

INVITATION FOR BID
TO ESTABLISH A LISTING
FOR
LIGHTING IMPROVEMENT &
MAINTENANCE
GVB IFB 2019-004MS

GUAM VISITORS BUREAU INVITATION FOR BID	
IFB Number: <div style="border-bottom: 1px solid black; text-align: center; padding: 2px;">GVB IFB 2019-004MS</div>	IFB Title: <div style="text-align: center;">LIGHTING IMPROVEMENT & MAINTENANCE</div>
IFB Due Date and Time: <div style="text-align: center;">OCTOBER 21, 2019; 3:00 p.m.</div>	Number of Pages: 127; inclusive of Appendix H - References (85 pages attached separately); Attached appendices are numbered separately.
ISSUING AGENCY INFORMATION	
GUAM VISITORS BUREAU	Issue Date: SEPTEMBER 23, 2019
Ms. Pilar Laguaña President & CEO	401 Pale San Vitores Road Tumon, Guam 96913 Phone: (671) 646-5278 Fax: (671) 646-8861 Website: www.guamvisitorsbureau.com
INSTRUCTIONS TO BIDDERS	
Delivery of Bid <i>By U.S. Mail or Deliver Only to the attention of:</i> <div style="text-align: center;"> Ms. Pilar Laguaña President & CEO Guam Visitors Bureau 401 Pale San Vitores Road Tumon, Guam 96913 </div>	Mark Face of Envelope/Package: <div style="text-align: center;"> LIGHTING IMPROVEMENT & MAINTENANCE Number: GVB IFB 2019-004MS Due Date: OCTOBER 21, 2019; 3:00 p.m. </div>
	Special Instructions: PLEASE PROCESS PROPOSAL SUBMISSION IN ACCORDANCE WITH SECTIONS 4 AND 5 OF THE NOTICE/INSTRUCTIONS TO BIDDERS.
BIDDERS MUST COMPLETE THE FOLLOWING	
Bidder Name/Mailing Address:	Authorized Bidder Signatory:
	(PLEASE PRINT NAME AND SIGN IN INK)
Bidder Title:	Bidder Email Address:
Bidder Telephone Number:	Bidder FAX Number:
BIDDERS MUST RETURN THIS COVER SHEET WITH IFB RESPONSE	

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(85 pages attached separately)	

BIDDER'S IFB CHECKLIST

The 10 Most Critical Things to Keep in Mind When Responding to an IFB for GVB

1. **Read the entire document.** Note critical items such as: mandatory requirements; supplies/services required; submittal dates; number of copies required for submittal; contract requirements.
2. **Note the procurement officer's name, address, phone numbers and e-mail address.** This is the only person you are allowed to communicate with regarding the IFB and is an excellent source of information for any questions you may have.
3. **Attend the pre-bid conference** if one is offered. These conferences provide an opportunity to ask clarifying questions, obtain a better understanding of the project, or to notify GVB of any ambiguities, inconsistencies, or errors in the IFB.
4. **Take advantage of the "question and answer" period.** Submit your **written** questions to the procurement officer by the due date listed in the Invitation for Bid and view the answers given. Should an addendum be required, GVB will issue a formal "addendum" for the IFB. All addenda issued for an IFB are posted on GVB's website.
5. **Follow the format required in the IFB** when preparing your response. Provide point-by-point responses to all sections in a clear and concise manner.
6. **Provide complete answers/description.** Read and answer **all** questions and requirements. Don't assume GVB or evaluation committee will know what your company capabilities are or what items/services you can provide, even if you have previously contracted with GVB. The bids are evaluated based solely on the information and materials provided in your response.
7. **Use the forms provided**, i.e., cover page, "ALL" Affidavit forms, etc.
8. **Check the GVB website for IFB addenda.** Before submitting your response, check the GVB website at www.guamvisitorsbureau.com to see whether any addenda were issued for the IFB. If so, you must submit a signed copy of the addendum for each addendum issued along with your IFB response.
9. **Review and read the IFB document again** to make sure that you have addressed all requirements. Your original response and the requested copies must be identical and be complete. The copies are provided to the evaluation committee members and will be used to score your response.
10. **Submit your response on time.** Note all the dates and times listed in the Invitation for Bid and within the document, and be sure to submit all required items on time. Late bid responses are **never** accepted.

This checklist is provided for assistance only and should not be submitted with the Bidder's Response.

SECTION I	INVITATION FOR BID
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LIGHTING IMPROVEMENT & MAINTENANCE
GVB IFB 2019-004MS

The Guam Visitors Bureau (“GVB”), a public, non-stock corporation, invites sealed bids to establish and Pre-qualify a listing of Contractors for this Multi-Step Invitation for Bid according to the following schedule:

September 23, 2019	Bid Documents (USB format) available at GVB office or via the GVB website
October 1, 2019; 9:00 a.m.	Pre-Bid Conference: GVB Main Conference Room
October 4, 2019; 3:00 p.m.	Deadline to submit written questions
October 9, 2019	GVB response to questions
October 21, 2019; 3:00 p.m. BID SUBMISSION DEADLINE	Phase I: Opening of Technical Proposals to determine pre-qualification of bidders
October 25, 2019; 3:00 p.m.	Phase II: Opening of Bid Price
October 28, 2019; 3:00 p.m.	Award to multiple responsible and responsive bidders.
October 30, 2019; 3:00 p.m.	Notice to Proceed and Pre-Project Conference

This INVITATION FOR BID (USB format) may be obtained at the GVB Office, 401 Pale San Vitores Road, Tumon, Guam, 8:00 AM – 5:00 PM, Monday – Friday. A non-refundable \$25.00 fee is required for each USB packet obtained at the GVB Office. Methods of payment are:

- (1) US\$ Cash
- (2) Bank Wire Transfer
- (3) Major Credit Card (Visa, MasterCard, Discover, JCB)

IFB packet can also be **DOWNLOADED AT NO COST** from GVB’s website at www.guamvisitorsbureau.com.

Bids will be accepted until 3:00 PM Chamorro Standard Time, October 21, 2019 at the GVB office located at 401 Pale San Vitores Road, Tumon, Guam 96913. All questions relating to this invitation for bid should be made in writing to the President & CEO at procurement@visitguam.org according to the schedule provided.

Bid security in the amount of 15% of the engineer’s estimate of \$90,000/year must accompany all bids for this Indefinite Delivery, Indefinite Quantity contract. Bid security may be a bid bond, certified check or cashier’s check, made payable to the Guam Visitors Bureau.

GVB hereby notifies all bidders it will affirmatively ensure that minority business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color or national origin in consideration for an award of any contract entered into pursuant to this advertisement.

GVB reserves the right to reject any or all bids, solicit new bids, waive minor informalities or irregularities or award this contract in whole or in part. Except to the above person named, direct or indirect contact with the GVB Management or Staff, Board Member, or any person participating in the selection process is prohibited.

/s/ Pilar Laguaña
President & CEO

SECTION II	NOTICE/INSTRUCTIONS TO BIDDERS
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1. DESCRIPTION OF WORK

The Guam Visitors Bureau invites sealed bids from bidders for “Pre-qualification of Contractors and to establish a listing for this Invitation for Bid for the LIGHTING IMPROVEMENT & MAINTENANCE project as described in the Scope of Work (see Appendix A). The bid specification and drawings are also provided as Appendix B. This solicitation is issued as full and open with a period of performance of 12 months and four (4) 12-month options to renew.

2. PRE-BID CONFERENCE

The Pre-Bid Conference is scheduled for Tuesday, **October 1, 2019 at 9:00 a.m.** in the GVB Main Conference Room.

3. QUESTIONS AND INTERPRETATIONS

Questions concerning the Bid Documents shall be submitted in writing, via hand delivery, email to procurement@visitguam.org or fax at (671) 646-8861, to the President & CEO, Ms. Pilar Laguana. Replies will be issued to all bidders of record to the solicitation. Questions must be received at GVB no later than **3:00 pm on October 4, 2019**.

4. SEALED BIDS

This is a multi-step sealed bid procurement for an Indefinite Delivery, Indefinite Quantity multi-award contract.

All bids for this project shall be enclosed in a sealed envelope and shall be submitted at the place and time indicated in the bid package.

PART 1: Bid Proposal review to determine Bidder's qualifications

Bidders are advised that it is GVB's intent to ensure that only responsive, responsible, qualified and reliable contractors enter into a contract to perform the work as defined in this solicitation.

GVB considers the following qualifications to be a pre-requisite in order to be considered as a qualified Bidder for the purposes of this solicitation.

Responsive Bidders must meet the following requirements:

- A. Must agree to the terms and conditions as provided in this solicitation.
- B. Must show proof of ability and capability to perform the work required of this project.
- C. Must be licensed to do business on Guam and must show proof of all certifications necessary to perform the work as described.
- D. Must respond to the criteria as provided in the Scope of Work and compliance with submission requirements as indicated in this section and in Items 5, 10 and 25 of this section to determine the most responsive and responsible bidders.

Priced bids shall be submitted at the same time as the BID PROPOSAL but will remain sealed until after PART I is completed. Bidders who are found acceptable in PART I will be contacted to attend PART II - Bid Opening.

PART 2: Bid Price Opening

PART II participants will be those who receive a score of 80% or higher in PART I. The second sealed envelope in the bid submission marked "BID PRICE" and containing the BID BOND, BID FORM AND BID SCHEDULE shall be opened by the President & CEO at the time and place indicated in Section 1. GVB may award multiple bidders and rotate tasks based on the best values as provided in each respective price listing.

5. BID PACKAGE SUBMITTAL ITEMS

The proposal and bid must be sealed in separate envelopes and marked on the face with the name and address of the bidder and the Invitation for Bid number. Each bidder shall submit two (1) complete sets of the bid; one (1) marked "ORIGINAL" and one (1) marked "COPY." An official authorized to legally bind the bidder to all IFB provisions contained herein must sign the proposal and bid. Terms and conditions differing from those set forth in this IFB may be cause for disqualification of the bid.

A. Under a Cover letter, which should provide information about the company profile and experience, including resumes or a summary of qualifications and work experience, the bidder is required to submit the BID PROPOSAL package containing the following items, which will be reviewed during PART I:

- (1) Proof of License to do business on Guam (Business/Contractor's License);
- (2) Affidavits (forms provided in package)
 - a. Disclosure of Ownership and Commissions
 - b. Non-Collusion
 - c. Special Provisions
- (3) Minimum three (3) references receiving services similar to this project; at a minimum, provide the following information:
 - a. Company Name
 - b. Location where the services were provided
 - c. Contact person(s)
 - d. Customer's telephone number
 - e. A complete description of the service type
 - f. Dates the services were provided

B. Past Performance Questionnaire* (see Appendix G)

*shall be submitted directly to GVB by each reference and added to submission package.

A separate SEALED enveloped marked "BID PRICE" containing the following items must be complete and included in the bid packet, but will only be opened during PART II, if the bidder's total score during PART I is 80% or higher:

A. Bid Bond

B. Bid Form

C. Bid Schedule

Bidder must submit its proposal on the forms furnished by GVB. All blank spaces on the Proposal Forms and Bid Schedule must be correctly filled in for each and every item where a quantity is given. In case of an error in the extension or prices, unit price will govern. A conditional or qualified bid is non-responsive and will not be accepted. The proposal signatory must initial all erasures or other changes in the proposal.

Bidder shall sign his proposal in the blank space provided therefore. If proposal is made by a partnership or corporation, name and address of the partnership or corporation shall be shown together with names and addresses of the partners or officers. If proposal is made by a partnership, it shall be signed by one of the partners; if made by a corporation, it shall be signed by one of the officers thereof.

Bidder shall send the Past Performance Questionnaire to those companies in the project reference list. Each reference will be asked to complete and send their confidential response directly to procurement@visitguam.org and will be included as part of the bidder's submission if received on or before the deadline of this solicitation.

6. **LATE BIDS AND MODIFICATIONS OF WITHDRAWALS**

Bids and modifications or withdrawals thereof received at GVB after the exact time set for opening of bids will not be accepted. Bids may be withdrawn by written request received from bidders prior to the time set for opening bids.

7. **RIGHT TO ACCEPT AND REJECT BIDS**

GVB reserves the right in accordance with law and regulation and in its sole and absolute discretion, to reject any and all bids, or to accept that bid, if any, which in its sole and absolute judgment will, under all circumstances, best serve GVB's interests.

In the event that the successful bidder fails to execute contract upon his part, the GVB, after declaring the security deposit of such bidder forfeited, reserves the option to accept the bid of the second ranked bidder within ten (10) days from such default, in which case such acceptance shall have the same effect as to such bidder as though he were the originally successful bidder.

8. **BID GUARANTEE**

Bids shall be accompanied by a bid guarantee of not less than fifteen percent (15%) of the amount of the bid, which may be a Bid Bond (form enclosed), certified check or cashier's check, made payable to Guam Visitor's Bureau. Attorneys-in Fact who sign bid bonds shall file with each bond a certified and effective dated copy of their Power of Attorney.

Such bid bond or check shall serve to guarantee:

- A. That the bidder shall not withdraw his bid for a period of 60 days after the scheduled closing time for the receipt of bids;
- B. That if his bid is accepted, he will enter into a formal contract with GVB, in accordance with the contract for work included as part of the Contract Documents. In the event of withdrawal of said bid within said period, or failure to enter into said

contract, bidder shall be liable to GVB for the full amount of the bid guarantee as representing damage to the GVB on account of the default of the bidder in any particular case hereof.

Bid guarantee shall be returned to all except the three lowest bidders within three (3) days after formal opening of bids. Remaining Bid Bonds and checks will be returned to the three lowest bidders within forty-eight (48) hours after GVB and the accepted Bidder have executed an intent to award the contract by the GVB.

A surety company holding a certificate of authority from the United States Secretary of Treasury or from a company acceptable to the GVB shall execute guarantee Bonds. Checks or money order submitted as a bid guarantee shall be made payable to the Guam Visitors Bureau.

9. INDEFINITE DELIVERY, INDEFINITE QUANTITY (IDIQ) CONTRACT

Pursuant to 2GAR, Division 4, §3119 (i) Indefinite Quantity, this is an indefinite delivery, indefinite quantity contract, which is a contract for an indefinite amount of supplies or services to be furnished at specific times, or as ordered, that establishes unit prices of a fixed-price type. Said contract may be reviewed every 6 months for a determination of the continued need for such a contract; however, the term for this Lighting Improvement and Maintenance Project is full and open with a projected period of performance of 12 months and four (4) 12-month options to renew.

10. METHOD OF AWARD

In determining the lowest, responsive, responsible bidder(s), the Contracting Officer will, along with a review of the bid package submittal items listed in Section 5 above, award this contract based on the bidder's cover letter attesting to the factors listed in items a-f below:

- A. Quality of performance of bidder with regards to awards previously made to the company;
- B. The ability, capacity and skill of bidder to perform based on submitted bid documents;
- C. Character, integrity, reputation, judgment, experience, and efficiency of bidder;
- D. Ability of bidder to perform promptly or within specified time without delay or interference;
- E. Previous and existing compliance by bidder with laws and regulations relative to procurement;
- F. The sufficiency of the financial resources and ability of the bidder to perform.

11. LIQUIDATED DAMAGES

It is understood and agreed that liquidated damages shall be assessed against the Contractor for non-performance in accordance with the Liquidated Damages clause in the contract.

12. BID SECURITY

The successful bidder shall be required to furnish a bid bond amounting to fifteen percent (15%) of the total bid submitted.

13. STATUTORY REQUIREMENTS

The Contractor and any subcontractors employed in completion of the project shall comply with all applicable Federal and local laws.

14. NOTICE OF LOCAL PREFERENCE

In accordance with 5 Guam Code Ann. §5008, please take notice that the Guam Visitors Bureau will apply a local preference to this procurement. Accordingly, bidder requesting such a preference should do so in writing in the cover letter, and as part of their offer.

15. NOTICE REGARDING SERVICE DISABLED VETERANS

In accordance with 5 Guam Code Ann. §5011, please take notice that the Guam Visitors Bureau will apply a service-disabled veteran's preference to this procurement. Accordingly, bidders requesting such a preference should do so in writing in the cover letter, and as part of their offer.

16. REPRESENTATION REGARDING GRATUITIES AND KICKBACKS

(a) Gratuities. It shall be a breach of ethical standards for any person to offer, give or agree to give any employee or former employee, or for any employee or former employee to solicit, demand, accept or agree to accept from another person, a gratuity or an offer of employment in connection with any decision, approval, disapproval, recommendation, preparation of any part of a program requirement or a purchase request, influencing the content of any specification or procurement standard, rendering of advice, investigation, auditing, or in any other advisory capacity in any proceeding or application, request for ruling, determination, claim or controversy, or other particular matter, pertaining to any program requirement or a contract or subcontract; or to any solicitation or proposal therefor.

(b) Kickbacks. It shall be a breach of ethical standards for any payment, gratuity or offer of employment to be made by or on behalf of a subcontractor under a contract to the prime contractor or higher tier subcontractor or any person associated therewith, as an inducement for the award of a subcontract or order.

17. PROHIBITION AGAINST CONTINGENT FEES

(a) Contingent Fees. It shall be a breach of ethical standards for a person to be retained, or to retain a person, to solicit or secure a territorial contract upon an agreement or understanding for a commission, percentage, brokerage or contingent fee, except for retention of bona fide employees or bona fide established commercial selling agencies for the purpose of securing business.

(b) Representation of Contractor. Every person, before being awarded a territorial contract, shall represent, in writing, that such person has not retained anyone in violation of Subsection (a) of this Section. Failure to do so constitutes a breach of ethical standards.

18. REPRESENTATION REGARDING ETHICAL STANDARDS FOR GOVERNMENT EMPLOYEES AND FORMER GOVERNMENT EMPLOYEES The bidder or contractor

represents that it has not knowingly influenced and promises that it will not knowingly influence a government employee to breach any of the ethical standards set forth in 5 GCA Chapter 5 Article 11 (Ethics in Public Contracting) of the Guam Procurement Act and in Chapter 11 of the Guam Procurement Regulations.

19. DISCLOSURE OF MAJOR SHAREHOLDERS AFFIDAVIT

As a condition of bidding, any partnership, sole proprietorship or corporation doing business with the Government of Guam shall submit an affidavit executed under oath that lists the name and address of any person who has held more than fifteen percent (15%) of the outstanding interest or shares in said partnership, sole proprietorship or corporation at any time during the twelve (12) month period immediately preceding submission of a bid.

The affidavit shall contain the number of shares or the percentage of all assets of such partnership sole proprietorship or corporation which have been held by each such person during the twelve (12) month period.

In addition, affidavit shall contain the name and address of any person who has received or is entitled to receive a commission, gratuity or other compensation for procuring or assisting in obtaining business related to the bid or the bidder and shall also contain the amounts of any such commission, gratuity or other compensation. Affidavit shall be open and available to the public for inspection and copying.

All bidders are required to submit a current affidavit disclosing required information. Failure to do so will mean disqualification and rejection of the bid.

20. NON-COLLUSION AFFIDAVIT/CONFLICT OF INTEREST DISCLOSURES

By submitting an offer, the bidder certifies that the price submitted was independently arrived at without collusion. Bidders must submit a non-collusion affidavit and conflict of interest disclosures in the form provided with this Invitation for Bids. Failure to submit said affidavit and disclosures shall result in the bidder's proposal to be deemed non-responsive to this procurement.

21. RESTRICTION AGAINST CONTRACTORS EMPLOYING CONVICTED SEX OFFENDERS FROM WORKING AT GOVERNMENT OF GUAM VENUES

The bidder must submit with their proposal an affidavit (see attached) acknowledging their responsibilities under Guam statute 5 Guam Code Ann. § 5253. Restriction Against Contractors Employing Convicted Sex Offenders from Working at Government of Guam Venues. Per this statute, the bidder must affirm that:

1. That no person providing services on behalf of the contractor has been convicted of a sex offense under the provisions of Chapter 25 of Title 9 GCA or an offense as defined in Article 2 of Chapter 28, Title 9 GCA, or an offense in another jurisdiction with, at a minimum, the same elements as such offenses, or who is listed on the Sex Offender Registry; and
2. That if any person providing services on behalf of the contractor is convicted of a sex offense under the provisions of Chapter 25 of Title 9 GCA or an offense as defined in Article 2 of Chapter 28, Title 9 GCA or an offense in another jurisdiction with, at a minimum, the same elements as such offenses, or who is listed on the Sex Offender Registry, that such person will be immediately removed from

working at said agency and that the administrator of said agency be informed of such within twenty-four (24) hours of such conviction.

22. CANCELLATION OF THIS INVITATION FOR BIDS

Please take note that this Invitation for Bids may be cancelled as provided in Guam procurement law and Guam procurement rules and regulations. Prospective bidders are directed to review relevant law, statute and regulation and particularly 2 Guam Admin. R. & Reg. §3115.

23. WAGE AND BENEFIT DETERMINATION

(a) In such cases where the government of Guam enters into contractual arrangements with a sole proprietorship, a partnership or a corporation for the provision of a service to the government of Guam, and in such cases where the contractor employs a person(s) whose purpose, in whole or in part, is the direct delivery of service contracted by the government of Guam, then the contractor shall pay such employee(s) in accordance with the Wage Determination for Guam and the Northern Mariana Islands issued and promulgated by the U.S. Department of Labor for such labor as is employed in the direct delivery of contract deliverables to the government of Guam.

(b) The Wage Determination most recently issued by the U.S. Department of Labor at the time a contract is awarded to a contractor by the government of Guam shall be used to determine wages, which shall be paid to employees pursuant to this Article. Should any contract contain a renewal clause, then at the time of renewal adjustments, there shall be made stipulations contained in that contract for applying the Wage Determination, as required by this Article, so that the Wage Determination promulgated by the U.S. Department of Labor on a date most recent to the renewal date shall apply. In addition to the Wage Determination detailed in this Article, any contract to which this Article applies shall also contain provisions mandating health and similar benefits for employees covered by this Article, such benefits having a minimum value as detailed in the Wage Determination issued and promulgated by the U.S. Department of Labor, and shall contain provisions guaranteeing a minimum of ten (10) paid holidays per annum per employee.

24. ACKNOWLEDGEMENT OF RECEIPT OF AMENDMENTS

Potential bidders are advised that this Invitation for Bids may, from time to time be altered or supplemented by amendments. Each and all such amendments must be acknowledged by the potential bidder. Failure to do so may result in an offer being deemed non-responsive.

25. EVALUATION CRITERIA

GVB will review and rate the Bid Technical Proposals submitted according to the following criteria based on a maximum possible value of 100 points. In the rating and reviewing of Bid Proposals submitted, the factors and their relative importance will be as follows:

- A. Required Licenses/Affidavits/Required Forms.....(10 Points)**
- B. References.....(10 Points)**
- C. Company Profile/Resumes/Qualifications.....(40 Points)**
- D. Experience and Delivery Capability.....(40 Points)**

TOTAL MAXIMUM POINTS..... (100 Points)

Bid Proposal Requirements

All bid proposals submitted in response to this IFB shall contain the following information, which is detailed and rated. Bidders must provide sufficient detail to support their degrees or levels of expertise, job performance, and ability to perform the work contemplated:

Business/Contractor's License/Affidavits/Required Forms (10 points)

Bidders are expected to submit all requested documentation to prove ability and capability to do the work under the requirements of this IFB. Please provide copies of all licenses (i.e. contractor's license(s), master electrician's license, etc.).

References (10 Points)

The Bid Proposal should contain at least three (3) references receiving services similar to this project; at a minimum, provide the company name, location where services were provided, contact person, telephone number, complete description of the service type; dates the services were provided; and sample of work, if available. The submission of Past Performance Questionnaires from said references will be counted in this section.

Company Profile/Summary of Qualifications/Statement of Commitment (40 points)

The cover letter should provide information about the company profile and experience, including resumes or a summary of qualifications and work experience. Please provide a listing of current and completed contracts, contracts completed on time, contract not renewed due to failure to perform (at least 3 latest references), and summary of any Department of Labor (DOL) or Occupational Safety Hazard Act (OSHA) penalties. Include a statement regarding commitment and availability to perform the work for GVB. The resumes of all participating on this project should also be attached.

Delivery Capability (40 points)

The Bid Proposal should include delivery capability, such as explaining the methods of quality control, manpower available and equipment to perform the services, including timeliness and dependability of delivery of service as required of this IFB.

The following scale will determine whether a Bid Proposal will proceed to PART II of this solicitation:

90% - 100%	Acceptable
80%-89%	Potentially Acceptable
79% - below	Not Acceptable

26. CONTRACT TERM

The project term shall begin upon receipt of the Notice to Proceed through September 30, 2020 for Fiscal Year 2020 with the option to extend from year-to-year, as determined necessary and approved by GVB, for a period of up to five (5) years, subject to availability of funds.

SECTION III GENERAL PROVISIONS
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1. DEFINITIONS

- A. The term “GVB” as used herein shall mean the Guam Visitors Bureau. The term “Bureau” as used herein shall mean the Guam Visitors Bureau.
- B. The term “Contracting Officer” as used herein shall mean the President & CEO of GVB, the person executing this Contract on behalf of the GVB, and includes a duly appointed successor or authorized representative.
- C. The term “Contractor” shall mean the party (individual, corporation, joint venture, or partnership) who has entered into the Contract with the GVB.
- D. The term “Contract” shall mean the written agreement covering the performance of the project by the Contractor, including the furnishing of labor, materials and equipment in connection therewith. It shall include the invitation and solicitation, these general requirements and provisions, the notice to contractors, the bid, wage schedule, list of subcontractors, the award, the plans, the technical specifications, the bond, any addendum and any written order. It shall also include all amendments to the Contract by supplemental agreement thereto in writing.
- E. “Project” shall mean the work to be performed as described in the technical specifications.
- F. The term “Work” shall mean all equipment, materials, operations and incidental activities necessary for the completion of any part or all of the project.
- G. The term “Project Manager” shall mean the duly authorized representative of the Contracting Officer who is responsible for the administration of the Contract.

2. PERMITS AND RESPONSIBILITIES

The Contractor shall, without additional expense to the GVB, be responsible for obtaining any necessary licenses and permits and for complying with any applicable Federal and local codes and regulations, in connection with execution of the work. He shall be similarly responsible for all damage to persons or property that occurs as a result of his fault or negligence. He shall take proper safety and health precautions to protect the work, the workers, the public, and the property of others. He shall also be responsible for all materials delivered and work performed until completion and acceptance of the entire project.

3. CONDITIONS AFFECTING THE WORK

Contractor shall be responsible for having taken steps reasonably necessary to ascertain the nature and location of the work, and the general and local conditions, which can affect the work or cost thereof. Any failure by the Contractor to do so will not relieve him from responsibility for successfully performing the work without additional expense to GVB. GVB assumes no responsibility for any understanding or representations concerning conditions made by any of its officers or agents prior to execution of this Contract, unless such understanding or representations by GVB are expressly stated in the Contract.

4. ADDITIONAL BOND SECURITY

If any surety upon any bond furnished in connection with this Contract becomes unacceptable to the GVB, or if any such surety fails to furnish reports as to his financial condition from time to time as requested by the GVB, the Contractor shall promptly furnish such additional security as may be required from time to time to protect the interests of the GVB and of persons supplying labor or materials in the prosecution of the work contemplated by this Contract.

5. COVENANT AGAINST CONTINGENT FEES

The contractor represents that it has not retained a person to solicit or secure a territorial contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, except for retention of bona fide employees or bona fide established commercial selling agencies for the purpose of securing business.

6. OFFICIALS NOT TO BENEFIT

No member of the Government of Guam Legislature or the Governor of Guam shall be admitted to any share of this Contract, or to any benefit that may arise therefrom; but this provision shall be construed to extend to this Contract if made with a corporation for its general benefit.

7. DISPUTES

- A. All controversies between the GVB and the contractor which arise under, or are by virtue of, this contract and which are not resolved by mutual agreement, shall be decided by the GVB in writing, within 60 days after written request by the contractor for a final decision concerning the controversy; provided, however, that if the GVB does not issue a written decision, within 60 days after written request for a final decision, or within such longer period as may be agreed upon by the parties, then the contractor may proceed as if an adverse decision had been received.
- B. The GVB shall immediately furnish a copy of the decision to the contractor, by certified mail, return receipt requested, or by any other method that provides evidence of receipt.
- C. Any such decision shall be final and conclusive, unless fraudulent, or: (i) the contractor brings an action seeking judicial review of the decision in the Superior Court of Guam.
- D. The contractor shall comply with any decision of the GVB and proceed diligently with performance of this contract pending final resolution by the Superior Court of Guam of any controversy arising under, or by virtue of, this contract, except where there has been a material breach of the contract by the territory; provided, however, that in any event the contractor shall proceed diligently with the performance of the contract where the GVB has made a written determination that continuation of work under the contract is essential to the public health and safety.

8. CONTRACT AND BONDS

If the successful bidder fails to satisfactorily execute the required forms of contract within the time established in the bid, the GVB may proceed to have the required work performed by contract or otherwise, and the bidder to whom the award was originally made shall be liable for any excess cost to the GVB and the bid guaranty shall be available toward offsetting such excess cost.

9 WORKING HOURS

Routine maintenance work shall be conducted during normal working hours (7:00 AM through 6:00 PM) Monday through Friday and should not exclude the possibility of working after hours and on weekends for emergency calls. Contractor must respond to emergency calls at any time of the day or night for the purposes of energizing or de-energizing streetlights or crosswalk power supplies; or for other services deemed necessary for health or safety. Such determination shall be by GVB and not the Contractor.

10. FEES AND CHARGES

Contractor shall obtain and pay all fees and charges for connections to outside services and for the use of property outside of the work site.

11. FEDERAL AND TERRITORY OF GUAM TAXES

Except as may be otherwise provided in this Contract, the Contract price includes all applicable Federal and local taxes and duties.

12. ACCIDENT PREVENTION – PUBLIC SAFETY

In performance of the Contract, Contractor shall comply with applicable provisions of the U.S Occupational Safety and Health Act (OSHA), and shall take all precautions necessary to protect persons and property.

13. DISPUTES CONCERNING LABOR STANDARDS

Dispute arising out of the Labor Standards provisions of this Contract shall be subject to the clause entitled “Disputes” of this Contract except to the extent such disputes involve classifications or wage rates, which questions shall be referred to the Contracting Officer.

14. NONCOMPLIANCE WITH CONTRACT REQUIREMENTS

In the event the Contractor, after receiving written notice from the Contracting Officer of noncompliance with any requirement of this Contract, fails to initiate promptly such action as may be appropriate to comply with the specific requirement within a reasonable period of time, the Contracting Officer shall have the right to order the Contractor to stop all other work and correct the deficiency. The Contractor will not be entitled to any extension of contract time or payment for any costs incurred as a result of being ordered to stop work for such cause.

15. INSURANCE – LIABILITY TO THIRD PERSONS

The Contractor and his subcontractors shall procure thereafter maintain workmen’s compensation, builders’ risk, comprehensive general liability (bodily damage), and fire and extended coverage insurance, with respect to performance under this Contract; provided, that the Contractor may, with the approval of the Contracting Officer, maintain a self-insurance program. All insurance required pursuant to the provisions of this paragraph shall be in such form in such amounts, and for such periods of time as the Contracting Officer may, from time to time, require or approve, and with insurers approved by the Contracting Officer.

A. Automobile liability insurance in an amount not less than \$500,000 Combined Single

Limit (CSL) for bodily injury or death per person and for damages to property for each occurrence.

- B. Comprehensive general liability insurance with minimum limits of \$1,000,000 Combined Single Limit (CSL) for bodily injury or death and for property damage per occurrence.
- C. Workmen's Compensation. Contractor shall take out adequate workmen's compensation insurance for all of the employees who will be engaged in work at the site of the project and in case any part of such Contractor's contract is sublet, the Contractor will require his subcontractor's employees who will be so engaged, unless the latter's employees are protected by the principal contractor's insurance.

The comprehensive general and automobile liability policies shall contain a provision worded as follows: The insurance company waives any right of Subrogation against the GVB, which may arise by reason of any payment under this policy.

When a subcontractor is utilized, Contractor shall procure and maintain during contract period, insurance coverage with same bodily injury and property damage liability limits specified above, covering accidents caused by actions of subcontractor or employees.

All of the insurance policy or policies herein prescribed shall be procured and maintained at no cost to the GVB and shall have the GVB named as additional insured; provided that, where the GVB may not be named as an insured under the rules applicable to any policy or policies, the Contractor shall procure and maintain at no expense to the GVB contractor's protective insurance providing the GVB with the same coverage's and limits of liability as are required herein for the Contractor. A copy of such policy or policies shall be furnished to the GVB at the time prescribed in the contract documents. Such policy or policies shall contain an endorsement to the effect that the insuring company will notify GVB thirty (30) days prior to the effective date of any cancellation of such policy or policies or any change in their provisions.

16. LIQUIDATED DAMAGES

In lieu of any other provision regarding liquidated damages it shall be mutually agreed and understood by and between the parties to this contract that time and strict adherence to the work requirements shall be of essence to the contract unless otherwise directed by the Contracting Officer. In case of failure on the part of the Contractor to complete required services within the time agreed upon and in accordance with the specified work requirements, it is agreed that the damages being impossible of definite ascertainment, that liquidated damages shall be fixed at the sum of 15% of the work item dollar amount which was performed late, as determined by the Contracting Officer and acknowledged by the Contractor in Section IV (Bid Proposal) of this Invitation for Bid. Any work item not performed and not able to be made up will be deducted from the contract by prorating as determined by the Contracting Officer.

SECTION IV

BID PROPOSAL

Date: _____

Hafa Adai:

The undersigned (hereafter called the Bidder), a _____, (Corporation, Partnership or Individual) organized and/or licensed to do business under the laws of the Government of Guam hereby proposes and agrees to furnish all the necessary labor, materials, equipment, tools and services necessary for the performance of the following project:

LIGHTING IMPROVEMENT & MAINTENANCE

all in accordance with the Bid Documents for the prices stated in the itemized Bid Schedule forms attached hereto, plus any and all sums to be added and/or deducted resulting from all extra and/or omitted work in accordance with the unit and/or lump sum prices stated in the itemized Bid Schedule forms attached hereto.

The undersigned has visited and inspected the location of the proposed work, reviewed the Bid Documents and is familiar with and knowledgeable of the local conditions at the place where the work is to be performed.

The individual Bid Bond attached, with our endorsement, in the sum of not less than fifteen percent (15%) of the amount of each Proposal, is furnished to GVB as a guarantee that the Agreement will be executed and a Performance Bond furnished within fifteen (15) days after award of the Contract to the undersigned. In the event that this Proposal is accepted, and the undersigned bidder shall fail to execute the contract and furnish a satisfactory Performance Bond under the conditions and within the time specified in this Proposal, the Bid Bond shall be forfeited, as liquidated damages for the delay and additional work and costs caused thereby in obtaining another bidder, said amount being beforehand determined as being reasonable and containing no penalties.

If written notice of the acceptance of this bid is mailed, telegraphed or delivered to the undersigned within sixty (60) days after the opening thereof, the undersigned agrees to execute the form of Agreement included as one of the Contract Documents, and to furnish a Performance Bond in an amount equal to one hundred percent (100%) of the Contract Amount, within fifteen (15) days after receipt of such notice.

If awarded the Contract, the undersigned agrees to perform the work for the duration of the contract period and any extensions thereto upon commencement of the contract time as defined in the Contract.

The undersigned understands that the GVB reserves the right to reject any or all Bids or to waive any informality or technicality in any Bid in the interest of the GVB. All required affidavits and forms are included in this bid proposal.

RESPECTFULLY SUBMITTED BY:

(CONTRACTOR)

(BY)

(TITLE)

(BUSINESS ADDRESS)

SECTION V

BID FORM

PROJECT: LIGHTING IMPROVEMENT & MAINTENANCE

TO: President & CEO
Guam Visitors Bureau
Tumon, Guam

Dear Madam:

The undersigned bidder, having examined all pertinent Contract Documents relating to this Invitation for Bid (GVB IFB 2019-004MS), proposes to provide all labor, materials, equipment, tools, appliances, transportation, storage and items incidental to completing all work based on the Proposal and Bid Schedule consisting of the combination of lump sum and unit price items for the following sum of:

Performance as per Bid Documents and Bid Schedule for one year (Base Bid):

_____ Dollars (\$_____)

(TOTAL OF MATERIALS AND LABOR AND ALL OTHER COSTS)

Bidder hereby further agrees to commence work under this Contract on the date specified in the written "Notice to Proceed" by GVB and to fully complete the work designated for performance within the time stipulated in the Contract Documents. Bidder further agrees to pay liquidated damages in accordance with the Liquidated Damages section of the General Provisions.

By submission of this bid, each bidder and each person signing on behalf of any bidder and in the case of a joint bid each party thereto certified as to its own organization, certifies and affirms as true to the best of his knowledge and belief:

- a. The prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement for the purpose of restricting competition, as to any other matter relating to such prices with any other bidder or with any competitor.
- b. Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder or to any competitor; and no attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.
- c. That if the product of the UNIT PRICE bid by the number of units does not equal the total amount named by a bidder of any item, it will be assumed that the error was made in computing the product of the unit price and the number of units. The named UNIT PRICE alone will be considered as representing the bidder's intention and the total amount bid on such item shall be considered to be the amount arrived at by multiplying the UNIT PRICE by the number of units.

d. All matters for this project of which there is not a special item in the Bid Schedule, shall be considered incidental to and included in the Contractor's bid on any items in the Bid Schedule, as the bidder sees fit.

This bid may be withdrawn at any time prior to the scheduled time for the opening of bids or any authorized postponement thereof.

Dated:_____

BY_____

Address_____

SECTION VI

BID BOND

KNOW all men by these presents, that we

(Name of Contractor)
as Principal, and

(Name of Surety)

as surety are held and firmly bound unto the Guam Visitors Bureau, hereinafter called the GVB, in the penal sum of _____ dollars, lawful money of the United States, for the payment of which sum will and truly be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these present.

The condition of this obligation is such, that whereas the principal has submitted the accompanying bid dated _____ 2019 for **the LIGHTING IMPROVEMENT & MAINTENANCE project.**

THE BID BOND will remain in effect until such time as GVB awards the contract.

In Witness Whereof, the above-bound parties have executed this instrument under their several seals this _____ day of _____, 20____ the name and corporate seal of each corporate party being hereto affixed and these present duly signed by its undersigned representative, pursuant to authority of its governing body.

The rate of premium on this bond is _____ per thousand.

Total amount of premium charged,

\$ _____
(The above must be filled in by corporate surety)

IN PRESENCE OF:

_____	_____ (SEAL)
_____	(Individual Principal)
_____	_____
_____	(Business Address)
_____ (Address)	_____ (SEAL)
	(Individual Principal)
_____	_____
_____ (Address)	(Business Address)

	(Corporate Principal)

Attest:

(Business Address)

AFFIX CORPORATE SEAL

By: _____

Attest:

(Corporate Surety)

(Business Address)

AFFIX CORPORATE SEAL

By: _____

CERTIFICATE AS TO CORPORATE PRINCIPAL

I, _____, certify that I am the _____
_____ secretary of the corporation named as principal in the within
bond; that _____, who signed the said bond on behalf of the
principal was then _____

_____ of said corporation; that I know his signature, and his signature thereon is genuine; and that said
bond was duly signed, sealed and attested for and in behalf of said corporation by authority of
its governing body.

(CORPORATE SEAL)

SECTION VII

AFFIDAVITS/FORMS

ALL FORMS MUST BE COMPLETED AND ATTACHED

- 1:** Affidavit re Non-Collusion
- 2:** Affidavit re Major Shareholder Disclosure
- 3:** Affidavit re Special Provisions

AFFIDAVIT re NON-COLLUSION

Type of Service Being Offered: _____

Name of Offeror (Firm or Individual): _____

IN AND FOR GUAM)
)
VILLAGE OF _____) SS.

_____ being first duly sworn,
deposes and says:

That he/she is _____ (the respondent, a partner of the respondent, an officer of the respondent) making the foregoing identified bid or proposal; that such bid or proposal is genuine and not collusive or a sham; that said respondent has not colluded, conspired, connived or agreed, directly or indirectly, with any other respondent or person, to put in a sham proposal or to refrain from making an offer, and has not in any manner, directly or indirectly, sought by an agreement or collusion, or communication or conference, with any person to fix the proposal price of respondent or of any other respondent, or to fix any overhead, profit or cost element of said proposal price of respondent or of that of any other respondent, or to secure any advantage against the Government of Guam or any other respondent, or to secure any advantage against the Government of Guam or any person interested in the proposed contract; and that all statements in this affidavit and proposal are true.

Signature of individual if Offeror is a sole Proprietorship;
Partner, if the Offeror is a Partnership; Officer, if the
Offeror is a Corporation.

SUBSCRIBED AND SWORN to before me this _____ day of _____, 2019.

Notary Public
My Commission Expires: _____

THIS AFFIDAVIT **MUST** BE COMPLETED AND RETURNED IN THE ENVELOPE
CONTAINING THE BID PROPOSAL.

AFFIDAVIT re MAJOR SHAREHOLDER DISCLOSURE

Name of Offeror (Firm or Individual): _____

IN AND FOR GUAM)
)
VILLAGE OF _____) SS.

1. I, the undersigned, being first duly sworn, depose and say that I am an authorized representative of the undersigned and that

[please check one]:

☐ The respondent is an individual or sole proprietor and owns the entire interest in the Offeror's company.

☐ The respondent is a corporation, partnership, joint venture, or association, and the persons, companies, partners, or joint ventures that have held more than 10% of the shares or interest in the Offeror's business for the twelve months preceding the submission of this proposal are as follows *[if none, please so state]*:

<u>Name</u>	<u>Address</u>	<u>% of Shares of Interest Held</u>
-------------	----------------	-------------------------------------

2. Further, I say that the persons who have received or are entitled to receive a commission, gratuity or other compensation for procuring or assisting in obtaining business related to the bid or proposal for which this affidavit is submitted are as follows *[if none, please so state]*:

<u>Name</u>	<u>Address</u>	<u>Compensation</u>
-------------	----------------	---------------------

3. If the ownership of the offering business should change between the time this affidavit is made and the time an award is made or a contract is entered into, then I promise to personally to update the disclosure required by 5 GCA § 5233 by delivering another affidavit to the government.

Signature of individual if Offeror is a sole Proprietorship; Partner, if the Offeror is a Partnership; Officer, if the Offeror is a Corporation.

SUBSCRIBED AND SWORN to before me this ___day of _____, 2019.

Notary Public
My Commission Expires: _____

**THIS AFFIDAVIT MUST BE COMPLETED AND RETURNED IN THE ENVELOPE
CONTAINING THE BID PROPOSAL.**

AFFIDAVIT re SPECIAL PROVISIONS

If a contract for services is awarded to the bidder or Offeror, then the service provider must warranty that they will comply with the following Procurement laws and regulations identified in the IFB:

1. The Offeror should be familiar with federal and local laws, codes, ordinances, and regulations, which, in any manner, affect those engaged or employed in the work, or the material or equipment used in or upon the site, or in any way affect the conduct of the work. No misunderstanding or ignorance on the part of the Offeror will in any way serve to modify the provision of the contract.

2. **Prohibition Against Gratuities and Kickbacks**

The Offeror duly represents that he or she has not violated, is not violating, and will not violate the prohibition against gratuities and kickbacks set forth in the Guam procurement law as follows (2 G.A.R., Div. 4, Chap. 11, §11107(3)):

It is a breach of ethical standards for any person to offer, give, or agree to give any government employee or former government employee, or for any government employee or former government employee to solicit, demand, accept, or agree to accept from another person, a gratuity or an offer of employment in connection with any decision, approval, disapproval, recommendation, preparation of any part of a program requirement or a purchase request, influencing the content of any specification or procurement standard, rendering of advice, investigation, auditing, or in any other advisory capacity in any proceeding or application, request for ruling, determination, claim or controversy, or other particular matter, pertaining to any program requirement or a contract or subcontract, or to any solicitation or proposal therefore. Further, it shall be a breach of ethical standards for any payment, gratuity, or offer of employment to be made by or on behalf of a subcontractor under a contract to the prime contractor or higher tier subcontractor or any person associated therewith, as an inducement of the award of a subcontract or order.

3. **Ethical Standards**

The Offerors shall duly represents that he, she, they or it has not knowingly influenced, and promises that it will not knowingly influence, a government employee to breach any of the ethical standards set forth in the Guam procurement laws and regulations pertaining to ethics in public contracting. (2 G.A.R., Div. 4, Chap. 11, §11103(b))

4. **Covenant Against Contingent Fees**

The Offeror warrants that no person was retained for a commission, percentage, brokerage, or contingent fee to solicit or secure any resultant contract upon agreement. Breach of this warranty shall give [Entity Name] the right to terminate the contractor, or at its discretion to deduct from the contract price or consideration the amount of such commission, percentage, brokerage, or contingent fees. This warranty shall not apply to commission payable by contractors upon contracts or sales secured or made through *bona fide* established commercial or selling agencies maintained by the contractor for the purpose of securing business. (2 G.A.R., Div. 4, Chap. 11, §11108(f) and (h))

5. **Wage Determination Established and Benefits**

The Offeror has read and understand the provisions of 5 GCA §5801 and §5802, which read:

- a. §5801. Wage Determination Established.

- i. In such cases where the government of Guam enters into contractual arrangements with a sole proprietorship, a partnership or a corporation (“contractor”) for the provision of a service to the government of Guam, and in such cases where the contractor employs a person(s) whose purpose, in whole or in part, is the direct delivery of service contracted by the government of Guam, then the contractor shall pay such employee(s) in accordance with the Wage Determination for Guam and the Northern Mariana Islands issued and promulgated by the U.S. Department of Labor for such labor as is employed in the direct delivery of contract deliverables to the government of Guam.
 - b. The Wage Determination most recently issued by the U.S. Department of Labor at the time a contract is awarded to a contractor by the government of Guam shall be used to determine wages, which shall be paid to employees pursuant to this Article. Should any contract contain a renewal clause, then at the time of renewal adjustments, there shall be made stipulations contained in that contract for applying the Wage Determination, as required by this Article, so that the Wage Determination promulgated by the U.S. Department of Labor on a date most recent to the renewal date shall apply.
 - c. §5802. Benefits.
 - i. In addition to the Wage Determination detailed in this Article, any contract to which this Article applies shall also contain provisions mandating health and similar benefits for employees covered by this Article, such benefits having a minimum value as detailed in the Wage Determination issued and promulgated by the U.S. Department of Labor, and shall contain provisions guaranteeing a minimum of ten (10) paid holidays per annum per employee.
 - d. That the Offeror is in full compliance with 5 GCA §5801 and §5802, as may be applicable to the procurement referenced herein;
 - e. That I have attached the most recent wage determination applicable to Guam issued by the U.S. Department of Labor. [*INSTRUCTIONS-Please attach Appendix F*]
6. **Restriction Against Contractors Employing Convicted Sex Offenders from Working at Government of Guam Venues.** (§5253 of Title 5 Guam Code Annotated)
- a. No person convicted of a sex offense under the provisions of Chapter 25 of Title 9 Guam Code Annotated, or an offense as defined in Article 2 of Chapter 28, Title 9 GCA in Guam, or an offense in any jurisdiction which includes, at a minimum, all of the elements of said offenses, or who is listed on the Sex Offender Registry, and who is employed by a business contracted to perform services for an agency or instrumentality of the government of Guam, shall work for his employer on the property of the government of Guam other than a public highway.
 - b. All contracts for services to agencies listed herein shall include the following provisions: (1) warranties that no person providing services on behalf of the contractor has been convicted of a sex offense under the provisions of Chapter 25 of Title 9 GCA or an offense as defined in Article 2 of Chapter 28, Title 9 GCA, or an offense in another jurisdiction with, at a minimum, the same elements as such offenses, or who is listed on the Sex Offender Registry; and (2) that if any person providing services on behalf of the contractor is convicted of a sex offense under the provisions of Chapter 25 of Title 9 GCA or an offense as

defined in Article 2 of Chapter 28, Title 9 GCA or an offense in another jurisdiction with, at a minimum, the same elements as such offenses, or who is listed on the Sex Offender Registry, that such person will be immediately removed from working at said agency and that the administrator of said agency be informed of such within twenty-four (24) hours of such conviction.

- c. Duties of the General Services Agency or Procurement Administrators. All contracts, bids, or Requests for Proposals shall state all the conditions in §5253(b).
- d. Any contractor found in violation of §5253(b), after notice from the contracting authority of such violation, shall, within twenty-four (24) hours, take corrective action and shall report such action to the contracting authority. Failure to take corrective action within the stipulated period may result in the temporary suspension of the contract at the discretion of the contracting authority.”

Signature of individual if Offeror is a sole Proprietorship; Partner, if the Offeror is a Partnership; Officer, if the Offeror is a Corporation.

SUBSCRIBED AND SWORN to before me this _____ day of _____, 2019.

Notary Public

My Commission Expires: _____

THIS AFFIDAVIT **MUST** BE COMPLETED AND RETURNED IN THE ENVELOPE
CONTAINING THE BID PROPOSAL.

SECTION VIII

AUTHORIZED CONTACT

AUTHORIZED CONTACT FOR CONTRACT*

IFB NUMBER: GVB IFB 2019-004MS

NAME	
TITLE	
COMPANY	
MAILING ADDRESS	
TELEPHONE NUMBER	
FACSIMILE NUMBER	
EMAIL	

**If the authorized contact for contract is not the authorized signatory for the company, then an affidavit from the company owner must be included to verify the name listed on this form as authorized contact for contract for this procurement and must accompany the submission.*

APPENDIX A

Scope of Work

TITLE	PAGE #
Project Description and Summary	33
Time of Completion	34
Payment	34
Safety	35
Background	36
Materials	37
Inspection & Testing	37
Lighting System	37
General Description of Scope of Work for Lighting When Required by Construction Manager	38
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SCOPE OF WORK

PROJECT DESCRIPTION AND SUMMARY

The Guam Visitors Bureau “GVB” is a non-stock, non-profit, membership corporation, which by legal authority leads Guam’s efforts to maintain and improve Guam’s tourism industry.

Tumon Bay (Tomhum Bay) is the heart of the tourist district. Its main artery, Chalan San Vitores (also Pale San Vitores Road), connects the entire district from north to south. Chalan San Vitores sees thousands of local residents and visitors daily along its streets and sidewalks. As such, it must be maintained to provide the safest, cleanest experience possible for residents, employees and visitors.

Integral parts of this maintenance requirement include street and sidewalk lighting, crosswalks and crosswalk lighting and adequate directional and international pedestrian and vehicle signage. As part of its maintenance program, GVB is inviting bids from qualified and responsive construction providers for the following project:

LIGHTING IMPROVEMENT & MAINTENANCE

The scope of work includes repair, including replacement when necessary, of streetlight assemblies including poles, repair of panels and cabinets, replacement of stainless-steel panels, replacement of wiring to and between streetlight fixtures, installation of new LED street lighting fixtures and median lighting panels, concrete footings and fixtures. It also includes the repair of light pole fixtures, attachments, components, base plate covers and selected pole arms.

The project may require digging, trenching, and restoration to replace damaged conduits.

The project also includes the maintenance and some upgrades of crosswalks, including concrete, pavers, curbs, striping, markings, warning lights and signage.

The Contractor shall be solely responsible for performing all work and for furnishing all materials, labor, supplies and parts inventory and equipment necessary to complete the Work. The Contractor shall make necessary assessments and diagnoses of existing facilities prior to work ensure proper materials are on hand.

Work shall be scheduled, sequenced, and performed in a manner which minimizes disruption to the public. When activated, the Contractor shall prepare daily QC (Quality Control) Reports and Contractor Production Reports submitted to GVB via its Construction Manager for approval. The Contractor shall provide daily report photographs taken prior construction and after finishing work for each aspect of the work.

This is an on-call service agreement. Hence, this maintenance and upgrade contract will not require an overall Progress Schedule.

However, where work is to exceed two days in duration, the Contractor shall incorporate construction and schedule constraints in preparing a **“Look-Ahead”** Schedule. The schedules shall include the Contractor's activities necessary to satisfy all constraints of the Contract Documents.

The Work shall be performed and coordinated in such order or precedence as determined by the Contractor, subject to the conditions and the approval of the Construction Manager. Each completed streetlight panel shall be inspected and approved by Construction Manager prior payment.

Coordinate power disconnections with GPA and street control with DPW.

TIME OF COMPLETION

The Contractor shall begin Work within ten (10) days after the date set forth in the Notice to Proceed and shall complete all Work under the Contract as follows:

Diagnosis	Within 8 hours of notification
Electrical circuit re-setting	Within 24 hours of notification
Fixture replacement	Within 24 hours of notification
Photocell replacement	Within 24 hours of notification
Breaker and Contactor replacement	Within 24 hours of notification
Plate Covers, Baseplate Covers	Within 24 hours of notification
Wire Replacement	Within 24 hours of notification
Cement Cracks in Poles	Within 7 days of notification
Flush lighting/In Pavement LED Crosswalk Lighting Markers Installation	75 Days Maximum
Standard “Crosswalk Ahead” Signpost	5 Days Maximum
Standard “Crosswalk Ahead” Lighted Signpost	21 Days Maximum
Concrete Curb Repair at Crosswalks	14 Days Maximum
Re-Striping – Crosswalks	14 Days Maximum
New Striping and Markings – Crosswalk	45 Days Maximum

The foregoing is provided as a guideline and all work to be done is likely not included in the list. In this case the Contractor shall submit a schedule of when such work shall be done. The schedule is subject to mutual agreement among GVB, the Construction Manager and the Contractor. In case of disagreement, the final decision shall be by GVB.

PAYMENT

Certify and sign statement on each invoice that all work to be paid under the invoice has been completed in accordance with contract requirements.

SAFETY

Continuous operation of Street Lighting is of critical importance. The Contractor shall schedule and conduct activities to enable the existing facilities to operate continuously, unless otherwise approved by Construction Manager.

The 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. The Contractor shall be responsible for preventing health hazards arising from work related activities of its employees. Persons shall be afforded safe passages around areas of demolition.

The Contractor shall exercise care in preserving vegetation and protecting property, to avoid disturbing areas beyond the limits of the Work and promptly repair any damage caused by Contractor operations.

Stockpiles of earth and other construction-related materials shall be protected from being transported from the Site by wind or water.

Traffic Control, when required, shall comply with the requirements of the Guam Police Department and the Department of Public Works. This traffic control is anticipated to be required primarily when the work is at the crosswalks but may be required for work on the streetlights as well, e.g., when a bucket truck will be blocking one lane during the work.

In all cases the provisions for safety must adhere to the Manual on Uniform Traffic Control Devices (MUTCD) including the provisions for pedestrian and bicycle traffic, OSHA requirements for the protection of workers and others, permits or notifications required by the Guam Police Department and applicable sections of the Guam Building Code including the NFPA, the NEC and IBC 2009.

The Contractor must have a Safety Officer on staff with the appropriate certifications. Personnel working on electrical systems must be supervised by a competent technician and must be trained in safety procedures.

Appropriate safety certifications shall be current for any personnel working on high-lift bucket truck, ladder and extended ladder work, confined spaces, electrical equipment and traffic safety.

The Contractor must have established procedures for all work being performed under this contract including emergency instructions, first aid/CPR assistance and emergency contact information.

Any work including diagnosis must be accompanied by a pre-work safety meeting (tailgate or otherwise), and an AHA must be submitted for any types of work under this contract. The AHA should include lockout/tagout procedures.

BACKGROUND

The modern evolution of the Pale San Vitores Road in Tomhum first began in 1978 when sidewalks and infrastructure were installed to allow a center turning lane and signalization.

A complete reconstruction of Pale San Vitores Road began in 1996 through 2000 as part of the Tumon Bay Infrastructure and Beautification Project (TBIB), a special bond-funded capital improvement. Under this reconstruction, modern signalized intersections connected the five-lane (center lane included) highway along the entire length of the Tomhum Bay Hotel District.

Phase I of this project consisted of the reconstruction of Pale San Vitores from its intersection at the Australian Cable intersection at Marine Drive to the Westin then through the Happy Landing Road intersection. This segment also included a stretch of Gogña Road from the Westin to the Nikko Hotel intersection. This reconstruction included infrastructure upgrades for water, sewer, electrical, cable, communications, roadways and sidewalks.

Phase II consisted of the same from Happy Landing Road up to the rotunda at the Pale San Vitores/Chalan San Antonio intersection.

Other segments covered under this IFB include Fahrenholt Avenue from Oka Payless to the Sheraton Hotel and portions of Camp Watkins Road.

Along with the other infrastructure installed in TBIB, the street lighting and crosswalks systems are now approaching 23 and 19 years of service in Phase I and Phase II, respectively. Since their initial installation, the crosswalks and streetlighting system have been and are subject to the wear and tear of traffic and time.

Both systems have been repaired through individual maintenance efforts, but a continuous servicing of these systems is required especially as they approach the end of their usable life.

The appendix contains information from the TBIB and from a recent evaluation and service contract issued by GVB for the streetlighting system.

This project will provide on-call servicing for the street lighting system on the main hotel strip in Tomhum. It will also provide maintenance and some upgrades to the medians along San Vitores as well as the other segments mentioned above.

The Contractor shall refer to the Appendix which contains details in the form of drawings, cut sheets and other information. The Contractor shall verify the scope of the Work. The Contractor shall comply with the maintenance and guarantee requirements.

MATERIALS

Due to time constraints, long-lead materials will need to be ordered. Refer to the attached list at end of this document for long-lead materials. There is still a requirement for readily available additional materials for this project to be purchased by the contractor.

The contractor is responsible for maintaining an inventory of long-lead materials to be stored in an enclosed moderate temperature facility. Electronic and electrical devices are to be stored in an air-conditioned facility approved by GVB.

Any additional material proposed by the contractor to be maintained in inventory shall be approved by construction manager and may be paid as undistributed materials.

Any removed existing materials will remain the property of GVB unless the Contractor receives the construction manager's approval to properly dispose of or to keep the materials.

INSPECTION AND TESTING

All applicable tests, special inspections, and observations required by the contract shall be approved by the Construction Manager.

Perform and participate in Pre-Final and Final Inspection of every task. Submit a list of deficiencies to the Construction Manager for each inspection. Correct all deficiencies prior to the Final inspection. Notify Construction Manager prior to final inspection to establish a schedule date acceptable by the Construction Manager. This provision is applicable to each repair or servicing task from simple replacement to complete redo's.

The Contractor shall maintain a testing plan and log. Ensure that all testing is performed in accordance with the U.S. Department of Transportation Federal Highway Administration FHWA Lighting Handbook August 2012 or later, the MUTCD and the manufactures recommendations. Review all test reports and notify the Construction Manager of all deficiencies, along with a proposal for corrective actions.

LIGHTING SYSTEM

As mentioned above the Tumon Bay Street Lighting System was partly installed under the Tumon Infrastructure and Beautification Phase 1 and Phase II Project completed in 1998 and 2002. The different phases included improvements to the infrastructure and utilities.

An assessment of the Phase II was completed in 2004.

Due to lack of qualified maintenance and repair the Tumon Bay Street Lighting System remain in what was described in 2004 as a "...desolate state of emergency." This was because of the unreliable lighting system that worked sporadically in some cases. A major issue in 2004 was the nuisance tripping of circuits based on weather conditions, a condition which continues today.

An assessment was conducted to provide information about the as-built status as much as possible and condition of the Street Lighting System. That information was and is valuable for developing an asset status, introduction of maintenance programs and proactively rebuilding an aging system.

The assessment was extensive utilizing visual inspection from ground, visual inspection from bucket-truck and use of selected specialized testing equipment to be as objective as possible to ensure valuable consistency of collected data. That assessment included the Street Lighting Panel (SLP) enclosure (also cabinet/panel box). It did not include the transformer, connectivity, and metering at the SLP's. The entire Tumon Bay Street Lighting System consists of 18 SLPs (panels).

Electrical insulation of conductors and connections tends to become brittle over time and may crack resulting in circuit breaker nuisance tripping; this insulation degradation accelerates if rainwater and other contaminations (i.e. rodents) can enter the electrical system.

The 2004 assessment did not include transformers, connectivity and metering but this project includes those components.

Other than environmental wear and tear and incidents, vandalism, unauthorized tampering and road traffic accidents affect the functionality of a street lighting system.

The traffic accident incidents are generally not covered under this Project. However, in the cases of hit-and-run events the Contractor may be required to provide repair or replacement services.

There are three different types of Street Lighting Concrete Poles (pole) configurations. The first consists of poles with both a street (larger fixture) and a sidewalk (smaller fixture) lighting fixture, the second one is a street lighting fixture alone and the third is a sidewalk lighting fixture alone.

Some streetlight fixtures have been already replaced by energy efficient LED fixtures. Data was collected using tools such as megger testing equipment to test the insulation properties of the wires. During the evaluation, many of the light fixtures were not operational and some worked sporadically.

GENERAL DESCRIPTION OF SCOPE OF WORK FOR LIGHTING WHEN REQUIRED BY CONSTRUCTION MANAGER

The following is a guide list of the types of work to be completed under this contract for the lighting segment of the contract.

Most of these components of the lighting system are located along roadways and sidewalks. There may be instances where the Contractor will be directed to repair lighting system components away from the roadway or sidewalks when deemed necessary by GVB.

These include but are not limited to park lighting, public lighted areas such as the driveway to parks, the GVB parking lot and the areas surrounding bus stops and bus stations.

- Submit Schedule of each type of replacement or repair. This schedule may consist of a general description for purposes of bid evaluation. During the contract execution a “Look-Ahead” Schedule may be required for tasks or repairs requiring several days.
- Replace all non-LED lighting fixtures with new LED energy efficient lighting fixtures complete with housing. (Smaller size fixtures for sidewalk and larger size fixtures for street).
- Replace all other lighting fixtures with LED energy efficient lighting fixtures complete with housing. (Smaller size fixtures for sidewalk and larger size fixtures for street)
- Replace Lighting Fixtures of any Type with Fixture Types directed by the Construction Manager.
- Clean all concrete footing at SLPs to remove overgrown vegetation and other dirt, and mold/mildew.
- Remove all overgrown vegetation’s at the SLPs and Street Lighting Fixtures, including mold/mildew.
- Replace all damaged concrete footings as required. Place new concrete footing central within 3 feet of existing location and as far away from traffic as possible on Median. Install two red retro reflective safety devices (cat eyes or similar) on each side of the concrete footing in each driving direction.
- Replace all conductors from the SLPs to all street lighting concrete poles and conduits as required. Contractor needs to determine total conductor length.
- Replace all lighting conductors at SLPs.
- Replace all wiring inside of all street lighting concrete poles. From wire cover plate to lighting fixture.
- Replace all conductors from the SLPs to all Median Panels and conduits as required. Contractor shall supply all conductors for the medians.
- Install new circuit breakers into new Median panels.
- Replace all conductors from the Median panel to all spotlights on median and conduits as required.
- Install new fused lighting connectors for every lighting fixture at each concrete pole.
- Replace all deteriorated hardware from enclosures, conduits to bolts and replace all corroded framing hardware.
- Replace all SLP stainless steel enclosures (reuse internal panels and enclosures). Install new rigid conduit entering from concrete footing to enclosure and use Myers Hub to connect to the enclosure. Replace all lighting contactors. Reuse all other materials inside the SLP.
- Replace all Median stainless-steel enclosures. Install new rigid conduit and use Myers Hub to connect to the enclosure.
- Replace all conduits entering the SLPs and use only Myers hub.
- In addition, replace all photocells and install locking type photo control devices and mating receptacles in compliance with ANSI C136.10 and UL 773.

- Replace damaged or missing poles.
- Replace damaged and missing concrete pole base plate covers.
- Replace missing wire cover plate at concrete poles as required.
- Install conduit sealant/putty on all new and existing conduits to prevent intrusion of water.
- Install new fused inline watertight connectors at all concrete poles.
- Install new conductors and other wiring system as deemed necessary. Use for each wiring connection in addition two layers of rubber mastic tape.
- ID each concrete pole numbering per the SLP system (to be provided). Provide a one-line diagram for each SLP where wiring to or from the SLP is replaced or affected. Base concrete pole numbering on one-line diagram.
- Any other work and materials not listed here that are required to have a full functioning Street Lighting System. Wire is generally available locally.
- Provide all equipment and tools, including high-reach equipment, required for this project.
- Replace damaged underground conduits as required. Such replacement shall include concrete encasement of 3" with 2500 PSI concrete all around. Conduits shall be placed at a 24" minimum depth under roadways/driveways with detectable warning tape at 12" below finish grade to be installed. Provide selected backfill no larger than 2". Provide compaction at 95%. Repair pavement to existing condition.
Sand cushion (sand backfill) conduit all around 4" with selected sand (sieve size of 3/8" or less). A 24" minimum depth under sidewalks (no roadway/driveway) shall be maintained. Install detectable warning tape at 12" below finish grade. Provide selected backfill no larger than 2". Provide compaction at 95%. Repair finished grade to existing condition.
- Install new pedestrian crossing warning lights where directed. Such PCWL's shall be connected by micro-duct (2" or less) cuts along crosswalks.
- Provide a 1-year warranty for any new installations. Repairs shall be warranted for 30 days or for the manufacturer's warranty whichever is longer.
- Inspect the street lighting system at a minimum once per week after sundown to confirm that all light fixtures and photocells are working correctly. Provide a weekly report to GVB for review.
- When directed by GVB to provide repairs or replacement, obtain work authorization and materials approvals immediately the next working day. Include cost for replacement of defective LED lighting fixtures under warranty. The LED fixtures are coming with a 7 years' warranty if installed and maintained correctly in confirmation with manufacturer installation and maintenance recommendation. Provide maintenance of LED lighting fixtures in confirmation with manufacturer recommendations.
- Be proactive and be able to react in a timely fashion in order to upkeep a working street lighting system.
- Maintain proper maintenance, repair and inventory records providing details on the state of the lighting system. Submit these records at the first Monday of every month. Identify

shortcomings and implement best practice maintenance standards. Keep maintenance and repair records together with the lighting systems operation and maintenance documentation.

- Ensure that repairs or replacements are carried out in compliance with industry standards and that materials are installed within manufacturer's recommendations.

Routine Maintenance, Inspection, and Repair Reports for all routine work and shall contain the following:

1. SLP and Pole number or other Description Acceptable to Construction Manager
2. Date, time, and reported by
3. Short description of defect and proposed repair
4. Troubleshooting performed
5. Work Performed
6. Materials replaced/used
7. Special order materials
8. Date, time, work completed

Note: All new installations shall include a 1-year warranty, e.g., pole assembly or fixture assembly replacement. All repair work shall include a 30-day warranty.

CROSSWALKS AND PEDESTRIAN LIGHTING

As mentioned above the Tumon Bay crosswalks were for the most part installed under the Tumon Infrastructure and Beautification Phase 1 and Phase II Project completed in 1998 and 2002.

Since then, some modifications and repairs have been effected at various crosswalks along the 4-mile stretch of Pale San Vitores Road. Recent paving repairs to the section of Fahrenholt Avenue from Oka Payless to the Sheraton have been completed but without improvements to the pedestrian safety features.

The Contractor is required to appropriately schedule all crosswalk work so as to incorporate traffic encroachment permits and other requirements, and to provide Look-Ahead schedules for approval prior to any crosswalk work.

Crosswalk work under this project can be generally described as:

- Repair and maintenance of crosswalk curbs and surfaces.
- Restriping of existing warning striping, new striping and new striping and warnings

- Repair or upgrade of existing signage, repair or upgrade of warning lighted signage, installation of new signage, lighted signage, warning lights, lighting and unlighted surface indicators including surface lights, raised pavement markers and rumble strips
- Temporary signage and warning devices may be required as part of this contract

Due to lack of qualified maintenance and repair resources and other priorities by the Department of Public Works, crosswalk maintenance has generally been left to the GVB or to property owners affected by fronting or nearby crosswalks.

As with the Tumon Bay Street Lighting System the crosswalks can also be described as being in a near state of emergency.

Recent reference data indicates the Tumon San Vitores can peak as high as 25,000 ADT. This ADT consists of motorcycles, passenger cars, mid-size vans and buses and delivery trucks including up to 72-passenger buses.

This major volume causes structural damage at the terminus points where crosswalks occur remain in what was described in 2004 as a "...desolate state of emergency." This project will address both routine maintenance and emergency maintenance requirements for crosswalk structures, surfaces, signage and signalization.

The Contractor shall be expected to be able to respond to emergency requirements which may include temporary warning signs, barricades, flashing messaging indicators (trailerable) and temporary concrete or pavement repairs.

Traffic Control when required shall comply with the requirements of the Guam Police Department and the Department of Public Works. This traffic control is anticipated to be required primarily when the work is at the crosswalks but may be required for work on the sidewalks and medians as well.

In all cases the provisions for safety must adhere to the Manual on Uniform Traffic Control Devices (MUTCD) including the provisions for pedestrian and bicycle traffic, OSHA requirements for the protection of workers and others, permits or notifications required by the Guam Police Department and applicable sections of the Guam Building Code including the NFPA, the NEC and IBC 2009.

Striping materials and applications, surface and mounted lighting and structural repairs must be performed by technicians certified by manufacturers or licensed or certified in the work required to the satisfaction of the Construction Manager.

The Contractor must have a Safety Officer on staff with the appropriate certifications. Personnel working on electrical or indicator and sensor systems must be supervised by a competent technician and must be trained in safety procedures.

Appropriate safety certifications shall be current for any personnel working on high-lift bucket truck, ladder and extended ladder work, confined spaces, electrical equipment, mechanized equipment such as backhoes, dump trucks and “Bobcats” for example, and traffic safety.

The Contractor must have established procedures for all work being performed under this contract including emergency instructions, first aid/CPR assistance and emergency contact information.

Any work including diagnosis must be accompanied by a pre-work safety meeting (tailgate or otherwise), and an AHA must be submitted for any types of work under this contract. The AHA should include traffic control requirements procedures.

No roads or lanes shall be closed without a 5-day notice to GVB except in cases of emergencies.

Refer to the Appendices for additional data and information.

END OF APPENDIX A

APPENDIX B Specifications

SPECIFICATIONS (FP-03) (BID PACKAGE – SEPTEMBER 2019)

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SECTION 106 ACCEPTANCE OF WORK

106.02 Visual Inspection. Acceptance is based on visual inspection of the work for compliance with the contract and prevailing industry standards.

106.03 Certification. For material manufactured off-site, use a manufacturer with an ISO 9000 certification or an effective testing and inspection system. Require the manufacturer to clearly mark the material or packaging with a unique product identification or specification standard to which it is produced.

Other than references in or to the FAR or Federal Law, when these Standard Specifications reference certifications; certificates; or certified documents, equipment, or individuals, these references are not certifications under Section 4301 of Public Law 104-106, National Defense Authorization Act for Fiscal Year 1996. These references refer to documentation of non-regulatory, peripheral contract requirements that are required to be validated by an individual or organization having unique knowledge or qualifications to perform such validation.

Material accepted by certification may be sampled and tested at any time. If found not in conformance with the contract, the material will be rejected whether in place or not.

One of the following certifications may be required:

(a) Production certification. Material requiring a production certification is identified in the Acceptance Subsection of each Section. Require the manufacturer to furnish a production certification for each shipment of material. Include the following with each production certification:

- (1) Date and place of manufacture;
- (2) Lot number or other means of cross-referencing to the manufacturer's inspection and testing system; and
- (3) Substantiating evidence that the material conforms to the contract quality requirements as required by FAR 46.105(a)(4), including all of the following:
 - (a) Test results on material from the same lot and documentation of the inspection and testing system;
 - (b) A statement from the manufacturer that the material complies with all contract requirements; and
 - (c) Manufacturer's signature or other means of demonstrating accountability for the certification.

(b) Commercial certification. When a certification is required, but not a production certification, furnish one commercial certification for all similar material from the same manufacturer.

A commercial certification is a manufacturer's or Contractor's representation that the material complies with all contract requirements. The representation may be labels, catalog data, stamped specification standards, or supplier's certifications indicating the material is produced to a commercial standard or specification.

106.04 Measured or Tested Conformance. Provide all necessary production and processing of the work and control performance of the work so that all of the work complies with the contract requirements.

Results from inspection or testing shall have values within the specified tolerances or specification limits. When no tolerance values are identified in the contract, the work will be accepted based on customary manufacturing and construction tolerances.

END OF SECTION 106

SECTION 109 MEASUREMENT AND PAYMENT

109.01 Measurement of Work. Take and record measurements and perform calculations to determine pay quantities for invoicing for work performed. Take or convert all measurements of work according to United States customary measure.

Unless otherwise specified, measure when the work is in place, complete, and accepted. Measure the actual work performed, except do not measure work outside the design limits or other adjusted or specified limits (staked limits). Measure structures to the lines shown on the plans or to approved lines adjusted to fit field conditions.

Take measurements as described in Subsection 109.02 unless otherwise modified by the Measurement Subsection of the Section controlling the work being performed.

Remeasure quantities if it has been determined that any portion of the work is acceptable but has not been completed to the lines, grades, and dimensions shown on the plans or established by the CO.

Submit measurement notes to the CO within 24 hours of completing the work. For on-going work, submit measurement notes weekly. When work is not complete, identify the measurement as being an interim measurement. Submit the final measurement when the installation is completed. Measurement notes form the basis of the Government's receiving report (see Subsection 109.08(d)). For lump sum items, submit documentation to support invoiced progress payment on a monthly basis.

Use an acceptable format for measurement records. As a minimum, include the following information in all records of measurement:

- (a) Project name and number;
- (b) Contract item number;
- (c) Date the work was performed;
- (d) Location of the work;
- (e) Measured quantity;
- (f) Calculations made to arrive at the quantity;
- (g) Supporting sketch and details as needed to clearly define the work performed and the quantity measured;
- (h) Names of persons measuring the work;
- (i) Identification as to whether the measurement is interim or final; and
- (j) Signed certification statement by the persons taking the measurements, performing the calculations, and submitting them for payment that the measurement and calculations are correct to the best of their knowledge and that the quantity being measured is subject to direct payment for the identified item under the contract.

109.05 Scope of Payment. Payment for all contract work is provided, either directly or indirectly, under the pay items shown in the bid schedule.

(a) **Direct payment.** Payment is provided directly under a pay item shown in the bid schedule when one of the following applies:

- (1) The work is measured in the Measurement Subsection of the Section ordering the work, and the bid schedule contains a pay item for the work from the Section ordering the work.
- (2) The Measurement Subsection, of the Section ordering the work, references another Section for measuring the work and the bid schedule contains a pay item for the work from the referenced Section.

(b) Indirect payment. Work for which direct payment is not provided is a subsidiary obligation of the Contractor. Payment for such work is indirectly included under other pay items shown in the bid schedule. This includes instances when the Section ordering the work references another Section for performing the work and the work is not referenced in the Measurement Subsection of the Section ordering the work.

Compensation provided by the pay items included in the contract bid schedule is full payment for performing all contract work in a complete and acceptable manner. All risk, loss, damage, or expense arising out of the nature or prosecution of the work is included in the compensation provided by the contract pay items.

Work measured and paid for under one pay item will not be paid for under any other pay item.

The quantities shown in the bid schedule are approximate unless designated as a contract quantity. Limit pay quantities to the quantities staked, ordered, or otherwise authorized before performing the work. Payment will be made for the actual quantities of work performed and accepted or material furnished according to the contract. No payment will be made for work performed in excess of that staked, ordered, or otherwise authorized.

109.08 Progress Payments. Follow the requirements of FAR Clauses 52.232-5 Payments under Fixed-Price Construction Contracts and 52.232-27 — Prompt Payment for Construction Contracts.

(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 submitted to, and accepted by, the CO.

(b) Closing date and invoice submittal date. The closing date for progress payments will be designated by the CO. Include work performed after the closing date in the following month's invoice. Submit invoices to the designated billing office.

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

- (1) The information required in FAR Clause 52.232-27(a)(2)(i) through (a)(2)(xi).
- (2) A tabulation of total quantities and unit prices of work accomplished or completed on each pay item as of the monthly closing date. Do not include any quantities unless field note documentation 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.
- (3) The certification required by FAR Clause 52.232-5(c) and, if applicable, the notice required by FAR Clause 52.232-5(d). Provide an original signature on the certification. Facsimiles are not acceptable.
- (4) If applicable, a copy of the notices that are required by FAR Clause 52.232-27(e)(5) and (g).
- (5) The amount included for work performed by each subcontractor under the contract.
- (6) The total amount of each subcontract under the contract.
- (7) The amounts previously paid to each subcontractor under the contract.
- (8) Adjustments to the proposed total payment that relate to the quantity and quality of individual items of work. Adjustments for the following may be made by the Government after validation of the invoice:
 - (a) Retent resulting from a failure to maintain acceptable progress;

- (b) Retent resulting from violations of the labor provisions;
- (c) Retent pending completion of incomplete work, other "no pay" work, and verification of final quantities;
- (d) Obligations to the Government such as excess testing cost or the cost of corrective work pursuant to FAR Clause 52.246-12(g); or
- (e) Liquidated damages for failure to complete work on time.

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

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

(1) Proper invoices. If the invoice meets the requirements of Subsection 109.08(c), and the quantities and unit prices shown on the Contractor's invoice agree with the corresponding quantities and unit 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 any of the quantities or unit prices shown on the Contractor's invoice exceed the corresponding quantities and unit prices shown on the Government's receiving report, the invoice is defective, and the Contractor will be notified according to FAR Clause 52.232-27(a)(2). 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 unit 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, 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 storage places.

Partial payment for material does not constitute acceptance of such material for use in completing items of work. Partial payments will not be made for living or perishable material until incorporated into the project.

Partial payments for material will not exceed the lesser of:

- (1) 80 percent of the contract bid price for the 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.

109.09 Final Payment. Follow the requirements of FAR Clause 52.232-5 Payment under Fixed-Price Construction Contracts and FAR Clause 52.232-27 Prompt Payment for Construction.

Upon final acceptance and verification of final pay records, the Government will send, by certified mail, a final voucher (SF 1034) 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.

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 shall constitute and be deemed execution of the documents and the release of all 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.

END OF SECTION 109

SECTION 151 MOBILIZATION

151.01 Description. This work consists of moving personnel, equipment, material, and incidentals to the project and performing all work necessary before beginning work at the project site. Mobilization includes the obtaining of permits, insurance, and bonds.

151.02 Measurement. Measure mobilization according to Subsection 109.02.

151.03 Payment. 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 according to FAR Clause 52.232-5 Payments Under Fixed-Price Construction Contracts, after receipt of the evidence of payment.
- (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.

END OF SECTION 151

SECTION 152 CONSTRUCTION SURVEY AND STAKING

152.01 Description. This work consists of furnishing qualified personnel and necessary equipment and material to survey, stake, calculate, and record data for the control of work. See FAR Clause 52.236-17 Layout of Work.

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

(a) **Personnel.** Furnish technically qualified survey crews experienced in highway construction survey and staking. Provide personnel capable of performing in a timely and accurate manner. An acceptable crew supervisor shall be on the project whenever surveying/staking is in progress.

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

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

Construction Requirements

152.02 General. Include staking activities in the construction schedule submitted according to Section 155. Include the dates and sequence of each staking activity. The Government will set initial reference lines, will set horizontal and vertical control points, and will furnish the data for use in establishing control for completion of each element of the work. Data relating to horizontal and vertical alignment, theoretical slope stake catch points, and other design data will be furnished.

Before beginning construction, notify the CO of any missing initial reference lines, control points, or stakes. The Government will reestablish initial reference lines, control points, and stakes missing before the beginning of construction.

Perform additional calculations for convenient use of Government-furnished data. Provide immediate notification of apparent errors in the initial staking or in the furnished data.

Preserve all initial reference and control points. After beginning construction, replace all destroyed or disturbed initial reference or control points necessary to the work.

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

- (a) Surveying and staking methods;
- (b) Stake marking;
- (c) Grade control for courses of material;
- (d) Referencing;
- (e) Structure control; and
- (f) Any other procedures and controls necessary for the work.

Survey and establish controls within the tolerances shown in Table 152-1.

Prepare field notes in an approved format. Furnish all survey notes at least weekly. All field notes and supporting documentation become the property of the Government upon completion of the work.

Start work only after staking for the affected work is accepted.

The construction survey and staking work may be spot-checked for accuracy, and unacceptable portions of work may be rejected. Resurvey rejected work, and correct work that is not within the tolerances specified in Table 152-1.

Acceptance of the construction staking does not relieve the Contractor of responsibility for correcting errors discovered during the work and for bearing all additional costs associated with the error.

Remove and dispose of all flagging, lath, stakes, and other staking material after the project is complete.

152.03 Survey and Staking Requirements. Perform all survey, staking, recording of data, and calculations as necessary to construct the project from the initial layout to final completion. Reset stakes 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 and elevations for the relocated points before the initial points are disturbed.

(b) Roadway cross-sections. Take roadway cross-sections normal to centerline. When the centerline curve radius is less than or equal to 500 feet, take cross-sections at a maximum centerline spacing of 25 feet. When the centerline curve radius is greater than 500 feet, take cross-sections at a maximum centerline spacing of 50 feet. Take additional cross-sections at significant breaks in topography and at changes in the typical section. Along each cross-section, measure and record points at breaks in topography, but no further apart than 20 feet. Measure and record points to at least the anticipated slope stake and reference locations. Reduce all cross-section distances to horizontal distances from centerline.

(c) Slope stakes and references. Set slope stakes and references on both sides of centerline at the cross-section locations. Establish slope stakes in the field as the actual point of intersection of the design roadway slope with the natural ground line. Set slope stake references outside the clearing limits. Include all reference point and slope stake information on the reference stakes. When initial references are provided, slope stakes may be set from these points with verification of the slope stake location with field measurements. Recatch slope stakes on any section that does not match the staking report within the tolerances established in Table 152-1. Take roadway cross-section data between centerline and the new slope stake location. Set additional references even when initial references are provided.

(d) Clearing and grubbing limits. Set clearing and grubbing limits on both sides of centerline at roadway cross-section locations.

(e) Centerline reestablishment. Reestablish centerline from instrument control points. The maximum spacing between centerline points is 25 feet when the centerline curve radius is less than or equal to 500 feet. When the centerline curve radius is greater than 500 feet, the maximum distance between centerline points is 50 feet.

(f) Grade finishing stakes. Set grade finishing stakes, for grade elevations and horizontal alignment, on centerline and on each shoulder at roadway cross-section locations. Set stakes at the top of subgrade and the top of each aggregate course.

Where turnouts are constructed, set stakes on centerline, on each normal shoulder, and on the shoulder of the turnout. In parking areas, set hubs at the center and along the edges of the parking area. Set stakes in all ditches to be paved.

The maximum longitudinal spacing between stakes is 25 feet when the centerline curve radius is less than or equal to 500 feet. When the centerline curve radius is greater than 500 feet, the maximum longitudinal spacing between stakes is 50 feet. The maximum transverse spacing between stakes is 20 feet. Use brushes or guard stakes at each stake.

(g) Culverts. Stake culverts to fit field conditions. The location of culverts may differ from the plans. Perform the following:

- (1) Survey and record the ground profile along the culvert centerline.
- (2) Determine the slope catch points at the inlet and outlet.

- (3) Set reference points and record information necessary to determine culvert length and end treatments.
- (4) Plot-to-scale the profile along the culvert centerline. Show the natural ground, the flow line, the roadway section, and the culvert including end treatments and other appurtenances. Show elevations, grade, culvert length, and degree of elbow.
- (5) Submit the plotted field-design cross-section for approval of final culvert length and alignment.
- (6) When the field design has been approved, set drainage structure survey stakes, reference stakes, and stake inlet and outlet ditches to make the structure functional.
- (7) Stake or grade ditches to make the culvert functional.
- (h) Bridges.** Set adequate horizontal and vertical control and reference points for all bridge substructure and superstructure components. Establish and reference the bridge chord or the bridge tangent. Also establish and reference the centerline of each pier, bent, and abutment.
- (i) Retaining walls.** Survey and record profile measurements along the face of the proposed wall and 5 feet in front of the wall face. Every 25 feet along the length of the wall and at all major breaks in terrain take cross-sections within the limits designated by the CO. For each cross-section, measure and record points every 25 feet and at all major breaks in terrain. Set adequate references and horizontal and vertical control points.
- (j) Borrow and waste sites.** Perform the work essential for initial layout and measurement of the borrow or waste site. Establish a referenced baseline, site limits, and clearing limits. Survey and record initial and final cross-sections.
- (k) Permanent monuments and markers.** Perform all survey and staking necessary to establish permanent monuments and markers. Set permanent monuments according to Section 621.
- (l) Miscellaneous survey and staking.** Perform all surveying, staking, and recording of data essential for establishing the layout and control of the following, as applicable:
 - (1) Approach roads and trails;
 - (2) Curb and gutter;
 - (3) Guardrail;
 - (4) Parking areas;
 - (5) Paved waterways;
 - (6) Special ditches;
 - (7) Turf establishment;
 - (8) Utilities;
 - (9) Signs, delineators, and object markers; and
 - (10) Pavement markings.

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

Staking Phase	Horizontal	Vertical
Existing Government network control points	±0.06 feet	±0.035 feet × \sqrt{M} ⁽²⁾
Local supplemental control points set from existing Government network points	±0.03 feet	±0.01 feet × \sqrt{N} ⁽³⁾

Centerline points ⁽⁴⁾ — (PC), (PT), (POT), and (POC) including references	±0.03 feet	±0.03 feet
Other centerline points	±0.16 feet	±0.16 feet
Cross-section points and slope stakes ⁽⁵⁾	±0.16 feet	±0.16 feet
Slope stake references ⁽⁵⁾	±0.16 feet	±0.16 feet
Culverts, ditches, and minor drainage structures	±0.16 feet	±0.06 feet
Retaining walls and curb and gutter	±0.06 feet	±0.03 feet
Bridge substructures	±0.03 feet ⁽⁶⁾	±0.03 feet
Bridge superstructures	±0.03 feet ⁽⁶⁾	±0.03 feet
Clearing and grubbing limits	±2.00 feet	—
Roadway subgrade finish stakes ⁽⁷⁾	±0.16 feet	±0.03 feet
Roadway finish grade stakes ⁽⁷⁾	±0.16 feet	±0.03 feet

(1) At 95% confidence level. Tolerances are relative to existing Government network control points.

(2) M is the distance in miles.

(3) N is the number of instrument setups.

(4) Centerline points: PC - point of curve, PT - point of tangent, POT - point on tangent, POC - point on curve.

(5) Take the cross-sections normal to the centerline ±1 degree.

(6) Bridge control is established as a local network and the tolerances are relative to that network.

(7) Includes paved ditches.

152.04 Acceptance. Construction survey and staking will be evaluated under Subsections 106.02 and 106.04.

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

Measure grade finishing stakes one time for the subgrade and one time for each aggregate course.

Do not measure resetting stakes.

For miscellaneous survey and staking paid by the hour, the minimum survey crew size is 2 persons. Do not measure time spent in making preparations, traveling to and from the project site, performing calculations, plotting cross-sections and other data, processing computer data, and other efforts necessary to successfully accomplish construction survey and staking.

152.06 Payment. The accepted quantities, as provided above, will be paid at the contract price per unit of measurement for the Section 152 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

Payment for lump sum items will be prorated based on the total work completed.

END OF SECTION 152

SECTION 157 SOIL EROSION CONTROL

157.01 Description. This work consists of furnishing, constructing, and maintaining permanent and temporary erosion and sediment control measures.

157.02 Material. Conform to the following Subsections:

Backfill material	704.03
Erosion control bales, wattles, logs, and rolls	713.13
Erosion control culvert pipe	713.15
Fertilizer	713.03
Geotextile	714.01
Mulch	713.05
Plastic lining	725.19
Riprap	251.02
Sandbags	713.14
Seed	713.04
Silt fence	713.16
Water	725.01

Construction Requirements

157.03 General. Provide permanent and temporary erosion control measures to minimize erosion and sedimentation during and after construction according to the contract erosion control plan, contract permits, Section 107, and this Section. Contract permits amend the requirements of this Section. Do not modify the type, size, or location of any control or practice without approval.

The contract erosion control plan reflects special concerns and measures to protect resources. An alternate erosion control proposal, with all necessary permits, may be submitted for acceptance according to Subsection 104.03. Submit alternate erosion control proposals at least 30 days before their intended use.

When erosion control measures are not functioning as intended, immediately take corrective action.

157.04 Controls and Limitations on Work. Before grubbing and grading, construct all erosion controls around the perimeter of the project including filter barriers, diversion, and settling structures.

Limit the combined grubbing and grading operations area to 350,000 square feet of exposed soil at one time.

Construct erosion control and sediment control measures as follows:

- (a) Construct temporary erosion controls in incremental stages as construction proceeds.
- (b) Construct temporary slope drains, diversion channels, and earth berms to protect disturbed areas and slopes.
- (c) Unless a specific seeding season is identified in the contract, apply permanent turf establishment to the finished slopes and ditches within 14 days according to Sections 624 and 625.
- (d) Apply temporary turf establishment, mulch, or other approved measures on disturbed areas within 14 days after the last disturbance except where:
 - (1) The area will be disturbed within 21 days after last disturbance.
 - (2) When initial stabilization is precluded by snow cover or by seasonal arid conditions in arid or semi-arid areas (average annual rainfall of 20 inches or less).
- (e) Construct outlet protection as soon as culverts or other structures are complete.

(f) Construct permanent erosion controls including waterway linings and slope treatments as soon as practical or upon completion of the roadbed.

(g) Construct and maintain erosion controls on and around soil stockpiles to prevent soil loss.

(h) Following each day's grading operations, shape earthwork to minimize and control erosion from storm runoff.

157.05 Filter Barriers. Construct silt fence, bales, wattles, logs, rolls, and brush barriers for filtering sediment from runoff and reducing the velocity of sheet flow. Conserve brush from clearing operations to construct brush barriers.

157.06 Sediment Retention Structures. Construct sediment retention structures of the following types:

(a) **Temporary sediment traps.** Construct temporary sediment traps to detain runoff from disturbed areas and settle out sediment. Provide outlet protection.

(b) **Sediment basins.** Construct sediment basins to store runoff and settle out sediment for large drainage areas. Excavate and construct sediment basins according to Section 204. Construct riser pipes according to Section 602. Provide outlet protection.

157.07 Outlet Protection. Construct riprap aprons or basins to reduce water velocity and prevent scour at the outlet of permanent and temporary erosion control measures. Construct riprap according to Section 251.

157.08 Water Crossings. Construct temporary culvert pipe at temporary crossings where construction vehicles cross a live waterway.

157.09 Diversions. Construct temporary channels, temporary culverts, earth berms, or sandbags to divert water around disturbed areas and slopes. Use temporary channels, temporary culverts, pumps, sandbags, or other methods to divert the flow of live streams for permanent culvert installations and other work. Stabilize channels according to Subsection 157.10. Provide outlet protection.

157.10 Waterway and Slope Protection and Stabilization. Use plastic lining, riprap, check dams, erosion control blankets and mats, and temporary slope drains as follows:

(a) **Plastic lining.** Use plastic lining to protect underlying soil from erosion. Place the plastic lining loosely on a smooth soil surface free of projections or depressions that may cause the liner to puncture or tear. Lap transverse joints a minimum of 36 inches in the direction of flow. Do not use longitudinal joints. Anchor the lining in place using riprap.

(b) **Riprap.** Construct riprap for channel lining according to Section 251.

(c) **Check dams.** Construct riprap, sandbags, or earth berms for temporary dams to reduce the velocity of runoff in ditches and swales.

(d) **Rolled erosion control products.** Use rolled erosion control products to stabilize waterways and slopes before or after temporary or permanent seeding. Install according to Section 629.

(e) **Temporary slope drains.** Use drainpipe, riprap, or plastic lined waterway for temporary slope drains to channel runoff down slopes. Channel water into the slope drain with an earth berm constructed at the top of a cut or fill. Anchor slope drains to the slope. Provide outlet protection.

157.11 Temporary Turf Establishment. Apply seed, fertilizer, and mulch for soil erosion protection at the rates shown in Table 157-1. Protect and care for seeded areas, including watering, until permanent turf establishment is in place.

Table 157-1
Application Rates for Temporary Turf Establishment

Material	Application Rate pounds/acre
Seed	35
Fertilizer	335
Mulch	1350

157.12 Inspection and Reporting. Inspect all erosion control facilities at least every 7 days, within 24 hours after more than 3/8 inch of rain in a 24-hour period, and as required by the contract permits.

Within 24 hours, furnish inspection reports to the CO which include all of the following:

- (a) Summary of the inspection;
- (b) Names of personnel making the inspection;
- (c) Date and time of inspection;
- (d) Observations made; and
- (e) Corrective action necessary, action taken, and date and time of action.

157.13 Maintenance and Cleanup. Maintain temporary erosion control measures in working condition until the project is complete or the measures are no longer needed. Clean erosion control measures when half full of sediment. Use the sediment in the work, if acceptable, or dispose of it according to Subsection 204.14.

Replace erosion control measures that cannot be maintained and those that are damaged by construction operations.

Remove and dispose of temporary erosion control measures when the vegetation is satisfactorily established and drainage ditches and channels are lined and stabilized. Remove and dispose of erosion control measures according to Subsection 203.05.

Restore the ground to its natural or intended condition and provide permanent erosion control measures.

157.14 Acceptance. Material for soil erosion control measures will be evaluated under Subsections 106.02 and 106.03.

Construction, maintenance, and removal of soil erosion control measures will be evaluated under Subsections 106.02 and 106.04.

Geotextile will be evaluated under Section 207.

157.15 Measurement. Measure the Section 157 items listed in the bid schedule according to Subsection 109.02 and the following as applicable.

Do not measure replacement items.

Measure temporary turf establishment by the acre on the ground surface. When measurement is by the pound, weigh the seed in pounds.

Measure excavation for diversion channels and sediment basins under Section 204.

Measure riprap under Section 251.

Measure permanent paved waterways under Section 608.

Measure permanent slope paving under Section 616.

Measure topsoil under Section 624.

Measure permanent turf establishment under Section 625.

Measure rolled erosion control products under Section 629.

157.16 Payment. The accepted quantities will be paid at the contract price per unit of measurement for the Section 157 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

Progress payments for erosion control measures will be made as follows:

- (a) 50 percent of the unit bid price will be paid upon installation.
- (b) An additional 25 percent of the unit bid price will be paid following completion of 50 percent of the contract amount.
- (c) Payment of the remaining portion of the unit bid price will be paid when the temporary erosion control measures are removed from the project.

END OF SECTION 157

SECTION 158 WATERING FOR DUST CONTROL

158.01 Description. This work consists of furnishing and applying water for the control of dust caused by the work and public travel.

158.02 Material. Conform to the following Subsection:

Water 725.01

Construction Requirements

158.03 General. Provide an adequate water supply and apply water needed at all hours (including nights, weekends, and periods of nonwork) as necessary to control dust. Uniformly apply water using pressure-type distributors, pipelines equipped with spray systems, or hoses with nozzles.

(a) Project dust control for public benefit. Control dust within the construction limits at all hours when the project is open to public traffic. When the project is not open to public traffic, control dust in areas of the project which neighbor inhabited residences or places of business. Control dust on approved, active detours established for the project. Apply water at the locations, rates, and frequencies ordered by the CO.

(b) Other dust control. Control dust on active haul roads, in pits and staging areas, and on the project during all periods not covered in (a) above.

158.04 Acceptance. Furnishing and placing water will be evaluated under Subsection 106.02.

158.05 Measurement. Measure the Section 158 items listed in the bid schedule according to Subsection 109.02 and the following as applicable.

Measure water for dust control by the cubic yard in the hauling vehicle or by metering.

Do not measure water for dust control applied according to Subsection 158.03(b).

158.06 Payment. The accepted quantities will be paid at the contract price per unit of measurement for the Section 158 pay item listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

END OF SECTION 158

SECTION 203 REMOVAL OF STRUCTURES AND OBSTRUCTIONS

203.03 Salvaging Material. Salvage, with reasonable care, all material designated to be salvaged. Salvage in readily transportable sections or pieces. Replace or repair all members, pins, nuts, plates, and related hardware damaged, lost, or destroyed during the salvage operation. Wire all loose parts to adjacent members or pack them in sturdy boxes with the contents clearly marked.

Match mark members of salvaged structures. Furnish one set of drawings identifying the members and their respective match marks.

Stockpile salvaged material at a designated area on the project.

203.05 Disposing of Material. Dispose of debris and unsuitable and excess material as follows:

(a) **Remove from project.** Recycle or dispose of material legally off the project. Furnish a statement documenting the nature and quantity of material processed or sold for recycling. Otherwise, furnish a signed copy of the disposal agreement before disposal begins.

(b) **Burn.** Obtain necessary burning permits. Furnish a copy of the burning permits before burning begins.

Burn using high intensity burning processes that produce few emissions. Examples include incinerators, high stacking, or pit and ditch burning with forced air supplements. Provide a competent watchperson during the burning operations.

When burning is complete, extinguish the fire so no smoldering debris remains. Dispose of unburned material according to (a) above.

(c) **Bury.** Bury debris in trenches or pits in approved areas within the right-of-way. Do not bury debris inside the roadway prism limits, beneath drainage ditches, or in any areas subject to free-flowing water.

Place debris in alternating layers of 4 feet of debris covered with 2 feet of earth material. Distribute stumps, logs, and other large pieces to form a dense mass and minimize air voids. Cover the top layer of buried debris with at least 1 foot of compacted earth. Grade and shape the area. Seed and mulch disposal areas on Government property according to Section 625.

(d) **Hazardous material.** Furnish a copy of all disposal permits. Dispose of material according to Federal, State, and local regulations.

203.08 Payment. The accepted quantities will be paid at the contract price per unit of measurement for the Section 203 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

END OF SECTION 203

SECTION 204 EXCAVATION AND EMBANKMENT

204.01 Description. This work consists of excavating material and constructing embankments. This includes furnishing, hauling, stockpiling, placing, disposing, sloping, shaping, compacting, and finishing earthen and rocky material.

204.06 Roadway Excavation. Excavate as follows:

(a) **General.** Do not disturb material and vegetation outside the construction limits.

Incorporate only suitable material into embankments. Replace any shortage of suitable material caused by premature disposal of roadway excavation. Dispose of unsuitable or excess excavation material according to Subsection 204.14.

At the end of each day's operations, shape to drain and compact the work area to a uniform cross-section. Eliminate all ruts and low spots that could hold water.

(b) **Rock cuts.** Blast rock according to Section 205. Excavate rock cuts to 6 inches below subgrade within the roadbed limits. Backfill to subgrade with topping or with other suitable material. Compact the material according to Subsection 204.11.

(c) **Earth cuts.** Scarify earth cuts to 6 inches below subgrade within the roadbed limits. Compact the scarified material according to Subsection 204.11.

204.08 Borrow Excavation. Use all suitable roadway excavation in embankment construction. Do not use borrow excavation when it results in excess roadway excavation. Deduct excess borrow excavation from the appropriate borrow excavation quantity.

Obtain borrow source acceptance according to Subsection 105.02. Develop and restore borrow sources according to Subsection 105.03. Do not excavate beyond the established limits. When applicable, shape the borrow source to permit accurate measurements when excavation is complete.

204.09 Preparing Foundation for Embankment Construction. Prepare foundation for embankment construction as follows:

(a) **Embankment less than 4 feet high over natural ground.** Remove topsoil and break up the ground surface to a minimum depth of 6 inches by plowing or scarifying. Compact the ground surface according to Subsection 204.11.

(b) **Embankments over an existing asphalt, concrete, or gravel road surface.** Scarify gravel roads to a minimum depth of 6 inches. Scarify or pulverize asphalt and concrete roads to 6 inches below the pavement. Reduce all particles to a maximum size of 6 inches and produce a uniform material. Compact the surface according to Subsection 204.11.

(c) **Embankment across ground not capable of supporting equipment.** Dump successive loads of embankment material in a uniformly distributed layer to construct the lower portion of the embankment. Limit the layer thickness to the minimum depth necessary to support the equipment.

(d) **Embankment on an existing slope steeper than 1V:3H.** Cut horizontal benches in the existing slope to a sufficient width to accommodate placement and compaction operations and equipment. Bench the slope as the embankment is placed and compacted in layers. Begin each bench at the intersection of the original ground and the vertical cut of the previous bench.

204.10 Embankment Construction. Incorporate only suitable roadway excavation material into the embankment. When the supply of suitable roadway excavation is exhausted, furnish unclassified borrow to complete the embankment. Construct embankments as follows:

(a) **General.** At the end of each day's operations, shape to drain and compact the embankment surface to a uniform cross-section. Eliminate all ruts and low spots that could hold water.

During all stages of construction, route and distribute hauling and leveling equipment over the width and length of each layer of material.

Compact embankment side slopes with a tamping foot roller, by walking with a dozer, or by over-building the fill and then removing excess material to the final slope line. For slopes 1V:1¾H or steeper, compact the slopes as embankment construction progresses.

Where placing embankment on one side of abutments, wing walls, piers, or culvert headwalls, compact the material using methods that prevent excessive pressure against the structure.

Where placing embankment material on both sides of a concrete wall or box structure, conduct operations so compacted embankment material is at the same elevation on both sides of the structure.

Where structural pilings are placed in embankment locations, limit the maximum particle size to 4 inches.

(b) Embankment within the roadway prism. Place embankment material in horizontal layers not exceeding 12 inches in compacted thickness. Incorporate oversize boulders or rock fragments into the 12-inch layers by reducing them in size or placing them individually as required by (c) below. Compact each layer according to Subsection 204.11 before placing the next layer.

Material composed predominately of boulders or rock fragments too large for 12-inch layers may be placed in layers up to 24 inches thick. Incorporate oversize boulders or rock fragments into the 24-inch layer by reducing them in size or placing them individually according to (c) below. Place sufficient earth and smaller rocks to fill the voids. Compact each layer according to Subsection 204.11 before placing the next layer.

(c) Individual rock fragments and boulders. Place individual rock fragments and boulders greater than 24 inches in diameter as follows:

- (1) Reduce rock to less than 48 inches in the largest dimension.
- (2) Distribute rock within the embankment to prevent nesting.
- (3) Place layers of embankment material around each rock to a depth not greater than that permitted by (b) above. Fill all the voids between rocks.
- (4) Compact each layer according to Subsection 204.11 before placing the next layer.

(d) Embankment outside of roadway prism. Where placing embankment outside the staked roadway prism, place material in horizontal layers not exceeding 24 inches in compacted thickness. Compact each layer according to Subsection 204.11.

204.14 Disposal of Unsuitable or Excess Material. Dispose of unsuitable or excess material legally off the project.

When there is a pay item for waste, shape and compact the waste material in its final location. Do not mix clearing or other material not subject to payment with the waste material.

204.16 Measurement. Measure the Section 204 items listed in the bid schedule according to Subsection 109.02 and the following as applicable.

(a) Roadway excavation. Measure roadway excavation in its original position as follows:

- (1) Include the following volumes in roadway excavation:
 - (a) Roadway prism excavation;
 - (b) Rock material excavated and removed from below subgrade in cut sections;
 - (c) Unsuitable material below subgrade and unsuitable material beneath embankment areas when a pay item

for subexcavation is not shown in the bid schedule;

(d) Ditches, except furrow ditches measured under a separate bid item;

(e) Conserved topsoil;

(f) Borrow material used in the work when a pay item for borrow is not shown in the bid schedule;

(g) Loose scattered rocks removed and placed as required within the roadway;

(h) Conserved material taken from stockpiles and used in Section 204 work except topsoil measured under Section 624; and

(i) Slide and slipout material not attributable to the Contractor's method of operation.

(2) Do not include the following in roadway excavation:

(a) Overburden and other spoil material from borrow sources;

(b) Overbreakage from the backslope in rock excavation;

(c) Water or other liquid material;

(d) Material used for purposes other than required;

(e) Roadbed material scarified in place and not removed;

(f) Material excavated when stepping cut slopes;

(g) Material excavated when rounding cut slopes;

(h) Preparing foundations for embankment construction;

(i) Material excavated when benching for embankments;

(j) Slide or slipout material attributable to the Contractor's method of operation;

(k) Conserved material taken from stockpiles constructed at the option of the Contractor; and

(l) Material excavated outside the established slope limits.

(3) When both roadway excavation and embankment construction pay items are shown in the bid schedule, measure roadway excavation only for the following:

(a) Unsuitable material below subgrade in cuts and unsuitable material beneath embankment areas when a pay item for subexcavation is not shown in the bid schedule;

(b) Slide and slipout material not attributable to the Contractor's method of operations; and

(c) Drainage ditches, channel changes, and diversion ditches.

(b) Unclassified borrow, select borrow, and select topping. When measuring by the cubic yard measure in its original position. If borrow excavation is measured by the cubic yard in place, take initial cross-sections of the ground surface after stripping overburden. Upon completion of excavation and after the borrow source waste material is returned to the source, retake cross-sections before replacing the overburden.

Do not measure borrow excavation used in place of excess roadway excavation.

(c) Embankment construction. Measure embankment construction in its final position. Do not make deductions from the embankment construction quantity for the volume of minor structures.

(1) Include the following volumes in embankment construction:

(a) Roadway embankments;

(b) Material used to backfill subexcavated areas, holes, pits, and other depressions;

(c) Material used to restore obliterated roadbeds to original contours; and

(d) Material used for dikes, ramps, mounds, and berms.

(2) Do not include the following in embankment construction:

(a) Preparing foundations for embankment construction;

(b) Adjustments for subsidence or settlement of the embankment or of the foundation on which the embankment is placed; and

(c) Material used to round fill slopes.

(d) Rounding cut slopes. Measure rounding cut slopes horizontally along the centerline of the roadway.

(e) Waste. Measure waste by the cubic yard in its final position. Take initial cross-sections of the ground surface after stripping over burden. Upon completion of the waste placement, retake cross-sections before replacing overburden.

(f) Slope scaling. Measure slope scaling by the cubic yard in the hauling vehicle.

204.17 Payment. The accepted quantities will be paid at the contract price per unit of measurement for the Section 204 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

END OF SECTION 204

SECTION 301 UNTREATED AGGREGATE COURSES

301.08 Acceptance. See Table 301-1 for sampling and testing requirements and the acceptance quality characteristic category.

Aggregate gradation and surface course plasticity index will be evaluated under Subsection 106.05. Other aggregate quality properties will be evaluated under Subsections 106.02 and 106.04.

(a) Aggregate gradation. The upper and lower specification limits are equal to the calculated mean of all test results plus or minus the allowable deviations shown in Tables 703-2 and 703-3, except as follows:

(1) If the calculated mean value for any tested sieve exceeds the maximum gradation value shown in Table 703-2 or 703-3, the upper specification is equal to the maximum gradation value plus the allowable deviation, and the lower specification is equal to the maximum gradation value minus the allowable deviation.

(2) If the calculated mean value for any tested sieve is less than the minimum gradation value shown in Table 703-2 or 703-3, the upper specification is equal to the minimum gradation value plus the allowable deviation and the lower specification is equal to the minimum gradation value minus the allowable deviation.

(b) Plasticity index. The upper and lower specification limits for surface courses are shown in Table 703-3.

Construction of untreated aggregate courses will be evaluated under Subsections 106.02 and 106.04.

Preparation of the surface on which the aggregate course is placed will be evaluated under Section 204 or 303 as applicable.

301.10 Payment. The accepted quantities will be paid at the contract price per unit of measurement adjusted according to Subsection 106.05 for the Section 301 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

END OF SECTION 301

SECTION 303 ROAD RECONDITIONING

303.01 Description. This work consists of reconditioning ditches, shoulders, roadbeds, and aggregate surfaces.

303.02 Material. Conform to the following Subsection:

Water 725.01

Construction Requirements

303.03 Ditch Reconditioning. Remove all slide material, sediment, vegetation, and other debris from the existing ditches and culvert inlets and outlets. Reshape ditches and culvert inlets and outlets to achieve positive drainage and a uniform ditch width, depth, and grade. Dispose of waste according to Subsection 204.14.

303.04 Shoulder Reconditioning. Repair soft and unstable areas according to Subsection 204.07. Remove all slide material, vegetation, and other debris from existing shoulders including shoulders of parking areas, turnouts, and other widened areas. Reshape shoulders and dispose of waste according to Subsection 204.14.

303.05 Roadbed Reconditioning. Repair soft and unstable areas according to Subsection 204.07. Remove all organic, deleterious, or oversize material larger than 6 inches from the top 6 inches of subgrade. Dispose of waste according to Subsection 204.14. Scarify to a 6-inch depth, remove surface irregularities, and shape to provide a uniform surface. Finish earth surfaces to within 0.05 feet and rock surfaces to within 0.10 feet of the required line, cross-section, and grade. Compact according to Subsection 204.11.

303.06 Aggregate Surface Reconditioning. Repair soft and unstable areas to the full depth of the aggregate surface and according to Subsection 204.07. Scarify to the depth of the aggregate surface or to a depth of 8 inches, whichever is less, and remove surface irregularities. Reshape, finish, and compact the entire aggregate surface according to Section 308.

303.07 Roadway Reconditioning. Perform all the applicable work described in Subsections 303.03 through 303.06.

303.08 Pulverizing. Scarify the surface to the designated depth and width. Pulverize all material to a size one and one half times the maximum sized aggregate or to 1½ inches, whichever is greater. Mix, spread, compact, and finish the material according to Section 301.

303.09 Acceptance. See Table 303-1 for sampling and testing requirements. Road reconditioning work will be evaluated under Subsections 106.02 and 106.04.

303.10 Measurement. Measure the Section 303 items listed in the bid schedule according to Subsection 109.02 and the following as applicable.

Measure ditch reconditioning and shoulder reconditioning by the station or foot horizontally along the centerline of the roadway for each side of the roadway.

Measure roadbed reconditioning, aggregate surface reconditioning, roadway reconditioning, and pulverizing by the station or by the square yard. Measure the square yard area on a horizontal plane. Do not measure isolated areas less than 20 square yards.

Measure waste under Section 204.

303.11 Payment. The accepted quantities will be paid at the contract price per unit of measurement for the Section 303 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05

END OF SECTION 303

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

402.01 Description. This work consists of constructing one or more courses of HVEEM or Marshall hot asphalt concrete pavement.

The mix design method is designated as HVEEM or Marshall. Hot asphalt concrete pavement class is designated as shown in Table 402-1. Aggregate grading is designated as show in Table 703-4. Pavement smoothness/roughness type is designated as shown in Subsection 401.16. Asphalt binder is designated as shown in AASHTO M 20, M 226, or M 320.

Antistrip additive type is designated as shown in Subsection 702.08. Where no type is designated, use type 3 (lime).

402.02 Material. Conform to the following Subsections:

Aggregate	703.07
Antistrip additive	702.08
Asphalt binder	702.01
Mineral filler	725.05
Recycled asphalt pavement	703.19
Recycling agent	702.06

Construction Requirements

402.03 Composition of Mix (Job-Mix Formula). Furnish mixes of aggregate, asphalt binder, recycled asphalt pavement, and additives that meet the applicable material requirements, appropriate design parameters in Table 402-1, and are capable of being placed and compacted as specified.

(a) Recycled asphalt pavement use. See Subsection 401.03(a).

(b) Submission. Submit written job-mix formulas with Form FHWA 1607 (HVEEM) or Form FHWA 1608 (Marshall) for approval at least 28 days before production. Include the location of all commercial mixing plants to be used and a separate job-mix formula for each plant. 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. For each job-mix formula, submit the following:

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

Design Parameters ⁽¹⁾	Class of Mix		
	A	B	C
(a) HVEEM (AASHTO T 246 and T 247)			
(1) Stabilometer, minimum	37	35	30
(2) Percent air voids	3.0–5.0	3.0-5.0	3.0-5.0
(3) Voids in mineral aggregate, min. %	See Table 402-2		
(b) Marshall (AASHTO T 245)			
(1) Stability, pounds min.	1,800	1,200	1,000
(2) Flow, 0.01 inches	8-14	8-16	8-20
(3) Percent air voids	3.0-5.0	3.0-5.0	3.0-5.0
(4) Voids in mineral aggregate, min. %	See Table 402-2		
(5) Compaction, number of blows each end of test specimen	75	50	50

(c) Immersion – Compression (AASHTO T 165 and T 167)			
(1) Compressive strength, pounds per square inch min. (dry)	300	250	200
(2) Retained strength, min. %	70	70	70
(d) Dust-asphalt ratio⁽²⁾	0.8-1.6	0.8-1.6	0.8-1.6

(1) The percent of air voids are based on AASHTO T 166, T 209, and T 269. Maximum specific gravity (density) will be based on AASHTO T 209.

(2) Dust-asphalt ratio is defined as the percent of material including nonliquid antistriper and mineral filler passing the No. 200 sieve divided by the percent of effective asphalt (calculated by mass of mix).

Table 402-2
Voids in Mineral Aggregate (VMA)
Marshall or HVEEM Mix Design

Sieve Size⁽¹⁾	Minimum Voids ⁽²⁾⁽³⁾ Percent	
	Marshall	HVEEM
No. 4	18.0	16.0
3/8 inch	16.0	14.0
1/2 inch	15.0	13.0
3/4 inch	14.0	12.0
1 inch	13.0	11.0

(1) The largest sieve size listed in the applicable specification upon which any material is permitted to be retained.

(2) VMA to be determined according to *AI Manual Series No. 2 (MS-2)*.

(3) When a mineral filler or nonliquid antistriper is used, include the percentage specified in the calculation for compliance with the VMA.

(1) Aggregate and mineral filler.

(a) Target values:

(1) Target value for percent passing each sieve size for the aggregate blend; and

(2) Designate target values within the gradation band specified for the grading designation shown in Table 703-4.

(b) Aggregate sources. See Subsection 401.03(b)(1)(b).

(c) Stockpile gradations. See Subsection 401.03(b)(1)(c).

(d) Representative samples. See Subsection 401.03(b)(1)(d).

(e) Results of aggregate quality tests for contractor selected sources. See Subsection 401.03(b)(1)(e).

(2) Asphalt binder. See Subsection 401.03(b)(2).

(3) Antistriper additives. See Subsection 401.03(b)(3).

(4) Recycled asphalt pavement material. See Subsection 401.03(b)(4).

(c) Verification. The CO will review and may perform design verification testing. If verification testing is performed, the information supplied in the Contractor's design must agree with the verification test results within the tolerances shown below:

(1) Aggregate gradations. See Subsection 401.03(c)(1).

(2) HVEEM stabilometer. The Contractor's design stabilometer value at the contractor's selected design asphalt content is verified if it meets or exceeds the specification limit and differs from the CO's result by no more than six points and the average of the Contractor's results and the CO's results meets or exceeds the minimum contract specification.

(3) HVEEM air void content. The Contractor's design air void content is verified if it meets the contract specification of 3.0 to 5.0 percent and differs from the CO's result by no more than 2.0 percent, and the CO's result does not exceed the specification limits by more than 0.5 percent.

(4) Voids in mineral aggregate (VMA). See Subsection 401.03(c)(2).

(5) Immersion-compression. The Contractor's dry strength result is verified if the CO's result is above the minimum contract specification, or the average of the Contractor's and the CO's result is above the minimum contract specification and the two values differ by no more than 50 pounds per square inch. The Contractor's percent retained strength result is verified if the CO's result is above the minimum contract specification.

(6) Marshall air voids, stability, and flow. The Contractor's results are verified if they meet the contract specifications in Table 402-1.

(d) Changes and resubmissions. See Subsection 401.03(d).

(e) Acceptance. See Subsection 401.03(e).

402.04 Mixing Plant. See Subsection 401.04.

402.05 Pavers. See Subsection 401.05.

402.06 Surface Preparation. See Subsection 401.06.

402.07 Weather Limitations. See Subsection 401.07.

402.08 Asphalt Preparation. See Subsection 401.08.

402.09 Aggregate Preparation. See Subsection 401.09.

END OF SECTION 402

SECTION 411 ASPHALT PRIME COAT

411.01 Description. This work consists of applying a cut-back or emulsified asphalt prime coat.

Prime coat asphalt grade is designated as shown in AASHTO M 140 or M 208 for emulsified asphalt and AASHTO M 81 or M 82 for cut-back asphalt.

411.02 Material. Conform to the following Subsections:

Blotter	703.13
Cut-back asphalt	702.02
Emulsified asphalt	702.03
Water	725.01(c)

Construction Requirements

411.03 Equipment. Use equipment conforming to Subsection 409.04.

411.04 Surface Preparation. Prepare the surface to be primed according to Subsection 301.05 and 301.06.

411.05 Weather Limitations. Apply prime coat on a dry or slightly damp surface when the air temperature in the shade and the pavement surface temperature are at least 50 °F and rising and when the weather is not foggy or rainy.

411.06 Asphalt Application. When required, lightly spray the surface with water before applying the prime coat. Apply asphalt according to Subsection 409.08 at a rate of 0.10 to 0.50 gallons per square yard for optimum penetration.

Where using an emulsified asphalt that is not formulated as a penetrating prime coat material, dampen the roadway surface and scarify 1 to 2 inches deep. When required, dilute a slow-setting emulsified asphalt by adding an equal amount of water. Apply the emulsified asphalt at a rate of 0.10 to 0.30 gallons per square yard. Immediately process, respread, and compact the material.

Cure surfaces primed with emulsified asphalt for not less than 24 hours and surfaces primed with cut-back asphalt for not less than 3 days before covering with the next course.

Until the next course is placed, maintain the primed surface and keep it free of corrugations by broom dragging.

Where traffic is routed over a primed surface before the asphalt material has been completely absorbed, or to minimize damage by rain, spread blotter to cover the unabsorbed asphalt. Remove excess blotter as soon as practicable after excess asphalt is absorbed. Remove all dirt or other deleterious material and repair all damaged areas before placing the next course.

411.07 Acceptance. Emulsified asphalt and cut-back asphalt will be evaluated under Subsections 106.04 and 702.09.

Aggregate for blotter will be evaluated under Subsection 106.03.

Construction of the prime coat will be evaluated under Subsections 106.02 and 106.04.

Surface preparation will be evaluated under Section 301.

411.08 Measurement. Measure the Section 411 items listed in the bid schedule according to Subsection 109.02 and the following as applicable.

Measure prime coat asphalt including water added for dilution.

Measure blotter by the cubic yard in the hauling vehicle.

411.09 Payment. The accepted quantities will be paid at the contract price per unit of measurement for the Section 411 pay items listed in the bid schedule. Payments will be full compensation for the work prescribed in this Section. See Subsection 109.05.

END OF SECTION 411

SECTION 501 RIGID PAVEMENT

501.01 Description. This work consists of constructing rigid pavement on a prepared surface. This work also includes pavement rehabilitation consisting of full-depth, full-width removal and reconstruction of rigid pavement. Pavement smoothness/roughness type is designated as shown in Subsection 501.12.

501.02 Material. Conform to the following Subsections:

Air-entraining admixtures	711.02
Chemical admixtures	711.03
Coarse aggregate	703.02
Curing material	711.01
Epoxy grout	725.22(b)
Epoxy resin adhesives	725.21
Fine aggregate	703.01
Fly ash	725.04(a)
Hydraulic cement	701.01
Joint fillers and sealants	712.01
Non-shrink grout	725.22(c)
Reinforcing steel, tie bars, dowel bars, hook bolts, caps	709.01
Water	725.01

Construction Requirements

501.03 Composition of Mix (Concrete Mix Design). Design the concrete mix according to Subsection 552.03. Conform to Table 501-1.

501.04 Equipment. Furnish equipment conforming to the following:

(a) **Forms.** Furnish straight, steel forms. For edge radii less than 200 feet, furnish flexible or curved forms. Conform to all the following:

- (1) Depth equal to edge of pavement thickness;
- (2) 10-foot minimum length;
- (3) Stabilizing devices to withstand paving operations;
- (4) Joint locks to join form lengths tightly together; and
- (5) Clean and oil before each use.

Table 501-1
Rigid Pavement Composition

Water/Cement Ratio (maximum)	Temperature of Concrete	Slump	Air Content (minimum)	Aggregate Size ⁽¹⁾ (AASHTO M 43)	28-Day Compressive Strength (minimum)
0.49	70±20 °F	1½±1 inches	4.5 %	No. 57 or 67	3500 pounds per square inch

(1) Other AASHTO M 43 aggregate sizes smaller than no. 57 or 67 may be used in the concrete mix design. If the nominal-maximum-sized aggregate is 1/2 inch or smaller, provide at least 5 percent air content.

(b) **Paving.** Furnish the paving and finishing equipment applicable to the type of construction as follows:

(1) Slip form construction. Furnish slip form machines capable of spreading, consolidating, screeding, and float-finishing the freshly-placed concrete in one complete pass of the machine to provide a dense and homogeneous pavement with minimal hand finishing.

Equip the paving machine with the following:

- (a) Electronic controls to control line and grade from either or both sides of the machine.
- (b) Vibrators to vibrate the concrete for the full width and depth of the strip of pavement being placed.
- (c) A positive interlock system to stop all vibration and tamping elements when the forward motion of the machine is interrupted.

Operate the paving machine with a continuous forward movement and coordinate mixing, delivering, and spreading concrete to provide uniform progress without stopping and starting the paving machine. Apply no tractive force to the machine except that which is controlled from the machine.

(2) Side form construction. Furnish mechanical, self-propelled spreading and finishing machines capable of compacting and finishing the concrete with minimal hand finishing. Equip the machine with one 18-inch minimum width screed with compensating springs to minimize the effect of the screed's momentum on the side forms, or 2 independently-operated screeds.

Coordinate the number of driving wheels, power of the motor, and the machine's mass to prevent slippage. Any machine that displaces the side forms will not be permitted.

(3) Vibrators. Furnish internal immersed tube or multiple spud type vibrators for all paving more than 8-inches-thick. Surface pan type vibrators are acceptable for full-width concrete consolidation of slabs 8 inches or less in thickness. Attach vibrators to the spreader or finishing machine or mount on a separate carriage. For construction of irregular areas, use hand-held vibrators according to Subsection 552.11(d).

(c) Joint sealing. Furnish sealing equipment according to the sealant manufacturer's recommendations.

(d) Joints and concrete removal. Furnish an adequate supply of concrete saws with sufficient power to saw full depth and complete the work with water-cooled, diamond-edged blades or abrasive wheels. Equip saws with blade guards and guides or devices to control alignment and depth. Furnish and maintain standby equipment and an adequate supply of replacement blades or wheels.

(e) Concrete removal. Furnish concrete saws, drop hammers, hydrohammers, and jack hammers to break concrete. Concrete saws shall conform to (d) above. Ball-drop breakers are not permitted.

Furnish equipment that will not damage the subgrade, subbase, base, or existing concrete slabs designated to remain.

If new or existing slabs not scheduled for replacement are chipped, spalled, or damaged during the removal operations, replace the damaged slabs.

501.05 Preparing Roadbed. Prepare the roadbed according to Subsection 303.07 and Section 301. Uniformly dampen the roadbed before placing the concrete. If traffic is allowed to use the prepared roadbed, check and correct the surface immediately before the concrete is placed.

Full-depth, full-width reconstruction shall conform to Subsection 501.13.

501.06 Placing Concrete. For storing, handling, batching, and mixing material and delivering concrete, conform to Subsections 552.04 through 552.08 and 552.10.

Do not place concrete on frozen subgrade. Place concrete with side form or slip form paving machines. Where a paving machine is impractical, place concrete according to Subsection 501.07.

When concrete is placed adjoining a previously-constructed lane of pavement, do not allow mechanical equipment to be operated on the existing lane until the lane has attained a minimum flexural strength of 550 pounds per square inch according to

AASHTO T 97 or compressive strength of 3,500 pounds per square inch according to AASHTO T 22. Protect the previously constructed lane from damage by the paving equipment.

Construct reinforcing steel according to Section 554. Firmly position the reinforcement on acceptable supports before placing the concrete, or after spreading, mechanically place or vibrate the reinforcement to the required depth in the plastic concrete.

501.07 Construction of Irregular Areas. In irregular areas or areas inaccessible to paving equipment, construct the pavement using side forms. Strike-off, consolidate, float, and surface finish the concrete as follows:

- (a) Thoroughly and uniformly vibrate and compact the concrete during placement without segregating the material.
- (b) Using templates or screeds, strike-off the concrete to shape it to the required cross-section between the forms. Carry a slight excess of concrete in front of the leading edge of the template or screed.
- (c) Float the surface to the required grade and cross-section.
- (d) Finish the surface according to Subsection 501.09.

501.08 Joints. Do not vary longitudinal joints more than 1/2 inch and transverse joints more than 1/4 inch from the true alignment. When curbs or medians are constructed integral with the pavement, construct transverse joints continuous through the curb or median. Protect all joints from the intrusion of deleterious matter until sealed.

Form isolated joints at structures by placing 1/2-inch expansion joint filler around each structure that extends into or through the pavement before concrete is placed.

Remove and replace all newly-placed concrete pavement where uncontrolled cracking occurs.

(a) Longitudinal joints. Construct longitudinal joints by forming or sawing. Construct sawed longitudinal joints (with tie bars) when the concrete pavement placement width exceeds 15 feet. Construct the longitudinal joint continuous with no gaps in either the transverse or longitudinal joints at intersections.

Place tie bars perpendicular to the longitudinal joints with mechanical equipment or rigidly secured chairs without damaging or disrupting the concrete. Do not paint or coat tie bars with any material or enclose them in tubes or sleeves.

Where adjacent lanes of pavement are constructed separately, use slip form paving machines or steel side forms to form a keyway along the construction joint. Tie bars may be bent at right angles against the form of the first lane constructed and straightened into final position before placing concrete in the adjacent lane. Repair or replace broken or badly-damaged tie bars.

Threaded hook bolts may be used instead of tie bars. Fasten hook bolts to the form of the longitudinal construction joint. With slip form paving, tie bars may be hydraulically inserted through metal keyways.

(1) Formed joints. Form joints with an approved nonmetallic or removable device while the concrete is plastic. When adjacent lanes are constructed separately, form the sealant reservoir in the lane placed last.

(2) Sawed joints. After placing concrete, saw joints as soon as equipment can be supported and before uncontrolled cracking occurs. Do not ravel the joints while sawing. Saw longitudinal joints immediately after sawing transverse joints. Protect the sawed concrete faces from drying during the curing period. Saw sealant reservoirs no sooner than 72 hours after placing the concrete.

If necessary, continue sawing day and night, regardless of weather conditions. Clean the saw cut and adjacent concrete surface of slurry residue after sawing each joint.

Do not saw a joint if a crack occurs at or near the joint location before sawing. Discontinue sawing when a crack develops ahead of the saw.

If a crack develops in reinforced concrete pavement, remove and replace at least a 10-foot long, full-width slab properly attached to adjacent slabs.

If a crack develops in plain concrete pavement, remove and replace a full slab properly attached to adjacent slabs.

(b) Transverse expansion joints. Form transverse expansion joints according to (a)(1) above. Place dowel bars through transverse joints. Hold dowels parallel to the surface and center line of the slab by a metal device that remains in the pavement.

Dowel placement implanters may be used while the concrete is plastic provided they conform to the dowel tolerance specified. Remove all concrete that leaks into the joint expansion space.

Install the preformed joint filler full-depth, perpendicular to the subgrade, and continuous across the full-pavement width. Do not use damaged or repaired joint filler. If joint filler is assembled in sections, construct without an offset between adjacent sections.

(c) Transverse contraction joints. Where required by the contract, place dowel bars according to (b) above. Dowel bar sleeves and finishing caps are not required. Saw joints according to (a)(2) above. For adjacent lanes placed separately, construct joints continuously across full width of pavement.

Concrete edges adjacent to the joint may be rounded or beveled to a radius or length as approved. Resaw or grind any joint having an insufficient opening. Where a joint is larger than required, furnish a larger size joint seal as approved.

(d) Transverse construction joints. Unless an expansion joint occurs at the same location, construct a transverse construction joint at the end of each day's work or where concrete placement is interrupted for more than 30 minutes. Do not construct a transverse joint within 10 feet of any parallel joint.

If sufficient concrete has not been mixed to form a slab at least 10 feet long when an interruption occurs, remove and dispose of the excess concrete back to the last preceding joint.

Use a metal or wooden bulkhead to form the joint, shaped to the pavement cross-section, and designed to permit the installation of dowel bars.

Install dowel bars in all transverse construction joints whose location does not coincide with the location of a transverse expansion or contraction joint.

501.09 Surface Finishing. Protect the surface from rain damage.

After floating, check the surface of the fresh concrete with a 10-foot straightedge. Remove high areas indicated by the straightedge. Lap each successive check with the straightedge 5 feet over the previous check path.

Correct pavement edge slump in excess of 1/4 inch in 10 feet before the concrete has hardened. If edge slump exceeds 1 inch on any 1 foot or greater length of hardened concrete, remove and replace the entire panel between the transverse and longitudinal joints.

Before the concrete has initially set, work the pavement edges on each side of transverse expansion joints, formed joints, transverse construction joints, and emergency construction joints to produce a 1/4 -inch continuous radius and a smooth, dense mortar finish. Do not use mortar buildup to round edges.

Finish the surface according to Subsection 552.14(c)(1).

501.10 Curing. Immediately after finishing and when marring will not occur, cure the concrete for a minimum of 72 hours. Do not leave the concrete exposed for more than one half hour during the curing period. Cure using one of the following methods:

(a) Water method. Cure according to Subsection 552.15(b). Entirely cover the surface of the pavement and the edges of the slab with water saturated mats. Extend mats at least twice the thickness of the pavement beyond the edges of the slab. Place the mats in complete contact with the surface. Use masses or other approved methods to maintain contact.

(b) Liquid membrane curing compound method. Cure according to Subsection 552.15(c). Protect sawed joints from intrusion of foreign material into the joint before sealing. Repair damaged areas immediately with additional compound.

(c) Waterproof cover method. Thoroughly wet the surface using a fog mist applicator. Cover the entire surface with a waterproof cover. Lap the cover at least 18 inches. Extend the cover beyond the edges of the slab at least twice the thickness of the pavement. Place the cover in complete contact with the surface.

Use masses or other approved methods to maintain contact. Seal, sew, or cement lap joints to prevent opening or separating while curing.

When the air temperature is expected to drop below 35 °F, furnish a sufficient supply of insulating material. Insulate the pavement surface and sides to a depth that maintains a temperature above 40 °F for 3 days. Furnish and place continuously recording thermometers according to Subsection 552.10.

Remove forms when the concrete has hardened sufficiently to resist damage but not earlier than 12 hours after placing concrete. Protect the sides of the exposed slabs immediately with a curing method equal to that provided for the surface. Prevent erosion of the base course beneath the exposed pavement edges until shoulders are constructed.

501.11 Sealing Joints. Saw cut and seal joints before the pavement is opened to construction or public traffic. Do not saw sealant reservoirs within 72 hours after placing concrete.

Clean each joint of all foreign material, including membrane curing compound and concrete slurry, immediately after sawing the joint. Blow dry joints with compressed air. Do not apply sealing material unless the joint faces are clean and surface dry.

Use preformed joint seals, silicone sealant, or hot-poured sealant for expansion joints. Use silicone or hot-poured sealants for longitudinal and transverse contraction joints.

(a) Silicone or hot-poured sealants. Install backer rod with a steel wheel to the depth required. Do not stretch or twist the backer rod during installation. Limit the length of backer rod installed to that which can be sealed during the same workday.

Place poured joint sealing material when the air temperature is over 40 °F. Immediately remove any excess or spilled material, and clean the pavement surface. Do not use sand or similar material to cover the seal.

(b) Preformed joint seals. Furnish the seal in one piece in the size specified for the joint opening. Install seals with a lubricant adhesive covering both sides of the concrete joint. Compress the seal to between 20 and 50 percent of its nominal width. Install the top of the seal about 1/4 inch below the pavement surface.

Remove and replace seals that are damaged, twisted, improperly positioned, or stretched more than 3 percent.

501.12 Pavement Smoothness/Roughness. Measure the smoothness/roughness of the final pavement surface after the concrete has sufficiently hardened and according to the designated type below. In addition, construct all pavement surfaces to meet the requirements of (c) below.

(a) Type A smoothness (profile ride index (PRI)). For type A pavement smoothness, furnish a California type profilograph and personnel to operate the profilograph. The CO will direct and observe its operation. Operate the profilograph in the “mode” such that the continuous plot produced can be reduced according to FLH T 504. Measure in the middle portion of each lane and exclude areas according to FLH T 504. Measure excluded areas according to (c) below. Submit the trace to the CO.

A PRI will be calculated for each 0.1-mile lane of traveled way using a zero blanking-band. The PRI will be determined according to FLH T 504. Bumps will be located using a 0.4-inch bump template.

The upper specification limit is 24 inches per mile. Defective areas are bumps in excess of 0.4 inches in 25 feet, 0.1-mile profile ride index greater than 28.5 inches per mile, or surfaces with a pay factor less than 0.75 as determined under Subsection 106.05.

(b) Type B roughness (international roughness index (IRI)). For type B pavement roughness, furnish an inertial profiler conforming to AASHTO PP 50 and validated according to AASHTO PP51. 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 CO will direct and observe its operation. Measure in the middle portion of each lane. Submit raw data files (*.ERD) that are compatible with FHWA Profile Viewer software on a compact disk to the CO.

Areas of localized roughness will be identified using a 25-foot moving average filter. The difference between the 25-foot moving average and the reported relative elevation for every profile point will be determined. Deviations greater than 0.15 inches are areas of localized roughness.

An IRI value will be determined for each 0.1-lane mile of traveled way. Cattle guards and bridges not being overlaid will be excluded from the calculation of IRI and determination of localized roughness. Measure excluded areas according to (c) below.

Defective areas are 0.1-lane mile segments with IRI values greater than 95 inches per mile or areas of localized roughness.

The pay adjustment factor for each 0.1-mile segment will be determined from Table 401-3.

(c) Type C pavement smoothness/roughness (straightedge measurement). Use a 10-foot metal straightedge to measure at right angles and parallel to the centerline. Defective areas are surface deviations in excess of 1/4 inch in 10 feet between any two contacts of the straightedge with the surface.

(d) Defective area correction. Correct defective areas from paragraphs (a), (b), and (c) above. Obtain approval for the proposed method of correction. If no corrections are allowed, no adjustment will be made to the pay adjustment factors.

Re-measure corrected areas according to the specified type of pavement smoothness/roughness. The smoothness/roughness value obtained will replace the original.

501.13 Full-Depth, Full-Width Patching. Construct the pavement patch to provide a similar appearance to the existing pavement. Prepare test panels using the same materials proposed for the work.

Begin pavement work after the test panels have been inspected and approved for appearance and the concrete mix design 28-day compressive strength is verified.

(a) Concrete removal. For mesh-reinforced, plain dowel, or plain jointed concrete pavement, saw cut slabs full depth leaving vertical edges at the limits of the patch.

For continuously reinforced concrete pavement, saw cut the exterior transverse patch limits to a depth of $1\frac{3}{4} \pm \frac{1}{4}$ inches. Do not allow the saw cut to penetrate the steel reinforcement. Saw cut longitudinal limits full depth. Break up the concrete with a chipping hammer down to the steel.

If replacement steel is welded, cut the existing reinforcing steel and leave 8 inches of steel exposed. If replacement steel is tied, cut the existing steel to leave the lap length plus 2 inches. Lap lengths are shown in Table 501-2.

Table 501-2
Reinforcing Steel Splices

Bar Size	Length of Overlap (inches)
No. 4	15
No. 5	18
No. 6	22

Remove the concrete by either or both of the following methods:

- (1) Break-up and clean-out method.** Break up the concrete from the center of the patch area toward the end saw cuts. Remove the concrete pieces with equipment that will not damage the underlying surface.
- (2) Lift-out method.** Lift the slab in one or more pieces without disturbing the underlying surface. Clean out the area with hand tools.

Dispose of the concrete according to Section 203. When directed, excavate the underlying material to a maximum depth of 12 inches, and replace with aggregate base according to Sections 204 and 301. Prevent adjacent concrete slabs from being undermined.

Remove and replace adjacent slabs damaged by concrete removal. Repair spalls using partial-depth patching methods according to Section 502.

Repair all saw overcuts at the corner of repair areas and nicks to adjacent pavement outside the perimeter of the repair area with non-corrosive, non-shrink grout.

(b) Replacing reinforcing steel. For continuously reinforced concrete pavement, if more than 10 percent of the reinforcing steel is visibly corroded or damaged, extend the limits of the patch over the required lap length. The required lap lengths for various sizes of reinforcing steel bars are shown in Table 501-2.

For concrete pavement patches, provide a 3-inch clearance between the ends of new reinforcing steel and the existing slab face. Match the number, type, and spacing of the new reinforcement to the existing pavement. Support reinforcing steel with bar chairs or other approved methods while placing concrete.

(c) Joints. Construct joints according to Subsection 501.08. Field adjust locations and lengths of joints as directed at intersections, median openings, and other areas of odd-shaped slabs such that no joint is less than 18 inches long and no slab has an angle less than 60 degrees. Construct joints perpendicular to the edge of pavement.

Place dowels or tie bars into the existing slab. Drill the dowel or tie bar holes into the face at the required diameter with the drill rigidly supported. Completely fill the holes around the dowels and tie bars with an epoxy or nonshrink grout for a permanent fastening to the existing concrete. Furnish a plug or donut to prevent epoxy or grout loss.

Edge all transverse and longitudinal joints against forms or existing pavement. Transverse joints in a continuous lane pour or longitudinal joints in a continuous dual lane pour do not require edging.

Clean the exposed faces of joints according to Subsection 502.06(a). Seal joints according to Subsection 501.11.

(d) Concrete placement. Construct side forms to overlap the ends of the existing slab. Securely fasten side forms so they do not move when concrete is placed. To accommodate forms for the patch, excavate the adjacent shoulders a maximum width of 12 inches.

Cast each patch in one continuous full-depth operation. After removal of the forms, backfill, compact, and return the excavated shoulder area to its previous condition.

(e) **Finishing.** Finish patches according to Subsection 501.09 to match the plane and texture of the contiguous pavement.

501.14 Opening to Traffic. Do not allow traffic on new concrete pavement earlier than 14 days after concrete placement unless concrete tests indicate one of the following conditions is obtained:

(a) Flexural strength of 550 pounds per square inch according to AASHTO T 97; or

(b) Compressive strength of 3,500 pounds per square inch according to AASHTO T 22.

Cure specimens according to AASHTO T 23, Curing, Curing for Determining Form Removal Time or When a Structure May be Put into Service.

Do not allow traffic on the pavement when joint sealant is tacky and traffic debris would imbed into the sealant.

501.15 Acceptance. Material (except reinforcing steel) for rigid pavement will be evaluated under Subsections 106.02 and 106.03. Furnish a production certification for the hydraulic cement.

The concrete mixture's slump, air content, unit mass, and temperature will be evaluated under Subsections 106.02 and 106.04. See Table 501-3 for sampling and testing requirements.

Type B pavement roughness will be evaluated under Subsection 106.04. See Subsection 501.12.

Concrete compressive strength, pavement thickness, and type A pavement smoothness will be evaluated under Subsection 106.05. See Table 501-3 for sampling and testing requirements.

(a) **Compressive strength.** The lower specification limit is the minimum required compressive strength at 28 days (f'_c) specified in Table 501-1. A single compressive strength test result is the average result from 2 cylinders cast from the same load and tested at 28 days. See Table 501-3 for the acceptance quality characteristic category.

(b) **Pavement thickness.** The lower specification limit is the required thickness minus 1/4 inch. See Table 501-3 for the acceptance quality characteristic category.

(c) **Pavement smoothness.** The evaluation will be made after all defective areas are corrected. See Subsection 501.12.

Construction (including batching, placing, finishing, and curing concrete) of the rigid pavement will be evaluated under Subsections 106.02 and 106.04.

Reinforcing steel will be evaluated under Section 554.

501.16 Measurement. Measure the Section 501 items listed in the bid schedule according to Subsection 109.02 and the following as applicable.

Measure the square yard width horizontally including allowable curve widening. Measure the square yard length horizontally along the centerline of the roadway.

Measure sealing joints under Section 502.

Measure removal and disposal of unsuitable material in the subbase or subgrade under Section 204.

Measure patching and leveling material used to replace unsuitable material removed from the roadbed under the applicable Sections.

501.17 Payment. The accepted quantities will be paid at the contract price per unit of measurement for the Section 501 pay items listed in the bid schedule except the rigid pavement unit bid price will be adjusted according to Subsections 106.05 and 501.12. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

Payment for rigid pavement will be made at a price determined by multiplying the unit bid price by the material pay factor. The material pay factor is the lowest single pay factor determined for either compressive strength or pavement thickness.

When the bid schedule contains a pay item for rigid pavement, type A pavement smoothness, a separate adjustment will be made for pavement smoothness according to the following formula:

$$A2 = 32,700(PF_{\text{smooth}} - 1.00)(L)$$

where:

A2 = Adjustment to contract payment in dollars for pavement smoothness.

L = Total project length in lane miles of traveled way including excluded areas. Measure project length to 3 decimal places.

PF_{smooth} = Pay factor for smoothness with respect to the upper specification limit is determined according to Subsection 501.12(a) and 106.05 after completion of corrective work.

When the bid schedule contains a pay item for rigid pavement, type B pavement roughness, a separate pay adjustment will be made. The dollar amount of the adjustment will be determined by summing the pay adjustment factors determined in Subsection 401.16 for each 0.1-mile and multiplying that sum by the contract unit bid price.

END OF SECTION 501

SECTION 601 MINOR CONCRETE STRUCTURES

601.02 Material. Conform to the following Subsections:

Air-entraining admixtures	711.02
Chemical admixtures	711.03
Coarse aggregate	703.02
Concrete coloring agents	711.05
Curing material	711.01
Fine aggregate	703.01
Fly ash	725.04
Hydraulic cement	701.01
Joint fillers	712.01
Precast concrete curbing	725.06
Precast concrete units	725.11
Reinforcing steel	709.01
Structural steel	717.01
Water	725.01

601.03 Concrete Composition. Conform to Table 601-1. Before batching concrete, submit the proposed concrete proportions for approval on Form FHWA 1606 *Minor Concrete Mix Design Trial Batch Summary* or other approved form. As a minimum, submit the following:

- (a) Type and source(s) of all material proposed for use.
- (b) Material certification for all material proposed for use.
- (c) Saturated surface dry mass of the fine and coarse aggregate per cubic yard of concrete.
- (d) Gradation of fine and coarse aggregate.
- (e) Mass of mixing water per cubic yard of concrete.
- (f) Mass of cement per cubic yard of concrete. Fly ash, ground iron blast-furnace slag, or silica fume may be substituted for cement according to Subsection 552.03(g).
- (g) Entrained air content of plastic concrete in percent by volume.
- (h) Maximum slump of plastic concrete in inches.
- (i) When colored concrete is required, submit preliminary samples of the colored concrete. Prepare a 3-foot by 3-foot by 4-inch panel for each acceptable mix that is to be colored. Finish and cure the panels in the same manner as the concrete will be finished and cured on the project.

Table 601-1
Composition of Minor Structure Concrete

Property	Specification
Cement content	611 pounds per cubic yard minimum
Water/cement ratio	0.49 maximum
Slump	5 inches maximum
Air content	4 % minimum

Size of coarse aggregate	AASHTO M 43 with 100% passing the 1½-inch sieve
28-day compressive strength	3,000 pounds per square inch minimum

Construction Requirements

601.04 General. Excavate and backfill according to Section 209. When concrete is cracked, spalling, or scaling, remove concrete to the nearest joint.

Design and construct forms that are free of bulge and warp and allow for removal without injuring the concrete. When concrete contains a retarding admixture, fly ash, or other pozzolan replacement for cement, design the forms for a lateral pressure equal to that exerted by a fluid weighing 150 pounds per cubic foot.

Use wood, metal, or other suitable material for forms. Keep forms clean and coat with a form release agent or form oil before placing concrete.

Place and fasten reinforcing steel according to Subsection 554.08.

601.08 Measurement. Measure the Section 601 items listed in the bid schedule according to Subsection 109.02 and the following as applicable.

Measure concrete by the cubic yard in the structure.

601.09 Payment. The accepted quantities will be paid at the contract price per unit of measurement for the Section 601 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

The concrete lump sum item will be prorated based on the progress of the work under this Section.

END OF SECTION 601

SECTION 604 MANHOLES, INLETS, AND CATCH BASINS

604.06 Metal Construction. Fabricate metal drop inlets from the same material as adjoining metal pipes.

604.09 Measurement. Measure the Section 604 items listed in the bid schedule according to Subsection 109.02 and the following as applicable.

Measure manholes from finished grade to the flow line surface of the manhole.

Measure metal frames and grates and removing and resetting metal frames and grates unless included as part of the original inlet, manhole, or catch basin construction.

604.10 Payment. The accepted quantities will be paid at the contract price per unit of measurement for the Section 604 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

END OF SECTION 604

SECTION 607 CLEANING, RECONDITIONING, AND REPAIRING EXISTING DRAINAGE STRUCTURES

607.01 Description. This work consists of cleaning, reconditioning, and repairing existing culverts and appurtenant structures.

Construction Requirements

607.02 General. Dispose of material according to Subsection 203.05.

607.03 Removing and Cleaning Culverts. Carefully remove the culvert and clean all foreign material from within the barrel and at the jointed ends.

607.04 Cleaning Culverts in Place. Remove and dispose of all foreign material within the barrel and appurtenances of the culvert by any method that does not damage the culvert.

All or part of a culvert designated to be cleaned in place may be removed, cleaned, and relayed according to Section 602.

607.05 Relaying or Stockpiling Salvaged Pipe. Relay removed and cleaned pipe according to Section 602. Furnish all jointing material and replace damaged pipe according to Section 602.

Place salvaged pipe at a designated stockpile location. Dispose of pipe that is damaged.

607.06 Reconditioning Drainage Structures. Remove all debris from structures designated to be reconditioned. Repair all leaks and structural damage and replace missing or broken metalwork according to Section 602.

607.07 Acceptance. Cleaning, reconditioning, and repairing existing drainage structures will be evaluated under Subsection 106.02.

Relaying culverts will be evaluated under Section 602.

607.08 Measurement. Measure the Section 607 items listed in the bid schedule according to Subsection 109.02 and the following as applicable.

Measure removing, cleaning, and stockpiling culvert in the stockpile.

607.09 Payment. The accepted quantities will be paid at the contract price per unit of measurement for the Section 607 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

END OF SECTION 607

SECTION 615 SIDEWALKS, DRIVE PADS, AND PAVED MEDIANS

615.01 Description. This work consists of constructing sidewalks, drive pads, and paved medians.

Sidewalks, drive pads, and paved medians are designated as concrete, asphalt, concrete brick, or clay brick.

615.02 Conform to the following Sections and Subsections:

Asphalt mixtures	404
Bed course	704.09
Clay or shale brick	725.07
Concrete	601
Concrete brick	725.08
Curing material	711.01
Masonry and mortar cement	701.02
Sealants, fillers, seals, and sleeves	712.01
Reinforcing steel	709.01

Construction Requirements

615.03 General. Excavate and backfill according to Section 209. Place bed course material in layers not exceeding 4 inches in compacted thickness. Compact each layer with at least three passes of a lightweight mechanical tamper, roller, or vibratory system.

615.04 Concrete Sidewalks, Drive Pads, and Medians. Perform the work according to Section 601. Use forms that extend for the full depth of the concrete.

(a) Joints. Construct joints perpendicular to the outside slab edges and other joints. Match the joints in adjacent curb or pavements. Tool and remove all free mortar and concrete from joints.

(1) Expansion joints. Construct at intervals not exceeding 20 feet. Use 3/4-inch thick preformed expansion joint filler for the full depth of the joints. When joints are to be sealed, use multi-component joint sealant.

(2) Contraction joints. Construct at intervals not exceeding 10 feet. Form the joint with a jointing tool or saw the joints to a depth of 1/4 to 1/3 of the thickness of the concrete and about 1/8 inch wide.

(3) Construction joints. Form construction joints around all appurtenances such as manholes, utility poles, buildings, and bridges. Use 1/2-inch, thick preformed expansion joint filler for the full depth of the joints.

When joints are to be sealed, use multi-component joint sealant.

(b) Finishes. Provide a sidewalk finish unless otherwise required. Edge outside edges of slab and all joints with a 1/4-inch radius edging tool.

(1) Sidewalk finish. See Subsection 552.14(c)(2).

(2) Exposed aggregate finish. See Subsection 552.14(c)(4).

Cure the concrete for at least 72 hours according to Subsection 552.15(b) or (c). Protect the work from pedestrian traffic for 72 hours and from vehicular traffic for 7 days.

615.05 Asphalt Concrete Sidewalks, Drive Pads, and Medians. Perform the work according to Section 404.

615.06 Brick Sidewalks, Drive Pads, and Medians. Lay brick in successive courses on a prepared surface. Lay each course of brick to grade. Relay any course that deviates from a straight line by more than 2 inches in 30 feet.

Sweep and inspect the brick surface before the bed sets. Remove each imperfect brick and replace.

Chock the joints flush with a dry mixture of 4 parts sand and 1 part cement by mass and carefully water the surface to saturate the joint filler.

615.07 Acceptance. See Table 615-1 for sampling and testing requirements.

Clay or shale brick, concrete brick, curing material, joint fillers, and reinforcing steel will be evaluated under Subsections 106.02 and 106.03.

Bed course material will be evaluated under Subsections 106.02 and 106.04.

Construction of sidewalks, drive pads, and medians will be evaluated under Subsections 106.02 and 106.04.

Excavation and backfill will be evaluated under Section 209.

Asphalt mixture will be evaluated under Section 404.

Concrete will be evaluated under Section 601.

615.08 Measurement. Measure the Section 615 items listed in the bid schedule according to Subsection 109.02.

615.09 Payment. The accepted quantities will be paid at the contract price per unit of measurement for the Section 615 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

END OF SECTION 615

SECTION 634 PERMANENT PAVEMENT MARKINGS

634.01 Description. This work consists of applying permanent pavement markings and raised pavement markers on the completed pavement.

Pavement markings are designated as follows:

Type A —	Conventional traffic paint with type 1 glass beads
Type B —	Waterborne traffic paint with type 1 glass beads
Type C —	Waterborne traffic paint with type 3 glass beads
Type D —	Epoxy markings with type 1 glass beads
Type E —	Epoxy markings with type 1 and type 4 glass beads
Type F —	Polyester markings with type 1 glass beads
Type G —	Polyester markings with type 1 and type 4 glass beads
Type H —	Thermoplastic markings with type 1 glass beads
Type I —	Thermoplastic markings with type 1 and type 5 glass beads
Type J —	Preformed plastic markings
Type K —	Nonreflectorized markings

634.02 Material. Conform to the MUTCD and the following Subsections:

Conventional traffic paint	718.13
Epoxy markings	718.15
Epoxy resin adhesives	718.23
Glass beads	718.19
Polyester markings	718.16
Preformed plastic markings	718.18
Raised pavement markers	718.20
Thermoplastic markings	718.17
Waterborne traffic paint	718.14

Construction Requirements

634.03 General. Where existing and final pavement marking locations are identical, stake the limits of all existing pavement markings (no-passing zones, edge stripes, etc.) before any pavement work. Upon completion of the final surface course, establish line limits for the new pavement for approval before marking. Establish markings according to the MUTCD. In curve widening areas, apply the pavement edge markings at the edge of the traveled way and the centerline markings midway between the pavement lines.

Remove loose particles, dirt, tar, grease, and other deleterious material from the surface to be marked. Where markings are placed on rigid pavement less than 1 year old, clean the pavement of all residue and curing compounds. Remove temporary pavement markings the same day permanent pavement markings are applied. Apply markings to a clean, dry surface according to the MUTCD.

At least 7 days before applying pavement markings, furnish a written copy of the marking manufacturer's recommendations for use. A field demonstration may be required to verify the adequacy of recommendations.

Ship marking material in appropriate containers plainly marked with the following information, as appropriate, for the material being furnished:

- (a) Manufacturer's name and address;
- (b) Name of product;
- (c) Lot/batch numbers;
- (d) Color;
- (e) Net mass and volume of contents;
- (f) Date of manufacture;
- (g) Date of expiration;
- (h) Statement of contents (if mixing of components is required);
- (i) Mixing proportions and instructions; and
- (j) Safety information.

Apply pavement markings in the direction of traffic according to the manufacturer's recommendations. Apply all markings to provide a clean-cut, uniform, and workmanlike appearance by day and night.

Make lines 4 inches wide. Make broken lines 10 feet long with 30-foot gaps. Make dotted lines 2 feet long with 4-foot gaps. Separate double lines with a 4-inch space.

Protect marked areas from traffic until the markings are dried to no-tracking condition. Remove all tracking marks, spilled marking material, markings in unauthorized areas, and defective markings.

Remove all conflicting pavement markings according to Subsection 635.13.

634.04 Conventional Traffic Paint (Type A). Apply paint when the pavement and air temperatures are above 40 °F. Spray paint at 15 mil minimum wet film thickness before glass beads or at a rate of 107 square feet per gallon. Immediately apply type 1 glass beads on the paint at a minimum rate of 6 pounds per gallon of paint.

On new asphalt pavements or new asphalt surface treatments, apply two coats. Apply the first coat at 360 square feet per gallon and the second coat at 150 square feet per gallon.

634.05 Waterborne Traffic Paint (Type B and C). Apply paint when the pavement and air temperatures are above 50 °F. Spray paint at 15 mil minimum wet film thickness before glass beads or at a rate of 107 square feet per gallon.

(a) **Type B.** Immediately apply type 1 glass beads on the paint at a minimum rate of 6 pounds per gallon of paint.

(b) **Type C.** Immediately apply type 3 glass beads on the paint at a minimum rate of 12 pounds per gallon of paint.

On new asphalt pavements or new asphalt surface treatments, apply two coats. Apply each coat at 210 square feet per gallon.

634.06 Epoxy Markings (Types D and E). Heat components A and B separately at 110±30 °F and mix. Discard all material heated over 140 °F. Apply epoxy when the pavement and air temperatures are above 50 °F. Apply as a spray at 110±30 °F (gun tip temperature) at a 15 mil minimum dry film thickness or 107 square feet per gallon.

(a) **Type D.** Immediately apply type 1 glass beads on the epoxy at a minimum rate of 15 pounds per gallon of epoxy.

(b) **Type E.** Use two bead dispensers. Immediately apply type 4 glass beads on the epoxy at a minimum rate of 12 pounds per gallon of epoxy immediately followed by an application of type 1 glass beads at a minimum rate of 12 pounds per gallon.

634.07 Polyester Markings (Types F and G). Apply polyester when the pavement and air temperatures are above 50 °F. Spray at 128±7 °F (gun tip temperature) at a 15 mil minimum dry film thickness or 107 square feet per gallon. Discard all material heated over 150 °F. Do not use fast dry polyester markings on asphalt pavements less than 1 year old.

(a) **Type F.** Immediately apply type 1 glass beads on the polyester at a minimum rate of 15 pounds per gallon of polyester.

(b) **Type G.** Use two bead dispensers. Immediately apply type 4 glass beads on the polyester at a minimum rate of 12 pounds per gallon of polyester immediately followed by an application of type 1 glass beads at a minimum rate of 12 pounds per gallon.

634.08 Thermoplastic Markings (Type H and I). On areas to be marked on rigid pavements and old asphalt pavements, apply an epoxy resin primer/sealer according to the thermoplastic manufacturer's recommendations. Allow the primer/sealer to dry.

Apply thermoplastic when the pavement and air temperatures are above 50 °F. Spray or extrude the thermoplastic at 430±5 °F. For centerlines and lane lines, spray or extrude 90 mil minimum dry film thickness or at a rate of 17.8 square feet per gallon. For edge lines, spray or extrude 60 mil minimum dry film thickness or at a rate of 26.7 square feet per gallon.

(a) **Type H.** Immediately apply type 1 glass beads on the thermoplastic at a minimum rate of 12 pound per 100 square feet.

(b) **Type I.** Use two bead dispensers. Immediately apply type 5 glass beads on the thermoplastic at a minimum rate of 12 pounds per 100 square feet immediately followed by an application of type 1 glass beads at a minimum rate of 12 pounds per 100 square feet.

The minimum bond strength of the thermoplastic shall be 175 pounds per square inch on rigid pavements.

634.09 Preformed Plastic Markings (Type J). Install to form a durable, weather resistant bond to the pavement. Apply preformed plastic markings according to the manufacturer's recommendation.

Where applied during final compaction of asphalt pavement, apply preformed plastic when the pavement temperature is about 140 °F. Roll the marking into the surface with a steel wheel roller. The finished pavement marking may extend approximately 10 mil above the final surface.

634.10 Nonreflectorized Markings (Type K). Apply conventional traffic paint, waterborne traffic paint, epoxy markings, polyester markings, or thermoplastic markings as described above, but with no glass beads added.

634.11 Raised Pavement Markers. Install raised pavement markers when the pavement and air temperatures are above 50 °F. Apply raised pavement markers with epoxy resin or asphalt adhesive.

Heat epoxy components A and B separately with indirect heat, mix, and apply at 70±10 °F. Discard all material heated over 120 °F or stiffened by polymerization.

Heat and apply asphalt adhesives at 412±12 °F. Discard all material heated over 450 °F.

Space and align the markers to within 1/2 inch of the required location. Do not place raised pavement markers over pavement joints.

The minimum bond strength will be 1.75 pounds per square inch or a total tensile strength of 25 pounds.

634.12 Acceptance. Material for permanent pavement markings will be evaluated under Subsections 106.02 and 106.03.

Placement of permanent pavement marking will be evaluated under Subsections 106.02 and 106.04.

634.13 Measurement. Measure the Section 634 items listed in the bid schedule according to Subsection 109.02 and the following as applicable.

When two coats of paint are required, measure each coat.

When pavement markings are measured by the linear foot or station, measure the length of line applied along the centerline of each 4-inch-wide 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. For line widths other than 4 inches, the measured length of line is adjusted in the ratio of the required width to 4 inches.

When pavement markings are measured by the square foot, measure the number of square feet of symbol or letter marking based on the marking area shown in the contract or, if not shown, the area of each marking measured in place to the nearest square foot.

634.14 Payment. The accepted quantities will be paid at the contract price per unit of measurement for the Section 634 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

END OF SECTION 634

SECTION 635 TEMPORARY TRAFFIC CONTROL

635.01 Description. This work consists of furnishing, maintaining, relocating, and removing temporary traffic control devices and services as ordered for the control and protection of public traffic through the project.

Advance warning arrow panel, barricade, and warning light types are designated as shown in the MUTCD.

635.02 Material. Conform to the MUTCD and the following Sections and Subsections:

Construction sign panels	633
Retroreflective sheeting	718.01
Temporary concrete barrier	618
Temporary plastic fence	710.11
Temporary guardrail	617
Temporary pavement markings	718.21
Temporary traffic control devices	718.22
Traffic markings	634

Construction Requirements

635.03 General. Install and maintain temporary traffic control devices adjacent to and within the project as required by the traffic control plan, Section 156, and the MUTCD. Install and maintain traffic control devices as follows:

- (a) Furnish and install traffic control devices before the start of construction operations.
- (b) Install only those traffic control devices needed for each stage or phase.
- (c) Relocate temporary traffic control devices as necessary.
- (d) Remove devices that no longer apply to the existing conditions.
- (e) Immediately replace any device that is lost, stolen, destroyed, or inoperative.
- (f) Keep temporary traffic control devices clean.
- (g) Furnish and maintain traffic control devices that meet the "acceptable" standard described in *Quality Standards for Work Zone Traffic Control Devices* published by ATSSA. Amend the ATSSA standards as follows:
 - (1) Repair or remove and replace "marginal" devices within 48 hours; and
 - (2) Repair or remove and replace "unacceptable" devices immediately.
- (h) Remove all temporary traffic control devices upon contract completion or when approved.
- (i) Furnish temporary traffic control devices that meet the NCHRP Report 350, *Recommended Procedures for the Safety Performance Evaluation of Highway Features*, for crashworthiness standards as applicable.

635.04 Advance Warning Arrow Panels. Perform the work described under MUTCD Part 6.

635.05 Barricades. Perform the work described under MUTCD Part 6. Use type III, VII, VIII, or IX retroreflective sheeting.

635.06 Cones and Tubular Markers. Perform the work described under MUTCD Part 6. Use 28-inch cones or tubular markers. Use type III, or VI retroreflective sheeting.

635.07 Construction Signs. Use type III, VII, VIII, or IX retroreflective sheeting. For roll-up signs, use type VI retroreflective sheeting. Remove or completely cover all unnecessary signs with metal, plywood, or other acceptable material.

Use crashworthy posts within the traversable area adjacent to traffic. Install posts according to Section 633.

- 635.08 Drums.** Perform work described in MUTCD Part 6. Use plastic drums that are approximately 36 inches high and a minimum of 18 inches in diameter. Use type III or VI retroreflective sheeting.
- 635.09 Flaggers.** Use flaggers certified by the American Traffic Safety Services Association, the National Safety Council, the International Municipal Signal Association, a state agency, or other acceptable organization. Perform the work described under MUTCD Part 6. Use type III, VII, VIII, or IX retroreflective sheeting on flagger paddles. Do not use flags.
- 635.10 Pilot Cars.** Perform the work described under MUTCD Part 6. Use pilot car operators meeting the minimum qualifications of a flagger according to Subsection 635.09. Mount a rotating amber beacon on the roof of each pilot car. Do not use strobe light beacons.
- 635.11 Temporary Barriers.** Perform the work described under MUTCD Part 6. Use temporary barriers that meet NCHRP Report 350 and are new or used provided they are not badly damaged. Lifting holes no larger than 4 inches or lifting loops are permitted. Individual sections may vary in length.

Mount 3-inch minimum dimension white or yellow retroreflectors, as applicable, to the top or side of the barrier on 25-foot centers. Mount the retroreflectors at a uniform height at least 2 feet above the pavement surface.

- 635.12 Temporary Guardrail.** Construct temporary guardrail according to Section 617.

Mount 3-inch minimum dimension white or yellow retroreflectors, as applicable, to the top or side of the guardrail on 25-foot centers. Mount the retroreflectors at a uniform height at least 2 feet above the pavement surface.

- 635.13 Temporary Pavement Markings and Delineation.** Before opening a pavement surface to traffic, remove all conflicting pavement markings by sandblasting or other methods that do not damage the surface or texture of the pavement. Make the removal pattern uneven so it does not perpetuate the outline of the removed pavement markings. Lightly coat sandblasted or removal areas on asphalt surfaces with emulsified asphalt.

Place and maintain temporary pavement markings that are neat, crack free, true, straight, and unbroken. For temporary pavement markings, use preformed retroreflective tape, traffic paint, or temporary raised pavement markers as follows:

(a) Preformed retroreflective tape. Apply according to the manufacturer's instructions. Remove all loose temporary preformed retroreflective tape before placing additional pavement layers.

(b) Traffic paint. Do not apply temporary traffic paint to the final surface. Apply traffic paint as the temporary pavement marking if no work will be performed on the project for at least 30 consecutive days. Apply temporary traffic paint at a 15 mil minimum wet film thickness (0.9 gallons per 100 square feet). Immediately apply type 1 glass beads on the paint at a minimum rate of 6 pounds per gallon of paint.

(c) Raised pavement markers. Do not use raised pavement markers during seasonal suspensions. When chip seals, slurry seals, or tack coats are used after marker placement, protect the markers with an approved protective cover, which is removed after the asphalt material is sprayed. Temporary raised pavement markers may be used as temporary pavement markings as follows:

(1) 10-foot broken line. Four pavement markers spaced 3.33 feet apart followed by a 30-foot gap.

(2) 2-foot broken line. Two pavement markers spaced 2 feet apart followed by an 18-foot gap.

(3) Solid line. Pavement markers on 5-foot centers.

Remove all temporary raised pavement markers before placing additional pavement layers.

Remove all temporary pavement markings from the surface course before placing permanent pavement markings.

635.14 Vertical Panels. Perform the work described under MUTCD Part 6. Use type III, VII, VIII, or IX retroreflective sheeting.

635.15 Warning Lights. Perform the work described under MUTCD Part 6. When type C, steady-burn, warning lights are installed on barricades or drums and used in a series for delineation, use type A, flashing, warning lights on the first 2 barricades or drums in the series. Mount batteries for type B warning lights a maximum of 12 inches from ground or roadway surface as measured to top of the battery casing.

635.16 Shadow Vehicle. Use a shadow vehicle (15,000 pound gross vehicle mass minimum) equipped with a truck-mounted attenuator (crash cushion) attached to the rear of the vehicle, exterior flashing yellow dome light, and an advance warning arrow panel. Use advance warning arrow panel according to Subsection 635.04.

Use the shadow vehicle to provide physical protection to workers from traffic approaching from the rear during moving operations (i.e., pavement markings, traffic control set up and removal, etc.). Use the following procedures to close a lane of traffic. Alternate procedures may be used if approved by the CO.

- (a) Move the shadow vehicle to a point approximately 200 feet from the first advance warning sign for the lane closure and stop on the shoulder.
- (b) Activate the flashing lights and flashing arrow panel. Begin the arrow panel in the caution mode and after approximately 2 minutes display the correct flashing pass arrow.
- (c) Move the shadow vehicle (now acting as a protection vehicle) along the shoulder to the first sign location, stopping approximately 100 feet before the sign location in a blocking position.
- (d) Place the first sign then proceed to the next advance sign location. Repeat step (c) for the second sign and install that sign. Repeat this procedure until all advance warning signs are installed.
- (e) After installing all of the advanced warning signs for the lane closure, move the shadow vehicle into the lane that is to be closed to a position 100 feet in advance of the closing taper location. Install the channelizing devices for the taper in the shielded lane.
- (f) Move the shadow vehicle off the roadway and past the taper on the shoulder and remain in position until the flashing arrow panel for the closure (if one is to be provided) is placed and operating. Move the shadow vehicle with the workers as they proceed to set up the remaining devices as additional protection.

635.17 Pavement Patch. Use an asphalt mix according to Section 404 or 417 to repair potholes and rough spots in the traveled way before reopening travel lanes to traffic.

635.18 Portable Changeable Message Sign. Conform to the MUTCD Part 6.

635.19 Temporary Crash Cushions. Install an FHWA-approved temporary crash cushion conforming to the appropriate level of crashworthiness per NCHRP Report 350. FHWA-approved crash cushions are available on the FHWA Safety website. Install according to manufacturer's recommendations.

635.20 Temporary Signal System. Use a temporary signal system according to Section 636 and MUTCD Parts 4 and 6.

Use signal heads with three lenses, minimum 8 inches diameter, indicating red, yellow, and green phases. Use a signal controller capable of operating in either the solid red, solid green, or a red/yellow/green mode for each signal.

635.21 Temporary Fence. Use temporary fence according to Section 619.

- 635.22 Portable Rumble Strip.** Use a strip 10 feet long, 18 inches wide, and 1¼ inches high to alert drivers of an approaching flagger station or work area.
- 635.23 Opposing Traffic Lane Divider.** Use type III, VII, VIII, or IX retroreflective sheeting.
- 635.24 Steel Plates.** Use 1-inch or thicker steel plates capable of safely carrying traffic. Secure the plates to the pavement to prevent any movement.
- 635.25 Acceptance.** Material (including signs, drums, barricades, cones, tubular markers, crash cushions, concrete barriers, dividers, fence, guardrail, pavement markings, rumble strips, traffic signals, lights, and vertical panels) for temporary traffic control devices will be evaluated under Subsections 106.02 and 106.03. Vehicles for pilot cars and shadow vehicles will be evaluated under Subsection 106.02.

Placement of temporary traffic control devices will be evaluated under Subsections 106.02 and 106.04.

Temporary traffic control services will be evaluated under Subsection 106.02.

- 635.26 Measurement.** Measure the Section 635 items listed in the bid schedule according to Subsection 109.02 and the following as applicable when ordered by the CO and installed.

Measure temporary traffic control items only one time even if relocated or replaced, except for items paid by the hour.

Measure advance warning arrow panels by the hour or by the each. When measurement is by the hour, round portions of an hour up to the half hour.

Measure barricades by the linear foot of width.

Measure construction signs by the square foot of front face sign panel. Do not measure posts and temporary supports.

Measure flaggers, for each hour a person is actually performing the work. Round portions of an hour up to the half hour. Measure time in excess of 40 hours per week at the same rate as the first 40 hours.

Measure pilot cars (including operators) for each hour the car is actually performing the work. Round portions of an hour up to the half hour. Measure time measured in excess of 40 hours per week at the same rate as the first 40 hours.

When there is a pay item for moving temporary barriers, do not measure movement of temporary barriers for work access or the convenience of the Contractor.

Measure temporary guardrail from center-to-center of end posts.

Measure temporary pavement markings for only one application of pavement markings per lift. When temporary pavement markings are measured by the linear foot or mile, measure the number of linear feet or miles of lines applied along the centerline of each 4-inch wide line applied regardless of color. Measure solid lines from end to end of each continuous line. Measure broken lines from end to end including gaps. For line widths greater than 4 inches, adjust the measured length of line in the ratio of the required width to 4 inches. When temporary pavement markings are measured by the square foot, measure the number of square feet of symbols or letter markings based on the marking area shown in the contract or, if not shown, the area of each marking measured in place to the nearest square foot.

Measure temporary raised pavement markers one time for each lift of pavement even if replaced. Measure temporary raised pavement markers used at the option of the Contractor in lieu of temporary pavement markings as equivalent temporary pavement markings and not as temporary raised pavement markers.

Measure pavement marking removal of actual line removed. Do not measure gaps.

Measure temporary crash cushions for each entire crash configuration.

When there is a pay item for moving temporary crash cushion, do not measure movement of temporary crash cushion for work access or the convenience of the Contractor.

Measure replacement barrels or cartridges for crash cushions for the barrels or cartridges damaged by public traffic.

635.27 Payment. The accepted quantities will be paid at the contract price per unit of measurement for the Section 635 pay items in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

Progress payments for temporary traffic control devices will be made as follows:

- (a) 50 percent of the unit bid price will be paid upon installation.
- (b) An additional 25 percent of the unit bid price will be paid following completion of 50 percent of the contract amount.
- (c) Payment of the remaining portion of the unit bid price will be paid when the temporary traffic control devices are removed from the project.

Progress payments for items paid for by the hour will be paid at 100 percent of the unit bid price when ordered by the CO and furnished.

END OF SECTION 635

SECTION 636 SIGNAL, LIGHTING, AND ELECTRICAL SYSTEMS

636.01 Description. This work consists of installing, modifying, or removing traffic signals, flashing beacons, highway lighting, sign illumination, communication conduits, and electrical systems or provisions for future systems.

636.02 Material. Conform to the following Subsections:

Backer rod	712.01(g)
Electrical material	721.01
Lighting material	721.02
Precast concrete units	725.11(d)
Sealant	712.01(a)

Construction Requirements

636.03 Regulations and Codes. Furnish material and workmanship conforming to the standards of the National Electrical Code, local safety code, UL, and the National Electrical Manufacturers Association.

Obtain permits, arrange for inspections, and pay all fees necessary to obtain electrical service.

Furnish luminaries with crashworthy supports.

Notify the CO, local traffic enforcement agency, local utility company, or railroad company 7 days before any operational shutdown to coordinate connections or disconnections to an existing utility or system.

636.04 General. At the preconstruction conference, submit a certified cost breakdown of items involved in the lump sum for use in making progress payments and price adjustments.

Fifteen days before installation, submit a list of proposed equipment and material. Include the manufacturer's name, size, and identification number of each item. Supplement the list with scale drawings, catalog cuts, and wiring diagrams showing locations and details of equipment and wiring.

The CO will establish the exact locations of the systems.

Remove structures and obstructions according to Section 203. Salvage all material acceptable for reuse in the work. Excavate and backfill according to Section 209. Construct concrete according to Section 601.

Where roadways are to remain open to traffic and existing systems will be modified, maintain the existing systems in operation until final connection to the modified circuit to minimize traffic disruptions.

636.05 Conduit. Cut conduit so the ends are smooth. Connect conduit sections with couplings to butt the ends of both conduits squarely against each other inside the couplings. Provide a metal expansion and deflection fitting where conduit crosses a structural expansion joint.

Install conduits continuous between outlets with a minimum of couplings to permit pulling conductors. Terminate conduit with bell fittings or bushings. Furnish pull wires for conduits designated for future cable installation.

Remove and replace crushed, deformed, or damaged conduit. Maintain conduits clean and dry and protect ends of conduit with plugs, caps, or fittings.

Size pull boxes to provide for termination of the conduit and connection of the conductors.

636.06 Installation of Signal and Lighting Systems. Design the control unit to energize the lighting circuit upon failure of any component of its circuit. Furnish a control with an "on" level adjustable between 1 and 5 foot candles. Operate luminaires with a series circuit distribution system at a potential not exceeding 2400 volts.

Control lights and luminaires by photocell controls. For current less than or equal to 10 amperes, furnish a photocell switch. For current greater than 10 amperes, furnish a photocell switch operating a magnetic relay for switching the lighting circuit.

636.07 Loop Installation. Do not install loops when the pavement is wet. Saw cut, wire, and seal for loop wires on the same day. Do not allow vehicular traffic to pass over an open saw cut unless covered by a protective panel.

Saw clean, smooth, well-defined, 5/16-inch wide, and 1¾-inch deep cuts without damaging the adjacent pavement. Overlap saw cuts to provide full depth at all corners. Saw cut the lead-in to the pull box as close as possible to the edge of pavement. Clean and dry saw cuts according to Subsection 502.06(a).

Install the loop wire in one continuous length at the bottom of the cut. Install without kinks, curls, or other damage to the wire or its insulation. Replace any damaged wires. Hold the loop wire in place with 2-foot long backer rods.

Where the loop wire crosses a crack or joint, use a plastic sleeve that extends 4 inches on each side of the crack or joint. Provide extra loop wire in the sleeve for joint expansion and contraction.

Twist the loop lead-in wires 1 turn per foot from the loop to the pull box. Color code the wires of each loop for identification of separate loops. Coil 3 feet of lead-in pair slack in the pull box for each loop.

Before applying sealant, test the loop and lead-in for continuity and resistance by applying a 1000-volt megger between each end of the loop lead-in and the nearest reliable electrical ground. If no available ground exists, establish a ground for the measurement. Record the location and megger readings and submit readings and test equipment data. Replace the loop if the megger reading is less than 10 megaohms or the inductance is less than 60 microhenries or more than 100 microhenries.

Apply sealant to the saw cuts with the backer rods in place. Apply the sealant in a manner that does not produce air bubbles. Remove excess sealant and finish level with the pavement. Follow the manufacturer's instructions for sufficient time for the sealant to harden before allowing traffic to cross the loops.

Repeat the resistance and continuity test after sealant is applied. Report the second test for comparison with the first report.

636.08 Testing and Demonstration Period. Before energizing any portion of the system, demonstrate that the conductor system is clear and free of all short circuits, open circuits, and unintentional grounds. Repair or replace faulty circuits.

After energizing the system, demonstrate that all electrical components work properly. Repair or replace faulty electrical components.

After completing electrical component tests, conduct a demonstration test for 30 continuous days. Adjust and correct any deficiencies in the system during the 30-day demonstration period. If any part of the system is replaced or repaired, retest that part of the system for an additional 30 days.

636.09 Warranties, Guarantees, and Instruction Sheets. When installations are permanent, deliver manufacturers' warranties, guarantees, instruction sheets, and parts lists at the final inspection.

Upon completion of the work, also submit as-built drawings showing all detail changes from the original plans.

636.10 Relocations. Use material equivalent to existing material, unless present codes require different or improved material. Existing material may be salvaged and reused, provided all material and installation methods used meet the requirements of applicable codes and ordinances.

636.11 Acceptance. Material for signal systems, lighting systems, and electrical systems will be evaluated under Subsections 106.02 and 106.03.

Installation of signal systems, lighting systems, and electrical systems will be evaluated under Subsections 106.02 and 106.04.

Structural excavation and backfill will be evaluated under Section 209.

Concrete will be evaluated under Section 601.

636.12 Measurement. Measure the Section 636 items listed in the bid schedule according to Subsection 109.02 and the following as applicable.

For relocations, do not measure additional line or connections necessary to place the fixture at the new location.

636.13 Payment. The accepted quantities will be paid at the contract price per unit of measurement for the Section 636 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

Payment for lump sum items will be prorated based on the total work completed.

END OF SECTION 636

SECTION 704 SOIL

Table 704-2
Select Topping Gradation

Sieve Size	Percent by Mass Passing Designated Sieve (AASHTO T 27 & T 11)
3 inch	100
No. 200	0-15

704.09 Bed Course. Furnish porous, free-draining granular material free of excess moisture, muck, frozen lumps, roots, sod, or other deleterious material conforming to the following:

- (a) Gradation, well graded coarse to fine Table 704-3
- (b) Liquid limit, AASHTO T 89 30 max.

Table 704-3
Bed Course Gradation

Sieve Size	Percent by Mass Passing Designated Sieve (AASHTO T 27 & T 11)
1/2 inch	100
No. 200	0 – 10

704.10 Select Granular Backfill. Furnish sound, durable, granular material free from organic matter or other deleterious material. Conform to the following:

(a) Quality requirements.

- (1) Gradation Table 704-4
- (2) Angle of internal friction 34° min.
on the portion passing the No. 10 sieve,
AASHTO T 236

Note: Compact samples for AASHTO T 236 to 95 percent of the maximum density determined according to AASHTO T 99, method C or D and corrected for oversized material according to AASHTO T 99, Note 9.

- (3) Sodium sulfate soundness loss (5 cycles), 15% max.
AASHTO T 104

- (4) Plasticity index, AASHTO T 90 6 max.

(b) Electrochemical requirements for MSE walls with metallic reinforcements.

- (1) Resistivity, AASHTO T 288 3000 Ωcm min.
- (2) pH, AASHTO T 289 5.0 to 10.0
- (3) Sulfate content, AASHTO T 290 200 ppm max.
- (4) Chloride content, AASHTO T 291 100 ppm max.

Note: Tests for sulfate and chloride content are not required when resistivity is greater than 5000 ohm centimeters.

(c) Electrochemical requirements for MSE walls with geosynthetic reinforcements.

pH, AASHTO T 289 5.0 to 10.0

Table 704-4
Select Granular Backfill Gradation

Sieve Size	Percent by Mass Passing Designated Sieve (AASHTO T 27 & T 11)
4 inch	100
No. 40	0 – 60
No. 200	0 – 15

END OF SECTION 704

SECTION 725 MISCELLANEOUS MATERIAL

725.12 Frames, Grates, Covers, and Ladder Rungs. Fabricate metal grates and covers to evenly bear on the frames. Correct bearing inaccuracies by machining. Assemble all units before shipment. Mark all pieces to facilitate reassembly at the installation site. Uniformly coat all castings with a commercial preservative according to the manufacturer's standard practice. Conform to the following:

(a) Gray iron castings	AASHTO M 105
(b) Carbon steel castings	AASHTO M 103
(c) Structural steel	ASTM A 36
(d) Galvanizing	AASHTO M 111
(e) Malleable iron castings	ASTM A 47
(f) Aluminum alloy ladder rung material	ASTM B 221, alloy 6061-T6
(g) Aluminum castings	ASTM B 26, alloy 356.0-T6

725.21 Epoxy Resin Adhesives. Conform to AASHTO M 235.

725.29 Reinforcing Fibers. Use deformed steel or fibrillated polypropylene fibers conforming to ASTM C 1116.

END OF SECTION 725

APPENDIX C

BID SCHEDULE - A

LIGHTING IMPROVEMENT & MAINTENANCE PROJECT

BID ITEM NO.	BID ITEM DESCRIPTION	UNIT	UNIT BID PRICE
1.0	Mobilization	LS	
2.0	Traffic Control Each Site When Req'd	EA	
3.0	DIAGNOSIS – Lighting/Electrical Per Post	EA	
3.a	DIAGNOSIS – Panel Box/Cabinet	EA	
3.b	Continuity Test	EA	
3.c	Insulation Test	EA	
4.a	High Intensity Discharge (HID)	EA	
4.b	High Pressure Sodium (HPS)	EA	
4.c	Metal Halide (MH)	EA	
4.d	LED	EA	
5.a	#2 AWG THHN	LF	
5.b	#6 AWG THHN/THWN (Blk, Red, Wht,Grn)	LF	
5.c	#8 AWG THHN/THWN (Blk, Red,Wht,Grn)	LF	
5.d	#10 AWG THHN/THWN	LF	
5.e	#12 AWG THHN/THWN	LF	
5.f	#14 AWG THHN/THWN	LF	
6.a	2" Conduit - Alum Sch 80	LF	
6.b	2" Conduit - Alum Sch 40	LF	
6.c	1 1/2" Conduit - Alum Sch 80	LF	
6.d	1 1/2" Conduit - Alum Sch 40	LF	
6.e	1 1/4" Conduit – Alum Sch 80	LF	
6.f	1 1/4" Conduit – Alum Sch 40	LF	
6.g	3/4" Conduit – Alum Sch 80	LF	
6.h	3/4" Conduit – Alum Sch 40	LF	
6.i	2" Conduit - PVC Sch 80	LF	
6.h	2" Conduit - PVC Sch 40	LF	
6.i	1" Conduit PVC Sch 80	LF	
6.j	1" Conduit PVC Sch 40	LF	
6.k	3/4" Conduit PVC Sch 80	LF	
6.l	3/4" Conduit PVC Sch 40	LF	
7.0	SS Cabinet	Ea	

8.0	Breakers	Ea	
9.0	Contactor	Ea	
10.0	Photocell	Ea	
11.0	Sidewalk Repair	SF	
12.0	Base Cover	EA	
13.0	Plate Covers	EA	
14.0	Pole Trunk Cement Crack Repair - Epoxy	LF	
15.0	Replace Base	EA	
16.0	Pole/Fixture Assembly	EA	
17.0	Foundation Base	EA	
18.0	Light Fixture Arm	EA	
19.0	Sidewalk Banner Arm	EA	
20.0	ID of Circuits and Labelling at Panel	EA	

Note: Except for Mobilization and Testing (1.0, 2.0 and 3.a, b c) the Unit Price of Each Item Should be Based on Installation Including Cleanup and Securing Jobsite.

Legend: LS - Lump Sum
 LF - Linear Feet
 SF - Square Feet
 SY - Square Yards
 EA - Each

APPENDIX C

BID SCHEDULE - B

LIGHTING IMPROVEMENT & MAINTENANCE PROJECT

BID ITEM NO.	BID ITEM DESCRIPTION	UNIT	UNIT BID PRICE
1.0	Mobilization	LS	
2.0	Traffic Control Each Site When Req'd	EA	
3.0	Sandbags/Erosion Control Ea Site	LF	
4.0	Water Blast/Clean Crosswalks ⁽¹⁾	EA	
5.0	Replace Brick Pavers	SF	
6.0	Repair Damaged Curbs w/High Strength Plaster	LF	
7.0	Replace Sign Post	EA	
8.0	Replace Pedestrian Crossing Sign	EA	
9.0	Replace Stop Sign	EA	
10.0	Replace Yield Sign	EA	
11.0	Replace Pedestrian Crossing Ahead	EA	
12.0	LED Solar Powered Pedestrian Crossing Sign	EA	
13.0	LED Solar Powered Area Lighting Sign	CY	
14.0	SS In-Roadway Crosswalk Warning Light ⁽²⁾	Set	
15.0	Lighted Pedestrian Crossing Lighted Conventional ⁽³⁾	EA	
16.0	Lighted Pedestrian Crossing Lighted Solar ⁽³⁾	EA	
17.0	Excavation	SY	
18.0	Asphalt Saw Cutting to 6" Thk	SY	
19.0	Concrete Paving Saw Cutting to 12" Thk	SY	
20.0	Subgrade Preparation (8")	SY	
21.0	Base Course (6")	SY	
22.0	Hot Asphalt Pavement (2")	SY	
23.0	Hot Asphalt Pavement (4")	SY	
24.0	Cold Mix Asphalt (4")	SY	
25.0	5000 PSI PC Concrete Pavement (8")	SY	
26.0	Concrete Curb Replace	LF	
27.0	Concrete Header	LF	
28.0	Traffic Marking 4"	LF	
29.0	Traffic Marking 6"	LF	
30.0	Traffic Marking 8"	LF	
31.0	Traffic Marking 12"	LF	

32.0	Arrow Marking	EA	
33.0	Crosswalk Ahead Pavement Marking	EA	

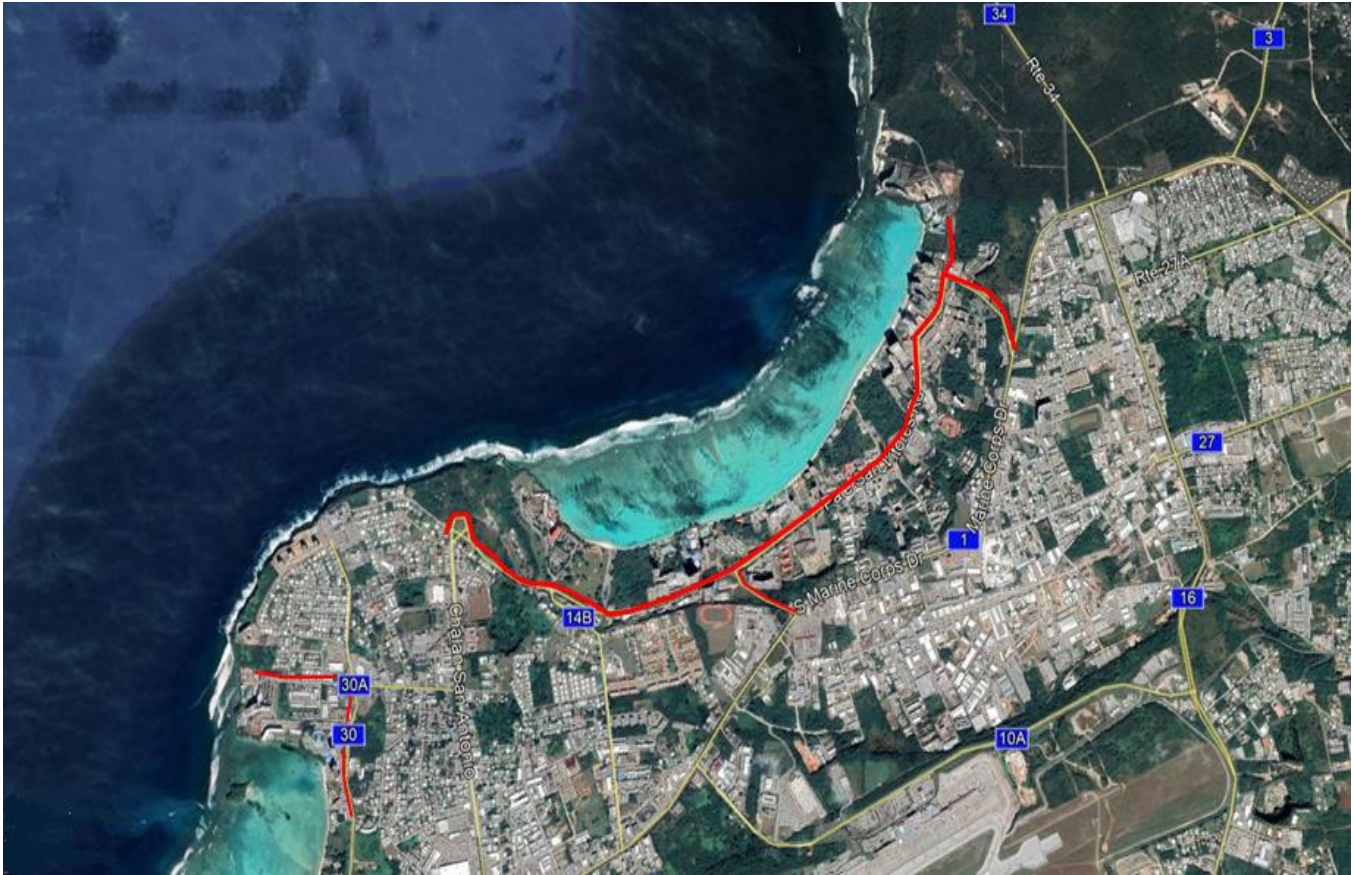
Notes:

1. Sidewalk to Sidewalk, Beginning at Approach Stripe each Crosswalk, each Side and Properly Collect and Dispose of Silt and Trash - No Silt or Trash Allowed to Remain or Wash Into Curb.
2. Must Include Photo-Sensor Bollard Activation, System Controller and Fixtures; Facing Both Approaches.
3. Traffic Marking Includes Cleaning and Preparation of Existing Marking for Restoration; or Cleaning and Preparation of Existing Pavement, Concrete or Asphalt to Receive New Markings.
4. Permitting and Permit Fees are Incidental to all Work Above.

Legend: LS - Lump Sum
LF - Linear Feet
SF - Square Feet
SY - Square Yards
EA - Each

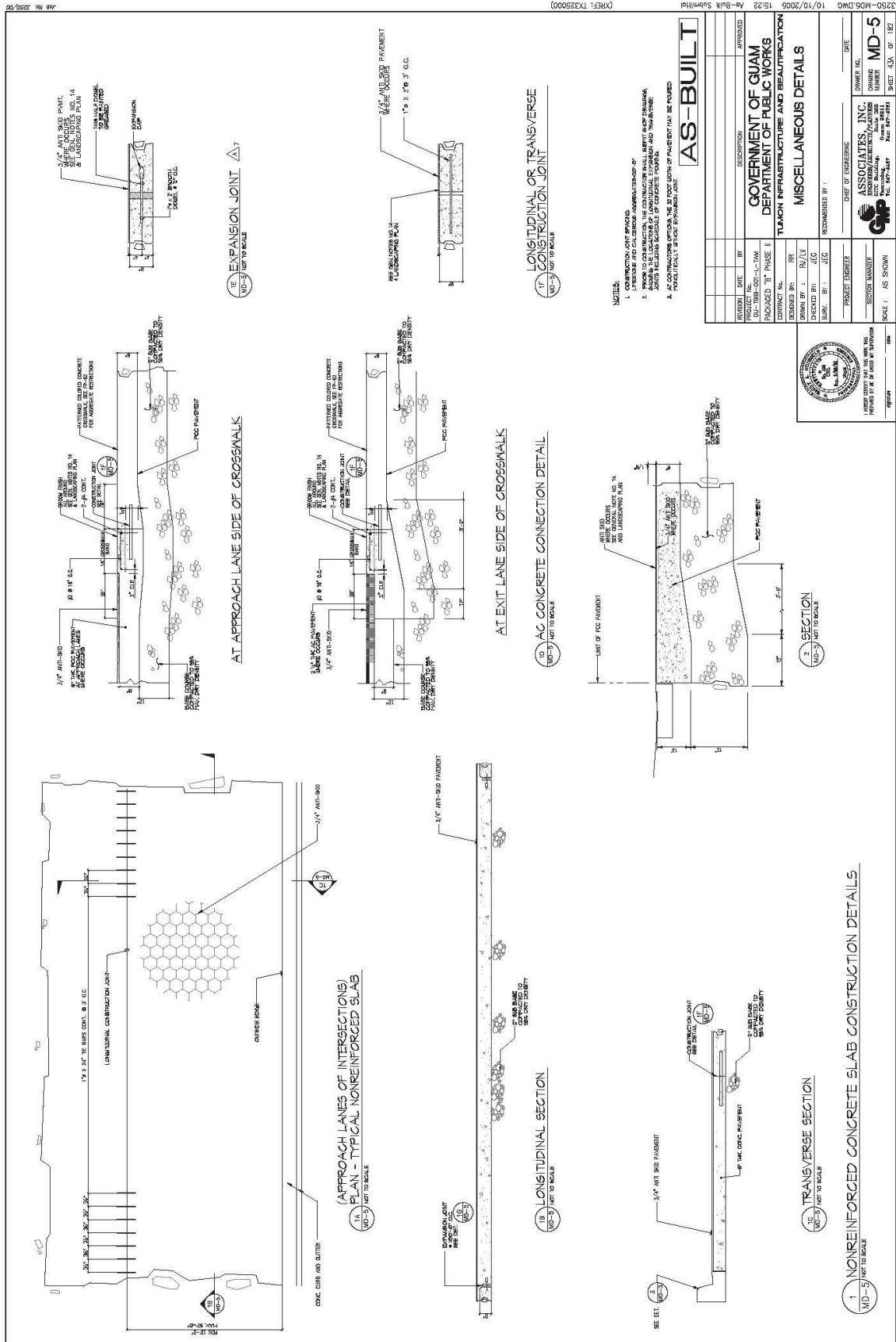
APPENDIX D

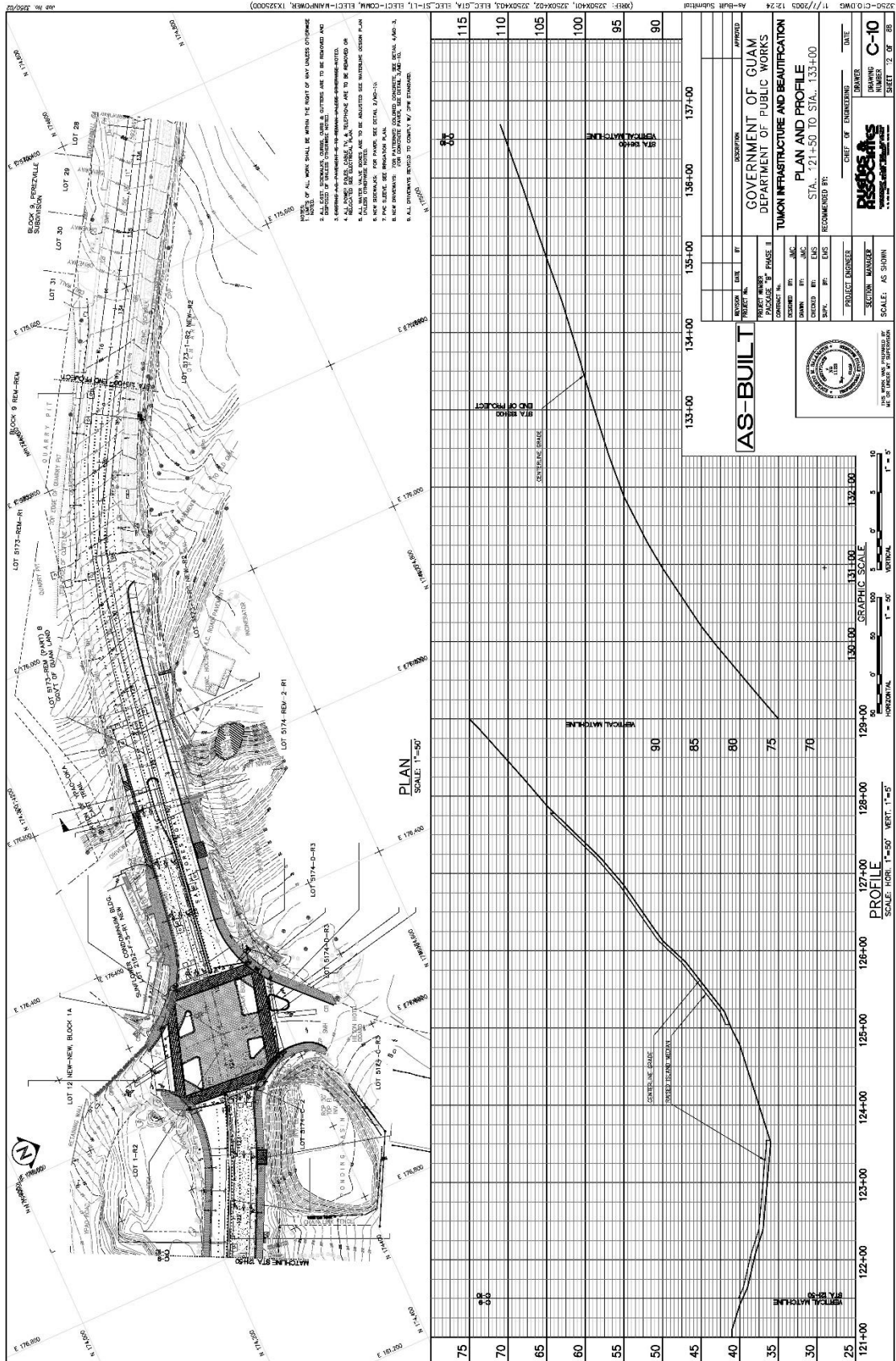
Location Map

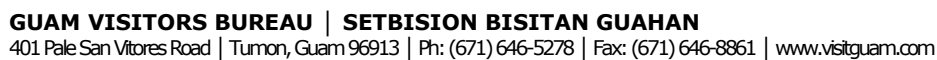


APPENDIX E

Selected As-Builts







APPENDIX F

U.S. Department of Labor
Wage & Determination Listing
WD 15-5693 posted 01/01/2019

WD 15-5693 (Rev.-8) was first posted on www.wdol.gov on 01/01/2019

REGISTER OF WAGE DETERMINATIONS UNDER | U.S. DEPARTMENT OF LABOR
THE SERVICE CONTRACT ACT | EMPLOYMENT STANDARDS ADMINISTRATION
By direction of the Secretary of Labor | WAGE AND HOUR DIVISION
| WASHINGTON D.C. 20210
|

Daniel W. Simms Director	Division of Wage Determinations	Wage Determination No.: 2015-5693 Revision No.: 8 Date of Revision: 12/26/2018
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Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.60 for calendar year 2019 applies to all contracts subject to the Service Contract Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.60 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2019. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

States: Guam, Northern Marianas, Wake Island

Area: Guam Statewide
Northern Marianas Statewide
Wake Island Statewide

****Fringe Benefits Required Follow the Occupational Listing****

OCCUPATION CODE - TITLE	FOOTNOTE	RATE
01000 - Administrative Support And Clerical Occupations		
01011 - Accounting Clerk I		13.57
01012 - Accounting Clerk II		15.23
01013 - Accounting Clerk III		17.04
01020 - Administrative Assistant		17.71
01035 - Court Reporter		17.22
01041 - Customer Service Representative I		10.89
01042 - Customer Service Representative II		12.25
01043 - Customer Service Representative III		13.37
01051 - Data Entry Operator I		12.15
01052 - Data Entry Operator II		13.25
01060 - Dispatcher, Motor Vehicle		14.37
01070 - Document Preparation Clerk		13.71
01090 - Duplicating Machine Operator		13.71
01111 - General Clerk I		10.29
01112 - General Clerk II		11.28
01113 - General Clerk III		12.32
01120 - Housing Referral Assistant		19.20
01141 - Messenger Courier		11.16

01191 - Order Clerk I	12.57
01192 - Order Clerk II	13.71
01261 - Personnel Assistant (Employment) I	15.57
01262 - Personnel Assistant (Employment) II	17.25
01263 - Personnel Assistant (Employment) III	19.22
01270 - Production Control Clerk	20.08
01290 - Rental Clerk	11.10
01300 - Scheduler, Maintenance	15.39
01311 - Secretary I	15.39
01312 - Secretary II	17.22
01313 - Secretary III	19.20
01320 - Service Order Dispatcher	12.73
01410 - Supply Technician	17.71
01420 - Survey Worker	15.26
01460 - Switchboard Operator/Receptionist	9.67
01531 - Travel Clerk I	12.77
01532 - Travel Clerk II	13.83
01533 - Travel Clerk III	14.78
01611 - Word Processor I	13.48
01612 - Word Processor II	15.13
01613 - Word Processor III	16.92
05000 - Automotive Service Occupations	
05005 - Automobile Body Repairer, Fiberglass	13.58
05010 - Automotive Electrician	13.06
05040 - Automotive Glass Installer	12.10
05070 - Automotive Worker	12.10
05110 - Mobile Equipment Servicer	10.27
05130 - Motor Equipment Metal Mechanic	13.71
05160 - Motor Equipment Metal Worker	12.10
05190 - Motor Vehicle Mechanic	13.71
05220 - Motor Vehicle Mechanic Helper	10.12
05250 - Motor Vehicle Upholstery Worker	12.10
05280 - Motor Vehicle Wrecker	12.10
05310 - Painter, Automotive	12.87
05340 - Radiator Repair Specialist	12.10
05370 - Tire Repairer	10.40
05400 - Transmission Repair Specialist	13.58
07000 - Food Preparation And Service Occupations	
07010 - Baker	10.47
07041 - Cook I	10.88
07042 - Cook II	12.63
07070 - Dishwasher	9.04
07130 - Food Service Worker	9.31
07210 - Meat Cutter	11.86
07260 - Waiter/Waitress	9.12
09000 - Furniture Maintenance And Repair Occupations	
09010 - Electrostatic Spray Painter	16.21
09040 - Furniture Handler	9.87
09080 - Furniture Refinisher	16.21
09090 - Furniture Refinisher Helper	11.97
09110 - Furniture Repairer, Minor	14.11
09130 - Upholsterer	16.21
11000 - General Services And Support Occupations	
11030 - Cleaner, Vehicles	9.13
11060 - Elevator Operator	9.13

11090 - Gardener	12.58
11122 - Housekeeping Aide	9.23
11150 - Janitor	9.23
11210 - Laborer, Grounds Maintenance	9.50
11240 - Maid or Houseman	9.13
11260 - Pruner	8.51
11270 - Tractor Operator	11.51
11330 - Trail Maintenance Worker	9.50
11360 - Window Cleaner	10.31
12000 - Health Occupations	
12010 - Ambulance Driver	17.77
12011 - Breath Alcohol Technician	17.77
12012 - Certified Occupational Therapist Assistant	24.38
12015 - Certified Physical Therapist Assistant	24.38
12020 - Dental Assistant	14.21
12025 - Dental Hygienist	32.84
12030 - EKG Technician	23.96
12035 - Electroneurodiagnostic Technologist	23.96
12040 - Emergency Medical Technician	17.77
12071 - Licensed Practical Nurse I	15.88
12072 - Licensed Practical Nurse II	17.77
12073 - Licensed Practical Nurse III	19.81
12100 - Medical Assistant	11.54
12130 - Medical Laboratory Technician	17.11
12160 - Medical Record Clerk	12.37
12190 - Medical Record Technician	17.77
12195 - Medical Transcriptionist	15.88
12210 - Nuclear Medicine Technologist	39.04
12221 - Nursing Assistant I	11.03
12222 - Nursing Assistant II	12.43
12223 - Nursing Assistant III	13.54
12224 - Nursing Assistant IV	15.22
12235 - Optical Dispenser	17.77
12236 - Optical Technician	15.88
12250 - Pharmacy Technician	15.49
12280 - Phlebotomist	15.22
12305 - Radiologic Technologist	22.64
12311 - Registered Nurse I	20.70
12312 - Registered Nurse II	25.32
12313 - Registered Nurse II, Specialist	25.32
12314 - Registered Nurse III	30.64
12315 - Registered Nurse III, Anesthetist	30.64
12316 - Registered Nurse IV	36.72
12317 - Scheduler (Drug and Alcohol Testing)	22.01
12320 - Substance Abuse Treatment Counselor	22.01
13000 - Information And Arts Occupations	
13011 - Exhibits Specialist I	19.26
13012 - Exhibits Specialist II	23.86
13013 - Exhibits Specialist III	29.18
13041 - Illustrator I	19.26
13042 - Illustrator II	23.86
13043 - Illustrator III	29.18
13047 - Librarian	26.42
13050 - Library Aide/Clerk	15.33
13054 - Library Information Technology Systems	23.86

<i>Administrator</i>		
13058 - Library Technician		16.64
13061 - Media Specialist I		17.21
13062 - Media Specialist II		19.26
13063 - Media Specialist III		21.47
13071 - Photographer I		17.06
13072 - Photographer II		19.06
13073 - Photographer III		23.63
13074 - Photographer IV		28.92
13075 - Photographer V		35.00
13090 - Technical Order Library Clerk		17.04
13110 - Video Teleconference Technician		17.18
<i>14000 - Information Technology Occupations</i>		
14041 - Computer Operator I		15.71
14042 - Computer Operator II		16.26
14043 - Computer Operator III		18.13
14044 - Computer Operator IV		20.14
14045 - Computer Operator V		22.31
14071 - Computer Programmer I	(see 1)	15.73
14072 - Computer Programmer II	(see 1)	19.50
14073 - Computer Programmer III	(see 1)	23.84
14074 - Computer Programmer IV	(see 1)	
14101 - Computer Systems Analyst I	(see 1)	24.23
14102 - Computer Systems Analyst II	(see 1)	
14103 - Computer Systems Analyst III	(see 1)	
14150 - Peripheral Equipment Operator		15.71
14160 - Personal Computer Support Technician		20.14
14170 - System Support Specialist		21.24
<i>15000 - Instructional Occupations</i>		
15010 - Aircrew Training Devices Instructor	(Non-Rated)	24.23
15020 - Aircrew Training Devices Instructor	(Rated)	29.32
15030 - Air Crew Training Devices Instructor	(Pilot)	33.30
15050 - Computer Based Training Specialist / Instructor		24.23
15060 - Educational Technologist		25.10
15070 - Flight Instructor	(Pilot)	33.30
15080 - Graphic Artist		20.47
15085 - Maintenance Test Pilot, Fixed, Jet/Prop		32.74
15086 - Maintenance Test Pilot, Rotary Wing		32.74
15088 - Non-Maintenance Test/Co-Pilot		32.74
15090 - Technical Instructor		17.65
15095 - Technical Instructor/Course Developer		21.58
15110 - Test Proctor		13.87
15120 - Tutor		13.87
<i>16000 - Laundry, Dry-Cleaning, Pressing And Related Occupations</i>		
16010 - Assembler		9.78
16030 - Counter Attendant		9.78
16040 - Dry Cleaner		11.30
16070 - Finisher, Flatwork, Machine		9.78
16090 - Presser, Hand		9.78
16110 - Presser, Machine, Drycleaning		9.78
16130 - Presser, Machine, Shirts		9.78
16160 - Presser, Machine, Wearing Apparel, Laundry		9.78
16190 - Sewing Machine Operator		11.94
16220 - Tailor		12.44
16250 - Washer, Machine		10.24

<i>19000 - Machine Tool Operation And Repair Occupations</i>		
19010 - Machine-Tool Operator	(Tool Room)	16.21
19040 - Tool And Die Maker		20.37
<i>21000 - Materials Handling And Packing Occupations</i>		
21020 - Forklift Operator		13.96
21030 - Material Coordinator		20.08
21040 - Material Expediter		20.08
21050 - Material Handling Laborer		11.37
21071 - Order Filler		9.66
21080 - Production Line Worker	(Food Processing)	13.96
21110 - Shipping Packer		13.33
21130 - Shipping/Receiving Clerk		13.33
21140 - Store Worker I		14.21
21150 - Stock Clerk		19.94
21210 - Tools And Parts Attendant		13.96
21410 - Warehouse Specialist		13.96
<i>23000 - Mechanics And Maintenance And Repair Occupations</i>		
23010 - Aerospace Structural Welder		20.69
23019 - Aircraft Logs and Records Technician		16.09
23021 - Aircraft Mechanic I		19.70
23022 - Aircraft Mechanic II		20.69
23023 - Aircraft Mechanic III		21.74
23040 - Aircraft Mechanic Helper		13.70
23050 - Aircraft, Painter		18.50
23060 - Aircraft Servicer		16.09
23070 - Aircraft Survival Flight Equipment Technician		18.50
23080 - Aircraft Worker		17.38
23091 - Aircrew Life Support Equipment (ALSE) Mechanic I		17.38
23092 - Aircrew Life Support Equipment (ALSE) Mechanic II		19.70
23110 - Appliance Mechanic		16.21
23120 - Bicycle Repairer		12.96
23125 - Cable Splicer		19.59
23130 - Carpenter, Maintenance		14.47
23140 - Carpet Layer		15.16
23160 - Electrician, Maintenance		17.86
23181 - Electronics Technician Maintenance I		15.16
23182 - Electronics Technician Maintenance II		16.21
23183 - Electronics Technician Maintenance III		18.31
23260 - Fabric Worker		14.11
23290 - Fire Alarm System Mechanic		15.43
23310 - Fire Extinguisher Repairer		13.06
23311 - Fuel Distribution System Mechanic		17.26
23312 - Fuel Distribution System Operator		13.06
23370 - General Maintenance Worker		11.96
23380 - Ground Support Equipment Mechanic		19.70
23381 - Ground Support Equipment Servicer		16.09
23382 - Ground Support Equipment Worker		17.38
23391 - Gunsmith I		13.06
23392 - Gunsmith II		15.16
23393 - Gunsmith III		17.26
23410 - Heating, Ventilation And Air-Conditioning Mechanic		16.58
23411 - Heating, Ventilation And Air Conditioning		17.63

<i>Mechanic (Research Facility)</i>	
23430 - Heavy Equipment Mechanic	17.39
23440 - Heavy Equipment Operator	16.21
23460 - Instrument Mechanic	17.26
23465 - Laboratory/Shelter Mechanic	16.21
23470 - Laborer	11.37
23510 - Locksmith	16.21
23530 - Machinery Maintenance Mechanic	21.03
23550 - Machinist, Maintenance	17.26
23580 - Maintenance Trades Helper	10.23
23591 - Metrology Technician I	17.26
23592 - Metrology Technician II	18.35
23593 - Metrology Technician III	19.43
23640 - Millwright	17.26
23710 - Office Appliance Repairer	16.21
23760 - Painter, Maintenance	13.95
23790 - Pipefitter, Maintenance	17.52
23810 - Plumber, Maintenance	16.45
23820 - Pneudraulic Systems Mechanic	17.26
23850 - Rigger	17.26
23870 - Scale Mechanic	15.16
23890 - Sheet-Metal Worker, Maintenance	15.37
23910 - Small Engine Mechanic	15.16
23931 - Telecommunications Mechanic I	19.01
23932 - Telecommunications Mechanic II	19.76
23950 - Telephone Lineman	18.24
23960 - Welder, Combination, Maintenance	17.82
23965 - Well Driller	17.26
23970 - Woodcraft Worker	17.26
23980 - Woodworker	13.06
24000 - Personal Needs Occupations	
24550 - Case Manager	14.16
24570 - Child Care Attendant	10.09
24580 - Child Care Center Clerk	12.58
24610 - Chore Aide	10.38
24620 - Family Readiness And Support Services Coordinator	14.16
24630 - Homemaker	16.12
25000 - Plant And System Operations Occupations	
25010 - Boiler Tender	17.26
25040 - Sewage Plant Operator	19.28
25070 - Stationary Engineer	17.26
25190 - Ventilation Equipment Tender	11.97
25210 - Water Treatment Plant Operator	19.28
27000 - Protective Service Occupations	
27004 - Alarm Monitor	10.90
27007 - Baggage Inspector	9.13
27008 - Corrections Officer	12.05
27010 - Court Security Officer	12.05
27030 - Detection Dog Handler	10.90
27040 - Detention Officer	12.05
27070 - Firefighter	12.05
 27101 - Guard I	 9.13

27102 - Guard II	10.90
27131 - Police Officer I	12.05
27132 - Police Officer II	13.40
28000 - Recreation Occupations	
28041 - Carnival Equipment Operator	12.37
28042 - Carnival Equipment Repairer	13.42
28043 - Carnival Worker	9.14
28210 - Gate Attendant/Gate Tender	13.18
28310 - Lifeguard	11.01
28350 - Park Attendant (Aide)	14.74
28510 - Recreation Aide/Health Facility Attendant	10.76
28515 - Recreation Specialist	18.26
28630 - Sports Official	11.74
28690 - Swimming Pool Operator	17.71
29000 - Stevedoring/Longshoremen Occupational Services	
29010 - Blocker And Bracer	20.23
29020 - Hatch Tender	20.23
29030 - Line Handler	20.23
29041 - Stevedore I	18.85
29042 - Stevedore II	21.64
30000 - Technical Occupations	
30010 - Air Traffic Control Specialist, Center (HFO) (see 2)	38.15
30011 - Air Traffic Control Specialist, Station (HFO) (see 2)	26.30
30012 - Air Traffic Control Specialist, Terminal (HFO) (see 2)	28.97
30021 - Archeological Technician I	17.49
30022 - Archeological Technician II	19.56
30023 - Archeological Technician III	24.21
30030 - Cartographic Technician	23.18
30040 - Civil Engineering Technician	21.93
30051 - Cryogenic Technician I	24.12
30052 - Cryogenic Technician II	26.63
30061 - Drafter/CAD Operator I	17.49
30062 - Drafter/CAD Operator II	19.56
30063 - Drafter/CAD Operator III	20.74
30064 - Drafter/CAD Operator IV	24.21
30081 - Engineering Technician I	14.62
30082 - Engineering Technician II	16.41
30083 - Engineering Technician III	18.36
30084 - Engineering Technician IV	22.34
30085 - Engineering Technician V	27.83
30086 - Engineering Technician VI	33.66
30090 - Environmental Technician	21.78
30095 - Evidence Control Specialist	21.78
30210 - Laboratory Technician	20.74
30221 - Latent Fingerprint Technician I	24.12
30222 - Latent Fingerprint Technician II	26.63
30240 - Mathematical Technician	23.34
30361 - Paralegal/Legal Assistant I	19.44
30362 - Paralegal/Legal Assistant II	23.68
30363 - Paralegal/Legal Assistant III	28.99
30364 - Paralegal/Legal Assistant IV	33.88
30375 - Petroleum Supply Specialist	26.63
30390 - Photo-Optics Technician	21.93
30395 - Radiation Control Technician	26.63
30461 - Technical Writer I	22.17

30462 - Technical Writer II	27.10
30463 - Technical Writer III	32.79
30491 - Unexploded Ordnance (UXO) Technician I	24.24
30492 - Unexploded Ordnance (UXO) Technician II	29.33
30493 - Unexploded Ordnance (UXO) Technician III	35.16
30494 - Unexploded (UXO) Safety Escort	24.24
30495 - Unexploded (UXO) Sweep Personnel	24.24
30501 - Weather Forecaster I	24.12
30502 - Weather Forecaster II	29.34
30620 - Weather Observer, Combined Upper Air Or (see 2)	20.74
Surface Programs	
30621 - Weather Observer, Senior (see 2)	23.00
31000 - Transportation/Mobile Equipment Operation Occupations	
31010 - Airplane Pilot	29.33
31020 - Bus Aide	8.15
31030 - Bus Driver	9.69
31043 - Driver Courier	8.97
31260 - Parking and Lot Attendant	8.93
31290 - Shuttle Bus Driver	9.99
31310 - Taxi Driver	9.43
31361 - Truckdriver, Light	9.78
31362 - Truckdriver, Medium	11.61
31363 - Truckdriver, Heavy	13.89
31364 - Truckdriver, Tractor-Trailer	13.89
99000 - Miscellaneous Occupations	
99020 - Cabin Safety Specialist	14.30
99030 - Cashier	9.12
99050 - Desk Clerk	9.70
99095 - Embalmer	24.24
99130 - Flight Follower	24.24
99251 - Laboratory Animal Caretaker I	21.62
99252 - Laboratory Animal Caretaker II	22.67
99260 - Marketing Analyst	20.09
99310 - Mortician	24.24
99410 - Pest Controller	14.61
99510 - Photofinishing Worker	12.74
99710 - Recycling Laborer	13.02
99711 - Recycling Specialist	19.69
99730 - Refuse Collector	12.39
99810 - Sales Clerk	9.46
99820 - School Crossing Guard	16.14
99830 - Survey Party Chief	21.65
99831 - Surveying Aide	12.31
99832 - Surveying Technician	16.00
99840 - Vending Machine Attendant	21.84
99841 - Vending Machine Repairer	27.71
99842 - Vending Machine Repairer Helper	21.84

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors, applies to all contracts subject to the Service Contract 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 the victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

ALL OCCUPATIONS LISTED ABOVE RECEIVE THE FOLLOWING BENEFITS:

HEALTH & WELFARE: \$4.48 per hour or \$179.20 per week or \$776.53 per month

HEALTH & WELFARE EO 13706: \$4.18 per hour, or \$167.20 per week, or \$724.53 per month*

**This rate is to be used only when compensating employees for performance on an SCA-covered contract also covered by EO 13706, Establishing Paid Sick Leave for Federal Contractors. A contractor may not receive credit toward its SCA obligations for any paid sick leave provided pursuant to EO 13706.*

VACATION: 2 weeks paid vacation after 1 year of service with a contractor or successor; and 4 weeks after 3 years. Length of service includes the whole span of continuous service with the present contractor or successor, wherever employed, and with the predecessor contractors in the performance of similar work at the same Federal facility. (Reg. 29 CFR 4.173)

HOLIDAYS: A minimum of ten paid holidays per year: New Year's Day, Martin Luther King Jr.'s Birthday, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans' Day, Thanksgiving Day, and Christmas Day. (A contractor may substitute for any of the named holidays another day off with pay in accordance with a plan communicated to the employees involved.) (See 29 CFR 4.174)

THE OCCUPATIONS WHICH HAVE NUMBERED FOOTNOTES IN PARENTHESES RECEIVE THE FOLLOWING:

1) **COMPUTER EMPLOYEES:** Under the SCA at section 8(b), this wage determination does not apply to any employee who individually qualifies as a bona fide executive, administrative, or professional employee as defined in 29 C.F.R. Part 541. Because most Computer System Analysts and Computer Programmers who are compensated at a rate not less than \$27.63 (or on a salary or fee basis at a rate not less than \$455 per week) an hour would likely qualify as exempt computer professionals, (29 C.F.R. 541.400) wage rates may not be listed on this wage determination for all occupations within those job families. In addition, because this wage determination may not list a wage rate for some or all occupations within those job families if the survey data indicates that the prevailing wage rate for the occupation equals or exceeds \$27.63 per hour conformances may be necessary for certain nonexempt employees. For example, if an individual employee is nonexempt but nevertheless performs duties within the scope of one of the Computer Systems Analyst or Computer Programmer occupations for which this wage determination does not specify an SCA wage rate, then the wage rate for that employee must be conformed in accordance with the conformance procedures described in the conformance note included on this wage determination.

Additionally, because job titles vary widely and change quickly in the computer industry, job titles are not determinative of the application of the computer professional exemption. Therefore, the exemption applies only to computer employees who satisfy the compensation requirements and whose primary duty consists of:

- (1) The application of systems analysis techniques and procedures, including consulting with users, to determine hardware, software or system functional specifications;
- (2) The design, development, documentation, analysis, creation, testing or modification of computer systems or programs, including prototypes, based on and related to user or system design specifications;
- (3) The design, documentation, testing, creation or modification of computer programs related to machine operating systems; or

(4) A combination of the aforementioned duties, the performance of which requires the same level of skills. (29 C.F.R. 541.400).

2) **AIR TRAFFIC CONTROLLERS AND WEATHER OBSERVERS - NIGHT PAY & SUNDAY PAY:** If you work at night as part of a regular tour of duty, you will earn a night differential and receive an additional 10% of basic pay for any hours worked between 6pm and 6am. If you are a full-time employed (40 hours a week) and Sunday is part of your regularly scheduled workweek, you are paid at your rate of basic pay plus a Sunday premium of 25% of your basic rate for each hour of Sunday work which is not overtime (i.e. occasional work on Sunday outside the normal tour of duty is considered overtime work).

**** HAZARDOUS PAY DIFFERENTIAL ****

An 8 percent differential is applicable to employees employed in a position that represents a high degree of hazard when working with or in close proximity to ordnance, explosives, and incendiary materials. This includes work such as screening, blending, dying, mixing, and pressing of sensitive ordnance, explosives, and pyrotechnic compositions such as lead azide, black powder and photoflash powder. All dry-house activities involving propellants or explosives. Demilitarization, modification, renovation, demolition, and maintenance operations on sensitive ordnance, explosives and incendiary materials. All operations involving re-grading and cleaning of artillery ranges.

A 4 percent differential is applicable to employees employed in a position that represents a low degree of hazard when working with, or in close proximity to ordnance, (or employees possibly adjacent to) explosives and incendiary materials which involves potential injury such as laceration of hands, face, or arms of the employee engaged in the operation, irritation of the skin, minor burns and the like; minimal damage to immediate or adjacent work area or equipment being used. All operations involving, unloading, storage, and hauling of ordnance, explosive, and incendiary ordnance material other than small arms ammunition. These differentials are only applicable to work that has been specifically designated by the agency for ordnance, explosives, and incendiary material differential pay.

**** UNIFORM ALLOWANCE ****

If employees are required to wear uniforms in the performance of this contract (either by the terms of the Government contract, by the employer, by the state or local law, etc.), the cost of furnishing such uniforms and maintaining (by laundering or dry cleaning) such uniforms is an expense that may not be borne by an employee where such cost reduces the hourly rate below that required by the wage determination. The Department of Labor will accept payment in accordance with the following standards as compliance:

The contractor or subcontractor is required to furnish all employees with an adequate number of uniforms without cost or to reimburse employees for the actual cost of the uniforms. In addition, where uniform cleaning and maintenance is made the responsibility of the employee, all contractors and subcontractors subject to this wage determination shall (in the absence of a bona fide collective bargaining agreement providing for a different amount, or the furnishing of contrary affirmative proof as to the actual cost), reimburse all employees for such cleaning and maintenance at a rate of \$3.35 per week (or \$.67 cents per day). However, in those instances where the uniforms furnished are made of "wash and wear" materials, may be routinely washed and dried with other personal garments, and do not require any special treatment such as dry cleaning, daily washing, or commercial laundering in order to meet the cleanliness or appearance standards set by the terms of the Government contract, by the contractor, by law, or by the nature of the work, there is no requirement that employees be reimbursed for uniform maintenance costs.

**** SERVICE CONTRACT ACT DIRECTORY OF OCCUPATIONS ****

The duties of employees under job titles listed are those described in the "Service Contract Act Directory of Occupations", Fifth Edition (Revision 1), dated September 2015, unless otherwise indicated.

**** REQUEST FOR AUTHORIZATION OF ADDITIONAL CLASSIFICATION AND WAGE RATE, Standard Form 1444 (SF-1444) ****

Conformance Process:

The contracting officer shall require that any class of service employee which is not listed herein and which is to be employed under the contract (i.e., the work to be performed is not performed by any classification listed in the wage determination), be classified by the contractor so as to provide a reasonable relationship (i.e., appropriate level of skill comparison) between such unlisted classifications and the classifications listed in the wage determination (See 29 CFR 4.6(b)(2)(i)). Such conforming procedures shall be initiated by the contractor prior to the performance of contract work by such unlisted class(es) of employees (See 29 CFR 4.6(b)(2)(ii)). The Wage and Hour Division shall make a final determination of conformed classification, wage rate, and/or fringe benefits which shall be paid to all employees performing in the classification from the first day of work on which contract work is performed by them in the classification. Failure to pay such unlisted employees the compensation agreed upon by the interested parties and/or fully determined by the Wage and Hour Division retroactive to the date such class of employees commenced contract work shall be a violation of the Act and this contract. (See 29 CFR 4.6(b)(2)(v)). When multiple wage determinations are included in a contract, a separate SF-1444 should be prepared for each wage determination to which a class(es) is to be conformed.

The process for preparing a conformance request is as follows:

- 1) When preparing the bid, the contractor identifies the need for a conformed occupation(s) and computes a proposed rate(s).*
- 2) After contract award, the contractor prepares a written report listing in order the proposed classification title(s), a Federal grade equivalency (FGE) for each proposed classification(s), job description(s), and rationale for proposed wage rate(s), including information regarding the agreement or disagreement of the authorized representative of the employees involved, or where there is no authorized representative, the employees themselves. This report should be submitted to the contracting officer no later than 30 days after such unlisted class(es) of employees performs any contract work.*
- 3) The contracting officer reviews the proposed action and promptly submits a report of the action, together with the agency's recommendations and pertinent information including the position of the contractor and the employees, to the U.S. Department of Labor, Wage and Hour Division, for review (See 29 CFR 4.6(b)(2)(ii)).*
- 4) Within 30 days of receipt, the Wage and Hour Division approves, modifies, or disapproves the action via transmittal to the agency contracting officer, or notifies the contracting officer that additional time will be required to process the request.*
- 5) The contracting officer transmits the Wage and Hour Division's decision to the contractor.*
- 6) Each affected employee shall be furnished by the contractor with a written copy of such determination or it shall be posted as a part of the wage determination (See 29 CFR 4.6(b)(2)(iii)).*

Information required by the Regulations must be submitted on SF-1444 or bond paper:

When preparing a conformance request, the "Service Contract Act Directory of Occupations" should be used to compare job definitions to ensure that duties requested are not performed by a classification already listed in the wage determination. Remember, it is not the job title, but the required tasks that determine whether a class is included in an established wage determination. Conformances may not be used to artificially split, combine, or subdivide classifications listed in the wage determination (See 29 CFR 4.152(c)(1)).

APPENDIX G

Past Performance Questionnaire

PAST PERFORMANCE QUESTIONNAIRE

GVB IFB NO: 2019-004MS

Title: LIGHTING IMPROVEMENT AND MAINTENANCE

[PROVIDE THIS PPQ TO THOSE ON YOUR PROJECT REFERENCES TO COMPLETE
AND SUBMIT DIRECTLY TO GVB ON OR BEFORE THE DEADLINE FOR THIS PROCUREMENT.]

BIDDER: _____

REFERENCE DETAILS PROVIDED BY BIDDER

Company Name: _____

Point of Contact: _____

Contact Details: _____

PLEASE RETURN THIS COMPLETED QUESTIONNAIRE BY EMAIL TO
procurement@visitguam.org

PLEASE PROVIDE CONTACT DETAILS IF COMPLETING THIS QUESTIONNAIRE:

Name: _____ Telephone Number: _____

Title: _____ Email Address: _____

1. Please briefly describe the type of services performed for your organization by the Bidder. (Name of project, types of services performed -- analysis, training, technical support, etc.):

Comment: _____

2. Were any unique techniques or tools employed for the delivery of the services? Were the tools/techniques employed effectively?

Comment: _____

PPQ FOR BIDDER: _____

3. How would you rate the Bidder's ability to learn/understand your organization's or the project needs/requirements?

☐ Excellent (Score 10 points)
☐ Very Good (Score 8 points)
☐ Good (Score 5 points)
☐ Poor (Score 0 points)

Comment: _____

4. How would you rate the Bidder's knowledge and experience in providing the requested technical services?

☐ Excellent (Score 10 points)
☐ Very Good (Score 8 points)
☐ Good (Score 5 points)
☐ Poor (Score 0 points)

Comment: _____

5. How would you rate the Bidder's ability to identify and recommend resolutions to problems or issues?

☐ Identified and recommended quickly (Score 10 points)
☐ Identified and recommended slowly (Score 8 points)
☐ Identified but not recommended (Score 5 points)
☐ Were ignored (Score -0 points)

Comment: _____

PPQ FOR BIDDER: _____

6. Quality of Services:

How would you rate the overall quality of the Bidder's technical services?

- | | |
|------------------------------------|-------------------|
| <input type="checkbox"/> Excellent | (Score 10 points) |
| <input type="checkbox"/> Very Good | (Score 8 points) |
| <input type="checkbox"/> Good | (Score 5 points) |
| <input type="checkbox"/> Poor | (Score 0 points) |

Comment: _____

7. Do you recall the name(s) of the Bidder's employees who performed services under your contract? If so, please provide names below.

Comment: _____

8. Overall Performance: On a scale of 0 to 10, how would you rate the Bidder's OVERALL PERFORMANCE? (Score based upon # of points - 10 points max)

- | | |
|------------------------------------|-------------------|
| <input type="checkbox"/> Excellent | (Score 10 points) |
| <input type="checkbox"/> Very Good | (Score 8 points) |
| <input type="checkbox"/> Good | (Score 5 points) |
| <input type="checkbox"/> Poor | (Score 0 points) |

Additional Comments:

9. Would you enter into a contract with this Bidder again? If not, why?

Comment: _____

PPQ FOR BIDDER: _____

10. Are you aware of any other company or organization this Bidder has done work for? If so, do you have a contact name and phone number?

Name: _____ Phone Number: _____

Other contact information: _____

11. Do you have any additional comments that might assist us in evaluating the Bidder's past performance?

Comment: _____

Thank you for your cooperation.

GVB PROCUREMENT

APPENDIX H

References