CONTRACT BOOK

FOR

N8066(3)1,2&4 BLACK MESA

GRADE, DRAIN, CONCRETE ARCH CULVERT, BRIDGE, AGGREGATE BASE COURSE,

HOT ASPHALTIC CONCRETE PAVEMENT, AND MISCELLANEOUS CONSTRUCTION FOR LENGTH OF 5.71 MILES N8066, 1.21MILES N8066 SPUR AND 0.30 MILES N8066 ACCESS ROAD

LOCATED NEAR PINON, AZ,

NAVAJO COUNTY, NAVAJO NATION

April 2, 2026



Navajo Division of Transportation

Navajo Transportation Complex

#16 Old Coal Mine Road

Mentmore, NM 87319

Phone (505) 371-8300

TABLE OF CONTENTS

Agreement

Article 1 – Primary Work Location

Article 2 – The Project

Article 3 – Engineer; Government and Contractor's Representative

Article 4 – Contract Times

Article 5 – Contract Price

Article 6 – Payment Procedures

Article 7 – Interest

Article 8 – Contractor's Representations

Article 9 – Contract Documents

Article 10 – Miscellaneous

Exhibit A - Standard General Conditions

Article 1 – Definitions and Terminology

Article 2 – Preliminary Matters

Article 3 – Contract Documents: Intent, Amending, Reuse

Article 4 – Availability of Lands; Subsurface and Physical Conditions; Hazardous Environmental Conditions; Reference Points

Article 5 – Bonds and Insurance

Article 6 – Contractor's Responsibilities

Article 7 – Other Work at the Site

Article 8 – Government's Responsibilities.

Article 9 – Engineer's Status During Construction

Article 10 – Changes in the Work; Claims

Article 11 – Cost of the Work; Allowances; Unit Price Work

Article 12 – Change of Contract Price; Change of Contract Times

Article 13 – Test and Inspections; Correction, Removal or Acceptance of Defective Work

Article 14 – Payments to Contractor and Completion

Article 15 – Suspension of Work and Termination

Article 16 – Dispute Resolution

Article 17 – Miscellaneous

Exhibit B - Project Specific Supplemental General Conditions

1. WTI, *Design Memorandum, Proposed Arch Bridge Over Oraibi Wash, Black Mesa, Arizona*; October 10, 2020.
2. Terracon, *Geotechnical Engineering and Pavement Design Report*, February 13, 2017.
3. AMEC Foster Wheeler, *Final Geotechnical Investigation and Foundation Recommendation Report, BIA Project N8066(3),N8065(1) and School Spur*, June 15, 2016.

Exhibit C - Special Contract Requirements

1. Contractor Safety Program Requirements
2. Water
3. Buy America Requirements
4. Borrow and Aggregate Materials
5. Furnishing of Contractor Field Testing Laboratory
6. Furnishing of Field Office & Sanitary Facilities
7. Asphalt Shipments
8. Load Restrictions
9. Archeological/NEPA Requirements
10. Construction Requirements
11. Environmental NOI Requirements
12. Contract Clauses

Exhibit D – Bid Instructions and Schedule

Notice to Bidder

Clause NN-214-18 Preparation of Bids

Clause NN-228-1 Bid Guarantee

Clause NN-228-11: Individual Surety

Clause NN-228-15: Performance and Payment Bonds

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

Bid Schedule

Exhibit E – Required Contract Forms

Solicitation, Offer, and Award SF 1442

Bid Bond SF 24

Affidavit of Individual Surety SF 28

Performance Bond SF 25

Payment Bond SF 25A

Affidavit of Non-Collusion

Exhibit F – Standard Specification for Construction of Roads and Bridges – FP-14 & Supplemental Specifications

Supplemental Specifications

Exhibit G – Project Design Plans

Exhibit H – Davis Bacon Wage Determination

Exhibit I – Environmental Requirements & Permits

Contract Number:_____

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

BUSINESS UNIT #'S & AMOUNTS: ############ $ #,###,###.##

CONTRACT NOT TO EXCEED: $ #,###,###.##
(Amount to encumber)

BEGINNING DATE OF CONTRACT:
ENDING DATE OF CONTRACT: 280 working days 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 _____, 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 " N8066(3)/1,2&4 Black Mesa" Navajo County, AZ 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 Black Mesa Chapter area of the Navajo Nation, Navajo County, State of Arizona.

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 N8066(3)1,2&4 includes:
Roadway reconstruction, earthwork, installation of drainage pipes, box culverts, a precast concrete arch culvert, aggregate base course, hot asphaltic concrete pavement, and 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 Dibble Engineering, herein referred to as "Engineer of Record".

3.2 The Government's representative [Contracting Officer (CO)] is Buu Nygren, 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 ensure the completion of the Work in accordance with the Contract Documents.

3.3 The Contractor's representative is _____ whose phone number is (___)_____.

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 280 working days after NTP, 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 280 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 300 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*:

($) 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 _____ 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 then the Effective Date of the Agreement.

GOVERNMENT:	CONTRACTOR:
The Navajo Nation	_____
By: Buu Nygren	By: _____
Title: President	Title: _____
(If Government is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)	(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)
Attest: _____	Attest: _____
Title: _____	Title: _____
Address for giving notices:	Address for giving notices:
P.O. Box # 7440	_____
Window Rock, AZ 86515	_____
	License No.: AZ (Where Applicable)

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

Agent for service of process: _____
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.

EXHIBIT A

STANDARD GENERAL CONDITIONS

TABLE OF CONTENTS

Page

Article 1 – Definitions and Terminology 19
1.1 Defined Terms 19
1.2 Terminology 23

Article 2 – Preliminary Matters 25
2.1 Delivery of Bonds and Evidence of Insurance 25
2.2 Copies of Documents 25
2.3 Commencement of Contract Times; Notice to Proceed 25
2.4 Starting the Work 25
2.5 Before Starting Construction 25
2.6 Preconstruction Conference; Designation of Authorized Representatives 26
2.7 Initial Acceptance of Schedules 26

Article 3 – Contract Documents: Intent, Amending, Reuse 27
3.1 Intent 27
3.2 Reference Standards 27
3.3 Reporting and Resolving Discrepancies 28
3.4 Amending and Supplementing Contract Documents 29
3.5 Reuse of Documents 29
3.6 Electronic Data 29

Article 4 – Availability of Lands; Subsurface and Physical Conditions; Hazardous Environmental Conditions; Reference Points 30
4.1 Availability of Lands 30
4.2 Subsurface and Physical Conditions 30
4.3 Differing Subsurface or Physical Conditions 31
4.4 Underground Facilities 32
4.5 Reference Points 33
4.6 Hazardous Environmental Condition at Site 34

Article 5 – Bonds and Insurance 35
5.1 Performance, Payment, and Other Bonds 35
5.2 Licensed Sureties and Insurers 36
5.3 Insurance Requirements 36
5.4 Builder's Risk Insurance 40
5.5 Government's Liability Insurance 40
5.6 Property Insurance 40
5.7 Waiver of Rights 40
5.8 Receipt and Application of Insurance Proceeds 40
5.9 Acceptance of Bonds and Insurance; Option to Replace 41
5.10 Partial Utilization, Acknowledgment of Property Insurer 41

Article 6 – Contractor's Responsibilities 41
6.1 Supervision and Superintendence 41

6.2 Labor; Working Hours 42
6.3 Services, Materials, and Equipment 42
6.4 Progress Schedule 43
6.5 Substitutes and "Or-Equals" 43
6.6 Concerning Subcontractors, Suppliers, and Others 46
6.7 Patent Fees and Royalties 47
6.8 Permits 48
6.9 Laws and Regulations 48
6.10 Taxes 48
6.11 Use of Site and Other Areas 49
6.12 Record Documents 50
6.13 Safety and Protection 50
6.14 Safety Representative 51
6.15 Hazard Communication Programs 51
6.16 Emergencies 51
6.17 Shop Drawings, Samples and Certifications 52
6.18 Continuing the Work 55
6.19 Contractor's General Warranty and Guarantee 56
6.20 Indemnification 57
6.21 Delegation of Professional Design Services 57
6.22 Licensing & Registration Requirements 58
6.23 Records; Audits 59

Article 7 – Other Work at the Site 59
7.1 Related Work at Site 59
7.2 Coordination 60
7.3 Legal Relationships 60

Article 8 – Government's Responsibilities 61
8.1 Communications to Contractor; Project Supervision 61
8.2 Replacement of Construction Manager 61
8.3 Furnish Data 61
8.4 Pay When Due 61
8.5 Lands and Easements; Reports and Tests 61
8.6 Insurance 61
8.7 Contract Modifications 62
8.8 Inspections, Tests, and Approvals 62
8.9 Limitations on Government's Responsibilities 62
8.10 Undisclosed Hazardous Environmental Condition 62
8.11 Evidence of Financial Arrangements 62
8.12 Compliance with Safety Program 62

Article 9 – Engineer's Status During Construction 62
9.1 Government's Representative 62
9.2 Visits to Site 62
9.3 Project Representative 63
9.4 Authorized Variations in Work 63
9.5 Rejecting Defective Work 63

9.6 Shop Drawings, Change Orders and Payments....64
9.7 Determinations for Unit Price Work....64
9.8 Decisions on Requirements of Contract Documents and Acceptability of Work....64
9.9 Limitations on Engineer's Authority and Responsibilities....65
9.10 Compliance with Safety Program....65

Article 10 – Changes in the Work; Claims....65
10.1 Authorized Changes in the Work....65
10.2 Unauthorized Changes in the Work....66
10.3 Execution of Contract Modifications....66
10.4 Notification to Surety....66
10.5 Claims....67

Article 11 – Cost of the Work; Allowances; Unit Price Work....67
11.1 Cost of the Work....67
11.2 Allowances....70
11.3 Unit Price Work....70

Article 12 – Change of Contract Price; Change of Contract Times....71
12.1 Amendments; Contract Modifications....71
12.2 Change of Contract Times....72
12.3 Delays....72

Article 13 – Tests and Inspections; Correction, Removal or Acceptance of Defective Work....73
13.1 Notice of Defects....73
13.2 Access to Work....73
13.3 Tests and Inspections....73
13.4 Uncovering Work....74
13.5 Government May Stop the Work....75
13.6 Correction or Removal of Defective Work....75
13.7 Correction Period....75
13.8 Acceptance of Defective Work....76
13.9 Government May Correct Defective Work....76

Article 14 – Payments to Contractor and Completion....77
14.1 Schedule of Values....77
14.2 Progress Payments....77
14.3 Contractor's Warranty of Title....81
14.4 Substantial Completion....81
14.5 Partial Utilization....82
14.6 Final Inspection....83
14.7 Final Payment....83
14.8 Final Completion Delayed....84
14.9 Waiver of Claims....85

Article 15 – Suspension of Work and Termination....85
15.1 Government May Suspend Work....85
15.2 Government May Terminate for Cause....85
15.3 Government May Terminate for Convenience....87

15.4 Contractor May Stop Work or Terminate 88

Article 16 – Dispute Resolution 88
16.1 Dispute Resolution 88
16.2 Department of Justice Approval 90

Article 17 – Miscellaneous 90
17.1 Giving Notice; Mailings 90
17.2 Computation of Times 90
17.3 Survival of Obligations 90
17.4 Governing Law; Compliance with Navajo Nation Laws; Jurisdiction 91
17.5 Headings 92
17.6 Government Ownership of Work Product 92
17.7 Right to Assurance 92

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 fifteen [15] 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	$ 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	$ 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 of 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 Article5 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 electronic copies 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 guardrail, all permanent timber materials, aluminum signing materials, pavement markings and paints, traffic sign paint, paints and coatings for structural steel, high strength bolts,

seed, piling, and other materials calling for painted surfaces, any other materials which require fabrication or materials taken from outside of the project limits, and for materials specifically requiring certificates of 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, expediters, 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 (l) 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. WTI, *Design Memorandum, Proposed Arch Bridge Over Oraibi Wash, Black Mesa, Arizona*; October 10, 2020.
2. Terracon, *Geotechnical Engineering and Pavement Design Report*, February 13, 2017.
3. AMEC Foster Wheeler, *Final Geotechnical Investigation and Foundation Recommendation Report, BIA Project N8066(3),N8065(1) and School Spur*, June 15, 2016.

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

Number and Title		Page
1.	Contractor Safety Program Requirements	97
2.	Water	98
3.	Buy America Requirements	98
4.	Borrow and Aggregate Materials	99
5.	Furnishing of Contractor Field Testing Laboratory	100
6.	Furnishing of Field Office and Sanitary Facilities	101
7.	Asphalt Shipments	102
8.	Load Restrictions	102
9.	Archeological/NEPA Requirements	104
10.	Construction Requirements	105
11.	Environmental NOI Requirements	106
12.	Contract Clauses	107
	Clause NN-236-1: Performance of Work by the Contractor	107
	Clause NN-222-6: Construction Wage Rate Requirements (Davis Bacon Act)	107
	Clause NN-236-21: Specifications and Drawings for Construction	110
	Clause NN-248-3: Value Engineering Construction	110

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.

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 adjacent to or within the project site, one weatherproof building for the exclusive use of Government personnel for use as a field office. The minimum outside dimensions of the building shall be 3.66 meters (12 feet) in width and 12.2 meters (40 feet) in length. The minimum ceiling height shall be 2.4 meters (8 feet). The field office shall include a bathroom. The contractor shall provide and maintain the water supply and holding tank necessary for the field office bathroom to function, and provide service of the holding tank as necessary (or weekly at a minimum). The contractor shall also provide and pay for the necessary power required to run all field office equipment, Wi-Fi- router system, Internet modem and connection to provider with 100 MB speed, lighting, air conditioning and heat. Furnishings provided by the contractor shall include two office work stations with desk, chair and file storage, a plan table, a table and chairs for meetings of at least eight people. Any maintenance of the field office that may be required during construction shall be taken care of promptly by the contractor.

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 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:

Distance (D)	Load (L)	Distance (D)	Load (L)	Distance (D)	Load (L)

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:

Distance (D)	**Load (L)**	**Distance (D)**	**Load (L)**	**Distance (D)**	**Load (L)**
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 archaeologist 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.

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.

Contractor's Responsibility for Utility Property and Services includes:

The contractor shall be NDOT's underground utility field locator, and perform all requirements as prescribed in A.R.S. 40-360.21 through .29, for all underground facilities that have been installed by the contractor on the current project, until the project is accepted by NDOT.

At least two working days prior but no more than 15 working days prior to commencing excavation, the contractor shall contact ARIZONA 811, between the hours of 6:00 a.m. and 5:00 p.m., Monday through Friday, excluding holidays, for information relative to the location of buried utilities. The contractor can call 811 from anywhere in Arizona or can contact ARIZONA 811 at the number below:

Projects Outside Maricopa County (800) 782-5348

Contactors can also create and manage utility locate tickets online by using the Arizona 811 E-Stake tool at www.Arizona811.com.

NTUA Water – As part of this project's utility mitigations, the Government and the Contractor will be responsible for completing utility relocation work on behalf of the NTUA for specified facilities/crossings in the plans requiring relocation and/or adjustment. The Exhibit D – Bid Schedule includes bid items to complete these items of work and the Contractor shall provide the appropriate unit bid prices. The Contractor's unit bid prices should include all the appropriate permits and tapping fees (see *Article 6.8 Permits* of the Standard General Conditions). The Contractor's construction schedule should also include time to complete these items before starting on the nearby roadway construction.

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.

The Bid Schedule has two alternate bid categories, 1) Hot Asphaltic Concrete Pavement, Class "B", Grade "B", Type III Smoothness and Asphalt Binder, PG 58-28; or 2) Chip Seal, Type 2C. Contract shall complete both alternative bids and final bids with each alternate. The Government shall review all Bidders and Alternatives and select the most responsive Bidder and Alternate.

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 B

NAVAJO NATION DIVISION OF TRANSPORTATION

PROJECT: N8066 (3) 2 & 4 - BLACK MESA (MAINLINE EXTENSION) **DATE:** _____

LENGTH: 0.35 Miles N8066

LINE ITEM NO.	PAY ITEM NUMBER	PAY ITEM DESCRIPTION	ESTIMATED QUANTITIES	UNIT	UNIT PRICE BID	TOTAL AMOUNT
B1	10901-0000	Extra & Miscellaneous Work - Section 109.02(s)	All Required	LPSM	$ 150,000.00	$ 150,000.00
B2	15101-0000	Mobilization	All Required	LPSM		
B3	15201-0000	Construction Survey And Staking	All Required	LPSM		
B4	15301-0000	Contractor Quality Control	All Required	LPSM		
B5	15705-1400	Soil Erosion Control, Fiber Roll	470	LNFT		
B6	15714-0000	Temporary Straw Mulching	10	ACRE		
B7	20101-0000	Clearing And Grubbing	8	ACRE		
B11	20304-1000	Removal Of Structures And Obstructions	1	LPSM		
B12	20401-0000	Roadway Excavation	1,000	CUYD		
B13	20402-0000	Subexcavation	5,000	CUYD		
B14	20403-0000	Unclassified Borrow, (In Place)	12,000	CUYD		
B15	20425-1100	Drainage Excavation	1,900	CUYD		
B19	21102-2100	Roadway Obliteration, Method 2	8,000	SQYD		
B20	21301-0000	Subgrade Stabilization	8,000	SQYD		
B21	25101-2100	Placed Riprap, Method B, Class 1	100	CUYD		
B27	30101-0100	Untreated Aggregate Base, Grading "Special"	2,000	TON		
B28	40201-0200	Asphalt Concrete Pavement, Marshall Mix, Class B	1,000	TON		
B29	40504-0000	Asphalt Binder	60	TON		
B30	41101-4000	Asphalt Prime Coat, Penetrating Emulsified Prime (PEP)	10	TON		
B34	60103-0342	Slope Paving Concrete & Headwall 84-Inch Pipe	6	EACH		
B36	60103-0702	Slope Paving Concrete & Headwall Double 48-Inch Pipe	6	EACH		
B45	60202-0600	36-Inch Equivalent Diameter Arch Or Elliptical Pipe Culvert	198	LNFT		
B49	60211-1000	End Section For 36-Inch Equivalent Diameter Arch Or Elliptical Pipe C	6	EACH		
B55	61102-2950	6-Inch Waterline, Polyvinyl Chloride (Pvc)	1,189	LNFT		
B56	61102-0000	6-Inch Waterline, High Density Polyethylene (HDPE)	220	LNFT		
B62	61104-0800	Valve, Gate, 6-Inch	3	EACH		
B63	61901-1000	Fence, Barbed Wire, 5 Strand	3,600	LNFT		
B66	61902-5100	Gate, Woven Wire, 16 Feet Width	2	EACH		
B69	61903-1100	Cattle Guard, 32 Feet	1	EACH		
B70	62101-0000	Monument	16	EACH		
B71	62102-0000	Marker	16	EACH		
B72	62102-2000	Install Waterline Marker (Utility Furnished)	6	EACH		
B73	62510-1000	Seeding, Dry Method	10	ACRE		
B75	63301-0000	Sign System	14	EACH		
B76	63308-3000	Object Marker, Type 3	8	EACH		
B77	63309-0100	Delineator, Type 1	14	EACH		
B80	63401-0300	Pavement Markings, Type B, Solid	7,200	LNFT		
B82	63401-0700	Pavement Markings, Type D, Solid	7,200	LNFT		
B84	63401-1900	Pavement Markings, Type J, Solid	100	LNFT		
B86	63501-0000	Temporary Traffic Control	All Required	LPSM		
B87	63509-1000	Temporary Traffic Control, Flagger	640	FXHR		
				ROADWAY SUBTOTAL:		

BID SCHEDULE B

NAVAJO NATION DIVISION OF TRANSPORTATION

PROJECT: N8066 (3) 2 & 4 - BLACK MESA (MAINLINE EXTENSION) **DATE:** _____

LENGTH: 0.35 Miles N8066

LINE ITEM NO.	PAY ITEM NUMBER	PAY ITEM DESCRIPTION	ESTIMATED QUANTITIES	UNIT	UNIT PRICE BID	TOTAL AMOUNT
	STRUCTURE NO. 0000N35780T0735, STA 735+46, 1-48'x14'x136' Concrete Arch					
E1	20425-1100	Drainage Excavation	1,563	CUYD		
E2	20801-0000	Structure Excavation	301	CUYD		
E3	20803-0000	Structural Backfill	1,963	CUYD		
E4	25302-1000	Gabions, Galvanized Or Aluminized Coated	135	CUYD		
E5	25305-1100	Wire Enclosed Riprap, Class 1	3,350	CUYD		
E6	55101-1200	Steel H-Pile, 10 X 42, In Place	1,330	LNFT		
E7	55101-1800	Steel H-Pile, 14 X 73, In Place	3,128	LNFT		
E8	55202-3800	Precast, Reinforced Concrete Arch w/CIP Concrete Footings	1	LPSM		
E9	55202-3801	Precast, Reinforced Concrete Headwalls for Concrete Arch	1	LPSM		
E10	55202-3802	Precast, Reinforced Concrete Wingwalls for Concrete Arch	1	LPSM		
		STRUCTURE NO. 0000N35780T0735, STA 735+46, 1-48'x14'x136' Concrete Arch SUBTOTAL:				

		CONSTRUCTION SUBTOTAL:	
Firms Name:		NAVAJO NATION TAX (6%):	
Signature:		**SCHEDULE B TOTAL BID PRICE:**	

SCOPE OF WORK

This work is for Schedule B, Project N8066(3)1,2&4 Extension, on the Navajo Nation, Navajo County, Arizona, and shall be in accordance with the FP 14, Special Contract Requirements, and Drawings. The proposed work consists of furnishing all labor, materials, equipment, services and incidentals required to grade, drain, place aggregate base course, subgrade treatment, asphalt pavement, construct turnouts, fencing, cattleguards, gates, signing, and pavement markings on 0.35 miles of miles of roadway. Payment for work performed on Items furnished and constructed will be made in accordance with Subsection 109.05 Payment of FP-14. The Unit Price Bid must include all overhead, profit and bonding.

BID SCHEDULE C

NAVAJO NATION DIVISION OF TRANSPORTATION

PROJECT: N8066 (3) 2 & 4 - BLACK MESA (Chapter House Access Road) **DATE:** _____

LENGTH: 0.12 Miles Chapter House Access Road

LINE ITEM NO.	PAY ITEM NUMBER	PAY ITEM DESCRIPTION	ESTIMATED QUANTITIES	UNIT	UNIT PRICE BID	TOTAL AMOUNT
C1	10901-0000	Extra & Miscellaneous Work - Section 109.02(s)	All Required	LPSM	$ 25,000.00	$ 25,000.00
C2	15101-0000	Mobilization	All Required	LPSM		
C3	15201-0000	Construction Survey And Staking	All Required	LPSM		
C4	15301-0000	Contractor Quality Control	All Required	LPSM		
C6	15714-0000	Temporary Straw Mulching	2	ACRE		
C7	20101-0000	Clearing And Grubbing	3	ACRE		
C10	20302-0700	Removal Of Fence	130	LNFT		
C11	20304-1000	Removal Of Structures And Obstructions	1	LPSM		
C12	20401-0000	Roadway Excavation	4,000	CUYD		
C13	21301-0000	Subgrade Stabilization	5,000	SQYD		
C21	25101-2100	Placed Riprap, Method B, Class 1	10	CUYD		
C24	25305-1100	Wire Enclosed Riprap, Class 1	50	CUYD		
C27	30101-0100	Untreated Aggregate Base, Grading "Special"	1,000	TON		
C28	40201-0200	Asphalt Concrete Pavement, Marshall Mix, Class B	500	TON		
C29	40504-0000	Asphalt Binder	30	TON		
C30	41101-4000	Asphalt Prime Coat, Penetrating Emulsified Prime (PEP)	10	TON		
C40	60201-0800	24-Inch Pipe Culvert	130	LNFT		
C46	60210-0800	End Section For 24-Inch Pipe Culvert	2	EACH		
C51	60901-1700	Curb, Concrete, 18-Inch Depth	382	LNFT		
C52	60902-0550	Curb & Gutter, MAG 220, Type C, Rolled	360	LNFT		
C53	61102-1700	2-Inch Waterline, Polyvinyl Chloride (Pvc)	235	LNFT		
C60	61104-0600	Valve, Gate, 2-Inch	3	EACH		
C64	61901-2000	Fence, Chain Link, 72-Inch Height	200	LNFT		
C65	61902-4100	Gate, Chain Link, 28 Feet Width (Double)	2	EACH		
C72	62102-2000	Install Waterline Marker (Utility Furnished)	2	EACH		
C73	62510-1000	Seeding, Dry Method	2	ACRE		
C75	63301-0000	Sign System	5	EACH		
C80	63401-0300	Pavement Markings, Type B, Solid	700	LNFT		
C82	63401-0700	Pavement Markings, Type D, Solid	700	LNFT		
C84	63401-1900	Pavement Markings, Type J, Solid	100	LNFT		
C85	63405-4050	Pavement Markings, Type J, Accessibility Symbol	3	EACH		
C86	63501-0000	Temporary Traffic Control	All Required	LPSM		
C87	63509-1000	Temporary Traffic Control, Flagger	320	FXHR		
C89	64503-1000	Utility Company Compensation	1	CTSM	$ 30,000.00	$ 30,000.00
					SUBTOTAL:	
	Firms Name:				NAVAJO NATION TAX (6%):	
	Signature:				**SCHEDULE C TOTAL BID PRICE:**	

		RECAPITULATION				
		Schedule A Total Bid Price				
		Schedule B Total Bid Price				
		Schedule C Total Bid Price				
		TOTAL CONSTRUCTION BID PRICE				

BID SCHEDULE C

NAVAJO NATION DIVISION OF TRANSPORTATION

PROJECT: N8066 (3) 2 & 4 - BLACK MESA (Chapter House Access Road) **DATE:** _____

LENGTH: 0.12 Miles Chapter House Access Road

LINE ITEM NO.	PAY ITEM NUMBER	PAY ITEM DESCRIPTION	ESTIMATED QUANTITIES	UNIT	UNIT PRICE BID	TOTAL AMOUNT

SCOPE OF WORK

This work is for Schedule C, Project N8066(3) Chapter House Access Road, on the Navajo Nation, Navajo County, Arizona, and shall be in accordance with the FP 14, Special Contract Requirements, and Drawings. The proposed work consists of furnishing all labor, materials, equipment, services and incidentals required to grade, drain, place aggregate base course, subgrade treatment, asphalt pavement, construct turnouts, fencing, gates, signing, and pavement markings on 0.12 miles of miles of roadway and parking area. Payment for work performed on Items furnished and constructed will be made in accordance with Subsection 109.05 Payment of FP-14. The Unit Price Bid must include all overhead, profit and bonding.

EOPCC SCHEDULE A

NAVAJO NATION DIVISION OF TRANSPORTATION

PROJECT: N8066 (3) 2 & 4 - BLACK MESA (MAINLINE AND SPUR) **DATE:**

LENGTH: 5.36 Miles N8066, 1.21 Miles N8066 Spur

LINE ITEM NO.	PAY ITEM NUMBER	PAY ITEM DESCRIPTION	ESTIMATED QUANTITIES	UNIT	UNIT PRICE BID	TOTAL AMOUNT
A1	10901-0000	Extra & Miscellaneous Work - Section 109.02(s)	All Required	LPSM	$ 500,000.00	$ 500,000.00
A2	15101-0000	Mobilization	All Required	LPSM		
A3	15201-0000	Construction Survey And Staking	All Required	LPSM		
A4	15301-0000	Contractor Quality Control	All Required	LPSM		
A5	15705-1400	Soil Erosion Control, Fiber Roll	48,740	LNFT		
A6	15714-0000	Temporary Straw Mulching	100	ACRE		
A7	20101-0000	Clearing And Grubbing	104	ACRE		
A8	20301-0600	Removal Of Cattle Guard	1	EACH		
A9	20301-2400	Removal Of Sign	3	EACH		
A10	20302-0700	Removal Of Fence	2,370	LNFT		
A11	20304-1000	Removal Of Structures And Obstructions	1	LPSM		
A12	20401-0000	Roadway Excavation	156,000	CUYD		
A13	20402-0000	Subexcavation	22,000	CUYD		
A14	20403-0000	Unclassified Borrow, (In Place)	26,500	CUYD		
A15	20425-1100	Drainage Excavation	39,000	CUYD		
A16	20425-3000	Drainage Excavation, Crown Ditch	1,800	LNFT		
A17	20435-1000	Backfill, Select Granular	20	CUYD		
A18	20802-0000	Foundation Fill	1,000	CUYD		
A19	21102-2100	Roadway Obliteration, Method 2	52,000	SQYD		
A20	21301-0000	Subgrade Stabilization	114,500	SQYD		
A21	25101-2100	Placed Riprap, Method B, Class 1	3,950	CUYD		
A22	25101-2200	Placed Riprap, Method B, Class 2	770	CUYD		
A23	25101-2300	Placed Riprap, Method B, Class 3	70	CUYD		
A24	25305-1100	Wire Enclosed Riprap, Class 1	1,900	CUYD		
A25	25401-1000	Articulated Concrete Block Revetment	900	SQYD		
A26	25402-1000	Concrete Armor Unit Revetment	400	SQYD		
A27	30101-0100	Untreated Aggregate Base, Grading "Special"	23,500	TON		
A28	40201-0200	Asphalt Concrete Pavement, Marshall Mix, Class B	19,000	TON		
A29	40504-0000	Asphalt Binder	1,082	TON		
A30	41101-4000	Asphalt Prime Coat, Penetrating Emulsified Prime (PEP)	140	TON		
A31	41801-1000	Asphalt Concrete Pavement Patch, Type 1	1,730	SQYD		
A32	60101-0100	Concrete, Class A(AE)	20	CUYD		
A33	60103-0340	Concrete, Headwall For 84-Inch Pipe Culvert	3	EACH		
A34	60103-0342	Slope Paving Concrete & Headwall 84-Inch Pipe	5	EACH		
A35	60103-0700	Concrete, Headwall For Double 48-Inch Pipe Culvert	2	EACH		
A37	60103-0704	Concrete Headwall For 4-Barrel 48-Inch Pipe Culvert	2	EACH		
A38	60103-0820	Concrete, Headwall For Double 84-Inch Pipe Culvert	1	EACH		
A39	60103-0822	Slope Paving Concrete & Headwall Double 84-Inch Pipe	3	EACH		
A40	60201-0800	24-Inch Pipe Culvert	340	LNFT		
A41	60201-1000	36-Inch Pipe Culvert	1,314	LNFT		
A42	60201-1100	42-Inch Pipe Culvert	366	LNFT		

EOPCC SCHEDULE A

NAVAJO NATION DIVISION OF TRANSPORTATION

PROJECT: N8066 (3) 2 & 4 - BLACK MESA (MAINLINE AND SPUR) **DATE:**

LENGTH: 5.36 Miles N8066, 1.21 Miles N8066 Spur

LINE ITEM NO.	PAY ITEM NUMBER	PAY ITEM DESCRIPTION	ESTIMATED QUANTITIES	UNIT	UNIT PRICE BID	TOTAL AMOUNT
A43	60201-1200	48-Inch Pipe Culvert	488	LNFT		
A44	60201-1800	84-Inch Pipe Culvert	888	LNFT		
A45	60202-0600	36-Inch Equivalent Diameter Arch Or Elliptical Pipe Culvert	1,026	LNFT		
A46	60210-0800	End Section For 24-Inch Pipe Culvert	12	EACH		
A47	60210-1000	End Section For 36-Inch Pipe Culvert	32	EACH		
A48	60210-1100	End Section For 42-Inch Pipe Culvert	6	EACH		
A49	60211-1000	End Section For 36-Inch Equivalent Diameter Arch Or Elliptical Pipe C	30	EACH		
A50	60701-1000	Removing, Cleaning, And Stockpiling Culvert	550	LNFT		
A53	61102-1700	2-Inch Waterline, Polyvinyl Chloride (Pvc)	134	LNFT		
A54	61102-2700	4-Inch Waterline, Polyvinyl Chloride (Pvc)	265	LNFT		
A55	61102-2950	6-Inch Waterline, Polyvinyl Chloride (Pvc)	888	LNFT		
A57	61103-0700	8-Inch Encasement Pipe, Galvanized Steel	88	LNFT		
A58	61103-0900	10-Inch Encasement Pipe, Galvanized Steel	178	LNFT		
A59	61103-1100	12-Inch Encasement Pipe, Galvanized Steel	208	LNFT		
A60	61104-0600	Valve, Gate, 2-Inch	2	EACH		
A61	61104-0700	Valve, Gate, 4-Inch	4	EACH		
A62	61104-0800	Valve, Gate, 6-Inch	6	EACH		
A63	61901-1000	Fence, Barbed Wire, 5 Strand	58,600	LNFT		
A66	61902-5100	Gate, Woven Wire, 16 Feet Width	29	EACH		
A67	61903-0300	Cattle Guard, 16 Feet	9	EACH		
A68	61903-0700	Cattle Guard, 24 Feet	1	EACH		
A69	61903-1100	Cattle Guard, 32 Feet	2	EACH		
A70	62101-0000	Monument	94	EACH		
A71	62102-0000	Marker	94	EACH		
A72	62102-2000	Install Waterline Marker (Utility Furnished)	20	EACH		
A73	62510-1000	Seeding, Dry Method	100	ACRE		
A74	62901-1100	Rolled Erosion Control Product, Type 4	16,400	SQYD		
A75	63301-0000	Sign System	60	EACH		
A76	63308-3000	Object Marker, Type 3	65	EACH		
A77	63309-0100	Delineator, Type 1	220	EACH		
A78	63316-1000	Remove And Reset Sign	1	EACH		
A79	63318-1020	Milepost, 38 mm x 38 mm Steel square tube	12	EACH		
A80	63401-0300	Pavement Markings, Type B, Solid	106,800	LNFT		
A81	63401-0400	Pavement Markings, Type B, Broken	23,150	LNFT		
A82	63401-0700	Pavement Markings, Type D, Solid	108,650	LNFT		
A83	63401-0800	Pavement Markings, Type D, Broken	23,750	LNFT		
A84	63401-1900	Pavement Markings, Type J, Solid	120	LNFT		
A86	63501-0000	Temporary Traffic Control	All Required	LPSM		
A87	63509-1000	Temporary Traffic Control, Flagger	3,600	FXHR		
A88	63701-0000	Field Office	1	EACH		
				ROADWAY SUBTOTAL:		

EOPCC SCHEDULE A

NAVAJO NATION DIVISION OF TRANSPORTATION

PROJECT: N8066 (3) 2 & 4 - BLACK MESA (MAINLINE AND SPUR) **DATE:**

LENGTH: 5.36 Miles N8066, 1.21 Miles N8066 Spur

LINE ITEM NO.	PAY ITEM NUMBER	PAY ITEM DESCRIPTION	ESTIMATED QUANTITIES	UNIT	UNIT PRICE BID	TOTAL AMOUNT
		STRUCTURE NO. 0000N35780T0460, STA 460+00, 2-10'X4'X91' RC				
AA1	20425-1100	Drainage Excavation	16,487	CUYD		
AA2	20801-0000	Structure Excavation	509	CUYD		
AA3	20802-0000	Foundation Fill	14,255	CUYD		
AA4	20803-0000	Structural Backfill	2,189	CUYD		
AA5	25302-1000	Gabions, Galvanized Or Aluminized Coated	1,270	CUYD		
AA6	60103-2300	Inlet Wingwalls for 2-10'x4' RCBC	1	EACH		
AA7	60103-2302	Level Outlet Wingwalls for 2-10'x4' RCBC	1	EACH		
AA8	60103-4300	Reinforced Concrete Box Culvert Outlet Apron	1	EACH		
AA9	60222-2951	10 Feet Span, 4 Feet Rise Reinforced Concrete Box Culvert, Double B	91	LNFT		
A0		**STRUCTURE NO. 0000N35780T0460, STA 460+00, 2-10'X4'X91' RCBC SUBTOTAL:**				
A0						
A0		**STRUCTURE NO. 0000N35780T0488, Sta 488+96, 6-48"x68' CMP**				
AB1	20801-0000	Structure Excavation	592	CUYD		
AB2	20803-0000	Structural Backfill	403	CUYD		
AB3	25101-2100	Placed Riprap, Method B, Class 1	61	CUYD		
AB4	60103-0706	Concrete Headwall For 6-Barrel 48-Inch Pipe Culvert	2	EACH		
AB5	60201-1200	48-Inch Pipe Culvert	408	LNFT		
A0		**STRUCTURE NO. 0000N35780T0488, Sta 488+96, 6-48"x68' CMP SUBTOTAL:**				
A0						
A0		**STRUCTURE NO. 0000N35780T0595, STA 595+75, 3-10'x4'X68' RCBC**				
AC1	20801-0000	Structure Excavation	358	CUYD		
AC2	20803-0000	Structural Backfill	100	CUYD		
AC3	25101-2100	Placed Riprap, Method B, Class 1	55	CUYD		
AC4	60103-2303	Inlet Wingwalls for 3-10'x4' RCBC	1	EACH		
AC5	60103-2304	Outlet Wingwalls for 3-10'x4' RCBC	1	EACH		
AC6	60223-2952	10 Feet Span, 4 Feet Rise Reinforced Concrete Box Culvert, Triple Ba	68	LNFT		
A0		**STRUCTURE NO. 0000N35780T0595, STA 595+75, 3-10'x4'X68' RCBC SUBTOTAL:**				
A0						
A0		**STRUCTURE NO. 0000N35780T0643, STA 643+00, 8-48"x68' CMP**				
AD1	20801-0000	Structure Excavation	424	CUYD		
AD2	20803-0000	Structural Backfill	170	CUYD		
AD3	25101-2100	Placed Riprap, Method B, Class 1	79	CUYD		
AD4	60103-0708	Concrete Headwall For 8-Barrel 48-Inch Pipe Culvert	2	EACH		
AD5	60201-1200	48-Inch Pipe Culvert	544	LNFT		
		STRUCTURE NO. 0000N35780T0643, STA 643+00, 8-48"x68' CMP SUBTOTAL:				

EOPCC SCHEDULE A

NAVAJO NATION DIVISION OF TRANSPORTATION

PROJECT: N8066 (3) 2 & 4 - BLACK MESA (MAINLINE AND SPUR) **DATE:**

LENGTH: 5.36 Miles N8066, 1.21 Miles N8066 Spur

LINE ITEM NO.	PAY ITEM NUMBER	PAY ITEM DESCRIPTION	ESTIMATED QUANTITIES	UNIT	UNIT PRICE BID	TOTAL AMOUNT
				CONSTRUCTION SUBTOTAL:		
	Firms Name:			NAVAJO NATION TAX (6%):		
	Signature:			**TOTAL BID PRICE SCHEDULE A:**		

SCOPE OF WORK

This work is for Schedule A, Project N8066(3)1,2&4 and N8066 Spur, on the Navajo Nation, Navajo County, Arizona, and shall be in accordance with the FP 14, Special Contract Requirements, and Drawings. The proposed work consists of furnishing all labor, materials, equipment, services and incidentals required to grade, drain, place aggregate base course, subgrade treatment, asphalt pavement, construct turnouts, fencing, cattleguards, gates, signing, and pavement markings on 6.57 miles of miles of roadway. Payment for work performed on items furnished and constructed will be made in accordance with Subsection 109.05 Payment of FP-14. The Unit Price Bid 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 ☐ SEALED BID (IFB) INVITATION FOR BID ☐ NEGOTIATED (RFP) REQUEST FOR PROPOSAL	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)*

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 _____ calendar 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? *(If "YES", indicate within how many calendar days after award in Item 12b.)* ☐ YES ☐ 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)*
	16. REMITTANCE ADDRESS *(Include only if different than Item 14.)*
CODE 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 ▶

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	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 THE UNITED STATES CODE AT ☐ 10 U.S.C. 3204(a) ( ) ☐ 41 U.S.C. 3304(a) ( )
26. ADMINISTERED BY	27. PAYMENT WILL BE MADE BY

CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE

☐ 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.	☐ 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 Page 3)	Date Bond Executed (Must Not Be Later Than Bid Opening Date)	**OMB Control Number: 9000-0001** **Expiration Date: 1/31/2027**

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 United States of America (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. (Seal)	2. (Seal)	3. (Seal)	Corporate Seal
Name(s) And 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 And Address		State Of Incorporation	Liability Limit ($)	Corporate Seal
	Signature(s)	1.	2.		
	Name(s) And Title(s) (Typed)	1.	2.		
Surety B	Name And Address		State Of Incorporation	Liability Limit ($)	Corporate Seal
	Signature(s)	1.	2.		
	Name(s) And Title(s) (Typed)	1.	2.		
Surety C	Name And Address		State Of Incorporation	Liability Limit ($)	Corporate Seal
	Signature(s)	1.	2.		
	Name(s) And Title(s) (Typed)	1.	2.		
Surety D	Name And Address		State Of Incorporation	Liability Limit ($)	Corporate Seal
	Signature(s)	1.	2.		
	Name(s) And Title(s) (Typed)	1.	2.		

Surety E	Name And Address		State Of Incorporation	Liability Limit ($)	Corporate Seal
	Signature(s)	1.	2.		
	Name(s) And Title(s) (Typed)	1.	2.		
Surety F	Name And Address		State Of Incorporation	Liability Limit ($)	Corporate Seal
	Signature(s)	1.	2.		
	Name(s) And Title(s) (Typed)	1.	2.		
Surety G	Name And Address		State Of Incorporation	Liability Limit ($)	Corporate Seal
	Signature(s)	1.	2.		
	Name(s) And 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."

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 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 (MVCB), 1800 F Street, NW, Washington, DC 20405.

Affidavit Of Individual Surety
(See instructions on page 4)

OMB Control Number: 9000-0001
Expiration Date: 1/31/2027

State Of	County Of	ss.

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. Where the sureties are 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. I recognize that statements contained herein concern a matter within the jurisdiction of an agency of the United States 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 United States of America to accept me as surety on the attached bond.

1. Name (First, Middle, Last) (Type or Print)	2A. Home Address (Number, Street, City, State, ZIP Code)	
3. Type And Duration Of Occupation	2B. Telephone Number	2C. Email Address
4A. Name And Address Of Employer (Number, Street, City, State, ZIP Code) (If self-employed, so state)	5A. Name And Address Of Individual Surety Broker Used (Number, Street, City, State, ZIP Code)	
	5B. Surety Broker Email Address	
4B. Employer Email Address	5C. Home Telephone Number	5D. Business Telephone Number
6A. Name And Address Of Financial Institution Submitting The Pledge Of Securities On Behalf Of Individual Surety (Number, Street, City, State, ZIP Code)	6B. Financial Institution Email Address	6C. Routing Transit Number (RTN)
	6D. Contact Person Name	6E. Contact Person Telephone Number
	6F. Contact Person Email Address	

7. The Following Is A True Representation Of The Assets I Have Pledged To The United States In Support Of The Attached Bond. (List The Committee On Uniform Securities Identification Procedures (CUSIP) Number And Par (Face) Amount Of Each Security).

8. Identify All Liens, Judgements, Or Any Other Encumbrances Involving Subject Assets.

9. Identify All Bonds, Including Bid Guarantees, For Which The Subject Assets Have Been Pledged Within Three 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 Month Day Year	b. City And State (or other jurisdiction)		Official Seal
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 Federal Acquisition Regulation (FAR) 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 (i.e. must be a natural person). 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. 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.

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: U.S. General Services Administration, Regulatory Secretariat Division (MVCB), 1800 F Street, NW, Washington, DC 20405.

Performance Bond	Date Bond Executed (Must be same or later than date of contract)	**OMB Control Number: 9000-0001** **Expiration Date: 1/31/2027**

See Instructions on page 3

Principal (Legal name and business address)	Type of Organization ("X" one) ☐ Individual ☐ Partnership ☐ Joint Venture ☐ Corporation ☐ Other (Specify) State of Incorporation
Surety(ies) (Name(s) and business address(es))	Penal Sum of Bond Million(s) | Thousand(s) | Hundred(s) | Cents Contract Date | Contract Number

Obligation:

We, the Principal and Surety(ies), are firmly bound to the United States of America (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)	
Name(s) & Title(s) (Typed)	1.	2.	3.	Corporate Seal

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 ($)	
	Signature(s)	1.	2.		Corporate Seal
	Name(s) & Title(s) (Typed)	1.	2.		
Surety B	Name & Address		State of Incorporation	Liability Limit ($)	
	Signature(s)	1.	2.		Corporate Seal
	Name(s) & Title(s) (Typed)	1.	2.		
Surety C	Name & Address		State of Incorporation	Liability Limit ($)	
	Signature(s)	1.	2.		Corporate Seal
	Name(s) & Title(s) (Typed)	1.	2.		
Surety D	Name & Address		State of Incorporation	Liability Limit ($)	
	Signature(s)	1.	2.		Corporate Seal
	Name(s) & Title(s) (Typed)	1.	2.		
Surety E	Name & Address		State of Incorporation	Liability Limit ($)	
	Signature(s)	1.	2.		Corporate Seal
	Name(s) & Title(s) (Typed)	1.	2.		

Corporate Surety(ies) (continued)

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.		

Bond Premium ▶	Rate Per Thousand ($)	Total ($)

Instructions

1. 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.

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 bonds, 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.

Payment Bond (See Instructions On Page 3)	Date Bond Executed (Must be same or later than date of contract)	**OMB Control Number: 9000-0001** **Expiration Date: 1/31/2027**

Principal (Legal name and business address)	Type Of Organization ("X" one) ☐Individual ☐Partnership ☐Joint Venture ☐Corporation ☐Other (Specify)
	State Of Incorporation
Surety(ies) (Name(s) and business address(es))	Penal Sum Of Bond

Million(s)	Thousand(s)	Hundred(s)	Cents

Contract Date	Contract Number

Obligation:

We, the Principal and Surety(ies), are firmly bound to the United States of America (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. (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) (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, 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.

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 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: U.S. General Services Administration, Regulatory Secretariat Division (MVCB), 1800 F Street, NW, Washington, DC 20405.

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 defined as widespread 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's cross sections and adjusted by the surveyor to fit actual field conditions.

rev: 6/17/25

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, and Contractor Surveyors. The Government key personnel that may attend the first partnering meeting are NDOT Executive Staff, Construction Manager, QAM, 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: 11/13/23

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.

107.10 Environmental Protection.

The third paragraph is superseded with the following:

(c) Dirt, plant, and foreign material. Remove dirt, plant, and foreign material from vehicles and equipment before mobilizing to work site. Prevent introduction of noxious weeds and non-native plant species into the work site. Control dust that would be generated during earth moving activities. Follow applicable Federal land management agency requirements, state requirements, Navajo Nation Pesticide Act, Navajo Nation Integrated Weed Management Plan and Navajo Nation Air Pollution Prevention and Control Act (Navajo Clean Air Act), 4 N.N.C. §§1134-40. Maintain cleaning and inspection records and use of Best Management Practices (BMPs).

107.12 Contractor's Responsibility for Utility Property and Services: of the Standard Specifications FP-14 is modified to add:

The contractor shall be NDOT's underground utility field locator, and perform all requirements as prescribed in A.R.S. 40-360.21 through .29, for all underground facilities that have been installed by the contractor on the current project, until the project is accepted by NDOT.

At least two working days prior but no more than 15 working days prior to commencing excavation, the contractor shall contact ARIZONA 811, between the hours of 6:00 a.m. and 5:00 p.m., Monday through Friday, excluding holidays, for information relative to the location of buried utilities. The contractor can call 811 from anywhere in Arizona or can contact ARIZONA 811 at the number below:

Projects Outside Maricopa County (800) 782-5348

Contactors can also create and manage utility locate tickets online by using the Arizona 811 E-Stake tool at www.Arizona811.com.

The following agencies and utility companies have facilities in the area but are not anticipated to be in conflict:

Navajo Tribal Utility Authority (Power)
Art McCabe
Electrical System Engineering
HWY 4 12N
Fort Defiance, AZ 86504
928-729-6143
artm@ntua.com

For the mainline and Spur of N8066, the NTUA does have electric facilities within the project area which were determined by field survey to have vertical clearance greater than the minimum, to not be in conflict with the proposed improvements and are to be protected in place.

For the Chapter House access road and parking area, the electric powerline and poles were in conflict. As an add Alternate, if Navajo DOT elects to include the Chapter House access road and parking area, Navajo DOT will request NTUA to complete the mutually agreed upon power pole and line relocations. The payment for the agreed work would be paid by the Contractor under Item 64503-1000.

Table 1 - Power Line and Pole Proposed Status

STATION, OFF	DESCIPTION	LOCATION	ELEVATION	OWNER	REMARKS	PH #
8+55.00 N8085	Existing Overhead Power Line	Centerline	6510.18	NTUA	PIP-27 ' Prop Clearance @ cl	
207+53.00 Access	Existing Overhead Power Line	Centerline	6726.620	NTUA	PIP-24.7' Prop Clearance @ cl	
207+94.00 Access	Existing Overhead Power Line	Centerline	6723.700	NTUA	PIP-25.8' Prop Clearance @ cl	
208+07, 15' Rt Access	Power Pole	Access Rd Centerline		NTUA	Relocate by NTUA	
209+17, 38' Rt	Power Pole	Parking Area		NTUA	Relocate by NTUA	
209+25, 110' Lt	Power Pole	Parking Area		NTUA	Protect in Place	
474+30.00 N8066	Existing Overhead Power Line	Centerline	6549.75	NTUA	22' Prop Clearance @ cl	
539+31.00 N8066	Existing Overhead Power Line	Centerline	6599.11	NTUA	28' Prop Clearance @ cl	
601+41.00 N8066	Existing Overhead Power Line	Centerline	6629.08	NTUA	28' Prop Clearance @ cl	
625+60.00 N8066	Existing Overhead Power Line	Centerline	6627.94	NTUA	27' Prop Clearance @ cl	
697+62.00 N8066	Existing Overhead Power Line	Centerline	6669.31	NTUA	28' Prop Clearance @ cl	

Navajo Tribal Utility Authority (Water/Wastewater)
Jeremy Bitsoi
HQ W/WW Construction Quality Assurance Officer
PO Box 170
Fort Defiance, AZ 86504
928-729-6517
jeremyb@ntua.com

NTUA has water lines and valves within the project area which were field surveyed and determined to be in conflict with the proposed improvements, and are to be relocated and encased in accordance with Current NTUA Water Design Standards and Details. Jeremy Bitsoi will contact NTUA District staff who will coordinate construction preparation, materials, inspection, and acceptance with the Navajo DOT Contractor.

Table 2- Waterline Proposed Status

. STATION, OFF	DESCIPTION	LOCATION	ELEVATION	OWNER	REMARKS	PH#
8+35.00 N8085	Existing Waterline, 6" PVC	Centerline	6478.65	NTUA	Relocate & Encase by NDOT	1
104+92.00 Spur	Existing Waterline, 10" DIP	Centerline	6666.89	NTUA	Existing Steel Encasement, PIP	10
165+84.00 Spur	Existing Waterline, 2" PVC	Centerline	6803.80	NTUA	Relocate & Encase by NDOT	12
207+84.00 Access	Existing Waterline, 2" PVC	Centerline	6702.350	NTUA	Relocate	13
208+52.00 Access	Existing Waterline, 2"	Parking Area	not found	NTUA	Relocate	14
208+59.00 Access	Existing Waterline, unknown	Parking Area	6702.710	NTUA	Relocate	15
208+86.00 Access	Existing Waterline, 2" PVC	Parking Area		NTUA	Relocate	
476+95.00 N8066	Existing Waterline, 2" PVC	Centerline	6523.47	NTUA	Relocate & Encase by NDOT	2
564+53.00 N8066	Existing Waterline, 6" DIP	Centerline	6578.61	NTUA	Relocate & Encase by NDOT	3
569+73.00 N8066	Existing Waterline, 6"	157' Lt	6577.53	NTUA	Relocate & Encase by NDOT	4
571+28.00 N8066	Existing Waterline, 6"	161' Lt	not found	NTUA	Relocate & Encase by NDOT	5
625+58.00 N8066	Existing Waterline, 6" PVC	Centerline	6593.34	NTUA	Relocate & Encase by NDOT	6
705+05.00 N8066	Existing Waterline, 4" PVC	Centerline	6637.97	NTUA	Existing Steel Encasement, PIP	7
736+50.00, N8066 100' Rt	Existing Waterline, 6"	Wash X-ing	not found	NTUA	Relocate	
738+32.00 N8066	Existing Waterline, 6"	Centerline	not found	NTUA	Abandon	8

745+72.00 N8066	Existing Waterline, 6" PVC	Centerline	6668.17	NTUA	Abandon	9

NTUA will supply waterline marker posts. The Contractor shall install waterline marker posts per NTUA Detail WS-13 under bid item 62102-2000 Install Waterline Marker, (Utility Furnished).

NTUA does have wastewater facilities within the project area which shall be protected-in-place..

Table 3- Wastewater Proposed Status

STATION, OFF	DESCIPTION	LOCATION	ELEVATION	OWNER	REMARKS	PH#
142+54.00	Existing Sewer, 12" DIP	Centerline	6687.24	NTUA/NHA	20.2' Prop Clearance @ cl Protect in Place	11

Power lines and other utilities may be at various locations throughout the project limits. However, they are not anticipated to be in conflict. All work at or in close proximity to said lines shall be performed in accordance with all Federal, State, and local laws and regulations, including but not limited to:

(1) Arizona law regarding "Underground Facilities" (A.R.S. 40-360.21 to .32).
(2) Arizona law regarding "High Voltage Power Lines and Safety Restrictions" (A.R.S. 40-360.41-.45).
(3) The Occupational Safety and Health Administration.
(4) The National Electric Safety Code.

It shall be the contractor's responsibility to determine the exact location of any utilities prior to any construction operations and to notify the above-mentioned utility companies at least two working days prior to commencing any work on the project.

There is no railroad involvement within ½ mile of the project limits.

rev: 6/17/25

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

SUPPLEMENTAL SPECIFICATIONS

SECTION 109 - MEASUREMENT AND PAYMENT

109. 01 Measurement of Work. This section 109 supplements Article 14 of Exhibit A.

Add the following:

The U.S. Customary (Imperial) 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 metric 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:

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

Subparagraph (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 subjection:

(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 and QAM 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:

(b) Construction Price adjustments. The CO will not consider price adjustments for material (except for Fuel Cost as noted below) and other Contractor and/or subcontractor price increases during the life of the contract unless the contract allows for such.

Fuel Cost Adjustment:

General: The CO will adjust monthly progress payments **up or down** as appropriate for cost fluctuations in diesel fuel as determined in accordance with these special provisions. A fuel cost adjustment will be made when fluctuations in the price of diesel fuel, in excess of 15 percent, occur throughout this contract. The CO will not provide such adjustments for fluctuations in the price of diesel fuel of 15 percent or less. No adjustments will be made for fluctuations in the price of fuels other than diesel.

Measurement: The base index price of fuel will be determined by the CM from the selling prices of diesel fuel. The base index price for each month will be the arithmetic average of the selling price for diesel fuel shown in the last four reports received prior to the last Wednesday of the month.

For projects located in Arizona: The base index price of fuel will be determined by the CM from the selling prices of diesel fuel published by OPIS (Oil Price Information Service). The base index price to be used will be the price for Diesel fuel No. 2, Ultra Low Sulfur, PAD 5, City of Phoenix Rack. The reported average value for the Phoenix area will be used. This price will be effective as of the last Wednesday of each month and will be posted on ADOT's website on or shortly after the last Wednesday of the month.

- https://azdot.gov/business/contracts-and-specifications/bituminous-and-fuel-price-adjustment
- https://apps.azdot.gov/files/cns/pdf/historical-bituminous-diesel.pdf

For projects located in New Mexico: The base index price of fuel will be determined by the CM from the selling prices of diesel fuel published by U.S. Energy Information Administration (eia.gov). The base index price to be used will be the price for Diesel fuel, Ultra Low Sulfur, PADD 3, Gulf Coast, Rack Price. This price will be effective as of the last Wednesday of each month and is available at the website below.

- https://www.eia.gov/dnav/pet/pet_pri_gnd_dcus_r30_w.htm

This price will be deemed to be the "initial cost" (IC) for diesel fuel on projects for which bids are opened during the following month.

The current index price for diesel fuel in subsequent months will be the base index price, determined as specified above, for the current month. For example, an adjustment for diesel fuel used in May, if applicable, will be based on the "current price" (CP) for May as posted on the last Wednesday of May. The amount of adjustment per gallon will be the net difference between the "initial cost," adjusted by 15 percent, and the current index price. The monthly adjustment will be determined by the CM and included in the payment estimate as a fuel adjustment.

For fluctuations in excess of 15 percent, fuel cost adjustments will only be made for current price index increases greater than 1.15 times the "initial cost" or for decreases less than 0.85 times the "initial cost." No calculation will be made for fluctuations in the current index price of 15 percent or less when compared to the "initial cost."

The number of gallons of diesel fuel used per month will be considered to equal 1.5 percent of the dollar amount of work reported by the contractor for each month. Such dollar amount will not include incentives earned by the contractor for any other revenue derived from quality incentives; or for revenue accrued in the previous month for or diesel fuel price adjustments.

A monthly adjustment, if applicable, will be made on this quantity, as shown below:

$$S = \frac{0.015(Q)}{IC} \text{ x } (CP - AC)$$

Where, S = Monetary amount of the adjustment (plus or minus) in dollars
Q = Dollar amount of work completed for the month
CP = Current index price in dollars per gallon
AC = Adjusted "initial cost" (1.15 or 0.85 times IC) in dollars per gallon
IC = "Initial cost" as determined above, dollars per gallon

If adjustments are made in the contract quantities, the contractor shall accept any fuel adjustment as full compensation for increases or decreases in the price of fuel regardless of the amounts of overrun or underrun.

The value calculated above (plus or minus) will be adjusted to include sales tax and other taxes as applicable.

No additional compensation will be made for any additional charges, costs, expenses, etc., which the contractor may have incurred since the time of bidding, and which may be the result of any fluctuation in the base index price of diesel fuel.

No adjustments will be made for work performed after Substantial Completion has been achieved.

Payment: Price adjustments will be shown on the monthly progress estimate under the *10901-0000 Extra & Miscellaneous Work* bid item but will not be included in the total cost of work for determination of progress or for extension of contract time.

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.

NDOT Fuel Cost Adj (New Mexico)

Project Number:	N##(##)#,# & #
Letting Date:	January 1, 2024
NDOT Special Provision - 109.06 Fuel Cost Adjustment	**IC =** $2.880
Diesel fuel, Ultra Low Sulfur, PADD 3, Gulf Coast, Rack Price	
IC and CP values taken from = https://www.eia.gov/dnav/pet/pet_pri_gnd_dcus_r30_w.htm	

Pay Estimate Number	Month/Year	CP Current index price in dollars per gallon ($)	AC Adjusted "initial cost" (0.85 times IC) in dollars per gallon ($)	AC Adjusted "initial cost" (1.15 times IC) in dollars per gallon ($)	Q Dollar amount of work completed for the month (- tax, incentives)	Fluctutation % (must be greater than 15%)	S Monetary amount of the adjustment ($)	
001	Jan-24	$2.650	$2.448	$3.312	$ 1,500,000.00	-7.99%	$ -	
002	Feb-24	$3.030	$2.448	$3.312	$ 100,000.00	5%	$ -	Increasing Fuel Cost Adjustment only. See below for decreasing fuel cost option.
003	Mar-24	$3.980	$2.448	$3.312	$ 150,000.00	38%	$ 521.88	
004	Apr-24	$4.020	$2.448	$3.312	$ 250,000.00	40%	$ 921.88	
005	May-24	$4.520	$2.448	$3.312	$ 1,500,000.00	57%	$ 9,437.50	
006	Jun-24	$4.970	$2.448	$3.312	$ 2,000,000.00	73%	$ 17,270.83	
007	Jul-24	$3.950	$2.448	$3.312	$ 1,750,000.00	37%	$ 5,815.10	
			$2.448	$3.312		-100%	$ -	
			$2.448	$3.312		-100%	$ -	
			$2.448	$3.312		-100%	$ -	
			$2.448	$3.312		-100%	$ -	
			$2.448	$3.312		-100%	$ -	
			$2.448	$3.312		-100%	$ -	
			$2.448	$3.312		-100%	$ -	
TOTAL TO DATE for the Project							$ 33,967.19	
###	Month/Year	$2.250	$2.448	$3.312	$ 1,000,000.00	-22%	$ (1,031.25)	Sample calculation for a decreasing fuel cost option
			$2.448	$3.312		-100%	$ -	
			$2.448	$3.312		-100%	$ -	
			$2.448	$3.312		-100%	$ -	
TOTAL TO DATE for the Project							$ (1,031.25)	

(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 workday 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: 12/28/23

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

Section 152 – Construction Survey and Staking herein supersedes Section 152 of FP-14. This section 152 supplements Article 6 of Exhibit A.

Description

152.01 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 control points 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 shown in the plans. The Contractor shall also be responsible for maintaining and preserving all control points 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.

Construction Requirements

152.02 **Qualifications**. Provide technically qualified survey crews experienced in highway construction survey and staking. Provide personnel capable of performing in a timely and accurate manner.

152.03 **Submittals.** Submit the following at the preconstruction conference:

(a) Survey Quality Control Plan (see example at the end of Section).

(b) Automated Machine Guidance (AMG) methods (if used):

Technology statement that includes: (1) The manufacturer, model, and software version of the AMG equipment; and (2) Certification that the final 3D data is compatible with the AMG equipment.

Personnel qualifications. (1) The name, authority, relevant experience, and qualifications of the person with overall responsibility for the AMG system. (2) The names, authority, and relevant experience of personnel directly responsible for operating the AMG equipment.

Contractor quality control plan. Comply with Section 153 and describe procedures for checking, mechanical calibration, and maintenance of both survey and construction equipment. Include the frequency and types of checks performed.

(c) Lump Sum Price Breakdown. Include a price breakdown by individual tasks when construction survey and staking is paid by the lump sum for use in making progress payments and price adjustments.

152.04 General. Personnel, equipment, material, and survey notes shall conform to 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 always be on the project during the survey and staking of each item of work and during the measurement of each pay item.

(b) Equipment. Furnish survey instruments and supporting equipment capable of achieving the specified tolerances.

Construction equipment controlled with a Global Positioning System (GPS) and Robotic Total Station (RTS) machine guidance system may be used in the construction of subgrade, subbase, and base aggregate courses, or other construction operations when approved.

(c) Material. Furnish acceptable tools and supplies of the type and quality suitable for highway survey work. Furnish stakes and hubs of sufficient length to provide a solid set in the ground with sufficient surface area above ground for necessary legible and durable markings.

(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. The Contractor shall submit his/her definitions file for the codes used in text format.

The cross sections and staked alignments 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 Civil3d 2024 software.

The Contractor's RLS Surveyor shall prepare graphical plan view and cross section plots of both the original and final cross-section data in AutoCAD 2024 (*.DWG) file format and review them and all survey data for accuracy and errors before submitting the data to the Construction Manager (CM) 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 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 handwritten field books or electronic files. Slope stake notes shall be provided in accordance with section 152.05(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 11" x 17" sheets as well as in AutoCAD 2024 (*.DWG) file format.

(4) Other survey and staking requirements. Furnish other survey and staking notes in handwritten field books or an agreed upon format with the CM and the QCM.

Include staking activities in the construction schedule required under Section 155. Include the dates and sequence of each staking activity.

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 approved Survey QCP. The work may be in the presence of a representative of the CM. The Contractor shall notify the CM at least one week before the actual surveying is to begin to allow the Government time to have a representative on site.

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 CM 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 CM with all the cross section, staking, and DTM data. During Construction, any survey data that does not meet the tolerance requirements must be immediately reported to the CM to resolve the problem.

The Contractor shall prepare electronic files (aka. field notes) in an agreed upon format with the CM 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. All original survey notes (certified by the RLS) shall be submitted through the QCM to the CM 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.

Government data relating to the control points, existing ground surface, proposed horizontal/vertical alignment data and design base drawing will be furnished. Reformatting and additional calculations may be required for the convenient use of Government-furnished data. Provide

immediate notification of apparent errors in the Government-furnished data. Preserve initial reference and control points. Notify the CM of missing control points at least 10 days before beginning construction. The Government will reestablish control points missing before the beginning of construction.

Record survey and measurement field data in an approved format. Submit as-staked data and corrections made to the Government-furnished data. Submit survey and measurement data weekly. Field data and supporting documentation become the property of the Government upon completion of the work.

Discuss and coordinate the following with the CM before surveying or staking: (1) Surveying and staking methods; (2) Stake marking; (3) Grade control for courses of material; (4) Referencing; (5) Structure control; (6) Field staking data; (7) Localization of the GPS systems to the Government-established control points; and (8) Other procedures and controls necessary for the work.

Do not start work until staking or three-dimensional (3D) verification data for the affected work has been approved. Acceptance of the construction staking does not relieve the Contractor of responsibility for correcting errors discovered during the work and for bearing additional costs associated with the error. Maintain legibility of stake markings for the duration of the project or until notified in writing the stakes are no longer needed. Replace stakes if necessary to ensure markings are maintained. Remove and dispose of flagging, paint, lath, stakes, and other staking material after the project is complete.

152.05 Survey and Staking Requirements: Perform survey, staking, recording of data, and calculations as necessary to construct the project from the initial layout to final completion. Survey and set stakes to the tolerances in Table 152-1. Reset stakes, refine 3D data, or both as many times as necessary to construct the work.

(a) Control points. Relocate initial horizontal and vertical control points in conflict with construction to areas that will not be disturbed by construction operations. Furnish the coordinates, elevations, and supporting documentation for the relocated points before the initial points are disturbed. Set durable monuments for survey control that uniquely identify the points. Furnish the GPS localization results at least 7 days before beginning construction layout survey work. The CM may order the GPS localization calibration and associated 3D model to be broken into two or more zones to maintain the localized relationship between control points and original ground.

(b) Centerline establishment. Establish or reestablish centerline at roadway design cross-section locations and as necessary to construct the work. Reestablish the centerline when construction survey and staking work does not meet the tolerances.

(c) Original ground topographic verification. 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 at 50-foot (20-meter) intervals. The Contractor shall QC check the data and submit the **original** ground cross-section survey data, with the RLS certification to the CM for review and approval.

Perform the same procedure 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 (ABC) material. The data must exclude any waste or other stockpiles 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 CM for review and acceptance. Do not begin any base course or paving work until the survey data is reviewed and accepted by the Government in writing.

(d) Slope and references stakes. Perform the following:

(1) AMG method. For machine grade control grading, the Contractor shall submit a detailed 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 ensure the work complies with the tolerances in table 152-1.

After clearing operations are completed, set centerline reference stakes and hubs on both sides of centerline at 100-foot (30-meter) intervals at the clearing limit locations. Where clearing limits are greater than 10 feet (3 meters) vertically, 25 feet (8 meters) horizontally, or both from subgrade hinge point; provide an additional reference stake and hub as approved by the CM. Label each centerline reference stake with station, hub elevation, and offset from centerline.

Construct a 1000-foot (300-meter) long test section using AMG on the project at an approved location before beginning grading operations. Select a test location with superelevation and curve widening transitions if applicable. Notify the CM 10 days before beginning the test section. Demonstrate capability, knowledge, equipment, and experience to achieve work within tolerances. Allow 14 days to evaluate the test section. Do not start full grading operations until the test section is approved.

Provide as-built cross-sections at random locations specified by the CM not to exceed 500-foot (150-meter) intervals. If as-built cross-sections do not meet the tolerances in Subsection 204.13(d); rework the section until the specified tolerances are achieved and provide additional cross-sections as directed by the CM at no cost to the Government.

(2) Conventional survey methods. Verify and set slope stakes on both sides of centerline at the theoretical catch point. If the theoretical catch point is not within a tolerance of 0.5 feet (150 millimeters), perform original ground topographic verification according to Subsection 152.05(c). Set the slope stake at the actual intersection of the design roadway slope with the natural ground-line. Set reference stakes outside the clearing limits. Include reference points and slope-stake information on the reference stakes. Establish slope stakes in the field at the actual point of intersection of the design roadway slope with the natural ground-line when theoretical catch point information is not available.

When earthwork is called for in the contract documents, submit the revised 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 CM.

Any substantial deviations in the staking from what is shown on the plan cross section sheets must immediately be reported to the CM for corrective measures to be taken.

(e) Clearing and grubbing limits. Set clearing and grubbing limits on both sides of centerline based on the actual slope-stake locations.

(f) Grade-finishing stakes.

(1) AMG method. Construct a 1000-foot (300-meter) long test section using AMG on the project at an approved location before beginning grading operations. Select a test location with superelevation and curve widening transitions if applicable. Notify the CM 10 days before beginning the test section. Demonstrate the capability, knowledge, equipment, and experience to achieve work within tolerances. Allow 14 days to evaluate the test section. Do not start full grading operations until the test section is approved.

Verify the grade elevation and horizontal alignment of roadway grade-finishing operations. Use conventional survey methods at random locations specified by the CM, not to exceed 500-foot (150-meter) intervals. Submit 3D coordinates of grade-finishing quality control checks.

(2) Conventional survey methods. Set grade-finishing stakes for grade elevations and horizontal alignment, on centerline and on each shoulder at design roadway cross-section locations. Set stakes at the top of subgrade and the top of each aggregate course. Reset grade finishing stakes as many times as necessary to construct the subgrade and each aggregate course.

During turnout or pullout construction, set stakes on the centerline, on each normal shoulder, and on the shoulder of the turnout. In parking areas, set stakes at the center and along the edges of the parking area. Set stakes in ditches to be paved.

When the centerline curve radius is less than or equal to 250 feet (75 meters), use a maximum longitudinal spacing between stakes of 25 feet (8 meters). When the centerline curve radius is greater than 250 feet (75 meters), use a maximum longitudinal spacing between stakes of 50 feet (15 meters). Use a maximum transverse spacing between stakes of 20 feet (6 meters). Use brushes or guard stakes at each stake.

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 in the slope stake notes for blue topping making sure the required uniform design thickness of ABC is achieved to ensure the design template geometry is maintained (i.e., crown, hinge points, driving lanes, etc.).

(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 152.05(d)**. The CM 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 flowline).

(2) After the CM 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 flowline.

(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 onto the existing ground/proposed roadway template cross-sections for all drainage structures. These profiles shall be on 11" x 17" sheets to a scale agreed to by the CM. Assemble all pertinent structure information, into a spreadsheet acceptable to the CM, 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 CM for review and approval.

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

(h) Bridges. Set adequate horizontal and vertical control and reference points for bridge substructure and superstructure components. Establish and reference the bridge chord, bridge tangent, or control lines as specified on the bridge plans. Also establish and reference the centerline of each pier, bent, and abutment.

(i) Retaining walls and reinforced soil slopes. Survey and record profile measurements along the face of the proposed wall or reinforced soil slope at 5 feet (1.5 meters) and 10 feet (3 meters) in front of the wall or slope face. Take cross-sections every 25 feet (8 meters) along the length of the wall or reinforced soil slope and at major breaks in terrain within the limits designated by the CM. Measure and record points every 25 feet (8 meters) and at major breaks in terrain for each cross-section. Set additional references and control points to perform the work.

(j) Borrow and waste sites. Perform field work necessary for initial layout and measurement of the borrow or waste site. Establish site limits and clearing limits. Measure both original and final ground conditions and submit cross-sections as directed by the CM.

(k) Permanent monuments and markers. Perform survey and staking work necessary to establish permanent monuments and markers as described in Section 621 or reestablish monuments as described in Subsection 107.02.

(l) Miscellaneous survey and staking. Survey and stake other work (such as guardrail, curb and gutter, turf establishment, utilities, and excavation limits for structures) to the proper location and required tolerances. Propose staking increments for approval by the CM when not specified.

(m) ROW monuments and markers. For rehabilitation projects, if bid items are shown in the bid schedule, Contractor shall replace existing damaged or missing right-of-way monuments (as reflected in the existing right-of-way map) and ensure the "*English*" stationing is placed on the reference markers (i.e., angle irons) as defined in the bid schedule. For new roadway construction projects, and if bid items are shown in the bid schedule, stake the right-of-way monuments as shown in the approved/new ROW maps and label the reference markers with stationing as noted in the plans. Stamp or furnish the true state plane coordinates and elevations (to 3 significant figures) on the brass caps for all right-of-way monuments.

Table 152-1
Construction Survey and Staking Tolerances [(1)]

Staking Phase	Horizontal	Vertical
Control points set from existing Government control points	±0.03 feet (±10 millimeters)	±0.01 feet × $\sqrt{N}$ (±3 millimeters × $\sqrt{N}$) [(2)]
Mapping, topography, and cross-section points	±0.16 feet (±50 millimeters)	±0.16 feet (±50 millimeters)

Centerline points [3] including (PC), (PT), (POT), (POC), and references	±0.06 feet (±20 millimeters)	±0.06 feet (±20 millimeters)
Slope-stake and slope-stake references [4]	±0.16 feet (±50 millimeters)	±0.16 feet (±50 millimeters)
Culverts, ditches, and minor drainage structures stakes	±0.16 feet (±50 millimeters)	±0.06 feet (±20 millimeters)
Retaining walls stakes	±0.06 feet (±20 millimeters)	±0.03 feet (±10 millimeters)
Curb and gutter stakes	±0.06 feet (±20 millimeters)	±0.03 feet (±10 millimeters)
Bridge substructures stakes	±0.03 feet (±10 millimeters) [5]	±0.03 feet (±10 millimeters)
Bridge superstructures stakes	±0.03 feet (±10 millimeters) [5]	±0.03 feet (±10 millimeters)
Clearing and grubbing limit stakes	±1.00 feet (±300 millimeters)	–
Roadway subgrade finish stakes [6]	±0.16 feet (±50 millimeters)	±0.03 feet (±10 millimeters)
Roadway finish grade stakes [6]	±0.16 feet (±50 millimeters)	±0.03 feet (±10 millimeters)

(1) At statistical 95 percent confidence level. Tolerances are relative to existing Government control points.
(2) N is the number of instrument setups.
(3) Centerline points: PC - point of curve, PT - point of tangent, POT - point on tangent, POC - point on curve.
(4) Take the cross-sections normal to the centerline ±1 degree.
(5) Bridge control is established as a local network and the tolerances are relative to that network.
(6) Includes paved ditches

152.06 Acceptance: Construction survey and staking will be evaluated under Subsections 106.02 and 106.04. Survey notes will be evaluated under Subsection 106.02

The Contractor's personnel shall make all the computations (with detailed and clear sketches as approved by the CM) 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 CM for further review and processing.

Measurement

152.07 Measure the Section 152 pay items listed in the bid schedule according to Subsection 109.02 and the following as applicable.

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.

Payment

152.08 The accepted quantities, measured as provided in Section 152.07, 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 CM for review and approval before payment is made. The Engineer of Record shall review the data before the CM 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 152.05(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 CM in the format outlined under **Subsection 152.04(d) Survey Notes**. Once reviewed and approved by the CM, 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 CM.

rev: 2/19/26

(EXAMPLE) 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 changes 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 ensure 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 is in conformance to the contract requirements. This form will be signed by the Field Supervisor and submitted with survey notes to the Construction Manager (CM) 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 for this 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 CM. Discrepancies should be resolved in the field if all possible.

This Survey 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 152.04 Requirements:

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

1. Surveying and 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 (benchmarks).
5. Structure control.
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 base 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 CM. "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 152.04. 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 subgrade. This work will include an independent network check using Government provided control points and one National Geodetic Survey (NGS) control monument. 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 points and/or design base 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 152.05(a) through (m), 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 surveyor prepared 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 in accordance with Table 152-1. A CM 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 152-05 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 furnished 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 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.

(b) 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.

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

PT	Gov North (m)	Gov East (m)	Gov 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	Gov North (m)	Gov 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#	Gov 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

(c) 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.

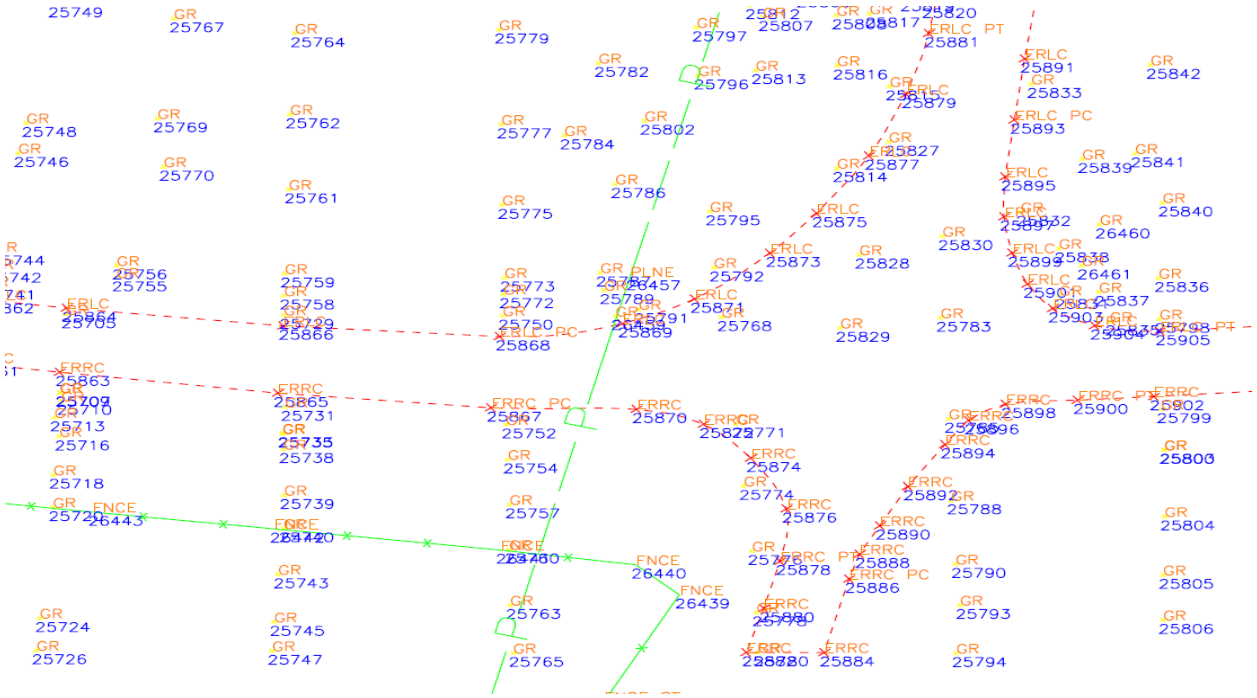
All topographic terrain breaks will be classified as break lines and all topographic flat surfaces will be classified as ground points. All break lines will be measured and recorded in a continuous pattern. The data points will be numbered in a sequential order and all break lines will be coded to best 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 break lines 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., break lines 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:



(d) Slope Stakes and References:

The "RLS" shall field stake the project according to the Surveyor prepared 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 original 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 CM 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 CM for review.

The "RLS" will reset all slope stakes that may have been removed or 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 Original 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	~~1910.034~~	F 1.421
Offset	@ 2.499	13.251	10.752	8.082	0.000	6.465	9.135	14.819	@ 5.684
Slope	-25.00%	-25.00%	-16.67%	-7.20%		7.20%	-16.67%	-25.00%	-25.00%
Station:	38+140.000								
Feature		LFill 1	LSP	L_Subgr	Subgr_CL	R_Subgr	RSP	RFill1	
Elevation	F 0.705	1909.934	1910.639	1911.084	1911.666	1912.131	1911.686	1910.839	F 0.846
Offset	@ 2.818	13.570	10.752	8.082	0.000	6.465	9.135	12.521	@ 3.386
Slope	-25.00%	-25.00%	-16.67%	-7.20%		7.20%	-16.67%	-25.00%	-25.00%
Station:	38+160.000		10.27 13.15					13.69	
Feature		LFill 1	LSP	L_Subgr	Subgr_CL	R_Subgr	RSP	RFill1 10.78	
Elevation	F 0.734	~~1918.135~~	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		10.29 13.99					14.13	
Feature		LFill 1	LSP	L_Subgr	Subgr_CL	R_Subgr	RSP	RFill1 10.89	
Elevation	F 0.912	~~1918.180~~	1911.097	1911.542	1912.124	1912.590	1912.145	~~1910.769~~	F 1.375
Offset	@ 3.647	14.400	10.752	8.082	0.000	6.465	9.135	14.636	@ 5.501
Slope	-25.00%	-25.00%	-16.67%	-7.20%		7.20%	-16.67%	-25.00%	-25.00%
Station:	38+200.000								
Feature		LFill 1	LSP	L_Subgr	Subgr_CL	R_Subgr	RSP	RFill1	
Elevation	F 0.968	1910.305	1911.274	1911.719	1912.300	1912.766	1912.321	1910.950	F 1.371
Offset	@ 3.873	14.625	10.752	8.082	0.000	6.465	9.135	14.619	@ 5.484
Slope	-25.00%	-25.00%	-16.67%	-7.20%		7.20%	-16.67%	-25.00%	-25.00%
Station:	38+220.000	10.60	13.87					14.45	
Feature		LFill 1	LSP	L_Subgr	Subgr_CL	R_Subgr	RSP	RFill1 11.09	
Elevation	F 0.921	~~1918.456~~	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%

(e) 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 with 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 plans. 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.

(f) Grade Finishing Stakes:

The "RLS" will field stake all finish grades in accordance with the grades prepared by the Surveyor (i.e. P&P sheets, cross sections 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 surfacing thickness and crown.

(g) Drainage Structures:

The "RLS" will stake all culvert locations in accordance with the plans. Due to terrain changes caused by seasonal runoff, the culvert length 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 intervals 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.

(h) Bridges: (When Required)

The "RLS" will set a minimum of four (4) 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 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 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.

(i) 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.

(j) Borrow and Waste Sites:

All horizontal and vertical control points will be established prior to any excavations or spoil displacements. The 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 152.05 for verifying the data before submission to the Government.

(k) 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 point. All measurements will be in accordance with Section 152, Table 152-1. The data will then be provided to the Government for future reference.

(l) Miscellaneous Survey Staking:

The "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) Ditches and special ditches.
6) Turf or seeding and mulching limits.
7) Signs, delineators, and object markers.
8) Pavement markers.
9) Utilities.
10) Concrete wall barrier.
11) Guardrails.

The "RLS" will consult with the Construction Manager on issues arising that require assistance beyond the Surveyor's control.

Rev: 2/19/26

SECTION 153 - CONTRACTOR QUALITY CONTROL

Section 153 – Contractor Quality Control herein supersedes Section 153 of FP-14. This section 153 supplements Article 6 of Exhibit A.

Description

153.01 This work consists of planning and implementing a construction quality process to ensure work conforms to the contract. This work also includes quality control inspection and documentation, and process control sampling and testing.

The Contractor shall be fully responsible for providing Quality Control of materials delivered to the site and the means/methods in which they are placed to meet the requirements of the contract documents and specifications. The Contractor shall maintain records and make them available to the Government (if requested). There is no contract pay item for this work.

The Government will be responsible for completing the Quality Assurance testing and construction inspection to verify that the testing requirements and specifications are met to ensure construction plans are followed and all items of work conform to the contract requirements. All work shall be conducted under the observation of the Government and is subject to Government inspection and testing at all places and at all reasonable times before acceptance to ensure strict compliance with the terms of the contract.

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

(b) 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.

(c) 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 Government is not responsible to the Contractor for 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.

(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.

Construction Requirements

153.02 Qualifications. Submit the following for approval:

(a) **Quality control manager (QCM).** The Contractor shall furnish and designate a qualified Quality Control Manager (QCM). Provide a QCM with no responsibilities for performing work on or managing the project. The QCM's resume shall reflect one of the following and shall be included in the Quality Control Plan.

(a) The QCM shall be a graduate of a two-to-four-year accredited engineering technology program in an Engineering discipline.

(b) Have 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 include the major trades that are part of this contract.

(c) A civil engineering technician with at least six (6) years of progressive experience in highway/bridge construction which includes basic surveying knowledge, 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.

The Contractor's QCM shall manage and carry out the Contractor's internal Quality Control Plan (QCP) and shall be a full-time employee who will work with and take direction from the Government's QAM. The duties and responsibility the Contractor 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 is required to attend and participate in the preconstruction meetings, partnering meetings, and the prep meetings for the work.** The Contractor QCM shall also stop work for the purpose of unsafe conditions.
The Contractor QCM shall report any deficiencies in the work directly to the QAM and Construction Manager (CM). Furthermore, it is the Contractor's responsibility to address and respond to all "non-compliance orders" issued by the QAM or CM. The Contractor's QCM shall not be the same individual as, nor be subordinate to, the Contractor project superintendent.

(b) **Quality assurance manager (QAM).** The Government shall furnish and designate a qualified Quality Assurance Manager (QAM).
The Government's QAM shall manage the overall Quality Control Plan, perform quality assurance testing and inspections, ensure construction plans are followed, review construction plans for errors or conflicts that may arise with testing and inspection procedures, and prepare Quality Assurance certifications and documentation required in this contract.

153.03 Quality Control Plan (QCP). In direct coordination with the Government QAM, the Contractor shall develop a QCP addressing all contract work categories. A category consists of related work items performed in one operation (such as excavation, drainage, and paving). Include the work of subcontractors, major material suppliers, and structural and geotechnical services suppliers. For each category, include the following:

(a) Quality control personnel. The Contractor shall provide for approval the name, resume, and relevant experience of all personnel directly responsible for implementing the Contactor's Quality Control Plan. The Contractor shall work cooperatively with the Government QAM and personnel to accommodate the inspection and testing requirements. Conform to Subsection 153.02.

(b) Quality control procedures. Describe the inspection, testing, and other activities to be performed for each phase of work in Subsection 153.04. Include methods, schedules, and equipment. Conform to Subsections 153.04 and 153.05.

List the material to be tested by:

(1) Pay item;

(2) Applicable requirements of the Sampling, Testing, and Acceptance Requirements tables;

(3) Proposed reporting formats. As a minimum perform process control testing according to the Sampling, Testing, and Acceptance Requirements tables included at the end of each Section where applicable.

(c) Records. Describe the reporting format for inspection, testing, certification, and daily reports. Conform to Subsections 153.06 and 153.07.

(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 and shall be accepted by the QAM or CM. This form shall be used for material certifications, shop drawings, mix designs, test/inspection reports, and resumes for Contractor's 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 that the documents and materials shown in the enclosed submittal is that proposed to be incorporated into this contract and is in compliance with the contract plans and specifications."***
>
> ***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.

(e) Manpower needs. The QCM shall coordinate with the QAM, CM and Project Superintendent and agree on the level of inspection and testing manpower needed for each week's work or operation for the QAM and CM to fully understand the testing and inspection work to occur.

The QAM 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 is done in a safe manner. The Contractor can propose changes to the QAM and CM by submitting a completed **"Submittal, Transmittal, Review and Approval Form"**, along with a complete resume of replacement personnel 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 CM prior to implementation.

At the Preconstruction Conference, the Contractor shall submit a written Quality Control Plan (QCP), which includes all subcontractors, and suppliers/fabricators of major construction components, and subcontracted surveying services for review and approval. The Contractor shall not be allowed to begin construction on major items of work until the QCP is 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.

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 actions required by the Quality Control Manager and the Quality Assurance Manager. Address each of the following subjects in each phase of construction for each item of work:

(a) Preparatory phase.

(1) Before starting each work category, hold a preparatory phase meeting. Include the project superintendent, work foreman, CM, QAM, QCM, and appropriate subcontractors.

Be prepared to discuss the following: (a) Contract requirements for the work, including acceptance procedures, schedule, and control strip; (b) Process and equipment for constructing the work; and (c) Plan for inspection, process control, testing, measuring, and reporting the work.

(2) Review and coordinate certifications, submittals, plans, drawings, and permits.

(3) Verify the capabilities of equipment, material, and personnel. Provide training as necessary.

(4) Establish a detailed testing schedule based on the production schedule.

(5) Ensure preparatory testing and inspection is accomplished.

(6) Review accuracy of the surveying and staking.

(b) Start-up phase.

(1) Hold a start-up meeting to review the contract, the construction processes, and the inspection, testing, and reporting requirements with the personnel performing the work. Include the project superintendent, inspectors, testers, CM, QAM, and QCM. Explain procedures that will be followed if defective work is identified.

(2) Inspect, test, and report start-up work according to the QCP and ensure the work conforms to the contract.

(c) Production phase.

(1) Inspect, test, and report according to the QCP and evaluate the acceptability of the work produced.

(2) Identify and correct deficiencies.

(3) Request Government inspection and acceptance.

(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. This section is deleted in its entirety. The Government will be responsible for the Quality Assurance sampling and Testing efforts.

153.06 Certifications. Obtain, review, and verify certifications for work. Submit certifications when required.

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

(a) Quality control and construction operations reports. Maintain written quality control and construction operations reports daily according to the QCP. Document meetings, work locations, labor and equipment used including actual hours worked, testing and measurement activities, inspection results, deficiencies observed, corrective actions taken, and process changes. Use FHWA Form 1413, Inspector's Daily Record of Construction Operations or approved alternate forms. Include the following certification signed by the QCM on all reports: "I certify that the information contained in this record is accurate and that work documented herein complies with the contract. Exceptions to this certification are documented as a part of this record."

(b) Control charts. Maintain linear control charts that identify the test number, test parameter, upper and lower specification limit applicable to each test parameter, and test results for applicable material. Use the control charts to document variability of the process, to identify production and equipment problems, and to identify actions to improve processes or quality. Update and post control charts daily in a location accessible to the CM. Cease production and correct the process when problems are evident.

In accordance with the Government's Records Management requirements, the QAM, 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 in a format agreed to by both the QAM, QCM and CM. 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 CM in writing. Copies of material measurements shall be furnished to the CM and QAM for review, approval, and preparation of progress pay estimates. Any errors/mistakes found by the CM 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 QAM and QCM are 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 a Government approved electronic file system. Under no circumstances shall any QC personnel alter any previous report(s) without notifying the QAM first and initials off on the corrections.

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

(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 always available for review by the QAM and/or CM. Along with the hard copy as-builts, the Contractor shall provide an electronic (PDF) file of the as-builts to the CM.

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

> "***It is hereby certified 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 QAM/CM 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 CM for final audit purposes within three (3) working days **after** the Final Inspection date or just prior to the final acceptance inspection if agreed to by the CM. The CM (in conjunction with the Government/FHWA) will review the final quantity books and all other records for completeness within 21 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 ensure compliance with audit requirements until the audit has been completed.

153.08 Acceptance. The Contractor's quality control system will be evaluated under Subsection 106.02 based on its demonstrated effectiveness to ensure work conforms to the contract.

Measurement and Payment

153.09 Payment. Do not measure Contractor quality control for payment. See Subsection 109.05.

rev: 11/13/23

NAVAJO DIVISION OF TRANSPORTATION

Contractor Submittal, Transmittal, Review and Approval Form

Part 1 - For Contractor Transmittal	
Submittal No.:	
From:	**To:**
Project No.: **Contract No.:**	**Project Location:**
Description of submittal:	
It is hereby certified that the documents and material shown in the enclosed submittal is that proposed to be incorporated into this contract and is in compliance with the contract plans and specifications.	
Certified by:	**Date:**
Part 2 - For Reviewer	
From:	**To:**
Review of submittal is for general compliance with the requirements of the contract documents and corrections or comments made do not relieve the contractor from compliance with these requirements. The contractor is responsible for: confirming and correlating all quantities and dimensions; any changes from the contract documents; coordinating the work with all trade and subcontractors; and performing the work in a satisfactory manner.	
☐ No Exception Taken ☐ Amend & Resubmit ☐ Make Corrections Noted ☐ Rejected	
Signature:	**Date:**
This form is for submitting material certifications, shop drawings, testing & inspection reports, personnel changes, permits, QC Plan updates, TCP plans, Safety Plan changes & construction schedule updates. All other transmittals must be submitted by formal letter to the Construction Manager.	

Revised: 11/10/2023

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 shall be completed in conjunction with the Contractor quality control efforts required under Section 153. Contractor shall include the work required under this Section 154 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 QAM will take possession of the Government samples.

Allow the CM and/or QAM the opportunity to witness all sampling and splitting.

This subsection 154.04 is superseded with the following:

154.04 Testing.

The Government's QAM shall perform all tests required by the Sampling and Testing Tables for all applicable work. The Contractor QCM and/or CM shall be afforded the opportunity to witness all testing. Testing of trial samples may be required to demonstrate testing competence.

The QAM 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 CM 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.

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 completed under Section 153 and no payment shall be made.

rev: 11/13/23

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.

Phasing and Work Zone Stipulations:

- Traffic, including school buses, shall be able to safely travel on the existing road or detours and have access to the homesites.
- The work zone shall be phased so that the N41 is accessible during working and non-working hours N8404.
- The work zone shall be phased so that N8066 Spur Road is accessible during working and non-working hours.

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.

Add the following stipulations:

No work, roadway closures or lane restrictions, or access restrictions are allowed during the following periods:

- Federal holidays
- The Fridays prior to Memorial Day and Labor Day or any Friday prior to a roving holiday (for example, July 4)
- Navajo Nation Memorial Day, June 1
- Navajo Code Talkers Day, August 14
- Veteran's Day, November 11

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.

(l) 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
15703-1000	Soil Erosion Control, Soil Stabilization	ha

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 202 – ADDITIONAL CLEARING AND GRUBBING

202.01 Description.

Add the following paragraph:

This work shall also include the removal of trees, as listed in the Timber Permit included in Exhibit I.

202.03 Construction Requirements: General.

Delete Sentence 4. Add the following paragraph:

Dispose of clearing and grubbing debris according to the Special Provisions listed in the Timber Permit (PERMIT No. FY20250119) included in Exhibit I of the Contract Book. The Contractor shall prepare a simplistic logging plan per the Timber Permit and submit to Navajo DOT and the Navajo Forestry Department for approval prior to any tree cutting activities. See Table 1 Timber Inventory in Exhibit I Timber Permit for the estimated amount of trees to be removed.

202.04 Construction Requirements: Selective Clearing.

Add the following paragraph:

Remove and stockpile in the designated locations in accordance with the BIA and Navajo Nation Forestry Requirements attached herein.

202.09 Measurement.

Delete Paragraph. Add the following paragraph:

Measure the work under Section 201 bid items in the bid schedule for Section 202 removal work.

202.10 Measurement.

Delete Paragraph. Add the following paragraph:

The accepted quantities will be paid at the contract price per unit of measurement for the Section 202 pay items listed under Section 201 bid items in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

rev: 3/13/26

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:

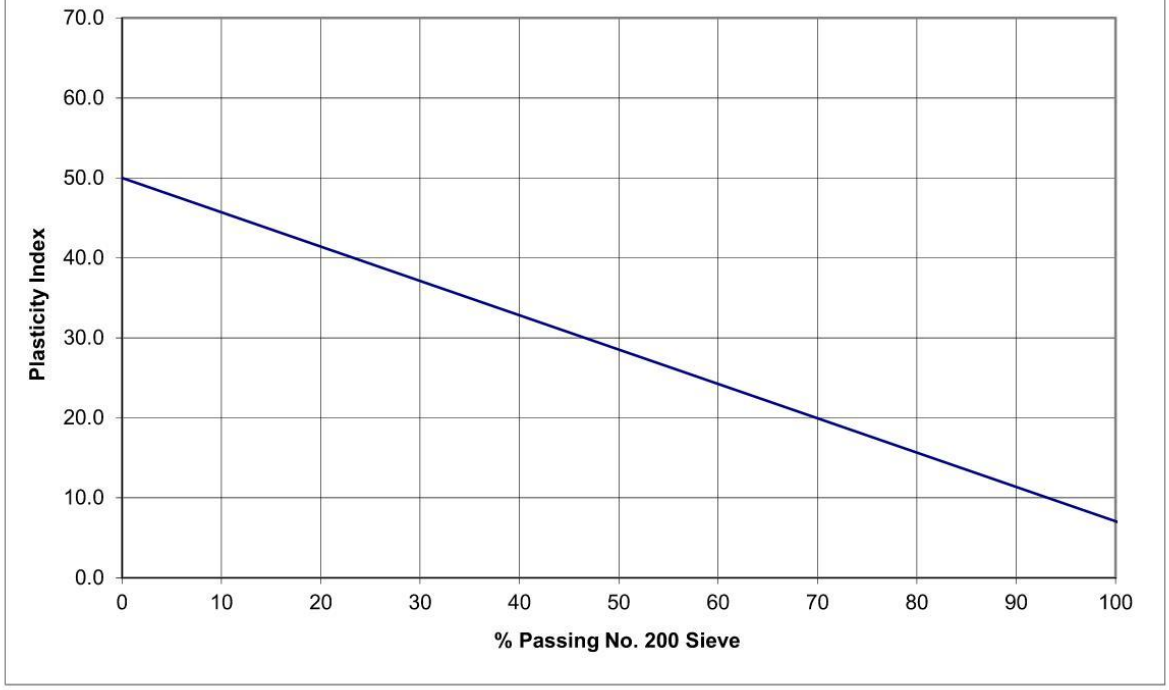
Table 204-1

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.

FIGURE 5
Subgrade Acceptance Chart (BIA Route N8066(3) & School Spur)



rev: 1/10/22

SECTION 205- ROCK BLASTING

205.01 Description.

The first paragraph is superseded with the following:

The work consists of fracturing rock and constructing stable final rock cut faces using controlled and/or production blasting and non-blasting techniques as may be required by environmental requirements. This section 205 supplements Article 6 of Exhibit A.

205.08 Blasting.

Add the following subparagraph:

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

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

205.11 Measurement.

Add the following:

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

rev: 12/19/17

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 pipelines 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

208.01 **Description.** Add the following to this subsection: This Section 208 supplements Article 6 of Exhibit A.

208.08 **Foundation Preparation.**

Add the following:

Soil classification reports shall be submitted to the Construction Manager for review and approval prior to starting the foundation preparation.

208.09 **Backfill.**

Add the following:

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 supplemental section 204.04.

Table 208-1 is superseded with the following:

Table 208-1

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: 11/15/23

SECTION 211-ROADWAY OBLITERATION

211.01 Description.

Add the following subparagraph:

Roadway obliterations shall be performed for existing roadway sections outside the right-of-way limits as called for on the approved construction plans and specifications. The Contractor shall coordinate all roadway obliterations outside the right-of-way with the Construction Manager once the new roadway is ready for traffic. This section 211 supplements Article 6 of Exhibit A.

211.02 Construction Requirements.

Add the following subparagraph (c):

(c) After scarifying and obliterating the roadway sections outside the ROW, seed and mulch in accordance with section 625 and as directed by the Construction Manager. Payment for the seeding and mulching shall be paid for under the bid item for section 625.

211.05 Measurement.

Add the following:

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

rev: 12/19/17

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)
Liquid Stabilizer (RoadBond EN-1 or approved equal)	Manufacturer's certification

No specific liquid stabilizer product is required. The Contractor shall submit a mix design and material certification of the stabilizer product to the Construction Manager for review and approval. This submittal shall be done 30 days prior to starting production.

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 stabilizer. 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.

Stabilizer 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 stabilized surface mixture on a dry, unfrozen surface when the air temperature in the shade is 40º F and rising; and when the temperature of the ground surface (in the shade) is 40º F. No work shall be permitted when weather conditions indicate that the air temperature is expected to fall below 32º F during the same working day.

213.06 **Application.** Diluted 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 stabilizer 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 stabilizer with the soil shall be accomplished by the stabilizer/mix spray placing method. When diluting the stabilizer 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 stabilizer concentrate) with water, 1 liter of stabilizer concentrate treats 6 cubic meters of material.

b. Application rate for every 6-inch (152 mm) depth is 30 m^2/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 stabilizer and required water (dilution ratio 200:1) shall be thoroughly mixed in the water truck. For ease of mixing and safety considerations, the stabilizer concentrate shall be mixed in 5-gallon increments. The subgrade and the diluted stabilizer is mixed and blended until a homogeneous mixture is achieved with an approved pulverizing machine and to the 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 stabilizer begins to "set-up" and harden. At final compaction, the moisture content shall be at optimum or within optimum plus or minus one percent (±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. The subgrade stabilization compressive strength requirement will be 200 psi @ 21 days using ASTM D1633, Method A per Table 213-1 of the FP-14 spec.

Material for stabilizer 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 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 each 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: 1/11/22

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.

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SECTION 252--BANK PROTECTION

252.01 Description:

The work under this section shall consist of furnishing all materials and constructing bank protection in accordance with the details shown on the plans and the requirements of the specifications.

Bank protection shall be dumped riprap, grouted riprap, wire tied riprap, riprap in wire baskets or gabions, soil-cement, and other types of bank protection and shall be constructed at the locations and as shown on the project plans.

252.02 Materials:

252.02.01 Rip Rap Bank Protection:

(A) Rock:

Rock shall be sound and durable, free from clay or shale seams, cracks or other structural defects.

The bulk (SSD) specific gravity of the rock shall be a minimum of 2.4 as determined in accordance with the requirements of Arizona Test Method 210, modified to specify that testing shall be performed on 3-inch maximum to plus No. 4 size material. If required by the Engineer, the contractor shall break an adequate amount of rock down to 3-inch maximum size particles for performance of the necessary testing. Rock used to construct dumped riprap shall be angular in shape. Rock used to construct other types of bank protection may be rounded stones or boulders. Rock shall have a least dimension not less than one-third of its greatest dimension and a gradation in reasonable conformity with that shown herein for the various types of bank protection. Control of the gradation will be by visual inspection.

When a source of rock is designated, it shall be the contractor's responsibility to negotiate for the material, obtain the right-of-way and pay all royalties and damages.

The acceptability of the rock will be determined by the Engineer by visual inspection and/or testing. If testing is required, suitable samples of rock shall be taken in the presence of the Construction Manager at least 25 days in advance of its expected use. The approval of some rock fragments from a particular quarry site shall not be construed as constituting the approval of all rock fragments taken from that quarry.

During construction of the bank protection, the contractor shall provide two samples of rock for the intended use. The size of each sample for rail bank protection shall be at least 500 pounds. One sample shall be provided at the construction site and may be a part of the finished bank protection. The other sample shall be provided at the quarry. These samples

will be used as a frequent reference for judging the gradation of the rock supplied. Any difference of opinion between the Construction Manager and the contractor shall be resolved by checking the gradation of two random samples of the rock.

Material that is deemed unsatisfactory by the Construction Manager shall be replaced with acceptable material at no additional cost to the Government.

Rock used to construct rail bank protection shall be well graded, varying in size from 4 to 12 inches.

(B) Metal Items:

(1) Wire Fabric:

Welded wire fabric shall be galvanized and shall conform to the requirements of AASHTO M 55, except that the minimum weight of the zinc coating shall be 0.15 ounces per square foot of actual surface.

Woven wire fabric shall be galvanized and shall conform to the requirements of ASTM A116, except that the minimum weight of the zinc coating shall conform to the requirements of ASTM A641, Class 3.

Wire fabric shall be of the diameter, spacing, pattern, and dimensions shown on the plans. The selvage on each sheet of mesh shall be galvanized steel wire with a minimum diameter 25 percent larger than that used in the body of the mesh.

Certificates of Compliance conforming to the requirements of Subsection 6.17 of Exhibit A, Standard General Conditions shall be submitted.

(2) Miscellaneous Fittings and Hardware:

Miscellaneous fittings and hardware shall be of the type and size provided by the manufacturer of the major item to which they apply and shall be galvanized in accordance with the requirements of AASHTO M 232.

Certificates of Compliance conforming to the requirements of Subsection 6.17 of Exhibit A, Standard General Conditions shall be submitted.

(3) Tie Wires:

Tie wires shall be of good commercial quality and the size shall be as shown on the project plans, except that the minimum weight of the zinc coating shall conform to the requirements of ASTM A641, Class 3. At the option of the contractor, approved wire fasteners may be used on gabions, slope mattresses, or wire fabric in lieu of tie wires.

Certificates of Compliance conforming to the requirements of Subsection 6.17 of Exhibit A, Standard General Conditions shall be submitted.

(4) Steel Cable:

Steel cable shall be zinc-coated steel structural wire rope conforming to the requirements of ASTM A475, seven-wire strand, Class A, for the diameter shown on the plans.

Certificates of Compliance conforming to the requirements of Subsection 6.17 of Exhibit A, Standard General Conditions shall be submitted.

(5) Railroad Rail:

Railroad rails may be new or used. If used rails are furnished, they shall be free from rust and equal to at least 95 percent of the original section.

(6) Soil Anchor Stakes:

Soil anchor stakes shall be steel and of the length called for on the plans. When not specified to be railroad rails, the following items may be used: crane rails with a weight of at least 40 pounds per linear foot, 2-inch diameter steel pipe conforming to the requirements of ASTM A53, or 3-inch by 3-inch by 3/8-inch structural steel angles conforming to the requirements of ASTM A36. Used rails, pipe or angles may be used provided the material is not rusted or damaged to the extent that the strength of the item is reduced to less than 90 percent of a new item of the same type and size.

Certificates of Compliance conforming to the requirements of Subsection 6.17 of Exhibit A, Standard General Conditions shall be submitted.

(C) Bedding Material:

Bedding material shall consist of granular material having a maximum dimension of 2 inches and shall be free of clay or organic material.

(D) Bank Protection Fabric:

Fabric shall be supplied in accordance with and conform to the material requirements of Class 1 Nonwoven fabric as described in Table 714-1, Subsection 714.01 of FP-2014. Special attention shall be given to the required survivability of the fabric.

The identification, packaging, handling, and storage of the geotextile fabric shall be in accordance with ASTM D4873. Fabric rolls shall be furnished with suitable wrapping for protection against moisture and extended ultraviolet exposure prior to placement. Each roll shall be labeled or tagged to provide product identification sufficient to determine the product type, manufacturer, quantity, lot number, roll number, date of manufacture, shipping date, and the project number and name to which it is assigned. Rolls will be stored on the site or at another identified storage location in a manner which protects them from the elements. If stored outdoors, they shall be elevated and protected with a waterproof, light colored, opaque cover. At no time, shall the fabric be exposed to sunlight for a period exceeding 14 days.

252.3 Construction Requirements:

252.3.01 Rip Rap Bank Protection:

Areas on which bank protection is to be constructed shall be cleared, grubbed, and excavated or backfilled in accordance with the requirements of the appropriate sections of Division 200 to produce a ground surface in reasonable conformance with the lines and grades shown on the project plans or established by the Construction Manager.

Placement through water will not be permitted unless otherwise approved by the Construction Manager.

Areas which are excavated for installation of rail bank protection shall be backfilled to original ground or to the lines and grades shown on the plans.

(A) Bank Protection Fabric:

When fabric is required, it shall be placed in the manner and at the locations shown on the project plans. The surface to receive the fabric shall be free of obstructions, depressions and debris. The fabric shall be loosely laid and not placed in a stretched condition.

The strips shall be placed to provide a minimum 24 inches of overlap for each joint. On horizontal joints, the uphill strip shall overlap the downhill strip. On vertical joints, the upstream strip shall overlap the downstream strip. The fabric shall be protected at all times during construction from extensive exposure to sunlight.

When the maximum size of the rock to be placed on fabric exceeds 18 inches, the fabric shall be protected during the placement of the rock by a layer of bedding material. The bedding material shall be spread uniformly on the fabric to a depth of 4 inches and shall be free of mounds, dips, or windrows. Compaction of the bedding material will not be required.

Rock shall be carefully placed on the bedding material and fabric in such a manner as not to damage the fabric. If, in the opinion of the Engineer, the fabric is damaged or displaced to the extent that it cannot function as intended, the contractor shall remove the rock, regrade the area if necessary, and replace the fabric.

(B) Rail Bank Protection:

Excavation, where required for rock fill, shall be performed in reasonably close conformity to the lines and grades established or shown on the plans.

Rails shall be driven at the locations and to the minimum penetrations shown on the plans. Driving equipment shall be capable of developing sufficient energy to drive the rails to the specified minimum penetration and be approved by the Engineer.

If hard material is encountered during driving before minimum penetration is reached and it has been demonstrated to the satisfaction of the Engineer that additional attempts at driving would result in damage to the rails, the Engineer may order additional work to be performed, such as jetting or drilling, in order that minimum penetration may be obtained or the Engineer may order the minimum penetration to be reduced as required by the conditions encountered.

Wire fabric shall be securely fastened to the rails, placed in the trenches and laid on the slopes. The rock backfill shall then be carefully placed so as not to displace the wire fabric or rails. The wire fabric shall entirely enclose the rock backfill.

The completed rock fill shall be backfilled as necessary and the waste material disposed of as directed by the Engineer.

252.4 Method of Measurement:

Rail bank protection will be measured by the linear foot. Measurement will be made from top of rail to top of rail (longest rail where rails of two or more lengths are used) and the distance measured will be from end rail to end rail.

Where two parallel rows of vertical rails are used, the measurement for payment will be the average of the distance along the two rows. Rail bank protection will be measured along the bank protection control line from end rail to end rail.

252.5 Basis of Payment:

The accepted quantities of rail bank protection, measured as provided above, will be paid for at the contract unit price per linear foot, which price shall be full compensation for the work, complete in place, including excavation; preparing the ground area; furnishing and installing the rock, filter fabric, bedding material, and metal items; and backfilling as required.

Materials, labor and equipment necessary to perform additional work such as jetting or drilling, as specified under Subsection 252.3.01 (B), will be paid for in accordance with the provisions of Subsection 109.06 of FP-2014.

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SECTION 254 – ARTICULATED CONCRETE BLOCK AND CONCRETE ARMOR UNITS

254.01 DESCRIPTION

Furnish all plant, labor, equipment, materials and incidentals necessary to construct the shoreline protection armoring system using Articulated Concrete Block mats (ACBs) and Concrete Armor Units (CAUs) in accordance with lines, grades, and dimensions shown on the Drawings and as specified herein.

The ACB revetment system is considered to include geotextile, cabled ACB mats, and associated concrete and riprap to be used at ACB termination locations. Infill of either topsoil or stone sized between ¼"-3/8" is to be placed within the open cells of the ACBs at locations as specified on the Drawings.

The CAU revetment system is considered to include geotextile, coarse drain material, and associated riprap to be used at CAU termination locations.

254.02 PRE-APPROVED PRODUCT SUBMITTALS

Pre-Approved ACB and CAU systems are those listed in Tables 1 and 3. Pre-Approved ACB and CAU systems shall provide the following submittal information.

1. Shop Drawings: At least 30 days prior to the start of any installation of the ACBs or CAUs, submit shop drawings showing proposed layout of the ACB or CAU system (geotextile, individual ACB or CAUs, bundled ACBs or CAUs, drainage material, and terminations or transitions for approval prior to installation. Include dimensions of all ACBs and CAUs, bundles, and installation procedures. Shop drawings shall be prepared by the ACB or CAU manufacturer and shall show:
    a. Plan of coverage depicting the layout of all ACBs or CAUs, terminations/transitions, special connections, and any other plan features as necessary.
    b. Typical cross sections.
    c. Attachment to structures, upslope and side termination/transition details, downslope termination/transition details.
    d. Product shop drawings.
2. Physical Testing Reports: Submit ACB and CAU test results for tests specified in Section 725.07(a).
3. Cables: Submit product information.
4. Geotextile: Submit product information.

254.03 ALTERNATIVE PRODUCT SUBMITTALS

(a) Alternative ACB and CAU systems are those that comply with Section 2.1 B. Alternative CAU systems shall provide the following submittal information.
    (a) All information as required for pre-approved products as listed in Section 254.02.
    (b) Required minimum unit size calculations in support of the CAU system, made per

Section 254 General Design Requirements., stamped and signed by a Professional Engineer licensed to practice in the state of the project.

(c) Manufacturers' hydraulic testing and calculations in support of the proposed CAU system per Section 254 General Design Requirements.

(b) Manufacturer Qualifications:

(a) Suppliers must own and operate their own manufacturing facility.

(b) A list of 5 comparable projects, in terms of size and applications, in the United States, where satisfactory performance of the specified alternate CAU system can be verified after a minimum of five (5) years of service life.

(c) A list of a minimum of one (1) registered Professional Engineer directly employed by the ACB and/or CAU supplier.

(d) The names and contact information (phone numbers and e-mail addresses, at a minimum) for the suppliers' representatives, for technical, production or logistics questions.

254.04 QUALITY CONTROL

Quality Control Responsibilities:

General: The Contractor is responsible for all quality control testing for each stage of work. This testing includes material inspection and conformance testing.

The owner's representative may, at any time, inspect any of the Contractor's or ACB/CAU Manufacturer's Quality Control operations and perform such independent or supplemental tests as he/she believes necessary to corroborate or check results reported by the Contractor and/or ACB/CAU Manufacturer. The Contractor and/or Manufacturer shall assist the Owner to the greatest extent practicable by furnishing equipment and personnel as necessary to secure samples for testing.

Reference Standards listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent indicated by the reference thereto.

American Society for Testing and Materials (ASTM) Standards:

ASTM C 33, Concrete Aggregates.

ASTM C 62, Building Brick Solid Masonry Units Made from Clay or Shale.

ASTM C 67, Sampling and Testing Brick and Structural Clay Tile.

ASTM C 90, Specification for Load-bearing Concrete Masonry Units.

ASTM C 94, Specification for Ready-Mixed Concrete.

ASTM C 140, Sampling and Testing Concrete Masonry Units.

ASTM C 150, Portland Cement.

ASTM C 207, Specification for Hydrated Lime Types.

ASTM C 595, Blended Hydraulic Cements.

ASTM C 618, Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete.

ASTM C 1262, Standard Test Method for Evaluating the Freeze-Thaw Durability of Manufactured Concrete Masonry Units and Related Concrete Units.

ASTM D 698, Standard Test Methods for Laboratory Compaction Characteristics of Soil

Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3)).
ASTM D 6684, Standard Specification for Materials and Manufacture of Articulating Concrete Block (ACB) Revetment Systems.
ASTM D 6884, Standard Practice for Installation of Articulating Concrete Block (ACB) Revetment Systems.
ASTM D 7276, Standard Guide for Analysis and Interpretation of Test Data for Articulating Concrete Block (ACB) Revetment Systems.
ASTM D 7277, Standard Test Method for Performance Testing of Articulating Concrete Block (ACB) Revetment Systems for Hydraulic Stability in Open Channel Flow.
Admixture in Portland Cement Concrete.
ASTM D 6684, Standard Specification for Materials and Manufacture of Articulating Concrete Block (ACB) Revetment Systems.
American Association of State Highway and Transportation Officials (AASHTO):
AASHTO M 288 – Standard Specification for Geotextile Specification for Highway Applications.

254.05 MATERIALS

PRE-APPROVED CAU REVETMENT SYSTEMS

254.2.1 Pre-Approved CAU systems: Pre-Approved CAU systems for use are those listed in Table 1.

Table 1 PRE-APPROVED CAU SYSTEMS

Manufacturer	CAU System	Contact
CONTECH Engineered Solutions	A-Jacks	Armortec: (513) 645-7000

Alternative CAU systems shall meet the CAU design requirements in Section 2.1D and physical model testing requirements. Alternative materials shall be approved in writing no later than ten (10) days prior to bid.

Alternatives:

CoreLoc, as developed by the U.S. Army Corps of Engineers.
Toskanes, as developed by Colorado State University.

Armor Unit Performance Evaluation

The CAU shall provide sufficient hydraulic stability under the design conditions specified by the Engineer of Record.
Calculations confirming that the selected CAU size has a tested permissible velocity, including applicable reduction factors, that meets or exceeds the project design velocity.

PRE-APPROVED ACB REVETMENT SYSTEMS

Table 2 - PRE-APPROVED ACB SYSTEMS

Manufacturer	ACB System	Contact
CONTECH Engineered Solutions	Standard ArmorFlex (open-cell or closed-cell)	Armortec (513) 645-7000
IECS	CABLE CONCRETE	IECS, INC. 1-855-768-1420

GENERAL ACB DESIGN REQUIREMENTS

Criteria	Required Value or System
Factor of Safety	1.5 minimum; see Paragraph 1 below.
Design Velocity	12 feet per second; see Paragraph 1 below.
Design Shear Stress	3.1 pounds per square foot
Longitudinal (Bed) Slope	Varies ft/ft
Side Slopes	2H:1V
Matrix Assembly	Cabled System
Block Type	Closed-cell
Minimum Block Thickness	5 inches

A. The design of the ACB system shall be in accordance with NEC 23, 3rd Edition, Volume 2, Design Guide 8, Articulating Concrete Block Systems. The analysis shall be performed based upon the stability of the mat due to gravity forces alone, neglecting conservative forces added by cabling, mechanical anchorage, contact with adjacent blocks, or other restraints not attributable to gravity-based forces. The analysis must account for a 0.5-inch block projection. Site grading may not be used to omit this requirement. This value shall be input into the factor of safety equations used to size the block. The ACB shall have a minimum thickness as shown on the plans. Tapered surface blocks with tapers shall not be utilized.

B. Individual blocks in each ACB mat shall be staggered and interlocked or cabled and clamped. The ACB mats shall be constructed of open-cell or closed-cell blocks as shown on the Contract Drawings. The open cell blocks have two (2) vertical openings of rectangular cross section with sufficient wall thickness to resist breakage during shipping and installation. Parallel strands of cable shall extend through two (2) cable ducts in each block allowing for longitudinal binding of the units within a mat. Each row of blocks shall be laterally offset by one- half of a block width from the adjacent row so that any given block is cabled to four other blocks (two in the row above and two in the row below). In rows where a half-block would be necessary to make the mat edge even, a block-and-a-half (BAH) unit shall be used instead of the half block and the adjacent full block. Leaving out half block units and field casting or filling the void shall not be an approved alternative to maintain the staggered matrix.

C. Each block shall incorporate interlocking surfaces or cabling and clamps that minimize lateral displacement of the blocks within the mats when they are lifted by the longitudinal revetment cables. The interlocking surfaces must not protrude beyond the perimeter of the blocks to such an extent that they reduce the flexibility or articulation capability of the cellular mats or become damaged or broken when the mats are lifted during shipment or placement. Once the mats are in place, the interlocking surfaces shall minimize the lateral displacement of the blocks even if the cables should become damaged or removed. The ACB mats must be able to flex a minimum of 18 degrees between any given row or column of blocks in the uplift direction and a minimum of 45 degrees in the downward direction.

D. The cables inserted into the mats shall form lifting loops at one end of the mat with the corresponding cable ends spliced together to form a lifting loop at the other end of the mat. The cables shall be inserted after sufficient time has been allowed for the concrete to complete the curing process.

E. All design calculations shall be based on the smallest block footprint utilized in the mat matrix. Partial or half blocks shall be analyzed separately.

Physical model testing

Certification by accredited laboratory documenting. physical hydraulic testing on CAUs to determine:

Manning's n
Critical Shear Stress

Dynamic Impact Factor > 1.75
Drag Coefficient
Permissible Velocity

The test reports shall clearly document the testing conditions and parameters used to determine items (a) through (e) above, including flow characteristics, CAU size, and slope geometry. If failure or damage was observed during testing, the specific conditions and location of the failure or damage shall be documented.

The installation placement shall be noted as uniform, random, or pseudo uniform.

MATERIALS AND MANUFACTURE OF CAU SYSTEMS

Concrete Armor Units shall be produced using a dry cast method.

Concrete Armor Unit Materials and Manufacture: Manufacture the CAUs at a block plant in accordance with *NCMA-ICPI Quality Control Program for Dry Cast Manufactured Concrete Products Production Plants version 1.01.*

Manufacture the CAUs in accordance with the following:

Cementitious Materials - Materials shall conform to the following applicable ASTM Standards:

Portland Cements - C 150, for Portland Cement.
Blended Cements - C 595, for Blended Hydraulic Cements.
Hydrated Lime Types - C 207, for Hydrated Lime Types.
Pozzolans - C 618, for Fly Ash and Raw or Calcined Natural Pozzolans for use in Portland Cement Concrete.
Aggregates – C 33, for Concrete Aggregates, except that grading requirements shall not necessarily apply.

Casting: Casting shall be in accordance with ASTM D6684.

Physical Requirements: At the time of delivery to the work site, the CAU units shall conform to the physical requirements prescribed in Table 2 below:

TABLE 2: CAU PHYSICAL REQUIREMENTS

Compressive Strength Net Area Min. psi (mPa)	Water Absorption Max. lb/ft^3 (kg/m^3)	Density in Air, Min. lb/ft^3 (kg/m^3)

Avg. of 3 units	Individual Unit	Avg. of 3 units	Individual Unit	Avg. of 3 units	Individual Unit
4,000 (27.6)	3,500 (24.1)	9.1 (160)	11.7 (192)	130 (2080)	125 (2000)

Visual Inspection

All units shall be sound and free of defects which would interfere with the proper placement of the unit, or which would impair the performance of the system. Surface cracks incidental to the usual methods of manufacture, or surface chipping resulting from customary methods of handling in shipment and delivery, shall not be deemed grounds for rejection.

Chipping, cracking, or spalling resulting in a weight loss exceeding 10% of the average weight of a concrete unit shall be deemed grounds for rejection.

Units rejected prior to delivery from the point of manufacture shall be replaced at the manufacturer's expense. Units rejected at the jobsite shall be repaired with structural grout or replaced upon request at the expense of the contractor.

Sampling and Testing

The purchaser (or their authorized representative) shall be afforded access to the relevant manufacturing facility or facilities, if desired, in order to inspect and/or sample the CAU units from lots ready for delivery prior to release for delivery to the job site. Such inspections are at the sole expense of the requesting entity.

Purchaser may request additional testing, at their expense, other than that provided by the manufacturer as needed. Such requested testing will extend any stated lead times for manufacturing and delivery, if the results of such testing are a prerequisite to approval (i.e., approval for release to manufacturing). Costs associated with such testing shall be borne by the purchaser.

Cables and Fittings

Galvanized steel or polyester cable for bundled assembly.

Cable type will be minimum 3/16” or 1/4” galvanized steel or polyester, as approved by the Engineer. These cables are for creating a bundled assembly and are not intended to be attached to rigging for lifting.

Fitting type will be minimum 3/16” aluminum, as approved by the Engineer.

Cables for lifting shall support each row within the bundle and will be designed by the contractor for safe lifting practices.

Geotextile

Geotextile shall be selected per Figure 16.3 in Design Guideline 16 of HEC-23. Geotextile shall be Type 4.
During all periods of shipment and storage, the filter fabric shall be protected from direct sunlight UV radiation, and temperatures greater than 140°F. To the extent possible, the fabric shall be maintained wrapped in its protective covering. Geotextile exposure to sunlight or UV radiation shall be minimized to the greatest extent possible until the installation process begins.

Graded Granular Layer (if applicable)
Granular filter layer should be selected per USACE EM 1110-2-2300 – Appendix B.

254.06 CONSTRUCTION REQUIREMENTS

SUBGRADE PREPARATION ACB SYSTEMS

A. Grading Tolerances and Treatment: The crest, downstream slope and toe area of the embankment shall be graded to a smooth plane surface to ensure that intimate contact is achieved between the slope face and the ACB mats. Subgrade shall be rolled smooth and compacted to 90% to 95% of standard proctor in accordance with ASTM D698. All slope deformities which project from the slope must be re-graded or removed. No holes, slope board teeth marks, footprints, or other voids greater than 0.5 inch in depth normal to the local slope face shall be permitted. No grooves or depressions greater than 0.5 inches in depth normal to the local slope face with a dimension exceeding 1.0 foot in any direction shall be permitted. Where such areas are evident, they shall be brought to grade by placing compacted approved fill. The slope and slope face shall be uniformly compacted. Once compacted, do not walk on or disturb the subgrade in any way that would result in a loss of intimate contact between the ACBs and the subgrade.

B. Inspection: The prepared base will be inspected by the Engineer immediately prior to placing the geotextile and ACB mats. No geotextile or ACB mats shall be placed thereon until that area has been approved by the Engineer.

C. Geotextile: Geotextile shall be placed, as shown on the Drawings, directly on the prepared subgrade, and free of folds or wrinkles. Avoid operations that will disturb or cause loss of intimate contact between the geotextile and the subgrade. Geotextile shall be placed so that the upstream strip of fabric overlaps the downstream strip. The longitudinal and transverse joints shall be overlapped at least two (2) feet. The geotextile shall terminate at the bottom of the termination trenches.

PLACING AND SECURING MATS

A. After the subgrade/backfill material has been acceptably prepared and approved by the Engineer, and the geotextile has been placed, install the ACB mats in accordance with the ACB manufacturer's approved layout drawings and as shown on the Contract Drawings. Attach the ACB mats to a spreader bar or other approved device to aid in the lifting and placing the mats in their proper position. Use a crane or other approved equipment to place the mats. The equipment used to place the mats shall have adequate capacity to place the mats without bumping, dragging, tearing or otherwise damaging the underlying systems. Place the ACB mats on the geotextile in such a manner as to produce a smooth plane surface in intimate contact with the geotextile and subgrade. No individual block within the plane of placed mat shall protrude or be recessed more than one-half inch from the surface plane of the mat. Place the mats side by side and/or end to end so that the mats abut each other. End to end placement shall allow for a 6" to 12" wide gap to accommodate the looped cable ends.

B. ACB Mat-to-Mat End Connections: The gap between mat ends with cable loops shall be grouted with 4,000-psi non-shrink grout or concrete to form a positive mat to mat (upstream/downstream) interlock. See project plans for complete details.

C. ACB Terminations: Terminate ACB ends and flanks as specified on the drawings.

D. Wherever the seam or void space between adjoining ACB mats, or between ACB mats and perimeter structures exceeds 2 inches, the void space shall be filled with 4,000-psi non-shrink grout. Prefabricate or adjust ACB mats so that the maximum width of the void space to be filled is less than or equal to one block width. Finish the top of the cast-in-place reinforced concrete surface so that it is smooth and flush with adjacent blocks. A concrete seam will also be required at distinct changes in grade that result in a discontinuous revetment surface in the direction of flow.

E. The open cells of each block and the spaces between the blocks shall be filled with topsoil or granular material as specified on the drawings. Topsoil shall be wetted and lightly tamped to be flush with the top of the Articulated Concrete Block system, seeded and mulched.

SITE PREPARATION CAU SYSTEMS

The layer directly underneath the CAU system shall be prepared as directed by the EOR and be free from debris.

PLACEMENT OF THE CAUs

The CAUs shall be placed individually or in bundles at the discretion of the installing Contractor.

Individually placed CAUs shall be set with uniform spacing. Standard spacing between unit centers in both the x and y direction is 50% of the total arm length.

Subsequent cabling of outer units is common, depending on the system embedment for the project.

Bundled CAUs are made up of a pre-determined matrix, spaced at 40% of the total arm length center to center in the x and y directions. Cable will be placed around the pre-determined matrix (around the mid-section), hand tightened and connected using standard cable hardware. These cables shall not be used for lifting the bundles. Bundles are to be placed with a recommended maximum spacing of 4" between bundles in a staggered configuration or as agreed upon prior to commencement of work.

254.07 Measurement

Measure the Section 254 pay items listed in the bid schedule according to Subsection 109.02 and the following.

Articulated Concrete Block revetments shall be measured by slope area excluding the buried terminations.

Concrete Armor Unit revetments shall be measured by slope area prior to burying the units. Stacked units shall be measured by slope area.

254.08 Payment

The accepted quantities will be paid for at the contract price per unit of measurement for the Section 254 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05 of FP-14.

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 ± ½" (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) Sodium sulfate soundness loss (coarse & fine) Durability index (coarse & fine) Fractured faces	AASHTO T 96 AASHTO T 104 AASHTO T 210 ASTM D 5821	1 per type & source of material “ “ 1 per type & source of material	Source of material “ “ Source of material	Yes, when requested “ “ Yes, when requested	Before using in work “ “ 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 Liquid limit Plasticity index[1] Moisture-density (max. density) Compaction Fractured faces Final thickness	AASHTO T 27 & T 11 AASHTO T 89 AASHTO T 90 AASHTO T 180, method D[2] AASHTO T 310, direct transmission ASTM D 5821 Appropriate test by Contractor	1 per 400t 1 per 400t 1 per 400t 1 per week 1 per 400t 1 per 1000t 1 per 400t	From windrow or roadbed after processing “ “ “ In-place [3] From windrow or roadbed after processing From windrow or roadbed after processing	Yes	Before using in work Before using in work Before using in work Before using in work Before placing next layer Before using in work 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 311.-STABILIZED AGGREGATE SURFACE COURSE

Replace Section 311 with the following:

Description

311.01 This work shall consist of constructing a stabilized aggregate layer with either imported or in-place aggregate. The aggregate layer is stabilized by incorporating cement (aggregate cement), fly ash, lime or liquid RoadBond EN-1. This section 304 supplements Article 6 of Exhibit A.

Materials

304.02 Conform to the following Subsections:

Aggregate	703.05
Fly Ash	725.04
Portland cement	701.01(a)
Lime	725.03
Water	725.01
RoadBond EN-1	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

304.03 **General.** RoadBond EN-1 shall be stored and handled in closed, weatherproof shipping containers. Prepare the aggregate surfacing course special according to Section 301. Scarify the aggregate surfacing course special to a depth of 6-inches on main roadway only. Size and shape the aggregate surface material to a windrow or blanket that is suitable for mixing.

304.04 **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.

304.05 **Weather Limitation.** Place and work the EN-1 aggregate surface mixture on a dry, unfrozen surface when the air temperature in the shade is 40º F and rising; and when the temperature of the ground surface (in the shade) is 40º F. No work shall be permitted when weather conditions indicate that the air temperature is expected to fall below 32º F during the same working day.

304.05 **Application.** Diluted Road Bond EN-1 liquid soil stabilizer shall be sprayed only on the aggregate surfacing area where the mixing and compaction operations shall be completed during the same working day. 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:

c. When diluted 200:1 (200 parts water to 1 part EN-1 concentrate) with water, 1 gallon of EN-1 concentrate treats 30 cubic yards of base.

304.06 **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 aggregate surfacing material 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.

304.07 **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 aggregate 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 (±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 surface course before processing additional sections.

The material shall be reworked as necessary until it meets all requirements. The shape of the course 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.

304.08 **Curing.** Do not allow traffic on the stabilized subgrade until final acceptance by the Construction Manager.

304.09 **Maintenance.** Maintain the stabilized base to the correct line, grade, and cross-section. If the base losses 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 304.07.

304.10 **Acceptance.** See **Table 304-3** for sampling and testing requirements.

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 base 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 304.09; the Contractor shall correct these area(s). This corrective work shall be at the Contractor's entire expense.

Measurement

304.11 Measure the treated aggregate surfacing stabilization by the square yard.

Liquid RoadBond EN-1 soil stabilizer shall not be measured for payment but shall be included in the cost of the treated aggregate surfacing.

Payment

304.12 The accepted quantities, measured as provided above, will be paid at the contract price per unit of measurement for the Section 304 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

Table 304-3

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 Base	Measured and tested for conformance (106.04)	Moisture-density	AASHTO T 180 (**1**)	1 proctor curve for each 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.

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

402.01 Description.

Add to the first paragraph:

This work shall include repairing and patching any potholes or irregularities in the existing surface as delineated and directed by the Construction Manager. Remove and dispose of unsuitable material to a depth of 2 inches (50mm); patch with hot asphalt concrete pavement. This section 402 supplements Article 6 of Exhibit A.

The last paragraph is superseded with the following:

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

402.03 Composition of Mixture (Job-Mix Formula).

The first paragraph is superseded by the following:

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

Table 402-1

Asphalt Concrete Mix Requirements

Marshall – AASHTO T 245	**CLASS B**
1. Stability, N (lbs)	8896 (2000)
2. Flow, 0.25 mm (0.01 inch)	1.5 – 3.8 (6-15)
3. Percent Air Voids[1]	3 - 5
4. Voids in Mineral Aggregate, % Minimum	See **Table 402-2**
5. Compaction, number of blows each end of test specimen	50

Root-Tunnicliff – ASTM D 4867

1. Tensile Strength Ratio, % minimum	70
Dust-Asphalt Ratio[2]	0.6 -- 1.3

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

[2] Dust-asphalt ratio is defined as the percent of material passing the 75 mm (#200) sieve divided by the percent of asphalt (calculated by weight of mix).

The first paragraph of enumerated item (c) is superseded by the following:

Submit written job-mix formula and three (3) copies of asphaltic concrete mix design, using FHWA Form 1622 Worksheet for a Marshall Mix Design, in accordance with AASHTO T 245 - Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus, compacted at 50 blows, for review and approval at least 28 calendar days before production. Include the location of all commercial mixing plants to be used and a separate job-mix formula, if applicable. Include a signed statement prepared by the testing laboratory that certifies the proposed job-mix formula meets the requirements of the contract and can be compacted in the field during production to meet contract requirements.

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

Add the following enumerated items (f)-(i) to 402.03(c)(1):

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

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

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

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

Add the following under 402.03(c)(2):

(e) The specific gravity of the asphalt cement.

Add the following to enumerated item 402.03(d)(1):

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

Add the following enumerated item (7) to 402.03(d):

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

Enumerated item 402.03(e) is superseded with the following:

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

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

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

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

Approved changes in target value(s) or job-mix formula will result in issuance of a

new **Job- Mix Formula Number** with an effective date. The maximum number of changes in target value(s) or job-mix formula is **three (3)**. Any requested changes above three (3) shall require submittal of a complete new mix design as described under 401.03(e) and Table 402-1 of the supplemental specifications and will be subject to verification testing as specified under 402.03(d).

Add the following new subsection:

(f) Control of asphaltic concrete mixtures during construction.

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

If the Construction Manager's test results do not verify the Contractor's test results, the Construction Manager's test results will be used for acceptance in accordance with Subsection 106.04 and Subsection 402.17. If the asphaltic concrete pavement mixture is rejected, the mixture shall be removed from the project site. Failure or refusal of the Contractor to remove the rejected control strip shall be grounds for the Construction Manager to either withhold any and all progress payments under the contract and/or default of contract.

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

The Contractor's QC laboratory shall determine the Root-Tunnicliff tensile strength ratio (TSR) test on the **second acceptance sample**. The sample shall be taken every other day within one (1) weeks production beginning with the first day of full production. Test results shall be given to the Construction Manager within **three (3)** days after sampling.

402.07 Weather Limitations.

The requirements under Subsection 401.07 are superseded with the following:

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

Table 401-2

Asphalt Concrete Mix Placement Temperature

Compacted Lift Thickness ≤ 2 inches

Road Surface Temperature, ºF (ºC)	Minimum Lay-Down Temperature [(1)] ºF (ºC)
<50 (10)	**(2)**
50 (10)	295 (146)
60 (16)	285 (141)
70 (21)	280 (138)
80 (27)	270 (132)
≥90 (32)	265 (129)

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

(2) PAVING NOT ALLOWED.

402.08 Asphalt Preparation.

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

402.09 Aggregate Preparation.

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

The first paragraph is superseded with the following:

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

The lime shall be weighed across a weight belt or an approved alternative weighing system, with a weigh totalizing system before entry into the pugmill. The pugmill shall be located in the aggregate delivery system at a location where the mixed material can be readily inspected on a belt before entry into the drum. The pugmill shall be capable of effective mixing in the full range of the asphaltic concrete production rates.

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

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

Enumerated Items (a)-(c) are deleted

402.12 Production Start Up Procedures.

The second paragraph under Subsection 402.12 (b) Control strip is superseded with the

following:

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

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

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

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

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

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

The fourth paragraph of 402.12(b) is superseded with the following:

If the control strip does not meet the above requirements under **(1)**, **(2)** and **(3)**; the

control strip will be rejected **by the Construction Manager in accordance with Subsection 402.17**. **If rejected, the rejected control strip shall be removed immediately off the project site.** Failure or refusal of the Contractor to remove the rejected control strip shall be grounds for the Construction Manager to either withhold any and all progress payments under the contract and/or default of contract. Once the control strip is removed the Contractor can construct another control strip in the same location as the previous control strip. No other control strip can be constructed until the rejected control strip is completely removed off the project site. An accepted control strip will remain in place and will be accepted and measured as a part of the completed pavement. Tests used for accepted control strip will not be included in the evaluation for payment according to Subsection 106.05. The Engineer will make a recommendation to the Construction Manager for acceptance/non-acceptance of a control strip based on test data. When a control strip is accepted, full production can begin.

402.13 Placing and Finishing.

Add the following under Subsection 401.13:

(a) Segregation. The bituminous mixture shall be transported and placed on the roadway without segregation. All segregated areas behind the paver shall be removed immediately upon discovery and replaced with specification material. If more than 50 square feet (4.6 m^2) of segregated pavement is ordered removed and replaced in any one continuous 500 linear feet (152 meters) of paver width, laydown operations shall be discontinued until the source of segregation has been found and corrected.

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

402.14 Compacting.

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

Compact to a pavement specific gravity (density) that is no less than 92.0% of the

maximum specific gravity (density) determined according to AASHTO T 209.

402.16 Pavement Smoothness/Roughness.

(b) International roughness index (IRI).

The first paragraph under subsection 401.16 is superseded with the following:

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

(d) Defective area correction.

The first paragraph is superseded with the following:

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

1. Remove and replace the surface course.

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

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

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

402.17 Acceptance.

The fourth paragraph third sentence is superseded with the following:

Asphalt binder will be evaluated and accepted under Subsections 106.03(a), 106.04

Add the following to enumerated item 402.17(c):

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

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

Subparagraph 402.17(b) is superseded with the following:

(b)Density.

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

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

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

Add subparagraphs (f) – (i) to Subsection 402.17:

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

(h) VMA. The lower specification limit is the value shown in Table 402-2.

(i) Marshall air voids, stability, and flow. The upper and lower specification limits for the air voids and flow are the values shown in Table 402-1. The lower specification limit for the stability is the value shown in Table 402-1.

(j) Sand equivalent. The lower specification limit is **55%**.

Add the following to Subsection 401.17:

The hot asphaltic concrete pavement will not be accepted under any acceptance provisions of Subsection 106.02 to 106.05 if <u>any</u> of the following conditions exist:

(a) The asphalt cement pay factor(s) are in the "No Pay or Remove Category" or;

(b) The Root-Tunnicliff tensile strength ratio test does not meet the minimum acceptance limit of **70%** and the Marshall air voids, VMA, flow and stability do not meet the upper and/or lower specification limits as shown in Table 402-1 or;

(c) Any of the pay factors for the asphalt content, gradation, density and pavement smoothness are less than 0.75; the materials shall be removed and rejected. Any asphalt binder, antistrip additive, and/or mineral filler in asphaltic concrete pavement, that has been rejected, shall also be subject to rejection regardless of whether the material meets specification or not.

(d) Control strip(s) and/or any hot asphaltic concrete pavement placed that is rejected shall be removed immediately off the project site. Any asphalt cement, antistrip additive and/or mineral filler in the asphaltic concrete pavement mixture shall also be rejected regardless of whether the material meets specification or not.

402.18 Measurement.

Add the following:

When the bid schedule does not contain a bid item for asphalt binder, antistrip additive, and/or mineral filler, then these items of work shall be considered incidental to item 40201.

Asphalt binder will be measured by the metric ton. Measurement shall be based on the Contractor's daily tank stab volume measurements at 60ºF (15ºC) or correct the volume used to 60ºF (15ºC) using recognized standard correction factors. Only asphalt binder used and accepted in the hot asphaltic concrete pavement mixture shall be measured for payment.

Hot asphaltic concrete pavement mixture used for repairing and patching any potholes or

irregularities on the existing surface shall not be measured for payment but shall be considered a subsidiary obligation of the Contractor under this Section.

402.19 Payment.

Add the following:

The accepted quantities of asphalt binder, measured as provided above, will be paid at the contract unit bid price.

The accepted quantities will be paid at the contract price per unit of measurement for the Section 402 pay items listed in the bid schedule except the hot asphalt concrete pavement contract unit bid price will be adjusted according to Subsections 106.05 and 402.16. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

Payment for hot asphalt concrete pavement will be made at a price determined by multiplying the contract unit bid price by the material pay factor. The material pay factor is the lowest single pay factor determined for asphalt content, specific gravity (density), or any individual sieve of the aggregate gradation

A separate pay adjustment will be made for the pavement smoothness. The dollar amount of the adjustment will be determined by summing the pay adjustment factors determined in Subsection 402.16 for each 350 feet (0.1 km) and multiplying that sum by the contract unit bid price.

Table 402-3
Sampling and Testing Requirements

Material or Product	Type of Acceptance (Subsection)	Characteristic	Category	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time
Aggregate source quality	Measured and tested for conformance (106.04)	LA abrasion (coarse)	—	AASHTO T 96	1 per type & source of material	Source of Material	Yes	Before Producing
		Sodium sulfate soundness loss (coarse & fine)	—	AASHTO T 104	"	"	"	"
		Sand equivalent	—	AASHTO T 176, alternate method no. 2, reference method	"	"	"	"
Asphalt concrete (mix design)	Measured and tested for conformance (106.04)	Gradation	—	AASHTO T 27 & T 11	1 per submitted mix design	Stockpiles	Yes	28 days before producing
		Voids	—	AASHTO T 209	"	"	"	"
		TSR	—	ASTM D 48867	"	"	"	"
Aggregates (production)	Measured and tested for conformance (106.04)	Gradation	—	AASHTO T 27 & T 11	1 per 6 hours of production but not less than 2 per day	Flowing aggregate stream (bin or belt discharge) or off of conveyor belt	Yes, when requested	End of shift
		Sand equivalent	—	AASHTO T 176, alternate method no. 2, reference method,	1 per type & source of material	"	"	"
		Fractured faces	—	ASTM 5821	"	"	"	"
		Sample for job-mix formula verification	—	Subsection 401.03	1 per aggregate stockpile	"	—	21 days before approval of job-mix formula

Table 402-3 (continued)
Sampling and Testing Requirements

Material or Product	Type of Acceptance (Subsection)	Characteristic	Category	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time
Asphalt binder	Measured and tested for conformance (106.04)	Quality	—	Subsection 702.01	1 per submitted source & mix design First 4 loads; every 25th load thereafter	In line between tank & mixing plant	2 – 1-L samples provided to the government	—
Asphalt concrete mixture (all)	Measured and tested for conformance (106.04) & Section 105	Mix temperature	—	—	First load & every other load thereafter	Hauling vehicle before dumping or windrow before picking up	—	Upon completing test
Hot asphalt concrete pavement (control strip)	Statistical (106.05)	Gradation		AASHTO T 11, & T 27	3 minimum	Cold-feed belt at Hot Plant	Yes	4 hours
		TSR		ASTM D4867	Subsection 402.03 (f)	Ditto	---	Upon completion
		Marshall properties		AASHTO T 245	Subsection 402.03 (f)	Ditto	---	Upon completion
		No. 4	I					
		No. 8	I					
		No. 50	I					
		No. 200	I					
		Other specified sieves	II					
		Asphalt content	I	AASHTO T 287	"	"	"	"

Table 402-3 (continued)
Sampling and Testing Requirements

Material or Product	Type of Acceptance (Subsection)	Characteristic	Category	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time
Hot asphalt concrete pavement (control strip)	Statistical (106.05)	Core density[1]	I	AASHTO T 166 & T 209	At least 5 samples per control strip	In-place	Cores to CM after determining specific gravity & compaction	—
Hot asphalt concrete pavement (production)	Statistical (106.05)	Gradation		AASHTO T 287, T 11, & T 27	1 per 700 t	Cold-feed belt at Hot Plant	Yes	4 hours
		TSR		ASTM D 4867	Subsection 402.03 (f)	Ditto	---	Upon
		Marshall properties		AASHTO T 245	Subsection 402.03 (f)	Ditto	---	completion
		No. 4	I	"	"	"	"	"
		No. 8	I					
		No. 50	I	"	"	"	"	"
		No. 200	I					
		Other specified sieves	II	"	"	"	"	"
		Asphalt content	I		"	"	"	
		Core density[1]	I	AASHTO T 166 & T 209	"	In-place	Cores to CM after determining specific gravity	24 hours
Hot asphalt concrete mixture (final surface)	Statistical (106.05)	Type I & II smoothness	I	FLH T 504	See Subsection 401.16 & 402.16	See Subsection 401.16 & 402.16	—	14 days after final paving

Table 402-3 (continued)
Sampling and Testing Requirements

Material or Product	Type of Acceptance (Subsection)	Characteristic	Category	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time
Hot asphalt concrete pavement	Measured and tested for conformance (106.04)	Type III & IV Roughness	—	AASHTO PP 50, PP 51, & PP 52	See Subsection 401.16	See Subsection 401.16	—	14 days after final paving

(1) Cut core sample from the compacted pavement according to AASHTO T 230, method B. Fill and compact the sample holes with asphalt concrete mixture.
Cores shall be 102 millimeters in diameter. Perform specific gravity and thickness tests on cores and deliver to CM/ after testing is completed. Label

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 workday 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 values that quickly open and close in one operation. Uniformly apply asphalt over the full width within 0.02 gal/yd^2 (0.08 L/m^2) of the target spread rate. The distributor shall be equipped with hand hose and nozzle attachment to be used for inaccessible spotting areas.

(4) Thermometer for measuring the asphalt temperature in the tank.

(5) Bitumeter that registers rate of travel in feet per minute, trip and total distance in feet.

(6) Pump for circulating the asphalt material in the spray bar, tank and for pumping the material through the spray bar or hand spray.

(7) Pressure gage, pump, calibrated tachometer or other approved device for controlling the application rate of asphalt material. Furnish a certification of the calibrated tachometer to the 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, QAM 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 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, QAM, 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/m^2) for optimum penetration. The QAM, 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 20 mph (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, QAM 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, QAM 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/m^2) 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, QAM and Construction Manager. Blotter material shall only be permitted and applied **after** the QCM, QAM 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 tons using appropriate conversion factors and/or certified weight ticket(s) from the refinery.

Regardless of which measurement is used above, the QCM shall determine daily quantity used, wasted, and/or used elsewhere-including application rates, which shall be part of the project records. Wasted quantities and those quantities used elsewhere shall not be measured for payment.

No measurement for traffic control (which includes pilot car(s) with driver) shall be made but shall be included in the contract unit price for contract Item 63501. Flaggers will be paid for under a separate bid item shown in the bid schedule.

No measurement for blotter material, equipment, labor and incidentals shall be made but shall be considered incidental to contract Item 41101.

rev: 11/15/23

412.01 Description. Add the following to this subsection: This section 412 supplements Article 6 of Exhibit A.

412.03 Equipment.

This subsection is superseded with the following:

(a) Asphalt Distributor. Furnish an asphalt distributor as follows:

(1) Capable of heating asphalt evenly.

(2) Adjustable full circulating spray bar up to 15 ft. width. Bar extensions shall be full circulating. Test spray bar at various heights to establish proper rate of application. The spray bar shall maintain the set height within 13/16 inch during each spray run.

(3) Apply uniform unbroken spread of asphalt and positive acting control values that quickly open and close in one operation. Uniformly apply asphalt over the full width within 0.02 gal/sy of the target spread rate. The distributor shall be equipped with hand hose and nozzle attachment to be used for inaccessible spotting areas.

(4) Thermometer for measuring the asphalt temperature in the tank.

(5) Bitumeter that registers rate of travel in feet per minute, trip and total distance in feet.

(6) Pump for circulating the asphalt material in the spray bar, tank and for pumping the material through the spray bar or hand spray.

(7) Pressure gage, pump, tachometer or other approved device for controlling the application rate of asphalt material.

(8) Calibrated tank with gage or other approved means of accurately determining the quantity of asphalt material in the tank.

(9) Maintenance of distributor and booster tanks such that no dripping of asphalt material shall occur from any part of the equipment.

The 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.

412.05 Weather Limitations.

This subsection is superseded with the following:

The prime coat shall be applied only when the surface to be treated is not frozen, dry, or slightly damp, when the atmospheric temperature in the shade is 35ºF or more; when the weather is not foggy or rainy; when no sandstorms are present; or when the wind velocity is less than 15mph as determined by the Construction Manager.

412.08 Measurement.

This subsection is superseded with the following:

Measure emulsified asphalt tack coat by the ton **excluding** the water added for dilution.

When certified project weigh scales are available, each distributor truck load shall be weighed across the project scales before and after each load application(s). For payment purposes, a weight ticket shall be made for each distributor truck load of **undiluted** tack coat.

When certified project weigh scales are not available, measurement of tack coat shall be by the gallon as required under **Subsection 109.02 Measurement Terms and Definitions (f) Gallon, FP-2014** and converted to tons using appropriate asphalt conversion factors and/or certified weight ticket(s) from the refinery.

Regardless of which measurement is used above, the QCM shall determine daily quantity used, wasted, and used elsewhere including application rates which shall be part of the project records. Wasted quantities and those quantities used elsewhere shall not be measured for payment.

rev: 12/19/17

SECTION 552. - STRUCTURAL CONCRETE

552.01 **Description.** Add the following to this subsection: This section 552 supplements Article 6.3 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 provide that supporting data and case histories showing conformance to all contract specifications for similar class and strength concrete delivered to similar remote locations are submitted for review and approval.

552.11 **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 CO for review and approval by the NRDOT Division Manager, a bridge deck placement plan addressing all applicable requirements within the contract. No concrete shall be placed in the bridge deck until the bridge deck placement plan is approved in writing by the CO and/or COR.

552.13 **Expansion and Contraction Joints.**

Add the following subparagraph 552.13(f):

(f) Bridge Deck Expansion Joints. The Contractor shall submit to the CO for review approval by the COTR 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 CO and COTR. 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 CO, shall be operated with the skew. The finishing machine shall not be allowed to travel over in-place concrete after initial set takes place, or on forms supporting concrete or support rails for the finishing machine, until the previously placed concrete has cured for at least 3 days.

When float finishing is provided by hand, the float finishing shall commence immediately after the finishing machine.

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 5 millimeters of the plan elevations. When tops of abutment caps and pier caps are to be bearing surfaces for prestressed box beams, provide straight edging in accordance with Section 552.14 (b), including supplemental specifications, and finish with a steel trowel to produce a smooth surface free of bleed water.

552.15 Curing Concrete.

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 CO and COTR.

552.17 Concrete Anchorage Devices.

Add the following:

The Contractor shall submit (to the NRDOT 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: Add the following:
The volume of concrete required, outside the neat lines of the footing, to pour against undisturbed rock as shown on the plans will not be measured for payment or subject to adjustment according to Subsection 109.02(c). When the CO directs the removal of material below the established elevation of the bottom of the footing, the volume of concrete required to fill the void will be measured for payment.

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 COTR 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 NRDOT Manager	Before producing
Produced aggregate (fine & coarse)	Measured and tested for conformance (106.04	Gradation	__	AASHTO T 27 & T11	1 per day	Flowing aggregate stream (bin, belt, discharge conveyor belt, or stockpile)	Yes, when requested	Before batching
		Fineness modulus	__	AASHTO T 27	1 per day	"	"	"
		Moisture test	__	AASHTO T 225	1 per day	"	"	"

Table 552-9
Sampling and Testing Requirements

Material or Product	Type of Acceptance (Subsection)	Characteristic	Category	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time
Concrete (552.09(b)(3))	Measured and tested for conformance (106.04)	Slump	--	AASHTO T 119	1 per load (2)	Point of discharge (1)	—	Upon completing tests
		Air content	--	AASHTO T 152 or AASHTO T 196	1 per load (2)	"	—	"
		Unit mass	--	AASHTO T 121	1 per load (2)	"	—	"
		Temperature	--	Thermometer		"	—	"
		Yield	--	AASHTO T 121 & approved mix design	1 per load First 3 loads; Note (4)	Point of discharge (1)	—	Upon completing tests
Structural concrete (552.09(b)(3))	Statistical (106.05)	Compressive strength	II	AASHTO T 22 & T23	1 set per 25m^3 but not less than 1 per day	Discharge stream at point of placing	Note 5	See Subsection 552.09(b)(4)

(1) Sample according to AASHTO T 141 except composite samples are not required.
(2) Cast at least 4 compressive strength test cylinders and carefully transport the cylinders to the job site curing facility.
3) A single compressive strength test result is the average result from 2 cylinders cast from the same load and tested at 28 days.
4) The yield of the concrete shall be determined by taking the total weight of the batch divided by the average unit weight of the first three (3) concrete truck loads. If the yield value is "under-yield" (less than 0.765 cubic meters or 27 cubic feet per cubic yard); the Contractor and his supplier shall make an adjustment to the concrete mix design. Once the adjustment is made, the Contractor shall check the yield again to ensure the yield is at 0.765 cubic meters or more.
(5) Deliver cylinders to designated laboratory for test.

rev:11/15/23

U.S. Department of Transportation
Federal Highway Administration
Federal Lands Highway Office

552 STRUCTURAL CONCRETE MIX DESIGN SUBMITTAL

Project: _____ Date: _____

Contractor: _____ Concrete for _____ Concrete producer: _____

Class of concrete: _____ Exposure Class: _____ Producer Mix designation: _____

☐ **METRIC** ☐ **ENGLISH**

SPECIFIED CONCRETE COMPRESSIVE STRENGTH (@ 28 Days)..... (f'c) _____

Required average concrete compressive strength used for mixture proportion selection[1] (f'cr) _____

MIXTURE PROPORTIONS

Material	Specific Gravity	Mass	Absolute Volume	Tolerance % (±)
Cement (Portland or Blended)				1
Fly Ash (Class F or C)				1
Water	1.0			1
Coarse aggregate (SSD)				2
Fine aggregate (SSD)				2
Fibers				3
Color Pigments				3
Other _____				
Total air _____				
Totals		0.0	0	

Admixtures	Dosage
Air entraining	
Type A (Water Reducer -WR)	
Type B (Set Retarder - SR)	
Type C (Set Accelerator - SA)	
Type D (WR & SR)	
Type E (WR & SA)	
Type F (High Range WR)	
Type G (High Range WR & SR)	
Hydration Stabilizer (B or D)	
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.

U.S. Department of Transportation
Federal Highway Administration
Federal Lands Highway Office

552 STRUCTURAL CONCRETE MIX DESIGN SUBMITTAL

Project: _____ Date: _____

Contractor: _____ Concrete for _____ Concrete producer: _____

Class of concrete: _____ Exposure Class: _____ Producer Mix designation: _____

☐ **METRIC** ☐ **ENGLISH**

SPECIFIED CONCRETE COMPRESSIVE STRENGTH (@ 28 Days)..... (f'c) _____

Required average concrete compressive strength used for mixture proportion selection[1] (f'cr) _____

MIXTURE PROPORTIONS

Material	Specific Gravity	Mass	Absolute Volume	Tolerance % (±)
Cement (Portland or Blended)				1
Fly Ash (Class F or C)				1
Water	1.0			1
Coarse aggregate (SSD)				2
Fine aggregate (SSD)				2
Fibers				3
Color Pigments				3
Other _____				
Total air _____				
Totals		0.0	0	

Admixtures	Dosage
Air entraining	
Type A (Water Reducer -WR)	
Type B (Set Retarder - SR)	
Type C (Set Accelerator - SA)	
Type D (WR & SR)	
Type E (WR & SA)	
Type F (High Range WR)	
Type G (High Range WR & SR)	
Hydration Stabilizer (B or D)	
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]

552 STRUCTURAL CONCRETE MIX DESIGN SUBMITTAL (Continued)

FINE AGGREGATE (FP SECTION 703.01 AND AASHTO M 6, CLASS B)

Name and phone number of fine aggregate supplier/producer: _____

Location of material source: _____

Material type: Manufactured sand ☐ _____ % Natural sand ☐ _____ % Blend ☐ _____ %

Sieve Analysis: (AASHTO T 27)			Property	Specification	Specification	Value
Sieve Size	% Passing (P) (Specification)	Cumulative % Retained (CPR)	(1) Clay lumps and friable particles	AASHTO T 112	3.0% max	
	(100)		(2) Coal and lignite	AASHTO T 113	1.0% max	
	(95-100)		(3) Minus	AASHTO T 11	3.0% max	
	(80-100)		(4) Organic Impurities	AASHTO T 21	Color not darker than standard	☐ Yes ☐ 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 (∑CPR/100)			(9) Absorption	AASHTO T 84	--	
			(10) Alkali Silica Reactivity[7]	Select/Enter		

COARSE AGGREGATE (FP SECTION 703.02 AND AASHTO M 80, CLASS A)

Name and phone number of coarse aggregate supplier/producer: _____

Grading number (AASHTO M43) Select **Location of material source:** _____ **Material type:** _____

Sieve Analysis: (AASHTO T 27)			Property	Specification	Specification	Value
Sieve Size	Percent Passing	AASHTO M 43 Specification[4]	(1) Clay lumps and friable particles	AASHTO T 112	2.0% max	
			(2) Deleterious chert	AASHTO T 113	3.0% max	
			(3) Σ (1) + (2)	AASHTO T 112 & T 113	3.0% max	
			(4) Minus	AASHTO T 11	1.0 or 1.5% max	
			(5) Coal and lignite	AASHTO T 113	0.5% max	
			(6) LA abrasion Grading____	AASHTO T 96	40% max	
			(7) Sodium sulfate soundness, 5 cycles	AASHTO T 104	12% max	
			(8) Adherent coating	ASTM D 5711	1.0% max	
			(9) Dry rodded unit mass	AASHTO T 19	--	
			(10) Mass of insoluble residue (bridge decks or surface courses)	ASTM D 3042	25% min	
			(11) Bulk specific gravity	AASHTO T 85	--	
			(12) Bulk SSD specific gravity	AASHTO T 85	--	
			(13) Absorption	AASHTO T 85	--	
			(14)Alkali Silica Reactivity[7]	Select/Enter		

[7] See specific contract requirements for ASR test methods and limits..

552 STRUCTURAL CONCRETE MIX DESIGN (Continued)
DATA FOR COMPUTING THE STANDARD DEVIATION

Cylinder Size: ☐ **or** ☐

1 Test Record[8] ☐ **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					

$$\overline{X} = \frac{\Sigma\, Xi}{n} = \frac{\quad}{n} = \underline{\quad}$$

For One Test Record:

$$s_s = \sqrt{\frac{\Sigma (X_i - \overline{X})^2}{(n-1)}} = \underline{\quad}$$

For Two Test Records:

$$\overline{s}_s = \sqrt{\frac{(n_1 - 1)(s_{s1})^2 + (n_2 - 1)(s_{s2})^2}{(n_1 + n_2 - 2)}} = \underline{\quad}$$

Where:

$\overline{X}$ = 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
$\overline{s}_s$ = 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 ≤	***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 = _____ $\overline{X}$ = _____ $\overline{X} \geq$ 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 = _____ $\overline{X}$ = _____ $\overline{X} \geq$ 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 +
≤ f'c ≤	f'cr = f'c +
f'c >	f'cr = 1.10f'c +

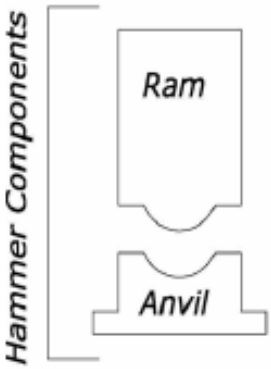
f'cr = _____ $\overline{X}$ = _____ $\overline{X} \geq$ f'cr ☐ Yes ☐ No

[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.

Pile Driving Equipment Data Sheet

Project: _____ Structure Name: _____

Contract No.: _____ Pile Driving Contractor: _____



Hammer

Manufacturer: _____

Model: _____ Type: _____

Serial No.: _____

Rated Energy: _____ at _____ length of stroke

Modifications: _____

_____

_____

_____

_____



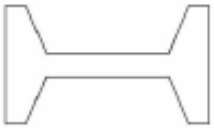
Capblock (Hammer Cushion)

Material: _____

Thickness: _____ Area: _____

Modulus of Elasticity (E): _____

Coefficient of Restitution (e): _____



Pile Cap

Helmet
Bonnet
Anvil Block
Drivehead

Weight: _____



Pile Cushion

Cushion Material: _____

Thickness: _____ Area: _____

Modulus of Elasticity (E): _____

Coefficient of Restitution (e): _____



Pile

Pile Type: _____ Weight/foot: _____

Wall Thickness: _____ Taper: _____

Cross Sectional Area: _____

Design Pile Capacity: _____ (Tons)

Length (in leads): _____

Description of Splice: _____

_____

Tip Treatment Description: _____

_____

Note: If mandrel is used to drive the pile, attach separate manufacturer's detail sheet(s) including weight and dimensions.

Submitted by: _____ Date: _____

SECTION 553. - PRESTRESSED CONCRETE

553.01 **Description.** Add the following to this subsection: This section 553 supplements Article 6.3 of Exhibit A.

553.08 **Pretensioned Members.**

Add the following:

Prepare and submit shop drawings (to the NRDOT Manager) for the required pre-tensioned members for review and approval according to subsection 104.03 and Special Contract Requirement #9.

Show full detailed dimensions and sizes of manufactured or fabricated components of the prestressed member and details of all miscellaneous and incidental parts (such as pre-stressing strands, reinforcing steel, inserts, bearing pads, restrainer devices, bearing plates, lifting devices, etc.) on shop drawings for prestressed concrete members. Submit shop drawings at least 4 weeks prior to fabrication. Fabrication shall not begin prior to written approval of prestressed member shop drawings.

Identify on the shop drawings the specification, type, grade, class and/or other specified characteristic, as stated in the plans and specifications, of all materials and parts indicated above where applicable.

Identify on the shop drawings the individual members required by the contract by separate mark suitable for use as reference during inspection, transportation and erection.

553.09 **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 Special Contract Requirements for all materials incorporated into fabricated precast

prestressed members and for the bearing devices. The material certifications shall certify conformance of material to specified requirements of this contract.

rev: 12/18/17

SECTION 554 - REINFORCING STEEL

554.01 **Description**. Add the following to this subsection: This section 554 supplements Article 6.3 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 Regional DOT Manager prior to utilization. Material required for splices for the convenience of the Contractor shall not be measured for payment but shall be provided at the entire expense of the Contractor.

Delete the third paragraph and substitute the following:

Welding of splices shall not be permitted.

Rev: 12/19/17

SECTION 562 - TEMPORARY WORKS

562.01 Description. Add the following to this subsection: This section 562 supplements Article 6.3 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 CO. In no case shall thickness be less than 0.85 mm (22 gauge) and 1.61 mm (16 gauge) for sheets and form supports, respectively.

562.03 Design Requirements:

Delete the last sentence in this Section and add the following:

Use permanent steel (stay in place) deck forms 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 2.4 kPa (50 psf). Unit working stresses shall not exceed 0.725 f_y (72.5%) of the specified minimum yield strength of the material furnished or 248 MPa (36 ksi), whichever is less.

Maximum deflections under the weight of the plastic concrete, reinforcement, and form system, shall not exceed 1/240 of the form span, or 13 mm (1/2 in.), whichever is less. In no case shall the loading used to compute the deflection be less than 5.8 kPa (120 psf). The form span for design and deflection shall be the clear distance between the flanges of the supporting beams or girders minus 50 mm (2 in.), measured parallel to the form flutes.

The increase in dead load due to the use of permanent steel deck forms shall be limited to 0.7 kPa (15 lbs./ft^2). 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 CO.

Form sheets shall not be permitted to rest directly on the top of the stringer, diaphragms or floor beam flanges. Sheets shall be securely fastened to form supports and shall have a minimum bearing width parallel to the beam or girder of 25 mm (1 in.) at each end. Form supports shall be placed in direct contact with the flange of beams or girders. All attachments shall be made by welds, bolts, clips or other approved method. Welding directly to steel girder or beam flanges shall not be permitted. Other methods of attachment for steel girders or beams shall be used. Welding to steel clips embedded into precast concrete girders or beams is permitted.

Clean, wire brush, and paint with 2 coats of zinc dust zinc-oxide primer (FSS TT-P-641 Type II, no color added) any permanently exposed form metal where the galvanized coating has been damaged. Minor heat discoloration, as determined by the COTR, in areas of welds need not be touched up.

All bottom reinforcement shall have a minimum cover of 25 mm (1 in.). Except in cases where reinforcing bars are not parallel to form corrugations, bars in the bottom layer of the main reinforcement shall be approximately centered over the valleys of the forms when necessary to achieve the required concrete cover. The distance from the top of the slab to the bottom layer of main slab reinforcement shall not be less than the originally designed dimension shown in the contract.

Locate transverse construction joints in slabs, when approved or allowed, in line with the bottom of a flute. Field drill six (6) millimeter diameter weeps holes at not less than 300 millimeters on center along the line of the transverse construction joint.

562.07 Maintenance and Inspection:

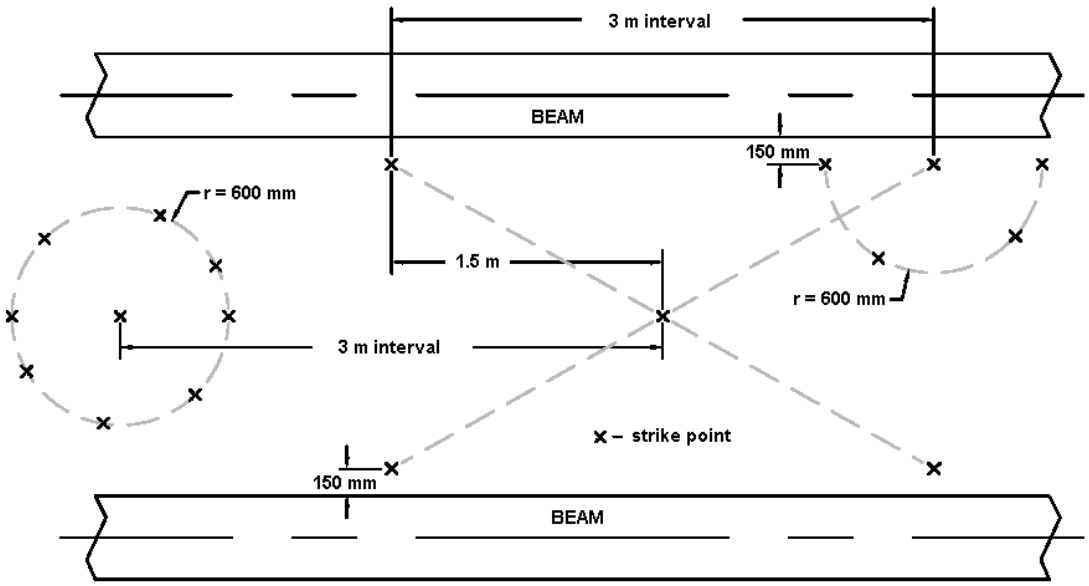
Add the following:

When permanent steel (stay in place) deck forms are permitted by the Contract, proper vibration of the concrete shall be provided to avoid honeycombs and voids, especially at construction joints, expansion joints, and valleys and ends of form sheets. If during the placement of the deck concrete there is evidence provided by the COTR 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 COTR. The geologist hammer shall be furnished by the Contractor.

(b) As a minimum, the forms shall be struck at 3 m (10 ft.) intervals parallel to and 150 mm (6 in.) from the edge of the beam or girder flanges and at 3 m (10 ft.) intervals along the centerline of each bay between the beams or girders in an X pattern with those along the beams or girders. Forms shall also be struck at random points on a semicircle or circle of about a 600 mm (2 ft.) radius from the above points. See figure below for minimum strike

pattern. Forms shall be struck in other places as directed by the COTR 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 COTR at the expense of the Contractor.

rev: 11/07/19

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 m^3) or more concrete placed and subsection 106.04 for less than 30 cubic yards (25 m^3) 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 be measured for payment under Item 55401-1000.

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 m3) but not less than 1 set each day (3)	Discharge stream at point of placement (1)

(1) Sample according to AASHTO T 141 except composite samples is not required.
(2) See Subsection 552.09(b) (3).
(3) Cast at least 4 compressive strength test cylinders and carefully transport the cylinders to the job site curing facility.
(4) A single compressive strength test result is the average result from 2 cylinders cast from the same load and tested at 28 days.

SECTION 602 - CULVERTS AND DRAINS

602.01 Description:

This section is superseded with the following: This 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 culverts 552

Metal Pipe culverts.....707

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 611. – WATER SYSTEMS

611.01 **Description.** Add the following to this subsection: This section 611 supplements Article 6 of Exhibit A.

611.02 **Material.**

Add the following:

Minor concrete	601	
Reinforcing Steel		709.01
Ductile Iron		707.01

rev: 1/11/22

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:

The type of seed and pure live seed rate is listed in section 713.04.

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: 2-20-26

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 Levels[1]

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

- 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
- 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
- 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

- 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 50ºF (10ºC). 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 50ºF (10ºC). 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. <u>When two coats of Type L paint are required only the top coat shall receive the required glass beads.</u>

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

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 14 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 10 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 (Alhagipseudalhagi) 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.

Rev: 11/07/19

Add the following to this section:

SECTION 645. - UTILITY COMPANY COMPENSATION

645.01 Description:

The work involved under this section is the payment by the Contractor to Navajo Tribal Utility Authority (NTUA) for powerline and pole relocations as agreed upon by Navajo Division of Transportation (Navajo DOT) and NTUA Electric. The payment will be reimbursed to the Contractor by Navajo DOT. The estimated payment $24,117.25 per the NTUA letter to Navajo DOT dated February 11, 2026.

645.02 Measurement:

Measure the Section 645 pay item as lump sum.

645.03 Payment:

The Contractor will be reimbursed for the payment made by the Contractor to NTUA. The Contractor shall provide a copy of the remitted check to Navajo DOT. Payment will be full compensation for the Contractor's payment to NTUA, no Contractor markups are allowed and all ancillary costs shall be considered included under Item 15101-0000 Mobilization.

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 Base Gradation Special

Sieve Size	Percent by Mass Passing Designated Sieve, AASHTO T 27
25mm (1-inch)	100
19mm (3/4-inch)	80 – 100
4.75mm (No.4)	30 – 60
2000µm (No.10)	20 – 45
75µm (No.200)	3 – 10

Table 703-2 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 110ºC plus or minus 5ºC (230ºF plus or minus 9ºF).

   (b) 100 mL heavy duty beaker.

   (c) Hydrogen Peroxide (3% solution) - H_2O_2.

   (d) Nitric Acid (concentrated)--HNO_3.

   (e) Distilled water.

   (f) A balance or scale capable of measuring the maximum weight to be determined and conforming to the requirements of AASHTO M 231, except the readability and sensitivity of any balance or scale utilized shall be at least 0.1 gram.

   (g) Neutral Litmus Paper.

   (h) Glass or Plastic Stirring Rod.

SAMPLE PREPARATION:

3. Prepare the sample according to the following:

(a) For material samples from stockpile(s), obtain a representative 300 gram plus or minus 10 gram sample of plus 4.75 mm (No.4) material. Wash the sample over a 4.75 mm (No.4) sieve and discard minus 4.75 mm (No.4) material.

(b) For uncrushed material samples, obtain a representative sample and crush to appropriate grading. Obtain a representative 300 gram plus or minus 10 gram sample of plus 4.75 mm (No.4) material.

(c) The prepared sample shall be oven dried to constant weight at 110ºC plus or minus 5ºC (230ºF plus or minus 9ºF).

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 H_2O_2 (3% solution) and stir. When the bubbling subsides, begin adding small amounts (approximately 10 mL) of concentrated HNO_3 to the beaker. Bubbling will be vigorous as the carbonates are being dissolved. Stir occasionally.

(c) When the bubbling has ceased and addition of HNO_3 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 110ºC plus or minus 5ºC (230ºF plus or minus 9ºF).

(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: 1/12/22

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: 2/23/26

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

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.

713.04 **Seed,** Add the following seed list from the ADOT Roadside Development website:

713.04 **Seed,** Add the following H1 seed mix from the ADOT Class II Seeding Special Provision:

Common Name	Botanical Name	PLS Rate (Lbs/Acre)
Purple Threeawn	Aristida purpurea	2.0
Needle Grama	Bouteloua aristidoides	1.0
Cane Beardgrass	Bothriochloa barbinodis	1.0
Sixweeks Grama	Bouteloua barbata	1.0
Sideoats Grama	Bouteloua curtipendula cv. Vaughn *	1.0
Blue Grama	Bouteloua gracilis cv. Hachita	1.0
Desert Marigold	Baileya multiradiata	0.75
Rothrock's Grama	Bouteloua rothrockii	0.5
Arizona Cottontop	Digitaria californica	1.0
Violet Prairie Clover	Dalea purpurea	2.0
Desert Saltgrass	Distichlis stricta	2.0
Gooding Verbena	Glandularia gooddingii	0.5
Firewheel	Gaillardia pulchella	1.5
Curly Mesquitegrass	Hilaria berlangeri	2.0
Gordon's Bladderpod	Lesquerella gordonii	1.0
Desert Lupine	Lupinus sparsiflorus	0.5
Arroyo Lupine	Lupinus succulentus	5.0
Arizona Desert Bluebell	Phacelia crenulata	1.0
Firecracker Penstemon	Penstemon eatonii	1.0
Palmer Penstemon	Penstemon palmeri	1.0
Western Wheatgrass	Pascopyrum smithii	1.0
Alkali Sacaton	Sporobolus airoides	1.0
Coues Cassia	Senna covesii	2.5
Sand Dropseed	Sporobolus cryptandrus	0.25
Squirrel-tail Grass	Sitanion hystrix (syn. Elymus elymoides)	3.0
Little Bluestem	Schizachyrium scoparium	1.1
		Total Rate = 35.6

* Niner may be furnished if Vaughn is determined by Roadside Development as unavailable from seed sources.

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 bailing 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:

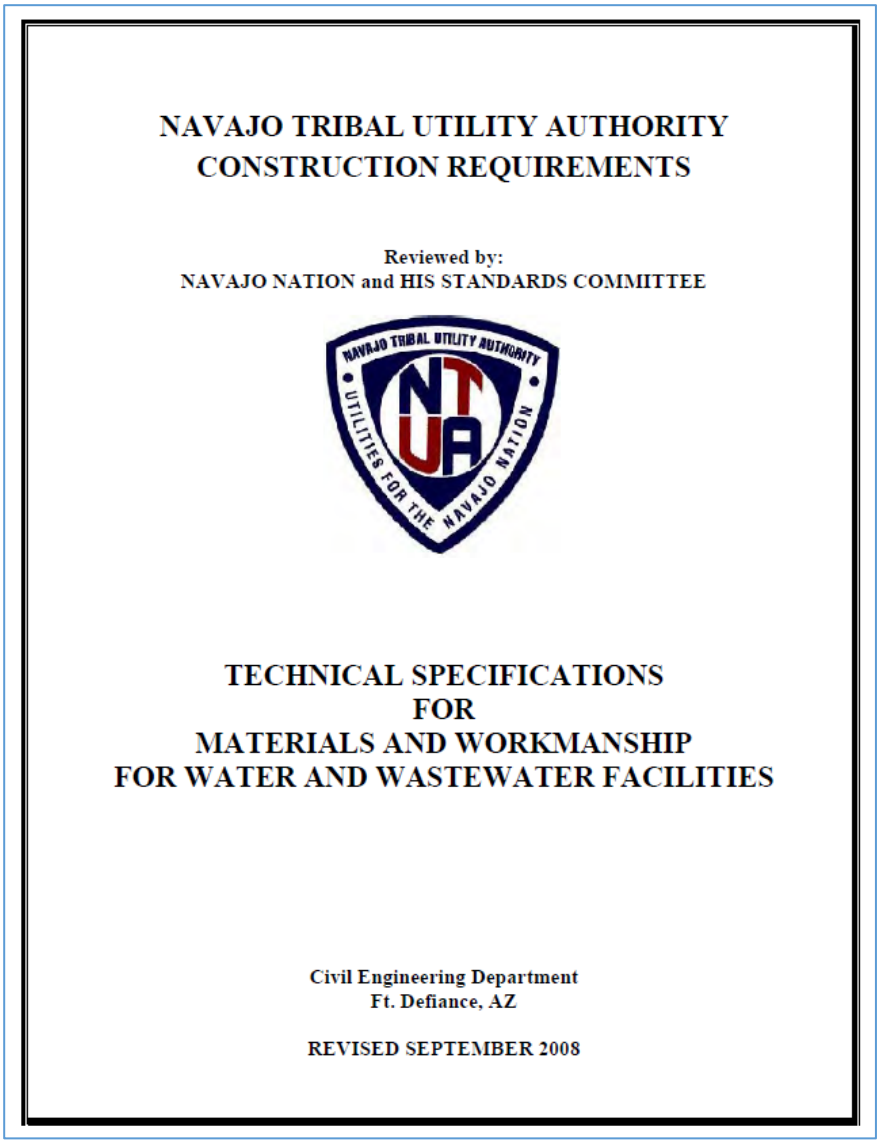
Parameter	**1110 Ultra High Build**	**Test Methods**
Density (#/gal.)	14.0 ± 0.2	ASTM D1475
Viscosity (KU), @ 77F	88 - 90	ASTM D562
Total Non Volatile (%)	77 min	ASTM D2369
Pigment Solids(%)	60 min	ASTM D3723
Non-Volatile Vehicle (%)	43 min	FTMS 4051
Vehicle Composition	100% HD- 21	ASTM D3168
Rutile 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	

SUPPLEMENTAL SPECIFICATIONS

The NAVAJO TRIBAL UTILITY AUTHORITY CONSTRUCTION REQUIREMENTS dated September 2008 shall hereby be incorporated into this Contract Book by reference. A PDF file of this document will be provided on the Navajo DOT website as reference to aid the Contractor in preparing bids.

These technical specifications shall be followed for all NTUA owned water and wastewater utility relocation bid items.



NAVAJO TRIBAL UTILITY AUTHORITY
CONSTRUCTION REQUIREMENTS

Reviewed by:
NAVAJO NATION and HIS STANDARDS COMMITTEE

TECHNICAL SPECIFICATIONS
FOR
MATERIALS AND WORKMANSHIP
FOR WATER AND WASTEWATER FACILITIES

Civil Engineering Department
Ft. Defiance, AZ

REVISED SEPTEMBER 2008

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

"General Decision Number: AZ20260033 01/02/2026

Superseded General Decision Number: AZ20250033

State: Arizona

Construction Type: Highway

County: Navajo County in Arizona.

HIGHWAY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	01/02/2026

ENGI0012-068 12/01/2024

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
Drill Rig/Auger	$ 35.56	18.12

IRON0075-013 08/01/2025

	Rates	Fringes
Ironworker	$ 39.50	19.91

LABO1184-025 06/01/2025

	Rates	Fringes
Laborer: Asphalt, Includes Raker, Shoveler, Spreader and Distributor	$ 29.91	9.26

LABO1184-030 06/01/2025

	Rates	Fringes
Laborer: Mason Tender	$ 29.91	9.26

LABO1184-038 06/01/2025

	Rates	Fringes
Laborer: Pipelayer	$ 31.98	9.26

SUAZ2023-018 11/19/2024

	Rates	Fringes
Carpenter: Formwork Concrete	$ 33.16	10.71
Laborer: General	$ 32.35	6.98

Painter: Sign and Display Erector	$ 19.06	2.99
Power Equipment Operator: Bobcat/Skid Steer/Skid Loader	$ 32.53	0.00
Power Equipment Operator: Compactor/Roller	$ 32.89	0.00
Power Equipment Operator: Concrete Screed	$ 33.90	0.00
Power Equipment Operator: Crane / Derricks	$ 48.32	14.18
Power Equipment Operator: Excavator/Trackhoe	$ 39.48	0.00
Power Equipment Operator: Forklift	$ 38.76	9.20
Power Equipment Operator: Loader/Front End Loader	$ 38.06	0.00
Power Equipment Operator: Motor Grader/Blade	$ 41.46	0.00
Power Equipment Operator:		

Oiler	$ 31.86	10.01
Power Equipment Operator: Paver/Spreader/Finish equipment (asphalt, aggregate, & concrete)	$ 30.40	0.06
Traffic Control	$ 20.00	0.00
Truck Driver: Dump	$ 24.50	2.75
Truck Driver: Water	$ 33.40	0.00

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 https://www.dol.gov/agencies/whd/government-contracts.

Note: Executive Order 13658 generally applies to contracts subject to the Davis-Bacon Act that were awarded on or between January 1, 2015 and January 29, 2022, and that have not been renewed or extended on or after January 30, 2022. Executive Order 13658 does not apply to contracts subject only to the Davis-Bacon Related Acts regardless of when they were awarded. If a contract is subject to Executive Order 13658, the contractor must pay all covered workers at least $13.30 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 2025. The applicable Executive Order minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under Executive Order 13658 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) (iii)).

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

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate 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. The date, 07/01/2024 in the example, is the effective date of the most current negotiated

rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by

computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the 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. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which

the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

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

a) a survey underlying a wage determination
b) an existing published wage determination
c) an initial WHD letter setting forth a position on a wage determination matter
d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

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

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail 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 an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail 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 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.

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END OF GENERAL DECISION

EXHIBIT I

Environmental Requirements & Permits

UNITED STATES DEPARTMENT OF THE INTERIOR
Bureau of Indian Affairs
TIMBER HARVEST PERMIT

Permit Name & Number: NDOT N8066 – Black Mesa Road FY20250119

Indian Reservation: Navajo Nation

Permit Type: ☐ Indian Free Use ☒ Indian Paid ☐ Non-Indian Paid

Authority: This permit is authorized by the National Indian Forest Resources Management Act of November 28, 1990 (25 U.S.C. 3101 et seq.), and in accordance with the regulations of 25 CFR § 163.

Permittee Name and Address: Navajo Division of Transportation
P.O. Box 4620, Window Rock, AZ 86515

Permission is hereby granted to the Permittee to cut and remove designated timber, on or before December 31, 2026 from the following tract(s) and as shown on the attached Exhibit A map.

Permit Area Description:

Navajo County, Black Mesa, Arizona, Gila and Salt River Meridian – See Table 1 also attached

Tribal/Allotted/Other	Title Tract Number	Township	Range	Section	Sale Area Acres	Harvest Block Acres
Tribal	790 P 7002	34N	21E	14	~4.6	~4.6
Tribal	790 P 7002	34N	21E	14		
Tribal	790 P 7002	34N	21E	32	~0.2	~0.2
				Total	~4.8	~4.8

Designated Timber

Woodland trees marked with red paint, at the base, for removal. See Table 1 (attached) for specific information

Estimated volume and value of timber consists of species, product, volume, and rates as follows:

Species	Product	Unit of Measure	Estimated Volume	Rate per Unit	Estimated Value
Juniper	Firewood	Piece	1	$1.00	$1.00
Pinyon	Firewood	Piece	52	$1.00	$52.00
		Totals	53	$1.00	$53.00

The volumes above are estimates only and are not guaranteed.

Payment for timber must be made as follows:

The volumes shown above are estimates only and are not guaranteed. Payment for timber shall be made as follows:

Two payments in the form of a cashier's check and/or money order made payable to the Navajo Nation 1) in the amount of $53.00 and 2) a performance bond of $10.60 (20% the appraised value) before any harvesting activities commence. Payment is to be submitted to the Navajo Forestry Department in Fort Defiance, AZ 86504-0230, for processing. An inspection of the permit area will be conducted to ensure completion of all pre and post-harvest requirements (Standard Provisions and Special Provisions attached). The performance bond will be refunded back to the permittee after inspection of the permit area and successful completion of all pre and post-harvest requirements.

Permittee agrees to comply with the conditions and provisions of this permit by signing below.

Permittee Signature & Date 9/22/25

Seller Signature & Date 09/26/2025

Seller Name & Title Alexious C. Becenti, Sr., Forest Manager

Approving Officer Signature & Date

Approving Officer Name & Title Herby J. Larsen, Acting Regional Director

original on file with all signatures

Standard Provisions

1. DEFINITIONS

1.1 **Approving Officer (AO)** - the Line Officer who approves the permit or an authorized representative.

1.2 **Officer in Charge (OIC)** - the Forest Officer of the highest rank assigned by the AO to oversee the day-to-day operations of forest product harvests, or their designated representative.

1.3 **Operations** - all activities and use of equipment by the Permittee in the execution of the permit.

1.4 **Permittee** - the purchaser of forest products under the permit and any successor(s) in interest.

2. OPERATIONS

2.1 The Permittee must have this permit in possession when operating on, or hauling products from, the permit area.

2.2 Trees not designated for harvest must be protected from damage. Unnecessary damage by the Permittee will be assessed by the OIC and paid for by the Permittee at double the permit stumpage rates.

2.3 Stumps must be cut as low as practical to avoid waste. The height of any stump must not exceed one-half its diameter, unless authorized by the OIC.

2.4 The slash resulting from operations, including limbs, tops, damaged sub-merchantable trees, and other material must be treated as directed by the OIC. The slash must be cut into smaller pieces, scattered, or piled compactly away from the residual trees in the permit area, or a combination thereof. Roads, road rights-of-way, and landings must be kept clear of slash.

3. SCALING AND MOVEMENT OF PRODUCTS

3.1 For estimated volume permits, logs or other products must be decked, stacked, or otherwise held at scaling points designated by the OIC. Products must not be moved until they have been scaled and released by the OIC. Products that are moved contrary to the instructions of the OIC are paid for by the Permittee at double the permit stumpage rates.

3.2 For estimated volume permits, waste from high stumps, improper bucking, breakage, and partially sound logs, and all trees which are left felled, lodged, or badly damaged by the operations are scaled for their merchantable contents (as if they had not been damaged). This material will be paid for by the Permittee at double the permit stumpage rates or as designated by local policy.

4. FIRE OPERATIONS

4.1 The Permittee must take all reasonable and practicable action to prevent fires resulting from permit activity, as required by a Fire Plan or the AO. When no other fire prevention direction has been provided, the requirements are not less than that required under the laws of the state in which the permit area is located.

4.2 The Permittee must immediately report any wildfires to the OIC.

4.3 When requested by the AO, the Permittee must make available any or all qualified personnel and equipment for use in suppressing a wildfire in, or threatening, the sale area.

4.4 The AO may require the Permittee to suspend any or all operations during high fire danger, or when fire is within or threatening the permit area.

4.5 The Permittee is liable for all damages and suppression costs of fires caused by negligence on the part of the Permittee, in an amount determined by the AO.

5. ENVIRONMENTAL

5.1 If human remains or items of historical or archeological significance are discovered, the Permittee must immediately halt operations and inform the OIC.

5.2 Operations must be conducted in a manner that minimizes damage to the course, channel, and sides of all streams, riparian areas, and wetlands whenever encountered. Streams include both flowing and intermittent watercourses.

5.3 The Permittee must take immediate action to contain any hazardous material spills that have occurred as a result of their operations. The Permittee must notify the OIC immediately of such spills. Hazardous materials must be disposed of as directed by the OIC. Hazardous materials include, but are not limited to, petroleum products such as

fuel, oil, hydraulic fluids, contaminated soils, etc. Permittee is responsible for environmental liabilities caused by operations.

5.4 The OIC may suspend operations during periods of wet weather when soil damages and road rutting could occur. The OIC may direct the Permittee to take reasonable soil erosion prevention measures to retain road surfaces and prevent the gullying of roads and skid trails, or to repair damages caused by operations.

5.5 All equipment and trash resulting from the operations must be removed and disposed of properly.

6. OTHER PROVISIONS

6.1 A performance bond may be required as determined by the AO.

6.2 The Permittee must comply with all other laws and regulations governing the reservation within which the permit tracts are located.

6.3 If the Purchaser breaches terms of this permit and does not resolve the situation to the satisfaction of the AO, the AO may revoke the permit by written notice to the Purchaser and halt operations. A Revocation must address title and ownership of harvested material not removed from the permit area, equipment not removed, unresolved permit obligations, and other items determined by the AO.

6.4 The Permittee or Seller may submit, in writing, disputes of any action or decision made under the permit.

6.5 The parties to this contract may appeal, in accordance with the regulations stated in 25 CFR Part 2, any action or decision taken by the AO.

7. SPECIAL PROVISIONS

SPECIAL PROVISIONS

1.0 GENERAL GUIDELINES

1.1 These Special Provisions are a supplement to the Standard Provisions (BIA Form 5-5331) and Navajo Nation Forest and Woodland Regulations (RCMA-48-01). Any changes outlined herewith supersede the Standard Provisions and Navajo Nation Forest and Woodland Regulations.

1.2 Trees (of various species) identified to be harvested are marked with 1 or 2 dot(s) in red, orange or blue paint on the tree stumps.

1.3 Tree branches (of various species) identified to be limbed are marked with a vertical line in red, orange or blue paint on the limb(s) to be removed.

1.4 SALE AREA BOUNDARY = The sale area boundary is defined by operability limits of the permit area.

2.0 HARVEST DESIGNATION AND METHOD

2.1 It may be required that all merchantable stems will be harvested and yarded to landings. Rubber tire skidder-grapple skidders and/or tracked skidders, front-end loader, backhoe or other equipment authorized by the Officer in Charge may be used.

2.2 Harvested forest products with a diameter greater than 5 inches designated to remain within the permit area for more than thirty (30) calendar days must be bucked into firewood size pieces, 24 inches in length or less.

2.3 Forest products cut into firewood size pieces must be stacked into piles less than or equal to 4 feet high, 4 feet wide, and 4 feet long. The piles must be in open areas, a minimum of 6 feet away from any residual tree, adjacent slash piles, firewood piles, structures and identified construction zones.

2.4 Harvesting/transportation operations must be conducted during the daytime (when visibility is high), all night operations are prohibited.

2.5 Felling shall minimize breakage of material and damage to the surrounding residual stand, including regeneration.

2.6 Directional felling into natural openings to prevent damage to the residual stand(s) must be practiced.

2.7 Any trees identified to be directionally felled will be marked with blue paint, with a blue arrow indicating the direction the tree is to be felled.

2.8 Felling trees across roads is not allowed unless permitted by the Officer in Charge.

2.9 Trees are not permitted to be pushed over, including damaged trees unless authorized by the Officer in Charge.

2.10 Landings (i.e., stockpile locations) are not to exceed 5,625 square feet (75 feet by 75 feet) and cannot be placed on slopes greater than 10 degrees, drainages, and intermittent streams unless authorized by the Officer in Charge.

2.11 All landings must be approved by the Officer in Charge.

2.12 Harvested Russian olive (*Elaeagnus angustifolia*) and tamarisk (*Tamarix spp*.) seedlings, saplings and trees must be chemically treated immediately after they are cut and while the cambium (living section of the tree) is still moist, by applying herbicide directly to the cut stumps cambium (see attached USDA - *Field Guide for Managing Russian Olive in the Southwest.)*

2.13 Although no additional standards or harvest requirements are anticipated, the Permittee will be responsible to follow any additional standards and harvest requirements as determined by the Navajo Forestry Department and the Bureau of Indian Affairs to protect the natural resources of the Navajo Nation.

2.14 The Permittee will be responsible to follow all applicable Navajo Nation and Bureau of Indian Affairs Best Management Practices (BMP's), listed in the Navajo Nation Ten-Year Forest Management Plan.

3.0 SLASH DISPOSAL

3.1 All slash must be treated within thirty (30) calendar days of felling.

3.2 Tree felling operations cannot proceed beyond one-half (1/2) mile of untreated slash.

3.3 All limbs must be removed from the main stem and cut flush with the bole of the tree.

3.4 To keep the risk of increased *Ips* species (bark beetle) activity low, avoid felling material greater than or equal to 3 inches in diameter between January and June. Unless such material is either: 1) chipped and dispersed widely to a depth less than or equal to 2 inches within thirty (30) calendar days; or 2) bucked into firewood size pieces 24 inches in length or less and stacked in accordance to section 2.3 of these provisions within thirty (30) calendar days.

3.5 Lop and scatter techniques will be implemented throughout the treatment area whenever hand/mechanized piling or chipping is not possible between July and December.

3.6 Slash that is lopped and/or scattered cannot exceed a maximum height of 18 inches.

3.7 Slash, including chipped material must be pulled-back a minimum of 6 feet away from the bole of any residual tree, adjacent slash piles, firewood piles, structures and identified construction zones.

3.8 All slash must be cut into segments no greater than 4 feet in length.

3.9 Slash that is piled, must be piled in open areas, a minimum of 6 feet away from residual trees, adjacent slash piles, firewood piles, structures, and construction zones.

3.10 Slash shall not be piled more than 4 feet high and 8 feet wide.

3.11 Cull trees/logs must be bucked into segments no longer than 20 feet in length. Cull trees/logs must have all exposed branches and limbs cut flush with the bole.

3.12 The Permittee may be obligated to transport all or portions of landing slash back into the surrounding stand.

3.13 All cull logs on and within 50 feet of landings must be transported into the surrounding stand(s).

4.0 ACCESS

4.1 The permit area may be accessed from Indian Route N8066 and adjacent roads.

4.2 Indian Route 8066 is the primary haul road to be utilized in and out of the permit area.

4.3 Road(s) adjacent to the primary haul road may be utilized as a secondary haul road(s), when authorized by the Officer in Charge.

4.4 The Permittee must not deviate from these designated haul road(s) unless authorized by the Officer in Charge.

5.0 ROAD CONSTRUCTION, MAINTENANCE, AND CLOSURE

5.1 The Permittee may be required to place logging signage and hauling signage, along the primary haul road and secondary haul road(s) to notify the public of logging operations.

5.2 Spur roads within the permit area will be flagged by the Officer in Charge prior to use.

5.3 Minor spur road improvements will be authorized within the permit area boundary only.

5.4 Spur roads may require to be closed-out upon completion of harvesting activities i.e., tank trapped, back dragged, racked, scarified etc.

5.5 Forest products must be transported in accordance with local and state laws and regulations. It is the responsibility of the Permittee to know the local and state laws and regulations.

5.6 The Permittee may be required to fill out a Bureau of Indian Affairs Log Load Receipt Book when transporting forest product(s) off the site.

5.7 If a Bureau of Indian Affairs Log Load Receipt Book is required under section 5.6 of these provisions, the Permittee must submit the Bureau of Indian Affairs Log Load Receipt Book to the Officer in Charge when harvesting operations are complete, or harvesting operations have stopped, due to environmental conditions, seasonal operating limits or other circumstances.

6.0 LOGGING SEASON

6.1 To reduce the chance of catastrophic fire, all operations during peak fire season may be restricted. For example, when red-flag days are identified by the Officer in Charge, through the Bureau of Indian Affairs, Navajo Region Branch of Wildland Fire and Aviation Management all forest operations must stop. Red flag days are usually from May to end of June for the Navajo Region.

6.2 The Permittee must abide by all Condition(s) of Compliance identified in the Biological Resource Compliance Form issued by the Navajo Nation Department of Fish and Wildlife (NNDFW) for this action.

6.3 The Permittee must abide by all Condition(s) of Compliance identified in the Cultural Resource Compliance Form issued by the Navajo Nation Heritage and Historic Preservation Department (NNHHPD) for this action.

6.4 Other than the restrictions stated above or as stated in the Standard Provisions, no additional seasonal restrictions on logging and log hauling activities are anticipated on the permit area. However, if in the judgment of the Officer in Charge, local conditions become such that logging, log hauling, or road construction activities will have a detrimental effect on resource values, logging and related activity will be suspended as necessary to protect resource values.

7.0 MINIMUM CUT

7.1 Although it is not anticipated, additional trees may be marked for harvest or removed from harvest as directed by the Officer in Charge. Additional fees may be assessed to the Permittee for the volume and value of forest products harvested.

7.2 The total forest product volume designated for harvest shall be cut and removed in accordance with the Standard Provisions and these Special Provisions prior to the expiration of the Timber Cutting Permit.

8.0 LOGGING PLAN

8.1 A simplistic logging plan may be required. For example, a descriptive letter and/or map that indicate a starting point/stopping point of felling, skidding, hauling and slash disposal operations. The logging plan may be updated as needed. A copy will be given to the Officer in Charge to update him on harvest and slash mitigation procedures and anticipated timelines for completion.

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS ALBUQUERQUE DISTRICT
NEW MEXICO & NW TEXAS BRANCH, ALBUQUERQUE OFFICE
4101 JEFFERSON PLAZA NE
ALBUQUERQUE, NEW MEXICO 87109-3435

October 1, 2025

Regulatory Division

SUBJECT: Nationwide Permit Verification (SPA-2025-00192)

Navajo Nation DOT
Attn: Tom Platero
PO Box 4620
Window Rock, AZ 86515
tplatero@navajodot.org

Dear Mr. Platero:

We are responding to your pre-construction notification (PCN), dated 14 May 2025, submitted to us for verification of authorization under nationwide permit (NWP) for the N8065/8066 Black Mesa Road and Drainage Improvement project. The project site is located along approximately six miles of Black Mesa Road - Navajo Route (N) 8066 and 8065 adjacent to Oraibi Wash centrally located at latitude 36.313543°, longitude -110.10711° in Black Mesa, Navajo County, Arizona.

Based on the information provided, we have determined that the N8065/8066 Black Mesa Road and Drainage Improvement project involves the discharge of dredged or fill material into waters of the United States, subject to Section 404 of the Clean Water Act. The specific activities that require Corps authorization will include the placement of fill into Aquatic Resources to allow construction of a multi-span concrete arch culvert bridge, five (5) reinforced concrete box culverts (CBCs), 11 new corrugated metal pipe (CMP) culverts, and three (3) replacement-upsized CMPs. The concrete arch culvert bridge will include concrete footers in the channel, concrete wing walls and scour aprons and a 12” thick gabion riprap mattress in the channel below the bridge crossing. All the culverts will have riprap aprons installed at the outfall for scour protection. Project activities will permanently impact 0.03 acre of channel as a result of placement of the bridge footings below the OHWM and will temporarily impact of 0.96 acre of channel from excavation and backfill to place the culverts and install the scour protection mattress and riprap aprons and will be conducted as described in the referenced PCN.

We have determined that activities associated with the project are authorized by 2021 NWP 14 – Linear Transportation Projects. A summary of this NWP and the 2021 Navajo Nation Regional Conditions are available on our website at www.spa.usace.army.mil/reg/nwp. Failure to comply with all terms and conditions of this NWP may result in the suspension or revocation of this authorization. As required by General Condition 30, you shall sign the enclosed Compliance Certification (Enclosure 1) and return it to this office within 30 days after completion of the authorized work. For specific information regarding compliance with water quality certification (WQC) requirements, please refer to our website at www.spa.usace.army.mil/reg/wqc.

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 Federal Highway Administration (FHWA) on behalf of Navajo DOT, has determined that this project will have no effect on federally listed species, or their critical habitat and the Corps concurs with their determination. Additionally, FHWA has determined that the project will have no adverse effect on historic properties and the Corps concurs with their determination. However, these determinations may be invalidated if the project is not completed as authorized or you did not provide accurate information in your PCN.

This permit verification is valid until March 14, 2026, unless the NWP is modified, suspended, reissued, or revoked 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 an NWP will remain authorized provided the activity is completed within 12 months of the date of the NWP's expiration, modification, or revocation.

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, local, or tribal 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, to undertake the proposed work.

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 permit.

We would appreciate your feedback on this permit action including your interaction with our staff or suggestions for improving our program. For more information about our program or to complete our Regulatory Program national customer service survey, visit our website at https://www.spa.usace.army.mil/Missions/Regulatory-Program-and-Permits/.

Please refer to identification number SPA-2025-00192 in any correspondence concerning this project. If you have any questions, please contact me by email at Sarrah.C.Kubinec@usace.army.mil, or telephone at 505-290-7079.

Sincerely,



Sarrah C. Kubinec
Regulatory Specialist
New Mexico/ W. Texas Branch

Enclosure

cc:
Chuck Howe, C2 Environmental, LLC, chowe@c-2-env.com;
David Cremer, FHWA, David.cremer@dot.gov

COMPLIANCE CERTIFICATION

Action Number: SPA-2025-00192

Name of Permittee: Navajo Nation DOT, Tom Platero

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:

U.S. Army Corps of Engineers, Albuquerque District
NEW MEXICO & NW TEXAS BRANCH, ALBUQUERQUE OFFICE
4101 JEFFERSON PLAZA NE
ALBUQUERQUE, NEW MEXICO 87109-3435
CESPA-RD-NM@usace.army.mil

Please note that your permitted activity is subject to a compliance inspection by a 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

Encl 1

Navajo Nation Environmental Protection Agency
Surface and Ground Water Protection Department
P. O. Box 339, Window Rock, AZ 86515
Phone: 928-871-7715 • Fax: 928-871-7996

Dr. Buu Nygren
President

Richelle Montoya
Vice-President

Tom Platero
Division Director, Navajo Division of Transportation
PO Box 4620
Window Rock, AZ 86515

June 30, 2025

RE: Clean Water Act § 401 Water Quality Certification for Navajo Division of Transportation Project: N8066 Black Mesa Road and Oraibi Wash Bridge Road and Drainage Improvements. - Navajo EPA Project ID No. 2025-0127TC.

Mr. Platero:

The Navajo Nation Environmental Protection Agency (NNEPA) has reviewed the above-referenced 401 Water Quality Certification Application. The fee for this project has been paid and the 30-day public comment period has ended and no public comments were received by the NNEPA.

The Navajo Division of Transportation (NDOT) is proposing to make road and drainage improvements to N8066 Black Mesa Road and Oraibi Wash Bridge including installation of a multi-span arch culvert and numerous other corrugated metal pipes.

The total amount of excavation (dredging) from jurisdictional surface waters within the project is 1,019 cubic yards. The total amount of fill material into jurisdictional surface waters within the project is 3,510.7 cubic yards. The total temporary impacts to jurisdictional surface waters within the project will be 0.60 acres while total permanent impacts will be 0.39 acres.

Your request for a 401 certification is granted with the following conditions:

1. NDOT shall provide a copy of these Clean Water Act § 401 Water Quality Certification conditions to all appropriate contractors and subcontractors. NDOT shall ensure that these conditions are understood by all appropriate contractors and subcontractors. NDOT shall keep at copy of these conditions at the work 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 work activities, 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. NDOT 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 site activities shall not be deposited at any site where it may be washed into Water of the United States 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. NDOT 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 work 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 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 work area, work activity shall cease and work 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 applicable United States Army Corps of Engineers (USCOE) Nationwide Permit Number 14 – Linear Transportation Projects. 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 928-871-7715.

Sincerely,

Yolanda Barney
Department Director
Surface and Groundwater Protection Department
Navajo Nation Environmental Protection Agency

Email CC: Patrick Antonio, Navajo Nation Environmental Protection Agency
US Army Corps, Albuquerque Regulatory
NDOT Contractor C2 Environmental, LLC

TTP Environmental Checklist/Categorical Exclusion

Tribe Name: Navajo Nation	**Is Project on an approved TTIP?** Yes
Project Name/Number: N8066/N8065 Black Mesa (Road and Bridge)	**NTTFI Route No. and Section:** N8066 - Sec. 55, 60, 70; N8065- Sec. 10

SECTION 1: PROJECT DETAILS

A. Purpose and Need: Briefly describe what the transportation problems are that need to be addressed and why. Do not provide solutions to the problems in this section.

The Navajo Nation DOT proposes the following road project along Bureau of Indian Affairs (BIA) Routes N8066 and N8065 in Black Mesa, in Navajo County, Arizona, on the Navajo Nation. The purpose and need for upgrading N8066 and N8065 is to provide an all-weather road for safer access to schools, the government center at the Black Mesa Chapter House, and other services. During wet seasons in this remote area, the existing dirt road presents many safety concerns to those traveling for work, school, supply runs, and social and religious events. The road can be especially hazardous during emergency situations or crossing Oraibi Wash. Although N8066 is located within a rural area, there are several private residences adjacent to the roadway with numerous associated turnouts for access, most of which are unpaved. Due to the proximity to Oraibi Wash, significant stream erosion called headcutting has occurred, which affects roadway stability and safety. The project is needed to improve safety, connectivity, movement of goods and services, and efficient operation and maintenance of the transportation system.

B. Project Description: Briefly describe project including location, limits, design elements, and construction activities. Describe how the proposed project will address the needs described above. Use Continuaton Sheet, if necessary. Attach maps, aerials, photos, etc. to help visualize the project.

To improve N8066/N8065, the Navajo Division of Transportation (Navajo DOT) is proposing 7.35 miles (38,763 linear feet) of roadway improvements along Bureau of Indian Affairs (BIA) Routes N8066 and N8065 in Black Mesa, in Navajo County, Arizona, on the Navajo Nation. N8066 is classified as a minor collector road in the 2021 Navajo Nation Long Range Transportation Plan and is currently 24 feet wide from shoulder to shoulder. N8066 has rights-of-way (ROW) set at 100 feet on each side south of the proposed project area, which are delineated with fencing and will be extended in the project area. Navajo DOT proposes road reconstruction and surface improvements on 5.71 miles of N8066, 1.21 miles of N8066 Spur Road to the Black Mesa Community School, 0.43 miles on N8065 Spur to connect N8065 and N8066, and the Black Mesa Chapter House Access Road and parking area, including the construction of a 247-foot bridge to connect the N8065 to N8066. The project starts approximately 8 miles north of N41 at the existing end of pavement and cattleguard and ends just north of the East Fork of Oraibi Wash northwest of the Chapter House. An engineered-size culvert is proposed for the East Fork of Oraibi Wash. A total of 178 acres of ROW, 68 acres of temporary construction easements, and 7 acres of temporary stage areas would be affected.

A number of rural homesites, and commercial properties are nearby, which connect to the route through driveways and side streets. There are also several culverts along the route, many of which are undersized, damaged, and/or clogged. The project would maintain the ROW to 100 feet from either side of the centerline, pave the roadway, add a 1-foot paved shoulder on each side, replace and upgrade existing culverts, adjust the road alignment to improve sight distance, and install a bridge to connect N8065 with N8066 over Oraibi Wash.

The bridge connecting N8065 and N8066 would be located in Township 33 N, Range 20 E, Section 11. N8066(3), N8066 Spur and the Chapter House Access Roads are located in Township 33 N, Range 20 E, Section 1: Township 33 N, Range 21 E, Section 6, Township 34 N, Range 21 E, Sections 14, 15, 21, 22, 23, 28, 29, 31, and 32. All Township and Range locations are in the Gila and Salt River Meridian, Navajo County, Arizona. Reconstruction of N8066 would begin at latitude: 36°17'28.79" N and longitude: 110° 08'02.36" W within the Black Mesa Chapter boundary and all portions of the project are on Navajo Nation Trust Land.

C. Independent Utility and Logical Termini

■ The project complies with NEPA requirements related to connected actions and segmentation (i.e. the project must have independent utility, connect logical termini when applicable, be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made and not restrict further consideration of alternatives for other reasonably foreseeable transportation improvements). [23 CFR 771.111(f)]

SECTION 2: ENVIRONMENTAL RESOURCE EVALUATIONS

All applicable environmental requirements were evaluated for this Environmental Checklist and are identified below.

A. Right of Way

Will the project involve right of way acquisitions or easements? ☒ Yes ☐ No

If yes, will a right of way action by the BIA be required? ☐ Yes ☒ No

If yes, the BIA may have additional environmental requirements. Please contact the FHWA Environmental Specialist for further guidance.

All portions of the project are on Navajo Nation Trust Land. A total of 178 acres of ROW, 68 acres of temporary construction easements, and 7 acres of temporary stage areas would be affected. Right-of-way will be acquired from the Navajo Nation General Land Department through the Tribal Access Authorization (TAA) process. The Navajo Nation Department of transportation will assume the ROW from the Bureau of Indian Affairs (BIA). This MAY require a separate ROW action with the BIA, who has jurisdiction over the ROW. IF IT IS DETERMINED that the BIA has an additional ROW action, the BIA may have additional environmental requirements. If a ROW action by BIA is identified, further consultation with the necessary BIA office to determine the appropriate level of documentation will be needed.

B. Cultural Resources

☒ Section 106 compliance is complete - select appropriate finding:

☐ No Potential to Affect Historic Properties ☐ No Historic Properties Affected

☒ No Historic Properties Adversely Affected ☐ Adverse Effect

Has consultation with SHPO and/or THPO been completed? ☒ Yes ☐ No

If yes, date(s) of concurrence 3/9/2023, and attach the letter(s) to this document.

Provide further discussion as needed.

A cultural resource survey was conducted for the entire 175.60 acre APE. During the Class III CRI, Navajo DOT identified two Anaasází sites, one multi-component site (Anaasází and modern), one TCP, and 15 IOs. Navajo DOT recommended all sites eligible for the NRHP under Criterion D, and the TCP eligible under Criteria A, C and D. The IOs were recommended not eligible. The FHWA OTT determined that the project would result in no adverse effect on any historic properties if specific mitigations (Section 3) are implemented. The Navajo Nation THPO concurred with this determination on March 9, 2023.

Are there other Tribes with ancestral ties to lands in or near the project area? ☐ Yes ☒ No

If yes, list the Tribes and describe results of consultation efforts.

C. Wetlands

- Wetlands (Executive Order #11990)

Will construction activities take place in wetlands? ☐ Yes ☒ No

If yes:

- What is the estimated permanent loss of wetlands, if any? _____ acres
- Are there any practical alternatives to the proposed construction in wetlands (i.e. can the wetlands be avoided while still meeting the purpose and need of the project)? ☐ Yes ☐ No
- Does the project include all practicable measures to minimize harm to the wetlands? ☐ Yes ☐ No

Provide further discussion as needed.

No wetlands were identified using the USFWS NWI inventory. No additional wetlands were identified in the area based on aerial imagery The NWI classifies Oraibi Wash as R4SBJ (Riverine, Intermittent, Streambed, intermittently flooded). No wetlands are projected to be affected by project actions.

D. Floodplains

- Floodplains (Executive Order #11988)

☒ No Floodplain Encroachment ☐ No Significant Encroachment ☐ Significant Encroachment
If in floodplain, are there practicable alternatives avoiding the floodplain? ☐ Yes ☐ No
Provide further discussion as needed.

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.

E. Biology

- Section 7 (Federal Endangered Species Act) Consultation Findings (Effect determination). Note: these webpages are helpful in identifying federally-listed species IPAC and NOAA Section 7 Mapper.

☒ No Effect
☐ May Affect, Not Likely to Adversely Affect. If applicable, FWS Concurrence Date: _____
If applicable, NMFS Concurrence Date:_____
☐ May Affect, Likely to Adversely Affect. If so, FWS Biological Opinion Date: _____
NMFS Biological Opinion Date: _____
☐ Programmatic Biological Opinion held by Partner Agency; File Number _____ Date 04.02.25
Provide further discussion as needed.

A biological evaluation report was prepared and submitted to the Navajo Nation Department of Fish and Wildlife (NNDFW) for review (G. Jones). The NNDFW found that the project would not affect any federally listed threatened or endangered species or habitats and issued a Biological Resources Clearance Form (BRCF) on July 20, 2022. Therefore, the FHWA OTT has determined that the project will have no effect on any federally listed threatened or endangered species.

- Essential Fish Habitat (Magnuson-Stevens Act) Findings (Effect determination):

☒ No Effect ☐ No Adverse Effect ☐ Adverse Effect and consultation with NMFS
Provide further discussion as needed.

- Migratory Bird Treaty Act
  - Will the project potentially impact migratory birds? ☐ Yes ☒ No
  - What actions will be taken to avoid migratory bird impacts, if any (e.g. vegetation clearing restricted to outside of migratory bird nesting periods, surveying for migratory bird nests prior to initiating construction, etc.)?

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.

- Bald and Golden Eagle Protection Act
  - Will the project potentially impact eagles? ☐ Yes ☒ No
  - What actions will be taken to avoid eagle impacts, if any (Following the USFWS' National Bald Eagle Management Guidelines is recommended)?

see above

F. Section 4(f) Transportation Act (23 CFR 774) and Section 6(f) Land and Water Conservation Act (36 CFR 59)

- Section 4(f) regulation was considered as a part of the review for this project and a determination was made:
  - ☒ Section 4(f) does not apply (*Project does not use a Section 4(f) property, or it meets one or more of the exceptions listed in* 23 CFR 774.13.*)*
  - ☐ Section 4(f) applies, select level of evaluation from below:
    - ☐ De Minimis
    - ☐ Programmatic Evaluation (types of Programmatic Evaluations):
      Select one if applicable _____
    - ☐ Individual: ☐ Legal Sufficiency Review complete ☐ HQ Coordinator Review Complete

- Section 6(f)—Does the project involve property purchased with Land and Water Conservation Funds?
  - ☒ No, Section 6(f) does not apply. No additional documentation required.
  - ☐ Yes ☐ Documentation of approval from National Park Service Director has been received for the conversion/and replacement of 6(f) property.

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.

G. Farmland Protection Policy Act of 1981

Does prime or unique farmland, or land of statewide or local importance exist within the project area (check the Natural Resources Conservation Service (NRCS) link to search for prime or unique farmland in the project area; you also may need to contact the appropriate state/local soils agency to make this determination)?

☐ Yes ☒ No

If the project has the potential to convert important farmland to non-farm use, coordinate with your local NRCS office (a land evaluation and site assessment may be required). Attach relevant coordination documentation to this form.

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).

H. Coastal Zone

Coastal Zone Management Act of 1972

☒ Not in Coastal Zone ☐ Coastal Permit Required

☐ Consistent with Federal, State, and Local Coastal Plans ☐ Federal Consistency Determination

Provide further discussion as needed.

I. Hazardous Waste and Materials

- Are hazardous materials or contamination exceeding regulatory thresholds (as set by U.S. EPA, Tribe, State County, etc.) present in the project area? ☐ Yes ☒ No
- If yes, is the nature and extent of the hazardous materials or contamination fully known? ☐ Yes ☐ No

  If no, briefly discuss the plan for securing information:

The EPA's NEPAssist website was checked to determine if any hazardous sites, such as Superfund sites, hazardous waste sites (RCRA), brownfields, areas noted in toxic release inventories, and existing NDPES discharge sites. None were found. 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.

J. Wild & Scenic Rivers

- Are there Wild & Scenic River designations in the project area? Check the National Wild and Scenic Rivers System.
  ☐ Yes ■ No
- Describe any impacts. (Attach the full evaluation if applicable).

K. Ancillary Sites (Materials, Disposal, Staging, Etc.)

- Will the project plans require the use of specific ancillary sites (e.g. materials sources, disposal sites, staging areas, etc.), or will these sites be left to the contractor to select?
  ■ Required by Plans ☐ Selected by Contractor
- If required by project plans, have the ancillary sites been included in all assessments of environmental impacts and consultations with appropriate agencies? ■ Yes ☐ No
  If no, please explain.

Staging areas and temporary construction easements have been identified and evaluated for impacts. Soil removed during earthwork will be stockpiled and used on site as fill where needed. Disposal materials will be collected and hauled off site to the nearest approved disposal site per Navajo Nation Solid Waste Regulations.

L. Air Quality

- Is the project in a "nonattainment" or "maintenance" area designated under the Clean Air Act (EPA Green Book)?
  ☐ Yes ■ No
  If yes, is the project consistent with air quality goals for the area? ☐ Yes ☐ No
- Even if the project is not in a "nonattainment" or "maintenance" area, how will general air quality concerns such as construction-related airborne dust be eliminated or reduced?

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.

M. Socioeconomics and Environmental Justice

- Will the project result in disproportionately high and adverse human health or environmental effects on minority populations and/or low-income populations (FHWA Environmental Justice page)? ☐ Yes ■ No
- Will construction activities substantially disrupt normal traffic patterns (including access to businesses, community facilities, and accessibility of emergency vehicles)? ☐ Yes ■ No

If yes to either, please explain how these impacts will be mitigated.

This portion is no longer applicable (EO 14173)

N. Noise

- Will the project significantly change the horizontal or vertical alignment of a road? ☐ Yes ■ No
- Will the project increase the number of through-traffic lanes on a road? ☐ Yes ■ No

If yes to either of the above questions, are there sensitive noise receptors (see FHWA guidance) located near the project? ☐ Yes ☐ No If yes, please explain how increased noise, if any, will be abated:

O. Other Relevant Environmental Considerations/Approvals

- Are there other relevant environmental considerations or approvals needed for this project? ☐ Yes ■ No
  If yes, please describe.

See Attachment E for Best Management Practices and Mitigation Measures incorporated into the Project.

P. Permits

1. Section 404 of the Clean Water Act
   Will there be impacts to Waters of the US: ☐ Yes ■ No
   If yes, approval anticipated:
   ☐ Nationwide Permit ☐ Individual Permit

2. Section 401 of the Clean Water Act approval anticipated:
   ■ Certification ☐ Waiver ☐ N/A

3. Section 402 of the Clean Water Act
   Will the project involve 1 acre of ground disturbance or more? ■ Yes ☐ No
   If yes, a National Pollutant Elimination System (NPDES) permit is required as well as the development of a Storm Water Pollution Prevention Plan (SWPPP) to be included in the final design.

4. Sections 9 and 10 of the Rivers and Harbors Improvement Act
   Will the project involve construction of a structure over a navigable waterway? ☐ Yes ■ No
   If yes, a Bridge Permit from the U.S. Coast Guard will be required.

5. List below other permits required for the project.

BIA Division of Forestry and Fire Management Timber Cutting Permit
Navajo Nation Low Threat General Permit (NPDES Permit)

SECTION 3: Environmental Commitments

List all environmental commitments for the project in this section, or attach additional documentation as necessary. The list should include any mitigations, permit conditions, or other commitments that were required or agreed to during environmental analyses, coordination, and consultation with relevant agencies.

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.

If any Migratory Bird Treaty Act protected bird with an active nest is observed before or during construction, the USFWS should be contacted immediately, and measures should be taken to protect the nest.

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.

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.

Archaeological Sites AZ-J-41-23 and AZ-J-41-24 will be avoided. TCE 12 will be removed and relocated. Temporary fencing will be installed around the site, and an archaeological/cultural monitor will be present during construction activities.

Archaeological Site AZ-J-41-25 will be avoided. The length of TCE 15 will be reduced by 175 ft. (53.34 m). Temporary fencing will be installed around the site, and an archaeological/cultural monitor will be present during construction activities.

Per Chapter House recommendation, TCP NNDOT-TCP-01 will be dismantled and placed at the edge of the ROW or beyond staging area.

If avoidance is not possible, then an archaeological monitoring and discovery plan should be developed and implemented; and/or AZ-J-41-23, AZ-J-41-24, and AZ-J-41-25 should be subjected to archaeological testing and/or data recovery program, as appropriate for the undertaking, in consultation with NNH&HPD.

Due to the need for tree removal, a Timber Cutting Permit administered by the BIA, Division of Forestry and Wildlife Fire Management, would be obtained prior to construction.

In addition, all stipulations found in the Best Management Practices, as provided by the Navajo Nation Division of Transportation (September 2024) will be implemented during all relevant project phases (see document).

SECTION 4: TYPE OF DOCUMENTATION: Use the information in this section to help determine the applicable documentation and clearance type for the project (CE, EA or EIS). Please note that this is used for planning purposes only. The final decision for level of documentation is made by FHWA after consultation and coordination.

A. Categorical Exclusions Defined (23 CFR 771.117[a]).

FHWA regulation 23 CFR 771.117(a) defines categorical exclusions as actions which:

- do not induced significant impacts to planned growth or land use for the area;
- do not require the relocation of significant numbers of people;
- do not have a significant impact on any natural, cultural, recreational, historic or other resources;
- do not involve significant air, noise, or water quality impacts;
- do not have significant impacts on travel patterns; or
- do not otherwise, either individually or cumulatively, have any significant environmental impacts.

☒ Checking this box certifies that project meets the above definition for a Categorical Exclusion (if not, an EA or EIS will be required).

B. Unusual Circumstances (23 CFR 771.117[b]).

FHWA regulation 23 CFR 771.117(b) provides that any action which normally would be classified as a CE but could involve *unusual circumstances* requires the Department to conduct appropriate environmental studies to determine if the CE classification is proper. Unusual circumstances include actions that involve:

- Significant environmental impacts;
- Substantial controversy on environmental grounds;
- Significant impact on properties protected by section 4(f) of the DOT Act or section 106 of the National Historic Preservation Act; or
- Inconsistencies with any Federal, State, or local law, requirement or administrative determination relating to the environmental aspects of the action.

All of the above unusual circumstances have been considered in conjunction with this project. (Please select one.)

☒ Checking this box certifies that **none of the above conditions apply** and that the project qualifies for a Categorical Exclusion.

☐ Checking this box certifies that unusual circumstances **are involved**. However, the appropriate studies/analysis have been completed, and it has been determined that the CE classification is still appropriate.

C. Check applicable categorical exclusions from the drop-down menu(s) below. For full text of CEs, click here.

Select a Categorical Exclusion:

(c)(23)(i) Federally funded projects that receive less than $5,000,000 of Federal funds.

Select additional Categorical Exclusion, if needed:

D. If categorical exclusions (c)(26), (c)(27), or (c)(28) were selected above, do any of the following circumstances apply?

☐ **Yes** ☒ **No** ☐ **N/A**

(1) An acquisition of more than a minor amount of right-of-way or that would result in any residential or non-residential displacements;
(2) An action that needs a bridge permit from the U.S. Coast Guard, or an action that does not meet the terms and conditions of a U.S. Army Corps of Engineers nationwide or general permit under section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act of 1899;
(3) A finding of "adverse effect" to historic properties under the National Historic Preservation Act, the use of a resource protected under 23 U.S.C. 138 or 49 U.S.C. 303 (section 4(f)) except for actions resulting in *de minimis* impacts, or a finding of "may affect, likely to adversely affect" threatened or endangered species or critical habitat under the Endangered Species Act;
(4) Construction of temporary access, or the closure of existing road, bridge, or ramps, that would result in major traffic disruptions;
(5) Changes in access control;
(6) A floodplain encroachment other than functionally dependent uses (e.g., bridges, wetlands) or actions that facilitate open space use (e.g., recreational trails, bicycle and pedestrian paths); or construction activities in, across or adjacent to a river component designated or proposed for inclusion in the National System of Wild and Scenic Rivers.

SECTION 5: Certification

This approval pertains only to the scope of work and project described above. Any changes to the scope of work should be evaluated for additional environmental impacts and reviewed by FHWA. The environmental commitments listed in the document are not subject to change without approval from FHWA.

Based on the information obtained during the environmental review process and included in this checklist, the project is determined to be a Categorical Exclusion pursuant to the National Environmental Policy Act and is in compliance with all other identified environmental laws, regulations, and Executive Orders.

Concurrence: By signing, you acknowledge you have authority to sign this document on behalf of the Tribe/Consortium, agree with the descriptions and assessments described within, and will insure the identified environmental commitments will be fulfilled and appropriate permits obtained.

Tribe/Consortium representative Name:	Anjanette Owens
Title:	Department Manager
Signature:	 Date: 04.02.25

Approval:

FHWA representative Name:	David E. Cremer
Title:	TTP Environmental Protection Specialist
Signature:	Date: 4/2/2025

FHWA Environmental Contacts:

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Terry Schumann,
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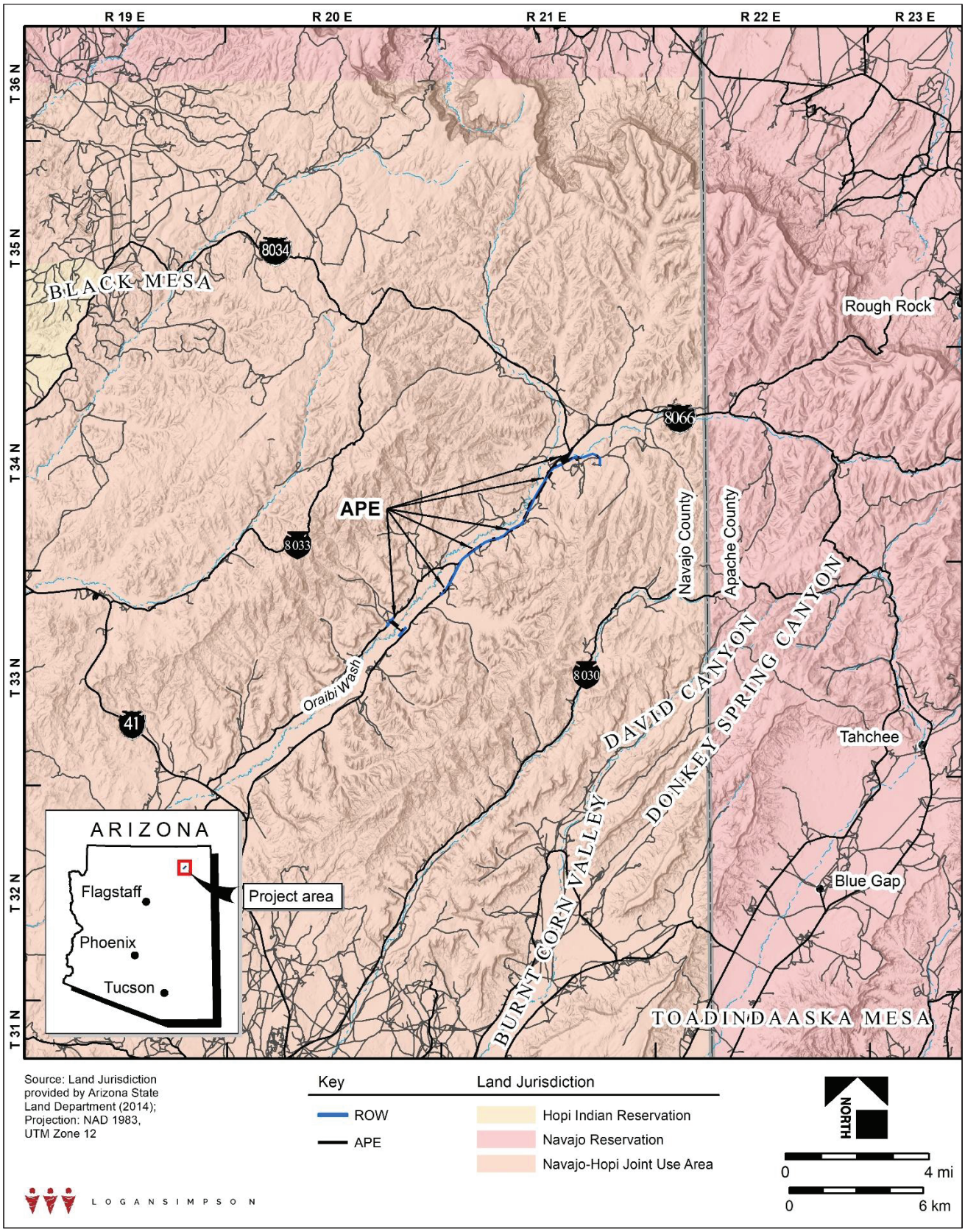


Figure 1. A cultural resources inventory along N8066 of 28 TCEs, 5 staging areas, a chapter/access road, and the N8065 bridge within Black Mesa, Navajo County, Arizona (NNDOT-21-002).

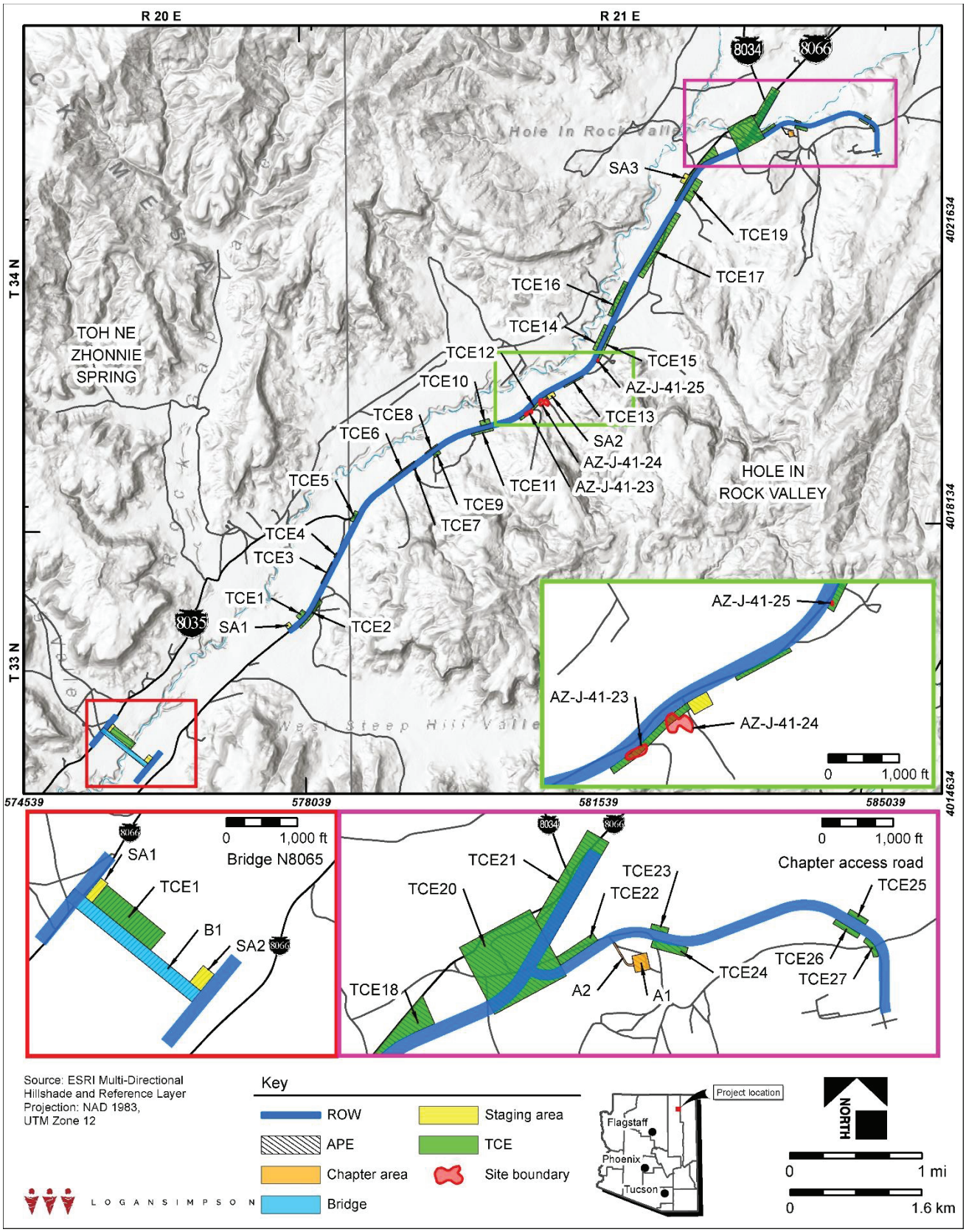


Figure 2. A cultural resources inventory along N8066 of 28 TCEs, 5 staging areas, a chapter/access road, and the N8065 bridge within Black Mesa, Navajo County, Arizona (NNDOT-21-002).

CHAPTER 5 BEST MANAGEMENT PRACTICES

As part of the Proposed Action, the contractor(s) will adhere to all federal, state, local, and tribal requirements and provide appropriate compliance documentation. Additionally, the contractor would adhere to all requirements within the project specifications.

- The contractor shall provide a traffic control plan and safety plan.
- The contractor will maintain access to existing properties, residences, and intersecting roads at all times.
- The contractor shall provide a SWPPP.
- Construction crews will implement dust-control measures, such as regular watering during land clearing and other related activities and covering loads during transport.
- The contractor shall be required to provide documentation which demonstrates compliance with NEPA and other federal regulations for construction equipment yards, material sources, and haul roads that are not covered by this assessment.
- If suspected hazardous materials are encountered during construction, work shall cease at that location and the Engineer will be notified immediately to make arrangements for proper treatment or disposal of those materials.
- 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.
- All oils, fuels, lubricants, and hydraulic fluids will be kept in sealed storage containers and or facilities that meet EPA regulations for preventing contamination of the environment.
- Damage to trees and shrubs outside of the construction limits will be replaced by the Contractor at his/her expense as directed by the Construction Manager.
- Due to the need for tree removal, a Timber Cutting Permit administered by the BIA, Division of Forestry and Wildlife Fire Management would be obtained prior to construction.
- Parking and staging areas will be limited to the construction limits. Existing roads may be used for detours, equipment storage, and hauling materials and water to the fullest extent possible with proper permits. Storage areas within the construction limits will utilize existing disturbed areas and be kept as small as possible.
- The installation of drainage structures will be undertaken in such fashion to minimize soil erosion and cover the pipe a minimum of 610 mm (24 inches) as measured from the roadway shoulder.
- Structural replacements will be performed during low- or no-flow periods to minimize water-quality impacts. No dumping of waste concrete will be allowed on the project site except in approved and lined pits on the project. Any and all excess concrete and asphalt materials will be disposed of (off-site) in accordance with EPA regulations and section 107.10 of the FP-2014.
- The Contractor will acquire water-use and aggregate material permissions/permits through the landowner process and follow all requirements of such permits, including royalties and environmental and CWA requirements.
- The government and project owner will acquire and the Contractor will comply with the following regulations regarding CWA permits:
    a) Section 401 & 404 permits to be acquired by owner.

b) Water Quality (Section 402) Certification to be acquired by owner.

c) NPDES permit and the SWPPP to be prepared by Contractor and approved by the Construction Manager.

- Comply with all mitigation requirements concerning archaeological sites on or near the project site as defined in the compliance documents.
- All construction trash and debris would be removed from the project site.
- All equipment brought in from off the site will be power washed before entering the site to avoid the possible introduction and invasion of noxious and invasive weeds.
- All construction trash and debris would be removed from the project site.
- Ground disturbance from the heavy equipment would be re-seeded with a certified weed-free seed mix per section 625 of the Manual for Standard Specifications for Construction of Roads on Federal Highway Projects (FP-14) supplemental specifications. The seed mix would be suitable to area and match existing native species.
- If populations of noxious weeds are encountered at any time, construction must cease and measures must be taken to clear the ROW. The problem area would be sprayed with the appropriate herbicide in accordance with Section 109.02m of the FP-14.
- By law, the target weed must be listed on the label of the herbicide being applied and the rate applied must be in accordance with the manufacturer's recommendations.
- Construction hours (limited to 40-hour work weeks) will be between 6:00 am and 8:00 pm, Monday through Friday, (weather permitting). In high wildlife use areas, an alternate construction schedule may be used in consultation with the Navajo Fish and Wildlife Department and/or the USFWS.

  The Contractor's camp and equipment storage area will be kept clean and free of litter at all times to prevent debris and litter from entering bodies of water. All trash will be disposed of in accordance with EPA regulations and all camp sites and equipment storage areas will be restored to their natural condition at project completion (in accordance with federal, tribal, state, or BLM permit requirements).
- The Contractor will inspect all construction equipment daily for leaks and notify the Construction Manager on the removal of leaking equipment from the project site until the leaking equipment is repaired and spills cleaned up to the satisfaction of the Construction Manager and Environmental Quality Office. Equipment will be washed down in a designated area to prevent the transport of mud, noxious weeds, and other debris from leaving the project limits when transporting equipment off the project site. The Contractor will collect and haul the debris to a disposal site.
- Ensure equipment involved in land-disturbing actions is clean of noxious weed seeds or propagative parts prior to entry on site. When working in areas with noxious weeds, equipment should be cleaned prior to moving off-site.
- Survey and inventory proposed work areas for noxious weeds and take reasonable measures to avoid spread of noxious weeds found (i.e., cleaning equipment with pressure washers, stockpiling overburden material for later treatment, avoiding driving through weed patches).

  Use only certified weed-free erosion control and revegetation materials (e.g., mulch, seed, natural fiber mats).

- If fill dirt or gravel will be required, the source needs to be noxious weed-free to the fullest extent possible.
- The Contractor should monitor the site for the life of the project for the presence of noxious weeds (includes maintenance and construction activities). If weeds are found, the Contractor will notify the Construction Manager who will determine the best method for the control of the particular weed species.
- Construct the project in accordance with FP-14 and in compliance with all applicable tribal and federal laws, codes, safety regulations, and executive orders.
- The Contractor will avoid any increase in sedimentation of bodies of water on or near the project by preparing and implementing a SWPPP. The Contractor will implement the SWPPP prior to any ground-disturbing activities. Adjustments to the SWPPP during construction shall be coordinated with the Construction Manager to ensure compliance with the CWA.
- The Contractor shall stockpile the existing topsoil for use in revegetation of borrow pits and roadway slopes, where feasible, in accordance with FP-14 and contract specifications. The cut and fill volumes will be balanced as much as possible to avoid the use of borrow sources and all slopes shall be rounded to blend into the existing terrain. All disturbed ground on the project will be disked, seeded, mulched, and revegetated as described in Section 625 of the FP-14 supplemental specifications.

CHAPTER 6 MITIGATION MEASURES

Additional measures to avoid, minimize, and mitigate impacts are listed below:

Cultural Resources

- Temporary avoidance fencing shall be installed around eligible sites— AZ-J-41-23, AZ-J-41-24, and AZ-J-41-25—with a 15-meter (50 feet) buffer to ensure avoidance.
- Dismantle and place TCP-1 at the end of the ROW or beyond the staging area.
- A monitoring and discovery plan shall be prepared prior to construction.
- A monitoring and discovery plan would be prepared prior to construction if the proposed avoidance measures are not possible and/or AZ-J-41 -23, AZ-J-41 -24, and AZ-J-41 -25 should be subjected to archaeological testing and/or data recovery program, as appropriate for the undertaking.
- A qualified cultural resource professional shall be present to monitor the placement of all temporary fences and monitor ground-disturbing activities within 15 meters (50 feet) of resources.
- All borrow areas, material sources, staging areas, and access routes shall be inventoried for cultural resources before any ground disturbance.
- In the event of a discovery ("discovery" means any previously unidentified or incorrectly identified cultural resources including but not limited to archaeological deposits, human remains, or locations reportedly associated with Native American religious/traditional beliefs or practices), all operations in the immediate vicinity of the discovery must cease, the Navajo DOT, and the NNHHPD must be notified.
- In the event that previously unreported cultural resources are encountered during ground-disturbing activities, all work must cease immediately within 15 meters (50 feet). The Navajo DOT must be contacted and NNHHPD's *Guidelines for the Treatment of Discovery Situations* must be followed in consultation with NNHHPD. Work must not resume in this area without the approval of Navajo DOT and NNHHPD
- If human remains are encountered during ground-disturbing activities, all work must immediately cease within 30 meters (100 feet) of the encounter. The Navajo DOT and the NNHHPD must be notified of the encounter within 24 hours (following Navajo Nation Policy for the Protection of *Jishchaa'*). All encounters will be treated with respect and in accordance with the Navajo Nation Policy for the Projection of *Jishchaa': Gravesites, Human Remains, and Funerary Items*, implemented pursuant to the Navajo Nation CRPA (CMY-19-88) or NAGPRA (Public Law 101-601; 25 U.S.C. 3001-3013). Work must not resume in this area without proper authorization from the NNHHPD.

Biological Resources

- Equipment operators shall stay within the proposed right-of-way of the road to avoid further impacts and disturbance outside of the project area.
- Implement Best Management plans and practices for erosion and sedimentation controls to alleviate siltation and sedimentation impacts along the right-of-way.
- A hazardous materials plan shall be developed and implemented to prevent leakage of toxic materials and hazardous substances from heavy equipment during grazing. All equipment shall be inspected daily for leaks and spills. All leaking equipment shall be removed from the site until

all leaks are repaired and cleaned up. All leaks and spills shall be reported to the BIA, Navajo Nation Department of Fish and Wildlife, and Navajo DOT.

- All toxic substances, oil, fuel, lubricants, and hydraulic fluids shall be kept in appropriate containers to prevent contamination of the environment.

Migratory Birds

- Removal of large trees or snags with cavities will be avoided, to the extent possible, during the migratory bird breeding season (March 1–August 31).
- If vegetation removal would occur during the migratory bird breeding season (March 1–August 31), preconstruction surveys would be conducted to identify active bird nests and disturbance to active nests would be avoided until the young have fledged.

THE NAVAJO NATION

Heritage & Historic Preservation Department
P.O. Box 4950 • Window Rock, Arizona 86515
(928) 871-7198 (tel) • (928) 871-7886 (fax)

CULTURAL RESOURCES COMPLIANCE FORM

NNHHPD NO.: HPD-23-080 **CONSULTANT REPORT NO.: NNDOT-21-002**

PROJECT TITLE: A Cultural Resource Inventory along N8066 of 28 TCEs, 5 Staging Areas, a Chapter/Access Road, and the N8065 Bridge in Black Mesa, Navajo County, Arizona.
LEAD AGENCY: FHWA
SPONSOR: Tom Platero, Division Director, Navajo Nation Division of Transportation, PO Box 4620 Window Rock, AZ 86515
PROJECT DESCRIPTION:
PROJECT ARCHAEOLOGIST: Anjanette Owens and Zachary Cooper
NAVAJO ANTIQUITIES PERMIT NO.: NTC535 **TOTAL ACREAGE INSPECTED:** 175.60
DATE INSPECTED: 4/1/2020 **DATE OF REPORT:** 3/9/2022
METHOD OF INVESTIGATION: Class III pedestrian inventory with transects spaced 15 m apart
LAND STATUS: NN Tribal Trust Land **CHAPTER:** Black Mesa
LOCATION: Township: 33N Range: 20E Section: 1 **QUAD:** Hole in the Rock Valley, AZ G&SRPM
UTM: Northing: 4016608 Easting: 577765 **DATUM:** NAD83 Zone 12
NUMBER OF ELIGIBLE PROPERTIES: 3 **NUMBER OF NON-ELIGIBLE PROPERTIES:** 0
NUMBER OF UNEVALUATED PROPERTIES: 0 **NUMBER OF ISOLATED OCCURRENCES:** 15
NUMBER OF TCPs: 1 **NUMBER OF IN-USE SITES:** 0
EFFECT/CONDITIONS OF COMPLIANCE: No Adverse Effect
PROCEED RECOMMENDED: Yes
CONDITIONS: Yes
Sites AZ-J-41-23, AZ-J-41-24, and AZ-J-41-25 shall be avoided, the site boundaries shall be temporarily fenced, and monitored during construction activities occurring within 50 feet of the site boundaries.

The TCP is potentially eligible, however, the Chapter House recommended removal and placed beyond the construction zone.
In the event of a discovery ["discovery" means any previously unidentified or incorrectly identified cultural resources including but not limited to archaeological deposits, human remains, or locations reportedly associated with Native American religious/traditional beliefs or practices], all operations in the immediate vicinity of the discovery must cease, and the Navajo Nation Heritage and Historic Preservation Department must be notified at (928) 871-7198.

FORM PREPARED BY: Rolf J. Nabahe **FINALIZED:** 2/24/2025

Richard M. Begay, Department Manager/THPO
Navajo Nation Heritage and Historic Preservation Department

02/25/25
Date

~ DOCUMENT IS VOID IF ALTERED ~

SPONSORS

Tom Platero, Division Director, Navajo Nation Division of Transportation

LOCATION INFORMATION

LAND STATUS: NN Tribal Trust Land DATUM: NAD83 ZONE: 12

STATE(S): AZ

COUNTY	QUADRANGLE(S)	UTM N	UTM E
Navajo	Hole in the Rock Valley, AZ	4016608	577765
	Toh Ne Zhonnie Spring, AZ	4023223	583717
		4022666	583392
		4022474	584930

CHAPTER	TOWNSHIP	RANGE	SECTIONS
Black Mesa	33N	20E	1
	33N	21E	6
	34N	21E	14, 21, 22, 28, 29, 31, 32