, it may maintain higher limits and/or broader coverages. The Contractor is not relieved of any liability or other obligations assumed or pursuant to this Contract by reason of its failure to obtain or maintain insurance in sufficient amounts, duration, or types.
- P. *No sovereign immunity waiver.* The Parties acknowledge and agree that the Government is relying on, and does not waive or intend to waive by any provision of this Contract, the monetary limitations and other rights, immunities, and protections provided under 1 N.N.C. §§551 *et. seq.*, as from time to time amended, or otherwise available to the Government or its elected officials, employees, agents, and volunteers.
- Q. *Mutual cooperation.* The Government and Contractor shall cooperate in good faith in the collection of any insurance proceeds which may be payable in the event of any loss, including the execution and delivery of any proof of loss or other actions required to effect recovery.
- R. *Insurance documentation required.* The Government's representative must receive written documentation of all required insurance prior to the issuance of a Notice to Proceed for the Project, and the Contractor shall not commence any work to be performed or services to be provided under this Contract unless and until such documentation has

been submitted to the Government. If the Contractor is able to furnish such documentation prior to the Government's execution of this Contract, such documentation shall be made an Attachment to the Primary Contract. The Government may terminate this Contract for breach if the Government's representative determines that the Contractor has failed to submit the required documentation in a timely manner and that the Government is unable to issue a Notice to Proceed in a timely manner.

5.4 *Builder's Risk Insurance*

- A. The Contractor shall obtain, on behalf of the Government, a "Builder's Risk" insurance policy for all aspects of the Project; such insurance coverage shall be in amount adequate to cover any potential loss, relating to the Project or any portion thereof, that may occur prior to the effective date and time of the Government's property insurance coverage for the Project.

5.5 *Government's Liability Insurance*

- A. Government, at Government's option, may purchase and maintain at Government's expense Government's own liability insurance as will protect Government against claims which may arise from operations under the Contract Documents.

5.6 *Property Insurance*

- A. The government is not responsible for insurable property interest losses of the contractor and subcontractors on this contract.

5.7 *Waiver of Rights*

- A. Contractor waives all rights against the Government and their respective officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) under such policies for losses and damages so caused.

5.8 *Receipt and Application of Insurance Proceeds*

- A. Any insured loss under the policies of insurance required by Paragraph 5.6 will be adjusted with Government and made payable to Government as fiduciary for the loss payees, as their interests may appear, subject to the requirements of any applicable mortgage clause and Paragraph 5.8.B. Government shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by

an appropriate Contract Modification.

- B. Government as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Government's exercise of this power. If such objection be made, Government as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Government as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Government as fiduciary shall give bond for the proper performance of such duties.

5.9 *Acceptance of Bonds and Insurance; Option to Replace*

- A. If either Government or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Article 5 herein. Government and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds or insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Contract Modification shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

- A. If Government finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.5, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.6 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6 – CONTRACTOR'S RESPONSIBILITIES

6.1 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. Contractor

shall not be responsible for the negligence of Government or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.

- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Government and Engineer except under extraordinary circumstances.
- C. The Contractor shall submit to the Government 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 Government for their records.

6.2 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site. The Contracting Officer (CO) may require, in writing, that the Contractor remove from the Work any employee the Government deems incompetent, careless, or otherwise objectionable.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Government's written consent (which will not be unreasonably withheld) given after prior written notice to Construction Manager. Any costs associated with Government inspections/oversight on weekends, holidays or in excess of the normal 40-hour work week as a result of contractor induced delays or mistakes in the work, shall be deducted from the next progress payment. Contractor shall also comply with Navajo Nation laws in connection with hiring and subcontracting. See Paragraph 17.4.A herein.

6.3 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone/internet, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.
- B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. The Contractor shall provide materials in accordance with the Buy America Act Requirements in 23 C.F.R. § 635.410. The Contractor shall bear the burden of proof and the cost to show the origin and place of manufacture of iron and steel products and materials. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Government. If required by Construction Manager, Contractor shall furnish

satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.4 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.7 as it may be adjusted from time to time as provided below.
 - 1. Contractor shall submit to Construction Manager for acceptance (to the extent indicated in Paragraph 2.7) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.
 - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Contract Modification.

6.5 *Substitutes and "Or-Equals"*

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and standard of quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Construction Manager for review under the circumstances described below.
 - 1. "*Or-Equal*" Items: If in Construction Manager's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Construction Manager as an "or-equal" item, in which case review and approval of the proposed item may, in Construction Manager's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.5.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment Construction Manager determines that:
 - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
 - 2) it will reliably perform at least equally well the function and achieve the results

imposed by the design concept of the completed Project as a functioning whole;
and

3) it has a proven record of performance and availability of responsive service.

b. Contractor certifies that, if approved and incorporated into the Work:

1) there will be no increase in cost to the Government or increase in Contract Times;
and

2) it will conform substantially to the detailed requirements of the item named in
the Contract Documents.

2. *Substitute Items:*

a. If in Construction Manager's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.5.A.1, it will be considered a proposed substitute item.

b. Contractor shall submit sufficient information as provided below to allow Construction Manager to determine if the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Construction Manager from anyone other than Contractor.

c. The requirements for review by Construction Manager will be as set forth in Paragraph 6.5.A.2.d, as supplemented by the General Requirements, and as Construction Manager may decide is appropriate under the circumstances.

d. Contractor shall make written application to Construction Manager for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:

1) shall certify that the proposed substitute item will:

a) perform adequately the functions and achieve the results called for by the
general design,

b) be similar in substance to that specified, and

c) be suited to the same use as that specified;

2) will state:

a) the extent, if any, to which the use of the proposed substitute item will
prejudice Contractor's achievement of Substantial Completion on time,

- b) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Government for other work on the Project) to adapt the design to the proposed substitute item, and
 - c) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;
- 3) will identify:
- a) all variations of the proposed substitute item from that specified, and
 - b) available engineering, sales, maintenance, repair, and replacement services; and
- 4) shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change.

- B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Construction Manager. Contractor shall submit sufficient information to allow Construction Manager, in Construction Manager's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Construction Manager will be similar to those provided in Paragraph 6.5.A.2.
- C. *Government's Evaluation:* Construction Manager will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.5.A and 6.5.B. Construction Manager may require Contractor to furnish additional data about the proposed substitute item. Construction Manager will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Construction Manager's review is complete, which will be evidenced by a Change Order in the case of a substitute and an approved Shop Drawing for an "or equal." Construction Manager will advise Contractor in writing of any negative determination.
- D. *Special Guarantee:* Government may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- E. *Government's Cost Reimbursement:* Construction Manager will record Government's costs in evaluating a substitute proposal as submitted by Contractor pursuant to Paragraphs 6.5.A.2 and 6.5.B. Whether or not Construction Manager approves a substitute so proposed or submitted by Contractor; Contractor may be required to reimburse Government for the reasonable charges evaluating each such proposed substitute. Contractor shall also reimburse

Government for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Government) resulting from the acceptance of each proposed substitute.

- F. *Contractor's Expense*: Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

6.6 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Government as indicated in Paragraph 6.6.B), whether initially or as a replacement, against whom Government may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.
- B. The Standard General Conditions (see Paragraph 6.6.I) require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Government in advance for acceptance by Government by a specified date prior to the Effective Date of the Agreement. If Contractor has submitted a list thereof in accordance with the Standard General Conditions, Government's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Contract Modification will be issued. No acceptance by Government of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Government or Engineer to reject defective Work.
- C. Contractor shall be fully responsible to Government and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:
1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Government or Engineer and any such Subcontractor, Supplier or other individual or entity; nor
 2. shall create any obligation on the part of Government or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.
- D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.

- E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Construction Manager through Contractor.
- F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Government and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as a loss payee on the property insurance provided in Paragraph 5.6, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Government, Contractor, Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same. See also Article 10.3.A of Agreement and Section 108.02 of the FP-14 Specifications.
- H. Within 14 days after award of the contract, the Contractor shall deliver to the Contracting Officer a completed Standard Form (SF) 1413, Statement and Acknowledgment, for each subcontract for construction within the United States, including the subcontractor's signed and dated acknowledgment that the clauses set forth in paragraph (b) of this clause have been included in the subcontract. Within 14 days after the award of any subsequently awarded subcontract the Contractor shall deliver to the Contracting Officer an updated completed SF 1413 for such additional subcontract.

6.7 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Government or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Government in the Contract Documents.
- B. Contractor shall indemnify and hold harmless Government and Engineer, and the officers,

directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.8 *Permits*

- A. Unless otherwise provided in Exhibit I – Environmental Requirements and Permits, Contractor shall obtain and pay for all construction permits and licenses. Government shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Contractor shall pay all charges of utility owners for connections for providing permanent service to the Work. See also Paragraph 5.1 of the Agreement.

6.9 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Government nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, and terms of the contract, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor's responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.3.
- C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times, in accordance with Article 12 herein.

6.10 *Taxes*

- A. *Taxes.* Contractor acknowledges and agrees that all work performed and services provided within the territorial jurisdiction of the Navajo Nation is subject to the **six** percent (6%) Navajo Sales Tax (24 N.N.C. §601 et seq.).
- B. *Identification of taxable activity.* The Contractor shall separately indicate, on each invoice or payment application submitted to the Government, any and all of its work performed

or services provided within the Navajo Nation pursuant to this Contract, and shall itemize the Navajo Sales Tax.

- C. *Withholding.* The Contractor acknowledges and agrees that the Government shall withhold from each payment **six** percent (**6%**) of the amount associated with work performed or services provided within the Navajo Nation under this Contract, and shall transfer such **six** percent (**6%**) amount to the Office of the Navajo Tax Commission (ONTC) on behalf of the Contractor. The Contractor shall indicate on its quarterly tax return filed with the ONTC that the Navajo Sales Tax has been withheld and paid.
- D. *Filing and other payments.* The Contractor acknowledges that the Government's withholding of tax in no way removes Contractor's responsibility for timely filing of tax returns and payment of interest, penalties, or any other amounts relating to Contractor's tax obligations under the Government's or any other jurisdiction.

6.11 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas:*

1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.
2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.
3. Contractor shall indemnify and hold harmless Government and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Government, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.

B. *Removal of Debris During Performance of the Work:* During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Government. At the completion of the Work

Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

- D. *Loading Structures*: Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.12 *Record Documents*

- A. The Contractor and Construction Manager shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Contract Modifications, Work Change Directives, Change Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to Engineer for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to Construction Manager for Government.

6.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. See Special Contract Requirements (Exhibit C) for Contractor Safety Program Requirements. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:
1. all persons on the Site or who may be affected by the Work;
 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.
- C. Contractor shall comply with the applicable requirements of Government's safety programs, if any. The Supplementary Conditions identify any Government's safety programs that are

applicable to the Work.

- D. Contractor shall inform Government and Engineer of the specific requirements of Contractor's safety program with which Government's and Engineer's employees and representatives must comply with while at the Site.
- E. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Government or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- F. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Government and Contractor in accordance with Paragraph 14.7.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

- A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.15 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.16 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Construction Manager prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Construction Manager determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a modification may be entered into in accordance with Article 12 herein.

6.17 *Shop Drawings, Samples and Certifications*

A. Contractor shall submit Shop Drawings and Samples to Construction Manager for review and approval in accordance with the accepted Schedule of Submittals (as required by Paragraph 2.7). Each submittal will be identified as Construction Manager may require.

1. *Shop Drawings:*

- a. Submit **three (3)** paper copies and an electronic copy for review. The Contractor shall provide Architectural D size shop drawings and electronic files in **AutoCAD 2019** compatible format on a jump drive 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. The Contractor shall allow up to three (3) weeks, from the time the shop drawings are received, for review and approval. The Government shall reply to the Contractor's shop plans either as "**Approved for Fabrication,**" "**Approved as Marked,**" or "**Resubmit/Disapproved**".
- b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Construction Manager the services, materials, and equipment Contractor proposes to provide and to enable Construction Manager to review the information for the limited purposes required by Paragraph 6.17.D.
- c. Approval of any and all concrete reinforcement lists, 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 requirements.

2. *Samples:*

- a. Submit number of Samples as specified in the specific material Specifications.
- b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Construction Manager may require to enable Construction Manager to review the submittal for the limited purposes required by Paragraph 6.17.D.

3. *Certifications:*

- a. 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 (bid item) 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-14, Contract plans and specifications, and/or approved shop drawings) with proper AASHTO or equivalent ASTM test results, heat numbers, and specified limits.
- b. 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 Government as an equivalent substitution. The certificates of compliance shall be submitted directly from the supplier, through the Prime Contractor, for review and approval prior to the materials being incorporated into the work. Certificates of compliance not containing all of the minimum requirements listed above, or certificates of compliance not conforming to the specified material specifications (ie; substitutions) which are submitted under the Submittal Transmittal Review and Approval Form, will not be reviewed by the Government and will be returned to the Contractor as DISAPPROVED. Full payment will not be made for work incorporating materials that require certificates of compliance until the material supplied on the project is matched by heat number or other identifying number to approved certificates of compliance. 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.
- c. 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.

- d. 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.
- e. 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.
- f. 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 and/or drawings. Verification shall be made by heat number, lot number, traceable paperwork, markings or other industry standard methods of material identification showing that the material is the same material shown on the approved certifications. Work containing material that is not verifiable as being covered by approved certifications may be disapproved and/or may be subject to non-payment. Verification shall be documented in the project record files.

B. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Construction Manager's review and approval of the pertinent submittals will be at the sole expense and responsibility of Contractor.

C. *Submittal Procedures:*

- 1. Before submitting each Shop Drawing or Sample, Contractor shall have:
 - a. reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
 - b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
 - c. determined and verified the suitability of all materials offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
 - d. determine and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
- 2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to

Contractor's review and approval of that submittal.

3. With each submittal, Contractor shall give Construction Manager specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawings or Sample submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Construction Manager for review and approval of each such variation.

D. *Engineer's Review:*

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Construction Manager. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Construction Manager has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

E. *Resubmittal Procedures:*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

6.18 *Continuing the Work*

- A. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Government. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.4 or as Government and Contractor may otherwise agree in writing.

6.19 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner/Government, **for up to 1 year** from the date of final acceptance, that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on representation of Contractor's warranty and guarantee.
- B. *Materials and Labor.* Contractor warrants to the Government that all labor, materials, equipment and furnishings used in, or incorporated into, the Project will be of good quality, new, that the Work will be free from defects in design, materials and workmanship, and that all Work will conform with the requirements of the Construction Documents. If required by the Government's Representative, the Contractor shall furnish satisfactory evidence of compliance with this warranty. The type, quality and quantum of such evidence, and whether such evidence is satisfactory, shall be within the sole discretion of the Government's Representative. Any portion of the Work not conforming to these requirements, including substitutions not properly approved and authorized by the Government, and including non-conformance relating to any materials, equipment, furnishings, labor, installation, or workmanship, may be considered defective.
- C. *Repair or replacement.* Contractor agrees to repair, replace, or re-perform, or pay the Government the reasonable cost of such repair, replacement, or re-performance, any portion of the Work that the Government deems in its sole discretion to be defective, so long as Government submits to the Contractor a written notice of any defect within one (1) calendar year following the issuance of a Certificate of Occupancy for the Project. The choice among repair, replacement, re-performance, or payment shall be the Contractor's. Any steps taken by the Contractor to correct defects shall not act to extend the term of this warranty. All repairs, replacement, or re-performance by the Contractor shall be at no charge to the Government and shall be performed within 60 calendar days of the Contractor's receipt of notification of the defect, which period shall be extended for delays outside the Contractor's control.
- D. *Access to the Project.* Government must provide access to the Contractor during its normal business hours, Monday through Friday, 8 a.m. to 5 p.m., to inspect the defect reported and, if necessary, to take corrective action.
- E. *No liens.* Contractor guarantees that, as of the conclusion of this Contract, all work will be free of liens, claims and security interests of any third parties.
- F. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
1. *Maintenance.* Failure of the Government to perform reasonable regular maintenance and proper care of the finished Project shall void this warranty.
 2. abuse, modification, or improper maintenance or operation by persons other than

Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or

3. normal wear and tear under normal usage.

G. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:

1. observations by Engineer;

2. recommendation by Construction Manager or payment by Government of any progress or final payment;

3. the issuance of a certificate of Substantial Completion by Construction Manager or any payment related thereto by Government;

4. use or occupancy of the Work or any part thereof by Government;

5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;

6. any inspection, test, or approval by others; or

7. any correction of defective Work by Government.

6.20 *Indemnification*

A. Contractor agrees to hold harmless and indemnify the Government and its divisions, departments, offices, agencies, boards, commissions, committees, enterprises, employees, officers, officials, and agents against any and all losses, costs, damages, claims, expenses, attorney's fees, or other liabilities whatsoever, for any injury, illness, disease or death to persons and for any damage to Government property arising from the negligent acts or omissions by the Contractor, as defined in Article 10.3 of the Agreement, regardless of whether or not any liability is caused in part by an indemnified party.

6.21 *Delegation of Professional Design Services*

A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.

B. If professional design services or certifications by a design professional related to systems,

materials or equipment are specifically required of Contractor by the Contract Documents, Government and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

- C. Government and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Government and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

6.22 *Licensing & Registration Requirements*

- A. *State license required.* The Contractor shall hold a current and valid license from an appropriate State Licensing Board or Agency for the type of work to be performed under this Contract, which license is customarily maintained in the industry. Said License must be maintained as active and current for the entire duration of performance under this Contract. The Contractor shall indicate its business name, business address, "Qualifying Party," and state license number in the Primary Contract. Regardless of who the "qualifying party" is, the Contractor agrees to immediately notify the Government if such license is suspended, revoked, expired, or otherwise not in effect.
- B. *Business registration required.* The Contractor shall be registered to do business with the State in which the Project is located. All documents regarding such registration shall be provided to the Government prior to the execution of this Contract, and must be active and valid for the effective duration of this Contract. The Contractor shall immediately notify the Government if such registration is suspended, revoked, expired, or otherwise not in effect.
- C. *Documentation required.* The Contractor shall submit written documentation of all required licenses and registrations to the Government's representative. The Government may terminate this Contract for material breach if the Government's representative determines that the Contractor has failed to timely submit the required documentation.

D. *Licensed subcontractors required.* All subcontractors used by the Contractor in its performance under this Contract shall be duly registered and licensed to practice their professions in the Navajo Nation and/or the State in which the Project is located. Use of unregistered or unlicensed subcontractors shall constitute a material breach and the Government may terminate this Contract.

6.23 *Records; Audits*

A. *Records; Audits.* Pursuant to 12 N.N.C. §352, Contractor shall keep and maintain books, records, documents or other materials related to performance under this Contract for a period of five (5) calendar years from the date of issuance of final payment under this Contract. Upon issuance of a Notice of Audit to Contractor, the Government may audit such documents and records any time during the effective period of this Contract, up to the five (5) calendar year period following final payment. Contractor agrees to have an authorized individual execute and have notarized a release authorizing the Government to release the Contractor's ledgers, books, records, documents or other materials related to performance under this Contract, as such information may be required by a governmental agency under an agreement with the Government for purposes of an audit by such agency of such documents and records. Contractor agrees that said executed release shall constitute permission for disclosure of information pursuant to 2 N.N.C. §85 (A)(5)(d) and 2 N.N.C. §86(C).

ARTICLE 7 – OTHER WORK AT THE SITE

7.1 *Related Work at Site*

- A. Government may perform other work related to the Project at the Site with Government's employees or through other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:
1. written notice thereof will be given to Contractor prior to starting any such other work; and
 2. if Government and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.5.
- B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner, and Government, if Government is performing other work with Government's employees, proper and safe access to the Site, provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work;

provided, however, that Contractor may cut or alter others' work with the written consent of Construction Manager and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Government and such utility owners and other contractors.

- C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Construction Manager in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

7.2 *Coordination*

- A. If Government intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:
 - 1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;
 - 2. the specific matters to be covered by such authority and responsibility will be itemized; and
 - 3. the extent of such authority and responsibilities will be provided.
- B. Unless otherwise provided in the Supplementary Conditions, Government shall have sole authority and responsibility for such coordination.

7.3 *Legal Relationships*

- A. Paragraphs 7.1.A and 7.2 are not applicable for utilities not under the control of Government.
- B. Each other direct contract of Government under Paragraph 7.1.A shall provide that the other contractor is liable to Government and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's wrongful actions or inactions.
- C. Contractor shall be liable to Government and any other contractor under direct contract to Government for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's wrongful action or inactions.

ARTICLE 8 – GOVERNMENT’S RESPONSIBILITIES

8.1 *Communications to Contractor; Project Supervision*

- A. Except as otherwise provided in these General Conditions, Government shall issue all communications to Contractor through Construction Manager.
- B. Project Supervision
 - 1. Government's Representative. In the performance of work or provision of services under this Contract, the Contractor shall at all times be under the supervision and direction of the Government's representative named in the Agreement, or his/her successor or designee.
 - 2. Joint supervision and approval. Any cooperative or joint supervision, or joint approval authority involving person(s) other than the Government's representative, whether Government staff or other person(s), shall be conducted through a duly approved and executed cooperative agreement that sets forth the extent of decision-making, supervision, and approval authority of the Government's representative and such other person(s).

8.2 *Replacement of Construction Manager*

- A. In case of termination of the employment of Construction Manager, Government shall appoint a Construction Manager to whom Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former Construction Manager.

8.3 *Furnish Data*

- A. Government shall promptly furnish the data required of Government under the Contract Documents.

8.4 *Pay When Due*

- A. Government shall make payments to Contractor when they are due as provided in Paragraphs 14.2.C and 14.7.C.

8.5 *Lands and Easements; Reports and Tests*

- A. Government’s duties with respect to providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.1 and 4.5. Paragraph 4.2 refers to Government’s identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

8.6 *Insurance*

- A. See Paragraph 5.3 herein.

8.7 *Contract Modifications*

A. Government is obligated to execute Contract Modifications as indicated in Paragraph 10.3.

8.8 *Inspections, Tests, and Approvals*

A. Government's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 13.3.B.

8.9 *Limitations on Government's Responsibilities*

A. The Government shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Government will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

8.10 *Undisclosed Hazardous Environmental Condition*

A. Government's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.6.

8.11 *Evidence of Financial Arrangements*

A. Upon request of Contractor, Government shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Government's obligations under the Contract Documents.

8.12 *Compliance with Safety Program*

A. While at the Site, Government's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Government has been informed pursuant to Paragraph 6.13.D.

ARTICLE 9 – ENGINEER'S STATUS DURING CONSTRUCTION

9.1 *Government's Representative*

A. Engineer will be Government's technical representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Government's representative during construction are set forth in the Contract Documents.

9.2 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Government, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Government a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Government informed of the progress of the Work and will endeavor to guard Government against defective Work.
- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 9.9. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

9.3 *Project Representative*

- A. If Government and Engineer agree, Engineer will furnish additional staff to assist Construction Manager in providing more extensive observation of the Work. The authority and responsibilities of any such staff and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.9. If Government designates another representative or agent to represent Government at the Site who is not Engineer's consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Project Specific Supplementary General Conditions (Exhibit B), and specifications.

9.4 *Authorized Variations in Work*

- A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Change Order and will be binding on Government and also on Contractor, who shall perform the Work involved promptly. If Government or Contractor believes that a Change Order justifies an adjustment in the Contract Price or Contract Times, or both, that adjustment will become a Work Change Directive and made in accordance with Article 12 herein.

9.5 *Rejecting Defective Work*

- A. Engineer will have authority to reject Work which Engineer believes to be defective, or

that Engineer believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Engineer will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.4, whether or not the Work is fabricated, installed, or completed.

9.6 *Shop Drawings, Change Orders and Payments*

- A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.
- B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.
- C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.
- D. In connection with Engineer's authority as to Applications for Payment, see Article 14.

9.7 *Determinations for Unit Price Work*

- A. Construction Manager will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Construction Manager's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Construction Manager's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Government and Contractor, subject to the provisions of Paragraph 10.5.

9.8 *Decisions on Requirements of Contract Documents and Acceptability of Work*

- A. Construction Manager will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Government and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question.
- B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Government or Contractor believes that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a modification shall be pursued in accordance with Article 12 herein.
- C. Engineer's written decision on the issue referred will be final and binding on Government and Contractor.

- D. When functioning as interpreter and judge under this Paragraph 9.8, Engineer will not show partiality to Government or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.9 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.7, will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 9.9 shall also apply to additional staff, if any, and assistants, if any.

9.10 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Engineer has been informed pursuant to Paragraph 6.13.D.

ARTICLE 10 – CHANGES IN THE WORK; CLAIMS

10.1 *Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Government may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change

Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

- B. If any such change causes an increase or decrease in the cost of, or the time required for, performance of any part of the work under this contract, whether or not changed by the order, the Government shall make an equitable adjustment in the contract price, the delivery schedule, or both, and shall modify the contract.
- C. The Contractor must assert its right to an adjustment within 30 days from the date of receipt of the written order. However, if the Government decides that the facts justify it, the Government may receive and act upon a proposal submitted before final payment of the contract.
- D. If the Contractor's proposal includes the cost of property made obsolete or excess by the change, the Government shall have the right to prescribe the manner of the disposition of the property.
- E. If Government and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, they shall follow the procedures of Article 16 herein.

10.2 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in Paragraph 3.4, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.4.D.

10.3 *Execution of Contract Modifications*

- A. Government and Contractor shall execute appropriate Contract Modifications in accordance with Article 12.
 - 1. changes in the Work which are: (i) ordered by Government pursuant to Paragraph 10.1.A, (ii) required because of acceptance of defective Work under Paragraph 13.8.A or Government's correction of defective Work under Paragraph 13.9, or (iii) agreed to by the parties;
 - 2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive.

10.4 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

10.5 *Claims*

- A. As provided for in Article 12 and Article 16 herein.

ARTICLE 11 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

11.1 *Cost of the Work*

- A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.1.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Contract Modification or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Government, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 11.1.B, and shall include only the following items:
 - 1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Government and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Government.
 - 2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Government deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Government. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Government, and Contractor shall make provisions so that they may be obtained.

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Government, Contractor shall obtain competitive bids from Subcontractors acceptable to Government and Contractor and shall deliver such bids to Government, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.1.
4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
 - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
 - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
 - c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Government with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
 - d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
 - e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
 - f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work, provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Government. No such losses, damages, and expenses shall be included

in the Cost of the Work for the purpose of determining Contractor's fee.

- g. The cost of utilities, fuel, and sanitary facilities at the Site.
- h. Minor expenses such as long distance telephone calls, telephone service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i. The cost of premiums for all bonds and insurance, Contractor is required by the Contract Documents to purchase and maintain.

B. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.1.A.1 or specifically covered by Paragraph 11.1.A.4, all of which are to be considered administrative costs covered by the Contractor's fee.
- 2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
- 4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
- 5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.1.A.

C. *Contractor's Fee:* When all the Work is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Contract Modification or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 12.1.

D. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.1.A and 11.1.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable

to Construction Manager an itemized cost breakdown together with supporting data (see Paragraph 12.1.D for further detail).

11.2 Allowances

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Government and Engineer.
- B. *Contingency Allowance:*
 - 1. Contractor agrees that a contingency allowance, if any, is for the sole use of Government to cover unanticipated costs.
- C. Prior to final payment, an appropriate Contract Modification will be issued as recommended by Construction Manager to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.3 Unit Price Work

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Construction Manager subject to the provisions of Paragraph 9.7.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead, profit, bonding, labor, materials, incidentals, and all applicable permits for each separately identified item.
- D. Government or Contractor may seek to adjust the Contract Price in accordance with Article 12, if:
 - 1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
 - 2. there is no corresponding adjustment with respect to any other item of Work; and
 - 3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Government believes that Government is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

4. *Variation in Estimated Quantities:* If the quantity of a unit-priced item in this contract is an estimated quantity and the actual quantity of the unit-priced item varies more than 15 percent above or below the estimated quantity, an equitable adjustment in the contract price shall be made upon demand of either party. The equitable adjustment in the unit price shall only include added overhead, profit, bonding, and taxes (as used in the original bid) unless the Contractor can justify other allowable costs as approved by the Government. Bid Items based on Lump sum, and man-hours are not subject to the requirements in this paragraph. The equitable adjustment shall be based upon any increase or decrease in costs due solely to the variation above 115 percent or below 85 percent of the estimated quantity. If the quantity variation is such as to cause an increase in the time necessary for completion, the Contractor may request, in writing, an extension of time, to be received by the Government within 10 days from the beginning of the delay, or within such further period as may be granted by the Government before the date of final settlement of the contract (see Paragraph 12.3 for further detail).

ARTICLE 12 – CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.1 Amendments; Contract Modifications

- A. *Written modification required.* Any revisions, amendments, addendums, alterations, contract modifications, increases in payment over and above the Original Contract Amount, or changes whatsoever to any provision of the Contract shall be made only by a duly approved written agreement, deemed a modification signed by the signatories of the Agreement or their authorized designee.
- B. *Prior approval required.* The Government's authorized representative shall determine that the modification is reasonably related to the scope of work for the project; all modifications must be approved in writing by the Government's representative prior to consideration and execution by the Government signatory.
- C. *20% Limitation if Bid used.* If the Original Contract Amount is based on a "Bid" submitted by the Contractor and accepted by the Government, pursuant to 2 N.N.C. §223(F), such modifications shall not exceed, in the aggregate, twenty percent (20%) of the accepted Bid.
- D. *Cost Breakdown.* The Contractor, in connection with any proposal he makes for a contract modification, shall upon request furnish a price breakdown, itemized along with a complete breakdown of the original unit bid price as requested by the Government. 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 in the request.

12.2 *Change of Contract Times*

- A. The working days allowed for the performance of the contract is based on the Contractor's schedule for the work to be performed. The working days required to complete the work, as specified, takes into consideration normal weather conditions for the project area. Shutdowns due to inclement weather conditions, including winter suspension(s), and holidays shall be requested by the Contractor and approved by the Construction Manager.
- B. Any adjustment of the Contract Times may only be changed by a Contract Modification. Any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

12.3 *Delays*

- A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in Paragraph 12.2. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Government, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.
- B. If Government, Engineer, or other contractors or utility owners performing other work for Government as contemplated by Article 7, or anyone for whom Government is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Government, or other causes not the fault of and beyond control of Government and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Time extensions because of weather conditions shall not be granted except in cases of unusually severe/abnormal weather unanticipated by this contract. The Contractor shall be required to obtain and submit, to the Government, climatological data for the area of the project, covering at least a ten year period, to receive consideration for any contention of unusually severe/abnormal weather and time extension. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.3.C.
- D. Government, Engineer, and their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall not be liable to Contractor for any claims, costs,

losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

- E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

ARTICLE 13 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.1 Notice of Defects

- A. Prompt notice of all defective Work of which Government or Engineer has actual knowledge will be given to Contractor. Defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.2 Access to Work

- A. Government, Engineer, their consultants and other representatives and personnel of Government, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply therewith as applicable.

13.3 Tests and Inspections

- A. Contractor shall give Construction Manager timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.
- B. Government shall employ and pay for the services of an independent testing laboratory to perform all Quality Assurance inspections, tests, or approvals required by the Contract Documents except:
 - 1. for inspections, tests, or approvals covered by Paragraphs 13.3.C and 13.3.D below;
 - 2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.4.B shall be paid as provided in Paragraph 13.4.C; and
 - 3. as otherwise specifically provided in the Contract Documents.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging

and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Construction Manager the required certificates of inspection or approval.

- D. Contractor shall be responsible for all Quality Control of the work by arranging and obtaining and shall pay all costs in connection with any and all inspections, tests, or approvals required for Government's and Engineer's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Government and Engineer. See Special Contract Requirements, Exhibit C for the Furnishing of Contractor Field Testing Laboratory (if required by the contract).
- E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Construction Manager, Contractor shall, if requested by Construction Manager, uncover such Work for observation.
- F. Uncovering Work as provided in Paragraph 13.3.E shall be at Contractor's expense unless Contractor has given Construction Manager timely notice of Contractor's intention to cover the same and Construction Manager has not acted with reasonable promptness in response to such notice.

13.4 *Uncovering Work*

- A. If any Work is covered contrary to the written request of Construction Manager, it must, if requested by Construction Manager, be uncovered for Construction Manager's observation and replaced at Contractor's expense.
- B. If Construction Manager considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Construction Manager's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.
- C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Government shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Government may make a Claim therefor as provided in Paragraph 10.5.
- D. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof,

Contractor may make a Claim therefor as provided in Paragraph 10.5.

13.5 *Government May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, Government may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Government to stop the Work shall not give rise to any duty on the part of Government to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.6 *Correction or Removal of Defective Work*

- A. Promptly after receipt of written notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Construction Manager, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).
- B. When correcting defective Work under the terms of this Paragraph 13.6 or Paragraph 13.7, Contractor shall take no action that would void or otherwise impair Government's special warranty and guarantee, if any, on said Work.

13.7 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Government or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Government and in accordance with Government's written instructions:
 - 1. repair such defective land or areas; or
 - 2. correct such defective Work; or
 - 3. if the defective Work has been rejected by Government, remove it from the Project and replace it with Work that is not defective, and
 - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.

- B. If Contractor does not promptly comply with the terms of Government's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Government may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.
- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.7, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
- E. Contractor's obligations under this Paragraph 13.7 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.7 shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

13.8 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Government (and, prior to Construction Manager's recommendation of final payment, Construction Manager) prefers to accept it, Government may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Government's evaluation of and determination to accept such defective Work (such costs to be approved by Construction Manager as to reasonableness) and for the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Construction Manager's recommendation of final payment, a Contract Modification will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Government shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Government may make a Claim as provided in Article 16 herein. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Government.

13.9 *Government May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Construction Manager to correct defective Work, or to remove and replace rejected Work as required by Construction Manager in accordance with Paragraph 13.6.A, or if Contractor fails to perform

the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Government may, after seven days written notice to Contractor, correct, or remedy any such deficiency.

- B. In exercising the rights and remedies under this Paragraph 13.9, Government shall proceed expeditiously. In connection with such corrective or remedial action, Government may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Government has paid Contractor but which are stored elsewhere. Contractor shall allow Government, Government's representatives, agents and employees, Government's other contractors, and Engineer and Engineer's consultants access to the Site to enable Government to exercise the rights and remedies under this Paragraph.
- C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Government in exercising the rights and remedies under this Paragraph 13.9 will be charged against Contractor, and a Contract Modification will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Government shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Government may make a Claim therefor as provided in Article 16 herein. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Government of Government's rights and remedies under this Paragraph 13.9.

ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

14.1 Schedule of Values-

- A. The Schedule of Values established as provided in Paragraph 2.7.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Construction Manager. Progress payments on account of Unit Price Work will be based on the number of units completed in place and accepted.

14.2 Progress Payments

A. Applications for Payments:

- 1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Construction

Manager for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation (i.e. the Government's receiving reports per FP Section 109.08(d)) as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Government has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Government's interest therein, all of which must be satisfactory to Government.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment (see Section 109.08(c)(17) of Exhibit F for certification language).
3. The amount of retainage with respect to progress payments will be as stipulated in Paragraph 14.2.D.
4. The Taxes applied with respect to progress payments will be as stipulated in Article 6.10 herein.

B. Review of Applications:

1. Construction Manager will, within 14 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Government or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Construction Manager's recommendation of any payment requested in an Application for Payment will constitute a representation by Government, based on Engineer's/ Construction Manager's observations of the executed Work as experienced and qualified design professionals, and on Construction Manager's review of the Application for Payment and the accompanying data and schedules, that to the best of Construction Manager's knowledge, information and belief:
 - a. the Work has progressed to the point indicated;
 - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 9.7, and any other qualifications stated in the recommendation); and

- c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Construction Manager's responsibility to observe the Work.
3. By recommending any such payment Construction Manager will not thereby be deemed to have represented that:
- a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Construction Manager in the Contract Documents; or
 - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Government or entitle Government to withhold payment to Contractor.
4. Neither Construction Manager's review of Contractor's Work for the purposes of recommending payments nor Construction Manager's recommendation of any payment, including final payment, will impose responsibility on Construction Manager:
- a. to supervise, direct, or control the Work, or
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
 - d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or
 - e. to determine that title to any of the Work, materials, or equipment has passed to Government free and clear of any Liens.
5. Construction Manager may refuse to recommend the whole or any part of any payment if, in Construction Manager's opinion, it would be incorrect to make the representations stated in Paragraph 14.2.B.2. Construction Manager may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Construction Manager's opinion to protect Government from loss because:
- a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;

- b. the Contract Price has been reduced by Contract Modifications;
- c. Government has been required to correct defective Work or complete Work in accordance with Paragraph 13.9; or
- d. Construction Manager has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.2.A.

C. *Payment Becomes Due:*

- 1. Thirty (30) calendar days after presentation of the Application for Payment to Government with Construction Manager's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.2.D and 14.2.E) become due, and when due will be paid by Government to Contractor.

D. *Retainage:*

- 1. *Percentage withheld.* Contractor agrees that the Government shall withhold ten percent (10%) of the payment due under each invoice submitted to the Government, as Retainage. If Paragraph 5.1.C herein applies, the retainage shall be fifty percent (50%).

E. *Reduction in Payment; Debts Owed; Right to Offset:*

- 1. Government may refuse to make payment of the full amount recommended by Construction Manager because:
 - a. Debts Owed; Right to Offset. The Contractor acknowledges that pursuant to the Navajo Business and Procurement Act, 12 N.N.C. §§1501 *et seq.*, the Contractor, in its present form or in any other identifiable capacity as an individual, business, corporation, partnership, or other entity, is eligible to do business with the "Navajo Nation" as defined in 12 N.N.C. §1503(A). Contractor further acknowledges that if the Contractor has an outstanding money judgment against it in favor of the Government, or there exists a delinquent accounts receivable debt which is due and owing to the Government by Contractor, then the Government may, upon due notice to the Contractor, offset its money claim against any amount owed for work performed or services provided under this Contract.
 - b. claims have been made against Government on account of Contractor's performance or furnishing of the Work;
 - c. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Government to secure the satisfaction and discharge of such Liens; or
 - d. Government has actual knowledge of the occurrence of any of the events

enumerated in Paragraphs 14.2.B.5.a through 14.2.B.5.c or Paragraph 15.2.A.

2. If Government refuses to make payment of the full amount recommended by Construction Manager, Government will give Contractor immediate written notice stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Government shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Government and Contractor, when Contractor remedies the reasons for such action.
3. Upon a subsequent determination that Government's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.2.C.1 and subject to interest as provided in the Agreement.

14.3 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Government no later than the time of payment free and clear of all Liens.

14.4 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use, Contractor shall notify Construction Manager in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Construction Manager issue a certificate of Substantial Completion.
- B. Promptly after Contractor's notification, Construction Manager, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. **Substantial Completion** will ONLY be given by the Government 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 Construction Manager and Engineer during a substantial completion inspection. For conventional bridge and highway work, this is the point at which all road grading, pavement structure, shoulder, drainage, permanent signing and markings, traffic barrier, safety appurtenance, utility work is complete and meets all the contract requirements. If Construction Manager does not consider the Work substantially complete, Construction Manager will notify Contractor in writing giving the reasons therefor.
- C. If Construction Manager considers the Work substantially complete, Construction Manager will deliver to Engineer and Contractor a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Engineer shall have seven days after receipt of the tentative certificate during which to make written objection to Construction Manager as to any provisions of the certificate or attached list. If, after considering such objections, Construction Manager concludes that the Work is not substantially complete, Construction Manager will, within 14 days after submission of the tentative certificate, notify Contractor in writing, stating the reasons therefor. If, after

consideration of Engineer's objections, Construction Manager considers the Work substantially complete, Construction Manager will, within said 14 days, execute and deliver to Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Construction Manager believes justified after consideration of any objections from Engineer.

- D. *Release of Partial Retainage.* Upon receipt of a Certificate of Substantial Completion and a request by the Contractor for a release of partial retainage, the Government shall obtain consent of the Surety (if any) and shall make payment of partial retainage for the invoiced Work required to obtain the Certificate of Substantial Completion. Any invoiced Work which did not contribute to the Certificate of Substantial Completion shall be released until the Final Payment as described in Paragraph 14.4.E and Article 14.7 herein.
- E. *Legal release required.* Any remaining portion of the retainage balance shall not be released until the Contractor submits a "Release of All Claims and Liens" which is notarized and signed by the Contractor, and also submits all similar legal releases of subcontractors.
- F. At the time of delivery of the tentative certificate of Substantial Completion, Construction Manager will deliver to Government and Contractor a written recommendation as to division of responsibilities pending final payment between Government and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Government and Contractor agree otherwise in writing and so inform Construction Manager in writing prior to issuing the definitive certificate of Substantial Completion, Construction Manager's aforesaid recommendation will be binding on Government and Contractor until final payment.
- G. Government shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the tentative list.

14.5 *Partial Utilization*

- A. Prior to Substantial Completion of all the Work, Government may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Government, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Government for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:
 - 1. Government at any time may request Contractor in writing to permit Government to use or occupy any such part of the Work which Government believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Government, and Engineer will follow the procedures of Paragraph 14.4.A through F for that part of the Work.

2. Contractor at any time may notify Construction Manager in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Construction Manager to issue a certificate of Substantial Completion for that part of the Work.
3. Within a reasonable time after either such request, Construction Manager, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Construction Manager does not consider that part of the Work to be substantially complete, Construction Manager will notify Contractor in writing giving the reasons therefor. If Construction Manager considers that part of the Work to be substantially complete, the provisions of Paragraph 14.4 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

14.6 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Construction Manager will promptly make a final inspection with Engineer and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.7 *Final Payment*

A. *Application for Payment:*

1. After Contractor has, in the opinion of Construction Manager, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.
2. The final Application for Payment shall be accompanied (except as previously delivered) by:
 - a. Copies of all work product documents, reports, photographs, drawings, schematics, related correspondence, invoices, and other information or documents regarding the Project shall be provided to the Government's Representative no later than thirty (30) calendar days following the expiration or termination of this Contract. Final invoice(s) shall be due no later than thirty (30) calendar days following the expiration or termination of this Contract.

- b. evidence of insurance required by Paragraph 5.3.
 - c. consent of the surety, if any, to final payment;
 - d. a list of all Claims against Government that Contractor believes are unsettled; and
 - e. complete and legally effective releases or waivers (satisfactory to Government) of all Lien rights arising out of or Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 14.7.A.2 and as approved by Government, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Government might in any way be responsible, or which might in any way result in liens or other burdens on Government's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Government to indemnify Government against any Lien.

B. Construction Manager's Review of Application and Acceptance:

1. If, on the basis of Construction Manager's observation of the Work during construction and final inspection, and Construction Manager's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Construction Manager is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, Construction Manager will, within ten days after receipt of the final Application for Payment, indicate in writing Construction Manager's recommendation of payment and present the Application for Payment to Government for payment. At the same time Construction Manager will also give written notice to Engineer and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.9. Otherwise, Construction Manager will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. Payment Becomes Due:

1. Thirty (30) days after the presentation to Government of the Application for Payment and accompanying documentation, the amount recommended by Construction Manager, less any sum Government is entitled to set off against Construction Manager's recommendation, including but not limited to liquidated damages, will become due and will be paid by Government to Contractor.

14.8 *Final Completion Delayed-*

- A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Construction Manager so confirms, Government shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of Construction Manager, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by Government for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.1, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Construction Manager with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.9 *Waiver of Claims*

- A. The making and acceptance of final payment will constitute:
 - 1. a waiver of all Claims by Government against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.6, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and
 - 2. a waiver of all Claims by Contractor against Government other than those previously made in accordance with the requirements herein and expressly acknowledged by Government in writing as still unsettled.

ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION

Generally. The rights of the Parties to suspend or terminate this Contract shall be as provided for herein. In addition, upon prior written notice to the Contractor of not less than thirty (30) calendar days, the Government may unilaterally order a temporary stoppage of work. If the Contractor is not at fault for stoppage, any additional payment to the Contractor for such stoppage shall be in accordance with Article 12 herein.

15.1 *Government May Suspend Work*

- A. At any time and without cause, Government may suspend the Work or any portion thereof for a period of not more than 120 consecutive days by notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Article 16 herein.

15.2 *Government May Terminate for Cause*

A. The occurrence of any one or more of the following events will justify termination for cause:

1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule;
2. *Non-compliance or violation of laws.* In addition to the Government's right of suspension and termination provided for in the Primary Contract, the Government may terminate this Contract for Breach if the Government's representative determines in writing that the Contractor or any of its' subcontractors has violated any applicable law or regulation in the procurement or performance of this Contract.;
3. *Falsification, lack of documentation.* The Government may terminate this Contract for breach if:
 - a. any statement or documentation regarding any licensing, business registration, insurance coverage, or debts owed, is determined to be false; or
 - b. Contractor has failed to submit in a timely manner any requested documentation pertaining to any licensing, business registration, insurance coverage, or debts owed, and the Government's Representative determines that the Government is unable to issue a Notice to Proceed, or to otherwise proceed with the Project, in a timely manner.
4. *Financial responsibility, solvency.* The Government may terminate this Contract for breach if:
 - a. the Contractor becomes insolvent or its insolvency is imminent, or the Contractor files for bankruptcy under any chapter of federal law; or
 - b. the provider of the Contractor's insurance is not solvent or its insolvency is imminent; or
 - c. the Government receives notice that the Contractor has failed to pay its subcontractors, employees, suppliers or other ancillary firm(s) for any work on this Project.
5. *Debarment, suspension.* The Government may terminate this Contract if the Government or any of its political subdivisions, enterprises, or other related entities, or if any federal or state governmental entity, has for any reason debarred or suspended the Contractor or any of its subcontractors. Such debarment or suspension shall be considered effective notwithstanding any appeal, and shall be effective unless and until conclusively resolved in favor of the Contractor or subcontractor.

B. If one or more of the events identified in Paragraph 15.2.A occur, Government may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:

1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and

use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion);

2. incorporate in the Work all materials and equipment stored at the Site or for which Government has paid Contractor but which are stored elsewhere; and
 3. complete the Work as Government may deem expedient.
- C. If Government proceeds as provided in Paragraph 15.2.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Government arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Government. Such claims, costs, losses, and damages incurred by Government will be reviewed by Construction Manager as to their reasonableness and, when so approved by Construction Manager, incorporated in a Contract Modification. When exercising any rights or remedies under this Paragraph, Government shall not be required to obtain the lowest price for the Work performed.
- D. Notwithstanding Paragraphs 15.2.B and 15.2.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.
- E. Where Contractor's services have been so terminated by Government, the termination will not affect any rights or remedies of Government against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Government will not release Contractor from liability.
- F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.1.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.2.B and 15.2.C.

15.3 *Government May Terminate For Convenience*

- A. *Termination for Convenience.* Pursuant to 12 N.N.C. §344 and §350, the Government shall have the right to terminate this Contract for the convenience of the Government. Upon seven days written notice to Contractor, Government may, without cause and without prejudice to any other right or remedy of Government, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;
 3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and
 4. reasonable expenses directly attributable to termination.
- B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.4 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 120 consecutive days by Government or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Government fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Government, and provided Government does not remedy such suspension or failure within that time, terminate the Contract and recover from Government payment on the same terms as provided in Paragraph 15.3.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Government has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Government, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.4 are not intended to preclude Contractor from making a Claim under Article 16 herein for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

ARTICLE 16 – DISPUTE RESOLUTION

16.1 *Dispute Resolution.* Any claim, dispute, or other matter in question arising out of or relating to this Contract shall be resolved by the negotiation and arbitration procedures set forth as follows:

- A. *Negotiation.* The Parties shall endeavor to resolve claims or disputes between them by informal good faith negotiation, which negotiation period shall not exceed thirty (30) calendar days, commencing as of the receipt by either Party of the other Party's written

"Notice to Invoke Dispute Resolution Procedures."

- B. *Arbitration.* If the negotiation provided for in Article 16.1.A herein does not result in resolution of the Parties' dispute within thirty (30) calendar days of commencement of negotiation, then, unless the Parties agree in writing to extend the time for negotiation, either Party may invoke arbitration by sending Notice of Intent to Commence Arbitration. Any Arbitration invoked against the Government shall be in accordance with the procedures referenced in the Navajo Sovereign Immunity Act, as amended, at 1 N.N.C. §554(J) and §554(K), and as set forth in the Navajo Nation Arbitration Act, as amended, at 7 N.N.C. §§1101 *et seq.* Any procedure not expressly provided for under Navajo law may be conducted in accordance with the Commercial Arbitration Rules of the American Arbitration Association, except to the extent that any rules are modified by the following:
1. unless otherwise agreed to in writing by the Parties, all arbitration procedures shall be held in Window Rock, Arizona; and
 2. the arbitration shall be conducted by a single arbitrator selected by the Government, unless one of the Parties' claims exceeds \$1,000,000.00, exclusive of interest, costs, and fees; in such case the arbitration shall be conducted by a panel consisting of three (3) arbitrators, one of which shall be chosen by each Party, with the two arbitrators choosing the third; at least one arbitrator shall possess at least ten (10) years of experience in Indian Law; and
 3. if the Contractor seeks to enforce on arbitration award against the Government, a notice of intent to invoke arbitration shall be filed in strict compliance with the notice requirements of the Navajo Sovereign Immunity Act, at 1 N.N.C. §555; and
 4. whether as a result of an arbitration provided for herein or of any judicial action to enforce an arbitration award resulting from such arbitration, any award against the Government shall be in strict conformance with the provisions of 1 N.N.C. §554(K) 1-6; and
 5. whether in the context of an arbitration provided for herein or any judicial action to enforce an arbitration award resulting from arbitration, Navajo Nation laws and regulations shall exclusively govern the interpretation of this Contract, the arbitration provisions herein, the arbitration procedures conducted pursuant thereto, and the application of all provisions of the Contract to the Contractor; and
 6. pursuant to 1 N.N.C. §554(K) and 7 N.N.C. §1102, the appropriate Navajo Nation district court shall have **exclusive jurisdiction** to compel the Government's participation in on arbitration, and shall have exclusive jurisdiction to enforce, modify, or vacate on arbitration award resulting from such arbitration; Contractor understands and agrees that domestication of an arbitration judgment against the Government in any other court will violate the Navajo Nation Sovereign Immunity Act such that the Government will be able to assert the defense of sovereign immunity in any other foreign (federal, state, tribal) court; and

7. neither Party can be awarded any attorney's fees and costs.

- C. *Exclusive Remedy.* The negotiation and arbitration provisions provided herein shall constitute the sole and exclusive remedy to any dispute or controversy arising from this Contract. This dispute resolution agreement shall be a complete defense to any suit, claim, action or proceeding in any federal, state, or tribal judicial or administrative tribunal; and
- D. *Post-termination; post-expiration.* Regarding any dispute arising from this Contract, the dispute resolution procedures set forth herein shall survive the termination or expiration of this Contract.
- E. *Challenges limited.* By entering into this Contract, the Contractor expressly covenants and agrees that it shall not contest or challenge the territorial, administrative, legislative, executive or judicial jurisdiction of the Navajo Nation on the basis that such jurisdiction is inconsistent with the status of the Navajo Nation as an Indian tribal Nation, or that the Navajo Nation government is not a government of general jurisdiction, or that the Navajo Nation government does not possess full police power (i.e., the power to legislate and regulate for the public's general health and welfare) over all lands, persons, activities, transactions, or occurrences within its territorial boundaries, or on any other basis not generally applicable in a similar challenge to the jurisdiction of a state government.

16.2 *Department of Justice Approval.* Pursuant to 1 N.N.C. §554(J)(2) and (K)(2), Navajo Nation Department of Justice approval is required for all agreements that include a limited waiver of sovereign immunity to compel or enforce arbitration under the Navajo Nation Arbitration Act, as amended, 7 N.N.C. §1101 et seq.

ARTICLE 17 – MISCELLANEOUS

17.1 Giving Notice; Mailings

- A. *Issuance of Notices; Mailings.* Any notices or correspondence relating to this Contract sent by either Party to the other shall be mailed to the address shown on the signature page of the Agreement, shall be mailed via certified U.S.P.O. mailing with return receipt requested, and shall be deemed issued or submitted to the receiving Party as of the date of such certified mailing.

17.2 Computation of Times

- A. When any period of time is referred to in the Contract Documents by calendar days, it will be computed to include the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.3 Survival of Obligations

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

17.4 *Governing Law; Compliance with Navajo Nation Laws; Jurisdiction*

A. *Governing Law; Compliance with Navajo Nation Laws.*

1. *Navajo Nation Law Governs.* Navajo Nation law governs the interpretation of the Contract Documents.
2. *Navajo Preference in Hiring.* In the hiring of any employees (under an employer-employee relationship) who will perform primarily at the Project site, the Contractor shall comply with all provisions of the Navajo Preference in Employment Act, at 15 N.N.C. §601 *et seq.*
3. *Navajo Preference in subcontracting.* Contractor expressly acknowledges and agrees that it is deemed a "Prime Contractor" under 5 N.N.C. §202 K, and as such must comply with all applicable provisions of the Navajo Business Opportunity Act, at 5 N.N.C. §201 *et seq.*, and with all rules and regulations promulgated thereto. In accordance with 5 N.N.C. §205 F, the Navajo Nation Business Regulatory Department shall have the authority to require the Contractor to comply with current minimum percentages for procurement and subcontract awards to Navajo-owned and controlled entities, firms and organizations, based upon availability and upon the qualifications of such entities to provide specific products and services necessary or appropriate for the Project.
4. *Other laws.* The Contractor shall comply with all other Navajo Nation laws and regulations and of the United States, now in force and effect or as hereafter may come into force and effect that pertain to the work to be performed or services to be provided under this Contract.

B. *Navajo Nation Jurisdiction.* By voluntarily entering into and executing this Contract, the Contractor expressly consents to the full territorial, administrative, legislative, executive and judicial jurisdiction of the Government, including but not limited to, the jurisdiction to regulate, adjudicate disputes, and to levy fines or enter judgments for injunctive relief and/or compensatory and punitive damages, in connection with all activities conducted by the Contractor within the Navajo Nation or which have a proximate (legal) effect on persons or property within the Navajo Nation. The Contractor hereby acknowledges and agrees that this Contract constitutes a voluntary consensual relationship between the Contractor and the Government.

C. *Sovereign Immunity.* Nothing herein shall be considered a waiver, express or implied, of the sovereign immunity of the Government, except to the limited extent provided for in the Navajo Sovereign Immunity Act, as amended, at 1 N.N.C. §§551 *et seq.*

17.5 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these Standard General Conditions.

17.6 *Government Ownership of Work Product*

- A. *Government Ownership of Work Product.* All intangible and intellectual property or work product that is produced by the Contractor or any of its subcontractors, which work product is embodied in any tangible medium such as notes, plans, or drawings, including the overall form as well as the arrangement and composition of spaces and elements in the medium, and is produced for purposes of fulfilling any duties under this Contract, shall be and remain the property of the Government at all times, whether or not such product is completed or certified, and may be used by the Government, except as follows:

1. *Limited disclosure.* Said property shall not be distributed or disclosed to any party other than the Government or its divisions, departments, offices, agencies, boards, commissions, committees, enterprises, employees, officers, officials, and agents, except (1) upon prior written consent of the Contractor; or (2) pursuant to a duly authorized and executed contract between the Government and any other tribal, county, state or federal agency; or (3) pursuant to any applicable law requiring disclosure.
2. *Right of reuse.* The Contractor acknowledges and agrees that the Government may use said property, or any portion thereof, in connection with the Project that is the subject of this Contract, for purposes of completion, modification, restoration, or renovation of such Project, at the sole discretion of the Government. Contractor agrees that such reuse shall be without any consideration, compensation or consent of Contractor, and Contractor expressly waives any claims with respect to such reuse. With regard to reuse of said property for any purpose not reasonably related to the Project, said property shall be considered Instruments of Service as provided for in the Primary Contract, and shall be subject to the restrictions on reuse as provided for therein.

17.7 *Right to Assurance*

- A. *Right to Assurance.* If at any time prior to the completion of services, the Government has reason to believe that the Contractor does not intend to or is unable to complete the contracted services, the Government may demand in writing that the Contractor submit written assurance of intent to complete performance. Failure to provide such assurance within fourteen (14) calendar days shall be deemed as a response that the Contractor will not complete services which will allow the Government to terminate this Contract.

EXHIBIT B
PROJECT SPECIFIC SUPPLEMENTAL GENERAL
CONDITIONS

PROJECT SPECIFIC SUPPLEMENTAL GENERAL CONDITIONS

This space is reserved for project specific Supplementary Conditions to the contract. Please refer to Paragraph 4.2.B and 4.6.B of Exhibit A, Standard General Conditions for discussion of Contractor's limited reliance of the technical data contained herein.

1. Wood - Geotechnical Study and Foundation Recommendation Report – dated May 30, 2019

The above listed reports can be obtained from the Navajo Division of Transportation Website below during the Request for Proposal process.

<https://navajodot.org/rfp%2Frfq>

EXHIBIT C

SPECIAL CONTRACT REQUIREMENTS

EXHIBIT C - SPECIAL CONTRACT REQUIREMENTS

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EXHIBIT C - SPECIAL CONTRACT REQUIREMENTS

1. Contractor Safety Program Requirements

Article 6.13, Exhibit A, Standard General Conditions is supplemented with the following:

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 Government a proposed comprehensive safety program in accordance with the following:

(a) The Contractor shall provide and maintain work environments and procedures which will:
(1) safeguard the public and Government personnel, property, materials, supplies, and equipment exposed to Contractor operations and activities; (2) avoid interruptions of Government operations and delays in project completion dates; and (3) control costs in the performance of this contract.

(b) For these purposes on contracts for construction or dismantling, demolition, or removal of improvements, the Contractor shall -

(1) Provide appropriate safety barricades, signs, and signal lights;

(2) Comply with the standards issued by the Secretary of Labor at 29 CFR part 1926 and 29 CFR part 1910; and

(3) Ensure that any additional measures the Government determines to be reasonably necessary for the purposes are taken.

(c) Whenever the Government becomes aware of any noncompliance with these requirements or any condition which poses a serious or imminent danger to the health or safety of the public or Government personnel, the Government shall notify the Contractor orally, with written confirmation, and request immediate initiation of corrective action. This notice, when delivered to the Contractor or the Contractor's representative at the work site, shall be deemed sufficient notice of the noncompliance and that corrective action is required. After receiving the notice, the Contractor shall immediately take corrective action. If the Contractor fails or refuses to promptly take corrective action, the Government may issue an order stopping all or part of the work until satisfactory corrective action has been taken. The Contractor shall not be entitled to any equitable adjustment of the contract price or extension of the performance schedule on any stop work order issued under this clause.

(d) The Contractor shall insert paragraphs (a) thru (d), with appropriate changes in the designation of the parties, in all subcontracts.

B) Pre-Construction Safety Meeting:

A representative of the Contractor shall meet with Government staff prior to the start of construction, and throughout the term of the contract 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. The initial 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 including but not limited to the Clean Water Act, 33 U.S.C. §§1251 et seq. and the Clean Air Act, 42 U.S.C. §§7401 et seq.

2. Water

Article 6.3 of Exhibit A, is supplemented with the following:

The Contractor will include the cost of water necessary to complete all project work in the individual bid items. The cost for water which is needed during the course of the project for all other purposes, including dust control, will be included in the overall cost of the project. The Contractor will be responsible for computing his own water quantities and then basing his bid on his own computed quantities. No separate measurement or payment of water will be made.

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 Government prior to construction. In no case may sewer lagoon water be used until the Contractor can show proof 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.

3. Buy America Requirements

Article 6.3 of Exhibit A, is supplemented with the following:

The following clarifies the Government's "Buy America Requirements" which requires the Contractor to provide materials that comply with the Buy America requirements in 23 CFR § 635.410. Previous interpretations of the Buy America requirements allowed exclusions for certain steel and iron manufactured products that contained less than 90% steel or iron components.

Previous interpretations also allowed exclusions for miscellaneous steel and iron components, subcomponents and hardware. These exclusions no longer apply.

Since these exclusions no longer apply, the Contractor shall provide certification proving that all steel or iron materials were manufactured in the United States before performing Work that uses steel or iron materials. Additionally, the Contractor shall provide certification that all coatings on the steel or iron materials were applied in the United States. If these certifications are not provided, the Government may take any remedies available under the Contract.

Other exclusions to the Buy America requirements remain in effect, including but not limited to, minimal use of foreign steel and iron materials. The exclusion allows the Contractor to use foreign steel or iron material that does not exceed one-tenth of one percent (0.1%) of the Total Bid Amount or that does not exceed \$2,500.00 whichever is greater. To comply with the minimal use exclusion, the Contractor shall provide to the Construction Manager invoices showing the cost of the foreign steel or iron material that cannot be certified as delivered to the Project.

4. Borrow and Aggregate Materials

Article 6.3 of Exhibit A, is supplemented with the following:

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 the Navajo Indian Reservation. The Contractor shall provide copies of all permits to the Government for their records. The Government may provide suggested borrow sources information to the Contractor (if available) but gives no guarantees of the volumes available, suitability of the borrow material meeting the contract requirements, responsibility for the lack of material within the source to complete the items of work in this contract, nor does the Government waive any permit requirements through the Tribal processes. All activities associated with borrow and aggregate material sources on the Navajo Reservation, state, and federal lands shall be subject to applicable Federal, State, and Tribal laws. All expenses associated with obtaining necessary permits shall be the Contractor's responsibility. The contract time shall only be extended (under a negotiated written modification) if the Contractor in obtaining permits requiring Federal Government review and/or approval, which delays the Contractor. A delay caused by Tribal or other State or local permitting processes is the responsibility of the Contractor. Written proof is required to substantiate any delays as a result in obtaining any material sources for the project.

The Contractor shall perform aggregate quality tests on three (3) representative samples (i.e. 3 samples for the Contractor and 3 for the Government) for each proposed aggregate and borrow 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 entire responsibility of the Contractor including cost, all associated equipment, and labor. The Contractor shall notify the Government before opening the test hole within the source so that an elected representative will have the opportunity to observe the test hole opening and subsequent sampling. The Government may perform verification testing on the Government's split samples, the costs of which shall be the responsibility of the

Government. The Contractor shall not use the Materials Lab hired under this contract for the sampling and test or charge the costs to the Quality Control bid items.

The material sampled shall be tested by an AASHTO certified testing laboratory. The Contractor shall submit the test results to the Government immediately. The cost of all sampling and testing shall be considered an incidental obligation of the Contractor. The Government may direct the contractor to re-test the material source based on the 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 in accordance with section 109.02(m).

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

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

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 Government (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 with split samples for the Government. This requirement will be considered fulfilled if the submittals for the product supplied contain the required information that meets the contract requirements. The Government has the right to test the split samples as necessary and provide the results to the Contractor if there is an issue with the contractor's test results.

5. Furnishing of Contractor Field Testing Laboratory

Article 6 of Exhibit A is supplemented with the following:

A Contractor Furnished Field Testing Laboratory WILL NOT be required as part of this project.

~~The Contractor shall furnish, at a location convenient and close to the project site, a certified 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.~~

~~Test equipment will have been calibrated within the last 6 months of issuance of this contract, and 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.~~

6. Furnishing of Field Office and Sanitary Facilities

Article 6 of Exhibit A is supplemented with the following:

The Contractor shall furnish, at a location convenient and close to the project site, one weatherproof building for the exclusive use of Government personnel for use as a field office. The building shall have, as a minimum: outside dimensions of 2.4m (8 feet) in width by 9.14m (30 feet) in length having a minimum ceiling height of 2.13m (7 feet); at least two operable windows and two lockable doors; adequate supply of 110 volt, 60 cycle electricity capability for lighting, operating of office and computer equipment; shall be heated and air-conditioned; and contain a phone service line with internet service and fax capability. The Contractor shall also provide portable toilet facilities that are serviced at least weekly 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 for the duration of the project. The furnishings (i.e. two work desks, drafting table, 4 drawer file cabinet, and table/chairs for conducting meetings with up to eight people), of the above facility (including all utilities furnished and paid for (except phone service) shall be included in the unit price bid for mobilization or applicable bid item for Field Office as reflected in the bid schedule. See FP Section 637.03 for additional requirements.

7. **Asphalt Shipments**

Article 6 of Exhibit A is supplemented with the following:

All asphalt shipments to the project shall be in sealed tankers and this seal shall **only** be removed by an authorized representative of the Government. 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. 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.

8. **Load Restrictions**

Article 6 of Exhibit A is supplemented with the following:

The total gross vehicle weight imposed on this project under this contract or any other Navajo Reservation 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 owned 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.

14 N.N.C. §§607 - 608 of the Navajo Nation Code as it relates to vehicle load limits is referenced herein for the Contractor's convenience when hauling over BIA or tribal routes.

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 a vehicle shall not exceed 21,600 pounds, nor shall any one (1) wheel carry a load in excess of 11,000 pounds. A tandem axle **cannot** carry load in excess of 34,320 pounds.

- b) No wheel equipped with pneumatic, solid rubber, or cushion tires shall carry a load in excess of 600 pounds for every one inch 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 axle of measured longitudinally to the nearest one foot, as set forth in the following table:

<u>Distance</u> <u>(D)</u>	<u>Load (L)</u>	<u>Distance</u> <u>(D)</u>	<u>Load (L)</u>	<u>Distance</u> <u>(D)</u>	<u>Load (L)</u>
4	32,000	9	34,300	14	43,200
5	32,000	10	35,000	15	44,000
6	32,000	11	35,700	16	44,800
7	32,900	12	36,400	17	45,600
8	33,600	13	37,100	18	46,400

D = Distance in feet (ft) between first and last axles of group of axles.

L = Allowable load in pounds (lbs) 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 18 feet shall not exceed that given for the respective distances in the following table:

<u>Distance</u> <u>(D)</u>	<u>Load (L)</u>	<u>Distance</u> <u>(D)</u>	<u>Load (L)</u>	<u>Distance</u> <u>(D)</u>	<u>Load (L)</u>
19	47,200	29	58,650	39	68,000
20	48,000	30	59,500	40	70,000
21	48,800	31	60,350	41	72,000
22	49,600	32	61,200	42 – 51	73,280
23	50,400	33	62,050	52	73,600
24	51,200	34	62,900	53	74,400
25	55,250	35	63,750	54	75,200
26	56,100	36	64,600	55	76,000
27	56,950	37	65,450	56 & over	76,800
28	57,800	38	66,300		

D = Distance in feet (ft) between first and last axles of vehicle.

L = Allowable load in pounds (lbs) of vehicle.

- (c) The distance between axles shall be measured to the nearest even foot. When a fraction is exactly one-half foot 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, Tribal, and Bureau owned highway. All damages shall be repaired at the Contractor's expense to the facilities original condition.

9. **Archeological/NEPA Requirements**

Article 6.9 of Exhibit A is supplemented with the following:

The Contractor shall be responsible for all environmental and archaeological requirements as outlined in Navajo Nation Historic Preservation Department (HPD) Office 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 unless otherwise directed by the Government. The Contractor shall insure that no equipment comes within 16 feet of any known sites identified on the plans. Any mitigation measures that may be called for in this contract (excluding hiring of an archeologist for construction oversight) to protect archeological sites and/or environmental concerns during construction shall be paid for under the appropriate bid items shown. For those archaeological sites that are within the roadway right-of-way (i.e. refer to design plans) the Contractor may have to conduct the grading operations ONLY with an archeologist present. The Contractor shall coordinate such work with the Government so that an archeologist can be present during construction if the construction plans call for such. If any unknown arch sites or environmental concerns are discovered during construction, it will be the responsibility of the Government to mitigate in accordance with section 106 of the National Historic Preservation Act (NHPA) and/or section 107.02 of the FP-2014. The Contractor is then required to coordinate and accommodate the necessary archeological/environmental work while constructing the roadway in other locations.

The N5012 project has two known sites within the project limits. The sites fall at or just outside the proposed ROW limits and located roughly from Station 50+50 to 52+75 LT (sheet 11 of plans) and 55+50 to 56+20 RT (sheet 12 of plans). The Contractor shall do the following per Environmental Mitigation Note 1 on sheet 2 of the plans and per FP14 Section 710.11.

- (1) Constrict construction activities to the road prism for the length of the site boundary.
- (2) Site boundary be temporarily fenced or barricaded prior to construction.
- (3) Monitoring within 50 feet of site boundary by a qualified archaeologist during Construction
- (4) No rubber-tired vehicles shall be used to install ROW fence. Fence shall be installed by hand.

The fence must be installed before starting clearing and grubbing operations. A qualified, Government provided, archaeologist will flag and monitor the sites whenever construction operations fall within 50 feet of these locations. Contractor shall notify the CM four (4) days prior to this work starting for scheduling purposes.

In the event that **all project work** has to be suspended, for a short period of time (i.e. up to 4 weeks) to address any issues with archaeology or environmental mitigation mentioned above, the contractor may request for a time extension equal to the delay of the mitigation to the Government in writing. See Article 15 of Exhibit A for SUSPENSION OF WORK for further information.

10. Construction Requirements:

Article 6 of Exhibit A is supplemented with the following:

- A. The Contractor is not permitted to park heavy equipment within 50 feet (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 Government 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 by the Government and implemented by the Contractor. The Contractor is required to file a Notice of Intent with the USEPA as described in Section 11 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. Temporary washout traps or containment vessels are allowed provided these traps or vessels are properly engineered and located in the proper locations before use. At completion, the traps and vessels shall be removed from the project in accordance with these contract requirements, USEPA, Navajo EPA, and State regulations.
- 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 50 feet (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. The Contractor shall coordinate all work and cooperate with the utility companies and adjoining land users who have buried or overhead water, gas, electric, and phone lines within or just outside the right-of-way in accordance with Section 107.02 as incidental obligations under this contract.
- G. The Contractor shall stockpile the existing top soil for use in re-vegetation of borrow pits and roadway slopes to the fullest extent possible **when required in the bid schedule** or

other permit requirements issued under the permitting office. Do not carry out clearing and grubbing operations until the Contractor's surveyor has cross sectioned the original ground on the roadway and has submitted the data for review and the Contractor has been given approval in writing. For borrow pits, the overburden top soil must be removed first before cross sections can be taken. See section 204.08 & 204.16(b) of the FP-2014.

- H. The Contractor's camp site and construction yard shall be kept clean and free of litter at all times to prevent debris and litter from entering bodies of water. All trash will be disposed of in accordance with State and USEPA 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 applicable tribal, state, and federal laws.
- I. Oils, lubricant, fuel, and hydraulic fluids shall be stored in sealed containers or in facilities that meet EPA regulations for prevention of environmental contamination.
- J. Any welding called for (except tack welding) on any structural member (member designed to carry or resist traffic or pedestrian loads) shall be subject to visual inspection and magnetic particle testing by an AWS Certified Welding Inspector, and shall pass such testing prior to acceptance of the work unless otherwise directed by the Government. All inspection, equipment, materials and incidentals required for the testing, inspection, and reporting by an AWS Certified Welding Inspector shall be included in the unit price bid for Bid Item 15301-0000.

11. Environmental NOI Requirements:

Certain environmental clearances, Best Management Practices, and Clean Water Act permits are attached in Exhibit I of these contract documents as reflected in the design plans in accordance with section 107.01 of the FP-2014. 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 Owner/Government are jointly responsible for filing **Notice of Intent** (unless otherwise directed by the Government or as defined elsewhere in this contract) to begin construction 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 a Storm Water Pollution Prevention Plan (SWPPP) per section 157 and the requirements in Exhibit I.
- B. When the SWPPP is approved, the Government will have the project Owner file **Notice of Intent** 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 prepare the Contractor NPDES Permit **Notice of Intent** form in Exhibit I and submit an NOI to the USEPA no later than the 14 day waiting period prior to actual ground disturbance per the

2017 CGP. The USEPA will mail back a copy of the permit for the project and a copy shall be furnished to the Government 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 Government to insure compliance.

Note: The above forms can also be found on the USEPA's home page:

<https://www.epa.gov/npdes/submitting-notice-intent-noi-notice-termination-not-or-low-erosivity-waiver-lew-under>

12. Contract Clauses:

The following Clauses are applicable to this Construction Contract:

Clause NN-236-1: Performance of Work by the Contractor:

The Prime Contractor shall perform on the site, and with its own organization, work equivalent to at least **50%** percent of the total dollar amount of work to be performed under the contract. This percentage may be reduced by a supplemental agreement to this contract if, during performing the work, the Contractor requests a reduction and the Government determines that the reduction would be to the advantage of the Government.

Clause NN-222-6 Construction Wage Rate Requirements (Davis Bacon Act):

See Exhibit H for the Wage determination for this construction contract.

(a) Definition - Site of the work –

(1) Means -

(i) The primary site of the work. The physical place or places where the construction called for in the contract will remain when work on it is completed; and

(ii) The secondary site of the work, if any. Any other site where a significant portion of the building or work is constructed, provided that such site is -

(A) Located in the United States; and

(B) Established specifically for the performance of the contract or project;

(2) Except as provided in paragraph (3) of this definition, includes any fabrication plants, mobile factories, batch plants, borrow pits, job headquarters, tool yards, etc., provided -

(i) They are dedicated exclusively, or nearly so, to performance of the contract or project; and

(ii) They are adjacent or virtually adjacent to the “primary site of the work” as defined in paragraph (a)(1)(i), or the “secondary site of the work” as defined in paragraph (a)(1)(ii) of this definition;

(3) Does not include permanent home offices, branch plant establishments, fabrication plants, or tool yards of a Contractor or subcontractor whose locations and continuance in operation are determined wholly without regard to a particular Federal contract or project. In addition, fabrication plants, batch plants, borrow pits, job headquarters, yards, etc., of a

commercial or material supplier which are established by a supplier of materials for the project before opening of bids and not on the Project site, are not included in the “site of the work.” Such permanent, previously established facilities are not a part of the “site of the work” even if the operations for a period of time may be dedicated exclusively or nearly so, to the performance of a contract.

(b)

(1) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, or as may be incorporated for a secondary site of the work, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics. Any wage determination incorporated for a secondary site of the work shall be effective from the first day on which work under the contract was performed at that site and shall be incorporated without any adjustment in contract price or estimated cost. Laborers employed by the construction Contractor or construction subcontractor that are transporting portions of the building or work between the secondary site of the work and the primary site of the work shall be paid in accordance with the wage determination applicable to the primary site of the work.

(2) Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Construction Wage Rate Requirements statute on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (e) of this clause; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such period.

(3) Such laborers and mechanics shall be paid not less than the appropriate wage rate and fringe benefits in the wage determination for the classification of work actually performed, without regard to skill, except as provided in the clause entitled Apprentices and Trainees. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein; provided that the employer's payroll records accurately set forth the time spent in each classification in which work is performed.

(4) The wage determination (including any additional classifications and wage rates conformed under paragraph (c) of this clause) and the Construction Wage Rate Requirements (Davis-Bacon Act) poster (WH-1321) shall be posted at all times by the Contractor and its subcontractors at the primary site of the work and the secondary site of the work, if any, in a prominent and accessible place where it can be easily seen by the workers.

(c)

(1) The Government shall require that any class of laborers or mechanics, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The Government shall approve an additional classification and wage rate and fringe benefits therefor only when all the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination.

(ii) The classification is utilized in the area by the construction industry.

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(iv) With respect to helpers, such a classification prevails in the area in which the work is performed.

(2) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the Government agree on the classification and wage rate (including the amount designated for fringe benefits, where appropriate), a report of the action taken shall be sent by the Government to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator or an authorized representative will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the Government or will notify the Government within the 30-day period that additional time is necessary.

(3) In the event the Contractor, the laborers or mechanics to be employed in the classification, or their representatives, and the Government do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the Government shall refer the questions, including the views of all interested parties and the recommendation of the Government, to the Administrator of the Wage and Hour Division for Determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the Government or will notify the Government within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits, where appropriate) determined pursuant to subparagraphs (c)(2) and (c)(3) of this clause shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(d) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(e) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably

anticipated in providing bona fide fringe benefits under a plan or program; provided, that the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Construction Wage Rate Requirements statute have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

Clause NN-236-21: Specifications and Drawings for Construction:

(a) The Contractor shall keep on the work site a copy of the drawings and specifications and shall at all times give the Government access thereto. Anything mentioned in the specifications and not shown on the drawings, or shown on the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both. In case of difference between drawings and specifications, the specifications shall govern. In case of discrepancy in the figures, in the drawings, or in the specifications, the matter shall be promptly submitted to the Government, who shall promptly make a determination in writing. Any adjustment by the Contractor without such a determination shall be at its own risk and expense. The Engineer of Record shall furnish from time to time such detailed drawings and other information as considered necessary, unless otherwise provided.

(b) Wherever in the specifications or upon the drawings the words directed, required, ordered, designated, prescribed, or words of like import are used, it shall be understood that the direction, requirement, order, designation, or prescription, of the Government is intended and similarly the words approved, acceptable, satisfactory, or words of like import shall mean approved by, or acceptable to, or satisfactory to the Government, unless otherwise expressly stated.

(c) Where as shown, as indicated, as detailed, or words of similar import are used, it shall be understood that the reference is made to the drawings accompanying this contract unless stated otherwise. The word provided as used herein shall be understood to mean provide complete in place that is furnished and installed.

Clause NN-248-3: Value Engineering Construction:

(a) General. The Contractor is encouraged to develop, prepare, and submit value engineering change proposals (VECP's) voluntarily. The Contractor shall share in any instant contract savings realized from accepted VECP's, in accordance with paragraph (f) below.

(b) Definitions. Collateral costs, as used in this clause, means agency costs of operation, maintenance, logistic support, or Government-furnished property.

Collateral savings, as used in this clause, means those measurable net reductions resulting from a VECP in the agency's overall projected collateral costs, exclusive of acquisition savings, whether or not the acquisition cost changes.

Contractor's development and implementation costs, as used in this clause, means those costs the Contractor incurs on a VECP specifically in developing, testing, preparing, and submitting the VECP, as well as those costs the Contractor incurs to make the contractual changes required by Government acceptance of a VECP.

Government costs, as used in this clause, means those agency costs that result directly from developing and implementing the VECP, such as any net increases in the cost of testing, operations, maintenance, and logistic support. The term does not include the normal administrative costs of processing the VECP.

Instant contract savings, as used in this clause, means the estimated reduction in Contractor cost of performance resulting from acceptance of the VECP, minus allowable Contractor's development and implementation costs, including subcontractors' development and implementation costs (see paragraph (h) below).

Value engineering change proposal (VECP) means a proposal that -

- (1) Requires a change to this, the instant contract, to implement; and
- (2) Results in reducing the contract price or estimated cost without impairing essential functions or characteristics; provided, that it does not involve a change -
 - (i) In deliverable end item quantities only; or
 - (ii) To the contract type only.

(c) VECP preparation. As a minimum, the Contractor shall include in each VECP the information described in subparagraphs (1) through (7) below. If the proposed change is affected by contractually required configuration management or similar procedures, the instructions in those procedures relating to format, identification, and priority assignment shall govern VECP preparation. The VECP shall include the following:

- (1) A description of the difference between the existing contract requirement and that proposed; the comparative advantages and disadvantages of each, a justification when an item's function or characteristics are being altered, and the effect of the change on the end item's performance.
- (2) A list and analysis of the contract requirements that must be changed if the VECP is accepted, including any suggested specification revisions.
- (3) A separate, detailed cost estimate for (i) the affected portions of the existing contract requirement and (ii) the VECP. The cost reduction associated with the VECP shall take into account the Contractor's allowable development and implementation costs, including any amount attributable to subcontracts under paragraph (h) below.
- (4) A description and estimate of costs the Government may incur in implementing the VECP, such as test and evaluation and operating and support costs.
- (5) A prediction of any effects the proposed change would have on collateral costs to the agency.
- (6) A statement of the time by which a contract modification accepting the VECP must be issued in order to achieve the maximum cost reduction, noting any effect on the contract completion time or delivery schedule.
- (7) Identification of any previous submissions of the VECP, including the dates submitted, the agencies and contract numbers involved, and previous Government actions, if known.

(d) Submission. The Contractor shall submit VECP's to the Construction Manager at the worksite, providing a copy for the Contracting Officer.

(e) Government action.

(1) The Contracting Officer (CO) will notify the Contractor of the status of the VECP within 45 calendar days after the contracting office receives it. If additional time is required, the Contracting Officer will notify the Contractor within the 45-day period and provide the reason for the delay and the expected date of the decision. The Government will process VECP's expeditiously; however, it will not be liable for any delay in acting upon a VECP.

(2) If the VECP is not accepted, the Contracting Officer will notify the Contractor in writing, explaining the reasons for rejection. The Contractor may withdraw any VECP, in whole or in part, at any time before it is accepted by the Government. The Contracting Officer may require that the Contractor provide written notification before undertaking significant expenditures for VECP effort.

(3) Any VECP may be accepted, in whole or in part, by the Contracting Officer's award of a modification to this contract citing this clause. The Contracting Officer may accept the VECP, even though an agreement on price reduction has not been reached, by issuing the Contractor a notice to proceed with the change. Until a notice to proceed is issued or a contract modification applies a VECP to this contract, the Contractor shall perform in accordance with the existing contract. The decision to accept or reject all or part of any VECP is a unilateral decision made solely at the discretion of the Contracting Officer.

(f) Sharing.

(1) Rates. The Government's share of savings is determined by subtracting Government costs from instant contract savings and multiplying the result by (i) 45 percent for fixed-price contracts or (ii) 75 percent for cost-reimbursement contracts.

(2) Payment. Payment of any share due the Contractor for use of a VECP on this contract shall be authorized by a modification to this contract to -

(i) Accept the VECP;

(ii) Reduce the contract price or estimated cost by the amount of instant contract savings; and

(iii) Provide the Contractor's share of savings by adding the amount calculated to the contract price or fee.

(g) Collateral savings. If a VECP is accepted, the Contracting Officer will increase the instant contract amount by 20 percent of any projected collateral savings determined to be realized in a typical year of use after subtracting any Government costs not previously offset. However, the Contractor's share of collateral savings will not exceed the contract's firm-fixed-price or estimated cost, at the time the VECP is accepted, or \$100,000, whichever is greater. The Contracting Officer is the sole determiner of the amount of collateral savings.

(h) Subcontracts. The Contractor shall include an appropriate value engineering clause in any subcontract of \$70,000 or more and may include one in subcontracts of lesser value. In computing any adjustment in this contract's price under paragraph (f) above, the Contractor's allowable development and implementation costs shall include any subcontractor's allowable development and implementation costs clearly resulting from a VECP accepted by the Government under this contract, but shall exclude any value engineering incentive payments to a subcontractor. The Contractor may choose any arrangement for subcontractor value engineering incentive payments; provided that these payments shall not reduce the Government's share of the savings resulting from the VECP.

(i) Data. The Contractor may restrict the Government's right to use any part of a VECP or the supporting data by marking the following legend on the affected parts:

“These data, furnished under the Value Engineering proposal, shall not be disclosed outside the Government or duplicated, used, or disclosed, in whole or in part, for any purpose other than to evaluate a value engineering change proposal submitted under the clause. This restriction does not limit the Government's right to use information contained in these data if it has been obtained or is otherwise available from the Contractor or from another source without limitations.”

If a VECP is accepted, the Contractor hereby grants the Government unlimited rights in the VECP and supporting data, except that, with respect to data qualifying and submitted as limited rights technical data, the Government shall have the rights specified in the contract modification implementing the VECP and shall appropriately mark the data. (The terms unlimited rights and limited rights are defined in part 27 of the Federal Acquisition Regulation.)

Before undertaking significant expenditures, provide the CO with a written description of the value engineering change proposal (VECP) concept. Within 14 days, the CO will inform the Contractor as to whether the concept appears to be viable or if the concept is unacceptable. If the CO indicates (in writing) that the concept appears to be viable, prepare and submit the formal VECP proposal. Off the shelf product substitutions that are widely available to the local industry are not considered a VECP. This includes, but not limited to, drainage pipe coatings or change in type or size; erosion control mats of various types; products made and available in both steel or concrete such as cattle guards; fencing post coatings or types; sign posts or types; traffic control signs or types; other traffic control devices readily available; and products made from commonly used materials that are available in the industry as a substitute for the product call for in the contract.

EXHIBIT D
BID INSTRUCTIONS AND SCHEDULE

NOTICE TO BIDDER:

- **See Section 102.02 of the FP-2014 (Exhibit F) and below for Preparation of Bids instructions**
- Please reference Clause NN-236-1, Performance of Work by the Contractor in Exhibit C as to the percent of the total dollar amount of work to be performed by the Prime Contractor under the contract.
- All bonding, overhead, and profit are to be included in each unit bid price.
- Navajo Nation Tribal Taxes and/or Local Taxes for construction work on the Navajo Indian Reservation shall be shown separately on the bid and withheld from payment as described in Section 6.10 of Exhibit A. Bidders are responsible to inquire of any and all Tribal Taxes that may be applicable to this solicitation. For more information regarding Tribal Taxes contact:
The Navajo Nation
Office of the Navajo Tax Commission
P.O. Box 1903
Window Rock, Arizona, 86515
(928) 871-6681 or 6683
- The following items shall be submitted as part of the Contractor's response. Please refer to the Request for Proposal for complete instructions.
 - Letter of Interest
 - Certificates of Insurance
 - Bonds
 - Scope of Work including: roles and responsibilities, manpower, timelines, listing of equipment and products.
 - Communication Protocol
 - References
 - Certification of Navajo Business
 - Addendum Acknowledgement
 - Bid Form
 - Required Contract Forms

Clause NN-214-18 Preparation of Bids:

Execute and submit all required standard forms, bid schedules, and solicitation provisions contained in the solicitation as part of the bid. The person signing a bid must initial each erasure or change appearing on any bid form.

Complete SF-1442, Solicitation, Offer, and Award (*see Exhibit E for forms*), and sign as follows:

- (a) Individuals. Sign your individual signature. For individuals doing business as a firm, follow the individual signature with the individual's typed, stamped, or printed name and the words, "an individual doing business as (name of firm) ."
- (b) Partnerships. Submit a list of all partners having authority to bind the partnership. One of the listed partners must sign on behalf of the partnership.

(c) Corporations. Sign in the corporate name, followed by the word "by" and the signature and title of the person authorized to sign. Submit evidence from the corporation that the person signing has authority to bind the corporation.

(d) Joint ventures. Submit a copy of the Joint Venture agreement. Sign the Contract Agreement and SF-1442 according to the Joint Venture agreement.

(e) Limited liability company. Sign in the company name, followed by the word "by" and the signature of the person authorized to sign. Submit evidence that the individual executing the document has authority to bind the company.

(f) Agents. When an agent signs, other than as stated in (a) through (e) above, furnish satisfactory evidence that the agent has authority to bind the bidder.

Bid Schedule: Insert a unit bid price, in figures, for each pay item for which a quantity appears in the bid schedule. Multiply the unit bid price by the quantity for each pay item and show the amount bid. Should any mathematical check made by the Government show a mistake in the amount bid, the corrected unit price extension shall govern.

When the words "lump sum" appear as a unit bid price, insert an amount bid for each lump sum pay item.

When the words "*contingent sum*" or "*fixed rate*" appears as a unit bid price, include the Government inserted amount bid for the item in the total bid amount if not already filled in.

Total all of the amounts bid for each pay item and show the total bid amount.

The quantities shown in the bid schedule are approximate, unless designated as a contract quantity, and are used for the comparison of bids. Payment will be made for the actual quantities of work performed and accepted or material furnished according to the contract. The scheduled quantities may be increased, decreased, or deleted. Bid schedule quantities are considered the original contract quantities.

Clause NN-228-1 Bid Guarantee:

Submit the bid guarantee on Bid Form SF-24, Bid Bond (see Exhibit E for forms):

(a) Failure to furnish a bid guarantee in the proper form and amount, by the time set for opening of bids, will be cause for rejection of the bid.

(b) The bidder shall furnish a bid guarantee in the form of a firm commitment, e.g., bid bond supported by good and sufficient surety or sureties acceptable to the Government, postal money order, certified check, cashier's check, irrevocable letter of credit, or, under Treasury Department regulations, certain bonds or notes of the United States. The Government will return bid guarantees, other than bid bonds.

(1) To unsuccessful bidders as soon as practicable after the opening of bids; and

(2) To the successful bidder upon execution of contractual documents and bonds (including any necessary coinsurance or reinsurance agreements), as required by the bid as accepted.

(c) The amount of the bid guarantee shall be **ten (10)** percent of the bid price per Navajo Nation Procurement Code 12 N.N.C. §341 Bid Security.

(d) If the successful bidder, upon acceptance of its bid by the Government within the period specified for acceptance, fails to execute all contractual documents or furnish executed bond(s) within 10 days after receipt of the forms by the bidder, the Government may terminate the contract for default.

(e) In the event the contract is terminated for default, the bidder is liable for any cost of acquiring the work that exceeds the amount of its bid, and the bid guarantee is available to offset the difference.

(f) If the bid guarantee is other than a corporate or individual surety, sign the SF-24 as the principal and make a statement on the form pledging the security. Make checks or money orders payable to the agency issuing the solicitation.

(g) *Power of attorney.* A corporate surety shall submit a current power of attorney for the signing agent or attorney-in-fact with each bid bond.

(h) *Evidence of guarantee assistance.* A surety that has a guarantee of assistance from the Small Business Administration shall submit a copy of its "*Surety Bond Guarantee Agreement*" with each SF-24 bid bond form. In addition, submit a power of attorney for the surety representative identified in the agreement.

Clause NN-228-11: Individual Surety:

See Exhibit E for forms to use under this clause.

(a) Offerors shall obtain from each person acting as an individual surety on a bid guarantee, a performance bond, or a payment bond -

- (1) Pledge of assets; and
- (2) Standard Affidavit of Individual Surety.

(b) Pledges of assets from each person acting as an individual surety shall be in the form of -

(1) Evidence of an escrow account containing cash, certificates of deposit, commercial or Government securities, or other assets with respect to Government securities held in book entry form; and/or

(2) A recorded lien on real estate. The offeror will be required to provide -

(i) A mortgagee title insurance policy, in an insurance amount equal to the amount of the lien, or other evidence of title that is consistent with the requirements of Section 2 of the United States Department of Justice Title Standards at http://www.justice.gov/enrd/ENRD_Assets/Title_Standards_2001.pdf. This title evidence must show fee simple title vested in the surety along with any concurrent owners; whether any real estate taxes are due and payable; and any recorded encumbrances against the property, including the lien filed in favor of the Government.

(ii) Evidence of the amount due under any encumbrance shown in the evidence of title;

(iii) A copy of the current real estate tax assessment of the property or a current appraisal dated no earlier than 6 months prior to the date of the bond, prepared by a professional appraiser who certifies that the appraisal has been conducted in accordance with the generally accepted appraisal standards as reflected in the Uniform Standards of Professional Appraisal Practice, as promulgated by the Appraisal Foundation.

Complete and date the SF-28, Affidavit of Individual Surety form, after the solicitation date. The individual surety shall personally sign this Affidavit. Execution by power of attorney is not acceptable. Bidders cannot serve as their own surety. Assets named shall be committed to the project with a bank designated to serve as trustee.

After reviewing the SF-28, Affidavit of Individual Surety form, the surety may be requested to provide further documentation with respect to any of its assets, debts, or encumbrances. The information may be required to be furnished under oath. Failure of the surety to respond with the requested documentation within 7 days of receipt of the request is cause for rejection of the surety.

Any material misstatement by the surety, overstatement of assets (either as to ownership or value) or understatement of liabilities is cause for rejection of the surety. Substitution of individual sureties to support a bid bond after the bid opening will not be permitted.

Clause NN-228-15: Performance and Payment Bonds:

See Exhibit E for forms to use under this clause.

(a) The successful offeror shall furnish performance and payment bonds to the Government as detailed in Article 5.1 of Exhibit A.

(b) The requirements contained in Subsections 102.03 and 102.04 of the FP-14 relating to power of attorney, evidence of guarantee assistance, and individual sureties also apply to performance and payment bonds.

(c) Furnishing executed bonds. The Contractor shall furnish all executed bonds, including any necessary reinsurance agreements, to the Government, within the time period specified in the Bid Guarantee provision of the solicitation, or otherwise specified by the Government, but in any event, before starting work.

(d) Surety or other security for bonds. The bonds shall be in the form of firm commitment, supported by corporate sureties whose names appear on the list contained in Treasury Department Circular 570, individual sureties, or by other acceptable security such as postal money order, certified check, cashier's check, irrevocable letter of credit, or, in accordance with Treasury Department regulations, certain bonds or notes of the United States. Treasury Circular 570 is published in the Federal Register or at <http://www.fms.treas.gov/c570/>.

(e) Notice of subcontractor waiver of protection (40 U.S.C. 3133(c)). Any waiver of the right to sue on the payment bond is void unless it is in writing, signed by the person whose right is waived, and executed after such person has first furnished labor or material for use in the performance of the contract.

Clause NN-214-10: Sealed Bidding and Submission of Bids:

(a) The Government will evaluate bids in response to this solicitation as described in the Request for Proposals and will award a contract to the responsible bidder following the Navajo Nation Procurement Act and Regulations. Refer to 12 N.N.C §332 Competitive Sealed Proposals.

(b) The Government may (1) reject any or all bids, (2) accept other than the lowest bid, and (3) waive informalities or minor irregularities in bids received.

(c) The Government may accept any item or group of items of a bid, unless the bidder qualifies the bid by specific limitations. The Government reserves the right to make an award on any item for a quantity less than the quantity offered, at the unit prices offered, unless the bidder specifies otherwise in the bid.

(d) The Government may reject a bid as nonresponsive if the prices bid are materially unbalanced between line items or subline items. A bid is materially unbalanced when it is based on prices significantly less than cost for some work and prices which are significantly overstated in relation to cost for other work, and if there is a reasonable doubt that the bid will result in the lowest overall cost to the Government even though it may be the low evaluated bid, or if it is so unbalanced as to be tantamount to allowing an advance payment.

(e) Bids and bid modifications shall be submitted in sealed envelopes or packages (unless Government allows submissions by electronic means) (1) addressed to the office specified in the solicitation, and (2) showing the time and date specified for receipt, the solicitation number, and the name and address of the bidder.

(f) Bidders using commercial carrier services shall ensure that the bid is addressed and marked on the outermost envelope or wrapper as prescribed in subparagraphs (e) (1) and (2) of this provision when delivered to the office specified in the solicitation.

(g) Facsimile bids, modifications, or withdrawals, will not be considered unless authorized by the solicitation.

(h) Bids submitted by electronic commerce shall be considered only if the electronic commerce method was specifically stipulated or permitted by the solicitation.



**BID SCHEDULE
NAVAJO NATION DIVISION OF TRANSPORTATION**

PROJECT: N5012(1)2&4

Date: July ??, 2021

LENGTH: 0.644 miles

ITEM	DESCRIPTION	Quantity	Units	Unit Bid Price	Total Price
10901-0000	Extra & Miscellaneous Work - Authorized under Suppl. Spec. 109.02(s)	All Required	Lump Sum	\$ 100,000.00	\$ 100,000.00
15101-0000	MOBILIZATION	1	LPSM	\$ -	\$ -
15201-0000	CONSTRUCTION SURVEY AND STAKING	1	LPSM	\$ -	\$ -
15301-0000	CONTRACTOR QUALITY CONTROL	1	LPSM	\$ -	\$ -
15701-0000	SOIL EROSION CONTROL, TEMPORARY	1	LPSM	\$ -	\$ -
20102-0000	CLEARING AND GRUBBING	1	LPSM	\$ -	\$ -
20304-1000	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	1	LPSM	\$ -	\$ -
20401-0000	ROADWAY EXCAVATION	9,600	CUYD	\$ -	\$ -
20410-0000	BORROW	4,900	CUYD	\$ -	\$ -
20801-0000	STRUCTURE EXCAVATION	288	CUYD	\$ -	\$ -
20803-0000	STRUCTURAL BACKFILL	596	CUYD	\$ -	\$ -
21301-0000	SUBGRADE STABILIZATION (12")	12,900	SQYD	\$ -	\$ -
25101-0100	PLACED RIPRAP, METHOD A, CLASS 1	37	CUYD	\$ -	\$ -
25101-0200	PLACED RIPRAP, METHOD A, CLASS 2	5	CUYD	\$ -	\$ -
25112-2000	WIRE-ENCLOSED RIPRAP, CLASS 2	538	CUYD	\$ -	\$ -
30101-2000	AGGREGATE BASE, GRADING D	4,050	TON	\$ -	\$ -
40702-1100	CHIP SEAL, TYPE 2A	11,300	SQYD	\$ -	\$ -
41101-5000	ASPHALT PRIME COAT (PEP)	21	TON	\$ -	\$ -
55201-0100	STRUCTURAL CONCRETE CLASS A	34	CUYD	\$ -	\$ -
55201-0200	STRUCTURAL CONCRETE, CLASS A (AE)	206	CUYD	\$ -	\$ -
55302-3300	PRECAST, PRESTRESSED CONCRETE AASHTO GIRDER	402	LNFT	\$ -	\$ -
55401-1000	REINFORCING STEEL	26,775	LBS	\$ -	\$ -
55401-2000	REINFORCING STEEL, EPOXY COATED	29,860	LBS	\$ -	\$ -
55502-0000	STRUCTURAL STEEL, FURNISHED, FABRICATED, AND ERECTED	2,530	LBS	\$ -	\$ -
55601-0500	BRIDGE RAILING, CONCRETE 42"	264	LNFT	\$ -	\$ -
55901-0000	MEMBRANE WATERPROOFING	396	SQYD	\$ -	\$ -
56501-0400	DRILLED SHAFT, 36-INCH DIAMETER	420	LNFT	\$ -	\$ -
56505-0000	CROSSHOLE SONIC LOGGING	8	EACH	\$ -	\$ -
60101-0000	CONCRETE	21	CUYD	\$ -	\$ -
60201-0800	24" CULVERT PIPE	38	LNFT	\$ -	\$ -
60210-0800	24" CULVERT PIPE END SECTION	2	EACH	\$ -	\$ -
60201-1000	36" CULVERT PIPE	118	LNFT	\$ -	\$ -
60210-1000	36" CULVERT PIPE END SECTION	4	EACH	\$ -	\$ -
60201-1200	48" CULVERT PIPE	140	LNFT	\$ -	\$ -
60210-1200	48" CULVERT PIPE END SECTION	2	EACH	\$ -	\$ -



**BID SCHEDULE
NAVAJO NATION DIVISION OF TRANSPORTATION**

PROJECT: N5012(1)2&4

Date: July ??, 2021

LENGTH: 0.644 miles

ITEM	DESCRIPTION	Quantity	Units	Unit Bid Price	Total Price
60210-1250	END SECTION FOR 48-INCH PIPE CULVERT (WITH SAFETY BARS)	2	EACH	\$ -	\$ -
60201-1600	72" CULVERT PIPE	26	LNFT	\$ -	\$ -
60202-0400	28"Sx20" R(NOMINAL) CULVERT PIPE ARCH	32	LNFT	\$ -	\$ -
60210-1600	72" CULVERT PIPE END SECTION	2	EACH	\$ -	\$ -
60211-0800	28"Sx20" R(NOMINAL) CULVERT PIPE ARCH END SECTION	2	EACH	\$ -	\$ -
61701-5000	GUARDRAIL SYSTEM SGR-04b, TYPE PDE 02 WITH MSKT-TL3-8 END TERMINAL & THRIE BEAM TRANSITION	390	LNFT	\$ -	\$ -
61901-1000	FENCE, BARBED WIRE, 5 STRAND	6,660	LNFT	\$ -	\$ -
61902-1400	GATE, METAL, 16 FEET WIDTH	1	EACH	\$ -	\$ -
61902-2600	GATE, BARBED WIRE, 5-STRAND	4	EACH	\$ -	\$ -
61903-0300	CATTLE GUARD, 16 FEET	2	EACH	\$ -	\$ -
61903-0700	CATTLE GUARD, 24 FEET	1	EACH	\$ -	\$ -
61903-1100	CATTLE GUARD, 32 FEET	2	EACH	\$ -	\$ -
62101-0000	RIGHT OF WAY MONUMENTS	18	EACH	\$ -	\$ -
62102-0000	RIGHT OF WAY MARKERS	8	EACH	\$ -	\$ -
62510-1000	SEEDING, DRY METHOD	4.5	ACRE	\$ -	\$ -
63304-0400	SIGNS , STEEL PANELS, TYPE 9 SHEETING	200	SQFT	\$ -	\$ -
63305-0400	POSTS, STEEL, 2-INCH X 2-INCH	420	LNFT	\$ -	\$ -
63308-2000	OBJECT MARKER, TYPE 2	6	EACH	\$ -	\$ -
63308-3000	OBJECT MARKER, TYPE 3	4	EACH	\$ -	\$ -
63401-1500	PAVEMENT MARKINGS, TYPE H, SOLID	13,800	LNFT	\$ -	\$ -
63405-3101	PAVEMENT MARKINGS, TYPE H, "STOP BAR". 24" SOLID WHITE	3	EACH	\$ -	\$ -
63501-0000	TEMPORARY TRAFFIC CONTROL PLAN	1	LPSM	\$ -	\$ -

Subtotal: \$ -

Navajo Nation Tax (6%): \$ -

Total Bid Price: \$ -

Contractor Name

SCOPE-OF-WORK

The proposed work consists of furnishing all labor, material, equipment and incidentals necessary for construction of 0.644 miles of grading and subgrade, placement of aggregate base course, placement of double chip seal pavement, installation of drainage structures, fencing, cattleguards, gates, signs, striping and other miscellaneous work as called for in the design plans and specifications for this Project. The quantities listed for each item is estimated and the Unit Price is applicable to each as given in the Bid Schedule above. 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 Payment of FP-14. **The Unit Bid Price must include all overhead, profit, and bonding.**

EXHIBIT E

REQUIRED CONTRACT FORMS

The Bidder's shall fill out the forms herein and submit with their bids.

SOLICITATION, OFFER, AND AWARD (Construction, Alteration, or Repair)	1. SOLICITATION NUMBER	2. TYPE OF SOLICITATION <input type="checkbox"/> SEALED BID (IFB) <input type="checkbox"/> NEGOTIATED (RFP)	3. DATE ISSUED	PAGE OF PAGES
---	------------------------	---	----------------	---------------

IMPORTANT - The "offer" section on the reverse must be fully completed by offeror.

4. CONTRACT NUMBER	5. REQUISITION/PURCHASE REQUEST NUMBER	6. PROJECT NUMBER
--------------------	--	-------------------

7. ISSUED BY	CODE	8. ADDRESS OFFER TO
--------------	------	---------------------

9. FOR INFORMATION CALL:	a. NAME	b. TELEPHONE NUMBER (Include area code) (NO COLLECT CALLS)
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SOLICITATION

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid and "bidder".

10. THE GOVERNMENT REQUIRES PERFORMANCE OF THE WORK DESCRIBED IN THESE DOCUMENTS (*Title, identifying number, date*)

11. The contractor shall begin performance within _____ calendar days and complete it within _____ **working** days after receiving award, notice to proceed. This performance period is mandatory negotiable. (**See** _____).

12a. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT BONDS? <i>(If "YES", indicate within how many calendar days after award in Item 12b.)</i> <input type="checkbox"/> YES <input type="checkbox"/> NO	12b. CALENDAR DAYS
--	--------------------

13. ADDITIONAL SOLICITATION REQUIREMENTS:

a. Sealed offers in original and _____ copies to perform the work required are due at the place specified in Item 8 by _____ (**hour**) local time _____ (date). If this is a sealed bid solicitation, offers will be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.

b. An offer guarantee is, is not required.

c. All offers are subject to the (1) work requirements, and (2) other provisions and clauses incorporated in the solicitation in full text or by reference.

d. Offers providing less than _____ calendar days for Government acceptance after the date offers are due will not be considered and will be rejected.

OFFER (Must be fully completed by offeror)

14. NAME AND ADDRESS OF OFFEROR (Include ZIP Code)	15. TELEPHONE NUMBER (Include area code)
CODE	16. REMITTANCE ADDRESS (Include only if different than Item 14.)
FACILITY CODE	

17. The offeror agrees to perform the work required at the prices specified below in strict accordance with the terms of this solicitation, if this offer is accepted by the Government in writing within _____ calendar days after the date offers are due. (Insert any number equal to or greater than the minimum requirement stated in Item 13d. Failure to insert any number means the offeror accepts the minimum in Item 13d.)

AMOUNTS **See the Bid Schedule for Offeror's proposed bid amount.**

18. The offeror agrees to furnish any required performance and payment bonds.

19. ACKNOWLEDGMENT OF AMENDMENTS

(The offeror acknowledges receipt of amendments to the solicitation -- give number and date of each)

AMENDMENT NUMBER									
DATE.									

20a. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER (Type or print)	20b. SIGNATURE	20c. OFFER DATE
--	----------------	-----------------

AWARD (To be completed by Government)

21. ITEMS ACCEPTED:

22. AMOUNT See the Bid Schedule for Contract Award Amount	23. ACCOUNTING AND APPROPRIATION DATA
--	---------------------------------------

24. SUBMIT INVOICES TO ADDRESS SHOWN IN (4 copies unless otherwise specified)	ITEM	25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO <input type="checkbox"/> 10 U.S.C. 2304(c) () <input type="checkbox"/> 41 U.S.C. 3304(a) ()
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26. ADMINISTERED BY	27. PAYMENT WILL BE MADE BY
---------------------	-----------------------------

CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE

<input type="checkbox"/> 28. NEGOTIATED AGREEMENT (Contractor is required to sign this document and return _____ copies to issuing office.) Contractor agrees to furnish and deliver all items or perform all work requirements identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications incorporated by reference in or attached to this contract.	<input type="checkbox"/> 29. AWARD (Contractor is not required to sign this document.) Your offer on this solicitation is hereby accepted as to the items listed. This award consummates the contract, which consists of (a) the Government solicitation and your offer, and (b) this contract award. No further contractual document is necessary.
---	---

30a. NAME AND TITLE OF CONTRACTOR OR PERSON AUTHORIZED TO SIGN (Type or print)	31a. NAME OF CONTRACTING OFFICER (Type or print)
--	--

30b. SIGNATURE	30c. DATE	31b. UNITED STATES OF AMERICA BY	31c. DATE
----------------	-----------	---	-----------

BID BOND
(See instructions on reverse)

DATE BOND EXECUTED (Must not be later than bid opening date)

OMB Control Number: 9000-0045
Expiration Date: 8/31/2022

Paperwork Reduction Act Statement - This information collection meets the requirements of 44 USC § 3507, as amended by section 2 of the Paperwork Reduction Act of 1995. You do not need to answer these questions unless we display a valid Office of Management and Budget (OMB) control number. The OMB control number for this collection is 9000-0045. We estimate that it will take 1 hour to read the instructions, gather the facts, and answer the questions. Send only comments relating to our time estimate, including suggestions for reducing this burden, or any other aspects of this collection of information to: General Services Administration, Regulatory Secretariat Division (M1V1CB), 1800 F Street, NW, Washington, DC 20405.

PRINCIPAL (Legal name and business address)

TYPE OF ORGANIZATION ("X" one)

- INDIVIDUAL PARTNERSHIP JOINT VENTURE
 CORPORATION OTHER (Specify)

STATE OF INCORPORATION

SURETY(IES) (Name and business address)

PENAL SUM OF BOND					BID IDENTIFICATION	
PERCENT OF BID PRICE	AMOUNT NOT TO EXCEED				BID DATE	INVITATION NUMBER
	MILLION(S)	THOUSAND(S)	HUNDRED(S)	CENTS	FOR (Construction, Supplies or Services)	

OBLIGATION:

We, the Principal and Surety(ies) are firmly bound to the **Navajo Nation** (hereinafter called the Government) in the above penal sum. For payment of the penal sum, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally. However, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us. For all other purposes, each Surety binds itself, jointly and severally with the Principal, for the payment of the sum shown opposite the name of the Surety. If no limit of liability is indicated, the limit of liability is the full amount of the penal sum.

CONDITIONS:

The Principal has submitted the bid identified above.

THEREFORE:

The above obligation is void if the Principal - (a) upon acceptance by the Government of the bid identified above, within the period specified therein for acceptance (sixty (60) days if no period is specified), executes the further contractual documents and gives the bond(s) required by the terms of the bid as accepted within the time specified (ten (10) days if no period is specified) after receipt of the forms by the principal; or (b) in the event of failure to execute such further contractual documents and give such bonds, pays the Government for any cost of procuring the work which exceeds the amount of the bid.

Each Surety executing this instrument agrees that its obligation is not impaired by any extension(s) of the time for acceptance of the bid that the Principal may grant to the Government. Notice to the surety(ies) of extension(s) is waived. However, waiver of the notice applies only to extensions aggregating not more than sixty (60) calendar days in addition to the period originally allowed for acceptance of the bid.

WITNESS:

The Principal and Surety(ies) executed this bid bond and affixed their seals on the above date.

PRINCIPAL

SIGNATURE(S)	1.	2.	3.	Corporate Seal
	(Seal)	(Seal)	(Seal)	
NAME(S) & TITLE(S) (Typed)	1.	2.	3.	

INDIVIDUAL SURETY(IES)

SIGNATURE(S)	1.	2.
	(Seal)	(Seal)
NAME(S) (Typed)	1.	2.

CORPORATE SURETY(IES)

SURETY A	NAME & ADDRESS	STATE OF INCORPORATION	LIABILITY LIMIT (\$)	Corporate Seal
	SIGNATURE(S)	1.	2.	
	NAME(S) & TITLE(S) (Typed)	1.	2.	

SURETY B	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT (\$)	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) (Typed)	1.	2.		
SURETY C	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT (\$)	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) (Typed)	1.	2.		
SURETY D	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT (\$)	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) (Typed)	1.	2.		
SURETY E	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT (\$)	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) (Typed)	1.	2.		
SURETY F	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT (\$)	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) (Typed)	1.	2.		
SURETY G	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT (\$)	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) (Typed)	1.	2.		

INSTRUCTIONS

1. This form is authorized for use when a bid guaranty is required. Any deviation from this form will require the written approval of the Administrator of General Services.
2. Insert the full legal name and business address of the Principal in the space designated "Principal" on the face of the form. An authorized person shall sign the bond. Any person signing in a representative capacity (e.g., an attorney-in-fact) must furnish evidence of authority if that representative is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved.
3. The bond may express penal sum as a percentage of the bid price. In these cases, the bond may state a maximum dollar limitation (e.g., 20% of the bid price but the amount not to exceed _____ dollars).
4. (a) Corporations executing the bond as sureties must appear on the Department of the Treasury's list of approved sureties and must act within the limitations listed therein. The value put into the LIABILITY LIMIT block is the penal sum (i.e., the face value) of the bond, unless a co-surety arrangement is proposed.

(b) When multiple corporate sureties are involved, their names and addresses shall appear in the spaces (Surety A, Surety B, etc.) headed "CORPORATE SURETY(IES)." In the space designated "SURETY(IES)" on the face of the form, insert only the letter identifier corresponding to each of the sureties. Moreover, when co-surety arrangements exist, the parties may allocate their respective limitations of liability under the bond, provided that the sum total of their liability equals 100% of the bond penal sum.

(c) When individual sureties are involved, a completed Affidavit of Individual Surety (Standard Form 28) for each individual surety, shall accompany the bond. The Government may require the surety to furnish additional substantiating information concerning its financial capability.
5. Corporations executing the bond shall affix their corporate seals. Individuals shall execute the bond opposite the word "Corporate Seal"; and shall affix an adhesive seal if executed in Maine, New Hampshire, or any other jurisdiction requiring adhesive seals.
6. Type the name and title of each person signing this bond in the space provided.
7. In its application to negotiated contracts, the terms "bid" and "bidder" shall include "proposal" and "offeror."

PERFORMANCE BOND
(See instructions on reverse)

DATE BOND EXECUTED (Must be same or later than date of contract)

OMB Control Number: 9000-0045
Expiration Date: 8/31/2022

Paperwork Reduction Act Statement - This information collection meets the requirements of 44 USC § 3507, as amended by section 2 of the Paperwork Reduction Act of 1995. You do not need to answer these questions unless we display a valid Office of Management and Budget (OMB) control number. The OMB control number for this collection is 9000-0045. We estimate that it will take 1 hour to read the instructions, gather the facts, and answer the questions. Send only comments relating to our time estimate, including suggestions for reducing this burden, or any other aspects of this collection of information to: General Services Administration, Regulatory Secretariat Division (M1V1CB), 1800 F Street, NW, Washington, DC 20405.

PRINCIPAL (Legal name and business address)	TYPE OF ORGANIZATION ("X" one) <input type="checkbox"/> INDIVIDUAL <input type="checkbox"/> PARTNERSHIP <input type="checkbox"/> JOINT VENTURE <input type="checkbox"/> CORPORATION <input type="checkbox"/> OTHER (Specify)				
	STATE OF INCORPORATION				
SURETY(IES) (Name(s) and business address(es))	PENAL SUM OF BOND				
	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:25%;">MILLION(S)</td> <td style="width:25%;">THOUSAND(S)</td> <td style="width:25%;">HUNDRED(S)</td> <td style="width:25%;">CENTS</td> </tr> </table>	MILLION(S)	THOUSAND(S)	HUNDRED(S)	CENTS
MILLION(S)	THOUSAND(S)	HUNDRED(S)	CENTS		
	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">CONTRACT DATE</td> <td style="width:50%;">CONTRACT NUMBER</td> </tr> </table>	CONTRACT DATE	CONTRACT NUMBER		
CONTRACT DATE	CONTRACT NUMBER				

OBLIGATION:

We, the Principal and Surety(ies), are firmly bound to the **Navajo Nation** (hereinafter called the Government) in the above penal sum. For payment of the penal sum, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally. However, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us. For all other purposes, each Surety binds itself, jointly and severally with the Principal, for the payment of the sum shown opposite the name of the Surety. If no limit of liability is indicated, the limit of liability is the full amount of the penal sum.

CONDITIONS:

The Principal has entered into the contract identified above.

THEREFORE:

The above obligation is void if the Principal-

(a) (1) Performs and fulfills all the understanding, covenants, terms, conditions, and agreements of the contract during the original term of the contract and any extensions thereof that are granted by the Government, with or without notice of the Surety(ies) and during the life of any guaranty required under the contract, and

(2) Performs and fulfills all the undertakings, covenants, terms, conditions, and agreements of any and all duly authorized modifications of the contract that hereafter are made. Notice of those modifications to the Surety(ies) are waived.

(b) Pays to the Government the full amount of the taxes imposed by the Government, if the said contract is subject to 41 USC Chapter 31, Subchapter III, Bonds, which are collected, deducted, or withheld from wages paid by the Principal in carrying out the construction contract with respect to which this bond is furnished.

WITNESS:

The Principal and Surety(ies) executed this performance bond and affixed their seals on the above date.

PRINCIPAL

SIGNATURE(S)	1. _____ (Seal)	2. _____ (Seal)	3. _____ (Seal)	Corporate Seal
NAME(S) & TITLE(S) (Typed)	1. _____	2. _____	3. _____	

INDIVIDUAL SURETY(IES)


SIGNATURE(S)	1. _____ (Seal)	2. _____ (Seal)
NAME(S) (Typed)	1. _____	2. _____

CORPORATE SURETY(IES)

SURETY A	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT (\$)	Corporate Seal
	SIGNATURE(S)	1. _____	2. _____		
	NAME(S) & TITLE(S) (Typed)	1. _____	2. _____		

CORPORATE SURETY(IES) (Continued)

SURETY B	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT (\$)	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) <i>(Typed)</i>	1.	2.		
SURETY C	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT (\$)	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) <i>(Typed)</i>	1.	2.		
SURETY D	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT (\$)	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) <i>(Typed)</i>	1.	2.		
SURETY E	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT (\$)	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) <i>(Typed)</i>	1.	2.		
SURETY F	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT (\$)	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) <i>(Typed)</i>	1.	2.		
SURETY G	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT (\$)	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) <i>(Typed)</i>	1.	2.		

BOND PREMIUM		RATE PER THOUSAND (\$)	TOTAL (\$)
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INSTRUCTIONS

- This form is authorized for use in connection with Government contracts. Any deviation from this form will require the written approval of the Administrator of General Services.
- Insert the full legal name and business address of the Principal in the space designated "Principal" on the face of the form. An authorized person shall sign the bond. Any person signing in a representative capacity (e.g., an attorney-in-fact) must furnish evidence of authority if that representative is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved.
- Corporations executing the bond as sureties must appear on the Department of the Treasury's list of approved sureties and must act within the limitations listed therein. The value put into the LIABILITY LIMIT block is the penal sum (i.e., the face value) of bonds, unless a co-surety arrangement is proposed.
 - When multiple corporate sureties are involved, their names and addresses shall appear in the spaces (Surety A, Surety B, etc.) headed "CORPORATE SURETY(IES)." In the space designated "SURETY(IES)" on the face of the form, insert only the letter identifier corresponding to each of the sureties. Moreover, when co-surety arrangements exist, the parties may allocate their respective limitations of liability under the bonds, provided that the sum total of their liability equals 100% of the bond penal sum.
 - When individual sureties are involved, a completed Affidavit of Individual Surety (Standard Form 28) for each individual surety shall accompany the bond. The government may require the surety to furnish additional substantiating information concerning its financial capability.
- Corporations executing the bond shall affix their corporate seals. Individuals shall execute the bond opposite the words "Corporate Seal", and shall affix an adhesive seal if executed in Maine, New Hampshire, or any other jurisdiction requiring adhesive seals.
- Type the name and title of each person signing this bond in the space provided.

PAYMENT BOND <i>(See instructions on reverse)</i>	DATE BOND EXECUTED <i>(Must be same or later than date of contract)</i>	OMB Control Number: 9000-0045 Expiration Date: 8/31/2022
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Paperwork Reduction Act Statement - This information collection meets the requirements of 44 USC § 3507, as amended by section 2 of the Paperwork Reduction Act of 1995. You do not need to answer these questions unless we display a valid Office of Management and Budget (OMB) control number. The OMB control number for this collection is 9000-0045. We estimate that it will take 1 hour to read the instructions, gather the facts, and answer the questions. Send only comments relating to our time estimate, including suggestions for reducing this burden, or any other aspects of this collection of information to: General Services Administration, Regulatory Secretariat Division (M1V1CB), 1800 F Street, NW, Washington, DC 20405.

PRINCIPAL <i>(Legal name and business address)</i>	TYPE OF ORGANIZATION (" <i>X</i> " one) <input type="checkbox"/> INDIVIDUAL <input type="checkbox"/> PARTNERSHIP <input type="checkbox"/> JOINT VENTURE <input type="checkbox"/> CORPORATION <input type="checkbox"/> OTHER <i>(Specify)</i>								
	STATE OF INCORPORATION								
SURETY(IES) <i>(Name(s) and business address(es))</i>	PENAL SUM OF BOND								
	<table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:25%; border: 1px solid black;">MILLION(S)</td> <td style="width:25%; border: 1px solid black;">THOUSAND(S)</td> <td style="width:25%; border: 1px solid black;">HUNDRED(S)</td> <td style="width:25%; border: 1px solid black;">CENTS</td> </tr> <tr> <td colspan="2" style="border: 1px solid black;">CONTRACT DATE</td> <td colspan="2" style="border: 1px solid black;">CONTRACT NUMBER</td> </tr> </table>	MILLION(S)	THOUSAND(S)	HUNDRED(S)	CENTS	CONTRACT DATE		CONTRACT NUMBER	
MILLION(S)	THOUSAND(S)	HUNDRED(S)	CENTS						
CONTRACT DATE		CONTRACT NUMBER							

OBLIGATION:

We, the Principal and Surety(ies), are firmly bound to the **Navajo Nation** (hereinafter called the Government) in the above penal sum. For payment of the penal sum, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally. However, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us. For all other purposes, each Surety binds itself, jointly and severally with the Principal, for the payment of the sum shown opposite the name of the Surety. If no limit is indicated, the limit of liability is the full amount of the penal sum.

CONDITIONS:

The above obligation is void if the Principal promptly makes payment to all persons having a direct relationship with the Principal or a subcontractor of the Principal for furnishing labor, material or both in the prosecution of the work provided for in the contract identified above, and any authorized modifications of the contract that subsequently are made. Notice of those modifications to the Surety(ies) are waived.

WITNESS:

The Principal and Surety(ies) executed this payment bond and affixed their seals on the above date.

PRINCIPAL				
SIGNATURE(S)	1. _____ <div style="text-align: right; font-size: small;">(Seal)</div>	2. _____ <div style="text-align: right; font-size: small;">(Seal)</div>	3. _____ <div style="text-align: right; font-size: small;">(Seal)</div>	Corporate Seal
NAME(S) & TITLE(S) <i>(Typed)</i>	1. _____	2. _____	3. _____	
INDIVIDUAL SURETY(IES)				
SIGNATURE(S)	1. _____ <div style="text-align: right; font-size: small;">(Seal)</div>	2. _____ <div style="text-align: right; font-size: small;">(Seal)</div>		
NAME(S) <i>(Typed)</i>	1. _____	2. _____		
CORPORATE SURETY(IES)				
SURETY A	NAME & ADDRESS	STATE OF INCORPORATION	LIABILITY LIMIT \$	
	SIGNATURE(S)	2. _____		Corporate Seal
	NAME(S) & TITLE(S) <i>(Typed)</i>	2. _____		

CORPORATE SURETY(IES) (Continued)

SURETY B	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT \$	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) <i>(Typed)</i>	1.	2.		
SURETY C	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT \$	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) <i>(Typed)</i>	1.	2.		
SURETY D	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT \$	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) <i>(Typed)</i>	1.	2.		
SURETY E	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT \$	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) <i>(Typed)</i>	1.	2.		
SURETY F	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT \$	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) <i>(Typed)</i>	1.	2.		
SURETY G	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT \$	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) <i>(Typed)</i>	1.	2.		

INSTRUCTIONS

1. This form, for the protection of persons supplying labor and material, is used when a payment bond is required under 40 USC Chapter 31, Subchapter III, Bonds. Any deviation from this form will require the written approval of the Administrator of General Services.

2. Insert the full legal name and business address of the Principal in the space designated "Principal" on the face of the form. An authorized person shall sign the bond. Any person signing in a representative capacity (e.g., an attorney-in-fact) must furnish evidence of authority if that representative is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved.

3. (a) Corporations executing the bond as sureties must appear on the Department of the Treasury's list of approved sureties and must act within the limitations listed therein. The value put into the LIABILITY LIMIT block is the penal sum (i.e., the face value) of the bond, unless a co-surety arrangement is proposed.

(b) When multiple corporate sureties are involved, their names and addresses shall appear in the spaces (Surety A, Surety B, etc.) headed "CORPORATE SURETY(IES)." In the space designated "SURETY(IES)" on the face of the form, insert only the letter identifier corresponding to each of the sureties. Moreover, when co-surety arrangements exist, the parties may allocate their respective limitations of liability under the bonds, provided that the sum total of their liability equals 100% of the bond penal sum.

(c) When individual sureties are involved, a completed Affidavit of Individual Surety (Standard Form 28) for each individual surety shall accompany the bond. The Government may require the surety to furnish additional substantiating information concerning its financial capability.

4. Corporations executing the bond shall affix their corporate seals. Individuals shall execute the bond opposite the words "Corporate Seal", and shall affix an adhesive seal if executed in Maine, New Hampshire, or any other jurisdiction requiring adhesive seals.

5. Type the name and title of each person signing this bond in the space provided.

AFFIDAVIT OF INDIVIDUAL SURETY*(See instructions on reverse)*

OMB Control Number: 9000-0001

Expiration Date: 2/28/2021

Paperwork Reduction Act Statement - This information collection meets the requirements of 44 USC § 3507, as amended by section 2 of the Paperwork Reduction Act of 1995. You do not need to answer these questions unless we display a valid Office of Management and Budget (OMB) control number. The OMB control number for this collection is 9000-0001. We estimate that it will take 0.3 hours to read the instructions, gather the facts, and answer the questions. Send only comments relating to our time estimate, including suggestions for reducing this burden, or any other aspects of this collection of information to: General Services Administration, Regulatory Secretariat Division (M1V1CB), 1800 F Street, NW, Washington, DC 20405.

STATE OF	SS.
COUNTY OF	

I, the undersigned, being duly sworn, depose and say that I am: (1) the surety to the attached bond(s); (2) a citizen of the United States; and of full age and legally competent. I also depose and say that, concerning any stocks or bonds included in the assets listed below, that there are no restrictions on the resale of these securities pursuant to the registration provisions of Section 5 of the Securities Act of 1933. I recognize that statements contained herein concern a matter within the jurisdiction of an agency of the **Navajo Nation** and the making of a false, fictitious or fraudulent statement may render the maker subject to prosecution under Title 18, United States Code Sections 1001 and 494. This affidavit is made to induce the **Navajo Nation** to accept me as surety on the attached bond.

1. NAME (First, Middle, Last) (Type or Print)	2. HOME ADDRESS (Number, Street, City, State, ZIP Code)
3. TYPE AND DURATION OF OCCUPATION	4. NAME AND ADDRESS OF EMPLOYER (If Self-employed, so State)
5. NAME AND ADDRESS OF INDIVIDUAL SURETY BROKER USED (Number, Street, City, State, ZIP Code)	6. TELEPHONE NUMBER HOME - BUSINESS -

7. THE FOLLOWING IS A TRUE REPRESENTATION OF THE ASSETS I HAVE PLEDGED TO THE **Navajo Nation** IN SUPPORT OF THE ATTACHED BOND:
(a) Real estate (Include a legal description, street address and other identifying description; the market value; attach supporting certified documents including recorded lien; evidence of title and the current tax assessment of the property. For market value approach, also provide a current appraisal.)

(b) Assets other than real estate (describe the assets, the details of the escrow account, and attach certified evidence thereof).

8. IDENTIFY ALL MORTGAGES, LIENS, JUDGEMENTS, OR ANY OTHER ENCUMBRANCES INVOLVING SUBJECT ASSETS INCLUDING REAL ESTATE TAXES DUE AND PAYABLE.

9. IDENTIFY ALL BONDS, INCLUDING BID GUARANTEES, FOR WHICH THE SUBJECT ASSETS HAVE BEEN PLEDGED WITHIN 3 YEARS PRIOR TO THE DATE OF EXECUTION OF THIS AFFIDAVIT.

DOCUMENTATION OF THE PLEDGED ASSET MUST BE ATTACHED.

10. SIGNATURE	11. BOND AND CONTRACT TO WHICH THIS AFFIDAVIT RELATES (Where Appropriate)
---------------	---

12. SUBSCRIBED AND SWORN TO BEFORE ME AS FOLLOWS:

a. DATE OATH ADMINISTERED			b. CITY AND STATE (Or other jurisdiction)		Official Seal
MONTH	DAY	YEAR			
c. NAME AND TITLE OF OFFICIAL ADMINISTERING OATH (Type or print)			d. SIGNATURE	e. MY COMMISSION EXPIRES	

INSTRUCTIONS

1. Individual sureties on bonds executed in connection with Government contracts must complete and submit this form with the bond. (See 48 CFR 28.203, 53.228(e).) The surety must have the completed form notarized.
2. No corporation, partnership, or other unincorporated association or firm, as such, is acceptable as an individual surety. Likewise, members of a partnership are not acceptable as sureties on bonds that a partnership or an association, or any co-partner or member thereof, is the principal obligor. However, stockholders of corporate principals are acceptable provided (a) their qualifications are independent of their stockholdings or financial interest therein, and (b) that the fact is expressed in the affidavit of justification. An individual surety will not include any financial interest in assets connected with the principal on the bond that this affidavit supports.
3. United States citizenship is a requirement for individual sureties for contracts and bonds when the contract is awarded in the United States. However, when the Contracting Officer is located in an outlying area or a foreign country, the individual surety is only required to be a permanent resident of the area or country in which the contracting officer is located.
4. All signatures of the affidavit submitted must be originals. Affidavits bearing reproduced signatures are not acceptable. An authorized person must sign the bond. Any person signing in a representative capacity (e.g., an attorney-in-fact) must furnish evidence of authority if that representative is not a member of a firm, partnership, or joint venture, or an officer of the corporation involved.

Affidavit of Non-Collusion

BIDDER: _____ TELEPHONE: (_____) _____

ADDRESS: _____

The Bidder shall execute this Certification of Bidder. I _____ hereby affirm as a condition to the Government's execution of this Contract that I have not either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with the Bid for this Contract

Further affiant sayeth not.

Title: _____

Bidder (print): _____

Bidder Signature: _____

STATE OF _____)

COUNTY OF _____)

SUBSCRIBED AND SWORN TO BEFORE ME ON THIS:

_____ day of _____ 20____

Notary Public _____

My Commission Expires: _____

Failure to comply with the completion and timely submission of the Affidavit of Non-Collusion shall result in the Bidder's Bid being rejected as non-responsive.

EXHIBIT F

**STANDARD SPECIFICATION FOR CONSTRUCTION
OF ROADS AND BRIDGES ON FEDERAL HIGHWAY
PROJECTS, **FP-14****

& SUPPLEMENTAL SPECIFICATIONS

The **FP-14** book is available in electronic format at
<https://flh.fhwa.dot.gov/resources/specs/fp-14/fp14.pdf>

SUPPLEMENTAL SPECIFICATIONS

SECTION 101 - TERMS, FORMAT, AND DEFINITIONS

101. 04 **Definitions:** The following terms with their respective definitions are added, or redefined, as supplement to Article 1 of Exhibit A:

Contracting Officer (CO). -- Wherever the term "Contracting Officer" or "CO" is used in Division 100, the construction plans, or elsewhere in the specifications and contract documents, it is referred to as the Navajo Nation President who has the authority to enter into, administer, and/or terminate contracts and make related determinations and findings. The term includes certain authorized representatives of the Contracting Officer acting within the limits of their authority as delegated by the CO.

Construction Manager (CM). -- The CM is the duly authorized resident project site representative of the Contracting Officer (CO), and will act for the CO in administering the contract at the project site. The CM's duties and responsibilities are delineated by letter from the CO to the CM with a copy sent to the Contractor. The CM does not have any authority to make changes to the contract, or direct any of the work; only those duties and responsibilities as authorized by the CO and/or as provided for in the contract documents.

Engineer (Engineer of Record). -- The Engineer is the duly authorized Engineer of Record of the Contracting Officer (CO), and will act for the CO in the technical aspects of the contract. The Engineer's duties and responsibilities are delineated by letter from the CO to the CM and Engineer with a copy sent to the Contractor. The Engineer does not have any authority to make changes to the contract, or direct any of the work; only those duties and responsibilities related to the designs and interpretation of the design requirements including any design changes as authorized by the CO and/or as provided for in the contract documents.

NDOT. -- Wherever the term "NDOT" is used in the FP-14 supplemental specifications or other contract documents, it refers to the Navajo Nation Division of Transportation.

Government. – The term "Government" refers to the Navajo Nation through the Contracting Officer (CO).

Owner. – The term "Owner" refers to the owner of the project or facility being built.

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.

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

Unsuitable or Deleterious Material – Defined as Material not capable of providing stable foundations, embankments, drainage structure installations, retaining wall construction, or roadbeds. Unsuitable material may include muck, sod, or soils with high organic and/or high PH (low resistivity) contents depending upon the materials proposed use on the project.

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

rev: 12/19/17

Section 102. — BID, AWARD, AND EXECUTION OF CONTRACT

Section 102 is superseded with the following:

102.01 Acquisition Regulations. Bid, award, and execution of the contract are governed by 12 N.N.C §332 Competitive Sealed Proposals, Article 5 of Exhibit A and Exhibit D.

102.02 Preparation of Bids. Preparation of Bids shall be in accordance with this Section 102 and Bid Instructions/Bid Schedule of Exhibit D.

102.03 Bid Guarantee. Bid Guarantee shall be in accordance with Article 5 of Exhibit A and Clause NN-228-1 from the Bid Instructions of Exhibit D.

102.04 Individual Surety. Individual Surety shall be in accordance with Article 5 of Exhibit A and Clause NN-228-11 from the Bid Instructions of Exhibit D.

102.05 Opening of Bids. Bids will be opened by the Government and evaluated as specified in the Request for Proposals. The Government reserves the right to reject bids as set forth in the requirements of section 102.01.

102.06 Performance and Payment Bonds. Performance and Payment Bond shall be in accordance with Article 5 of Exhibit A and Clause NN-228-15 from the Bid Instructions of Exhibit D.

Use SF-25, Performance Bond, and SF-25A, Payment Bond, for submitting the bonds.

The requirements contained in Subsections 102.03 and 102.04 relating to power of attorney, evidence of guarantee assistance, and individual sureties also apply to performance and payment bonds.

102.07 Federal, State, and Local Taxes. Federal, State and Local Taxes shall be in accordance with Article 6.10 of the Standard General Conditions, Exhibit A.

rev: 1/31/18

SECTION 103- SCOPE OF WORK

Subsection 103.03 is superseded with the following:

103.03 Value Engineering. See Clause NN-248-3 of the Special Contract Requirements Exhibit C.

103.05 Partnering.

The third paragraph is superseded with the following:

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

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

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

rev: 12/19/17

SECTION 104 - CONTROL OF WORK

This section 104 supplements Article 6.11 of Exhibit A

104.03 Specifications and Drawings: The first sentence is superseded with the following: Follow the requirements of clause NN-236-21 of Exhibit C.

104.04 Coordination of Contract Documents:

The last sentence is superseded with the following:

The contract documents govern in the following order:

- (a) Navajo Nation Procurement Code 12- N.N.C. §301 - 371
- (b) 25 CFR Part 170, as amended
- (c) Agreement between Government and Contractor for Construction Contract (Fixed Price)
- (d) Standard General Conditions (Exhibit A)
- (e) Project Specific Supplemental General Conditions (Exhibit B)
- (f) Special Contract Requirements (Exhibit C) and Environmental Requirements & Permits (Exhibit I)
- (g) Supplemental Specifications to the FP-14 (Exhibit F)
- (h) Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, FP-14 (Exhibit F)
- (i) Project Design Plans (Exhibit G)

rev: 10/31/19

SECTION 105. – CONTROL OF MATERIAL

105.01 **Source of Supply and Quality Requirements.** The first sentence is superseded with the following: Follow the requirements of Article 6.3 of Exhibit A.

rev: 01/18/18

SECTION 106 - ACCEPTANCE OF WORK

106.01 **Conformity with Contract Requirements.** Add the following sentence: Section 106 supplements Article 13 of Exhibit A.

Add the following:

All applicable sections in the latest edition (as referenced in the FP-14) 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-14, or these supplemental specifications, then the FP-14 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 Construction Manager and/or Engineer of record to conduct the analysis described, and to provide the Contractor with the results that shall be used for determination of acceptance of the work and pay factors based under this section.

rev: 01/18/18

SECTION 107 - LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

107.02 **Protection and Restoration of Property and Landscape.** This section 107 supplements Article 6.11 of Exhibit A.

Add the following to paragraph three:

Unless otherwise modified in writing by the Construction Manager, 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 10 feet (3 m), or the new Typical Section width plus 10 feet (3 m) 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 Government. In no case shall any work be done outside the right-of-way limits (not already called for in the design plans) without prior approval from the Construction Manager.

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.

rev: 11/07/19

SECTION 108 - PROSECUTION AND PROGRESS

108.01 Commencement, Prosecution, and Completion of Work; This section 108 supplements Article 2.4 and Article 6 of Exhibit A.

108.02 Subcontracting. This section supplements Article 6.6 of Exhibit A.

108.03 Determination and Extension of Contract Time. The first sentence is superseded with the following: Follow the requirements of Article 12 of Exhibit A.

108.04 Failure to Complete Work on Time.

The first sentence of the first paragraph is deleted.

Add the following to Paragraph two:

The Contractor shall be subject to the Liquidated Damages as a result of the actions they take or that of their subcontractors in the amount specified in Table 108-1 for each day beyond the time allowed to complete the contract work, until final acceptance of the work is given. The Liquidated Damages shall be assessed when the entire project work cannot be completed due to delays as a result of any actions or inactions taken by the Contractor and/or sub-contractors including failure to complete all the work by the contract end date.

108.05 Stop Order. This section supplements Article 15 of Exhibit A.

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 may be made (under the following) 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.

(a) If the Contractor refuses or fails to prosecute the work or any separable part, with the diligence that will insure its completion within the time specified in this contract including any extension, or fails to complete the work within this time, the CO may, by written notice to the Contractor, terminate the right to proceed with the work (or the separable part of the work) that has been delayed. In this event, the Government may take over the work and complete it by contract or otherwise, and may take possession of and use any materials, appliances, and plant on the work site necessary for completing the work. The Contractor and its sureties shall be liable for any damage to the Government resulting from the Contractor's refusal or failure to complete the work within the specified time, whether or not the Contractor's right to proceed with the work is terminated. This liability includes any increased costs incurred by the Government in completing the work.

(b) The Contractor's right to proceed shall not be terminated nor the Contractor charged with damages under this section, if -

(1) The delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include (i) acts of God or of the public enemy, (ii) acts of the Government in either its sovereign or contractual capacity, (iii) acts of another Contractor in the performance of a contract with the Government, (iv) fires, (v) floods, (vi) epidemics, (vii) quarantine restrictions, (viii) strikes, (ix) freight embargoes, (x) unusually severe weather, or (xi) delays of subcontractors or suppliers at any tier arising from unforeseeable causes beyond the control and without the fault or negligence of both the Contractor and the subcontractors or suppliers; and

(2) The Contractor, within 10 days from the beginning of any delay (unless extended by the Contracting Officer), notifies the Contracting Officer in writing of the causes of delay. The Contracting Officer shall ascertain the facts and the extent of delay. If, in the judgment of the Contracting Officer, the findings of fact warrant such action, the time for completing the work shall be extended. The findings of the Contracting Officer shall be final and conclusive on the parties, but subject to appeal under Article 16 of Exhibit A.

(c) If, after termination of the Contractor's right to proceed, it is determined that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the termination had been issued for the convenience of the Government.

(d) The rights and remedies of the Government in this section are in addition to any other rights and remedies provided by law or under this contract.

rev: 12/19/17

SECTION 109 - MEASUREMENT AND PAYMENT

109.01 Measurement of Work. This section 109 supplements Article 14 of Exhibit A.

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 U.S. Customary (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 (b) is superseded with the following:

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

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

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

Add the following subsection:

(s) Contingent sum. Perform the work only when authorized by written work change directive. 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 Construction Manager. Provide current scale certification documents to the Construction Manager.

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 100 pounds (50 kg)
- (8) Tare Weight (haul unit); to the nearest 100 pounds (50 kg)
- (9) Net Weight (mass); to the nearest 100 pounds (50 kg)
- (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 Construction Manager 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 Construction Manager at the end of each shift. If any delivery report(s) does not contain the signature of the contractor's delivery acceptance 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 Pricing of Adjustments.

The first paragraph is superseded with the following:

At the time of award of contract, the Contractor shall provide the CO with a complete breakdown of their bid including the direct costs for each bid item, overhead rate, profit rate, and applicable taxes rates. Determine all costs according to the contract cost principles and procedures of NNPC 12 N.N.C§350. Follow the requirements of all sections providing for an equitable price adjustment.

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

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

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

(2) When actual costs cannot be determined, use the rates shown in the “*CE00ES*” (where applicable) published by The Army Corps of Engineers, for the area where costs are incurred. Adjust the rates for used equipment and for other variable parameters used in the schedules. Provide copies of data sheets taken from these rates books with your submission. DO NOT use a combination of rates from these sources. Actual contractor rates cannot exceed the rates in the ACOE *CE00ES* book.

(3) Compute proposed standby costs from acceptable ownership records or when actual costs cannot be determined, according to the ACOE *CE00ES* book. 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, used on other projects during the same time period, or for equipment that was not in operational condition.

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

(2) Overhead. The overhead rate(s) that apply to the prime Contractor shall be the actual rate used in the Contractor’s bid for the work the Prime Contractor performs under this contract but cannot exceed 30% for any post work pricing. For all prime and subcontract

work, identify overhead rate(s) and provide supporting data, which justifies the rate(s). List the types of costs, which are included in overhead pool. 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 12 N.N.C. §350, the profit shall be the actual rate used in the original bid but no more than 10% of the total direct costs reflecting the efficiency and economy of the Contractor and subcontractors in performing the work, the contract risk type, the work difficulty, and management effectiveness and diversity.

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

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

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

Add subparagraph **(c)** as follows:

(c) Construction Price adjustments. The CO will not consider price adjustments for material and other Contractor and/or subcontractor price increases during the life of the contract unless the contract allows for such.

109.07

Eliminated Work. The first sentence of this section is superseded with the following:

(a) The Contracting Officer may, at any time, without notice to the sureties, if any, by written order designated or indicated to be a contract modification, make changes in the work within the general scope of the contract, including changes -

- (1) In the specifications (including drawings and designs);
- (2) In the method or manner of performance of the work;
- (3) In the Owner-furnished property or services; or
- (4) Directing acceleration in the performance of the work.

(b) Any other written or oral order (which, as used in this paragraph (b), includes direction, instruction, interpretation, or determination) from the Contracting Officer that causes a change shall be treated as a work change directive under this clause; provided, that the Contractor gives the Contracting Officer written notice stating (1) the date, circumstances, and source of the order and (2) that the Contractor regards the order as a contract modification.

(c) Except as provided in this section, no order, statement, or conduct of the Contracting Officer shall be treated as a change under this section or entitle the Contractor to an equitable adjustment.

(d) If any change under this clause causes an increase or decrease in the Contractor's cost of, or the time required for, the performance of any part of the work under this contract, whether or not changed by any such order, the Contracting Officer shall make an equitable adjustment and modify the contract in writing. However, except for an adjustment based on defective specifications, no adjustment for any change under paragraph (b) of this clause shall be made for any costs incurred more than 20 days before the Contractor gives written notice as required. In the case of defective specifications for which the Government is responsible, the equitable adjustment shall include any increased cost reasonably incurred by the Contractor in attempting to comply with the defective specifications.

(e) The Contractor must assert its right to an adjustment under this clause within 30 days after (1) receipt of a written contract modification under paragraph (a) of this clause or (2) the furnishing of a written notice under paragraph (b) of this clause, by submitting to the Contracting Officer a written statement describing the general nature and amount of proposal, unless this period is extended by the Government. The statement of proposal for adjustment may be included in the notice under paragraph (b) above.

(f) No proposal by the Contractor for an equitable adjustment shall be allowed if asserted after final payment under this contract.

Section 109.08 & 109.09 are superseded with the following:

109.08 Progress Payments. Follow the requirements of Article 14.2 of the Standard General Conditions (Exhibit A).

(a) General. Only invoice payments will be made under this contract. Invoice payments include progress payments made monthly as work is accomplished and the final payment made upon final acceptance. Only one progress payment will be made each month. No progress payment will be made in a month in which the work accomplished results in a net payment of less than \$1,000. Full or partial progress payment will be withheld until a construction schedule or schedule update is approved by the CO.

(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 to have the Construction Manager prepare and submit a pay estimate to the Contractor, based on the receiving report, for approval on a form acceptable to both the Contractor and Government. However, no invoice payment can be submitted to the billing office without the Construction Manager agreeing with the work accepted in place and the quantities are reviewed and approved. The progress payment preparation shall be as outlined in subparagraph (c) & (d). The pay estimate must be signed by the Construction Manager and Contractor representative before an invoice can be submitted.

(c) Invoice requirements. Submit the invoice to the Government's designated billing office with the following items in the invoice:

- (1)** Name and address of the Contractor.
- (2)** Invoice date and invoice number. (The Contractor should date invoices as close as possible to the date of mailing or transmission.)
- (3)** Contract number or other authorization for work or services performed.
- (4)** Taxpayer Identification Number (TIN). The Contractor shall include its TIN on the invoice only if required elsewhere in this contract.
- (5)** Delivery and payment terms.
- (6)** Name and address of Contractor official to whom payment is to be sent (must be the same as that in the contract or in a proper notice of assignment).
- (7)** Name, title, phone number, and mailing address of person to notify in the event of a defective invoice.
- (8)** Description of work or services performed.
- (9)** 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 government field representative 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.
- (10)** A copy of the pay estimate must be included with the Contractor's invoice with a line for the Government field representative to concur on the invoice.
- (11)** If applicable, a copy of any notices regarding withholding to a subcontractor. The Contractor shall issue a written notice of any withholding to a subcontractor (with a copy furnished to the Contracting Officer), specifying -
 - (i) The amount to be withheld;
 - (ii) The specific causes for the withholding under the terms of the subcontract; and
 - (iii) The remedial actions to be taken by the subcontractor in order to receive payment of the amounts withheld.
- (12)** The amount included for work performed by each subcontractor under the contract.
- (13)** The total amount of each subcontract under the contract.
- (14)** The amounts previously paid to each subcontractor under the contract.
- (15)** Adjustments to the proposed total payment that relate to the quantity and quality of pay items or other claims as further described in Article 14.2.E of Exhibit A.
- (16)** Any other information or documentation required by the contract.
- (17)** Contractor certification. Along with each request for progress payments, the Contractor shall furnish the following certification, or payment shall not be made: (However, if the Contractor elects to delete paragraph (c)(4) from the certification, the certification is still acceptable.)

I hereby certify, to the best of my knowledge and belief, that—

(1) The amounts requested are only for performance in accordance with the specifications, terms, and conditions of the contract;

(2) All payments due to subcontractors and suppliers from previous payments received under the contract have been made, and timely payments will be made from the proceeds of the payment covered by this certification, in accordance with subcontract agreements and the requirements of Chapter 39 of Title 31, United States Code;

(3) This request for progress payments does not include any amounts which the prime contractor intends to withhold or retain from a subcontractor or supplier in accordance with the terms and conditions of the subcontract; and

(4) This certification is not to be construed as final acceptance of a subcontractor's performance.

(Name)

(Title)

(Date)

(d) Government's receiving report. The Government's receiving report will be developed using the measurement notes received by the Government and determined acceptable by the Construction Manager. Within 7 days after the closing date, the Construction Manager 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 Construction Manager that the materials have been inspected and appear to meet the project specifications and match the quantities given in the pay estimate.

(e) Processing progress payment requests. No payment will be made for work unless field note documentation for the work was submitted.

(1) Proper invoices. If the invoice meets the requirements of Subsection 109.08(c) and the quantities and contract prices shown on the Contractor's invoice agree with the corresponding quantities and contract prices shown on the Government's receiving report; the invoice will be paid.

(2) Defective invoices. If the invoice does not meet the requirements of Subsection 109.08(c) or if quantities or contract prices shown on the Contractor's invoice exceed the corresponding quantities and contract prices shown on the Government's receiving report; the invoice is defective and the Contractor will be notified. Defective invoices will be returned to the Contractor within 7 days after receipt by the Government's designated billing office. Correct and resubmit returned invoices. If the defects are minor, the Contractor may elect, in writing, to accept the quantities and contract prices shown on the Government's receiving report for payment.

(f) Partial payments. Progress payments may include partial payment for material to be incorporated in the work. In the preparation of pay estimates, the Contracting Officer may authorize material delivered on the site and preparatory work done to be taken into consideration, provided the material meets the requirements of the contract and is delivered on, or in the vicinity of, the project site or stored in acceptable (secured) storage places. For stockpiled aggregates, the Contractor's request must include test results indicating compliance with the specifications to verify the request.

Material delivered to the Contractor at locations other than the site also may be taken into consideration if the Contractor furnishes satisfactory evidence that it has acquired title to such material and that the material will be used to perform this contract. Partial payment for material does not constitute acceptance of the material for use in completing items of work. Partial payments will not be made for living or perishable material until incorporated into the project.

Individual and cumulative partial payments for preparatory work and material will not exceed the lesser of:

- (1) 80 percent of the contract price for the pay item; or
- (2) 100 percent of amount supported by copies of invoices submitted.

The quantity paid will not exceed the corresponding quantity estimated in the contract. The CO may adjust partial payments as necessary to protect the Government.

(g) Retainage. Follow the requirements of Article 14.2.D of the Standard General Conditions (Exhibit A).

109.09 Final Payment. Follow the requirements of Article 14.7 of the Standard General Conditions (Exhibit A).

Upon final acceptance and verification of final pay records, the Government will send a SF 1034, Public Voucher for Purchases and Services other than Personal (final voucher) and a release of claims document. Execute both the voucher and the release of claims, and return the documents to the Government for payment. The date of approval by the Government of the final voucher for payment constitutes the date of final settlement of the contract. 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 provided the Contractor supplies all the necessary records within 5 days after the final inspection.

If unresolved claims exist or claims are proposed, reserve the right to the claims by listing a description of each claim and the amount being claimed on the release of claims document.

Failure to execute and return the voucher and release of claims document within 90 days after receipt will constitute execution of the documents and the release of claims against the Government arising by virtue of the contract. In this event, the day after 90 days from receipt constitutes the date of final settlement of the contract.

rev: 6/10/19

SECTION 151 - MOBILIZATION

This section 109 supplements Article 6 of Exhibit A

151.03 Payment. This section is superseded with the following:

The accepted quantity, measured as provided in Subsection 109.02, will be paid at the contract price per unit of measurement for the Section 151 pay item shown in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

Progress payments for mobilization lump sum will be paid as follows:

- (a) Bond premiums will be reimbursed for the amount of premiums paid for performance and payment bonds (including coinsurance and reinsurance agreements, when applicable) after the Contractor has furnished evidence of full payment to the surety. The retainage provisions in Article 14.2.D of the Standard General Conditions (Exhibit A) shall not apply to that portion of progress payments attributable to bond premiums.
- (b) When 5 percent of the original contract amount is earned from other bid items, 50 percent of the mobilization item, or 5 percent of the original contract amount, whichever is less, will be paid.
- (c) When 10 percent of the original contract amount is earned from other bid items, 100 percent of the mobilization item, or 10 percent of the original contract amount, whichever is less, will be paid.
- (d) Any portion of the mobilization item in excess of 10 percent of the original contract amount will be paid after final acceptance.

rev: 01/18/18

SECTION 152 - CONSTRUCTION SURVEY AND STAKING

152.01 **Description:** This section 152 supplements Article 6 of Exhibit A.

The first paragraph is superseded with the following:

This work consists of furnishing qualified personnel and necessary equipment, materials, and incidentals to survey, stake, calculate, and record data for the control of work.

The Contractor shall lay out its work from Government-established base lines and bench marks indicated on the drawings, and shall be responsible for all measurements in connection with the layout. The Contractor shall furnish, at its own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the work. The Contractor shall be responsible for executing the work to the lines and grades that may be established or indicated by the Government. The Contractor shall also be responsible for maintaining and preserving all stakes and other marks established by the Government until authorized to remove them. If such marks are destroyed by the Contractor or through its negligence before their removal is authorized, the Government may replace them and deduct the expense of the replacement from any amounts due or to become due to the Contractor.

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 résumés on all members of the survey crew and the RLS to the Construction Manager 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 (to 3 significant figures) with the feature label coding table file used (if the government furnished coding (.xin file) table format is not used). The Contractor shall submit his/her definitions file for the codes used in text format and the cross section and staked alignment survey data shall be 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 a Digital Terrain Model (*.XML) file capable of being read correctly in the Civil3d 2015 software. The **Contractor RLS Surveyor** shall prepare graphical plane view and cross section plots of both the original and final cross-section data in AutoCAD 2015 (*.DWG) file format and review them AND ALL SURVEY DATA for accuracy and errors before submitting all the data to the Construction Manager with a certification of its accuracy.

Under no circumstance shall any original ground disturbing activities or base course placement be allowed until all the ORIGINAL ground cross-section data (including at borrow pits after overburden is removed) has been collected, reviewed, and accepted in writing by the Construction Manager. See section 109.02(b), 204.08, and 204.16(b) for further details.

(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 11" x 17" sheets as well as in AutoCAD 2015 (*.DWG) 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 Construction Manager 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 (QCP). The Contractor shall conduct all survey and staking per the Survey QCP at the end of and these specifications. The work may be in the presence of a representative of the CO. A QCP herein must be adhered to. The Contractor shall notify the Construction Manager at least one week before the actual surveying is to begin to allow the Government time to have a representative on site.

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

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

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 Construction Manager on the control point checks in a format and method agreed to with the Government. Once the control point

data is verified and within the tolerances, the alignment can then be staked and the data furnished in (*.alg or .xml) format to the Construction Manager 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 Construction Manager 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 Construction Manager 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 Construction Manager. All original survey notes (certified by the RLS) shall be submitted through the QCM to the Construction Manager 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.

152.05 Survey and Staking Requirements:

Add the following paragraphs to subparagraph (d) Slope and reference stakes:

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 152.05(d) 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 Construction Manager 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 Construction Manager 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.

(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 Construction Manager & 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 Construction Manager.

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

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

Add the following to Subsection (f):

It is recommended to set the red top stakes for finish subgrade 0.015 feet (5 mm) above the slope stake notes elevations provided to compensate for compaction and to achieve the proper crown. This will still allow for the finish subgrade to be within the ± 0.03 feet (10 mm) tolerance shown on Table 152-1. Set the blue top stakes for finish Aggregate Base Course (ABC) to the elevations provided in the slope stake notes for blue topping making sure the required uniform design thickness of ABC is achieved to insure the design template geometry is maintained (i.e. crown, hinge points, driving lanes, etc.).

Subparagraph (g) is superseded with the following:

(g) Drainage structures.

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

- (1) Slope stake the entire project according to **Subsection 152.03(c)**. The Construction Manager 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).
- (2) After the Construction Manager and QCM agree with the location geometry, obtain the original ground profile along centerline of each structure including a distance of 65 feet (20 meters) upstream and downstream along the flow-line.
- (3) Using engineering software (i.e. AutoCAD) 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 2 foot (610 mm) increment along the skew angle. When calculating pipe invert elevations and lengths, the lengths of any pipe end sections shall be subtracted from the total required pipe length.
- (4) Perform the same procedure as outlined in (3) above for drainage pipes under the turnouts and driveways.
- (5) Plot the final structure profiles on to the existing ground/proposed roadway

template cross-sections for all drainage structures. These profiles shall be on maximum size 11" x 17" sheets to a scale provided by the Construction Manager. Assemble all pertinent structure information, into a spreadsheet acceptable to the Construction Manager, 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 Construction Manager for review and approval.

(6) After the revised structure list is approved by the Construction Manager and prior to installing the drainage structures, the Contractor shall stake the final structure location and give the Construction Manager three (3) business days to review the locations. Any structure location problems noted as a result of survey errors by the Construction Manager 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 Construction Manager.

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 Construction Manager 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 Construction Manager 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 15201-0000, as measured above, will be paid as follows:

- (a) Up to 30% of the lump sum will be paid following completion of the control point and alignment data verification, existing ground cross-section surveys, and slope staking work and furnish copies of these staking notes to the Construction Manager hard copy and electronic format through the QCM for review and approval before payment is made. The Engineer of Record shall review the data before the Construction Manager can recommend payment.
- (b) Up to an additional 30% 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) Up to an additional 30% of the lump sum will be paid following completion of the final subgrade cross-sections taken and furnished the survey data to the Construction Manager in the format outlined under **Subsection 152.01(d) Survey Notes**. Once reviewed and approved by the government, payment shall be made.
- (d) The remaining 10% of the lump sum will be paid when the staking and surveying needed for all other items of work are completed and the Contractor submits all the original survey field books to the Construction Manager.

rev: 11/07/19

Survey Quality Control Plan

The Construction Surveyor/ Party Chief (“RLS”), shall furnish technically qualified surveyors capable of performing the work in a timely, accurate and professional manner. The field crews shall be under the supervision of a Professional Land Surveyor with a minimum of 10 years’ experience in highway construction staking. Each member of the survey crew will have highway construction knowledge in performing GEOMETRIC computations. Crew members will assist and check the party chief in performing calculations and interpretations of the plans. Construction survey and staking will be performed within the tolerances specified in Table 152-1, and in accordance with section 152 of the FP-14 and the contract documents. All survey information will be forwarded to the Government and critical attention be made to any potential changed to the construction plans.

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

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

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

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

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

Section 152.02 Requirements:

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

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

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

The “RLS” will collect all existing ground and (if required) existing ground on borrow pits and field check all data using GPS and/or conventional field equipment and process the survey data with surveying software into files that can be encoded in the AutoCAD platform per section 152.01(d). All duplicate points and lines shall be cleaned up prior to generating a digital terrain model of the existing and final subgrade/ground. The “Surveyor” will perform conventional optical differential level loops on all vertical benchmarks (i.e. control point data) furnished by the Government to verify that the reported elevations fall within the tolerances. The “RLS” will hold all control point elevations furnished by the Government, provided it meets the tolerances of plus or minus 0.0328 feet (10 mm).

GPS equipment will be used for horizontal verification and staking out of the sub grade. This work will include an independent network check using Government provided control points and one National Geodetic Survey (NGS) control monuments. Once the network is complete, a minimum of a six point horizontal: vertical calibration will be developed not exceeding 2.5 miles (4 km) for localizing from grid to ground. All Calibrations will be recorded electronically and a hard copy will be provided to the Government.

All vertical BMs will be verified by performing optical differential levels. A tolerance of plus or minus 0.0328 feet (10 mm) will be allowed. In the course of running differential levels, a daily collimation test (peg test) will be run to avoid errors.

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

Any inconsistency with the Government’s alignment, control and or grade data shall be brought to the attention of Contractor and the Government (Construction Manager) prior to continuing any surveys or construction.

Bi-monthly meetings (during construction) shall be scheduled with Contractor and the Construction Manager to discuss all surveying activities and changes in activities as listed in Section 152.02(a) through (f), and the Tolerances listed in Table 152- 1. All field notes shall be scanned to PDF format and also submitted in hard copy. All field notes shall be marked in red for changes made in the field for adjustment to fit actual field ground conditions.

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

Section 152-03 Surveying and Staking Requirements:

(a) Control Points:

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

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

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

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

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

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

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

SAMPLE OF DIFFERENTIAL LEVEL LOOP CONTROL CHECK:

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

(b) Roadway Cross-Sections:

Roadway cross sections will be taken at a maximum spacing of 50 feet (20 meters) along tangent of roadway and every 25 feet (10 meters) along curve of roadway sections. Each cross section shall be located based on known control points with all breaks or changes noted.

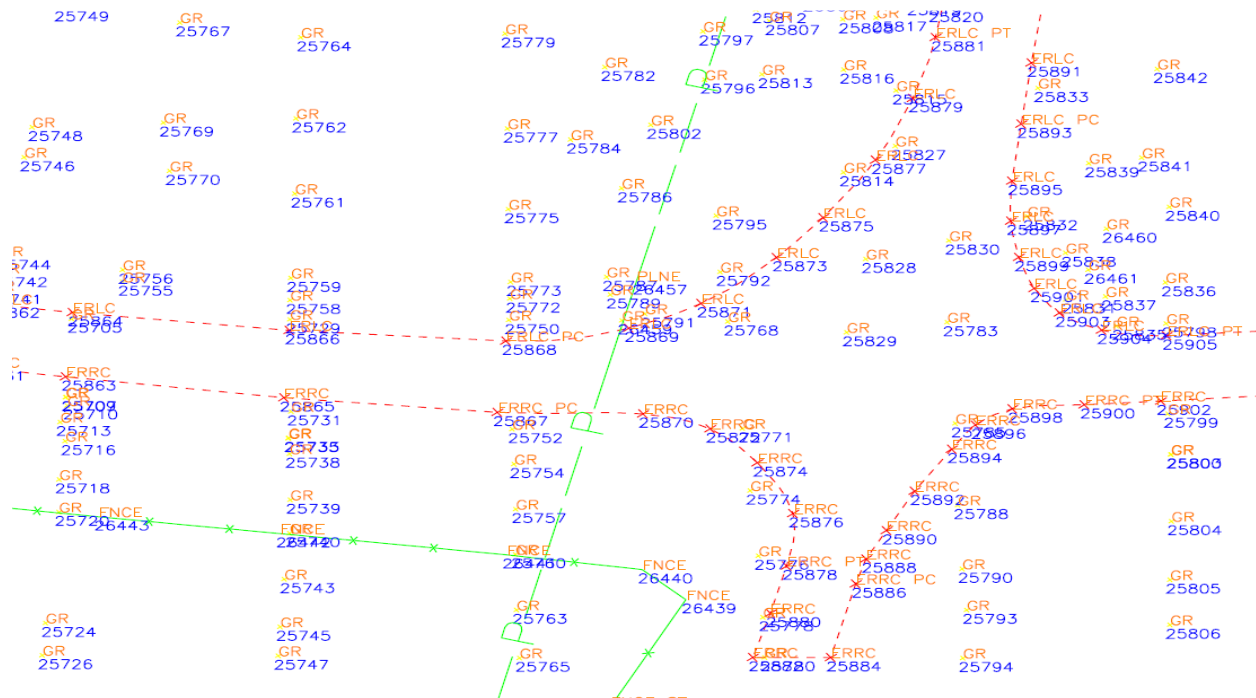
All topographic terrain breaks will be classified as break lines and all topographic flat surfaces will be classified as ground points. All break lines will be measured and recorded in a continuous pattern. The data points will be numbered in a sequential order and all break lines will be coded to best describe feature and stringed separately (i.e. TW, BB, DL, FL, etc.). Any topographic breaks within 15 feet (5 meters) of the 50 foot (20 meter) station increment will be measured and recorded. The project terrain model will be treated as single DTM with regards to data processing. All cross section data shall be formatted in an ASCII delimited point file (Point Number, Northing, Easting, Elevation and Code) and submitted to the Government along with an electronic copy of the survey raw data file to three significant figures. A complete description of the feature codes

used for the breaklines and other point data will be provided to the Government in a Microsoft Word or Excel file that encompasses the entire feature code library. All survey data will be converted into a DTM. A planimetric drawing for plan and profile and cross sections in 50-foot (20 meter) increments shall be prepared using AutoCAD to check the data (i.e. breaklines and other point features) before submission. The drawing will be used by the surveyor to correct any common geometry errors resulting from duplicate line features and survey data points in the data files.

SAMPLE OF SURVEY CROSS SECTION DATA IN ASCII FORMAT

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

SAMPLE OF SURVEY CROSS SECTION DATA PROCESSED IN AUTOCAD, OR OTHER EQUIVALENT SOFTWARE:



(c) Slope Stakes and References:

The “RLS” shall field stake the project according to the Government’s slope stake notes. In the event that field stakes require field adjustments due to terrain changes, the “RLS” will make the necessary field adjustments and redline all changes in their slope stake field book and on the Government furnished staking notes. If field adjustments become too extreme (i.e. catch points exceeding 1-foot (305 mm) from the reported slope stake notes, elevations exceeding 0.5 feet (152 mm), or slopes exceed the typical section slope for a given height criteria), the “RLS” will notify Contractor and the Government immediately prior to continuing any more field surveying.

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

The “RLS” will reset all slope stakes that may have been removed or is in conflict with construction activities.

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

Sample Government Marked up Staking Notes:

Station: 38+120.000 14.13
Feature LFill 1 LSP L_Subgr Subgr_CL R_Subgr RSP RFill1 10.20
Elevation F 0.625 1909.783 1910.408 1910.853 1911.435 1911.900 1911.455 ~~1910.834~~ F 1.421
Offset @ 2.499 13.251 10.752 8.082 0.000 6.465 9.135 14.819 @ 5.684
Slope -25.00% -25.00% -16.67% -7.20% 7.20% -16.67% -25.00% -25.00%

Station: 38+140.000
Feature LFill 1 LSP L_Subgr Subgr_CL R_Subgr RSP RFill1
Elevation F 0.705 1909.934 1910.639 1911.084 1911.666 1912.131 1911.686 1910.839 F 0.846
Offset @ 2.818 13.570 10.752 8.082 0.000 6.465 9.135 12.521 @ 3.386
Slope -25.00% -25.00% -16.67% -7.20% 7.20% -16.67% -25.00% -25.00%

Station: 38+160.000 13.69
Feature LFill 1 10.27 LSP 13.15 L_Subgr Subgr_CL R_Subgr RSP RFill1 10.78
Elevation F 0.734 ~~1910.135~~ 1910.869 1911.314 1911.896 1912.361 1911.916 ~~1910.654~~ F 1.263
Offset @ 2.935 13.687 10.752 8.082 0.000 6.465 9.135 14.186 @ 5.051
Slope -25.00% -25.00% -16.67% -7.20% 7.20% -16.67% -25.00% -25.00%

Station: 38+180.000 14.13
Feature LFill 1 10.29 LSP 13.99 L_Subgr Subgr_CL R_Subgr RSP RFill1 10.89
Elevation F 0.912 ~~1910.786~~ 1911.097 1911.542 1912.124 1912.590 1912.145 ~~1910.769~~ F 1.375
Offset @ 3.647 14.400 10.752 8.082 0.000 6.465 9.135 14.636 @ 5.501
Slope -25.00% -25.00% -16.67% -7.20% 7.20% -16.67% -25.00% -25.00%

Station: 38+200.000
Feature LFill 1 LSP L_Subgr Subgr_CL R_Subgr RSP RFill1
Elevation F 0.968 1910.305 1911.274 1911.719 1912.300 1912.766 1912.321 1910.950 F 1.371
Offset @ 3.873 14.625 10.752 8.082 0.000 6.465 9.135 14.619 @ 5.484
Slope -25.00% -25.00% -16.67% -7.20% 7.20% -16.67% -25.00% -25.00%

Station: 38+220.000 14.45
Feature LFill 1 10.60 LSP 13.87 L_Subgr Subgr_CL R_Subgr RSP RFill1 11.09
Elevation F 0.921 ~~1910.456~~ 1911.377 1911.822 1912.404 1912.870 1912.425 ~~1910.983~~ F 1.442
Offset @ 3.684 14.437 10.752 8.082 0.000 6.465 9.135 14.902 @ 5.767
Slope -25.00% -25.00% -16.67% -7.20% 7.20% -16.67% -25.00% -25.00%

(d) Clearing and Grubbing Limits:

Clearing and grubbing limits will be staked in conjunction with determining the existing right-of-way lines along the project. The clearing/grubbing limits (catch point location plus 3 feet) will be staked in accordance Section 201 of the FP 14. The right-of-way will be staked with flagging (lath) on 3-foot (1 meter) wooden stakes during the cross section survey based on the data provided by the Government from the right-of-way plats. All clearing and grubbing will be staked based on established control and calibration procedures.

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

(e) Centerline Reestablishment:

Upon the Government acceptance of the “RLS” centerline alignment verification, the “RLS” will field stake the centerline using wooden stakes and lath to properly identify the alignment. Stakes will be set every 25 feet (10 meter) interval along the horizontal alignment curvatures and every 50 feet (20 meter) interval along the horizontal alignment tangents.

(f) Grade Finishing Stakes:

The “RLS” will field stake all finish grades in accordance with the grades provided by the Government (i.e. P&P sheets and slope staking notes). All finish grades will be staked by conventional total station and/or optical level surveying equipment in accordance with Table 152-1. The “RLS” will use standard wood pegs and brushes to mark the subgrade and the top of aggregate. Stakes will be set at 25 foot (10 meter) intervals along the curved alignments and at 50 foot (20 meter) intervals along the horizontal alignment tangents.

For machine control grading, the Contractor and Government staff will meet to come up with a grading procedure that will meet the tolerances, super elevations, and profile required for the finish subgrade and surfacing and still maintain the proper base course and surfacing thickness and crown.

(g) Culverts:

The “RLS” will stake all culvert locations in accordance with the plans. Due to terrain changes caused by seasonal runoff, the culvert size and location may change. Prior to any pipe staking, the “RLS” will conduct the following:

- 1) Reference the topographic cross section survey and reestablish a ground profile from the culvert centerline extending 50 feet (20 meters) beyond the preliminary design inlet and outlet.
- 2) Field stake the catch points at the 50 foot (20 meter) station interval before and after the pipe location and at each inlet and outlet culvert pipe.
- 3) Set reference points to determine pipe skew, length and depth. The length is measured from the top of the pipe at the point where the fill slope intercepts the top of the pipe at both ends unless otherwise shown on the design plans or directed by the Government.
- 4) Create a standard profile and cross section along the culvert centerline skew beginning 50 feet (20 meters) from the inlet and ending 50 feet (20 meters) from the outlet of the culvert location. The “RLS” will label the culvert size, length, grade, embankment slopes, elevations, and degree of skew.
- 5) Create a detailed drawing illustrating the profile and cross sections for each culvert pipe location on 11” X 17” format conforming to section 152.05(g) of the FP-14 and submit to the Government for approval. The complete typical section details shall be reflected on the drawing. Submit the drawings with the as staked revised pipe listing.
- 6) Upon the Government’s acceptance, the “RLS” will provide all surveying stakes on the ground and all referencing data for the drainage, controls, and culvert inlet and outlet locations for the Contractor.

(g) Bridges: (When Required)

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

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

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

(h) Retaining Walls: (When Required)

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

(i) Borrow and Waste Sites:

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

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

(j) Permanent Monuments and Markers:

The “RLS” will set four (4) initial swing-tie reference points for each location of all permanent monuments. The “RLS” will stake out and mark each monument at the centerline point using GPS and/or conventional survey equipment using the coordinates provided by the Government. The “RLS” will measure and record (in bound survey books) each centerline point. All measurements

will be in accordance with Section 152, Table 152-1. The data will then be provided to the Government for future reference.

(I) Miscellaneous Survey Staking:

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

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

The “RLS” will consult with the Construction Manager on issues arising that require assistance beyond the Surveyor’s control.

Rev: 11/07/19

SECTION 153- CONTRACTOR QUALITY CONTROL

153.01 Description. This section 153 supplements Article 13 of Exhibit A.

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.

(a) Definition. Work includes, but is not limited to, materials, workmanship, and manufacture and fabrication of components.

(b) The Contractor shall maintain an adequate inspection system and perform such inspections as will ensure that the work performed under the contract conforms to contract requirements. The Contractor shall maintain complete inspection records and make them available to the Government. All work shall be conducted under the general direction of the Government and is subject to Government inspection and test at all places and at all reasonable times before acceptance to ensure strict compliance with the terms of the contract.

(c) Government inspections and tests are for the sole benefit of the Government and do not:

- (1) Relieve the Contractor of responsibility for providing adequate quality control measures;
- (2) Relieve the Contractor of responsibility for damage to or loss of the material before acceptance;
- (3) Constitute or imply acceptance; or
- (4) Affect the continuing rights of the Government after acceptance of the completed work under paragraph (i) below.

(d) The presence or absence of a Government inspector does not relieve the Contractor from any contract requirement, nor is the inspector authorized to change any term or condition of the specification without the Government's written authorization.

(e) The Contractor shall promptly furnish, at no increase in contract price, all facilities, labor, and material reasonably needed for performing such safe and convenient inspections and tests as may be required by the Government. The Government may charge to the Contractor any additional cost of inspection or test when work is not ready at the time specified by the Contractor for inspection or test, or when prior rejection makes re-inspection or retest necessary. The Government shall perform all inspections and tests in a manner that will not unnecessarily delay the work. Special, full size, and performance tests shall be performed as described in the contract.

(f) The Contractor shall, without charge, replace or correct work found by the Government not to conform to contract requirements, unless in the public interest the Government consents to accept the work with an appropriate adjustment in contract price. The Contractor shall promptly segregate and remove rejected material from the premises.

(g) If the Contractor does not promptly replace or correct rejected work, the Government may (1) by contract or otherwise, replace or correct the work and charge the cost to the Contractor or (2) terminate for default the Contractor's right to proceed.

(h) If, before acceptance of the entire work, the Government decides to examine already completed work by removing it or tearing it out, the Contractor, on request, shall promptly furnish all necessary facilities, labor, and material. If the work is found to be defective or nonconforming in any material respect due to the fault of the Contractor or its subcontractors, the Contractor shall defray the expenses of the examination and of satisfactory reconstruction. However, if the work is found to meet contract requirements, the Government shall make an equitable adjustment for the additional services involved in the examination and reconstruction, including, if completion of the work was thereby delayed, an extension of time.

(i) Unless otherwise specified in the contract, the Government shall accept, as promptly as practicable after completion and inspection, all work required by the contract or that portion of the work the Government determines can be accepted separately. Acceptance shall be final and conclusive except for latent defects, fraud, gross mistakes amounting to fraud, or the Government's rights under any warranty or guarantee.

Subsection 153.02 is superseded with the following:

153.02 **Qualifications.** Submit the following for approval with the Quality Control Plan:

- (a) **Quality control manager (QCM).** The Contractor shall furnish and designate a qualified Quality Control Manager (QCM). A QCM shall manage and carry out the Quality Control Plan (QCP). The QCM shall be a full time employee of the Contractor who will work with and take direction from the Construction Manager. 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 materials incorporated into the project. The QCM may perform inspection and testing on a periodic basis. The QCM is required to attend and participate in the preconstruction meetings, partnering meetings, and conduct the QC meetings for the work. The QCM shall perform the three phases of quality control, manage 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 any deficiencies in the work directly to the Construction Manager. Furthermore, it is the QCMs responsibility to address and respond to all “non-compliance orders” issued by the Government. The QCM shall also stop work for the purpose of unsafe conditions. The Contractor’s QCM shall not be the same individual as, nor be subordinate to, the Contractor project superintendent or the Contractor’s project manager.

- (1) Full-time, on-site QCM.** Provide a QCM with no responsibilities for performing testing and inspection, managing the project, or performing operations other than managing quality control and one of the following:
- (a) 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 (1) year experience as a QCM on similar size and type construction contracts which included the major trades that are part of this contract. This experience shall be reflected in the person's resume to be included in the QCP.
 - (b) A civil engineering technician with at least 8 years of progressive experience in highway/bridge construction which includes basic surveying knowledge (i.e. reading 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. Shall be currently certified by the National Institute for Certification in Engineering Technologies (NICET), Level III or higher in the field of highway materials or highway construction or an equivalent certification program. This experience shall be reflected in the person's resume to be included in the QCP.
- (2)** 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.
- (3)** 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 performs 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.

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 Construction Manager for review and approval if they are to perform and conduct any testing and/or

inspection work. Such testing and inspection work must be in the field for which the person is certified ONLY.

As a part of the QCP, provide a letter signed by an officer of the Contractor's firm appointing the QCM, "stand-in QCM", and Alternate QCM stating that he/she is responsible for managing and implementing the QC plan as described in this contract. Include in this letter the QCM, "stand-in QCM", and Alternate QCM authority to reject and direct the removal and replacement of non-conforming work and materials and to stop work for the purpose of unsafe conditions

- (b) **Inspector.** Inspectors who perform inspection work shall be materials lab 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 II (or equivalent certification program) or higher in the 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 Construction Manager. 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.

- (c) **Quality Testing Technician (Soils & Aggregates).** Materials lab 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)" or other state/industry certification program in the field of soils and aggregates.

- (d) **Quality Testing Technician (Hot Mix).** Materials lab 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 hot-mix asphalt (HMA)/warm-mix asphalt (WMA).

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

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

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

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

153.03 Quality Control Plan (QCP)

Enumerated item 153.03(a) is superseded with the following:

- (a) **Quality control personnel.** The Contractor shall provide for approval the names, authorities, resumes, 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. Conform to Subsection 153.02.

Add the following enumerated items 153.03(d) - (f):

- (d) **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 QCM and shall be consistent with the Submittal, transmittal, Review and Approval Form provided at the end of this supplemental specification. While use of this specific form and/or formats is not required, any other format used shall contain the same information. This form shall only be used for material certifications, shop drawings, mix designs, test/inspection reports, and resumes for QCP staff.

The Contractor shall prepare shop drawings, samples and certifications in accordance with Article 6.17 of Exhibit A – Standard General Conditions. Each submittal shall be accompanied with a Submittal, Transmittal, Review, and Approval Form 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.

- (e) **Manpower needs.** The QCM shall coordinate with the Construction Manager and Project Superintendent and agree on the level of inspection and testing manpower needed for each week's work or operation in order for the Construction Manager to measure and pay for the testing and inspection work under this section.

The Construction Manager 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 resumes of personnel to be added or replaced on the QC staff to the Construction Manager, **a minimum of seven (7) calendar days prior to a proposed change**. The resume and any proposed changes must be approved by the Construction Manager prior to implementation. Non-compliance with this requirement shall result in no payment for the hours claimed.

- (f) **Resumes.** A résumé of all QC staff shall be included in the QCP and must be 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 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 Construction Manager.

Paragraph three of subsection 153.03 is superseded by 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 all the QCPs are approved. 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 QCPs for major items shall require fourteen (14) calendar 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.

Paragraph one of subsection 153.04 is superseded with the following:

153.04 **Prosecution of Work.** 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 resulting action taken by the Quality Control Manager. Address each of the following subjects in each phase of construction for each item of work:

Add the following enumerated item 153.04(c)(4)

(4) 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 Construction Manager 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.

153.05 Sampling and Testing.

Add the following Enumerated items 153.05(a) – (d)

(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.** 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 CO 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 Construction 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 Construction Manager 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 Construction Manager. 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.

153.07 **Records and Control Charts.** Maintain records and control charts by pay item.

Add the following paragraphs to subsection 153.07

In accordance with the Government's Records Management requirements, the QCM and Contractor Superintendent shall be **responsible** for the measurement of quantities (including all verification of calculations, sketches, etc.) of all items of work in accordance

with **Subsection 109.01** and these measurements (quantities and calculations) kept in chronological order and in bound record books (bound books can be the steel strapped press board type or survey/lab grade) in a format agreed to by both the QCM and Construction Manager. **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 Construction Manager in writing. Copies of material measurements shall be furnished to the Construction Manager and Contractor for review, approval, and preparation of progress pay estimates. Any errors/mistakes found by the Construction Manager shall be corrected immediately by the QCM as outlined in this subsection 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 Government's Record Management policies, procedures, and requirements. These records must be kept in an 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 Construction Manager first and the Construction Manager 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.

Add the following Enumerated items 153.07(c)-(e)

- (c) **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 CO and/or Construction Manager at all times. **No progress payment(s) shall be**

considered for item 15301-0000 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 Construction Manager in hard copy or electronic AutoCAD 2015 format within three (3) calendar days after the Final Inspection date.

Upon submittal of the as-built plans to the Construction Manager, 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 _____

(d) Project Records for Audit. The QCM and Construction Manager shall jointly determine a format for project record keeping while being consistent with the Government's 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. 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 Construction Manager for final audit purposes within three (3) calendar days **after** the Final Inspection date or just prior to the final acceptance inspection if agreed to by the Construction Manager. The Construction Manager (in conjunction with the Government's audit staff) 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 Construction Manager and/or audit staff 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 audit staff during this review stage to insure compliance with audit requirements until the audit has been completed.

(e) The Government shall provide copies of the as-built plans and other construction records to the project owner for their records.

153.09 Measurement and Payment

Subsection 153.09 is superseded with the following:

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

Subsection 153.10 is added with the following:

153.10 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 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.

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 verification testing or inspection invalidates the Contractor testing or inspection work.

Payment will be made under the following or as shown in the bid schedule:

Pay Item	Pay Unit
15301-0000 Contractor Quality Control	Lump Sum

Navajo Division of Transportation
Submittal Transmittal, Review & Approval Form



rev. 10/19/17

Part 1 - For Contractor Transmittal	
Submittal No. (from Log of Submittals)	From (Contractor):
Routing (for NDOT use)	To: Navajo Division of Transportation P.O. Box 4620 Window Rock, AZ 86515 Attn: NDOT Project Manager
	Project No.:
	Contract No.:
	Project Location:
	Description of submittal:
Certification (This form shall not be used to forward substitutions or spec changes)	
(A) (Check One) <input type="checkbox"/> Approval <input type="checkbox"/> Record Only	It is hereby certified that the <input type="checkbox"/> document <input type="checkbox"/> material shown and marked in the enclosed submittal is that proposed to be incorporated into this contract is in compliance with the contract specifications:
(B) Person Designated By Contractor as having authority to sign certification	Certified by (B): Signature: _____ Date: _____
(For Reviewer Use) Part II - For Reviewer Use	
(C) Detailed review required on submittals for approval	From: NDOT Project Manager Navajo Division of Transportation Window Rock, AZ 86515
(D) Cursory review required on submittals for record	To: NDOT Principal Civil Engineer Navajo Division of Transportation Window Rock, AZ 86515
(a) Approval recommended	This submittal has been reviewed: <input type="checkbox"/> (C) <input type="checkbox"/> (D)
(b) Approval as noted recommended	The following recommendation is made: <input type="checkbox"/> (a) <input type="checkbox"/> (b) <input type="checkbox"/> (c) <input type="checkbox"/> (d)
(c) Disapproved/Resubmittal recommended	Signature: _____ Date: _____
(d) Submittal for record	
(For Approver Use) Part III - For NDOT Principal Civil Engineer Approval	
(a) Approved as submitted	From: NDOT Principal Civil Engineer Division of Transportation Window Rock, AZ 86515
(b) Approved as noted	To (Contractor):
(c) Disapproved/Resubmit	Enclosures are returned as noted: <input type="checkbox"/> (a) <input type="checkbox"/> (b) <input type="checkbox"/> (c) <input type="checkbox"/> (d)
(d) Submitted for record	cc: CO: _____ COTR: _____ QC Firm: _____
	Signature: _____ Date: _____
This form is only to submit material certs, shop drawings, testing & inspection report, QC personnel changes, flagger personnel changes, permits, QC Plan updates, TCP updates, Safety Plan changes, & Construction Schedule updates. All other submittals MUST be submitted by formal letter to the CO for action.	

rev: 11/07/19

SECTION 154--CONTRACTOR SAMPLING AND TESTING

154.01 **Description.** This section 154 supplements Article 13 of Exhibit A.

This subsection is replaced with the following:

This work consists of sampling, 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).

154.03 **Sampling.**

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

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

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.

Add the following paragraph:

Splitting: A riffle sample splitter shall be used that meets AASHTO T-248. The QCP shall include a detailed 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 Government's portion of split samples. Label Government 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 Construction Manager will take possession of the Government samples.

Allow the Construction Manager and/or Engineer the opportunity to witness all sampling and splitting.

This subsection 154.04 is superseded with the following:

154.04 **Testing.**

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 Construction Manager and/or Engineer 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 Construction Manager 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:

- (a) Description of the equipment calibrated or verified, including model number, serial number, or other acceptable identification.
- (b) Identification of the individual performing the calibration or verification.
- (c) Identification of the calibration or verification procedure used.
- (d) The calibration number for each calibration.

This subsection 154.05 is superseded with the following:

154.05 Records.

Record test results on approved acceptable forms containing all the information as required in 154.03. Furnish to the Construction Manager 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 the work under section 153 will be delayed or work suspended until test results are provided.**

Subsection 154.07 is superseded with the following:

154.07 Measurement. Do not measure Contractor sampling and testing for payment.

Subsection 154.08 is deleted in its entirety.

154.08 Payment. This subsection is replaced with the following:

This work is considered incidental obligations to the work under section 153 and no payment shall be made.

rev: 12/19/17

SECTION 155 -SCHEDULES FOR CONSTRUCTION CONTRACTS

155.03 **General.** This section 155 supplements Article 6.4 of Exhibit A.

The first sentence is replaced with the following:

Use the Bar Chart Method (BCM) as described below to develop the construction schedule for the total contracted work. Critical Path Method construction schedules are not allowed.

155.05 **(a) Bar Chart Method (BCM).**

Add the following subparagraph (4):

(4) Submit **3 copies** of the construction schedule at the preconstruction conference. Allow Government **14 days** for acceptance or rejection of the construction 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. Furnish a copy to the Construction Manager when necessary for review and approval/disapproval back to the Contractor. 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 Construction Manager issuing a stop work order.

Review and acceptance of any and all construction schedules is rendered as a service only and is not considered a guarantee of the work being completed within the time shown on the schedule and/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 time requirements in this contract.

Accelerated construction schedules, where the Contractor plans to complete all the work well within the contract time may be permissible, but cannot be used by the Contractor in any delay claim against the Government. The Construction Manager will enforce the contract time given in the contract and if the Contractor fails to complete all the work within that time, the Contractor shall be subject to liquidated damages under section 108.04. Any proposed accelerated schedule must adhere to the 40 hour work week and any request for work beyond the normal 40 hour work week is subject to Government review and approval.

Subsection 155.05(b) Critical Path Method (CPM) is deleted in its entirety.

155.06 Section 155.06(d) Critical Path Method updates is deleted in its entirety.

Subsection 155.09 Measurement is superseded with the following.

155.09 Measurement. Do not measure schedules for payment.

Subsection 155.10 Payment is superseded with the following.

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

rev: 12/19/17

SECTION 156 -PUBLIC TRAFFIC

156.01 **Description.** This work consists of controlling and protecting public traffic adjacent to and within the project. Follow Special Contract Requirement – Contractor Safety Program Requirements of Exhibit C. This section 156 supplements Article 6 of Exhibit A.

156.04 **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.

156.09 **Traffic Control Supervisor.**

Add after the first sentence of the first paragraph with the following:

Provide **current copies** of the certifications to the Construction Manager for review and approval.

rev: 12/19/17

SECTION 157. - SOIL EROSION CONTROL

157.01 Description.

This paragraph is supplemented with the following:

This work also 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. This Section 157 supplements Article 6.8 of Exhibit A and the Special Contract Requirements – Construction Requirements of Exhibit C.

157.04 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 Construction Manager a SWPPP in compliance with all 401, 402, 404, and NPDES permit applicable requirements (in full design details, hand sketches not allowed) and reflecting the requirements in the contract plans and specifications in such detail that the plan will adequately address the potential for erosion of soil and other pollutants into the waters of the USA, on the entire project, due to each phase of the Contractor's grading and drainage operations. The SWPPP must be prepared by a **qualified, registered professional engineer or a qualified storm water pollution prevention specialist** with the current qualifications certificates and registration incorporated into the SWPPP. The SWPPP shall show drawings of measures to control erosion, runoff, sediment, and pollutants by station and shall further include, but not limited to the following:

- (a) 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.
- (b) Measures to be taken in cut sections to preserve the back slopes and shoulder ditches from eroding into the waters of the USA. This includes placement of silt fencing spaced every 200 feet (60 meters) maximum (or as shown on the approved SWPPP) in the cut ditches. Place straw bales along the upper ridge lines of the cut slopes or use of wattles to redirect runoff away from cut slopes. **The use of straw bales in cut ditches is not permitted.** See also subsection 157.04(H).

- (c) Measures to be taken to protect all live streams, lakes, ponds, creeks, and wetlands from sediment infiltration in accordance with the contract plans and 401, 402/404 permit and other environmental requirements.
- (d) Details of sediment control structures (facilities) and locations where runoff is temporarily being diverted from its natural course;
 - (1) 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 157.05(b).
 - (2) The slopes of any settling basin shall be 1:3 or flatter. All settling basins shall have safety fence (4 feet [1.2 meters] in height snow fence or equivalent) enclosing them.
 - (3) Measures for maintaining all sediment control facilities at all times of the day and night.
- (e) 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.
- (f) Measures to install permanent erosion and sediment controls as soon as practical when sections of final grading and drainage work are complete.
- (g) 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) :
 - (1) protection of soil and aggregate stockpiles.
 - (2) protection of temporary cut and fill slopes
 - (3) protection for detour roads.
 - (4) temporary watering ponds.
 - (5) protection of top soils.
 - (6) protection of waters from pollutants
- (h) 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.
- (i) Details on storage of hazardous materials or waste.
- (j) Measures and procedures in addressing spills of hazardous materials.
- (k) Procedures on documenting inspections and maintenance of the SWPPP implementation.

- (I) Measures to prevent tracking of weeds and other invasive species onto the project site.

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 which will be deducted from the Contractor's final payments. 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 deduct the prorated progress payments for this work from the bid item in the contract until compliance is met.

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

Allow 14 calendar days for review and approval of the initial SWPPP. Any delays associated with the SWPPP implementation will be the responsibility of the Contractor and will not result in an adjustment of the period of performance or contract price.

157.05 Controls and Limitations on Work.

The first paragraph is superseded with the following:

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

Paragraph three is superseded with the following:

Construct erosion control and sediment control measures as follows:

- (a) Construct temporary erosion controls in incremental stages as construction proceeds in accordance with the **Construction Sequencing Plan (CSP)** and subsection 157.04.
- (b) Construct temporary slope drains, diversion channels, and earth berms to protect disturbed areas and slopes as reflected in the approved erosion control plan.
- (c) Apply permanent turf establishment (i.e. seeding & mulching) in accordance with section 625 on sections of completed slopes and other disturbed areas within 10 days of final grading.
- (d) Construct temporary outlet protection on all new and existing culverts and other drainage structures in accordance with the details shown in the contract plans and the approved SWPPP.
- (e) Construct permanent erosion controls (as shown in the contract plans and specifications) including waterway linings, slope treatments, gabions, riprap, and permanent sediment traps within 20 days of completion of the roadbed and/or drainage structures.
- (f) Apply permanent turf establishment and landscaping to finished slopes and ditches according to section 624 through 629 as required.
- (g) Construct and maintain erosion controls on and around all soil and aggregate stockpiles within the project limits to prevent soil loss into the waters of the USA.
- (h) During each day's grading operations, shape and roughen all embankment slopes to minimize and control erosion from storm runoff as follows:
 - 1. For cut and fill slopes run a bulldozer or other approved track equipment up and down the slope to create grouser tracks parallel to the roadway leaving small (approximately 2 inches [51 mm] 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 15703-1000 (as required) to cover all completed slopes (and other disturbed areas) that cannot be track walked under 157.05(h)(1) above. Crimp the mulch by running a crimping tiller up and down the slope or use a polymer tackifier 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, tackifier, and crimping shall be an incidental obligation of the Contractor under item 15703-1000. The mulch shall be applied at a rate of 4000 lbs/ac (4500 kg/ha). Apply tackifier at a rate of between 40-60 lbs/ac (44-67 kg/ha) or as recommended by the manufacturer.

157.14 Inspection and Reporting.

The first paragraph is replaced with the following:

The **qualified** Erosion Control Representative (ECR) who prepared the SWPPP and who must be assigned by the Contractor in writing (along with other qualified staff) those responsibilities 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 0.39 inch (10 mm) rainfall 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 Construction Manager and ECR on the project and provide a report of his findings to the Construction Manager within three (3) days after the inspection.

157.15 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.

157.17 Measurement.

Add the following:

It is the Contractor's responsibility to determine the amount of silt fence, straw bales and/or wattles or sand bags and other erosion control features that will be required for the project meeting the Section 402 of the Clean Water Act and details provide on the design plans. However, this does not preclude the Contractor from using any or all of the other measures shown in the design plan details and/or other measures required in the Contractor's SWPPP as a result of the construction sequencing. All those measures required by the approved Contractor's SWPPP shall be considered incidental obligations under the unit price bid for Temporary Erosion Control.

Temporary straw mulching shall be measured by the Hectare in place. Any secondary applications or touch ups as directed by the Construction Manager, due to issues with the first application, shall not be measured for payment but shall be incidental obligations under this item of work.

157.18 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 Construction Manager 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, Temporary	Lump Sum

rev: 7/07/21

SECTION 158 – WATERING FOR DUST CONTROL

158.05 Measurement. This section is replaced as follows:

This section 158 supplements Article 6.3 of Exhibit A and Section 2. Water of Exhibit C.

Do not measure water for project dust control.

158.06 Payment. This section is replaced as follows:

If no bid item is provided in the bid schedule for work under this section, then the work shall be considered incidental to other bid items using water in the bid schedule.

rev: 11/07/19

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. This section 203 supplements Article 6 of Exhibit A.

203.03 Salvaging Material.

The third paragraph is superseded with the following:

Stockpile salvageable material in a location as directed by the Construction Manager for project Owner's road maintenance office or landowner pickup unless otherwise specified in the design plans. Unsalvageable material shall be disposed of in accordance with section 203.05 of the Standard Specifications and as modified below.

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

203.04 Removing Material.

The first paragraph of 203.04(b) is superseded with the following:

Saw cut pavement (full depth), and structures when partial removal is required. All saw cut edges shall be protected until the new material is placed up against the exposed edges. If the saw cut edges are damaged (i.e. chipped, broken, crumbling, or loses its underlying support) shall, as an incidental obligation, be repaired 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 of 203.04(b):

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 Construction Manager. These structures shall be disposed of in accordance with section 203.05 (as applicable) and as directed in the design plans.

Any existing pavement shall be broken up to minus 6 inch (152 mm) 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 Construction Manager provided the milled material is grades to minus 3 inch (75 mm) 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).

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 or in areas that drain to the waters of the US. All waste from any bathroom facilities shall be hauled off to a sanitary facility off the project.

Add the following sub-section 203.05(e):

- (e) **Utilization.** Stone, masonry, asphalt pavement and/or concrete debris may be incorporated into embankment provided the material is broken into minus 6 inch (152 mm) [longest dimension] pieces and placed at least 3 feet (1 meter) below the subgrade surface and away from underground crossing utilities. Stone, masonry, asphalt pavement and/or concrete debris shall not be placed in embankment where piling is to be driven.

Stone may be incorporated into riprap provided the material meets the requirements of riprap rock, including hardness and gradation.

Removal of hazardous materials that were not identified in the design plans or specifications shall be disposed of in accordance with section 203.05(d). Removal of Contractor generated hazardous materials shall be considered an incidental obligation of the Contractor.

rev: 11/07/19

SECTION 204- EXCAVATION AND EMBANKMENT

204.01 Add the following to this section: This section 204 supplements Article 6 of Exhibit A.

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 40° F and rising (taking into account the wind chill factor) and the top 12 inches (305 mm) of ground and/or roadway embankment (including all backfill previously placed) temperature is a minimum of 40° F in the shade. The Construction Manager shall make the final determination (in writing) as to whether earthwork construction can proceed or not to the Contractor.

204.07 **Subexcavation:**

The first sentence is replaced with the following:

Excavate unsuitable material and replace with select borrow meeting the requirements of section 704.07 to a depth of 2 feet (610 mm) from existing subgrade or natural ground, and to the limits designated by the Construction Manager. 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:**

The first sentence, in the first paragraph, of subparagraph (b) is replaced with the following:

Within the roadway prism, place earth embankment in horizontal layers not exceeding 12 inches (610 mm) loose measurement.

Add the following to this section:

In no case shall any embankment lift material be placed upon frozen, muddy, or unstable natural ground or existing embankment. If existing subgrade or natural ground is wet and/or unstable due to conditions not attributable to the contractor's operations, it shall be plowed and/or scarified to a depth of 18 inches (457 mm) and aerated before compacting (in accordance with section 204.11) as directed by the Construction Manager. 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 Construction Manager 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:**

Subparagraph (b) and (c) are replaced with the following:

(b) Less than 80 percent retained on a ¼ inch (4.75-mm) sieve.

The material shall be classified according to AASHTO M 145. For material classified A-1 or A-2-4, the maximum density shall be determined according to AASHTO T 180, method D. For other material classification, the maximum density shall be determined according to AASHTO T 99, method C.

Adjust the moisture content of material classified A-1 to A-5 and material classified A-6 to A-7 to within ± 2 percent of the optimum moisture content.

Use compression-type or vibratory rollers. Compact each layer of material full width to at least 95% of the maximum density. Determine the in-place density and moisture content according to AASHTO T - 310 or other approved test procedures. When required, use AASHTO T - 224 to correct for coarse particles.

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(b):

- (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:
 - (a) Under the subgrade in cut sections.
 - (b) Under embankments in fill sections.

204.13 **Sloping, Shaping, and Finishing:**

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

Remove all material larger than 6 inches (152 mm) from the top 12 inches (305 mm) of finished roadbed and replace it as required with suitable material. The top surface of the finished subgrade shall not vary more than finished red top staking required in section 152.05(f)(2) in both transverse (full width of roadway) and longitudinal directions (every

50 foot [15 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:

The Government shall compute the final earthwork quantities which shall be based on the approved Contractor furnished final cross sections taken on the roadway subgrade, channels, borrow areas, and roadway prism cut and embankment sections in the final position to the staked limits only. Any over built roadway typical embankments and/or cuts (not authorized by the Construction Manager) shall be deducted from the final earthwork quantities per section 109.02(b). The Government will utilize the Contractor's final survey data to determine the final earthwork quantities and furnish the results to the Construction Manager and Contractor.

204.16 Measurement:

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

(1) Include the following volumes in embankment construction:

- (a) Roadway embankments that are in reasonable close conformance with the contract typical sections.
- (b) Material used to backfill sub-excavated areas, holes, pits, and other depressions as authorized.
- (c) Material used to restore obliterated roadbeds to original contours.
- (d) 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 only, 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 Construction Manager.

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

Table 204-1
Sampling and Testing Requirements

Material or Product	Type of Acceptance (Subsection)	Characteristic	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time
Top of Subgrade (204.11)	Measured and tested for conformance (106.04)	Compaction	AASHTO T 310 or other approved procedures	1 per 2500 yd ² (2000 m ²)	In-place	-	Before placing next layer
		Classification	AASHTO M 145	1 per 500 ft (152 meters)	Top 12 inches	Yes, when requested	Before placing next layer
		Sulfate Content ⁽²⁾	AASHTO T 290	1 per 500 ft (152 meters)	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: 11/07/19

SECTION 206- WATER

Add this section as follows:

206.01 Description. This section 206 supplements Article 6.3 of Exhibit A and Section #2 Water of Exhibit C.

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 locations on the project as identified and directed by the Construction Manager in accordance with section 158).

206.02 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 Construction Manager 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.

206.03 Measurement.

If no item is shown in the bid schedule for water development/, then no measurement will be made and all water shall be considered incidental to the bid items requiring it.

206.04 Payment.

When the bid schedule does not contain an item for water, then water shall be considered incidental to the earthwork, road reconditioning, and/or paving items shown and no additional payment shall be made.

rev: 11/07/19

SECTION 209- STRUCTURE EXCAVATION AND BACKFILL

209.01 **Description.** Add the following to this subsection: This section 209 supplements Article 6 of Exhibit A.

209.04 **General.**

The last sentence is superseded with the following:

Compact the foundation in accordance to Subsection 209.11.

209.08 **Bedding.**

Add the following:

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

209.09 **Backfill.**

Add the following to subparagraph 209.09(b):

Soil classification reports shall be submitted to the Construction Manager 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 CM	Source of material	Before using in work
		Compaction	AASHTO T 310 or other approved procedures	2 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 CM	Source of material	Before using in work
		Compaction	AASHTO T 310 or other approved procedures	2 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 CM	Source of material	Before using in work
		Compaction	AASHTO T 310 or other approved procedures	2 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 CM	Source of material	Before using in work

		Compaction	AASHTO T 310 or other approved procedures	2 per lift	In-place	Before placing next layer
		Resistivity ²	AASHTO T 288	1 per soil type	Source of material	Before using in work

(1) Minimum of 5 points per proctor.

(2) Only required for backfill of steel drainage structures called for in the bid schedule in accordance with section 704.

rev: 10/09/20

SECTION 213. - SUBGRADE STABILIZATION

Replace Section 213 with the following:

Description

213.01 This work shall consist of constructing a stabilized subgrade layer with either imported or in-place borrow. The subgrade layer is stabilized by incorporating cement (aggregate cement), fly ash, lime or liquid RoadBond EN-1. This section 213 supplements Article 6 of Exhibit A.

Materials

213.02 Conform to the following Subsections:

Unclassified Borrow	704.06
Fly Ash	725.04(a)
Portland cement	701.01(a)
Lime	725.03(b)
Water	725.01(c)
RoadBond EN-1 (or approved equal)	Manufacturer's certification

The Contractor shall submit a Material Certification of the RoadBond EN-1 to the Construction Manager for review and approval.

Construction Requirements

213.03 **General.** Prepare the subgrade according to Section 204. Prior to treatment of new or existing subgrade, materials shall be pulverized to prevent run-off and to facilitate even distribution of the diluted RoadBond EN-1 or approve equal. The liquid stabilizer shall be applied to the subgrade material at a plan depth per lift and rate of application as recommended by the Construction Manager, provided the equipment used in preparation, mixing and compaction adequately completes each phase of construction. Scarify the subgrade to a depth of **12-inches (304 mm)** on main roadway only.

RoadBond EN-1 shall be stored and handled in closed, weatherproof shipping containers.

213.04 **Equipment.** The machinery, tools and equipment necessary for proper execution of the work shall be on the project. The basic equipment required shall be a 1,000 gallon minimum water truck with a spray bar; a motorized grader, approved pulverizing/mixing machine, and approved rollers. All machinery, tools and equipment used shall be maintained in satisfactory working condition. The Contractor shall employ adequate

methods in performing the work and shall conduct operations in a satisfactory and workmanlike manner.

213.05 Weather Limitation. Place and work the EN-1 aggregate surface mixture on a dry, unfrozen surface when the air temperature in the shade is 40° F and rising; and when the temperature of the ground surface (in the shade) is 40° F. No work shall be permitted when weather conditions indicate that the air temperature is expected to fall below 32° F during the same working day.

213.06 Application. Diluted Road Bond EN-1 liquid soil stabilizer shall be sprayed only on the subgrade area where the mixing and compaction operations shall be completed during the same working day.

Unless otherwise approved by the Engineer, the RoadBond EN-1 or approve equal shall not be installed when soil moisture content measures in excess of optimum moisture content (+3%). If the soil moisture content is above the maximum accepted limit, the soil shall be re-mixed and air-dried (aerate) to reduce the moisture content to within tolerances.

The application and mixing of EN-1 with the soil shall be accomplished by the stabilizer/mix spray placing method. When diluting the EN-1 with water, the Contractor may use the method specified by the manufacturer which is as follows:

- a. When diluted 200:1 (200 parts water to 1 part EN-1 concentrate) with water, 1 litre of EN-1 concentrate treats 6 cubic meters of material.
- b. Application rate for every 6 inch (152 mm) depth is 30 m²/L. Adjust rate for the total depth of stabilization called for in the plans.

213.07 Mixing. Keep all traffic, except mixing equipment, off the spread material. The EN-1 and required water (dilution ratio 200:1 with concentrate EN-1) shall be thoroughly mixed in the water truck. For ease of mixing and safety considerations, the EN-1 concentrate shall be mixed in 5 gallon increments. The subgrade and the diluted EN-1 is mixed and blended until a homogeneous mixture is achieved with an approved pulverizing machine and to the EN-1 manufacturer's instructions plus to the satisfaction of the Construction Manager /QCM.

Mixing of the subgrade material shall begin when no more than one-half (1/2) of the required diluted stabilizer has been evenly placed on the section to be treated. When one pass with the approved mixer over the section is completed, the remaining diluted stabilizer shall be placed and the mixing shall continue until the treated material reaches a homogenous mixture and the proper moisture content is achieved.

213.08 Compacting and Finishing. Immediately after mixing, spread and compact the mixture to at least 95 percent of the maximum density. Determine the in-place density and moisture content according to AASHTO T 310 or other approved test procedures after final rolling/compaction but before the subgrade with RoadBond EN-1 begins to "set-up" and harden. At final compaction, the moisture content shall be at optimum or within optimum plus or minus one percent ($\pm 1\%$). Determine the optimum moisture content and maximum density according to AASHTO T-180 using water.

When tying into the previous day's work, provide a construction joint by remixing approximately 2 feet of the completed subgrade before processing additional sections. The material shall be reworked as necessary until it meets all requirements. The shape of the subgrade shall be maintained throughout the operation. Upon completion, the final surface shall be smooth and to the established lines and grades and in conformity with the typical section on the plans.

213.09 **Curing.** Do not allow traffic on the stabilized subgrade until final acceptance by the Construction Manager.

213.10 **Maintenance.** Maintain the stabilized subgrade to the correct line, grade, and cross-section. If the subgrade loses stability, density, or finish before placement of the next course, reprocess or re-compact the base as necessary to restore the strength of the damaged material to that specified in Subsection 213.08.

213.11 **Acceptance.** See **Table 213-3** for sampling and testing requirements.

The stabilized subgrade shall have a CBR value of 47 or higher when fully cured per the requirements of the geotechnical report.

Material for Road Bond EN-1 and water will be evaluated under Subsection 106.03.

Density and in-place depth measurements will be evaluated and accepted under Subsection 106.02 and 106.04. When the in-place depth measurement shows deficiency by more than 1/2-inch; the Contractor shall correct such areas in a manner satisfactory to the Construction Manager. This corrective work shall be at no cost to the Government.

Construction of reconditioning and subgrade stabilization work will be evaluated and accepted under Subsection 106.02 and 106.04.

Should the final surface and/or shoulders begin to show signs of heaving, swelling, movement, cracks or any other distress as a result of the Contractor not allowing the material to cure out in accordance with Subsection 213.09; the Contractor shall correct these area(s). This corrective work shall be at the Contractor's entire expense.

Measurement

213.12 Measure the treated subgrade stabilization by the square yard (square meter).

Liquid RoadBond EN-1 soil stabilizer shall not be measured for payment but shall be included in the cost of the treated subgrade.

Payment

213.13 The accepted quantities, measured as provided above, will be paid at the contract price per unit of measurement for the Section 213 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

Table 213-3

Sampling and Testing Requirements

Material or Product	Type of Acceptance (Subsection)	Characteristic	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time
Treated Subgrade	Measured and tested for conformance (106.04)	Moisture-density	AASHTO T 180 (1)	1 proctor curve for <u>each</u> station to station location	Processed and treated material	—	Before using in work
		Compaction	AASHTO T 310 or other approved method	5 per day	In-place	—	Before placing next layer
		Thickness	Contractor shall furnish a method	3 per day	Compacted base	—	Before placing next layer

(1) Minimum of 5 points per proctor.

rev: 7/07/21

SECTION 251 - RIP RAP

251.01 **Description.** Add the following to this first paragraph: This section 206 supplements Article 6.3 of Exhibit A.

251.03 **General.**

Add the following:

Steel stakes, for wire enclosed riprap, shall be fabricated to the required lengths from L 4" x 4" x 3/8" (L102 x 102 x 10 mm) angles as shown on the plans for minor drainage structures. All bridge embankment riprap shall also be anchored with the L 4" x 4" x 3/8" (L102 x 102 x 10 mm) angles.

Tie wire shall be No. 9 Ga (0.148 inch [3.8 mm]) 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 251.05 is replaced with the following:

251.05 **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 Construction Manager.

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 Construction Manager.

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

Subsection 251.07 is replaced with the following:

251.07 Acceptance.

See Table 251-1 for sampling and testing requirements herein.

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 251.08 is replaced with the following:

251.08 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 yard (cubic meter) in place.

Subsection 251.09 is replaced with the following:

251.09 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 is superseded with the following

**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	FLH T521 or other methods	1 per material type	Source of material	“	Before using in work
		Gradation	FLH T521 other methods	1 per 500 yd ³ (400 m 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.

rev: 11/07/19

SECTION 301--UNTREATED AGGREGATE COURSES

301.01 **Description.** Add the following: This section 301 supplements Article 6 of Exhibit A.

Subsection 301.03 is replaced with the following:

301.03 **General.**

Seven (7) calendar days before the placement of any aggregate base material, the Contractor shall notify the Construction Manager 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 Construction Manager, 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).

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 Construction Manager.

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

When the weather conditions (just prior to aggregate base placement) is projected to be foggy, showers, rain, snow, or the surface temperature drops below 40°F 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 2-inches (51 mm) of the lower lift.

301.06 Surface Tolerance.

The first paragraph is replaced with the following:

Grade finishing stakes are required during the placement process unless machine grading is allowed. Finish the final surface to within $\pm \frac{1}{2}$ " (10 mm) from staked line and grade elevations and plan thickness per Section 152 Table 152-1. The surface tolerance shall be checked by the string line method and depth stick. Defective areas or surface deviations that do not meet the above tolerance and crown shall be corrected. If spot dumping of base material is necessary to meet the staked line and grade elevation(s), this material shall be added to the existing base material by scarifying down 3-inches (76 mm) , 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 Construction Manager. 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, Construction Manager 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) and (b) is superseded with the following:

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

Materials, which fail to meet the aggregate gradation specification limits, shall be corrected by the Contractor by adding coarse and/or fine aggregate to bring the material into specification limits. The Contractor's Quality Control Testing Technician shall sample and test the corrected processed material. Repeat the corrective work until the aggregate base course gradation is within the upper and lower specification limits under Grading (D). Once the Contractor can show compliance with the contract requirements, then the material on the roadway, including any added aggregates shall be paid for at the full contract unit price. No separate payment for the added labor, overhead, traffic control, and equipment costs for adding coarse and/or fine aggregates shall be made but shall be an incidental obligation of the Contractor to bring the aggregate base course into contract aggregate gradation specification.

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

301.09 Measurement.

Add the following:

When the bid schedule calls for the aggregate base course to be measured by the ton, only the natural moisture in the material will be included for payment. Should the Contractor add water before weighing (pre-wet), then the weight of the added moisture shall be deducted by the Construction Manager 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 Construction Manager and QCM shall determine and use a method of measuring the waste; measure any aggregate base used on over-built roadway sections and make the appropriate adjustments in the quantities before payments are made.

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

301.10 Payment.

The first paragraph is superseded with the following:

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

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

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

Table 301-1
Sampling and Testing Requirements

Material or Product	Type of Acceptance Subsection)	Characteristic	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time
Aggregate source quality 703.05 (a) & (b) or 703.05 (a) & (c)	Measured and tested for conformance (106.04)	LA abrasion (coarse)	AASHTO T 96	1 per type & source of material	Source of material	Yes, when requested	Before using in work
		Sodium sulfate soundness loss (coarse & fine)	AASHTO T 104	“	“	“	“
		Durability index (coarse & fine)	AASHTO T 210	“	“	“	“
		Fractured faces	ASTM D 5821	1 per type & source of material	Source of material	Yes, when requested	Before using in work
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	1 per 400t	“		Before using in work
		Plasticity index ¹	AASHTO T 90	1 per 400t	“		Before using in work
		Moisture-density (max. density)	AASHTO T 180, method D ²	1 per week	“		Before using in work
		Compaction	AASHTO T 310, direct transmission	1 per 400t	In-place ³		Before placing next layer
		Fractured faces	ASTM D 5821	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 corrected areas and turnouts shall be required. These tests shall meet the requirements under Section 301.

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SECTION 411 - ASPHALT PRIME COAT

411.01 Description.

Add the following to this subsection: This section 411 supplements Article 6 of Exhibit A.

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. (Local Time).

This subsection is superseded with the following:

411.03 Equipment.

(a) **Asphalt Distributor.** Furnish an asphalt distributor as follows:

- (1) Capable of heating asphalt evenly.
- (2) Adjustable full circulating spray bar up to 15 foot (4.6 meter) 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 13/16" (20 mm) 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 0.02 gal/yd² (0.08 L/m²) 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 Construction Manager. 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 Construction Manager. 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 Construction Manager 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 Construction Manager (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 Construction Manager, 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 Construction Manager, the Contractor can place the prime coat. The Contractor shall place prime coat **only** at the Construction Manager 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 50°F (10°C) 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 15 mph (24 km/h) as determined by the Construction Manager. When the atmospheric and surface temperature is below 50°F (10°C) for a constant period of 30 minutes, no prime coat work shall be performed.

411.06 Asphalt Application.

The first paragraph and enumerated items (a)-(c) 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 407.09 at a rate of 0.10 to 0.30 gal/sy (0.45 to 2.25 liters/m²) for optimum penetration. The QCM and Construction Manager shall jointly determine the optimum application rate based upon test section(s). Unless otherwise shown on the design plans or directed by the Construction

Manager, 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 20mph (32 km/h).

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 Construction Manager 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 Construction Manager 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 5 lbs/sy (2.7 kg/m²) 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 Construction Manager. 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 Construction Manager. Blotter material shall only be permitted and applied **after** the QCM and Construction Manager have jointly determined the “sufficient time” for the initial cure period.

411.10 Measurement.

This subsection is superseded with the following:

Measure the prime coat asphalt by the ton (metric ton).

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 gallon (liter) as required under **Subsection 109.02 Measurement Terms and Definitions, (f) Gallon (Liter), FP-2014** 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.

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SECTION 552. - STRUCTURAL CONCRETE

552.01 **Description.** Add the following to this subsection: This section 552 supplements Article 6 of Exhibit A.

552.03 **Composition (Concrete Mix Design).**

Add the following to Paragraph two:

FWHA Form 1608 is provided at the end of this Supplemental Specification.

Add to subparagraph (s):

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 provided 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.**

Add the following to subparagraph 552.09(b)(4):

Care and curing of concrete cylinders for compressive strength testing shall conform to AASHTO T23.

552.11 **Handling and Placing Concrete.**

Add the following to subparagraph 552.11(a):

Concrete shall not be placed next to adjacent previous concrete placements until 24 hours has elapsed.

Add the following to subparagraph 552.11(b)(3):

When cast in place concrete bridge decks are specified, the Contractor shall develop and submit to the Construction Manager for review and approval by the Engineer, 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 Construction Manager.

552.13 Expansion and Contraction Joints.

Add the following subparagraph 552.13(f):

(f) Bridge Deck Expansion Joints. The Contractor shall submit to the Construction Manager for review approval by the Engineer 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 Construction 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.

Add the following to subparagraph 552.14(a):

The finishing machine, unless otherwise shown on the plans or approved in writing by the Construction Manager, 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 three (3) days.

When float finishing is provided by hand, the float finishing shall commence immediately after the finishing machine.

Add the following to the first paragraph of subparagraph 552.14(b):

Check all abutment cap, pier cap, back wall and wing wall top surfaces where elevations are given on the construction plans. Check the entire surface from given elevation to given elevation in all directions.

Add the following to subparagraph 552.14(c)(1):

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.

Add the following to subparagraph 552.14(d):

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 subparagraph:

(f) Abutment Caps and Pier Caps.

Finish the tops of abutment caps and pier caps to within 1/5 inches (5 mm) of the plan elevations. When tops of abutment caps and pier caps are to be bearing surfaces for prestressed box beams, provide straight edging in accordance with Section 552.14 (b), including supplemental specifications, and finish with a steel trowel to produce a smooth surface free of bleed water.

552.15 Curing Concrete.

Add the following to this subparagraph:

(a) Forms in-place method

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 Construction Manager.

552.17 Concrete Anchorage Devices.

Add the following:

The Contractor shall submit (to the Construction 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 renumbered-sections:

552.20 Sealing Existing Concrete Surface.

552.21 Acceptance.

552.22 Measurement

552.23 Payment.

552.20 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 Construction Manager 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.

552.21 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 Construction Manager	Before producing
Produced aggregate (fine & coarse)	Measured and tested for conformance (106.04)	Gradation	—	AASHTO T 27 & T11	1 per day	Flowing aggregate stream (bin, belt, discharge conveyor belt, or stockpile)	Yes, when requested	Before batching
		Fineness modulus	—	AASHTO T 27	1 per day	“	“	“
		Moisture test	—	AASHTO T 225	1 per day	“	“	“

Table 552-9

Sampling and Testing Requirements

Material or Product	Type of Acceptance (Subsection)	Characteristic	Category	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time
Concrete (552.09(b)(3))	Measured and tested for conformance (106.04)	Slump	--	AASHTO T 119	1 per load (2)	Point of discharge (1)	—	Upon completing tests
		Air content	--	AASHTO T 152 or AASHTO T 196	1 per load (2)	“	—	“
		Unit mass	--	AASHTO T 121	1 per load (2)	“	—	“
		Temperature	--	Thermometer	1 per load	“	—	“
		Yield	--	AASHTO T 121 & approved mix design	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 30 cy (25 m ³) but not less than 1 per day	Discharge stream at point of placing	Note 5	See Subsection 552.09(b)(4)

(1) Sample according to AASHTO T 141 except composite samples are not required.

(2) Cast at least 4 compressive strength test cylinders and carefully transport the cylinders to the job site curing facility.

(3) A single compressive strength test result is the average result from 2 cylinders cast from the same load and tested at 28 days.

(4) The yield of the concrete shall be determined by taking the total weight of the batch divided by the average unit weight of the first three (3) concrete truck loads. If the yield value is "under-yield" (less than 27 cubic feet [0.765 m³] 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 27 cubic feet (0.765 m³) or more.

(5) Deliver cylinders to designated laboratory for test.

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552 STRUCTURAL CONCRETE MIX DESIGN SUBMITTAL

Project: _____ Date: _____
 Contractor: _____ Concrete for _____ Concrete producer: _____
 Class of concrete: _____ Exposure Class: _____ Producer Mix designation: _____

METRIC ENGLISH

SPECIFIED CONCRETE COMPRESSIVE STRENGTH (@ 28 Days)..... (f'c) _____

Required average concrete compressive strength used for mixture proportion selection¹ (f'cr) _____

MIXTURE PROPORTIONS

Material	Specific Gravity	Mass	Absolute Tolerance Volume	Tolerance % (±)	Admixtures	Dosage
Cement (Portland or Blended)	_____	_____	_____	1	Air entraining	_____
Fly Ash (Class F or C)	_____	_____	_____	1	Type A (Water Reducer -WR)	_____
Water	1.0	_____	_____	1	Type B (Set Retarder - SR)	_____
Coarse aggregate (SSD)	_____	_____	_____	2	Type C (Set Accelerator - SA)	_____
Fine aggregate (SSD)	_____	_____	_____	2	Type D (WR & SR)	_____
Fibers	_____	_____	_____	3	Type E (WR & SA)	_____
Color Pigments	_____	_____	_____	3	Type F (High Range WR)	_____
Other _____	_____	_____	_____		Type G (High Range WR & SR)	_____
Total air _____					Hydration Stabilizer (B or D)	_____
Totals		0.0	0		Other _____	_____

FRESH CONCRETE PROPERTIES

Water/cementitious materials ratio (by mass)² _____ Theoretical unit mass: _____
 Measured unit mass (AASHTO T 121): _____ Measured air content (AASHTO T 152 or T 196): _____ %
 Concrete Temperature (AASHTO T 309): _____ Measured slump (AASHTO T 119): _____

HARDENED CONCRETE PROPERTIES

Average 28 day strength designated in specifications, _____ : _____ Average 7-day strength, _____ : _____
 If the concrete is subjected to elevated temperature curing, note the maximum curing temperature: _____
 Water-soluble chloride-ion (Cl) in hardened concrete by weight of cement: _____ %³

Signature _____ Print Name _____ Date _____

¹ Design in accordance with FP and specified ACI standards found in the contract.
² The ratio of the mass of water, exclusive only of that absorbed by the aggregate, to the combined mass of cementitious materials (i.e. cement, fly ash, silica fume and ground granulated blast furnace slag (GGBFS)).
³ Provide for reinforced and prestressed concrete when required in accordance with contract specifications.

552 STRUCTURAL CONCRETE MIX DESIGN SUBMITTAL (Continued)

CEMENT (AASHTO M 85 – TYPES I, IA, II, IIA, III, IIIA or V OR AASHTO M 240 – TYPES I(PM), IP, P, I(SM) or IS)⁴

Certification attached : Yes No _____

FLY ASH (AASHTO M 295 – CLASS C or F)⁴

Certification attached : Yes No _____

SILICA FUME (AASHTO M 307 – RAW, SLURRIED OR DENSIFIED)⁴

Certification attached : Yes No _____

GROUND GRANULATED BLAST FURNACE SLAG (GGBFS) (AASHTO M 302 – GRADE 100 or 120)⁴

Certification attached : Yes No _____

WATER (AASHTO M 157 AND AASHTO T 26)

Reclaimed water or water of questionable quality will be used? Yes No

Will water be added at the discharge site? Yes No If yes, how much? _____

CHEMICAL, COLOR PIGMENTS, FIBERS AND OTHER ADMIXTURES⁴

Admixture Type⁵	Point Admixture Added⁶	Certification Attached
Air entraining (AASHTO M 154)	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No
Type A – Water reducing	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No
Type B – Set Retarding (AASHTO M 194)	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No
Type C – Set Accelerating (AASHTO M 194)	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No
Type D – Water Reducing and Set Retarding (AASHTO M 194)	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No
Type E – Water Reducing and Set Accelerating (AASHTO M 194)	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No
Type F – High Range Water Reducing (AASHTO M 194)	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No
Type G – High Range Water Reducing and Set Retarding (AASHTO M 194)	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No
Type B – Hydration Stabilizing (AASHTO M 194) _____ hours	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No
Type D – Hydration Stabilizing (AASHTO M 194) _____ hours	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No
Color Pigments (ASTM C 979)	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No
Fibers (ASTM C 1116) Type: _____	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No
Other _____	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No

⁴ Certifications documentation is required prior to approval of a mix design.

⁵ Admixtures must be compatible and of the same type as those used in the mixtures from which strength data were obtained. Do not use chloride accelerators. Do not use set accelerating admixtures with Class P (Prestressed Concrete).

⁶ Each point where admixture is added must be noted (i.e. concrete batching facilities, project site, etc) as well as the corresponding dosage.

552 STRUCTURAL CONCRETE MIX DESIGN SUBMITTAL (Continued)

FINE AGGREGATE (FP SECTION 703.01 AND AASHTO M 6, CLASS B)

Name and phone number of fine aggregate supplier/producer: _____

Location of material source: _____

Material type: Manufactured sand _____ % Natural sand _____ % Blend _____ %

Sieve Analysis: (AASHTO T 27)			Property	Specification	Specification	Value
Sieve Size	% Passing (P)	Cumulative % Retained (CPR)	(1) Clay lumps and friable particles	AASHTO T 112	3.0% max	
	(Specification)					
	(100)		(2) Coal and lignite	AASHTO T 113	1.0% max	
	(95-100)		(3) Minus	AASHTO T 11	3.0% max	
	(80-100)		(4) Organic Impurities	AASHTO T 21	Color not darker than standard	<input type="checkbox"/> Yes <input type="checkbox"/> No
	(50-85)		(5) Sodium sulfate soundness, 5 cycles	AASHTO T 104	10% max	
	(25-60)		(6) Sand Equivalent. Alt method 2, referee method	AASHTO T 176	75% min	
	(10-30)		(7) Bulk specific gravity	AASHTO T 84	--	
	(2-10)		(8) Bulk SSD specific gravity	AASHTO T 84	--	
Fineness modulus (Σ CPR/100)			(9) Absorption	AASHTO T 84	--	
			(10) Alkali Silica Reactivity ⁷	Select/Enter		

COARSE AGGREGATE (FP SECTION 703.02 AND AASHTO M 80, CLASS A)

Name and phone number of coarse aggregate supplier/producer: _____

Grading number (AASHTO M43) Select _____ Location of material source: _____ Material type: _____

Sieve Analysis: (AASHTO T 27)			Property	Specification	Specification	Value
Sieve Size	Percent Passing	AASHTO M 43 Specification ^d	(1) Clay lumps and friable particles	AASHTO T 112	2.0% max	
			(2) Deleterious chert	AASHTO T 113	3.0% max	
			(3) Σ (1) + (2)	AASHTO T 112 & T 113	3.0% max	
			(4) Minus	AASHTO T 11	1.0 or 1.5% max	
			(5) Coal and lignite	AASHTO T 113	0.5% max	
			(6) LA abrasion Grading	AASHTO T 96	40% max	
			(7) Sodium sulfate soundness, 5 cycles	AASHTO T 104	12% max	
			(8) Adherent coating	ASTM D 5711	1.0% max	
			(9) Dry rodded unit mass	AASHTO T 19	--	
			(10) Mass of insoluble residue (bridge decks or surface courses)	ASTM D 3042	25% min	
			(11) Bulk specific gravity	AASHTO T 85	--	
			(12) Bulk SSD specific gravity	AASHTO T 85	--	
			(13) Absorption	AASHTO T 85	--	
			(14) Alkali Silica Reactivity ⁷	Select/Enter		

⁷ See specific contract requirements for ASR test methods and limits.

552 STRUCTURAL CONCRETE MIX DESIGN (Continued)
DATA FOR COMPUTING THE STANDARD DEVIATION

Cylinder Size: or

1 Test Record⁸ or 2 Test Records

Consecutive Strength Test	Date Batched ⁸	Compressive Strength - at 28 days			
		Cylinder 1	Cylinder 2	Cylinder 3	Strength Test X_i^9
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

$$\bar{X} = \frac{\sum X_i}{n} = \frac{\text{[]}}{n} = \text{[]}$$

For One Test Record:

$$s_s = \sqrt{\frac{\sum (X_i - \bar{X})^2}{(n - 1)}} = \text{[]}$$

For Two Test Records:

$$\bar{s}_s = \sqrt{\frac{(n_1 - 1)(s_{s1})^2 + (n_2 - 1)(s_{s2})^2}{(n_1 + n_2 - 2)}} = \text{[]}$$

Where:

\bar{X} = average of n strength test results n = number of consecutive strength tests s_{s1}, s_{s2} = sample standard deviations (1 & 2)
 X_i = individual strength tests s_s = sample standard deviation, n_1, n_2 = number of tests in each test record
 \bar{s}_s = statistical average standard deviation where two test records are used to estimate the sample standard deviation.

⁸ The test records must be no more than 12 months old and consist of at least 30 consecutive tests or two groups of consecutive tests totaling at least 30 tests. If 15 to 29 consecutive test records are provided, they must represent a single record of consecutive tests that span a period of not less than 45 calendar days. All test records must also represent materials, quality control procedures and conditions similar to those expected and changes in materials and proportions within the test records must not have been more restricted than those for proposed work. In addition, they must represent concrete produced to meet a specified strength or strengths within of f'c.

⁹ A strength test shall be the average of at least two 6 by 12-inch cylinders or at least three 4 by 8-inch cylinders made from the same sample of concrete and tested at 28 days or at test age designated in the specification for f'c.

552 STRUCTURAL CONCRETE MIX DESIGN SUBMITTAL (Continued)
DETERMINATION OF REQUIRED AVERAGE COMPRESSIVE STRENGTH

REQUIRED AVERAGE COMPRESSIVE STRENGTH (f_{cr})¹⁰

Case 1 – Required Average Compressive Strength with Test Records of 30 or More Consecutive Tests:

Table 1	
Specified Compressive Strength, f_c ,	Required Average Compressive Strength* f_{cr} ,
$f_c \leq$	Use the larger value computed from the following equations: $f_{cr} = f_c + 1.34ks_s$ (1) $f_{cr} = f_c + 2.33ks_s -$ (2)
$f_c >$	Use the larger value computed from the following equations: $f_{cr} = f_c + 1.34ks_s$ (1) $f_{cr} = 0.90f_c + 2.33ks_s$ (3)

* k is equal to 1.00 if the total number of tests are greater than or equal to 30

$f_{cr} =$ $\bar{X} =$ $\bar{X} \geq f_{cr}$ Yes No

Case 2 – Required Average Compressive Strength with Test Records of 15 to 29 Consecutive Tests:

Table 2 (k-modification Factor for use in Table 1)	
Number of Tests*	k-modification Factor for Sample Standard Deviation ⁺
15	1.16
20	1.08
25	1.03
30 or more	1.00

*Interpolate for intermediate numbers of tests
⁺k-modified sample standard deviation used to determine required average strength f_{cr} in Table 1

$f_{cr} =$ $\bar{X} =$ $\bar{X} \geq f_{cr}$ Yes No

Case 3 – Required Average Compressive Strength with Test Records less than 15 Consecutive Tests:

Table 3	
	Required Average Compressive Strength
$f_c <$	$f_{cr} = f_c +$
$\leq f_c \leq$	$f_{cr} = f_c +$
$f_c >$	$f_{cr} = 1.10f_c +$

$f_{cr} =$ $\bar{X} =$ $\bar{X} \geq f_{cr}$ Yes No

¹⁰ Required concrete proportions may be established by interpolation between strengths and proportions of two or more test records. When an acceptable record of field test results is not available, concrete proportions shall be established from trial mixtures or based upon experience or information, if approved by the Materials Engineer. Submit documentation of test records, trial mixtures or information.

SECTION 553. - PRESTRESSED CONCRETE

553.01 **Description.** Add the following to this subsection: This section 553 supplements Article 6 of Exhibit A.

553.08 **Pretensioned Members.**

Add the following:

Prepare and submit shop drawings (to the Construction Manager) for the required pretensioned members for review and approval according to subsection 104.03 and Article 6.17 of Exhibit A.

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 suitable for use as reference during inspection, transportation and erection.

553.09 **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.

553.12 Acceptance.

Add the following:

The Contractor shall submit for approval material certifications in accordance with Section 106 and Article 6.17 of Exhibit A for all materials incorporated into fabricated precast prestressed members and for the bearing devices. The material certifications shall certify conformance of material to specified requirements of this contract.

rev: 12/19/17

SECTION 554 - REINFORCING STEEL

554.01 **Description.** Add the following to this subsection: This section 554 supplements Article 6 of Exhibit A.

554.08 **Placing and Fastening:**

Delete the first paragraph and substitute the following:

Reinforcing bars shall be supported on metal (Class 1 or Class 2, Type B) supports for concrete placements against forms or false work. Support reinforcing bars on concrete (mortar) block supports only for concrete placements against compacted soil.

554.09 **Splices:**

Add the following:

Splices added for the convenience of the Contractor (i.e. splices not shown on the plans) shall be requested in writing by the Contractor and be approved in writing by the Engineer 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 paragraph and substitute the following:

Welding of splices shall not be permitted.

rev: 12/19/17

SECTION 556. - BRIDGE RAILING

556.01 **Description.** Add the following to this subsection: This section 556 supplements Article 6 of Exhibit A.

556.03 **General.**

Add the following:

The Contractor shall submit shop drawings (to the Construction Manager) for review and approval fabricated bridge railing or parts thereof. The shop drawings shall conform to Subsection 104.03 and Article 6.17 of Exhibit A. 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 Article 6.17 of Exhibit A 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.

rev: 12/19/17

SECTION 562 - TEMPORARY WORKS

562.01 **Description.** Add the following to this subsection: This section 562 supplements Article 6 of Exhibit A.

562.02 **Material:**

Add the following:

When permanent steel (stay in place) deck forms are permitted by the Contract, all material and elements of the permanent steel deck form units shall be fabricated from steel conforming to ASTM A 653M (A653) Grades 275 (40) or 340 (50). Coating shall be a minimum of Class Z500 (G165). Thickness and grade of form sheets and form supports shall be designated on the shop drawings as such, and shall be submitted for review and approval of the Construction Manager. In no case shall thickness be less than 22 gauge (0.85 mm) and 16 gauge (1.61 mm) for sheets and form supports, respectively.

562.03 **Design Requirements:**

Delete the last sentence in this Section and add the following:

Use permanent steel (stay in place) deck forms only when permitted by the Contract. Permanent steel forms shall not be used in decks where longitudinal deck slab construction joints are located between stringers.

Permanent steel forms shall be designed to support superimposed dead loads of the forming system, reinforcement, plastic concrete, and a live load of 50 psf (2.4 kPa). Unit working stresses shall not exceed $0.725 f_y$ (72.5%) of the specified minimum yield strength of the material furnished or 36 ksi (248 MPa), whichever is less.

Maximum deflections under the weight of the plastic concrete, reinforcement, and form system, shall not exceed $1/240$ of the form span, or $1/2$ inch (13 mm), whichever is less. In no case shall the loading used to compute the deflection be less than 120 psf (5.8 kPa). The form span for design and deflection shall be the clear distance between the flanges of the supporting beams or girders minus 2 inches (50 mm), measured parallel to the form flutes.

The increase in dead load due to the use of permanent steel deck forms shall be limited to 15 lbs./ft² (0.7 kPa). If this limit is exceeded, the Contractor shall show that the effects of the additional load on the bridge will not be detrimental, or shall strengthen the structure as will be necessary to accommodate the extra load, at the Contractors expense.

Physical design properties of the forming system shall be computed in accordance with requirements of the American Iron and Steel Institute Specification for the Design of Cold-Formed Steel Structural Members, latest published edition. The Contractor shall design the permanent steel deck forms so that the deck slab laterally supports the beam or girder top flanges in compression, except where shear connectors are provided.

562.06 Construction:

Add the following:

When permanent steel (stay in place) deck forms are permitted by the Contract, install forms according to fabrication and erection drawings that have been approved for the specific project by the Construction Manager.

Form sheets shall not be permitted to rest directly on the top of the stringer, diaphragms or floor beam flanges. Sheets shall be securely fastened to form supports and shall have a minimum bearing width parallel to the beam or girder of 1 inch (25 mm) at each end. Form supports shall be placed in direct contact with the flange of beams or girders. All attachments shall be made by welds, bolts, clips or other approved method. Welding directly to steel girder or beam flanges shall not be permitted. Other methods of attachment for steel girders or beams shall be used. Welding to steel clips embedded into precast concrete girders or beams is permitted.

Clean, wire brush, and paint with 2 coats of zinc dust zinc-oxide primer (FSS TT-P-641 Type II, no color added) any permanently exposed form metal where the galvanized coating has been damaged. Minor heat discoloration, as determined by the Construction Manager, in areas of welds need not be touched up.

All bottom reinforcement shall have a minimum cover of 1 inch (25 mm) except in cases where reinforcing bars are not parallel to form corrugations, bars in the bottom layer of the main reinforcement shall be approximately centered over the valleys of the forms when necessary to achieve the required concrete cover. The distance from the top of the slab to the bottom layer of main slab reinforcement shall not be less than the originally designed dimension shown in the contract.

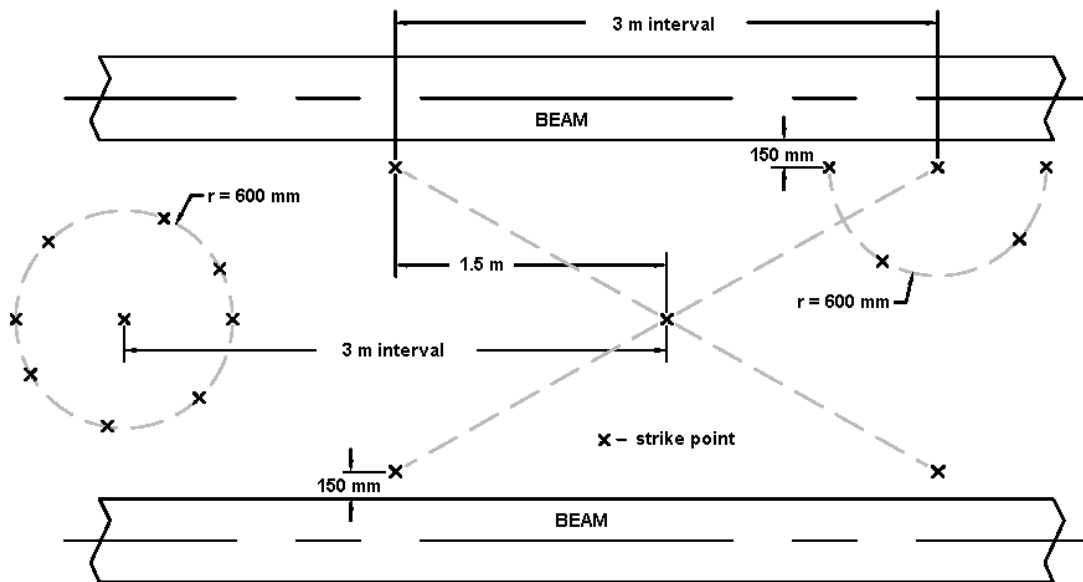
Locate transverse construction joints in slabs, when approved or allowed, in line with the bottom of a flute. Field drill ¼ inch (6 mm) diameter weep holes at not less than 12 inches (300 mm) on center along the line of the transverse construction joint.

562.07 Maintenance and Inspection:

Add the following:

When permanent steel (stay in place) deck forms are permitted by the Contract, proper vibration of the concrete shall be provided to avoid honeycombs and voids, especially at construction joints, expansion joints, and valleys and ends of form sheets. If during the placement of the deck concrete there is evidence provided by the Construction Manager to question the consolidation of the concrete, the procedure outlined below shall apply. The Contractor shall furnish suitable facilities to provide safe access to the work for the purpose of inspection. A minimum of two days after the deck concrete has been placed one or more from the following inspection procedures may be followed:

- (a) The forms shall be tested for soundness of the concrete and bonding of the forms to the concrete by striking the forms a sharp blow with a geologist hammer as detailed below and as instructed by the Construction Manager. The geologist hammer shall be furnished by the Contractor.
- (b) As a minimum, the forms shall be struck at 10 feet (3 meters) intervals parallel to and 6 inches (152 mm) from the edge of the beam or girder flanges and at 10 feet (3 meters) intervals along the centerline of each bay between the beams or girders in an X pattern with those along the beams or girders. Forms shall also be struck at random points on a semicircle or circle of about a 2 foot (610 mm) radius from the above points. See figure below for minimum strike pattern. Forms shall be struck in other places as directed by the Construction Manager to define suspicious or defective areas.



- (c) The cost of the inspection including providing access shall be measured and paid under bid Item 15301-0020, Contractor Quality Control. If areas of voids, honey combs, water pockets, or other defects are discovered, they shall be replaced or repaired to the satisfaction of the Construction Manager at the expense of the Contractor.

rev: 11/07/19

SECTION 564. - BEARING DEVICES

564.01 **Description.** Add the following to this subsection: This section 564 supplements Article 6 of Exhibit A.

564.11 **Measurement.**

This paragraph is superseded with the following:

Any bearing devices, including elastomeric bearing pads, specified in the design plans shall not be measured for payment but shall be considered incidental to the Steel Girder members and/or Prestressed Concrete Structural Members furnished under the appropriate bid items.

rev: 12/19/17

SECTION 570: PREFORMED CLOSED CELL FOAM BRIDGE JOINT SEALS

Add the following Section 570. This section 570 supplements Article 6 of Exhibit A.

Description

570.01 This Work consists of providing and installing preformed closed cell foam bridge joint seal systems in accordance with the manufacture’s recommendations and as approved by the Construction Manager.

Material

570.02 **General.** Select sealing material and the nosing element from the NMDOT’s Approved Products List for Preformed Closed Cell Foam Bridge Joints. Provide sealing, bonding and nosing elements from the same manufacturer.

Closed Cell Foam Joint Seal. Use a joint seal that:

- a. is an impermeable, closed-cell, cross-linked, ethylene vinyl acetate, low density polyethylene copolymer, nitrogen blown foam material,
- b. has a minimum working range of 60% compression and 30% tension,
- c. meets or exceeds the requirements listed in **Table 570.02-1** below,
- d. has 1/8 inch (3.175 mm) deep by 1/8 inch (3.175 mm) wide grooves spaced at ¼ inch to ½ inch (6.35 to 12.7 mm) along both sides of the joint and running the entire length of the joint to increase bond surface area,
- e. is resistant to degradation due to ultraviolet radiation,
- f. is self - extinguishing,
- g. is resistant to abrasion, oxidation, oils, gasoline, road salts and other petroleum products that may be spilled on the surface.

Bonder Use a bonder that is a two (2) component, 100% solid epoxy adhesive designed to bond joint material to steel, cured concrete or wood, and is approved by the manufacturer.

**Table 570.02-1
Minimum Requirements for Preformed Joint Sealer**

Property	Requirement
Service Range	-94 – 160 degrees F
Tensile Strength	110 psi min
Elongation at break	235% min
Tear Resistance (ASTM D-624)	20 lb/inch min
Water Absorption (ASTM 3573, Suffix L)	0.035 psf max
Density	2.6 – 4.0 psf

Weathering (ASTM G-154)	3000 Hrs No Chalking, Flaking, Blistering, Checking, and Cracking
Recovery (ASTM D-545)	97% min
Compression / Deflection	
@25% Deflection of original width	10 psi
@ 59% Deflection of original width	20 psi

Construction Requirements

570.03 General. The Contractor shall install the Joint sealant with a width 25% greater than the width of the joint opening at a near neutral condition 72°F (22°C) according to the manufacturer’s recommendations. The Contractor shall use the heat welding method for all directional changes in the joint sealant. The Contractor shall allow new concrete to cure for seven (7) Days, before installing the sealing material. The Contractor shall have all joint systems preapproved by the Construction Manager prior to placement. The Contractor shall use a Performance and Installation Enhancement (P.I.E.) bevel cut when the joint opening is greater than three (3) inches (76 mm).

Technical Representative. The Contractor shall have the manufacturer’s technical representative on site for the initial joint installation to advise the construction personnel and ensure a satisfactory joint installation. If the Contractor can show proof of satisfactory past experience installing at least ten (10) joints or 300 feet (91 meters) of joints of same Material, whichever is larger, the Construction Manager may waive this requirement. The Contractor shall provide a complete set of written joint installation instructions to the Construction Manager at least 14 days before installing the joints.

Existing or New Concrete To Concrete Joints. The Contractor shall clean surfaces of joint and remove debris. Sand blasting and/or mechanical abrasion of substrate may be required to remove debris. The Contractor shall prepare all surfaces in accordance with the manufacturer’s instructions. The Contractor shall place bonder and joint material against new or sound existing concrete.

Measurement and Payment

570.04 When the bid schedule does not provide a bid item for bridge joint seals and/or the work described in this section, then the work shall be considered incidental to completion of the bridge items and no measurement shall be made.

Rev: 11/11/19

SECTION 601 - MINOR CONCRETE STRUCTURES

601.01 **Description.** Add the following to this subsection: This section 601 supplements Article 6 of Exhibit A.

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 the following subparagraph 601.03(j):

- (j) Unit weight of concrete.

The compressive strength in Table 601-1 is superseded with the following:

Minimum 28-day compressive strength, 3,000 psi (20.7 MPa).

601.07 **Acceptance.**

The first and second paragraphs are superseded with the following:

See Table 601-2 for sampling and testing requirements.

The material for minor concrete structures including reinforcing steel and structural steel for minor structures will be evaluated under subsections 106.02 and 106.03.

Portland cement concrete shall be evaluated for acceptance based on the concrete mixture's slump, air content, unit mass, and temperature per subsection 106.04.

Concrete compressive strength shall be evaluated under Subsection 106.05 for 30 cubic yards (25 m³) or more concrete placed and subsection 106.04 for less than 30 cubic yards (25 m³) 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 the following to subsection 601.08:

Reinforcing steel will not be measured for payment but shall be considered incidental to the work described in this section.

Table 601-2 is added:

**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 30 cy (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.

rev: 11/07/19

SECTION 602 - CULVERTS AND DRAINS

602.01 Description:

This section is superseded with the following: This section 602 supplements Article 6 of Exhibit A.

This work consists of constructing culverts, drains, and cast-in-placed and precast Concrete Box Culverts.

602.02 Material:

Add the following:

Concrete for cast-in-placed and precast box culverts552

Corrugated Steel (metal) Pipe culverts.....707.02

602.03 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. Polymer coated pipe shall meet the requirements of ASTM A553 & A742.

Precast Concrete Box Culvert sections shall be fabricated in a plant certified by the National Precast Concrete Association (NCPA) or equivalent certification. Precast concrete box culvert sections shall be fabricated with mechanical connections at the top and bottom of the vertical sides.

Preparation for Placement of Precast Concrete Box Culvert Sections. In addition to the requirements of Section 209 of the FP-14 and the construction plan details, perform the following:

- (a) The bedding under the box culvert must be able to support the full load of the installed box culvert, its contents, and the loading above the box culvert.
- (b) Control surface and subsurface water and moisture so dry conditions are present during excavation and site preparation. Dewatering shall be performed to produce dry conditions during foundation construction and section joining operations.

- (c) Compaction of foundation and bedding shall be provided in accordance with Sections 209.07 & 209.08 respectively.
- (d) The minimum thickness of bedding material conforming to Section 704.02 of the FP-14 shall be 6 inches (152 mm).
- (e) Final grading of bedding material prior to placement of precast concrete box culvert sections shall be performed by screed board or other approved methods.

Lift holes and mechanical connections holes cast into sections of precast concrete box culverts shall be filled with an approved non-shrink grout and allowed to cure prior to backfilling.

A representative of the precast concrete box culvert manufacturer shall be present during the all phases of installation of the precast concrete box culvert sections.

602.04 Add the following subparagraph 602.04(c):

- (c) Joints for Precast Concrete Box Culvert Sections; Joints for precast sections shall be tongue and groove type. Joint surfaces shall be protected from mud, silt gravel or other foreign material prior to and during the joining procedures. Joints shall be sealed with preformed flexible joint seals conforming to ASTM C 990. Use the joint seal manufacturer's recommended primer for applicable conditions during joining of the precast sections. Remove and replace joint seals that become disturbed, displaced or contaminated. Sides and top surfaces of precast concrete box culvert section joints shall be further sealed with an exterior joint wrap conforming to ASTM C 990.

Precast concrete box culvert sections shall be joined by a method recommended by the manufacturer that does not cause any damage to the sections. Do not drive or ram sections by hand or machinery.

602.08 **Acceptance:**

The first and second 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.

Installation for culverts, drains, and cast-in-placed Concrete Box Culverts will be evaluated under Subsections 106.02 and 106.04.

602.09 Measurement

Add the following:

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.

rev: 11/07/19

SECTION 617. - GUARDRAIL

617.01 **Description.** Add the following to this subsection: This section 617 supplements Article 6 of Exhibit A.

617.06 **Terminal Sections.**

Add the following:

Use the MSKT-TL3-8 breakaway terminals, as shown on the design plans and bid schedule only for guardrail installations meeting the 2016 MASH standards with an eligibility letter from the FHWA. The SKT-350 or ET-2000 Plus is no longer ALLOWED.

617.12 **Measurement.**

The second paragraph is superseded with the following:

Guardrail for roadway shoulders (including asphaltic curbing where applicable) shall be measured by the linear foot 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, MSKT-TL3-8, SGR04b, Type PDE02.

Add the following:

Approach guardrail for bridges (including asphaltic curbing where applicable) shall be measured by the linear foot (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.

rev: 11/07/19

SECTION 619 - FENCES, GATES, AND CATTLE GUARDS

619.01 **Description.** Add the following to this subsection: This section 619 supplements Article 6 of Exhibit A.

619.03 **Fences and Gates:**

Add the following:

Remove existing fence at the locations specified on the design plans, or as designated by the Construction Manager, and replace with new fence material. Salvaged fence material, as determined by the Construction Manager, shall be cleaned (including the removal of any concrete from posts) and stockpile/deliver to a storage site as may be called for in the design plans unless otherwise directed by the Construction Manager.

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. 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 loss 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 20 feet (6 meters) of the fence line, ground the fence at each end or gate post or at intervals not to exceed 800 feet (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 Construction Manager 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.

Add the following to subparagraph 619.07(d):

The top coat of paint for all cattle guards shall be Highway Safety Yellow or equivalent, as approved by the Construction Manager.

619.09 Acceptance.

Add the following:

Temporary fence construction for livestock control shall be considered incidental to completion of the project and no separate payment shall be made.

619.10 Measurement.

Add the following:

When the bid schedule does not provide a bid item for temporary fence and/or the work described in this section, then the work shall be considered incidental to completion of the project and no measurement shall be made.

Installation of ground wires under 619.04 shall be included in the unit price bid for the fencing items shown in the bid schedule.

rev: 11/07/19

SECTION 625 -TURF ESTABLISHMENT

625.01 **Description.** Add the following to this subsection: This section 625 supplements Article 6 of Exhibit A.

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 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.

No seeding and/or mulching can take place when the wind speed is 5 mph or greater.

625.04 **Preparing Seedbed.**

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

Remove all weeds, sticks, high stone concentration areas with stones of 3 inches (75 mm) in size or larger, and other debris detrimental to application, growth, or maintenance of the turf. If there is a substantial amount of rock/stone larger than 3 inches (75 mm) 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 Construction Manager, are too rocky to till without drastically disturbing the completed roadway sections, the Construction Manager 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 kgs per Ha, uniformly applied to the surfaces to be seeded and tilled into a minimum of 3 inches (75 mm) of the surface.

Subsection 625.07 is superseded with the following:

625.07 Seeding. Apply seed by the following methods

- (a) Dry Method. Apply the seed with approved power driven seeders, drills, or other mechanical equipment. Hand-operated seeding methods are satisfactory on areas inaccessible to mechanical equipment; or

After the tillage is completed and accepted by the Construction Manager, seed shall be planted by drill, except that on slopes too steep or rocky, seed may be broadcast provided that it is covered by dragging, hand raking or other approved methods. The type of seed and pure live seed rate is as follows:

Species	Cultivar	Lbs (PLS)/acre
Total		xx.xx (lbs/acre)

Seed shall be planted approximately ¼ inch (6 mm) deep, with a maximum depth of ½ inch (13 mm). The distance between the drilled furrows shall not be more than 8 inches (203 mm). If the furrow openers on the drill exceed 8 inches (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 second sentence of the first paragraph is superseded with the following:

Apply straw mulch at a rate of 4000 lbs/acre (4500kg/Ha) after seeding by the following methods:

625.10 Acceptance. Add the following:

The Construction Manager will evaluate the placement of seeding and mulching and if during the life of the project the Construction Manager finds that the placement was not installed correctly, those areas shall be reseeded and mulched at the entire expense of the Contractor. The Construction Manager will withhold payments for this bid item until the corrections are done to the Construction Manager satisfaction.

625.11 Method of Measurement.

The first sentence is superseded with the following:

Measure the seeding by the acre (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.

Bid Item	Description	Units
62510-1000	Seeding, dry method	Hectare

rev: 11-07-19

SECTION 633. - PERMANENT TRAFFIC CONTROL

633.01 **Description.** Add the following to this subsection: This section 633 supplements Article 6 of Exhibit A.

The second paragraph is superseded with the following:

All permanent traffic control signs shall be fabricated out of aluminum only. Permanent sign post type shall be in accordance with the construction plans and bid schedule.

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 Construction Manager. The Contractor shall notify the Construction Manager 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.

633.05 **Legends, and Borders**

Add the following:

The letters, numerals, arrows, symbols, borders, etc. shall be applied in accordance with subsection 633.05 (b) Type L-3 (Direct Applied Characters) having a Class 2 adhesive, and as shown on the design plans.

Table 633-1

Table 2A-3. Minimum Maintained Retroreflectivity Levels¹

Sign Color	Sheeting Type (ASTM D4956-04)				Additional Criteria
	Beaded Sheeting		Prismatic Sheeting		
	I	II	III	III, IV, VI, VII, VIII, IX, X	
White on Green	W*; G ≥ 7	W*; G ≥ 15	W*; G ≥ 25	W ≥ 250; G ≥ 25	Overhead
	W*; G ≥ 7	W ≥ 120; G ≥ 15			Post-mounted
Black on Yellow or Black on Orange	Y*; O*	Y ≥ 50; O ≥ 50			2
	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/m ² measured at an observation angle of 0.2° and an entrance angle of -4.0°.					
² For text and fine symbol signs measuring at least 48 inches and for all sizes of bold symbol signs					
³ For text and fine symbol signs measuring less than 48 inches					
⁴ Minimum sign contrast ratio ≥ 3:1 (white retroreflectivity ÷ red retroreflectivity)					
* This sheeting type shall not be used for this color for this application.					
Bold Symbol Signs					
<ul style="list-style-type: none"> • W1-1,2 – Turn and Curve • W1-3,4 – Reverse Turn and Curve • W1-5 – Winding Road • W1-6,7 – Large Arrow • W1-8 – Chevron • W1-10 – Intersection in Curve • W1-11 – Hairpin Curve • W1-15 – 270 Degree Loop • W2-1 – Cross Road • W2-2,3 – Side Road • W2-4,5 – T and Y Intersection • W2-6 – Circular Intersection • W2-7,8 – Double Side Roads 		<ul style="list-style-type: none"> • W3-1 – Stop Ahead • W3-2 – Yield Ahead • W3-3 – Signal Ahead • W4-1 – Merge • W4-2 – Lane Ends • W4-3 – Added Lane • W4-5 – Entering Roadway Merge • W4-6 – Entering Roadway Added Lane • W6-1,2 – Divided Highway Begins and Ends • W6-3 – Two-Way Traffic • W10-1,2,3,4,11,12 – Grade Crossing Advance Warning 		<ul style="list-style-type: none"> • W11-2 – Pedestrian Crossing • W11-3,4,16-22 – Large Animals • W11-5 – Farm Equipment • W11-6 – Snowmobile Crossing • W11-7 – Equestrian Crossing • W11-8 – Fire Station • W11-10 – Truck Crossing • W12-1 – Double Arrow • W16-5P,6P,7P – Pointing Arrow Plaques • W20-7 – Flagger • W21-1 – Worker 	
Fine Symbol Signs (symbol signs not listed as bold symbol signs)					
Special Cases					
<ul style="list-style-type: none"> • W3-1 – Stop Ahead: Red retroreflectivity ≥ 7 • W3-2 – Yield Ahead: Red retroreflectivity ≥ 7; White retroreflectivity ≥ 35 • W3-3 – Signal Ahead: Red retroreflectivity ≥ 7; Green retroreflectivity ≥ 7 • W3-5 – Speed Reduction: White retroreflectivity ≥ 50 • For non-diamond shaped signs, such as W14-3 (No Passing Zone), W4-4P (Cross Traffic Does Not Stop), or W13-1P,2,3,6,7 (Speed Advisory Plaques), use the largest sign dimension to determine the proper minimum retroreflectivity level. 					

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 when specified in the bid schedule. 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 unless shown otherwise in the bid schedule and construction plans.

Type III object markers shall be mounted on 2.98 kg/m (min) steel “U” or Square tube posts with the marker fabricated out of aluminum per construction plans and bid schedule.

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 complete sign system, respectively.

The milepost markers shall be measured as a complete sign system.

rev: 12/19/17

SECTION 634. - PERMANENT PAVEMENT MARKINGS

634.01 **Description.** Add the following to this subsection: This section 634 supplements Article 6 of Exhibit A.

Add the following:

The Contractor shall provide temporary traffic control in accordance with Section 635.- Temporary Traffic Control and the approved traffic control plan.

Add:

Type L – Ultra High Build Waterborne Acrylic traffic paint with glass beads

634.02 **Material.**

Add:

Ultra High Build Waterborne Acrylic traffic paint 718.18

634.03 **General.**

The second paragraph is superseded with the following:

At least **7 days** before applying pavement markings, furnish a written copy of the markings manufacturer's recommendations for use. A field demonstration shall be conducted **on each route to be striped 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, and quality. The field demonstration shall be 100 feet (30 meters) for the white traffic markings with glass beads and 200 feet (60 meters) for the yellow markings with glass beads meeting the contract requirements under this section. Cease demonstration after placement of pavement markings until the demonstration is evaluated and accepted.

The field demonstration is accepted if the manufacturer's recommendations are verified and the application rates, mil thickness of the traffic markings, glass beads, and stripe location and width are within the contract specification limits.

Repeat the field demonstration until an acceptable demonstration is produced. See Subsection 106.01 for the disposal 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:

- (a) 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(g) Letter of Transfer for Markings**;
- (b) **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.
- (c) **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 Construction Manager present at the time of actual use. Drums with broken seals shall not be accepted.
- (d) **Equipment.** The traffic markings and beads shall be placed on the pavement by a spray type, self-propelled pavement marking machine, except that temporary striping during construction may be placed with other equipment designed for application of markings, or beads.

The machine shall be capable of applying clear-cut 4 inch lines. The machine shall be equipped with an air-operated glass bead drop-in dispenser controlled by the spray gun mechanism. The machine shall be equipped with a mechanical device capable of placing a broken reflectorized centerline stripe having a 10 foot (3 meter) length and 30 foot (9 meter) gap between stripes.

The dispenser shall be capable of placing the glass spheres immediately into the markings line as it is applied to the pavement in such a manner as to provide satisfactory marking and delineation.

The pavement marking equipment for longitudinal lines shall have a system capable of spraying both yellow and white pavement markings. The marking vehicle shall be of sufficient size and stability with an adequate power supply to produce lines of uniform dimension, with square edges, and proper mix of the two component parts to ensure proper application. The equipment shall be capable of placing markings and applying glass beads at both the left and right sides of the truck, and placing two lines simultaneously with either line in a solid or intermittent pattern in either yellow or white. All sprayers shall be in full view of the operators at all times. The equipment shall be provided with a metering device to register the accumulated installed pavement marking for each sprayer, each day. The Contractor shall provide a certificate from the American Traffic Safety Services

Association (A.T.S.S.A.) or equivalent documentation to the Construction Manager to verify that the driver and operator of the application truck are fully trained and experienced in the application of the dual component marking system being applied. The equipment shall include pressure gauges for each proportioning pump which is visible to the operator at all times, so that any fluctuations can be detected immediately during the marking operations.

The longitudinal line application vehicle shall be equipped with high pressure air spray jets in front of the striping material and glass bead applicators to remove loose matter on the pavement surface where the marking material is to be applied.

The vehicle shall be equipped with two separate glass bead supply tanks and two glass bead dispensers per each marking material sprayer. The Contractor shall provide documentation to the Construction Manager that bead dispensers are specifically manufactured for the glass bead application rates contained herein. When Type 4 or 5 gradations of glass beads are applied, the vehicle shall be equipped with high-capacity cone-shaped pressure or gravity dispensers. All bead dispenser outlets shall have enclosed wind shrouds or equivalent devices to direct the glass beads as they are applied. The shroud may include an opening which faces the operator so that the flow rate of the glass beads can be monitored. The bottom of the shroud shall be mounted within three to four inches (76 to 102 mm) off the pavement surface and be configured to allow for even distribution of glass beads on the applied markings.

Equipment for the application of transverse lines, longitudinal lines less than 200 feet (60 meters) in length, legends and symbols shall be either a hand wand attachment to a longitudinal line application vehicle, or a separate motorized trailer application system. Application equipment for short or transverse lines, legends, and symbols can be suitable for only one color.

- (e) **Measurement Devices.** A method of measuring the actual volume of markings and beads in the tanks shall be provided on the tanks either by strap measurement or other externally approved gaging methods.

The Contractor shall provide current certification of calibration of all marking equipment at least 7 calendar days before the field demonstration for review and approval.

- (f) **Volume Control Requirements.** The volume of markings and glass beads in place shall be measured by the quantity per mile method or by the use of markings and beads gauges.

The Contractor shall strap the tanks before beginning striping operations and again after ½ mile (1 km) has been striped or if the striping machine is equipped with air atomized spray units (not airless) and markings and bead gauges, the volume may be determined by said gauges.

The volume shall be measured again at the beginning and end of each day. This information shall be given to the Construction Manager.

- (g) **Letter of Transfer for Markings.** The markings and bead tanks of the striper must be **empty** before filling for the beginning of the striping operations for the project, unless a *Letter of Transfer for Markings* has been obtained.

Paint markings or glass beads left over in the striping truck tank can be transferred from one NDOT/BIA project by providing a *Letter of Transfer for Markings* which shall include the following information:

- (1) The quantity left in the tanks;
 - (2) The NDOT/BIA project it is coming from, including the termini and project name;
 - (3) The project it is going to;
 - (4) The date;
 - (5) The batch number the markings came from;
 - (6) The seal numbers of the markings in the tank;
 - (7) The previous Construction Manager's signature.
- (h) **Tolerance Requirements for Placing Markings & Beads.** The finished lines shall be smooth, aesthetically acceptable and free from undue waviness. The finished marking material shall be rectangular in shape with well-defined edges.
- (i) **Repair & Replacement of Unacceptable or Damaged Striping.** If the markings are not adhering to the existing pavement, the Contractor shall **REMOVE** the striping (under an approved method) and shall **RESTRIPE** the existing pavement. All damage to the pavement markings because of the Contractor's negligence or failure to maintain traffic control shall be **repaired at no additional cost to the Government.**

The fifth and sixth paragraph is superseded with the following:

Remove loose particles, dirt, tar, grease, old or temporary striping, and other deleterious material from the surface to be marked by water, sand, nut shell blasting, or other approved methods without damaging the pavement surface just prior to placement of new pavement markings. Where markings are placed on rigid pavement, less than 1 year old, the Contractor shall clean the pavement of all residue and curing compounds. Apply markings to a clean, dry surface according to the MUTCD. Damaged pavement surfaces, as a result of the cleaning process, shall be repaired to its original condition using an approved method and at the entire expense of the Contractor.

Add the following:

Permanent pavement markings **shall begin no earlier than 7 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 Construction Manager in writing. If the Contractor fails to comply with the above, the Construction Manager will withhold all pending and future progress payments under this contract until the Contractor complies with this requirement.

634.05 Waterborne Traffic Paint (Type B & Type C).

This section is superseded with the following:

634.05 Waterborne Traffic Paint (Type B and Type C) and Ultra High Build Waterborne Acrylic (Type L).

Apply Type B and Type C paint when the pavement and air temperatures are above 50°F (10°C). Spray paint at 15 mils (0.38 mm) minimum wet film thickness before glass beads are applied.

- (a) **Type B.** Immediately apply type 1 glass beads on the paint at a minimum rate of 6 pounds per gallon (0.7 kg per liter) of paint.
- (b) **Type C.** Immediately apply type 3 glass beads on the paint at a minimum rate of 12 pounds per gallon (1.4 kg per liter) of paint.

Apply Type L paint when the pavement and air temperatures are above 50°F (10°C). Spray paint at 25 mils (0.635 mm) minimum wet film thickness before glass beads are applied.

- (b) **Type L.** Immediately apply Type 3 glass beads on the paint at a minimum rate of 7 pounds per gallon of paint. When two coats of Type L paint are required only the top coat shall receive the required glass beads.

634.07 Thermoplastic Markings (Type H and I).

Add the following:

When thermoplastic paint is applied to concrete surfaces, the concrete surface shall be primed and sealed in accordance with the paint manufactures recommendations prior to application of the paint. A copy of the primer and sealer material specifications shall be provided to the Construction Manager for review and approval prior to application.

634.12 Measurement.

This subsection is superseded with the following:

Measure the Section 634 items listed in the bid schedule according to Subsection 109.02 and the following.

When pavement markings are measured by the linear foot (meter), measure the length of line applied along the centerline of each line applied regardless of color. Measure broken or dotted pavement lines from end to end of the line including gaps. Measure solid pavement lines from end to end of each continuous line. Measure line quantities based on

a 4-inch (102 mm) wide line. For line widths greater than 4 inch (102 mm), adjust the measured length of line in the ratio of the required width to 4 inches (102 mm).

634.13 Payment.

Add:

The Government will not pay for striping until the Construction Manager receives all the required certification and documentation. If the Contractor has not installed the specified quantity/amount of glass beads and paint, the Construction Manager will observe the striping at night to determine whether re-striping is necessary, at no additional cost to the Government. The Government will require the Contractor to re-stripe the roadway if the Construction Manager determines that the striping is not adhering to the pavement or the glass beads are not adhering to the paint.

The following work and items will be considered as included in the payment for the main items and will not be measured or paid for separately:

- (a) Removal of temporary marking tape or paint;
- (b) Repair or replacement of damaged striping due to Contractor's negligence or operations;
- (c) Furnishing, mixing, and applying adhesive; and
- (d) Surface preparation.

rev: 11/07/19

SECTION 635 - TEMPORARY TRAFFIC CONTROL

635.04 General.

Add the following:

The construction plans will show Temporary Traffic Control Details of general requirements. After award of contract, the Contractor shall be required to develop a project specific Traffic Control Plan (TCP) in accordance with the details shown in the design plans and the *Manual on Uniform Traffic Control Devices for Streets and Highways*, latest edition, and amendments.

The Contractor shall submit (at least 21 calendar days prior to the **Notice to Proceed**) his TCP in full professionally developed details using the Government's traffic control details as a guide, to the Construction Manager and Engineer for review. Neat hand drawn sketches will be accepted for emergency addendums to the original TCP ONLY with written justification. The Contractor assumes full responsibility and expense for errors and/or omissions in the TCP regardless of whether the plan was reviewed by the Government before the errors and/or omissions were discovered or after. The Contractor is also responsible for insuring a TCP that meets the contract requirements is in hand before construction begins. Failure to insure the TCP meets the contract requirements may result in a "Stop Work" order to be filed with the Contractor.

The Engineer will review and return the TCP within 14 calendar days, after receipt of the new TCP from the Contractor, stating either "Accepted", "Accepted as Noted", or "Resubmit".

Once the Construction Manager has notified the Contractor that the TCP has been accepted for use on the project, it will be the responsibility of the Contractor to implement and maintain the TCP prior to construction so as to accommodate traffic safely. The TCP shall be in force at all times during construction and at all locations where construction equipment is being used within the roadway prism. This shall include the area 1500 feet (457 meters) preceding the beginning of project and 1500 feet (457 meters) beyond the end of project.

Should the Contractor elect to perform other minor shoulder or corrective work outside the zone of the accepted TCP, or at various other work zones, it will be the Contractor's responsibility to provide additional traffic control (warning signs, barrels, barricades, flaggers, etc.) to direct traffic in a safe manner in accordance with the MUTCD manual as directed by the Construction Manager. Any additional traffic control required shall be considered incidental to completion of project and no additional payment shall be made.

The latest edition of the MUTCD manual is incorporated by reference into the Contractor's TCP. In cases of inconsistencies between the Contractor's TCP and what the MUTCD manual requires, the provisions of the MUTCD shall govern.

The Government's Safety Manager and/or Engineer will make periodic inspections of the project and report to the Construction Manager regarding the Contractor's compliance with his TCP.

Failure by the Contractor to comply with his TCP, or perform work which could be dangerous to the safety of the traveling public (without proper traffic control devices) shall be just cause for the Construction Manager to issue a "Stop Order" per section 108.05 for immediate corrective action to be taken.

When the Contractor has taken satisfactory corrective action, a written order to resume work shall be issued as required. The Contractor shall not be entitled to any extension of contract time; any claims for damages or to any excess cost by reason of the stop order and/or suspension orders. Failure of the Contracting officer to order suspension of any or all work in progress shall not relieve the Contractor of his responsibilities or obligations defined herein.

Flagging, signing, and any other traffic control required on haul routes from material pits and all detour roads shall not be measured for payment, but shall be considered a subsidiary obligation of the Contractor where the cost shall be included in the appropriate bid items.

Add the following subparagraphs:

- (j) Any existing side routes (i.e. roads outside the project r/w) used as detours for road and drainage structure construction shall be properly signed and maintained (in a safe manner) at least twice per week in accordance with sections 212, 107 and 156. These existing side routes proposed for use as detour roads shall not be modified without the Contractor first obtaining proper permits to do so. The use and maintenance of these side routes shall be included in the unit price bid for item 63501-0000.
- (k) Any proposed detour roads (within the project ROW) as shown on the Contractor's TCP shall be constructed, maintained, and signed in accordance with sections 212, 107.01, and 156. It shall be the responsibility of the contractor to adequately design and install any and all drainage structures for such detour roads that cross existing washes including obtaining all necessary permits. All proposed temporary drainage structures shall be shown on the contractor's TCP and ECP. The construction, maintenance, and subsequent removal and restoration work of proposed detour roads shall be included in the unit price bid for item 63501-0000.

635.07 Construction Signs:

Add the following:

All sign sheeting shall have a reflectivity in accordance with section 718.01 as modified in these supplemental specifications.

635.09 Flaggers.

Add the following:

Copies of the Flaggers certifications must be current (in accordance with the certification program criteria) and provided to the Construction Manager for review and acceptance at the time the NTP is given. Flaggers that have **current** certification from other federally approved flagger certification programs (i.e. states, counties, and tribal safety programs) may be allowed provided the Contractor submits documentation that the program is recognized and approved by either the FHWA, TRB, or ATSSA. Flaggers without training certificates are **not allowed**.

635.23 Acceptance.

Add the following:

Any damaged traffic control devices used on the project that is considered ineffective for its intended use (by the Construction Manager) shall be replaced at the Contractor's expense. Should the Contractor neglect or refuse to replace any traffic control device that the Construction Manager considers damaged to the extent that it no longer serves as an effective traffic control device (through a “noncompliance work order”), then the Construction Manager shall issue a “stop work order” in accordance with section 108.05 until the Contractor has complied with the Construction Manager directive.

rev: 11/07/19

Add the following Section 638:

SECTION 638- SELECTIVE/NON-SELECTIVE HERBICIDE APPLICATION

638.01 Description. Add the following to this subsection: This section 638 supplements Article 6 of Exhibit A.

This work consists of furnishing all labor, equipment, herbicide, materials, and all incidentals necessary for placing approved herbicide on the subgrade to kill noxious weeds prior to any earthwork activities and after the subgrade is completed in compliance with these specifications and the requirements and locations shown in the construction plans per section 109.02m.

The Contractor shall store, handle, mix and apply all herbicide(s) as specifically stipulated in the manufacture's label and in compliance with Federal, State and local laws and regulations.

638.02 Materials.

The herbicide shall conform to the following:

Non-selective pre-emergents herbicide shall be Glyphosate (Roundup®) containing the active ingredient metsulfuron (Escort® or Ally®) or an approved equal and may include 2,4-D applied at 1 - 2 lbs per acre to young plants in the spring prior to the bloom stage. The herbicide shall be approved for invasive weeds including Camelthorn (Alhagipseudalhari) and Halogeton (Halogetonglomeratus).

638.03 Construction Requirements:

(a) Mixing, Loading, and storage.

The Contractor shall keep all livestock, pets, and persons away from the herbicide including the mixing thereof and loading. The Contractor shall ensure that the mixing area is well ventilated. In no case shall any herbicides be mixed or loaded at night and all instructions and warning labels shall be followed during the mixing and loading to protect against spills, splash, and wind-drift. Protective equipment and clothing shall be worn during the mixing, loading and applying of mix.

The herbicide manufacture, through the Contractor, must provide appropriate specimen and manufacturer's labels, Material Safety Data Sheets, technical bulletins, toxicity ratings, and EPA registration numbers to the Construction Manager, a minimum of 14 days before using the chemical(s).

All herbicides shall be stored in strict accordance with applicable manufacturer's labels and requirements as well as other federal, state and tribal rules and regulations.

(b) Certification of Applicators.

The Contractor shall ensure that all herbicide(s) are applied by an appropriately licensed and certified applicator. The Applicator shall be licensed as a Commercial Applicator, in the State in which the herbicide will be applied, and certified in the application of the specified herbicide. Verification of licensing, training and testing in the safe and effective handling and use of herbicide(s) shall be submitted to the Construction Manager, 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 identified in the plans during construction just prior to Halogeton blooming usually in the spring. The herbicide applicator shall work with the Construction Manager in determining the exact time to initiate the application of the herbicide. The Construction Manager 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-14, 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 Government, upon recommendation from the Construction Manager, 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 12 mph. unless otherwise approved by the manufacturer.

The application width shall be as stated in the design plans and as directed by the Construction Manager. 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:

- (1) Date of application;
- (2) Types and application rates of herbicides applied;
- (3) Time of day of application;
- (4) Air temperature;
- (5) Wind velocity;
- (6) Area covered;
- (7) Location(s) of areas treated; and
- (8) Equipment calibration information.

The Construction Manager shall verify the QCM's daily herbicide record.

Copies of all daily herbicide records shall be submitted to the Construction Manager within 7 days of the application.

(e) Samples and Inspections.

Tank samples shall be furnished to the Construction Manager upon request. The Federal Government reserves the right to inspect the tank mix and/or equipment at any point before, during or after the application process.

638.04 Acceptance.

Application of herbicides shall be evaluated in accordance with section 106.02 through 106.04.

638.05 Measurement.

Measure the herbicide by the lump sum in place.

SECTION 703. - AGGREGATE

703.01 Fine Aggregate for Concrete. Add the following to this subsection: This section 703 supplements Article 6 of Exhibit A.

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 Surfacing Gradation Special

Sieve Size	Percent by Mass Passing Designated Sieve, AASHTO T 27 & T11
37.5mm (1½-inch)	100
25mm (1-inch)	80 – 100
19mm (¾-inch)	65 – 80
9.5mm (3/8-inch)	40 – 65
4.75mm (No.4)	30 – 50
425µm (No.40)	8 – 30
75µm (No.200)	2 – 12

Table 703-3 Footnote () is superseded with the following:

() Allowable deviations do not apply.

703.07 Asphalt Concrete Pavement Aggregate.

(b) Adherent coating on the aggregate,

(1) FLH T 512 0.5% maximum

(c) Percent Carbonates in Aggregate,

(1) Arizona Test Method ARIZ 238a Maximum 75%

The last paragraph is deleted.

703.09 Chip Seal Aggregate.

Add:

- (g) Density, AASHTO T 19M Min. 70 lbs./ft³ (1100 kg/m³)
- (h) 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 Double Course Chip Seal Aggregate Gradation**

Sieve Size	Percent by Mass Designated Sieve (AASHTO T 27 & T 11)
	Grading Designation – Special
1/2-inch (12.5 mm)	100 (1)
3/8-inch (9.5 mm)	70-85 (3)
1/4-inch (6.3 mm)	0-15 (5)
No.4 (4.75 mm)	0-5 (3)
No.8 (2.36 mm)	0-2 (1)
No.200 (75 μm)	0-1 (1)

- (1) Statistical procedures do not apply.
- () The value in the parentheses is the allowable deviation (±) from the target values.

703.12 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
3/8-inch (9.5 mm)	100
No.16 (1.18 mm)	40 – 80
No.200 (75 µm)	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) - H₂O₂.
 - (d) Nitric Acid (concentrated)--HNO₃.
 - (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%.

rev: 11/07/19

SECTION 704. - SOIL

704.01 Foundation Fill. Add the following to this subsection: This section 704 supplements Article 6 of Exhibit A.

704.02 Bedding Material.

Add the following subparagraphs (c) to (d):

- | | |
|-------------------------------|--------------------|
| (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.

Add the following to subparagraph 704.03(a):

- | | |
|-------------------------------|--------------------|
| (3) Resistivity, AASHTO T 288 | ≥2000 ohm-cm, Min. |
| (4) 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 | 24 inches (610 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.

rev: 11/07/19

SECTION 705. - ROCK

705.01 Gabion and Revet Mattress Rock. Add the following to this subsection: This section 705 supplements Article 6 of Exhibit A.

705.02 Riprap Rock.

This subsection is superseded with the following:

Furnish hard, durable, angular rock that is resistant to weathering and water action and free of organic or other unsuitable material. Do not use shale, rock with shale seams, or other fissile or fissured rock that may break into smaller pieces in the process of handling and placing. Conform to the following unless the material is coming from a source previously tested for and met the quality requirements for other contract items:

- | | |
|--|-------------|
| (a) Apparent specific gravity, AASHTO T 85 | 2.50 min. |
| (b) Absorption, AASHTO T 85 | 4.2% max. |
| (c) Coarse durability index, AASHTO T 210 | 50 min. |
| (d) Gradation for the class specified | Table 705-1 |

rev: 12/19/17

SECTION 710 - FENCE AND GUARDRAIL

Add the following to this subsection: This section 710 supplements Article 6 of Exhibit A.

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 (3.0 mm) inch or greater and shall be Class 1, soft temper, and meet the requirements of ASTM A 641.

All woven wire shall conform to the requirements of AASHTO M 279 Design 832-6-14^{1/2}, grade 125.

710.04 Fence Posts and Bollards

Add the following to subparagraph 710.04(c):

- (1) Powder Coated post will be evaluated under Subsection 106.03. Furnish a commercial certification including the name of the manufacturer, product name, style number, chemical composition, and other pertinent information to fully describe the product.
 - (a) Hardness ASTM D3363 Min 2H
 - (b) Adhesion ASTM D3359 5B
 - (c) Impact Resistance ASTM D2794
 - (d) Direct Impact ASTM D2794

rev: 11/07/19

SECTION 713 - ROADSIDE IMPROVEMENT MATERIAL

Add the following to this subsection: This section 713 supplements Article 6 of Exhibit A.

713.12 Fiber Rolls and Socks

Add the following subparagraph 713.12(g) with the following

(g) Straw Bales. Furnish bales tied with either commercial quality baling

(1) wire or string. Conform to the following:

(2) Straw Subsection 713.05(c)

(3) Approximate length 3 feet (1 meter)

(4) Shape rectangular

(5) Approximate mass 73 lbs (30 kg)

(h) 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 – 16” by 18” by 36” (400 by 450 by 900 mm)

(2) Approximate mass 73 lbs (33 kg)

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 3 inch diameter wood or 4 lbs per 3.3 foot (1.86 kg per meter) steel fence posts.

(b) Supports. Furnish 1/12 inch (2.03 mm) steel wire with a mesh spacing of 6 inches by 6 inches (152 mm by 152 mm) 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 30 inches (760 mm). Minimum embedment depth is 6 inches (152 mm).

rev: 11/07/19

SECTION 718. - TRAFFIC SIGNING AND MARKING MATERIAL

Add the following to this subsection: This section 718 supplements Article 6 of Exhibit A.

718.01 Retro reflective Sheeting.

Add the following:

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

718.04 Signposts.

Replace Subparagraph 718.04(b) with the following:

(b) Steel posts. Furnish posts that are straight, smooth, and free from defects affecting strength, durability, or appearance. Conform to the following:

(1) U-channel steel posts. Furnish flanged, channel, galvanized steel posts conforming to ASTM A 499, grade 60, and the following:

(a) Dimensions of U cross-section

(1) Width of opened end of U = 3 to 3.5 inches (75 to 90 mm) including flanges

(2) Width of closed end of U = 1 to 1.5 inches (25 to 40 mm)

(3) Depth of U = 1 to 1.5 inches (25 to 50 mm)

(4) Thickness of steel = 0.11 to 0.2 inches (3 to 5 mm)

(b) Punching shall be performed prior to coating. Starting 2 inches (25 mm) from the top and extending the full length of the post, drill or punch 0.4 inch (10 mm) holes on 2 inch (50 mm) centers along the centerline of the bottom of the U. Remove all burrs and sharp edges.

(c) Coating

(1) Galvanizing after post punching according to AASHTO M 111M

(2) Powder Coat will be evaluated under Subsection 106.03. Furnish a commercial certification including the name of the manufacturer, product name, style number, chemical composition, and other pertinent information to fully describe the product.

a) Hardness ASTM D3363 Min 2H

- b) Adhesion ASTM D3359 5B
- c) Impact Resistance ASTM D2794
- d) Direct Impact ASTM D2794

(2) Square tubular steel posts. Furnish square tubular galvanized steel posts conforming to ASTM A 1011M, grade 55, or ASTM A 715, grade 60, and the following:

(a) Dimensions

(1) Outside dimensions = 1.75 inches by 1.75 inches (44.5 mm by 44.5 mm) or 2 inches by 2 inches (50.8 mm by 50.8 mm)

(2) Wall thickness = 0.08 inches (2.1 mm)

(3) Mass 1.7 – 2.0 lbs/ft (2.5 – 3.0 kg/m)

(b) Punching. Starting 2 inches (50 mm) from the top and extending the full length of the post, drill or punch 0.43 inch (11 mm) holes on 2 inch (50 mm) centers along the centerline of all four sides, in true alignment and opposite each other directly and diagonally. Remove all burrs and sharp edges.

(c) Coating

- 1) Galvanizing after punching ASTM A 635M, (inside and outside of post) coating Z275 designation
- 2) Powder Coat after punching. Powder Coat will be evaluated under Subsection 106.03. Furnish a commercial certification including the name of the manufacturer, product name, style number, chemical composition, and other pertinent information to fully describe the product.
 - a) Hardness ASTM D3363 Min 2H
 - b) Adhesion ASTM D3359 5B
 - c) Impact Resistance ASTM D2794
 - d) Direct Impact ASTM D2794

718.18

Ultra High Build Waterborne Acrylic traffic paint. Furnish a waterborne acrylic paint meeting the following requirements:

Parameter	1110 Ultra High Build	Test Methods
Density (#/gal.)	14.0 ± 0.2	ASTM D1475
Viscosity (KU), @ 77F	88 - 90	ASTM D562
Total Non Volatile (%)	77 min	ASTM D2369
Pigment Solids(%)	60 min	ASTM D3723
Non-Volatile Vehicle (%)	43 min	FTMS 4051
Vehicle Composition	100% HD- 21	ASTM D3168
Rutile TiO2(#/ gal)	1.00	ASTM D1394
Scrub Resistance(Cycles)	1500 +	ASTM D2486
pH	9.8	ASTM E70
Non Pick Up Time (minute), 15 mils wet,no beads @ 50 % humidity	5 max	ASTM D711
VOC (grams/liter)	100	EPA method 24
Dry Through at 77°F and 60% RH		ASTM D1640
At 8 mils	10 minutes	
At 15 mils	30 minutes	
At 25 mils	60 minutes	
Freeze-Thaw 5 cycles (KU)	± 2 KU	ASTM D2243
Color	Pass	Federal # 595
Contrast Ratio @ 5 mils wet	0.93 min	ASTM D2805
Contrast Ratio @ 15 mils wet	0.99 min	ASTM D2805
Directional Reflectance (%)	88 min	ASTM E1347

Flexibility at 77°F		
1) At 8 mils	Pass	ASTM D522
2) At 15 mils	Pass	
3) At 25 mils	Pass	

NMDOT 2019 SUPPLEMENTAL SPECIFICATIONS

SECTION 521: NON-SHRINK GROUT

521.1 DESCRIPTION

This Work consists of providing and placing non-shrink grout for use in concrete structures. Uses of grout include the following:

1. Filling under masonry plates and blockouts between precast members;
2. Bonding cementitious dowel bars in preformed recesses;
3. Filling shear keys between Bridge members; and
4. Other uses as required.

For Concrete Structure surface repairs, see Section 533, "Concrete Structure Repair."

521.2 MATERIALS

The Contractor shall provide prepackaged nonshrink hydraulic-cement grout ("grout") in accordance with Table 521.2:1, "Enriched Mortar Physical Property Requirements." The Contractor shall select the grout from the Department's *Approved Products List*. The grout shall be nonmetallic, water-based and cannot contain chlorides, fluorides, sulfites, nitrates, or gas-forming agents.

**Table 521.2:1
Enriched Mortar Physical Property Requirements**

Property	ASTM Test	Requirements
Compressive strength, minimum (psi)	C-110	<u>Stiff</u>
		3 day - 4000
		7 day - 5000
		28 day - 8000
		<u>Flowable</u>
		3 day - 3000
7 day - 3500		
28 day - 5000		
Hardened Grout Height Change	C-827	Maximum 0.6%
Pull-out Strength	E-488	20,000 lbf

The Contractor shall provide water in accordance with Section 725.01 Water.

521.3 CONSTRUCTION REQUIREMENTS

The Contractor shall use non-shrink grout in accordance with the manufacturer's recommendations and instructions regarding proportioning, mixing, maximum water content, application, curing temperatures, and curing conditions. If manufacturer's recommendations conflict with this Section, the manufacturer's recommendations shall govern.

521.3.1 Placing, Finishing, and Curing

The Contractor shall clean concrete areas of loose or Deleterious Material that would prevent a bond between the grout and the base concrete surfaces. The Contractor shall flush areas with water and let dry to a surface dry condition immediately before placing the grout.

The Contractor shall ensure that the grout completely fills recesses and holes, voids under structural members, and at other specified locations. The Contractor shall screed the Material to the specified level and finish the surface to the specified texture.

521.3.2 Curing

After placing, the Contractor shall cure surfaces of grout in accordance with the manufacturer's recommendations. If the manufacturer recommendations are not specific, cure surfaces in accordance with Section 552.15 (b), Water Method.

521.3.2.1 Temperature Requirements

The Contractor shall place grout when the air temperature is at least 45 °F, but less than 95 °F. The Contractor shall not allow the grout temperature to rise above 85 °F during mixing and placing. The Contractor shall maintain the temperature of the grout at or above 45 °F during the curing period.

521.3.3 Elapsed Time Before Loading

The Contractor shall not allow loads on grout that has been in place less than 72 hours, or as recommended by the manufacturer, unless otherwise directed by the Construction Manager.

521.3.4 Grout Defects

The Contractor shall remove and replace improperly cured or otherwise defective grout.

521.4 METHOD OF MEASUREMENT – Reserved

521.5 BASIS OF PAYMENT

521.5.1 Work Included In Payment

The Government considers providing, placing, and curing of non-shrink grout Incidental to the completion of the Work and will not measure or pay for it separately.

SECTION 522: CHEMICAL ADHESIVE ANCHORS

522.1 DESCRIPTION

This Work consists of providing chemical adhesive anchorage systems.

522.2 MATERIALS

The Contractor shall use chemical adhesive anchorage for the installation of steel anchors in concrete Structures.

522.2.1 Chemical Adhesive Anchor Devices

The Contractor shall select chemical adhesive anchor devices that is reviewed and approved by the Construction Manager. Reference the NMDOT Approved Products List below for potential suppliers.
<https://dot.state.nm.us/content/dam/nmdot/APL/APL.pdf>

The Contractor shall provide devices in accordance with Table 522.2.1:1, “Chemical Adhesive Anchor System Ultimate Tension Load Requirements.” The Contractor shall use chemical adhesives of organic and inorganic compounds (including epoxies, polyurethanes, methacrylates and vinyl esters) to develop bond to concrete.

**Table 522.2.1:1
Chemical Adhesive Anchor System Ultimate Tension Load Requirements**

Anchorage bolt diameter (inch) or bar size	Minimum ultimate tension load (pounds) per ASTM E488
One (1) inch	37,700
7/8 inch	28,900
3/4 inch	21,200
5/8 inch	14,700
1/2 inch	9,400
3/8 inch	5,300
1/4 inch	2,400
No. 6	21,200
No. 5	14,700
No. 4	9,400

(Based on ASTM A307 anchor, Grade 60 rebar and 3,000 psi concrete)

522.2.1.1 Hardware

The Contractor shall provide ASTM A 307 Grade A threaded rod with nut (ASTM A 563A Hex) and washer (ASTM F 844) or ASTM A 193 Grade B7 threaded rod with nut (ASTM A 194 Grade 2H) and washer (ASTM F 436). The thread rod, nut and washer shall be zinc coated per AASHTO M 298, Class 50 (ASTM B 695, Class 50). If stainless steel anchor is specified in the contract, the Contractor shall provide ASTM F 593 threaded rod with nut (ASTM F 594) and washer (ASTM A 240).

The Contractor shall provide Grade 60 deformed steel bar reinforcements in accordance with AASHTO M 31.

The Government will not accept metal wedge expansion-type anchors as substitutes for chemical anchors.

522.2.1.2 Materials Certification

The Contractor shall submit a sample of the concrete chemical anchor device along with the manufacturer's installation instructions to the Project Manager.

The Contractor shall submit independent certified test results for expansion anchors in accordance with ASTM E 488 to the Project Manager. The Contractor shall submit independent certified test results for adhesive-bonded and other bonding compounds in accordance with ASTM E 1512 to the Project Manager. The Contractor shall use ASTM A 307 Grade A steel for anchor bolts (rods), Grade 60 steel reinforcing bars, and 3,000 psi concrete for these independent certified tests.

The Contractor shall test chemical adhesive anchor device systems installed per manufacturer's recommendations.

The Contractor shall provide independent test results to certify that the average ultimate tension load strength and method of installation of the proposed concrete anchorage system are in accordance with Table 522.2.1:1, "Chemical Adhesive Anchor System Ultimate Tension Load Requirements."

522.3 CONSTRUCTION REQUIREMENTS

The Contractor shall prepare holes and installation of the chemical adhesive anchors in accordance with the manufacturer's recommendations and instructions, including weather and temperature limitations. The Contractor shall not install chemical adhesive anchor systems before concrete attains its design strength.

522.3.1 Drilling of Holes

The Contractor shall use drilling methods that do not cause concrete spalling or cracking, or damage to the main reinforcing steel members. The Contractor shall drill the diameter and depth of the holes in accordance with the chemical adhesive anchor manufacturer's instructions, using drilling methods and drill bits specifically intended by the manufacturer for the particular anchorage. Diamond core drilling of the holes is not permitted unless allowable by the manufacturer.

The Contractor shall repair spalled or damaged concrete as directed by the Construction Manager.

The Contractor shall not drill with a lubricant; water is not a lubricant.

The Contractor shall maintain a distance of at least two (2) inches from the bottom of the structural slab to the bottom of drill holes. The Contractor shall only use anchor systems that can maintain this minimum surface-to-drill-hole distance requirement and still meet certified strength requirements.

522.3.2 Hole Preparation

Hole preparation shall be in accordance with the Manufacturer's recommendations. The Contractor shall ensure holes are dry before installing anchors.

522.3.3 Finishing

After the Contractor inserts the anchor into the full depth of the drilled hole, the Contractor shall strike flush the excess adhesive with the concrete surface. After placing the anchors, the Contractor shall not move anchors and shall not load the anchors until adhesives are fully cured.

522.3.4 Field Proof Load Tests

The Contractor shall submit the testing method to the State Materials Bureau before beginning the field pullout tests. The Contractor shall use an applied test load for the chemical adhesive anchors field pullout tests in accordance with Table 522.3.5:1, “Chemical Adhesive Anchor Design Loads.”

The Contractor shall perform proof load tests only if the Contract requires. The Government may perform proof load tests at the Construction Manager’s discretion. If the Contract requires proof load tests, the Contractor shall use nondestructive loading and stop the tests when the design tensile forces have been sustained for at least three (3) minutes without creep or deflection.

The Contractor shall use anchors that attain the specified test loads without permanently displacing the anchor or damaging the concrete. The Contractor shall replace anchor devices that fail the load test. The Contractor shall test replaced anchors.

The Contractor shall repair spalled or damaged concrete from load tests as directed by the Construction Manager. In the event that proof load tests fail to meet requirements, the Contractor shall submit a corrective action plan for deficiencies.

522.3.4.1 Acceptance

The Department will accept anchor if the specified test load is attained without permanently displacing the anchor or damaging the concrete.

522.3.4.2 Field Test Procedure

If the Contract requires proof load tests, the Project Manager will designate a random portion of not less than five percent (5%) of the installed concrete chemical anchors for load testing. The Contractor shall perform load tests in accordance with ASTM E 488 for static testing. If any individual test fails, the Contractor shall test all anchors for compliance with Table 522.3.5:1, “Chemical Adhesive Anchor Design Loads.”

522.3.5 Design Loads

The Contractor shall ensure chemical adhesive anchor systems are in accordance with Table 522.3.5:1, “Chemical Adhesive Anchor Design Loads.”

**Table 522.3.5:1
Chemical Adhesive Anchor Design (Proof) Loads**

Anchorage bolt diameter (inch) or bar size	Design load and tensile test load (pounds) per ASTM E488
One (1) inch	9,425
7/8 inch	7,225
3/4 inch	5,300
5/8 inch	3,675
1/2 inch	2,350

3/8 inch

1,325

Table 522.3.5:1
Chemical Adhesive Anchor Design (Proof) Loads

Anchorage bolt diameter (inch) or bar size	Design load and tensile test load (pounds) per ASTM E488
1/4 inch	600
No. 6	5,300
No. 5	3,675
No. 4	2,350

522.3.6 Welding

Welding to post-installed anchors is not permitted.

522.4 METHOD OF MEASUREMENT—Reserved

522.5 BASIS OF PAYMENT

The Department will make no separate payment for this Work.

522.5.1 Work Included In Payment

The Government considers all labor and materials for the preparation of holes and installation of dowels and anchors incidental to the completion of the Work and will not measure or pay for it separately.

SECTION 523: CEMENTITIOUS-GROUTED DOWELS AND ANCHORS

523.1 DESCRIPTION

This Work consists of providing and placing cementitious-grouted dowels and anchors for concrete Structures.

523.2 MATERIALS

Unless otherwise specified in the Contract, the Contractor shall use chemical adhesive anchorage per Section 522, "Chemical Adhesive Anchors" for the installation of steel anchors in concrete Structures. Cementitious grouted dowels and anchors shall only be used when required by the Contract.

523.2.1 Grout

The Contractor shall provide grout in accordance with Section 521, "Non-Shrink Grout."

The Contractor shall provide preblended mortar (grout), in accordance with the manufacturer's recommendations and instructions regarding proportioning, mixing, maximum water content, application, and curing temperatures and conditions.

523.2.2 Threaded Rods or Deformed Anchor Bars

Unless otherwise specified in the Contract, the Contractor shall fabricate dowels and anchors from full length threaded steel rods in accordance with ASTM A 307 or better, or deformed steel reinforcing bars in accordance with AASHTO M 31, Grade 60.

523.3 CONSTRUCTION REQUIREMENTS

523.3.1 Design (Proof) Loads

Unless otherwise shown in the Contract, the Contractor shall provide design tensile (pullout) loads for anchors or dowels fabricated from full length threaded steel bars or Grade 60 reinforcing bars in accordance with Table 523.3.1:1, "Cementitious-Grouted Dowels and Anchors Design (Proof) Loads."

Table 523.3.1:1
Cementitious-Grouted Dowels and Anchors Design (Proof) Loads

Reinforcing bar size or threaded rod Diameter	Design tensile load for cementitious grout (lb)
No. 8	5230
No. 7	4000
No. 6	2930
No. 5	2030
No. 4	1300
One (1) inch	4700
7/8 inch	3600
3/4 inch	2630
5/8 inch	1830
1/2 inch	1170

523.3.1.1 Field Proof Load Tests

The Contractor shall submit the testing method to the Construction Manager before beginning the field pullout tests. The Contractor shall use an applied test load for the anchors field pullout tests in accordance with Table 523.3.1:1, "Cementitious-Grouted Dowels and Anchors Design (Proof) Loads."

The Contractor shall perform proof load tests only if the Contract requires. The Government may perform proof load tests at the Construction Manager's discretion. If the Contract requires proof load tests, the Contractor shall use nondestructive loading and stop the tests when the design tensile forces have been sustained for at least three (3) minutes without creep or deflection.

The Contractor shall use anchors that attain the specified test loads without permanently displacing the anchor or damaging the concrete. The Contractor shall replace anchor devices that fail the load test. The Contractor shall test replaced anchors.

The Contractor shall repair spalled or damaged concrete from load tests as directed by the Construction Manager. In the event that proof load tests fail to meet requirements, the Contractor shall submit a corrective action plan for deficiencies.

523.3.2 Embedment Depth

The Contractor shall provide the required embedment depth as shown in the Plans.

The Contractor shall maintain a distance of 1 1/2 inch or greater from the bottom of structural deck slabs and two (2) inches or greater from the face of Structures in other installations.

The Contractor shall only use anchor systems that can maintain this minimum surface to drill hole distance requirement and still meet certified strength requirements.

523.3.3 Hole Preparation

The Contractor shall use impact drills equipped with carbide tipped bits or core drill. The Contractor shall not spall or damage concrete adjacent to the holes.

The Contractor shall provide a drilled hole diameter 3/4 inch greater than the diameter of steel anchors and dowels. Diamond core drilling of the holes is not permitted. The Contractor shall clean holes of dust, drilling debris, and other Deleterious Materials, saturate holes with water, and remove free water before placing the dowels or anchors.

The Contractor shall not drill with a lubricant; water is not a lubricant.

523.3.4 Placing of Anchors and Mortar (Grout)

The Contractor shall use sufficient mortar (grout) so no voids remain between the anchors and the sides of the holes after the dowels or anchors are fully inserted. During and after placing of the dowels and anchors, the Contractor shall maintain a tight bond between the mortar (grout) and hole and between the mortar (grout) and anchor or dowel.

523.3.5 Curing

Curing shall be in accordance with Section 521, "Non-Shrink Grout."

523.3.6 Temperature Limitations

Temperature limitations shall be in accordance with Section 521, “Non-Shrink Grout.”

523.3.7 Damaged or Unbonded Dowels and Anchors

The Contractor shall remove and replace dowels and anchors that fail to bond or are damaged before placing new concrete or completing the Structure.

523.4 METHOD OF MEASUREMENT—Reserved

523.5 BASIS OF PAYMENT

523.5.1 Work Included In Payment

The Department considers all labor and Materials for the preparation of holes and grouting of dowels and anchors Incidental to the completion of the Work and will not measure or pay for it separately.

SECTION 532: PENETRATING WATER REPELLENT TREATMENT

532.1 DESCRIPTION

This Work consists of providing and applying a penetrating water repellent treatment to concrete surfaces as directed in the plans.

532.2 MATERIALS

The Contractor shall use a penetrating water repellent solution that has a minimum of 40% solution by weight of silane or alkyltrialkoxo silane.

The Contractor shall use a solution that does not stain, discolor, alter the texture of, or form a coating on the concrete surface. The Contractor shall use a solution that is compatible with surface finishes applied in accordance with Section 552.16, Finishing Formed Concrete.

The Contractor shall provide a treatment solution that is reviewed and approved by the Construction Manager. Reference the NMDOT Approved Products List below for potential suppliers.

<https://dot.state.nm.us/content/dam/nmdot/APL/APL.pdf>

532.2.1 Physical Requirements

The Contractor shall provide a penetrating water repellent solution in accordance with Table 532.2.1:1, “Penetrating Water Repellent Treatment Requirements.”

**Table 532.2.1:1
Penetrating Water Repellent Treatment Requirements**

Characteristic	Requirement	Test method
Reduction in moisture absorption	80% minimum	NCHRP #244 Series II or ASTM D6532
Reduction in chloride ion absorption	80% minimum	NCHRP #244 Series II

532.2.2 Submittals

The Contractor shall submit manufacturer’s product data and application instructions to the Construction Manager 14 Days prior to start of work.

The Construction may take samples of the Materials from the shipping containers at the job site.

532.3 CONSTRUCTION REQUIREMENTS

532.3.1 Surface Preparation

Before applying the treatment solution, the Contractor shall remove curing compounds, laitance, dirt, dust, salt, oil, asphalt, and other Deleterious Materials from the concrete surface.

The Contractor shall obtain approval for surface preparation Equipment from the Construction Manager.

The Contractor shall ensure that the cleaning process:

1. Does not damage the concrete surface;
2. Does not remove or substantially alter the existing surface finish;

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3. Does not expose coarse aggregate in the existing concrete; and
4. Provides a reasonably uniform surface color and texture.

Validation for surface preparation shall be performed by applying adhesive tape to the surface. When the tape is removed there shall be no laitance or debris adhered to the tape.

The Contractor shall apply the treatment solution only after obtaining approval of the cleaned surfaces from the Construction Manager.

532.3.2 Application of Treatment Solution

532.3.2.1 Temperature and Weather Limitations

The Contractor shall apply the treatment solution only when the air and concrete surface temperatures are between 40°F and 100°F unless more restrictive temperature limits are recommended by the manufacturer. The Contractor shall not apply the solution to concrete surfaces when the wind speed is greater than ten (10) mph.

532.3.2.2 Application Equipment

The Contractor shall use Equipment that can apply the solution to all surfaces until they are all saturated and no further solution can be absorbed. The Contractor shall obtain written approval of the Equipment used from the Project Manager before starting application Work.

532.3.2.3 Application

The Contractor shall not treat new concrete until it attains the specified design strength. The Contractor shall follow the manufacturer's recommendations for application.

The Contractor shall not dilute or alter the treatment solution as supplied by the manufacturer.

The Contractor shall follow the manufacturer's recommended rate of coverage when applying the solution but not less than full saturation and no further solution can be absorbed.

The Contractor shall lightly apply water to treated surfaces between 12 hours and four (4) days after treatment to verify coverage where directed by the Construction Manager.

If the Contract specifies both a water repellent treatment and a special surface finish, the Contractor shall refer to the manufacturer's application recommendation on order of application.

532.3.3 Traffic Limitations

The Project Manager will determine when traffic is allowed on treated surfaces.

532.4 METHOD OF MEASUREMENT – Reserved

532.5 BASIS OF PAYMENT

532.5.1 Work Included in Payment

The Government considers providing, preparation, placing, and curing of penetrating water repellent treatment incidental to the completion of the Work and will not measure or pay for it separately.

SECTION 535: CRACK SEALING USING LOW-VISCOSITY, GRAVITY-FED SEALERS

535.1 DESCRIPTION

This Work consists of crack sealing using low-viscosity, gravity-fed sealers.

535.2 MATERIALS

535.2.1 High Molecular Weight Methacrylate

The Contractor shall provide low viscosity, non-fuming HMWM resin that is in accordance with Table 535.2.1:1, “HMWM Property Requirements” and reviewed and approved by the Construction Manager.

Reference the NMDOT Approved Products List below for potential suppliers.

<https://dot.state.nm.us/content/dam/nmdot/APL/APL.pdf>

**Table 535.2.1:1
HMWM Property Requirements**

Properties of Resin Specifications:	Test	Requirements
Viscosity, centipoises ^a	—	8–25
Specific gravity	—	1.00–1.07
Flash point, °F, minimum	Pinsky-Martens CC	180
Tensile elongation, %, minimum	ASTM D 638	5
Performance Properties of Resin:		
Cure speed:	—	—
Surface cure, hours, maximum		
@ 73 °F		8
@ application temperature	—	24
Gel time, minutes, @ application temperature, 50 ml sample	—	20–90

^aBrookfield Model LVT Viscometer, Spindle I at 60 rpm.

535.2.2 Low Viscosity, Low Surface Tension Polymer

The Contractor shall use low-viscosity, low surface tension polymer that is in accordance with Table 535.2.2:1, “Physical Properties of Low-Viscosity, Low Surface Tension Crack Sealer” and reviewed and approved by the Construction Manager.

Reference the NMDOT Approved Products List below for potential suppliers.

<https://dot.state.nm.us/content/dam/nmdot/APL/APL.pdf>

Table 535.2.2:1
Physical Properties of Low-Viscosity, Low Surface Tension Crack Sealer

Property	Value
Compressive strength (psi), ASTM D 695 minimum @ seven (7) Days	5,500
Tensile strength (psi), ASTM D 638, minimum @ seven (7) Days	3,100
Tensile elongation, %, ASTM D 638, minimum @ seven (7) Days	30
Water absorption, % by weight, ASTM D 570, maximum @ 24 hours	0.10
Shore D hardness, 77 °F, minimum	65
Gel time, minutes - 7.0 ounces	48–52
Adhesion to concrete	100% failure in concrete
Surface tension, maximum	32 Dynes/cm

Table 535.2.2:1
Physical Properties of Low-Viscosity, Low Surface Tension Crack Sealer

Property	Value
Percent solids	100

535.2.3 Fine Aggregate

The Contractor shall provide fine aggregate for spreading over treated areas that is free from dirt, clay, asphalt, and other Deleterious Materials, and has moisture content of less than 0.2% when applied.

Unless otherwise approved by the Construction Manager, the Contractor shall provide sand in accordance with Table 535.2.3:1, “Fine Aggregate Gradation Requirements.”

Table 535.2.3:1
Fine Aggregate Gradation Requirements

Sieve size	% passing Minimum	% passing Maximum
No. 8	95	100
No. 16	30	70
No. 30	0	3
No. 100	0	1

535.3 CONSTRUCTION REQUIREMENTS

535.3.1 General

The Contractor shall seal individual cracks to refusal. Where closely spaced map cracking has occurred on concrete Bridge decks, the Contractor shall seal by flooding the entire surface to refusal. The Project Manager will direct which method to use.

535.3.1.1 Planning and Demonstration

At least 21 days before applying the sealer, the Contractor shall submit a written crack-sealing plan to the Construction Manager that includes the following:

NDOT Contract – Exhibit F – Specifications and Supp. Specs

1. Material descriptions;
2. Deck preparation and application methods;
3. Safety considerations for blasting and sealing personnel; and
4. Plans to protect other persons, vehicles, and property from injury or damage.

535.3.1.2 Sequence of Operations

The Contractor shall seal cracks on new concrete bridge decks or approach slabs after 28 days of curing or per the manufacturer's recommendations.

535.3.2 Surface Preparation

The manufacturer's application requirements shall govern. If the manufacturer does not provide guidance on the following items, the following shall apply:

1. The Contractor shall clean concrete surfaces from three (3) inches to five (5) inches on either side of individual cracks;
2. The Contractor shall remove asphalt material, oil, dirt, rubber, curing compounds, paint, and other deleterious materials by grinding, sandblasting, and/or shot blasting;
3. The Contractor shall air blast, with oil free compressed air, or vacuum all loose material from visible cracks;
4. The concrete shall be dry at the time of overlay application. The criteria for "dry" shall be established by:
 - a. ASTM D 4263: for every 500 square feet, an 18 inch x 18 inch plastic sheet shall be taped to the deck with two (2) inch duct tape. The test area shall be protected from direct sunlight, direct heat, and damage to the plastic. After 16 hours, the concrete shall be considered dry when no moisture appears on the bottom of the plastic; and
 - b. It is also acceptable to use a moisture meter in conformance with ASTM F2659;
 - i. Unless otherwise directed by the manufacturer, the reading shall be four percent (4%) or less;
 - ii. The meter shall be an electrical impedance moisture meter specifically developed and calibrated for the non-destructive measurement of the comparative moisture condition in concrete floor slabs; and
 - iii. The moisture meter shall be used and calibrated in accordance with the manufacturer's written recommendations. The moisture meter manufacturer's recommendations and the calibration data shall be provided to the Construction Manager for acceptance prior to use on the project; and
5. The Contractor shall prepare the concrete surface per the manufacturer's recommendations. In the absence of the manufacturer's recommendations, the Contractor shall prepare the concrete surface to produce a surface relief equal to the International Concrete Repair Institute (ICRI) Surface Preparation CSP 5-8, or ASTM E 965 pavement macrotexture depth from 0.04 inch to 0.10 inch. The Contractor shall provide ICRI concrete surface profile chips to the Construction Manager for inspection of prepared surface. ICRI concrete surface profile chips will become the property of the Government.

535.3.3 Storage of Sealer

The Contractor shall store the sealer or its components separately and within the manufacturer recommended temperature ranges.

535.3.4 Application of Sealer

Surface temperature shall comply with the minimum manufacturer's recommendations. The Contractor shall follow the manufacturer's mixing and application recommendations. The Contractor shall apply one (1) gal per 200 ft for crack sealing and one (1) gal per 100 ft² for surface sealing. The Government may require two (2) or more applications of sealer for cracks 1/32 inch or larger. The Government may require application of a temporary surface sealer to wider, full depth deck cracks on the deck underside. Prior to use on the project, the Contractor shall ensure that the curing period recommended by the manufacturer confirms proper curing of the material.

535.3.4.1 Excess Sealer

The Contractor shall sweep away sealer that does not fill cracks, is not absorbed by the concrete surface, and fills or partially fills the grooves of a tined or grooved surface.

535.3.5 Application

The Contractor shall apply dry fine aggregate with coverage of eight (8) lb per square yard. The Contractor shall place sand before the sealer starts to gel. The Contractor shall remove excess sand after the curing period.

535.3.6 Limitation of Operations

The Contractor shall prevent the sealer from leaking through cracks onto persons, traffic, and property. If deck preparation procedures or the sealer deface the appearance of bridge components other than the crack sealed areas, the Contractor shall repair those components at no additional cost to the Government.

535.4 METHOD OF MEASUREMENT – Reserved

535.5 BASIS OF PAYMENT

535.5.1 Work Included In Payment

The Government considers providing, preparation, placing, and curing of low-viscosity, gravity-fed sealers incidental to the completion of the Work and will not measure or pay for it separately.

EXHIBIT G
PROJECT DESIGN PLANS

A set of the design plans can be obtained from the Navajo Division of Transportation Website below during the Request for Proposal process.

<http://www.navajodot.org/RFP.aspx>

EXHIBIT H

DAVIS BACON WAGE RATE DETERMINATION

[NM20210035 06/18/2021](#)

"General Decision Number: NM20210035 06/18/2021

Superseded General Decision Number: NM20200035

State: New Mexico

Construction Type: Highway

Counties: Dona Ana and San Juan Counties in New Mexico.

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.95 for calendar year 2021 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.95 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2021. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/01/2021
1	06/18/2021

ELEC0611-003 07/01/2014

	Rates	Fringes
ELECTRICIAN (Boom Operator).....	\$ 29.79	12.74

* TEAM0492-003 04/01/2021

SAN JUAN

	Rates	Fringes
TRUCK DRIVER (Dump).....	\$ 17.65	8.72

SUNM2011-003 08/25/2011

	Rates	Fringes
CARPENTER (Includes Form Work)		
Dona Ana.....	\$ 14.15	0.44
San Juan.....	\$ 13.42	0.44

CEMENT MASON/CONCRETE FINISHER...	\$ 13.65	0.26
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ELECTRICIAN (Includes Traffic Signalization and Installation)		
Dona Ana.....	\$ 25.91	9.45
San Juan.....	\$ 24.46	8.56

HIGHWAY/PARKING LOT STRIPING: Includes Highway Line/Parking Lot Line Striping and Line Striping Truck Driver		
Dona Ana.....	\$ 15.44	0.35
San Juan.....	\$ 14.39	0.35

IRONWORKER, REINFORCING		
Dona Ana.....	\$ 22.61	6.03
San Juan.....	\$ 16.41	5.85

LABORER		
Common or General		
Dona Ana.....	\$ 11.95	0.35
San Juan.....	\$ 11.48	0.35
Flagger/Cone Setter.....	\$ 14.27	0.35
Mason Tender-		
Cement/Concrete.....	\$ 10.25	0.35
Pipelayer.....	\$ 17.13	5.04

POWER EQUIPMENT OPERATOR:

Backhoe/Excavator/Trackhoe		
Dona Ana.....	\$ 17.74	0.26
San Juan.....	\$ 16.27	1.51
Bobcat/Skid Loader.....		
	\$ 14.56	0.26
Broom Sweeper.....		
	\$ 16.67	1.57
Grader/Blade.....		
	\$ 17.64	1.51
Loader(Front End).....		
	\$ 16.53	0.26
Mechanic.....		
	\$ 23.24	1.51
Oiler.....		
	\$ 22.08	8.72
Piledriver.....		
	\$ 16.26	0.26
Roller (Asphalt and Dirt)		
Dona Ana.....	\$ 16.27	1.51
San Juan.....	\$ 12.91	1.60
Trencher		
Dona Ana.....	\$ 15.22	0.26
San Juan.....	\$ 15.93	0.26

TRUCK DRIVER

Dump Truck		
Dona Ana.....	\$ 15.04	0.26
Flatbed Truck.....		
	\$ 13.30	0.26
Pickup Truck		
Dona Ana.....	\$ 12.14	0.26
San Juan.....	\$ 12.95	0.26
Water Truck.....		
	\$ 13.51	1.51

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

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic

violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

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

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

Union Rate Identifiers

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

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

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that

classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

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

Union Average Rate Identifiers

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

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

WAGE DETERMINATION APPEALS PROCESS

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

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

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour

Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

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

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

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

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

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

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

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

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

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END OF GENERAL DECISION"

EXHIBIT I
Environmental Requirements & Permits



October 23, 2020

**NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)
CATEGORICAL EXCLUSION (CE)**

**Proposed Reconstruction of N5012(1)1,2&4 Sanostee Wash Bridge, Sanostee, San Juan
County, New Mexico**

Project Description:

Navajo Division of Transportation (NDOT) is proposing a road and bridge construction project on 0.644 miles (3400 ft.) of roadway (N5012), located in Sanostee, San Juan County, New Mexico on the Navajo Nation. The project will include a right-of-way (ROW) of 150 ft. (45.7 m) (with a 75 ft. cultural buffer added to each end of the ROW boundary).

The proposed undertaking will include grade and drainage implementation, placement of untreated aggregate base course and double chip seal pavement along the roadway, the placement of drainage structures, the construction of one (1) bridge, and miscellaneous construction work. Ground disturbance will be intensive and extensive with the use of heavy equipment.

Purpose and Need:

The purpose for this undertaking is to improve the grade & drainage, placement of untreated aggregate base course and double chip seal pavement, drainage structures, one (1) bridge and miscellaneous construction. The traffic operation and volume with safety features improving for an existing dirt road accommodates the increase in traffic. The existing road conditions become unsafe and hazardous for public and private users during inclement weather, especially during winter and rainy periods. The maintenance activities will occur on Navajo Tribal Trust lands.

Environmental Compliance:

The project is funded through the Tribal Transportation Program (TTP). TTP funds are provided to the Navajo Nation in accordance with the *Tribal Transportation Program Agreement between the Navajo Nation and the United States Department of Transportation*. In accordance with this agreement, the Nation is responsible for project development, permit acquisition, contract management, construction, and construction oversight.

The expenditure of TTP funds constitutes a Federal action subject to compliance under the National Environmental Policy Act (NEPA). This NEPA CE represents the environmental compliance documentation prepared and submitted to FHWA by the Navajo Nation.

Right of Way

The subject project will involve right of way (ROW) acquisitions or easements. If any ROW actions by the Bureau of Indian Affairs (BIA) are identified, further consultation with the BIA region to determine the appropriate level of documentation will be necessary.

Cultural Resources:

The N5012(1)1,2&4 Sanostee Wash Bridge project is 0.64 miles (1.04 km) in length and will begin from station 40+00 and end at 74+00. The project will include a right-of-way (ROW) of 150 ft. (45.7 m) with a 75 ft. cultural buffer added to each end of the ROW boundary. The Area of Effect is calculated to be 11.64 ac (4.71 ha) with an Area of Potential Effect of 23.27 ac (9.42 ha).

A Cultural Resources Inventory was conducted by NNDOT for a proposed staging area measuring 350 ft. x 100 ft. (106 m x 46 m). The staging area will be designated to store construction materials and equipment for the N5012(1)1,2&4 undertaking. The area of effect is calculated to be 0.80 acres (0.33 ha) for the block survey. An additional 35 ft. (11 m) cultural buffer was included for three sides of the block survey resulting in a total area surveyed of 1.30 acres (0.53 ha). The fourth side of the block survey was not included as the boundary runs parallel with a fenced-in agriculture field.

The NNDOT reevaluated three (3) previously recorded historic properties that were previously reported in Navajo DOT 00-081 (HPD-01-229.2) and DCD3-00-081 (HPD-01-229 REVISED). Sites reevaluated were NM-H-34-69, NM-H-34-70, and NM-H-34-93. Each site was reassessed and upon completion of the reevaluation, each historic property was determined to retain their eligibility status for the National Register.

The FHWA has made the determination of “*No adverse effect*” for site NM-H-34-93. In conjunction with this finding, NNDOT has made the finding of “*Historic Properties Affected*” for sites NM-H-34-69 and NM-H-34-70. However, if the following conditions are imposed, both sites will revert to a “*Finding of no adverse effect*”:

- (1) Constrict construction activities to the road prism for the length of the site boundary.
- (2) Site boundary be temporarily fenced or barricaded prior to construction.
- (3) Monitoring within 50 feet of site boundary by a qualified archaeologist during Construction
- (4) No rubber-tired vehicles shall be used to install ROW fence. Fence shall be installed by hand.

By adhering to the specified mitigations/commitments, FHWA has determined that this project ***will not adversely affect*** any historic properties. The Navajo Nation Tribal Historic Preservation Office (NNTHPO) concurred with this assessment in writing on October 7, 2020.

To avoid unforeseen impacts, any archaeological or historical artifacts or remains discovered during construction shall be left intact and undisturbed, all work in the area shall stop immediately, and the FHWA TTP Environmental Coordinator shall be notified. In addition, the Navajo Nation Tribal Historic Preservation Office (NN THPO), and the Navajo Division of Historic Preservation will be notified of the discovery pursuant to 36 CFR 800.13. Construction operation may resume upon notification from the THPO and FHWA.

Biology:

The Navajo Division of Transportation Project Management Department received a list of “potential and known species” in the project area from the USFWS. This species list and any potential effects or impacts to the listed species was examined by the Navajo Nation Department of Fish and Wildlife (NDFW). Consultation with the NDFW resulted in a recommendation that the project would have

No Impact to any Federally Listed Threatened or Endangered Species or Critical Habitats (May 4, 2020).

The FHWA concurs with this determination.

The project will call for the removal of vegetation and soil, which will be accomplished in a manner to reduce soil erosion and to disturb as little vegetation as possible. Grading operations and reseedling of indigenous species will begin immediately following the subgrade construction. Heavy equipment will be inspected and cleaned prior to entering the project area to remove any mud or soil adhering to the equipment, which may harbor seeds of noxious weeds, prior to construction and transportation of any heavy equipment to the project site. Preventative measures will be taken to reduce the likelihood of spreading noxious weeds in the project area. Additionally, construction crews will avoid transporting seeds of noxious plants from other project areas.

A survey for active migratory bird nests will occur prior to construction and/or any ground disturbing activities. If an active nest is identified, the Navajo Fish and Wildlife Department will be contacted before conducting further project activities.

Section 4(f)

The Section 4(f) regulation was considered as a part of the review for this project and it was determined that Section 4(f) does not apply. This Project does not use a Section 4(f) property.

Floodplain:

According to the submitted project impact documentation, this project does not involve changes or impacts to a floodplain. Water flow, drainage, and/or retention will not be impacted by the subject project.

Water:

Surface water in the project area falls within the Puerco River area.

Section 404 of the Clean Water Act (CWA) as amended provides for the protection of waters of the U.S. through regulation of excavation or discharges of dredged or fill material. The Corps Regulatory Program (33 CFR 320-330) requires that a Section 404 determination to be conducted for all proposed construction that may affect waters of the US. The appropriate agency or contractor will conduct a reconnaissance survey of the project area to assess the drainages and waterways along the proposed project route. Sections 401 and 404 of the CWA will need to be addressed before construction begins by the Navajo Nation Division of Transportation.

Section 402 of the Clean Water Act (CWA) clarifies that storm water discharges associated with industrial activity to waters of the United States must be authorized by a National Pollutant Discharge Elimination System (NPDES) permit. Industrial activity includes storm water discharge associated with construction activities that involves clearing, grading and excavation that result in the disturbance of more than 1 acre of total land area. Because the construction activities in the proposed action would disturb more than one acre of land, section 402 of the CWA requires that the contractor file with the United States Environmental Protection Agency (EPA) a "Notice of Intent" and comply with the terms of this permit. The construction contractor will prepare a Storm Water Pollution Prevention Plan (SWPPP) and obtain the necessary permits before work commences.

An Individual 401 Quality certification would be acquired from the Navajo Nation Environmental Protection Agency (NNEPA).

The NNDOT will apply for the 401/404 permits prior to construction and will include the requirements in the contract documents for the contractor to follow during all work. The NNDOT contact the contractor to review permit requirements and discuss any deviations from the requirements so that NNDOT can coordinate any amendments to the permits with the regulatory agencies before construction takes place.

Water will be required for construction activities. Permits to use water will be obtained from the appropriate agencies or persons as required. If water is obtained from the Navajo Nation, then the construction contractor will need to obtain a permit from the Department of Water Resources Management at least 30 days prior to construction. The contractor will notify the Navajo Nation of the location of the water resources to be used during construction.

Prime or Unique Farmland

USGS soil maps were reviewed for the project area. The project site does not include prime or unique farmland, or other farmland of statewide or local importance as identified by the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS).

Hazardous Waste and Materials

The project area will have no impact on hazardous materials, contamination, toxic chemicals, gasses and radioactive substances that exceed regulatory thresholds and which could affect the health or safety of occupants or conflict with the intended use of the subject property.

Construction equipment will be inspected daily for leaks. Leaking equipment will be removed from the project site until repaired and spills will be cleaned up.

Leaking equipment will be removed from the project site until it is repaired. Spills will be properly addressed and cleaned.

All fuels, oils, lubricants, and hydraulic fluids will be kept in sealed storage containers or facilities that are located within the construction area.

All waste materials shall be disposed of off-site in accordance to local, state, federal and tribal regulations.

Air Quality:

Air quality attainments are based on the NAAQS established by the EPA. Due to the fact that the project will not result in increased traffic volume, long-term emissions increases will not occur. Thus, the project will not have lasting adverse impacts to the air quality.

There will be some dust generated during construction. Dust control measures such as wetting construction areas will be implemented to minimize fugitive dust.

Construction crews will limit unnecessary idle times on diesel-powered engines, implement dust control measures during land clearing and other related activities, and cover loads during transport.

Noise Quality:

Due to existing traffic patterns in the project area, there are no sound or noise issues associated with the proposed action. Noise will temporarily be increased above current background noise, however, it is expected to be minor and work will occur during daytime hours and not on weekends or holidays. Also, due to existing traffic in the project area, there are no sound or noise issues associated with the proposed action.

When occurring near residences, construction shall take place at times of the day so that the noise and light will least disturb residents.

Socio-Economics and Environmental Justice Impacts

Executive Order 12898 (published in the Federal Register on February 11, 1994) requires federal agencies to identify and address disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low income populations.

The proposed undertaking will provide an all-weather paved road and a bridge for nearby residents/families. Families will no longer be stranded by adverse weather; school buses will be able to pick up students; fewer school days will be missed by students. The existing road is used by local residents to travel for medical services, school and shopping for groceries and other goods.

The new roadway will only create a positive impact to the many low income, minority families that use this road to commute to and from school, work, church, etc. No adverse effects related to environmental justice or socio-economics are expected.

Temporary access will be allowed at all times for the duration of the project for emergency vehicles and residents. Traffic control provisions will be made to accommodate any local special events or festivals.

The school system will be notified at least 30 days prior to the start of work.

Residents will be notified at least 30 days prior to the start of work. Residents will be allowed access to their homes at all times.

A traffic control plan will be developed for the safety of the local traveling community.

Mitigations and Environmental Commitments:

The contractor shall be required to provide documentation which demonstrates compliance with NEPA and other federal, State and Tribal environmental regulations for construction equipment yards, material sources, staging areas and haul roads that are not covered by the assessment.

The subject project will involve right of way (ROW) acquisitions or easements. If any ROW actions by the Bureau of Indian Affairs (BIA) are identified, further consultation with the BIA region to determine the appropriate level of documentation will be necessary.

Construction crews will limit unnecessary idle times on diesel-powered engines, implement dust control measures during land clearing and other related activities, and cover loads during transport.

Construction equipment will be inspected daily for leaks. Leaking equipment will be removed from the project site until repaired and spills will be cleaned up.

All waste materials shall be disposed of off-site in accordance to local, state, federal and tribal regulations.

When occurring near residences, construction shall take place at times of the day so that the noise and light will least disturb residents.

A survey for active migratory bird nests will occur prior to construction and/or any ground disturbing activities. If an active nest is identified, the Navajo Fish and Wildlife Department will be contacted before conducting further project activities.

The project will call for the removal of vegetation and soil, which will be accomplished in a manner to reduce soil erosion and to disturb as little vegetation as possible.

Grading operations and reseeded of indigenous species will begin immediately following the subgrade construction.

Heavy equipment will be inspected and cleaned prior to entering the project area to remove any mud or soil adhering to the equipment, which may harbor seeds of noxious weeds, prior to construction and transportation of any heavy equipment to the project site.

Preventative measures will be taken to reduce the likelihood of spreading noxious weeds in the project area. Construction crews will avoid transporting seeds of noxious plants from other project areas.

Dust control measures such as wetting construction areas will be implemented to minimize fugitive dust.

As the project involves greater than one (1) acre of ground disturbance, the Contractor shall be responsible for applicable permits, such as the National Pollutants Discharge Elimination System (NPDES) permit. The NPDES requires development of a Storm Water Pollution Prevention Plan (SWPPP), which will identify erosion and sediment control best management practices, and maintenance and inspection procedures.

Because the construction activities in the proposed action would disturb more than one acre of land, section 402 of the CWA requires that the contractor file with the United States Environmental Protection Agency (EPA) a "Notice of Intent" and comply with the terms of this permit. The construction contractor will prepare a Storm Water Pollution Prevention Plan (SWPPP) and obtain the necessary permits before work commences.

The appropriate agency or contractor will conduct a reconnaissance survey of the project area to assess the drainages and waterways along the proposed project route. Sections 401 and 404 of the CWA will need to be addressed before construction begins by the Navajo Nation Division of Transportation.

NNDOT or its contractor will submit for a determination action to the ACOE to determine the permit required and comply with the permit terms and conditions.

If required, an Individual 401 Quality certification would also be acquired from the Navajo Nation Environmental Protection Agency (NNEPA).

The NNDOT will apply for the 401/404 permits prior to construction and will include the requirements in the contract documents for the contractor to follow during all work.

No work shall occur within jurisdictional Waters of the United States until the appropriate Clean Water Act Section 401 and 404 permits are obtained. The permits are to be obtained prior to construction. The Navajo Nation Division of Transportation will prepare and submit an application to the US Army Corps of Engineers for a Clean Water Act Section 404 permit for the project.

If water is obtained from the Navajo Nation, then the construction contractor will need to obtain a permit from the Department of Water Resources Management at least 30 days prior to construction. The contractor will notify the Navajo Nation of the location of the water resources to be used during construction.

Construction activities will be limited to the road prism for the length of the boundaries of sites NM-H-34-69 and NM-H-34-70.

The boundaries of sites NM-H-34-69 and NM-H-34-70 will be temporarily fenced or barricaded prior to construction.

Archaeological and Cultural Monitoring within 50 feet of the site boundaries of NM-H-34-69 and NM-H-34-70 will be implemented during Construction.

No rubber-tired vehicles shall be used to install ROW fence. Fence shall be installed by hand.

To avoid unforeseen impacts, any archaeological or historical artifacts or remains discovered during construction shall be left intact and undisturbed, all work in the area shall stop immediately, and the FHWA OTT Environmental Coordinator shall be notified. In addition, the Navajo Nation Tribal Historic Preservation Office (THPO) and the Navajo Department of Historic Preservation will be notified of the discovery pursuant to 36 CFR 800.13. Construction operation may resume upon notification from the THPO and FHWA.

Temporary access will be allowed at all times for the duration of the project for emergency vehicles and residents. Traffic control provisions will be made to accommodate any local special events or festivals.

The school system will be notified at least 30 days prior to the start of work.

Residents will be notified at least 30 days prior to the start of work. Residents will be allowed access to their homes at all times.

Summary

This clearance pertains only to the Scope of Work and Project description submitted for review. Any changes to the Scope of Work should be reviewed by FHWA and evaluated for additional environmental impacts. The environmental commitments and mitigations listed in the document are not subject to change without approval from FHWA.

CONCLUSION

The FHWA has determined that this project meets the requirements of a Categorical Exclusions (CE) as defined in 23 CFR 771.117(a) and does not involve unusual circumstances as described in 23 CFR 771.117(b). The project is categorically excluded from further NEPA analysis because it meets these requirements and falls within the following action(s) of 23 CFR 771.117: 23 CFR 771.117: (c)(22) projects, as defined in 23 USC 101, that would take place entirely within the existing operational right-of-way.

DAVID E CREMER

Digitally signed by DAVID E
CREMER

Date: 2020.10.23 13:23:01 -05'00'

David Cremer,
Environmental Protection Specialist,
Office of Tribal Transportation,
Federal Highway Administration

Date



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, ALBUQUERQUE DISTRICT
1970 EAST 3RD AVENUE, SUITE 109
DURANGO, CO 81301

March 3, 2021

Regulatory Division

SUBJECT: Nationwide Permit (NWP) Verification – Action No. SPA-2020-00290, NDOT Route N5012 Sanostee Wash Project

Garrett Silversmith
Navajo Division of Transportation
#16 Old Coal Mine Road
Mentmore, NM 87319

Dear Mr. Silversmith:

This letter responds to your October 21, 2020 pre-construction notification for the proposed NDOT Route N5012 Sanostee Wash Project located at approximately latitude 36.43519, longitude -108.86945, in San Juan County, New Mexico. The work, as described in your application and attachments, will consist of upgrades to 0.64 miles of Route N5012. We have assigned Action No. SPA-2020-00290 to this project. Please reference this number in all future correspondence concerning the project.

Specifically, and as shown in the submitted Sheet 11, this U.S. Army Corps of Engineers (Corps) Clean Water Act, Section 404 verification authorizes the permanent discharge of approximately 0.038 acres of fill into an intermittent channel, specifically Sanostee Wash, for the purpose of bridge construction. This verification also authorizes the temporary discharge of approximately 0.002 acres into an unnamed tributary to Sanostee Wash for the purpose of constructing a check dam.

Based on the information provided, we have determined that the project is authorized by Nationwide Permit (NWP) 14 Linear Transportation Projects. A summary of this permit and the New Mexico Regional Conditions are available on our website at www.spa.usace.army.mil/reg/nwp. Clean Water Act (CWA), Section 401, requires applicants of federal permits to obtain certification of compliance, or waiver thereof, with applicable water quality standards from the appropriate certifying authority. Water Quality Certification for this project has been waived in accordance with 121.9 (2)(i) of the CWA Section 401 Certification Rule. The permittee must ensure that the work complies with the terms and conditions of the NWP, including Navajo Nation Regional Conditions and the special conditions listed below.

1. Any culverts found within the project area shall be removed and placed in an upland location.

2. All temporarily impacted areas located adjacent to waters of the U.S. shall be restored by the permittee to pre-construction conditions, including original contours, vegetation composition and density (excluding invasive species), and drainage patterns.
3. For cultural sites NM-H-34-70 and NM-H-34-69 the following conditions will apply:
 - a. Constrict construction activities to the road prism for the length of the site boundary.
 - b. Site boundary be temporarily fenced or barricaded prior to construction.
 - c. Monitoring within 50 feet of site boundary by a qualified archaeologist during construction.
 - d. No rubber-tired vehicles shall be used to install the ROW fence. The fence shall be installed by hand.

Our review of this project also addressed its effects on threatened and endangered species and historic properties in accordance with general conditions 18 and 20. The Bureau of Indian Affairs (BIA) and the Federal Highway Administration (FHWA) are cooperating federal agencies for this work. The Navajo Nation Department of Fish and Wildlife (NNDFW) concurred with BIA's "*No effect*" determination for impacts to federally listed species or critical habitat (Review No. 20ndot04). The FHWA has made a determination of "*No adverse effect*" for site M-H-34-93 and has made a determination of "*Historic Properties Affected*" for sites NM-H-34-69 and NM-H-34-70. The Navajo Nation Tribal Historic Preservation Office concurred with the FHWA determination that these sites will revert to a finding of "*No adverse effect*" if the conditions within the consultation letter dated August 18, 2020 are followed. Based on the information provided, we have determined that this project will not affect any federally listed threatened or endangered species or any historic properties. However, please note that the permittee is responsible for meeting the requirements of general condition 18 on endangered species and general condition 20 on historic properties.

This letter does not constitute approval of the project design features, nor does it imply that the construction is adequate for its intended purpose. This permit does not authorize any injury to property or invasion of rights or any infringement of federal, state or local laws or regulations. The permittee and/or any contractors acting on behalf of the permittee must possess the authority and any other approvals required by law, including property rights, in order to undertake the proposed work.

This permit verification is valid until March 18, 2022 (33 CFR 330.6), unless the NWP is modified, suspended, revoked or reissued prior to that date. Continued confirmation that an activity complies with the terms and conditions, and any changes to the NWP, is the responsibility of the permittee. Activities that have commenced, or are under contract to commence, in reliance on a NWP will remain authorized provided the activity is completed within 12 months of the date of the NWP's expiration, modification, or revocation.

Within 30 days of project completion, the permittee must fill out the enclosed Certification of Compliance form and return it to our office. The landowner must allow Corps representatives to inspect the authorized activity at any time deemed necessary to ensure that it is being, or has been, accomplished in accordance with the terms and conditions of the NWP.

If you have any questions, please contact me at (970) 259-1764 X 1006 or by e-mail at Wyatt.T.Medley@usace.army.mil.

Sincerely,

A handwritten signature in cursive script that reads "Wyatt Medley".

Wyatt Medley
Regulatory Project Manager

**Certification of Compliance
with Department of the Army Nationwide Permit**

Action Number: SPA-2020-00290

Name of Permittee: Garrett Silversmith, Navajo Division of Transportation

Nationwide Permit: 14 Linear Transportation Projects

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the following address:

Wyatt Medley
Albuquerque District, U.S. Army Corps of Engineers
1970 East 3rd Avenue, Suite 109
Durango, CO 81301

Please note that your permitted activity is subject to a compliance inspection by an U.S. Army Corps of Engineers representative. If you fail to comply with this permit, you are subject to permit suspension, modification, or revocation.

Please enclose photographs showing the completed project (if available).

I hereby certify that the work authorized by the above referenced permit has been completed in accordance with the terms and conditions of the said permit, and required mitigation was completed in accordance with the permit conditions.

Date Work Started _____

Date Work Completed _____

Signature of Permittee

Date



THE NAVAJO NATION



JONATHAN NEZ | PRESIDENT MYRON LIZER | VICE PRESIDENT

NAVAJO NATION ENVIRONMENTAL PROTECTION AGENCY

Water Quality/NPDES Program
P.O. Box 1999, Shiprock, NM 87420
(505) 368-1037

June 24, 2021

Garret Silversmith
Division Director, NDOT
16 Old Coal Mine Road
Mentmore, NM 87319

RE: Clean Water Act Section 401 Certification for Proposed N5012(1) 1, 2, & 4 Sanostee Wash Bridge Project (2020-0092SR), Sanostee, San Juan County, NM

Mr. Silversmith,

The Navajo Nation Environmental Protection Agency (Navajo EPA) has reviewed and public noticed the above-referenced §401 Water Quality Certification Application. The 30-day comment period has ended and no comments were received.

The Navajo Nation Division of Transportation is proposing road and bridge construction on 0.644 miles of route N5012(1),1,2&4. The bridge will span Sanostee Wash and replace the current low-water crossing, which is unsafe or impassable during inclement weather. The approximately 100' single-span bridge will be two lanes wide and have wire-enclosed rip-rap along the base of each abutment. Excavation of existing material for bridge and erosional control structures will occur both inside and adjacent to the wash. The channel will be reshaped, but the grade will remain the same. Approximately 6694 yd³ will be dredged and 0.044 acre will be filled with rip-rap within the jurisdictional wash. Additional fill material will include some concrete and soil and rock from a borrow site located outside the project area. Disturbed areas without rip-rap will be reseeded to reduce erosion. Construction is expected to occur from March to October 2021.

Your request for a 401 certification is granted with the following conditions: The conditions which follow ensure that there is not a violation of Navajo Nation Surface Water Quality Standards 2015 Sections 102 - 105, 201(A) - (H), 202(A) - (F), 203(A)(1) - (A)(9), 203(B) and (C), 204(9), 204(13), 204(15), 204(16), 205, 206, 207(A) - (I), 208, 210 - 212, and/or 213, and Tables 205.1, 206.1, and/or 207.1:

1. Navajo Nation Division of Transportation (NDOT) shall provide a copy of these Clean Water Act §401 Water Quality Certification conditions to all appropriate contractors and subcontractors. NNDOT shall ensure that these conditions are understood by all appropriate contractors and subcontractors. NNDOT shall keep a copy of these conditions at the construction site where the workers may read it. (Justification – ensures that contractors and subcontractors comply with Navajo Nation Surface Water Quality Standards 2015 (NNSWQS 2015) Sections 203 and 207).

2. Erosion control and/or bank protection features (e.g., silt fences, straw bales, riprap, or mulching) shall be used, where appropriate, to minimize channel or bank erosion and soil loss. These features shall be maintained, as necessary, during pre-construction and construction periods. Denuded areas shall be revegetated as soon as possible with native plants and seed. (Justification – ensures that contractors and subcontractors comply with NNSWQS 2015 Sections 203 and 207).
3. Earthen fill placed in locations subject to scour shall contain no more than ten percent (10%) of particles finer than 0.25 mm diameter (passing a No. 60 sieve, on a dry weight basis). (Justification – ensures that contractors and subcontractors comply with NNSWQS 2015 Sections 203 and 207.)
4. Upon completion of construction, the work area shall be restored to maintain the stability of upstream and downstream segments of the impacted surface water bodies listed above with respect to erosion and sedimentation. (Justification – ensures that contractors and subcontractors comply with NNSWQS 2015 Sections 203 and 207).
5. NNDOT is responsible for ensuring construction material and/or fill, placed within the ordinary high water mark (OHWM), is free from substances (including fines that may be associated with rip-rap material) that can cause or contribute to pollution of a surface water. (Justification – ensures that contractors and subcontractors comply with NNSWQS 2015 Sections 203 and 207).
6. Debris (such as soil, silt, sand, rubbish, cement, asphalt, oil or petroleum products, organic materials, tires or batteries) derived from construction activities shall not be deposited at any site where it may be washed into a Water of the Navajo Nation and shall be properly disposed of after completion of the work. (Justification – ensures that contractors and subcontractors comply with NNSWQS 2015 Sections 203 and 207).
7. NNDOT shall have a spill containment plan to ensure that pollutants are contained, removed and properly disposed of. In addition, equipment maintenance shall be performed at an upland site away from Waters of the Navajo Nation. (Justification – ensures that contractors and subcontractors comply with NNSWQS 2015 Sections 203 and 207).
8. Runoff and seepage from alterations of the natural environment into the impacted surface water bodies listed above shall not cause a violation of NNSWQS 2015 Sections 203 and 207.
9. Construction materials, including concrete, asphalt, and piping, shall consist of materials that do not leach pollutants into surface or ground waters. Activities shall be conducted and monitored to ensure that pollution from concrete formation and equipment washing does not drain into surface or ground waters. (Justification – ensures that contractors and subcontractors comply with NNSWQS 2015 Sections 203 and 207).
10. At completion, all construction residues, equipment and non-native materials shall be removed from and properly disposed of outside the 100-year floodplain. (Justification – ensures that contractors and subcontractors comply with NNSWQS 2015 Sections 203 and 207).
11. Stockpiles of construction materials shall be stored outside of jurisdictional waters. (Justification – ensures that contractors and subcontractors comply with NNSWQS 2015 Sections 203 and 207).
12. No discharge of process water, material processing residue, wastewater or other residual material is authorized within jurisdictional waters. (Justification – ensures that contractors and subcontractors comply with NNSWQS 2015 Sections 203 and 207).
13. Flows shall be diverted around work operations or the work shall be performed during low water conditions when the area is naturally dewatered. When there is water flow within the construction area, construction activity shall cease and construction equipment relocated outside the watercourse. (Justification – ensures that contractors and subcontractors comply with NNSWQS 2015 Sections 203 and 207).

This certification is approved with the understanding that the subject activities are consistent with the terms, conditions, and regional conditions of the United States Army Corps of Engineers (USCOE) Nationwide Permit Program. If there are any substantive changes in the proposed project that may affect water quality, the applicant shall notify our office. Failure to do so will result in revocation of this certification. This certification is valid for the period specified in the USCOE Nationwide Permit Regulations (33 CFR Part 330). If for some reason the USCOE permit is revoked, suspended or modified, this certification may also be revoked, suspended or modified.

If you have any questions regarding this certification, please contact our office at 928-871-7690.

Sincerely,



Ronnie Ben
Department Director
Surface and Groundwater Protection Department
Navajo Nation Environmental Protection Agency

cc: Wyatt Medley, USACE
Patrick Antonio, NNEPA
Kerriane Zdimal, SME