HARPERS FERRY NATIONAL HISTORICAL PARK, WEST VIRGINIA

PAVEMENT PRESERVATION

PMIS 242454

PROJECT SPECIFICATIONS

100% Submittal
April 2026

NATIONAL PARK SERVICE (NPS)
DENVER SERVICE CENTER (DSC)

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NPS DSC Division 1 Specifications

HARPERS FERRY NATIONAL HISTORICAL PARK – 242454

SECTION 01 10 00 - SUMMARY OF WORK

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes the following:

1. Work Covered by Contract Documents
2. Work Phases
3. Work Under Other Contracts
4. Contractor Use of Site
5. Public Use of Site
6. Conduct of Operations
7. Work Restrictions
8. Special Construction Requirements
9. Soils Investigation Report
10. Additional Reports

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. Project Location: West Virginia

B. The Work consists of:

1. The pavement preservation work includes tree trimming, seal coating, chip seal, shoulder grading, crack sealing, partial and full depth asphalt pavement patching, pavement markings, traffic management and any temporary works needed for work.

C. Project will be constructed under a single prime contract.

1.3 WORK PHASES

A. The work shall be coordinated with the Contracting Officer (CO). The work can be performed in phases or done concurrently for the pavement preservation locations. Provide the CO the plan for the work with detail for what work will be completed in each phase or if concurrent the work that will be performed and what work will be completed before beginning next work element.

1.4 WORK UNDER OTHER CONTRACTS

a. Coincident with this contract may be other contracts within the same working vicinity. Coordinate construction operations to minimize impacts. Coordinate with CO for other contracts information. The table below with potential projects is provided for informational purposes and may not include all projects. It is the contractor's responsibility to coordinate work to reduce/eliminate conflicts. Need HAFE's input on other projects.

POTENTIAL PROJECTS	ESTIMATED CONSTRUCTION

1.5 CONTRACTOR USE OF SITE

A. General: Contractor shall have limited use of site for construction operations. Limit use of premises to work within the construction limits indicated on drawings. Do not disturb portions of Project site beyond areas in which the Work is indicated.

1. Limits: Confine construction operations to contractor laydown/staging areas shown in the drawings or approved by the CO.
2. Limit site disturbance, including earthwork and clearing of vegetation, to the construction limits indicated in the drawings unless approved by the CO.
3. Laydown areas (temporary storage or working areas near work site used for short durations) shall be approved by CO.
4. The Contractor shall hold a meeting no less than seven days in advance of work with the CO, in coordination with the Park, to review and confirm construction limits, equipment access, areas of ground disturbance and over all work procedures.
5. Contractor shall coordinate with CO for staging and storage area for traffic management set up including all materials and equipment for traffic management.
6. Contractor is responsible for restoring all staging and laydown area to pre-use conditions.
7. All emergency routes are to remain unobstructed at all times during construction. Contractor shall pick up construction-related debris daily.

B. Storage of Materials: Confine storage of materials to contractor staging areas shown in the drawings or at a location approved by the CO.

C. Parking: Confine parking to staging area. Parking at the construction site requires CO approval. Reduce and limit onsite parking to essential vehicles only. No less than 7 days prior to onsite work, submit an onsite parking plan with the number and type of vehicles and identify proposed laydown areas for CO approval.

D. Stockpiling: Confine stockpiling to staging area or laydown area as approved by the CO.

E. Preservation of Natural Features:

1. Prevent damage to natural surroundings. Restore damaged areas, repairing or replacing damaged trees and plants, at no additional expense to the Government.
2. Provide temporary barriers to protect existing trees and plants and root zones.
3. Do not remove, injure, or destroy trees or other plants without prior approval. Consult with CO and remove agreed-on roots and branches that interfere with construction.

4. Do not fasten ropes, cables, or guys to existing trees.
5. Carefully supervise excavating, grading, filling, and other construction operations near trees to prevent damage.

F. Driveways and Entrances: Keep driveways, pullouts and entrances serving premises clear and available to Government employees, and emergency vehicles at all times, unless otherwise shown as available staging area on the drawings or as approved by the CO. Do not use unauthorized areas for parking or storage of materials.

1. Schedule deliveries to minimize use of driveways and entrances.
2. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

G. Hauling Restrictions: Comply with legal load restrictions in hauling of materials. Load restrictions on park roads are identical to state load restrictions with such additional regulations as may be imposed by the Park Superintendent. Information regarding rules and regulations for vehicular traffic on park roads may be obtained from the Office of the Park Superintendent. A special permit will not relieve Contractor of liability for damage which may result from moving of equipment.

H. Lane and Bridge Closures: The Contractor shall submit a lane and/or closure with detour plan 3 weeks in advance of planned lane closures in accordance with 01 10 00 Subsection 1.8 to the CO for approval. No lane closures will be permitted without prior approval.

1.6 PUBLIC USE OF SITE

A. Contractor shall conduct operations to ensure the least inconvenience to public.

1.7 CONDUCT OF OPERATIONS

A. Contractor shall conduct operations in conformance with rules and regulations promulgated by the Secretary of the Interior for the National Park Service, and applicable park rules and regulations prescribed by Park Superintendent.

B. Work on Saturdays, Sundays, Federal holidays and at night may not be performed unless stated in the Work Restrictions below or without prior consent from the CO. Submit requests 5 business/calendar days in advance of the work to the CO for approval.

C. No signs or advertisements (except those specified herein) shall be displayed on the construction site or within the park unless approved by the CO.

1.8 WORK RESTRICTIONS

A. On-Site Work Hours: Work shall be generally performed during normal business working hours of 8:00 a.m. to 5:00 p.m, Monday through Friday, except when otherwise indicated.

1. Weekend Hours: are permitted upon request and approval by the CO.
2. Early Morning Hours: are permitted upon request and approval by the CO.
3. Hours for noisy activity: are permitted during normal business working hours, upon request

and approval by the CO.

4. Federal Holiday, Special Events and First Amendment Activities: No lane closures are allowed on Federal Holidays, Special Events and First Amendment Activities, including the day before or after if noted. Contractor permittee to coordinate with Harpers Ferry National Historic Park point of contact for Holidays, dates of Special Events and First Amendment Activities, for events/holidays that require lane closures on the day before or after and for approval of lane closures. Work is permitted upon request and approval by the CO.

   a. Work is not permitted on January 1st, Thanksgiving and Christmas, no exceptions.

5. No work in the event of Federal Government Closures (Weather, etc.).
6. The working hour and lane closure restrictions are as follows unless approved by CO:

   a. Daytime: Monday through Friday from 8:00AM to 5:00PM.

7. The contractor shall submit a phasing plan for approval by CO for each pavement preservation area. The table below lists work restrictions for each area to be incorporated into the phasing plans:

AREA	**LOCATION**	***IMPACTS***	***WORK RESTRICTIONS NOTES***

Contact information:
Add any specific contact information if needed for the parking areas

8. Wildlife - All ground disturbing work on or near bridge structures is prohibited until NPS consultation with the USFWS is complete and the Contracting Officer (CO) has

authorized approval for on-site work. This approval is expected no later than 15 days following pre-work submittal approvals.

A. Wildlife - Birds: Copied from GWMP verify what sections are applicable
   a. The Contractor shall perform woody vegetation clearing and tree removal work between November 15 and March 31 to avoid Migratory Bird Treaty Act (MBTA) impacts. No exceptions will be permitted.
   b. If structure repair is performed between April 1 and November 14, the Contractor must provide a survey by a USFWS approved biologist with findings presented to the CO for approval prior to beginning any onsite work. The Contractor shall comply with the Migratory Bird Treaty Act (MBTA) [16 USC 703]. If an active nest is encountered, the nest shall be left in place until the young hatch and depart. Park staff must be notified and a survey by the Contractor's biologist shall be done of the area to be impacted prior to execution; Park biologist/NR specialist will work with contractor to determine best practice on this case-by-case basis (e.g., if no nests are detected, clearing must be completed within one week of the survey, if nests are detected, clearing/execution may be held off for a period commensurate with nest stage egg incubation/hatchlings/near fledging).
   c. If bird nesting activity is observed within 50' of the project site, all work in the area shall stop until after the young have fledged. Work may resume once the fledglings have left the nest.

B. Wildlife - Bats:
   a. The Contractor shall perform woody vegetation clearing and tree removal work between November 15 and March 31 to avoid Threatened & Endangered Species impacts. No exceptions will be permitted.
   b. All bridge work areas will need to be surveyed by a USFWS approved biologist with findings presented to the CO for approval before any work begins (including but not limited to tree clearing and bridge repairs), regardless of seasonal restrictions. Bridge surveys shall be conducted during the active season for bats, no earlier than April 15 and no later than November 1, and is valid for two years. Tree and bridge surveys must be conducted following the USFWS Range-Wide Indiana Bat & Northern Long-Eared Bat Survey Guidelines: Indiana Bat and Northern Long-Eared Bat Survey Guidelines. A list of pre-approved USFWS bat biologists can be found here. If the Contractor selects an individual not on this list to conduct habitat assessments/surveys, provide that individual's qualifications to the USFWS Virginia Ecological Services Field Office for review and approval 60 days prior to the start of the survey. No work is permitted with positive findings without CO approval. Immediately report positive findings to the CO.

C. Wildlife – Monarch Butterfly:
   a. Fifteen days prior to vegetation clearing, the contractor will coordinate with NPS to schedule pre-work surveys for the monarch butterfly (NPS to complete). Following the monarch butterfly survey and subsequent relocation of any findings, vegetation clearing must be completed within one week.

9. Assessment of Effect: For cultural resources protection, no disturbance of historic or cultural features shall occur; no artifacts shall be collected; and if archeological or historic resources are discovered, work shall stop at the discovery site, the discovery shall be protected as required and the Cultural Resource Specialist shall be notified as soon as possible. Information and photographs regarding the location, size, and nature of the discovery should be provided, if possible.

10. Vegetation – Native Plantings:

    a. Soil disturbance shall be minimized to the greatest extent possible to reduce disturbance to native plants and reduce the potential for the introduction or spread of invasive non-native plant species.
    b. Disturbance to existing native vegetation shall primarily be contained in previously disturbed areas or within narrow construction limits. Whenever practicable, soils and plants affected by construction shall be salvaged for reuse in site restoration.
    c. Prior to construction, the project area shall be surveyed for invasive plants. A survey report shall be issued to NPS and a treatment plan developed and accepted by NPS, followed by treatment of identified species (per plan). Infestations of invasive plants within the project area shall be treated prior, during, and/or after project implementation (depending on species - as appropriate and following all protocols, labels, etc.).
    d. All disturbed ground shall be reclaimed using appropriate best management practices, which may include planting or seeding with native vegetation, or, in the case of small treatment areas, allowing native vegetation to reclaim the area naturally. Project leader shall consult with the Natural Resources branch to determine the best methods for restoration.

11. Vegetation – Herbicides/Pesticides:
    a. A pesticide work plan shall be submitted that will address; location, terrain, nearby waters/wetlands/intermittent streams, time of year, time of day for application, proximity to visitor use areas, number of personnel for the project, access to the work site, number of days anticipated, application techniques, and equipment to be used. Plan shall also include a safety plan that will outline the project's Personal Protective Equipment to be used.
    b. Herbicide application shall follow all federal, state, and local regulations.

12. Floodplains & Wetlands - Construction:
    a. Wetlands/WOUS: Impacts to wetlands and streams are to be avoided. Incorporate BMPs, including silt fencing and straw wattles where appropriate to limit sedimentation around wetland or stream areas.
    b. Heavy equipment use in wetlands is not permitted without CO approval.

B. Existing Utilities: Utility impacts are not anticipated but it is the contractor's responsibility to verify before any excavation work.

    1. Existing Utilities: Notify CO and utility companies of proposed locations and times for excavation.
    2. Contractor shall be responsible for locating and preventing damage to known utilities. If damage occurs, repair utility at no additional expense to the Government.
    3. If damage occurs to an unknown utility, repair utility. An equitable adjustment will be evaluated in accordance with the Changes clause of the contract.

C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Government or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

    1. Notify CO not less than two business days in advance of proposed utility interruptions.

2. Do not proceed with utility interruptions without CO written permission.
3. Hours and length of Utility Shutdowns: Coordinate with CO if utility shutdowns are required.

D. Nonsmoking Building/Tobacco Use/Vaping: Smoking is not permitted.

1.9 SPECIAL CONSTRUCTION REQUIREMENTS

A. Project Website: A Government Furnished Construction Management Platform administered and run by the Construction Management team will be used for purposes of managing communication and documents during construction stage.

1. See Section 01 31 00 "Project Management and Coordination" for requirements on using Project Website.

1.10 SOILS INVESTIGATION REPORT

A. A soils report is not available for this project.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 10 00

NPS DSC Division 1 Specifications

HARPERS FERRY NATIONAL HISTORICAL PARK – 242454

SECTION 01 26 01 – CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section consists of administrative and procedural requirements for contract modifications.

1.2 DEFINITIONS AND ALLOWANCES

A. Home Office Overhead: Costs incurred in support of all of a contractor's projects and not attributable to a specific job. The cost for home office overhead is only allowed as a percentage of all direct work excluding profit. The following items represent allowable home office overhead costs identified in Part 31 of the Federal Acquisition Regulation (FAR):

1. Rent
2. Utilities
3. Furnishings
4. Office equipment
5. Executive and management staff not exclusively assigned to the project
6. Support, accounting, and administrative staff
7. Preparation of cost proposals, estimating, and schedule analyses connected with Modifications
8. Estimating and preconstruction services
9. Mortgage costs
10. Real estate and corporate taxes
11. Automobile maintenance and travel costs for home office personnel
12. Home office insurances i.e. structure, automotive, umbrella, flood, etc.
13. Depreciation of equipment and other assets
14. Home office supplies (paper, staples, etc.)
15. Legal services
16. Accounting and data processing
17. Professional fees/registration

B. General Conditions (Field Office Overhead): Management and administrative costs incurred on site for the designated project. Costs associated with preparation of modifications will not be allowed. Costs for these items are to be included only in the general conditions of the modification estimate. Only in the case of a contract time extension are additional general conditions included in modifications. The following items, if applicable, are considered allowable costs for calculating General Conditions:

1. Project Manager (PM), Assistant Project Manager

2. Superintendent, Assistant Superintendent
3. Quality Control, Safety Officer, Environmental Manager, etc.
4. Engineers
5. Travel, lodging, and per diem (as established by Federal Travel Regulations)
6. Scheduling
7. Field Office Trailers and associated temporary utilities
8. Field office supplies
   a. Mailing and couriers
   b. Reproduction costs
   c. Storage
   d. Phones
   e. Computers
   f. Copiers
9. Personal vehicles i.e. Superintendent Pickup trucks

C. General Requirements: Costs directly associated with the project and are necessary to perform the actual work of the modification. These costs shall be shown as direct costs in the estimate. The following items, if applicable, are considered allowable costs for calculating General Requirements:

1. Hoisting
2. Material handling
3. Temporary fencing
4. Port-a-lets
5. Trash removal, dumpsters
6. Barricades
7. Small tools
8. Safety supplies
9. Scaffolding
10. Daily cleaning
11. Traffic control
12. Temporary signage
13. Temporary heating and power

D. Personnel Costs: Costs included in the modification must only be for General Conditions staff and workers actually present and working on project site. Modification costs for salaried workers are only allowed within the structure of a 40-hour week and no overtime or holiday pay will be allowed.

1. Worker Hourly Rates are costs directly associated with the individual worker and consist of the following:

   a. Base Rate: The hourly rate paid directly to the worker
   b. Labor Burden: Employer payments of all applicable burdens; includes insurance and taxes the business must pay on behalf of the worker to government entities and educational forums, such as:

      1) Social Security
      2) Medicare
      3) Workers Compensation – Policy and company calculation to be made available.

4) Federal Unemployment Tax Act (FUTA) - Cap Rate and percentage to be proportionally allocated over one year.
5) State Unemployment Tax Act (SUTA) - Cap Rate and percentage to be proportionally allocated over one year.
6) Union agreement costs - Other costs required under an enforceable collective bargaining agreement.

c. Fringe Benefits: Various non-wage compensations provided to employees such as:

1) Health Care Insurance Premiums
2) Cell Phone
3) Clothing
4) 401K and Pensions
5) Vehicle allowances
6) Gas allowance
7) Life insurance premiums
8) Disability insurance
9) Other Fringe Benefits required under an enforceable collective bargaining agreement

E. Bonuses or Deferred Compensation: No Bonus or Deferred Compensation will be allowed within any components of pricing including Home Office Overhead, General Conditions, General Requirements, Hourly Worker Rates, or the direct costs of work.

F. General Liability Insurance: An insurance policy that protects Contractor from claims resulting from bodily injury or property damage to a third party. Include as a separate line item within all modification proposals and provide a current insurance quote upon request.

G. Performance and Payment Bonds: A performance bond is a surety bond issued by an insurance company or bank to guarantee satisfactory completion of a project. The Payment Bond guarantees the Contractor will pay the labor and material costs incurred. Banks and Insurance companies charge a premium for individual project based on a sliding scale related to the size of the project. Include as a separate line item in modification proposals and provide current company bonding rates upon request.

H. Builder's Risk Insurance: Covers the contractor's loss due to fire, high winds, or other natural forces. Not reimbursed by the National Park Service (NPS) and shall not be included in modification proposals.

1.3 MODIFICATION PROPOSAL PRICING REQUIREMENTS

A. General:

1. Proposal be received in the format and within the time frame specified in the Request for Proposal (RFP) letter. Costs or delays resulting from failure of contractor to submit within the time frame specified will not be compensable.
2. Proposal shall be detailed with itemized lists of equipment, materials, labor, production rates, overhead, profit, and bond markup for each item. Labor costs must be itemized by craft and hourly rate, including Fringe Benefits and Labor Burden. If the costs of

Fringe Benefits and Labor Burden are not itemized, it is assumed they are included in the hourly rate shown, or contractor is not requesting reimbursement. Contractor may utilize the government provided Contractor Estimate Form, or their own form, provided that it contains the same information and level of detail as the Government's form.

3. Requests for extensions of contract time as a result of change must be justified with a Time Impact Analysis (TIA). Refer to Section 01 32 16 "Construction Schedule", for time impact analysis requirements. TIA and associated costs shall be received with the proposal by the date shown within the Request for Proposal letter. Contractor's failure to submit within the specified time frame will be construed as the Contractor waiving right for additional time and no time extension will be allowed.
4. All supporting documentation used to justify the proposed modification will be made available to the Contracting Officer (CO) upon request.
5. Contractor shall review and approve all subcontractor/supplier pricing in detail for proper format, scope, production rates, and pricing prior to submission to NPS. All delay costs associated with not reviewing and approving subcontractor/supplier pricing will be borne by the Contractor.
6. All pricing and production rates within the estimate must be based on fair and reasonable pricing and cannot include built-in contingency.

B. Labor:

1. Contractor shall estimate cost of labor by itemizing each craft involved, indicating worker hourly rate (base rate + labor burden + fringe benefits) for each and itemizing hours required for each craft directly engaged in modification work. Any work proposed requiring overtime work or premium pay shall be itemized separately. Rates shall be in accordance with the Davis-Bacon Act as incorporated herein. Labor Burden may include payroll taxes, Social Security, unemployment insurances, workers compensation insurance, Federal Insurance Contributions Act (FICA), FUTA, and other direct costs resulting from Federal, State or local laws.
2. Itemize labor costs for equipment operators separate from equipment costs.
3. Labor cost for foremen shall only be costs for related work required for the modification.

C. Materials:

1. Estimated cost for materials shall include quotes from multiple sources. Material prices shall include applicable fees and credits, including but not limited to, sales tax, freight and delivery charges, and tax rebates.
2. No markup shall be applied to any material provided by NPS.

D. Equipment:

1. Equipment used for the project must be appropriately sized for work being performed.
2. Do not include costs for "miscellaneous tools and equipment", in your proposal for a replacement value of $500 or less. Costs shown in excess of $500 shall be broken out separately.
3. Regardless of ownership, rates to be used in determining equipment rental costs shall be the lowest cost from one of the following sources:

   a. United States (U.S.) Army Corps of Engineers, Ownership and Operating Expense Schedule (use latest edition and applicable region)
   b. Construction Blue Book

c. Local equipment rental rates, documented by actual invoice charges, or itemized vendor quotes.

4. Estimated equipment rates shall include operating costs of all fuel, oil, lubrication, supplies, small tools, necessary attachments, ground engaging components, tires and tracks, routine repairs and maintenance (cost of major repair and overhaul is not allowed per Federal Acquisition Regulation (FAR) 31.105(d)(2)), depreciation, storage, insurance, and all incidentals. Mobilization, if applicable, may be included for equipment solely used on the modification work but must be listed separately.
5. Estimate full rate for equipment only for duration that equipment will be utilized to accomplish work of the modification.
6. Standby unit rates used in accordance with paragraph 1.3, D, 2, above. If the U.S. Army Corp of Engineers is utilized then their standby rates prevail. If Bluebook or local equipment pricing is accepted, then 1/2 of equipment costs minus any operating costs, major repair and overhaul will be accepted.
7. If equipment is in standby mode due solely to a documented NPS delay, established standby rate shall apply from the first day of the delay.
8. Equipment not used and on job site for up to five consecutive days may be classified at standby rates, provided the equipment is or has been used solely to perform work on the modification and will be necessary to complete additional modification work. Equipment still on the jobsite but not in use after five consecutive days will not be considered in the modification pricing.
9. Requests for compensation for equipment stand by time must be justified, documented and itemized separately.
10. The estimated timeframe (daily, weekly, monthly) for use of the equipment must reflect the lowest cost to the Government.

E. Establishment and Application of Overhead and Profit Percentages:

1. Home Office Overhead and Profit (OH&P) shall be applied to direct costs only. Profit shall not be applied to overhead amounts; and overhead shall not be applied to profit. Home office overhead shall contain only allowable, allocable, and reasonable costs per the contract documents and FAR Part 31. Profit percentages are based on risk factors found in FAR Part 31which have been applied to the specific type of work included in this project. Negotiated rates shall not exceed the following percentages for OH&P for contractor self-performed work:

Overhead……6%
Profit……10%

2. Total aggregate limit of markup (OH&P) for Contractor and Subcontractors on modification work shall not exceed 25%. The NPS will not be responsible for allocation of percentages between contractor and subcontractors at any tier.
3. If Contractors form a partnership, partnership may only receive home office overhead and profit in same amount as an individual Contractor (refer to paragraph 1.3,E,1 above). It is the responsibility of the partners to decide on division of revenue.
4. Combined Increases and Decreases: On proposals involving both increases and decreases in the Contract Price, overhead and profit mark-ups are required on net increases and deducted on net decreases.
5. At no time can profit be calculated on Overhead or itself, it must be calculated on direct costs of work only.

PART 2 - PRODUCTS

PART 3 - EXECUTION

END OF SECTION 01 26 01

NPS DSC Division 1 Specifications

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SECTION 01 27 00 – DEFINITION OF CONTRACT LINE ITEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section explains in general, what is and is not included in a contract line item, and limits or cut-off points where one item ends and another begins.

B. If no contract line item exists for a portion of work, include costs in a related item.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 LIST OF CONTRACT LINE ITEMS (See Table 01 32 16 for CLIN list with estimated quantities)

A. Contract Line Item Number 1, Parking Lot Surface Repair – Public Assets
   1. This item consists of work pertaining to the Parking Lot Surface Repair as shown in the contract documents including but not limited to:
      a. Mobilization
      b. Traffic Control
      c. Crack Sealing
      d. Pavement Patching
      e. Shoulder Grading
      f. Tree Trimming
      g. Joint Seal
      h. Slurry Seal
      i. Chip Seal
      j. Signs
      k. Pavement Markings
   2. For the following assets:
      a. 0010 – Hartzog Drive
      b. 0012 – Shenandoah Street
      c. 0014 – Shoreline Drive
      d. 0015 – Public Way
      e. 0300 – Whitman & Prospect Avenues
      f. 0408 – Maintenance Lot Access South of Filmore St.
      g. 0900 – Mather Training Center Parking
      h. 0902A – Facility Maintenance Public Parking

i. 0903 – HAFC Lewis Anthony Parking
j. 0904 – Cook Hall Parking
k. 0908 – Shipley School Parking
l. 0910 – Morrell House Parking
m. 0911 – Bracket House Parking
n. 0913 – Train Station Parking
o. 0915 – Pulp Mill Parking
p. 0916 – River Access Parking
q. 0918 – Visitor Center Parking
r. 0921Z – Bolivar Heights Parking
s. 0922Z – Bolivar Heights Bus Loop
t. 0923 – Grandville School Parking
u. 0932 – HAFC Bird Brady Parking
v. 0933 – HAFC Hartzog Drive Parking

3. Measurement for payment will be lump sum.
4. Payment will be made at the contract lump sum price.

B. Contract Line Item Number 2, Parking Lot Surface Repair – Non-Public Assets

1. This item consists of work pertaining to the Parking Lot Surface Repair as shown in the contract documents including but not limited to:
   a. Mobilization
   b. Traffic Control
   c. Crack Sealing
   d. Pavement Patching
   e. Shoulder Grading
   f. Tree Trimming
   g. Joint Seal
   h. Slurry Seal
   i. Chip Seal
   j. Sign installation
   k. Pavement Markings
2. For the following assets:
   a. 0902B – Facility Maintenance Complex
   b. 0906 – IDC Parking
   c. 0914 – Lower Town Bus Loop Parking
   d. 0919 – Visitor Center Bus loop
   e. 0926 – Bus Maintenance Parking
3. Measurement for payment will be lump sum.
4. Payment will be made at the contract lump sum price.

END OF SECTION 01 27 00

NPS DSC Division 1 Specifications

HARPERS FERRY NATIONAL HISTORICAL PARK – 242454

SECTION 01 31 00 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

1. Definitions
2. Construction Coordination
3. Submittals
4. Coordination Drawings
5. Requests for Information (RFIs)
6. Government Furnished Construction Management Platform
7. Project Meetings
8. Environmental Coordination
9. Permits

B. Related Requirements:

1. Section 01 32 16 "Construction Schedule" for preparing and submitting Contractor's construction schedule.
2. Section 01 73 40 "Execution" for procedures for coordinating general installation and field-engineering services.
3. Section 01 77 00 "Closeout Procedures" for coordinating closeout of the Contract.

1.2 DEFINITIONS

A. **Agency with Jurisdiction:** An Agency that has been granted legal authority over a location, action, or resource. This authority includes the ability to issue a permit or other legal permission document.

B. **Construction Permits – Contractor Provided:** Permits obtained by the Contractor based on the means and methods to conduct the work. Construction Permits are typically issued by the Agency to the Contractor and not to the National Park Service. Examples of typical Contractor Provided Permits are: National Pollutant Discharge Elimination System (NPDES) Construction Permit (ground disturbance), dewatering permit, permit for work in a roadway (with traffic management plan), temporary utility tap permit, etc.

C. **Government Furnished Permits:** Obtained by National Park Service (NPS), usually through the Architect/Engineer (A/E) or a consultant, during the design process (Predesign (PD) through Construction Documents (CD)) and are usually concerned with impacts to resources protected by

federal law. However, GF permits can include other permits that are obtained for the convenience of the Government during design. GF permits are "furnished" to the Contractor in the Request for Proposal (RFP) and as part of the final contract documents. The Contractor must comply with GF permit provisions. Examples of typical GF permits: Clean Water Act (CWA) 404 dredge and fill permit, CWA Water Quality Certification (often state administered), Highway Right-of-Way Permit, etc.

1.3 CONSTRUCTION COORDINATION

A. Coordination: Coordinate construction operations included in different Sections of Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, which depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Make provisions to accommodate items scheduled for later installation.
3. Properly plan construction operations to include permit requirements. Allow enough time to execute permit provisions to maintain work schedule, site visits, inspections, and reporting deadlines.

B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Coordinate with the project partners via the CO using the Harpers Ferry Contact List provided in Appendix A Such administrative activities include, but are not limited to:

1. Preparation of Contractor's Construction Schedule
2. Preparation of the Schedule of Values
3. Installation and removal of temporary facilities and controls
4. Delivery and processing of submittals
5. Progress meetings
6. Permit requirements
7. Pre-installation conferences
8. Project closeout activities
9. Commissioning activities

1.4 SUBMITTALS

A. Division 1 documents: The following items shall be submitted a minimum of one week prior to Preconstruction Conference. Contracting Officer (CO) will notify Contractor of tentative date for Pre-Construction Conference.

1. Letter designating Project Superintendent
2. Construction Schedule

3. A Comprehensive Schedule of Values
4. Accident Prevention Plan
5. A List of Subcontractors for this project
6. Written statements from Subcontractors certifying compliance with applicable labor standard clauses.
7. Certificates of Insurance or SF1413 for Contactor and all Subcontractors
8. Waste Management Plan
9. Quality Control Plan
10. Under-An-Acre Pollution Prevention Plan (UPPP)
11. Contractors Commissioning Plan
12. List of Required Construction Permits. Include the following information for each permit:
    a. Name of Permit
    b. Agency(ies) with Jurisdiction issuing the permit
    c. Information required from Government to complete permit application

B. Provide items listed to CO before Pre-Construction Conference. If all documents have not been received one week prior to scheduled Pre-Construction Conference date, conference may be cancelled, Notice to Proceed may not be issued, and CO will consider other contractual remedies. Work shall not commence until written Notice to Proceed has been issued.

1.5 REQUESTS FOR INFORMATION (RFIs)

A. General: Immediately on discovery of the need for additional information or interpretation of Contract Documents, Contractor shall prepare and submit an RFI on a form that contains the information in section B of this section or form provided by CO.

1. CO will not respond to RFIs submitted by other entities controlled by Contractor.
2. Coordinate and submit RFIs in a prompt manner to avoid delays in the work.

B. Content of RFI: Include detailed, legible description of item needing information or interpretation and the following:

1. RFI number, numbered sequentially
2. Date
3. RFI subject
4. Specification Section number and title and related paragraphs, as appropriate.
5. Drawing number and detail references, as appropriate.
6. Field dimensions and conditions, as appropriate.
7. Contractor's suggested resolution: If Contractor's suggested resolution impacts Contract Time or Contract Sum, Contractor shall state impact in RFI.
8. Contractor's signature
9. Requested date for response
10. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.

    a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.

C. CO's Action: CO will review each RFI, determine action required, and respond. CO will determine critical nature of each RFI and issue response accordingly.

1. The following are not considered to be RFIs and will receive no action:

   a. Requests for approval of submittals.
   b. Requests for approval of substitutions.
   c. Requests for approval of Contractor's means and methods.
   d. Requests for coordination information already indicated in Contract Documents.
   e. Requests for adjustments in Contract Time or Contract Sum.
   f. Requests for interpretation of Architect's actions on submittals.
   g. Incomplete RFIs or inaccurately prepared RFIs.

2. CO's action may include a request for additional information; time for response will date from time of receipt of additional information.
3. CO's action on RFIs may result in need for a change to Contract Time or Contract Sum. All contract changes will be processed following terms and conditions of contract.

1.6 PROJECT WEB SITE

A. Use Government Provided Construction Management Platform for communication throughout contract period. The website will be used for the following functions:

1. Project directory
2. Project correspondence
3. Meeting agendas and minutes
4. Contract modifications forms and logs
5. RFI form and processing
6. Task and issue management
7. Photo documentation
8. Baseline schedule, schedule updates and calendar management
9. Submittal form and processing
10. Payment coordination documentation
11. Drawing and specification document hosting, viewing, and updating
12. Online document collaboration
13. Reminder and tracking functions
14. Archiving functions
15. Notification of submittal and RFI statuses and current responsible party
16. Permits and addendums

B. Some documents are not suitable to be shared using website. Documents containing Personal Identifying Information (PII) (i.e. certified payrolls) shall not be shared using the website and shall be coordinated with Project team as appropriate.

1.7 PROJECT MEETINGS

A. Preconstruction Conference: Before start of construction, CO will arrange an on-site meeting with Contractor. Meeting agenda will include the following as a minimum:

1. Roles & Responsibilities / Lines of Authority
2. Park rules and regulations
3. Jobsite Safety
4. Resolution of comments on required Division 1 documents
5. Coordination of Subcontractors
6. Labor law application
7. Modifications
8. Payments to Contractor
9. Payroll reports
10. Contract time
11. Liquidated damages
12. Contractor Performance Evaluation
13. Display of Hotline posters
14. Notice to proceed
15. Correspondence procedures
16. Construction Management Website
17. Acceptance/rejection of work
18. Progress meetings
19. Submittal procedures
20. NPS Final Accessibility Inspection
21. Environmental requirements
22. Permit requirements
23. As-constructed drawings/operation and maintenance (O&M) manuals.
24. Saturday, Sunday, holiday and night work.
25. Reference materials
26. Value engineering
27. Schedule of Values

B. Progress Meetings: CO will schedule weekly meetings with Contractor.

1. Attendees: In addition to Government Representatives, each Contractor, Subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented. Participants at meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Meeting agenda will include:

    a. Approval of minutes of previous meetings
    b. Submittal status
    c. Review of off-site fabrication and delivery schedules.
    d. Requests for information (RFI) and other issues.
    e. Modifications
    f. Work in progress and projected.
        1) Status of required inspections (Special Inspections, Accessibility, etc.)
    g. Inspections of work in progress and projected (Special inspections, Accessibility, etc.)
    h. Construction Schedule update (provide updated Critical Path Method (CPM)).
    i. Status of Project Record Drawings and O&M manuals.
    j. Other business relating to work.
    k. Permit requirements

l. Lane closure notification for Road Report
   1) Contractor to provide lane closure notifications a minimum of 3 weeks prior to closure.

C. Preinstallation Conferences: Conduct at Project site before each construction activity that requires coordination with other construction.

1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend meeting. Advise CO of scheduled meeting dates.
2. Agenda: Review progress of other construction activities and preparations for particular activity under consideration, including requirements for:

   a. Contract Documents
   b. Options
   c. Related RFIs
   d. Related Change Orders
   e. Purchases
   f. Deliveries
   g. Submittals
   h. Review of mockups
   i. Possible conflicts
   j. Compatibility requirements
   k. Time schedules
   l. Weather limitations
   m. Manufacturer's written instructions
   n. Warranty requirements
   o. Compatibility of materials
   p. Acceptability of substrates
   q. Temporary facilities and controls
   r. Space and access limitations
   s. Regulations of agency(ies) with jurisdiction
   t. Testing and inspecting requirements
   u. Installation procedures
   v. Coordination with other work
   w. Required performance results
   x. Protection of adjacent work
   y. Protection of construction and personnel

3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
4. Reporting: Distribute minutes of meeting to each party present and to other parties requiring information.
5. Do not proceed with installation if conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of Work and reconvene conference at earliest feasible date.

1.8 ENVIRONMENTAL COORDINATION

A. Contractor's Environmental Manager: Designate on-site party responsible for overseeing Contractor's conformance to environmental goals for project and implementing procedures for environmental protection. The Contractor's Environmental Manager can be satisfied with key personnel (Superintendent, Quality Supervisor, Project Manager) working in other capacities provided they have the applicable experience.

1. Qualifications: Minimum 3 years Construction experience on projects of similar size and scope; with environmental procedures similar to this project; familiarity with Environmental Management Systems (EMSs) such as International Organization for Standardization (ISO) 14001; familiar with environmental regulations applicable to construction operations.
2. Responsibilities: Responsibilities shall include:

    a. Compliance with applicable Federal, State, and local environmental regulations, including maintaining required documentation.
    b. Implementation of Waste Management Plan (WMP).
    c. Implementation of Under-An-Acre Pollution Prevention Plan (UPPP).
    d. Present overview of environmental issues and summarize site specific procedures relating to management plans at Preconstruction conference.
    e. Training for Contractor personnel in accordance with position requirements.
    f. Monitoring and documentation of environmental procedures.

B. Perform project quality control in accordance with requirements specified in Related Sections, including:

1. Quality Requirements
2. Regulatory Requirements
3. Noise and Acoustics Management
4. Under-An-Acre Pollution Prevention Plan (UPPP)
5. Construction Waste Management

C. Contractor's Environmental Training Program: Contractor shall provide environmental training for workers performing work on project site. Training shall include:
1. Overview of environmental issues related to Project.
2. Review of site-specific procedures and management plans:

    a. Construction Waste Management
    b. Noise and Acoustics Management
    c. Under-An-Acre Pollution Prevention Plan (UPPP)

3. Pollution Prevention (P2) practices: Submit evidence of P2 training, participation in P2 programs, familiarity with P2 practices.
4. Compliance with environmental regulations: As specified in Regulatory Requirements. Submit Contractor 40 CFR (Code of Federal Regulations) employee training records upon request of CO.

D. Prior to any tree trimming and/or removal, Contractor shall coordinate with NPS for Section 7 process consultation.

1.9 PERMITS

A. General:

1. Permits and Responsibilities: Contractor shall, without additional expense to the Government, be responsible for obtaining necessary licenses and permits, and for complying with Federal, State and municipal laws, codes, and regulations applicable to the performance of the work. Contractor shall also be responsible for damages to persons or property that occur as a result of Contractor's fault or negligence; and for materials delivered and work performed until completion and acceptance of the work.
2. For the purpose of this contract, Contractor will not be considered an agent of the Government. Contractor shall comply with appropriate Federal, State and local laws.

B. Government Furnished Permits: During development of the project's design, permits listed below were negotiated and agreed to by the Government. Terms and provisions of these permits shall be adhered to for the duration specified in each permit.

1. The Government is in the process of securing the following permit:
   a. United States Army Corps of Engineers (USACE) Section 404 NWP 3.
   The Agency with Jurisdiction for these permits is West Virginia Department of Environmental Protection (WVDEP). No work will be permitted on *the Virginius Island Bridge* until this permit has been authorized by the regulatory agencies.

C. Potential Permits: Permits listed below were identified during the design process as likely to be required based on typical means and methods of construction. The list is provided to assist Contractor in determining which permits will be required for contract's chosen means and methods. The list shall not be considered complete; it is the Contractors' responsibility to determine means and methods and obtain required permits. Contractor shall obtain all permits required to legally conduct work.
   1. Encroachment and Traffic Control permits from local municipalities and state DOT may be required for lane closures and any other work requiring traffic control.
   2. Special use permit for commercial vehicle usage in park from NPS
   3. Construction Stormwater NPDES Permit

   It is the Contractor's responsibility to secure any and all remaining pre-construction permits prior to initiating onsite work. Demonstrated permit authorization is a condition of the quality control, preapproval phase of the three phase prework planning process.

D. Coordination with Agency(ies) with Jurisdiction Issuing Permits

1. Coordination: Contact the Agency(ies) with Jurisdiction as needed and sufficiently in advance to avoid delaying work: Coordinate meetings, reporting requirements, inspections, and other requirements.

E. Administrative Procedures:

1. Coordinate scheduling and timing of required administrative provisions of project permits with Agency(ies) with Jurisdiction, Construction Manager, and Park to avoid conflicts.

2. Supply needed information to Agency(ies) with Jurisdiction issuing permits, pay fees required and provide material needed to comply with permit's conditions and provisions.
3. Upload permits to Government Furnished project website when permits are obtained.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 31 00

HARPERS FERRY NATIONAL HISTORICAL PARK – 242454

SECTION 01 32 16 – CONSTRUCTION SCHEDULE

PART 1 - GENERAL

1.1 SUMMARY

A. Section consists of Construction Schedule requirements including:

1. Schedule of Values
2. Construction Schedule Requirements.
3. Construction Schedule Updates.
4. Time Impact Analysis.

B. Purpose: The Construction Schedule ensures adequate planning, coordination, scheduling, and reporting during execution of the work by the Contractor. It shall assist the Contractor and Contracting Officer (CO) in monitoring the progress of the work, evaluating proposed changes, and processing Contractor's monthly progress payments. It shall include the dates in the contract, phases, milestones, occupancies, holidays, weather consideration, a critical path, and the requirements of this section.

1.2 DEFINITIONS

A. Activity: A discrete part of a project identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.

1. Critical activities are activities on the critical path. They start and finish on the planned early start and finish times.
2. Predecessor Activity: An activity that precedes another activity in the network.
3. Successor Activity: An activity that follows another activity in the network.

B. Cost Loading: Allocation of the Schedule of Values for completion of an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum, unless otherwise approved by the CO.

C. Critical Path Method (CPM): Method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.

D. Critical Path: Longest connected chain of interdependent activities through the network schedule that establishes minimum overall Project duration and contains no float.

E. Float: Measure of leeway in starting and completing an activity.

1. Float: Not for the exclusive use or benefit of the Government or Contractor but is jointly owned.
2. Free Float: Amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
3. Total Float: Measure of leeway in starting or completing an activity without adversely affecting planned Project completion date.

F. Resource Loading: Allocation of manpower and equipment necessary for completion of an activity as scheduled.

G. Fragnet: A partial or fragmentary network that breaks down activities into smaller activities for greater detail.

1.3 SUBMITTALS

A. Electronic Copies: Schedules and reports submitted shall be posted on the NPS/DSC Government Furnished Construction Management Platform in electronic file formats. The intent of the Government is to limit the number of printed reports to those determined by the project team as essential.

B. Schedule of Values: After contract award and before Pre-Construction conference, submit schedule of dollar values based on Section 2.1.A below.

C. Construction Baseline Schedule: After contract award and before Pre-Construction conference, submit two paper copies of baseline schedule, large enough to show entire schedule for entire construction period. Utilize Schedule of Values in preparation of Construction Baseline Schedule.

D. Critical Path Method (CPM) Reports: Concurrent with CPM schedule, submit three paper copies of the following computer-generated reports. For each activity, include activity number, activity description, cost and resource loading, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.

1. Activity Report: List of activities sorted by activity number and then early start date, or actual start date if known.
2. Logic Report: List of predecessor and successor tasks for activities sorted in ascending order by activity number and then early start date, or actual start date if known.
3. Total Float Report: List of activities sorted in ascending order of total float.

E. Construction Schedule Updates: On or before 7th day preceding progress payment request date, submit estimates of percent completion of each schedule activity and necessary supporting data. Provide two paper copies.

F. Construction Schedule Revisions and Time Impact Analysis: For each Construction Schedule revision, submit two paper copies of a Time Impact Analysis. Incorporate a Fragmentary Network (Fragnet) into currently accepted Construction Schedule that demonstrating how Contractor proposes to incorporate a modification, change, delay, or Contractor request.

1.4 QUALITY ASSURANCE

A. Contractor shall meet with CO on day of the preconstruction conference to go over:

1. Review software limitations, content and format for reports.
2. Verify availability of qualified personnel needed to develop and update schedule.
3. Discuss constraints, including if work is concurrent or phased, work stages for retaining wall repair work, interim milestones and substantial completions.
4. Review time required for review of submittals and re-submittals.
5. Review requirements for tests and inspections by independent testing and inspecting agencies.
6. Review time required for completion and startup procedures.
7. Review time required for obtaining and activating permits.
8. Review and finalize list of construction activities to be included in schedule.
9. Review baseline schedule comments, resolve issues and progress on incorporating them
10. Review procedures for updating schedule.
11. Discuss reporting requirements and establish protocol for naming and transmitting electronic schedules.

B. Contractor's Schedule Representative: Before the preconstruction conference, designate an authorized representative to be responsible for preparing and maintaining the Construction Schedule. Submit resume outlining qualifications of Scheduler to CO for acceptance. Scheduler shall have prepared and maintained at least 5 previous schedules of similar size and complexity similar to this Contract, demonstrating proficiency of using scheduling software. Authorized representative will be responsible for preparing the Baseline Schedule, required updates, revisions, Time Impact Analyses, and reports.

1.5 COORDINATION

A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate Contractors.

B. Coordinate Construction Baseline Schedule with Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.

1. In developing Construction Baseline Schedule, ensure Subcontractor’s work at all tiers, and prime Contractor’s work, is included and coordinated.
2. Secure time commitments for performing critical elements of work from parties involved.
3. Coordinate each construction activity in network with other activities and schedule in proper sequence.

PART 2 - PRODUCTS

2.1 SCHEDULE OF VALUES

A. Breakdown each lump-sum item into component work activities as listed below for which progress payments may be requested. Work activities broken out within schedule of values shall

be integrated into and made a logical part of the construction baseline schedule. Total costs for the component work activities shall equal contract price for that lump-sum item. CO may request data to verify accuracy of dollar values. Include general condition costs, overhead and profit in the total dollar value of unit price items and in the component work activities for each lump-sum item. Do not include general condition costs, overhead or profit as a separate item.

Base Contract Schedule of Values (The base schedule of values shown in Table 01 32 16)

B. Do not break down unit price items in Schedule of Values. Use only the contract price for unit price items. Submit unit price item breakdown form provided at the end of this Section as Table 01 32 16 to supplement the Schedule of Values. The sum of the unit price item breakdown in Table 01 32 16 shall match the values shown in the Schedule of Values. An electronic version of Table 01 32 16 can be provided by the CO at the request of the Contractor.

C. Total cost of all items shall equal the contract price. The Schedule of Values will form the basis for progress payments and the Construction Schedule. With each progress payment request, submit an updated schedule of values tracking quantity measurements and precent complete by line item for which payment is being requested.

2.2 CONSTRUCTION SCHEDULE REQUIREMENTS

A. Construction Baseline Schedule: Prepare Construction Baseline Schedule using a computerized, cost and resource-based, time-scaled Critical Path Method network analysis diagram for the Work.

1. Develop and finalize Construction Baseline Schedule so it can be accepted for use no later than 30 days after date established for the Notice of Award.

   a. Failure to include any work item required for performance of this Contract shall not excuse Contractor from completing work within applicable completion dates, regardless of Governments acceptance of schedule.

2. Establish procedures for monitoring and updating Construction Baseline Schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.

B. Construction Baseline Schedule Preparation: Prepare a list of all activities required to complete the Work. Using preliminary Critical Path Method network diagram, prepare a skeleton network to identify probable critical paths.

1. Activities: Indicate estimated duration, sequence requirements, and relationship of each activity in relation to other activities.
2. Critical Path Activities: Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates.
3. Processing: Process data to produce output data on a computer-drawn, time-scaled network. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the Critical Path Method schedule within the limitations of the Contract Time.

4. Show sequence and interdependence of activities required for completion of work. Ensure work sequences are logical and Construction Baseline Schedule shows a coordinated plan of the work.
5. Resource loading of each activity shall include personnel by labor category and equipment type and capacity proposed to complete the activity in duration shown.
6. Consider seasonal weather conditions in planning and scheduling work influenced by high and low ambient temperatures, wind, or precipitation to ensure completion of work within contract time.
7. Time Frame: Proposed duration assigned to each activity shall be Contractor's best estimate of time required to complete activity considering the scope and resources planned for activity.

    a. An early finish date may be shown but the late finish date shall be same date as last day of contract period. An early completion schedule shall contain:

        1) Insert an activity titled "Project Float" as a successor to last activity in early project completion schedule network.
        2) Add a milestone titled "Contract End Date" as a successor to the activity "Project Float".
        3) Add duration to the activity "Project Float" as required so the milestone "Contract End Date" equals the last day of Contract Period.

    b. Contract completion date shall not be changed by submission of a schedule that shows an early completion date.
    c. Contractor shall limit use of lead or lag duration’s between schedule activities.
    d. Project Calendars: Develop and incorporate the following calendars:

        1) Administrative Calendar: Include calendar based on a 7-day week to be used on activities based on calendar days. Apply this calendar to administrative tasks or other tasks not affected by non-working days (Federal Holidays, weather, etc.).
        2) Project Calendar: Include calendar based on planned work week for the project. Include Federal Holidays, weekends, and non-workdays indicated in contract documents. Apply this calendar to activities not anticipated to be affected by weather. Be clear when identifying number of work days in work week.
        3) Weather Calendar: Utilize Project Calendar and show anticipated normal downtime related to weather as non-working time. Weather days shall be based on data for local area from a reliable source like the National Oceanic and Atmospheric Administration (NOAA), National Park Service records, or source acceptable to CO. Apply this calendar to activities anticipated to be affected by weather.

    e. Activity Duration: Define so no activity is longer than 14 days, except for non-construction activities including mobilization, shop drawings and submittals, fabrication and delivery of materials and equipment.
    f. Procurement Activities: Include procurement process activities for long lead items and major items, requiring a cycle of more than 60 calendar days, as separate activities in the schedule. Procurement cycle activities can include submittals, approvals, purchasing, fabrication, and delivery.

g. Submittal Review Time: Include review and re-submittal times indicated. Coordinate submittal review times in Construction Baseline Schedule.
h. Startup and Testing Time: Include not less than 3 days for startup and testing
i. Substantial Completion: Allow time for Government administrative procedures necessary for certification of Substantial Completion. (For more information, refer to Specification 01 77 00 "Closeout Procedures.")

8. Constraints: Include constraints and work restrictions indicated in Contract Documents and as follows in schedule and show how the sequence of Work is affected.

a. Phasing: Arrange list of activities on schedule by phase.
b. Work Restrictions: Show effect of the following on the schedule:

1) Coincident with this contract may be other contracts within the same working vicinity. Coordinate construction operations to minimize impacts. Coordinate with CO for other contracts information. The table below with potential projects is provided for informational purposes and may not include all projects. It is the contractor's responsibility to coordinate work to reduce/eliminate conflicts.

POTENTIAL PROJECTS	ESTIMATED CONSTRUCTION

2) Seasonal variations
3) Environmental control
4) Permit provisions

c. Work Stages: Indicate important stages of construction for each major portion of the Work.

1) Subcontract awards
2) Submittals
3) Purchases
4) Mockups
5) Fabrication
6) Sample testing
7) Deliveries
8) Installation
9) Tests and inspections
10) Adjusting
11) Curing

9. Milestones: Include milestones indicated in Contract Documents in schedule, including, but not limited to, Notice to Proceed, Division 1 Approvals and Substantial Completion interim milestones.

C. Joint Review, Revision, and Acceptance:

1. Within seven calendar days of receiving Contractor's proposed Construction Baseline Schedule, CO shall review initial Construction Baseline Schedule.
2. Within seven calendar days after review, Contractor shall revise and resubmit Construction Baseline Schedule in accordance with comments presented from review.
3. In the event the Contractor fails to define any element of work, activity, or logic, and the CO review does not detect this omission or error, such omission or error, when discovered by Contractor or CO, shall be corrected by Contractor within seven calendar days and shall not affect contract period.
4. Upon acceptance of the Construction Baseline Schedule, CO saves schedule as a baseline and updates on a monthly basis. Construction schedule update will be used to evaluate Contractor's monthly applications for payment based upon information developed at monthly Construction Schedule update meeting.

D. Cost Correlation: In the heading of the schedule, provide a cost correlation line, indicating planned and actual costs. On the line, show dollar volume of Work performed as of dates used to prepare payment requests.

1. Contractor shall assign cost to construction activities on Construction Baseline Schedule. Costs shall not be assigned to submittal activities unless specified otherwise but may, with CO's approval, be assigned to fabrication and delivery activities. Costs shall be included for testing and commissioning activities, operation and maintenance manuals, punch list activities, Project Record Documents, and demonstration and training (if applicable).
2. Each activity cost shall reflect an accurate value based on the Contract Price Schedule.
3. Total cost assigned to activities shall equal total Contract Price.

E. Recovery Schedule: When periodic schedule update indicates Work is 14 or more calendar days behind current accepted schedule, a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule shall also be submitted. Indicate changes to working hours, working days, crew sizes, and equipment required to achieve compliance, and date by which recovery shall be accomplished.

F. Computer Software: Prepare schedules using a program developed specifically to manage construction schedules.

1. Use Microsoft Project or Primavera, for Windows operating system (Windows 7 and newer.)

PART 3 - EXECUTION

3.1 CONSTRUCTION SCHEDULE UPDATES

A. Progress Meeting Updates: Provide a two week look-ahead schedule, derived from the currently accepted schedule, before each weekly progress meeting. Utilize look-ahead schedule to facilitate and take notes on discussions held during progress meeting.

B. Monthly Schedule Updates:

1. General: Update Construction Schedule on monthly basis to reflect construction progress and activities throughout entire contract period and until project substantial completion. The status date of each schedule update shall be the 7th day preceding the progress payment request date.
2. Procedure: Contractor shall meet with CO each month at Construction Schedule update meeting to review progress made through the status date of the Construction Schedule update, including dates activities were started or completed and percentage of work completed on each activity started or completed.
3. Reports: Concurrent schedule revisions, prepare tabulated reports showing:

    a. Identification of activities that have changed
    b. Changes in early and late start dates
    c. Changes in early and late finish dates
    d. Changes in activity durations in workdays
    e. Changes in the critical path
    f. Changes in total float or slack time
    g. Changes in the Contract Time

4. Narrative: Report shall include a brief description of actual progress made during update period; actual and potential delaying activities; impediments to progress; issues related to inclement weather; progress toward established milestones and project float. Report shall include a brief description of work anticipated to be performed in the next month. Minor revisions to the schedule should be identified for evaluation and acceptance or rejection.
5. As Work progresses, indicate Actual Completion percentage for each activity.
6. If schedule update shows a late finish date after contract completion date, include:

    a. Known delays
    b. Actions to get back on schedule
    c. Pending modifications
    d. Impediments or constraints affecting progress

7. Progress Payments: Monthly updating of the currently accepted Construction Schedule shall be an integral part of the process upon which progress payments will be made. If Contractor fails to provide schedule updates or revisions, a portion of the monthly payment may be retained until corrections have been made.

C. Distribution: Distribute copies of accepted schedule to CO, COs Representative, Construction Management Representative, Subcontractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.

1. Post copies in Project meeting rooms and temporary field offices.
2. When revisions are made, distribute updated schedules to same parties and post in same locations. Delete parties from distribution when they have completed their assigned portion of the Work.

D. Construction Schedule Revisions:

1. Required Revisions: If, as a result of the monthly schedule update, it appears the currently accepted Construction Schedule no longer represents actual prosecution and progress of the work, CO will request, and Contractor shall submit, a revision to the Construction Schedule. Contractor may also request reasonable revisions to currently

accepted Construction Schedule in event the Contractor's planning for the work is revised. If Contractor desires to make changes, Contractor shall notify CO in writing, stating reason for proposed revision. Accepted revisions shall be incorporated into currently accepted Construction Schedule for next monthly schedule update.

2. Procedure: If revision to currently accepted Construction Schedule is contemplated, Contractor or CO shall advise the other in writing at least seven calendar days prior to next monthly schedule update meeting, describing revision and reasons for the revision. Government-requested revisions will be presented in writing to the Contractor, who shall respond in writing within seven calendar days.
3. Reports: Concurrent with making revisions to schedule, prepare tabulated reports showing:

    a. Identification of activities changed
    b. Changes in early and late start dates
    c. Changes in early and late finish dates
    d. Changes in activity durations in workdays
    e. Changes in critical path
    f. Changes in total float or slack time

3.2 TIME IMPACT ANALYSIS FOR CONTRACT MODIFICATIONS CHANGES DELAYS AND CONTRACTOR REQUESTS:

1. Requirements: When contract modifications or changes are initiated, delays experienced, or Contractor desires to revise currently accepted Construction Schedule, Contractor shall submit to CO a written time impact analysis illustrating the influence of modification, change, delay, or Contractor request on contract time.
2. Time Extensions: Activity delays, resulting in a late completion date projection, shall not automatically mean an extension of contract time is warranted or due to Contractor. It is possible a modification, change, or delay will not affect existing critical path activities or cause non-critical activities to become critical. A modification, change, or delay may result in absorbing a part of available total float that may exist within an activity chain of the Schedule, not causing any effect on contract time. Time extensions will be granted in accordance with terms of contract.
3. Extension of contract time will be granted only to the extent the equitable time adjustments to activity or activities affected by modification, change, or delay exceeds total (positive or zero) float available on a particular activity.
4. Procedure: Each time impact analysis shall be submitted within time period stated in a request for proposal, or time period designated under the clauses entitled Changes or Default. In cases where Contractor does not submit a written request for extension of time and a time impact analysis within the designated time, it is mutually agreed that the particular modification, change, delay, or Contractor request does not require an extension of the contract time. Upon acceptance, time impact analysis shall be incorporated into currently accepted Construction Schedule at next monthly schedule update.
5. Contract Modifications: Prepare time-impact analysis using fragnets to demonstrate effect of proposed change on overall Construction Schedule for each proposed contract modification concurrent with submission.

TABLE 01 32 16

PARK - PMIS: **HAFE - 242454**
(Project Management Information System)

Developed Area: **Multiple Bridges and Structures within HAFE**
Project Title: **NCA / IMR Bridge Preservation**

Contract Line Item Number (CLIN)	Contract Line Item (CLI) Title & Component Work Activities	Add'l Description (if necessary)	Quantity	Unit of Measure
1	**Parking Lot Surface Repair - Public Assets**			
a	Mobilization		1	LS
b	Traffic Control		1	LS
c	Crack Sealing		20210	LF
d	Pavement Patching	Partial Depth	8485	SF
		Full Depth	5439	SF
e	Shoulder Grading		565	LF
f	Tree Trimming		56	LF
g	Joint Seal		1730	LF
h	Slurry Seal		276905	SF
i	Chip Seal		233803	SF
j	Signs			EA
k	Pavement Markings	Lane Markings	10258	LF
		ADA Parking Symbols	17	EA
		Marking Symbols	4	EA
2	**Parking Lot Surface Repair - Non-Public Assets**			
a	Mobilization		1	LS
b	Traffic Control		1	LS
c	Crack Sealing		1700	LF
d	Pavement Patching	Partial Depth	382	SF
e	Shoulder Grading			LF
f	Tree Trimming			LF
g	Joint Seal		190	LF
h	Slurry Seal			SF
i	Chip Seal		76411	SF
j	Signs			EA
k	Pavement Markings	Lane Markings	935	LF
		ADA Parking Symbols	2	EA
		Marking Symbols		EA

END OF SECTION 01 32 16

NPS DSC Division 1 Specifications

HARPERS FERRY NATIONAL HISTORICAL PARK – 242454

SECTION 01 32 33 – PHOTO DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for:

1. Existing condition images to document conditions prior to construction.
2. Periodic construction images

B. See Section 01 77 00 "Closeout Procedures" for a complete listing of closeout documents.

1.2 SUBMITTALS

A. Construction Images: Submit images on Government Furnished Construction Management Platform electronically within 7 days of taking the image. Include:

1. Date, time and number (sequentially number all images) in filename.
2. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
3. Submit digital images exactly as originally recorded in digital camera, without alteration, or modifications using image-editing software.

B. Closeout: Submit complete set of digital image electronic files as a Project Record Document.

1. Provide index as separate file. List each image as a file name with number, date, and time. Include description and or vantage point image was taken.
2. Submit images that have the same aspect ratio as the sensor, un-cropped.

PART 2 - PRODUCTS

2.1 FORMAT REQUIREMENTS Format should be compatible with all digital cameras.

A. Images: Provide sRGB (standard Red Green Blue) color images in JPEG (Joint Photographic Experts Group) format. Minimum sensor size of 8 megapixels, and at image resolution of not less than and 300 dpi (dots per inch).

PART 3 - EXECUTION

3.1 CONSTRUCTION IMAGES

A. General: Take digital images using the maximum range of depth of field, in-focus, to clearly show the Work. No blurry or out-of-focus areas accepted.

1. Maintain index with each set of Construction images and identify the number, date, time, and description for each.
2. Maintain one set of images accessible in field office at Project site available for reference.

B. Existing Condition Images: Before starting construction, take color digital images of Project site and surrounding properties, including existing items to remain during construction, from different vantage points.

1. Flag construction limits before recording construction images.
2. Take eight separate images to show existing conditions adjacent to property before starting Work.

C. Periodic Construction Images: Take color, digital images weekly and as needed to document construction activities, with timing each month adjusted to coincide with cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last images were taken.

D. Additional Images: Contracting Officer (CO) may issue requests for additional images.

1. Three days advance, where feasible.
2. In emergency situations, take additional images within 24 hours of request.
3. Additional images include, but are not limited to:

a. Immediate follow-up when on-site events result in construction damage or losses.
b. Fabrication locations away from Project site.
c. Substantial Completion of a major phase or component of Work.
d. Extra record images at time of final acceptance.

END OF SECTION 01 32 33

HARPERS FERRY NATIONAL HISTORICAL PARK – 242454

SECTION 01 33 23 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

1.2 DEFINITIONS

A. Action Submittals: Written, graphic information, and physical samples that require Government's responsive action.

B. Informational Submittals: Written information that does not require Government's responsive action. Submittals may be rejected for not complying with requirements.

C. File Transfer Protocol (FTP): Communications protocol that enables transfer of files to and from another computer over a network and that serves as the basis for standard Internet protocols. An FTP site is a portion of a network located outside of network firewalls within which internal and external users are able to access files.

D. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

1.3 GENERAL SUBMITTAL PROCEDURES

A. General: Prepare and submit submittals required by individual Specification Sections and in some cases as requested in drawings. Types of submittals are indicated in individual specific sections.

1. Contracting Officer (CO) reserves right to require submittals in addition to those called for in individual sections.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Review for legibility, accuracy, completeness, and compliance with Contract Documents.

1. Coordinate submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.

2. Coordinate transmittal of different types of submittals for related parts of Work so processing will not be delayed because of need for concurrent review coordination.

    a. CO reserves right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Submittal List: Submittal list is attached to the end of this Specification Section. The intent is to provide an overall summary of submittal requirements. The requirements of individual Specification Sections and terms and conditions of the Contract still apply regardless of what is shown on submittal list.

D. Processing Time: Allow time for submittal review, including time for re-submittals, as follows. Time for review shall commence when e-mail notification is received by CO (or designee) indicating submittal has been posted on government furnished website and is ready for review. When CO has completed review, notification will be sent to Contractor indicating submittal has been processed. No extension of Contract Time will be authorized because of failure to transmit submittals in advance of Work to permit processing, including re-submittals.

1. Action Submittals

    a. Initial Review: Allow 30 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required.
    b. Re-submittal Review: Allow 10 days for review of each re-submittal.

2. Informational submittals

    a. Review: Allow 10 days for review of each submittal.

E. Approved Equals:

1. For each item proposed as an "approved equal," submit supporting data, including:

    a. Drawings and samples as appropriate.
    b. Comparison of the characteristics of the proposed item with that specified.
    c. Changes required in other elements of the work because of the substitution.
    d. Name, address, and telephone number of vendor.
    e. Manufacturer’s literature regarding installation, operation, and maintenance, including schematics for electrical and hydraulic systems, lubrication requirements, and parts lists. Describe availability of maintenance service, and state source of replacement materials.

2. A request for approval constitutes a representation that Contractor:

    a. Has investigated the proposed item and determined that it is equal or superior in all respects to that specified.
    b. Will provide the same warranties for the proposed item as for the item specified.
    c. Has determined that the proposed item is compatible with interfacing items.
    d. Will coordinate installation of an approved item and make changes required in other elements of the work because of the substitution.
    e. Waives claims for additional expenses that may be incurred as a result of the substitution.

F. **Electronic Submittals:** Identify and incorporate information in each electronic submittal file as follows:

1. Transmittal Form (CM-16): All submittals and RFI's shall be transmitted using National Park Service Transmittal Form (CM-16). The form can be downloaded from the DSC Workflows website's Submittal Review page and completed on the NPS/DSC Government Furnished Construction Management Platform. No action will be taken on a submittal item unless accompanied by this Transmittal Form.

    a. Complete the general information at the top of form.
    b. Provide all required information based on submittal type
    c. Attach all related documents.
    d. Sign the Contractor section at bottom of the Transmittal Form (CM-16).

2. Physical samples: Complete Transmittal Form (CM-16) on the NPS/DSC Government Furnished Construction Management Platform as described above. Deliver physical sample to the CO (or designee) on site for processing. All comments and actions will be documented on the Transmittal Form (CM-16) on the NPS/DSC management software website.

G. Identification: Submittal number or other unique identifier, including revision identifier.

1. A separate (CM-16 form) is required for each submittal and each submittal shall use a sequential number (e.g. .001). The submittals shall provide a direct reference to the applicable specification section. Re-submittals shall include alphabetic suffix after another decimal point (e.g. .001.A). Multiple submittals under separate contract specifications can not be combined under one (CM-16).

H. Re-submittals: Make re-submittals using same process used with initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in the title block on the Transmittal Form (CM-16) and clearly indicate extent of revision.
3. Re-submit submittals until they are marked "Approved" or "Approved with notations".

I. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, and others as necessary for performance of construction activities.

J. Use for Construction: Use only final submittals with mark indicating "Approved" or "Approved with notations". Ensure notations have been incorporated and, at a minimum, keep one copy of final approved submittal on site for use during construction.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each submittal to show which products and options are applicable.
3. As applicable, include:

    a. Manufacturer's product specifications.
    b. Manufacturer's installation instructions: When Contract Documents require compliance with manufacturer's printed instructions, provide one complete set of instructions to CO and keep another complete set of instructions at the project site until substantial completion.
    c. Manufacturer's catalog cuts: Submit only pertinent pages; mark each page of standard printed data to identify specific products proposed for use.
    d. Wiring diagrams showing factory-installed wiring.
    e. Printed performance curves.
    f. Operational range diagrams.
    g. Compliance with specified referenced standards.
    h. Testing by recognized testing agency.

4. Submit product data in PDF (portable document format) file format before or concurrent with samples.

B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Preparation: Fully illustrate requirements in Contract Documents. As applicable, include:

    a. Dimensions
    b. Identification of products
    c. Fabrication and installation drawings
    d. Shopwork manufacturing instructions
    e. Templates and patterns
    f. Schedules
    g. Notation of coordination requirements
    h. Notation of dimensions established by field measurement
    i. Relationship to adjoining construction clearly indicated
    j. Seal and signature of professional engineer if specified

2. Submit shop drawings as PDF electronic file

C. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Complete and post the Transmittal Form (CM-16) on the NPS/DSC management software website for processing and documentation of action on submitted samples.
3. Identification: Attach label on unexposed side of Samples that includes:

    a. Generic description of Sample
    b. Product name and name of manufacturer

c. Sample source
d. Submittal Number and title of appropriate Specification Section

4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing full range of colors, textures, and patterns available.

    a. Number of Samples: Submit two full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. CO will return with options selected.

6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

    a. Number of Samples: Submit four sets of Samples. CO will retain three Sample sets; remainder will be returned.

D. Construction Materials: Contractor is encouraged to submit products made out of recycled or environmentally responsible material. Every effort will be made by National Park Service to approve these materials.

2.2 INFORMATIONAL SUBMITTALS

A. General: Prepare and submit Informational Submittals required by individual Specification Sections or as noted in the drawings.

1. Post informational submittals as PDF electronic files directly to the project website or as directed by the CO.
2. Certificates and Certifications: Provide a notarized statement with signature of entity responsible for preparing certification. Certificates and certifications shall be signed by officer or other individual authorized to sign documents on behalf of that entity.
3. Informational submittals that do not comply with requirements specified in Contract Documents will be rejected and one copy will be returned.

B. Coordination Drawings: Comply with requirements specified in Section 01 31 00 "Project Management and Coordination."

C. Contractors Construction Schedule: Comply with requirements specified in Section 01 32 16 "Construction Schedule."

D. Accident Prevention Plan: Comply with requirements specified in Section 01 35 23 "Safety Requirements."

E. Schedule of Values: Comply with requirements specified in Section 01 32 16 "Construction Schedule."

F. Waste Recycling Plan: Comply with requirements specified in Section 01 74 19 "Construction Waste Management and Disposal."

G. Quality Control Plan: Comply with requirements specified in Section 01 40 00 "Quality Requirements."

H. Storm Water Pollution Prevention Plan: Comply with requirements specified in Section 01 57 23 "Temporary Storm Water Pollution Prevention" and storm water permit requirements identified in Section 01 31 00 "Project Management and Coordination."

I. Qualification Data: Prepare written information demonstrating capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

J. Welding Certificates: Prepare written certification that welding procedures and personnel comply with Contract Documents. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on American Welding Society (AWS) forms. Include names of firms and personnel certified.

K. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying Installer complies with Contract Documents and, where required, is authorized by manufacturer for this specific Project.

L. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying manufacturer complies with Contract Documents. Include evidence of manufacturing experience where required.

M. Product Certificates: Prepare written statements on manufacturer's letterhead certifying product complies with Contract Documents.

N. Material Certificates: Prepare written statements on manufacturer's letterhead certifying material complies with Contract Documents.

O. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in Contract Documents.

P. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements in Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

Q. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in Contract Documents.

R. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before

installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

S. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in Contract Documents.

T. Design Data: Prepare written and graphic information, including: performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

U. Manufacturer's Instructions: Prepare written or published information documenting manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer.

V. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. As applicable, include:

1. Statement on condition of substrates and their acceptability for installation of product.
2. Summary of installation procedures being followed, compliance with requirements and, if not, what corrective action was taken.
3. Results of operational and other tests and a statement of whether observed performance complies with the requirements.

W. Permit Compliance Products: Prepare required information for compliance with permit provisions. Products include written notification of project startup, suspension, and completion of work; photo documentation of site conditions; reports; and drawings.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Review each submittal and check for coordination with other Work of Contract and for compliance with Contract Documents. Note corrections and field dimensions.

3.2 CONTRACTING OFFICER'S ACTION

A. General: Submittals will be disapproved without technical review if identification information is missing, not filled in, or if placed on back of submittal; an incorrect format of submittals is provided; transmittal form is incorrectly filled out; submittals are not coordinated; or submittals do not show evidence of Contractor's approval.

1. Any work done or orders for materials or services placed before approval shall be at Contractor's own risk.

B. Action Submittals: CO will review each submittal, generate comments on corrections or modifications required, and indicate appropriate action on the Transmittal Form (CM-16). Submittal will be marked as defined below:

1. APPROVED: Acceptable with no corrections.
2. APPROVED WITH NOTATIONS: Minor corrections or clarifications required. Comments are clear and no further review is required. Contractor shall address review comments when proceeding with the work.
3. DISAPPROVED - RESUBMIT: Rejected as not in accordance with the contract or as requiring major corrections or clarifications. CO will identify reasons for disapproval. Contractor shall revise and resubmit with changes clearly identified.

C. Informational Submittals: CO will review each submittal and will either accept or reject it.

D. Partial submittals are not acceptable, will be considered non-responsive, and will be returned without review.

END OF SECTION 01 33 23

NPS DSC Division 1 Specifications

HARPERS FERRY NATIONAL HISTORICAL PARK – 242454

SECTION 01 35 13.22 – ARCHEOLOGICAL PROTECTION – Compliance to determine if this spec is needed.

PART 1 - GENERAL

1.1 SUMMARY

A. The work of this section consists of protecting archeological resources. The contractor shall schedule a meeting prior to the start of construction with the Contracting Officer (CO), Park Archeological Cultural Resource Specialist and Deputy Superintendent to cover equipment access and work procedures. The Park does not anticipate that work will be in Archeological Sensitive areas, with the exception of archaeologically sensitive areas identified below, but will establish protocol for Park staff to monitor during construction to determination if any work areas become Archeological Sensitive.

1. Work is anticipated near the following Archaeologically Sensitive Area: This can be removed if there are not specific sensitive areas.

B. RELATED SECTIONS

Section 01 32 33 for photo documentation.

C. DEFINITIONS

Archeological Resources: Archeological resources are the physical evidences of past human activity, including evidences of the effects of that activity on the environment. Archeological resources represent both prehistoric and historic time periods. They are found above and below ground and under water.

Archeologically Sensitive Areas: Areas that have the potential to contain significant (National Register eligible) archeological resources. If National Register eligible or listed archeological resources could not be avoided, an appropriate mitigation strategy would be developed in consultation with the state historic preservation officer and, if necessary, associated American Indian tribes.

Non-sensitive Areas: Areas with little, if any, potential of containing significant (National Register eligible) archeological resources.

Archeological Monitor: Representative of the Government designated to oversee construction activities that could disturb archeological resources.

Archeological Resources Protection Act (ARPA) of 1979 (P.L. 96-95; 93 Stat. 712): defines archeological resources as any material remains of past human life or activities that are of archeological interest and at least 100 years old; Section 4 of the statute describes the

requirements that must be met before Federal authorities can issue a permit to excavate or remove any archeological resource on Federal or Indian lands; the curatorial requirements of artifacts, and other materials excavated or removed.

D. SUBMITTALS (if required by CO)

Daily Work Schedule; Submit a Daily work Schedule detailing construction work in archeologically sensitive areas. Submit to CO 30 days before start of ground disturbing site work.

E. QUALITY ASSURANCE

At least one week before on-site work begins and any ground disturbance, Contractor shall meet with CO and Archeological Monitor to discuss Daily Work Schedule and equipment and special methods to be used in any locations that are determined to be archeologically sensitive areas. Contractor shall ensure that approved Daily Work Schedule is followed throughout construction.

PART 2 - PRODUCTS

2.1 DAILY WORK SCHEDULE (if required by CO)

A. A Daily Work Schedule is required for all work occurring within archeologically sensitive areas. Include all work that is to occur within the area and key the schedule to the drawings to include the following:

1. Starting and ending dates of ground-disturbing construction.
2. Types of construction, such as clearing, topsoil stripping, structure or trench excavation, landscaping, and post construction clean-up.
3. Methods and equipment used for each type of construction.
4. Plan for relocating work in the event of temporary work stoppages at each archeologically sensitive area

PART 3 - EXECUTION

3.1 BARRICADES

A. Comply with requirements specified in Division 01 Section “Temporary Facilities And Controls.”

3.2 OBSERVATION

A. Archeological Monitor will observe all ground-disturbing site work, at all archeologically sensitive areas, from a safe location mutually agreed on by Contractor and Monitor. As new ground is broken, Monitor will examine excavated materials, using construction layout centerline and perimeter staking as a reference point to record locations of findings.

3.3 DISCOVERY OF RESOURCES

A. If Archeological Monitor discovers resources, immediate relocation of the work to a non-sensitive area may be required to allow Monitor to identify and document resources and, if necessary,

develop an appropriate mitigation plan. While Archeological Monitor is documenting resources in sensitive areas, Contractor shall relocate work to non-sensitive areas where monitoring is not normally required.

B. Potential Discovery may include discovery of human remains.

C. If resources are discovered while Archeological Monitor is absent, stop work immediately and report the discovery to the CO.

D. Discovered resources shall be photographed according to the format requirements in Specification 01 32 33 Photo Documentation, Section 2.1.

3.4 WORK STOPPAGE

A. The Contractor shall plan, schedule, and execute the work to prevent stoppages at one area from stopping all work at the construction site

END OF SECTION 01 35 13.22

NPS DSC Division 1 Specifications

HARPERS FERRY NATIONAL HISTORICAL PARK – 242454

SECTION 01 35 23 - SAFETY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes establishing an effective accident prevention program and providing a safe working environment for personnel and visitors.

1.2 CONDITIONS PRESENT FOR PROJECT

A. The project work site has construction related safety conditions associated with bridge superstructure and substructure repair works. Construction activities with equipment and work present potential hazards.
   1. Beyond typical construction activity hazards, additional anticipated hazards specific to the work include, but are not limited to, the following
      a. Wildlife includes potential for venomous snakes at the project site, ticks and poisonous various insects.
      b. Work on high-speed roadway facility.
      c. Work over water and risk of flooding.

1.3 SUBMITTALS

A. Accident Prevention Plan (APP): Submit APP after contract award and before Pre-Construction conference. Contracting Officer (CO) will review proposed APP. If APP requires any revisions or corrections, Contractor shall resubmit Plan within 10 days. No progress payments will be made until the APP is accepted.

1.4 QUALITY ASSURANCE

A. Comply with contract clauses "Accident Prevention" and "Permits and Responsibilities." In case of conflicts between Federal, State, and local safety and health requirements, the most stringent shall apply. Onsite equipment shall meet 29 CFR 1926 (Code of Federal Regulations) (Occupational Safety and Health Administration (OSHA)) requirements. Failure to comply with requirements of this section and related sections may result in suspension of work.

B. Site Safety Supervisor:

   1. Designate authorized onsite representative for preparation and maintenance of the APP.
   2. Shall be responsible for:

a. Implementation and enforcement of the APP
b. Daily safety inspections
c. Conducting and documenting weekly and monthly safety meetings
d. Review of safety requirements at progress meetings
e. Compilation and maintenance of Safety Data Sheets (SDS) and safety reference materials
f. Tracking and resolution of safety violations
g. Site personnel and visitor compliance with site safety and health requirements and APP
h. Investigation and reporting of accidents and injuries

C. Qualifications of Employees:

1. Physically and able to perform their assigned duties in a safe manner.
2. Do not allow employees whose ability or alertness is impaired because of prescription or illegal drug use, fatigue, illness, intoxication, or other conditions that may expose themselves or others to injury to perform work.
3. Provide operating instructions for equipment. Operators of vehicles, hoisting equipment, and hazardous plant equipment shall be able to understand signs, signals, operating instructions, and be fully capable of operating such equipment. Retain copies of operator licenses and certifications onsite.

1.5 ACCIDENT REPORTING

A. Reportable Accidents: Defined as: death, occupational disease, and/or traumatic injury to employees or the public; fires; and/or property damage by accident in excess of $100.

1. Notify CO immediately in the event of a reportable accident.
2. Fill out and forward an Accident/Property Damage Report Form (CM-22) to CO within 7 days of a reportable accident. Obtain form from CO.

1.6 RESOURCES

A. COVID-19 (Coronavirus Disease 2019) information provided below is not intended to provide a complete analysis of requirements for Contractor and is provided as a courtesy.
1. Coronoavirus.gov
2. Occupational Safety and Health Administration (United States Department of Labor) - COVID-19
3. Center for Disease Control (CDC)
   a. Get the Facts About Coronavirus
   b. What Construction Workers Need to Know about COVID-19
4. Federal Emergency Management Agency (FEMA) - Coronavirus (COVID-19) Response
5. National Park Service (NPS) - NPS Public Health Update

PART 2 - PRODUCTS

2.1 ACCIDENT PREVENTION PLAN (APP)

A. APP shall be written to comply with OSHA and project requirements (generic plan is not acceptable) including but not limited to:

1. Name and qualifications of supervisor responsible to carry out program.
2. Weekly and monthly safety meetings shall be documented with topics and attendees.
3. First aid and rescue procedures.
4. Job Hazard Analysis (JHA) for each major phase. List of hazards associated and methods proposed to provide for property protection and safety of the public, National Park Service personnel, and Contractor's employees. Include initial and continuing training.
5. Planning for possible emergency situations, as detailed in Article 1.2. Such planning shall take nature of construction, site conditions, and degree of exposure of persons and property into consideration.
6. Infectious Disease Preparedness:

a. Contractors are responsible for their employees' safety and the safety of job site visitors during the performance of this contract. We encourage Contractors to follow guidance from the Department of Labor (DOL), Occupational Safety and Health Administration (OSHA), the Centers for Disease Control and Prevention (CDC), and all other applicable local, city, and state mandates. We encourage Contractors to develop policies for infection prevention and an Infectious Disease Preparedness and Response Plan.
b. To the extent appropriate, Contractors should include the protective health and safety measures they intend to implement in any accident prevention or safety submittals required under this contract. These plans should contain preventive measures the Contractor intends to follow while performing work on government property as well as responsive and corrective actions to be taken if an employee exhibits symptoms or tests positive for contagion.
c. Upon contract award, Contractors should communicate with CO regarding Contractor decisions and actions to protect the health and safety of workers for the duration of contract performance under which pandemic conditions exist.

2.2 FIRST AID FACILITIES

A. Provide adequate facilities for number of employees and appropriate to construction hazards.

2.3 PERSONAL PROTECTIVE EQUIPMENT (PPE)

A. Selection shall conform to OSHA Subpart E.

PART 3 - EXECUTION

3.1 DAILY SAFETY INSPECTIONS

A. Conduct daily safety inspections and maintain daily safety reports which include:
   1. Area/operation inspected
   2. Date of inspection
   3. Identified hazards
   4. Corrective actions taken

3.2 EMERGENCY INSTRUCTIONS

A. Post telephone numbers and reporting instructions for ambulance, physician, hospital, fire department, and police in conspicuous locations at work site.

3.3 FIRE AND LIFE SAFETY

A. Comply with requirements of National Fire Protection Association (NFPA) 241 (Standard for Safeguarding Construction, Alteration, and Demolition Operations).

3.4 HAZARDOUS MATERIALS

A. Hazardous materials: Explosive, flammable, poisonous, corrosive, oxidizing, irritating, or otherwise harmful substances that could cause death or injury.

B. Store hazardous materials in accordance with manufacturer's and OSHA Subpart D requirements. Maintain Safety Data Sheets (SDS) for each chemical readily available on site.

   1. Immediately report spills of hazardous materials to the Park.
   2. Maintain a spill emergency response kit.
   3. Train employees how to respond to a spill and use emergency response kit.

3.5 PROTECTIVE EQUIPMENT

A. Inspect personal protective equipment daily and maintain in a serviceable condition. Clean, sanitize, and repair personal items as appropriate before issuing to another individual.

3.6 SAFETY MEETINGS

A. As a minimum, conduct one weekly 15-minute "toolbox" safety meeting conducted by a foreman or supervisor and attended by construction personnel at worksite. Topics shall coincide with work scheduled for following week. Document and submit meeting minutes to CO within one day after meeting.

B. Conduct monthly safety meetings for personnel, contractors, and subcontractors performing work on the site. Notify CO of meeting dates and times. Meetings shall be used to: review effectiveness

of Contractor's safety effort; resolve current health and safety problems; provide a forum for planning safe construction activities, and for updating Accident Prevention Plan. COs Representative will attend meetings and enter results of meetings into the daily log.

3.7 HARD HATS AND PROTECTIVE EQUIPMENT AREAS

A. A hard hat use area shall be designated by Contractor. Hard hat area shall be posted by Contractor in a manner satisfactory to CO.

B. It is Contractor's responsibility to require persons working on or visiting site to wear hard hats and PPE in good repair at all times. As a minimum, maintain [**six**] <**Insert number**> hard hats and other APP required equipment.

3.8 TRAINING

A. First Aid: Provide training to personnel to ensure prompt and efficient first aid.

B. Hazardous Material: Train and instruct each employee exposed to hazardous material in safe and approved methods of handling and storage.

END OF SECTION 01 35 23

NPS DSC Division 1 Specifications

HARPERS FERRY NATIONAL HISTORICAL PARK – 242454

SECTION 01 35 91 - HISTORIC PRESERVATION TREATMENT PROCEDURES Need to determine what is required for these structures and if Park as a specific specification for Historic Preservation.

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes special procedures for historic treatment on Project including, but not limited to:

1. Definitions
2. Submittals
3. Quality Assurance
4. Storage and protection of existing historic materials
5. Project site conditions
6. Historic Preservation Treatment Plan
7. Protection, General
8. Protection during application of chemicals
9. Protection during use of heat-generating equipment
10. Historic preservation treatment procedures

1.2 DEFINITIONS

A. "Preservation" - To apply measures necessary to sustain existing form, integrity, and materials of historic property. Work may include preliminary measures to protect and stabilize the property.

B. "Rehabilitation" - To make possible a compatible use for property through repair, alterations, and additions while preserving those portions or features that convey its historical, cultural, or architectural values.

C. "Restoration" - To accurately return form, features, and character of a property to its appearance at a particular period of time by means of removal of features from other periods in its history and repair and reconstruction of missing and deteriorated features from the restoration period.

D. "Reconstruction" - To reproduce in exact form and detail, a structure, or artifact as it appeared at a specific period in time. Reconstructed elements do not possess historic integrity in their own right since they are-not original fabric.

E. "Protect and Maintain" - To remove deteriorating corrosion, reapply protective coatings, and install protective measures such as temporary guards; to provide the least degree of intervention.

F. "Repair" - To stabilize, consolidate, or conserve; to retain existing materials and features while employing as little new material as possible. Repair includes patching, piecing-in, splicing,

consolidating, or otherwise reinforcing or upgrading materials. Within restoration, repair also includes limited replacement in kind, rehabilitation, and reconstruction, with compatible substitute materials for deteriorated or missing parts of features when there are surviving prototypes.

G. "Replace" - To duplicate in its entirety, a historic element or feature by matching its historic pattern, detail and appearance. Replacement is justified when original or historic elements are damaged beyond repair or are missing. Replacement conditions and methods include:

1. Replacement with Original or Historic Fabric: Includes fabric salvaged from other locations or projects having identical architectural qualities. Duplication of appearance using identical material possessing historical significance.
2. Replacement with New Materials: Includes replacement with new material of like kind (custom fabricated of manufactured). Duplication of appearance using like material.
3. Replacement with Substitute Materials: Includes replacement with a compatible substitute that is frequently contemporary and unlike the historic fabric. Duplication of appearance using modern (non-traditional) material Use of substitute materials is not approved unless matching materials are not available.

H. "Remove" - To demolish or detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.

I. "Remove and Salvage" - To detach items from existing construction and deliver them to Contracting Officer (CO) or designee.

J. "Remove and Reinstall" - To detach items from existing construction, repair and prepare for reuse, and reinstall where indicated.

K. "Existing to Remain" or "Retain" - Existing items of construction not to be removed and not otherwise indicated to be removed and salvaged or removed and reinstalled.

L. "Material in Kind" - Material that closely matches existing materials through comparison of architectural qualities and salient characteristic such as species, cut, color, grain, dimension, profile, thickness, and finish.

1.3 SUBMITTALS

A. Historic Preservation Treatment Plan:

1. After contract award and before Pre-Construction conference, submit for approval a written Historic Preservation Treatment Plan (HPTP).
2. If the plan requires revisions or corrections, Contractor shall resubmit plan within 10 days.
3. No change in approved plan may be made without written concurrence by Contracting Officer.

B. Alternative Methods and Materials: If alternative methods and materials to those indicated are proposed for any phase of work, provide a written description including evidence of successful use on other, comparable projects, and program of testing to demonstrate effectiveness for use on this Project.

C. Photographs or Videotape: In accordance with Section 01 32 33 "Photographic Documentation," show existing conditions of adjoining construction and site improvements including finish surfaces that might be misconstrued as damage caused by historic treatment operations. Submit before work begins.

1.4 QUALITY ASSURANCE

A. Historic Preservation Treatment Specialist Qualifications: Experienced firm with required certifications and training able to demonstrate through past performance they are qualified to perform this work.

1.5 PROJECT-SITE CONDITIONS

A. Exterior Cleaning and Repairing:

1. Proceed with work only when forecasted weather conditions are favorable.

    a. Wet Weather: Do not attempt repairs during rainy or foggy weather. Do not apply primer, paint, putty, or epoxy when relative humidity is above 80 percent. Do not remove exterior elements of structures when rain is forecast or in progress.
    b. Do not perform exterior wet work when air temperature is below 40 degrees Fahrenheit (5 degrees Celsius).
    c. Do not begin cleaning, patching, or repairing given likelihood of frost or freezing.
    d. Do not begin cleaning when either air or surface temperature is below 45 degrees Fahrenheit (7 degrees Celsius) unless approved means are provided for maintaining 45 degrees Fahrenheit (7 degrees Celsius) temperature of air and materials during, and for 48 hours subsequent to, cleaning.

2. Perform cleaning and rinsing of the exterior only during daylight hours.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 HISTORIC PRESERVATION TREATMENT PLAN

A. Prepare written plan for preservation work covering preservation components of project. Plan shall verify construction strategy and intent is compatible with Department of the Interior's (DOI) standards for Treatment of Historic Properties, guidelines for Treatment of Cultural Landscapes, and National Park Service management policies for cultural resources. Plan shall satisfy both project scope and resource protection requirements. Plan shall include:

1. Organized list of preservation components of project, systems, and tasks
2. Staging and sequence of work
3. Disassembly and reassembly techniques and steps
4. Equipment and tools required

5. Supplies and materials with manufacturer or supplier identified including specific clean up/storage procedure including frequency and documentation of such.
6. Skilled trades and crafts required
7. Anticipated testing and analysis of fabric
8. Additional investigations for extents or magnitude of treatments needed
9. Protective measures
10. Seasonal limitations on work
11. Alternative means if primary treatment method is unfeasible
12. Work conducted off-site (Approval from Contracting Officer required prior to taking resources off-site).

3.2 PROTECTION, GENERAL

A. Comply with manufacturer's written instructions for precautions and effects of products and procedures on components, and vegetation.

B. Ensure supervisory personnel are present when work begins and during progress.

C. Temporary Protection of Historic Materials during Construction:

1. Protect existing materials during installation of temporary protections and construction. Do not deface or remove existing materials.
2. Attachments of temporary protection to existing construction shall be approved by Contracting Officer prior to installation.

D. Protect landscape work adjacent to or within work areas as follows:

1. Provide barriers to protect tree trunks.
2. Bind spreading shrubs.
3. Coverings shall allow plants to breathe. Remove coverings at end of day. Do not cover plant material with waterproof membrane more than 8 hours at a time.
4. Set scaffolding and ladder legs away from plants.

E. Existing Drains: Prior to start of work or cleaning operations, test drains and other water removal systems to ensure drains and systems function properly. Notify Contracting Officer immediately of stopped or blocked drains or systems. Do not begin Work of this Section until drains are in working order.

1. Provide method to prevent solids including stone or mortar residue from entering drains or drain lines. Clean out drains and drain lines blocked or filled because of work performed under this Contract.
2. Protect storm drains from pollutants. Block drains or filter out sediments, allowing only clean water to pass.

3.3 PROTECTION DURING APPLICATION OF CHEMICALS

A. Comply with requirements in Section 01 50 00 "Temporary Facilities and Controls."

B. Cover adjacent surfaces with materials proven to resist chemical cleaners selected for Project unless chemicals being used will not damage adjacent surfaces. Use covering materials containing only waterproof, UV (ultraviolet)-resistant adhesives. Apply masking agents to comply with manufacturer's written instructions. Do not apply liquid masking agent to painted or porous surfaces. Promptly remove masking to prevent adhesive staining on completion.

C. Do not clean surfaces during winds of sufficient force to spread cleaning solutions to unprotected surfaces.

D. Neutralize and collect alkaline and acid wastes and dispose of outside park boundaries.

E. Document daily clean-up, proper storage, and disposition of any flammable/combustible materials with daily reports.

3.4 PROTECTION DURING USE OF HEAT-GENERATING EQUIPMENT

A. Comply with following procedures while performing work with heat-generating equipment, including welding, cutting, soldering, brazing, paint removal with heat, and other operations where open flames or implements utilizing heat are used:

1. Obtain Contracting Officer’s approval for operations involving use of open-flame or welding equipment.

    a. Notification shall be given for each occurrence and location of work with heat-generating equipment.
    b. Obtain appropriate permit from the park as required.

2. Before work with heat-generating equipment commences, furnish fire watch (or watches) for location(s) where work is to be performed.
3. Do not perform work with heat-generating equipment in or near rooms or in areas where flammable liquids or explosive vapors are present or thought to be present. Use combustible gas indicator test to ensure area is safe.
4. Remove and keep area free of combustibles, including, rubbish, paper, waste, etc., within area of operations.

    a. If combustible material cannot be removed, provide fireproof blankets to cover such materials.

5. Where possible, furnish and use baffles of metal or gypsum board to prevent spraying of sparks or hot slag into surrounding combustible material.
6. Prevent extension of sparks and particles of hot metal through open windows, doors, holes, and cracks in floors, walls, ceilings, roofs, and other openings.
7. Inspect each location of day's work not sooner than 30 minutes after completion of operations to detect hidden or smoldering fires; ensure proper housekeeping is maintained.

B. Where sprinkler protection exists and is functional, maintain without interruption while operations are performed. If operations are performed near automatic sprinkler heads, shield individual heads temporarily with guards.

3.5 HISTORIC PRESERVATION TREATMENT PROCEDURES

The principal aim of preservation work is to halt the process of deterioration and stabilize the item's condition to sustain the integrity of the historic element, feature or structure being preserved. Cyclic maintenance is often required as well as repair work. Repair is required where specifically indicated. The following procedures shall be followed:

1. Retain as much existing material as possible; repair and consolidate rather than replace.
2. Use additional material or structure to reinforce, strengthen, prop, tie, and support existing material or structure.
3. Use reversible processes wherever possible.
4. Use traditional replacement materials and techniques if possible. New work shall be distinguishable from old work and original materials and techniques.
5. Record repair work during construction with periodic construction photos and daily inspection reporting. Photo documentation is specified in Section 013233 "Photographic Documentation."

B. Prohibit smoking by personnel performing work on or near historic structures.

C. Notify Contracting Officer of visible changes in integrity of material or components due to environmental causes including biological attack, UV degradation, freezing, or thawing, or due to structural defects including cracks, movement, or distortion.

1. Do not proceed with work in question until directed by Contracting Officer.

D. Where Work requires existing features to be removed, cleaned, and reinstalled, perform operations without damage to material itself, to adjacent materials, or to substrate.

E. Identify new or replacement materials and features with inconspicuous, permanent marks to distinguish from original materials. Record legend of identification marks and locations of these marks on Record Drawings.

F. When cleaning, match samples of existing materials that have been cleaned and identified for acceptable cleaning levels. Avoid over-cleaning to prevent damage. Use gentlest methods available. Initiate cleaning using hand cleaning methods before introducing power cleaning methods and equipment.

END OF SECTION 01 35 91

HARPERS FERRY NATIONAL HISTORICAL PARK – 242454

SECTION 01 40 00 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with Contract Document requirements. Quality of work shall be responsibility of the Contractor.

1. Specified tests, inspections, and related actions do not limit Contractor's other quality assurance and control procedures that facilitate compliance with Contract Document requirements.

C. See Divisions 2 through 49 Sections for specific test and inspection requirements.

1.2 DEFINITIONS

A. Quality Assurance Services: Activities, actions, and procedures performed before and during execution of the work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

B. Quality Control Services: Tests, inspections, procedures, and related actions during and after execution of the work to evaluate actual products incorporated into the work and completed construction comply with requirements.

C. Preconstruction Testing: Tests and inspections performed specifically for project before products and materials are incorporated into work to verify performance or compliance with specified criteria.

D. Product Testing: Tests and inspections performed by a Nationally Recognized Testing Laboratory (NRTL), a National Voluntary Laboratory Accreditation Program (NVLAP), or a testing agency qualified to conduct product testing, to establish product performance and compliance with industry standards.

E. Source Quality Control Testing: Tests and inspections performed at the source, i.e., plant, mill, factory, or shop.

F. Field Quality Control Testing: Tests and inspections performed on-site for installation of work and for completed work.

G. Testing Agency or Laboratory: Entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

H. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.

1. Using a term such as "carpentry" does not imply certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to trades people of corresponding generic name.

1.3 CONFLICTING REQUIREMENTS

A. Reference Standards: If compliance with two or more standards is specified and standards establish different or conflicting requirements for minimum quality levels, comply with most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Contracting Officer (CO)before proceeding.

B. Minimum Quality Levels: Quality level shown or specified shall be minimum provided or performed. Actual installation may comply exactly with minimum quality specified, or it may exceed minimum within reasonable limits. To comply with requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to CO before proceeding.

1.4 SUBMITTALS

A. Quality Control Plan:

1. After contract award and before Pre-Construction conference, submit a written Contractor Quality Control (CQC) plan.
2. If plan requires revisions or corrections, Contractor shall resubmit plan within 10 days.
3. Government reserves the right to require changes in plan during contract period as necessary to obtain the quality specified.
4. No change in the approved plan may be made without written concurrence by CO.

B. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in form of a recent report on inspection of testing agency by a recognized authority.

C. Contractor Quality Control (CQC) Daily Reports: Submit showing inspections and tests on first workday following date covered by report. Quality Control Supervisor shall utilize DSC Forms.

1. Review Construction Management Representative (CMR) Daily report if applicable and reconcile any differences prior to posting.

D. Test Reports

1. Test reports shall be completed by person performing test.
2. Submit Daily Test Information Sheets with Quality Control Daily Reports.

3. Submit failing test results and proposed remedial actions within four hours of noted deficiency.
4. Submit three copies of complete test results no later than one calendar day after test was performed.

E. If Contractor Quality Control plan and Quality Control Daily Reports are not submitted as specified, CO may retain payments until such time plan(s) is/are accepted and implemented, or may retain payments for work completed on days with no Quality Control Daily Reports.

F. Permits, Licenses, and Certificates: For National Park Service (NPS) records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of work.

1.5 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this Article establish minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Contractors Quality Control Staff:

1. Contractor's Quality Control Supervisor may also perform other duties.
2. Contractor's designated Quality Control Supervisor shall be on the project site whenever contract work is in progress.
3. Contractor's job supervisory staff may be used to assist Quality Control Supervisor supplemented, as necessary, by additional certified testing technicians.

C. Installer Qualifications: Firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent indicated for Project, whose work has resulted in construction with a record of successful in-service performance.

D. Manufacturer Qualifications: Firm experienced in manufacturing products or systems similar to those indicated for Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

E. Fabricator Qualifications: Firm experienced in producing products similar to those indicated for Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

F. Professional Engineer Qualifications: Professional engineer legally qualified to practice in jurisdiction where Project is located and is experienced in providing engineering services of kind indicated (including Structural Tests and Special Inspections (STSI)). Engineering services are defined as those performed for installations of system, assembly, or products similar to those indicated for Project in material, design, and extent.

G. Testing Agency Qualifications: A Nationally Recognized Testing Laboratory (NRTL), a National Voluntary Laboratory Accreditation Program (NVLAP), or an independent agency with experience and capability to conduct testing and inspecting indicated, according to ASTM E 329; and with additional qualifications specified in individual Sections; and where required by Contract, is acceptable to CO.

1. Nationally Recognized Testing Laboratory (NRTL): Nationally recognized testing laboratory according to 29 CFR 1910.7 (Code of Federal Regulations).
2. National Voluntary Laboratory Accreditation Program (NVLAP): Testing agency accredited according to National Institute of Standards and Technology's (NIST) National Voluntary Laboratory Accreditation Program.
3. Measuring devices, laboratory equipment, and instruments shall be calibrated at established intervals against certified standards in accordance with NIST requirements. Measuring and testing devices shall be made available for use by Government for verification tests.

H. Factory-Authorized Service Representative Qualifications: Authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products similar in material, design, and extent to those indicated for Project.

1.6 QUALITY CONTROL

A. Contractor is responsible for testing and inspections, including Structural Tests and Special Inspections (STSI), as identified in attached STSI. Inspect and test work as needed to ensure quality of materials, workmanship, construction, finish, and functional performance are in compliance with applicable specifications, drawings, and those required by the Building Code.

1. Engage qualified testing agency to perform quality-control services.
2. Submit appropriate report for each quality-control service.
3. Testing and inspecting requested by Contractor and not required by Contract Documents are Contractor's responsibility.
4. CO may designate test locations.

B. Manufacturer's Field Services: Where indicated, engage factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing.

C. Re-testing/Re-inspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and re-inspecting, for construction of replaced work that failed to comply with Contract Documents.

D. Testing Agency Responsibilities: Cooperate with NPS and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify CO and Contractor promptly of irregularities or deficiencies observed in work during performance of services.
2. Determine location from which test samples will be taken and in which in-situ tests are conducted.
3. Conduct and interpret tests and inspections, State in each report whether tested and inspected work complies with or deviates from requirements.
4. Submit 3 copies of certified written report of each test, inspection, and similar quality-control service through Contractor.
5. Do not release, revoke, alter, or increase Contract Document requirements or approve or accept any portion of Work.

E. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide:

1. Access to Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for material mixes that require control by testing agency.
7. Security and protection for samples and testing and inspecting equipment at Project site.

F. Coordination: Coordinate sequence of activities to accommodate required quality assurance and control services with minimum delay and to avoid removing and replacing construction to accommodate testing and inspecting.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

PART 2 - PRODUCTS

2.1 QUALITY CONTROL PLAN

A. Quality Control Plan shall include:

1. List of personnel responsible for quality control and assigned duties. Include each person's qualifications. Include alternate(s) and qualifications.
2. Copy of letter of direction to Contractor's Quality Control Supervisor(s) outlining assigned duties and authorities designated by principal or owner.
3. Names, qualifications / accreditations, and descriptions of laboratories to perform sampling and testing, and samples of proposed report forms from laboratories.
4. Methods of performing, documenting, and enforcing quality control of work including Contractor report forms and acknowledgment of NPS forms.
5. Methods of monitoring and controlling environmental pollution and contamination as required by regulations and laws.
6. Specific discussion regarding mockups, off-site visits, receiving inspections, manufacturers representation, startup requirements, and other aspects of performance specific to Project.
7. Provisions for substantial completion(s) and final inspection(s) per Contract.

PART 3 - EXECUTION

3.1 OFF-SITE CONTROL

A. Items fabricated or assembled off-site shall be inspected for quality control at place of fabrication.

3.2 ON-SITE CONTROL

A. Notification:

1. Notify CO at least 48 hours in advance of preparatory phase meeting.
2. Notify CO at least 24 hours in advance of initial and follow-up phases.

B. Preparatory Phase: Perform before beginning each feature of work.

1. Review control submittal requirements with personnel directly responsible for quality assurance and quantity control of the work. As a minimum, Contractor's Quality Control Supervisor and foreman responsible for feature of work shall be in attendance.
2. Review applicable specifications sections and drawings related to feature of work.
3. Ensure copies of referenced standards related to sampling, testing, and execution for feature of work are available on site.
4. Ensure provisions have been made for field control testing.
5. Examine work area to ensure preliminary work has been completed.
6. Verify field dimensions and advise CO of discrepancies with contract documents.
7. Ensure necessary equipment and materials are at project site and they comply with approved shop drawings and submittals.
8. Document preparatory phase activities and discussions on Contractor's Quality Control Daily Report.

C. Initial Phase:

1. As soon as work begins, inspect and test representative portion of particular feature of work for quality of workmanship.
2. Review control testing procedures to ensure compliance with contract requirements.
3. Document initial phase activities and discussions on Contractor's Quality Control Daily Report. Exact location of initial phase shall be indicated for future reference and comparison with follow-up phases.

D. Follow-Up Phase: Inspect and test as work progresses to ensure compliance with contract requirements until completion of work.

E. Additional Preparatory and Initial Phases: Additional preparatory and initial phases may be required on same feature of work for following reasons:

1. Quality of on-going work is unacceptable.
2. Changes in quality control staff, on-site production supervision, or work crew.
3. Work on particular feature of work is resumed after substantial period of inactivity.

3.3 DOCUMENTATION

A. Maintain Quality Control Daily Reports, Daily Test Report Information Sheets, and Accessibility Inspection Reports of quality control activities and tests. (Download from DSC Workflows website > Forms/Templates/Samples/Guidelines page > Construction Forms section.)

B. Quality Control Daily Reports shall not be substituted for other written reports required under clauses of contract, such as Disputes, Differing Site Conditions, or Changes.

C. Quality Control Daily Reports shall accurately portray all work and materials. The materials shall match the materials as approved from the Construction Documents (CD) requirements. Combustible/flammable materials shall be documented as well.

3.4 ENFORCEMENT

A. Contractor shall stop work on any item or feature pending satisfactory correction of deficiency noted by quality control staff or CO.

3.5 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams as invisible as possible.

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01 40 00

HARPERS FERRY NATIONAL HISTORICAL PARK – 242454

SECTION 01 50 00 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

1.2 DEFINITIONS

A. Permanent Enclosure: As determined by Contracting Officer (CO), permanent or temporary roofing is complete, insulated, and weathertight; exterior walls are insulated and weathertight; and openings are closed with permanent construction or substantial temporary closures.

1.3 USE CHARGES

A. General: Cost or use charges for temporary facilities shall be included in Contract Sum as required.

B. Water Service: Portable and Non-Portable Water from existing water system is not available within park boundaries. Contractor shall furnish portable water from a source outside park boundary with any additional permit costs as required.

C. Electric Power Service: Electric power from existing system is not available within park boundaries. Contractor shall furnish generator with any additional permit costs as required.

1.4 QUALITY ASSURANCE

A. Electric Service: Comply with National Electrical Contractors Association (NECA), National Electrical Manufacturers Association (NEMA), and Underwriter Laboratories (UL) standards and regulations for temporary electric service. Install service to comply with National Fire Protection Association (NFPA) 70.

B. Environmental Protection: Provide environmental protection as required by agency(ies) with jurisdiction and as indicated in Contract Documents. Coordinate with requirements of the following:

1. Regulatory Requirements
2. Indoor Air Quality (IAQ) Management

3. Noise and Acoustics Management
4. Environmental Management
5. Construction Waste Management

C. Accessible Temporary Egress: Comply with applicable provisions in the United States (U.S.) Architectural & Transportation Barriers Compliance Board's Architectural Barriers Act Accessibility Standard (ABAAS) Accessibility Guidelines.

1.5 PROJECT CONDITIONS

A. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before NPS acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Temporary materials may be new or used, but must be adequate in capacity for required usage, must not create unsafe conditions, and must not violate requirements of applicable codes and standards.

B. Pavement: Comply with Division 32 Section "Asphalt Paving."

C. Polyethylene Sheet: Reinforced, fire-resistive sheet, 10 mil (0.25-millimeter) minimum thickness, with flame-spread rating of 15 or less per ASTM E 84 and passing NFPA 701 Test Method 2.

D. Dust-Control Adhesive-Surface Walk-off Mats: Provide mats minimum 36 by 60 inches (914 by 1624 millimeters).

2.2 TEMPORARY FACILITIES

A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.

B. Storage and Fabrication Sheds: Temporary weather tight sheds or other covered facilities for storage of materials subject to weather damage. Number and size of structures shall be subject to CO's approval.

C. Toilets: Sufficiently lighted and ventilated toilet facilities in weatherproof, sight proof, handicap accessible, sturdy enclosures with privacy locks.

1. Provide separate toilet facilities for men and women.

2.3 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

B. Heating, Ventilation, and Air Conditioning (HVAC) Equipment: Unless CO authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.

1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
2. Heating Units: Listed and labeled for type of fuel being consumed, by a testing agency acceptable to agency(ies) with jurisdiction, and marked for intended use.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

1. Locate facilities to limit site disturbance and as directed by the CO.

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

A. General: Install temporary service or connect to existing service.

1. Arrange with utility company, NPS, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services. Acquire necessary permits.

B. Storm Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.

1. Connect temporary sewers to municipal system directed by the agency(ies) with jurisdiction.

C. Non-potable water is not available within the park boundaries. Contractor shall furnish non-potable water from a source outside park boundary.

D. Potable water is not available on site. Contractor shall furnish potable water from a source outside park boundary. Alternatively, Contractor may procure water from local water utilities, such as WSSC Water, at the Contractor's expense.

1. Furnish cool, potable water for construction personnel in locations convenient to work stations.

E. Sanitary Facilities: Provide temporary toilets, and wash facilities for use by construction personnel.

1. Place in approved locations secluded from public observation and convenient to work stations. Relocate as work progress requires.
2. Maintain and clean toilet facilities at least weekly.
3. Completely remove sanitary facilities on completion of work.

F. Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.

1. Use of permanent heating and cooling system will not be allowed without written authorization from CO. When the permanent heating and cooling system is approved for use as temporary heating and cooling, pay costs until final acceptance. Permanent heating and cooling system shall be sufficiently complete, including controls, to permit safe operation
2. Provide and maintain adequate approved facilities, as required for safety and construction requirements, during the work. Provide ample clearance around stoves, heaters, chimney and vent connections to prevent ignition of combustible material
3. Install and maintain temporary filters when air handing equipment is used for temporary heating and cooling. Install new filters before final acceptance in addition to any extra sets of filters required. Clean coils as determined by CO.
4. Warranties for equipment used for temporary heating and cooling shall start on date of Final Acceptance.

G. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.

H. Electric Power Service: Contractor shall furnish a generator of sufficient size, capacity, and power characteristics required for construction operations. Electrical power service from existing systems are not available within park boundaries.

I. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.

1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

J. Telephone Service: No telephone service is available on site for Contractor's use. Make arrangements with Telephone Company and pay costs.

3.3 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:

1. Provide incombustible construction for offices, shops, and sheds located within construction area or within 50 feet of building lines. Comply with NFPA 241.
2. Maintain support facilities until near Substantial Completion. Remove structures, equipment, and furnishings, and terminate services after punch list is 100 percent completed or when directed by CO. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to CO.

B. CO/CMR Field Office:

1. Provide Heat, lights, power, air conditioning, temporary water pressure and sewage holding tanks.
2. Provide office, furnishings, and utility connections no later than 7 days after date of Notice to Proceed. Submit proposed location for CO approval.
3. Maintain equipment, furnishings, and structures. Provide equipment replacement elements as needed. Provide weekly cleaning services and trash disposal. Maintain and service water and sewer holding tanks as required.
4. If shared office space is provided, the CO/CMR shall have an enclosed space with a door and ceiling, cubicle partitions are not acceptable.

C. Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads and paved areas within construction limits indicated on Drawings.

1. Provide dust-control treatment that is nonpolluting and non-tracking. Reapply treatment as required to minimize dust.

D. Traffic Controls: Erect and maintain barricades, lights, danger signals, and warning signs in accordance with Manual on Uniform Traffic Control Devices (MUTCD), Part IV, latest edition.

1. Protect existing site improvements to remain including curbs, pavement, and utilities.
2. Maintain access for fire-fighting equipment and access to fire hydrants.
3. Illuminate barricades and obstructions at night; keep safety lights burning from sunset to sunrise.
4. Adequately barricade and post open cuts in or adjacent to thoroughfares.
5. Protect pedestrian traffic by guardrails or fences.
6. When pedestrian traffic is detoured onto a roadway, provide temporary walkways with protection as required at ends and overhead. For walkways, use lumber running parallel to direction of traffic movement and provide ramps at changes of elevation.
7. Cover pipes, hoses, and power lines crossing sidewalks and walkways with troughs using beveled edge boards.
8. Install Barrier Tape where directed by CO. Keep a minimum of two rolls on site.

E. Parking: Use designated staging areas shown on drawings for parking areas for construction personnel.

F. Dewatering Facilities and Drains: Comply with requirements of the agency(ies) with jurisdiction. Maintain Project site, excavations, and construction free of water.

1. Dispose of rainwater in lawful manner that will not result in flooding Project or adjoining properties nor endanger permanent Work or temporary facilities.
2. Remove snow and ice as required to minimize accumulations.

G. Project Identification and Temporary Signs: Provide Project identification and other signs. Fence, barricade, or otherwise block off the immediate work area to prevent unauthorized entry.

1. Provide temporary, directional signs for construction personnel and visitors.
2. Maintain and touchup signs so they are legible at all times.
3. Erect and maintain sufficient detour signs at road closures and along detour routes.

H. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of agency(ies) with jurisdiction.

I. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.

1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

J. Temporary Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

B. Cleaning of Equipment: Contractor shall ensure prior to moving on to Project Area, equipment, is free of soil, seeds, vegetative matter, or other debris that could contain or hold seeds. Ensure equipment has been pressure washed and is free of exotic species. Equipment shall be considered free of soil, seeds, and other debris when visual inspection does not disclose such material. Disassembly of equipment components or specialized inspection tools are not required.

C. Temporary Erosion and Sedimentation Control: Refer to Section 01 57 23 "Under an Acre Pollution Prevention".

D. Tree and Plant Protection: Refer to Section 01 11 00 "Summary of Work".

E. Pest Control: Follow NPS requirements to minimize attraction and harboring of rodents, roaches, and other pests and perform extermination and control procedures at regular intervals so Project will be free of pests and residues at Substantial Completion. Perform control operations lawfully, using environmentally safe materials.

1. Construct dustproof partitions with 2 layers of 3-mil (0.07-millimeters) polyethylene sheet on each side. Cover floor with 2 layers of 3-mil (0.07-millimeters) polyethylene sheet, extending sheets 18-inches (460 millimeters) up the sidewalls. Overlap and tape full length of joints. Cover floor with fire-retardant plywood.

a. Construct vestibule and airlock at each entrance through temporary partition with not less than 48-inches (1219 millimeters) between doors. Maintain water-dampened foot mats in vestibule.

2. Insulate partitions to provide noise protection to occupied areas.
3. Seal joints and perimeter. Equip partitions with dustproof doors and security locks.
4. Protect air-handling equipment.
5. Weather strip openings.
6. Provide walk-off mats at each entrance through temporary partition.

F. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.

1. Responsible Person: Capable and qualified person shall be placed in charge of fire protection. Responsibilities shall include locating and maintaining fire protective equipment and establishing and maintaining safe torch cutting and welding procedures.
2. Tobacco Use, Smoking, and Vaping: Smoking within buildings or temporary storage sheds is prohibited.
3. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of NPS. Check with Park; many require "burn permits" for welding.
4. Develop and supervise overall fire-prevention and -protection program for personnel at Project Site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
5. Provide temporary standpipes and hoses for fire protection. Hang hoses with warning sign stating hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.
6. Hazard Control: Take necessary precautions to prevent fire during construction. Do not store flammable or combustible liquids in existing buildings. Provide adequate ventilation during use of volatile or noxious substances. Ensure cleanup procedures and storage requirements are followed at close of every work session.
7. Spark Arresters: Equip gasoline or diesel powered equipment used during periods of potential fire hazards or in potential forest and grass fire locations with spark arresters approved by United States Department of Agriculture (USDA) Forest Service.

   a. Written determinations of periods and areas of potential fire hazard will be issued by CO.

8. Buildings: Furnish a minimum of one extinguisher for each 1,500 square feet of area or major fraction thereof.

   a. Travel distance from any work station to nearest extinguisher shall not exceed 75 feet.

9. Vehicles and Equipment: Provide one extinguisher on each vehicle or piece of equipment.
10. Service and Refueling Areas: Locate areas a minimum of 50 feet from buildings. Shut down equipment before refueling.

3.5 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. Minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on 24-hour basis where required to achieve indicated results and avoid possibility of damage.

C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of Contractor. NPS reserves right to take possession of Project identification signs.
2. At Substantial Completion, clean and renovate permanent facilities used during construction period.

END OF SECTION 01 50 00

NPS DSC Division 1 Specifications

HARPERS FERRY NATIONAL HISTORICAL PARK – 242454

SECTION 01 57 19.12 – NOISE AND ACOUSTICS MANAGEMENT

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Special requirements for noise and acoustics management during construction operations. The town of Harpers Ferry noise ordinance shall be followed. Working hours and sound levels are provided in the ordinance.

1.2 DEFINITIONS

A. Ambient noise level: The total noise associated with a given environment, being usually a composite of normal or existing sounds from all sources near and far, excluding the noise source at issue.

B. Daytime: Daytime hours are defined in the ordinance criteria

C. Nighttime: All non-daytime hours.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 NOISE MANGEMENT

A. Noise Control: Perform construction operations to minimize noise. Perform noise-producing work in less sensitive hours of the day or week as directed by the Contracting Officer CO).

B. Repetitive and/or intermittent, high-level noise: Noise levels for construction that are above those noted in the ordinance require exemptions for construction work. Contact Jefferson County for additional information.

3.2 FIELD QUALITY CONTROL

A. Monitor noise produced from construction operations in accordance with ASTM E1780.

END OF SECTION 01 57 19.12

NPS DSC Division 1 Specifications

HARPERS FERRY NATIONAL HISTORICAL PARK – 242454

SECTION 01 57 23 - UNDER-AN-ACRE POLLUTION PREVENTION

PART 1 - GENERAL

1.1 SUMMARY

A. National Park Service (NPS) Standards and Guidelines require water quality be protected to ensure compliance with Organic Act. Contractor shall prepare an Under-An-Acre Pollution Prevention Plan (UPPP) for each project resulting in less than 1 acre of soil disturbance or not otherwise subject to requirements of NPDES program.

B. Work of this section consists of implementing measures to Temporary Storm Water Pollution during construction activities, either through compliance with NPDES permit program; or in conformance with NPS guidance for UPPPs.

1.2 DEFINITIONS

A. Environmental Pollution and Damage: The presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances; or degrade utility of the environment for aesthetic, cultural, or historical purposes.

B. UPPP: Developed and implemented pollution prevention plan (including stormwater management measures, if needed) to protect environment from pollutants on construction projects with less than one acre of disturbance in conformance with NPS guidelines.

1.3 SUBMITTALS

A. After contract award and before pre-construction conference, prepare and submit:
   1. A UPPP in conformance with NPS guidelines and adherence to applicable construction storm water management practices.

B. Inspection Schedule: Submit schedule for inspection and monitoring of pollution prevention measures.

C. Erosion Control Products: Submit manufacturer's product information and installation recommendations for silt fence, filter fabric, erosion control blanket, straw bales, and other materials proposed for use on this project.

1.4 QUALITY ASSURANCE

A. Contractor shall prepare and submit a plan to Contracting Officer (CO) for review and concurrence in accordance with section 01 40 00 1.4.A.

B. Orientation Meeting: Contractor shall be responsible for arranging and conducting Pollution Prevention meeting/briefing to inform parties scheduled to be on-site during project of measures to be implemented for proper pollution prevention and control (may be included as part of Pre-Construction Meeting).

   1. Installation of silt fences, storm drain protection, and other forms of pollution prevention controls shall not begin until after this meeting has occurred.

C. Pollution Prevention Manager: Contractor shall designate Pollution Prevention Manager who will be responsible for implementation, inspection, maintenance, and amendments to approved plan.

   1. Pollution Prevention Manager shall be familiar with UPPP procedures and Best Management Practices (BMPs) and shall ensure emergency procedures and plan are updated as needed and available for inspection.

   2. When changes in approved plan are required, Pollution Prevention Manager shall prepare and certify an amendment and submit to Contracting Officer for review and concurrence.

PART 2 - PRODUCTS

2.1 UNDER-AN-ACRE POLLUTION PREVENTION PLAN

A. Provide a UPPP which conforms to NPS requirements (utilize UPPP template: https://www.nps.gov/dscw/publicforms.htm#CP___PAGEID=411517|) and include:
   1. Responsible Parties
   2. General Information: Project Scope, Project Details, Site Information, and Spill Prevention
   3. Standards and Constraints
   4. Project Scheduling
   5. Known Data on Soil and Fill
   6. Activities with Potential to Generate Sediment
   7. Activities and Materials with Potential to Pollute Storm Water
   8. Management and Reporting BMPs
   9. Waste Management BMPs
   10. Non-Storm Water Pollution Control BMPs
   11. Soil Stabilization BMPs
   12. Sediment Control BMPs
   13. Other Pollution Control BMPs
   14. References
   15. Preparer's Certification
   16. Appendices: Contact Information, Pollution Prevention Control Map or Sheet(s), Standard Installation Specifications for each BMP, and Blank forms.

PART 3 - EXECUTION

3.1 ENVIRONMENTAL PROTECTION

A. Protection of Natural Resources: Comply with applicable regulations and these specifications. Preserve natural resources within project boundaries and outside limits of work performed under this Contract in their existing condition or restore to an equivalent or improved condition as approved by Contracting Officer.

B. Construction Zone: Arrange construction activities to minimize pollution (i.e., erosion, trash, etc.) to maximum practical extent.

1. Clearing, excavation, and grading shall be limited to those areas of project site necessary for construction. Minimize area exposed and unprotected.
2. Clearly mark and delineate limits of work activities.
3. Equipment shall not be allowed to operate outside limits of work or to disturb existing vegetation.
4. Excavation and grading shall be completed during dry season to maximum extent possible.
5. Material shall be stored away from locations where water is present to greatest extent practicable.

3.2 UNDER-AN-ACRE POLLUTION PREVENTION PLAN

A. Review and Acceptance: Contractor and Contracting Officer will jointly review draft Plan and agree to needed revisions. Contractor shall incorporate revisions, sign, and submit final Plan to Contracting Officer. Final Plan will be the document enforced on the project.

1. Accepted Plan will describe and ensure implementation of practices to be used to reduce pollutants in storm water discharges.
2. Contractor shall maintain current copy of Plan and associated records and forms at jobsite throughout duration of project.
3. Plan shall be available for public inspection and inspection and use of Contracting Officer.
4. Approval of Contractor's Plan will not relieve Contractor of responsibility for compliance with applicable environmental regulations.

B. Implementation: Implement Plan as required throughout construction period and maintain erosion control elements in proper working order.

1. Do not perform clearing and grubbing or earthwork until Plan has been implemented.

3.3 SITE INSPECTIONS AND PLAN REVISIONS

A. Inspections: Contractor and Contracting Officer will perform a weekly inspection onsite.

1. Inspection shall include disturbed areas not completely stabilized, areas used for storage of materials, locations where vehicles enter or exit site, and other erosion and sediment controls included in the Plan.
2. Inspections shall be documented.

3. Inspection forms shall be retained onsite in Plan notebook throughout construction period.

B. Plan Revisions: It may be necessary to revise Plan during construction to make necessary improvements, revisions, or to respond to unforeseen conditions noted during construction or site inspections.

1. Plan shall specify mechanism whereby revisions may be proposed by Contractor or Contracting Officer.
2. Contractor and Contracting Officer will jointly review each revision to Plan before changes incorporated and implemented. Contractor will then provide revised copy of Plan to Contracting Officer.
3. Accepted modifications will be implemented within 7 calendar days following date of inspection when deficiencies or necessary corrections are first noted.

C. Negligence: Provide additional temporary erosion and pollution controls made necessary by Contractor's errors or negligence at no additional cost to Government.

3.4 HOUSEKEEPING AND SITE MANAGEMENT

A. Store materials onsite in conformance to Federal, state, local, and manufacturer's regulations and specifications. Use Best Management Practices to minimize risk of materials coming into contact with environmental conditions (i.e. water and wind) that could disperse them.

B. Manage solid waste in conformance to Federal, state, and local regulations. Best Management Practices should be used to minimize risk of materials coming into contact with environmental conditions (i.e. water and wind) that could disperse them.

C. Manage hazardous waste (including contaminated soil) in conformance to Federal, state, local and NPS regulations and guidelines.

3.5 EROSION CONTROL MEASURES

A. Erosion control measures shall consist of Best Management Practices for storm water discharges, including silt fencing, barrier protectors, straw bales, temporary soil retention blankets, excelsior drainage filters, sediment traps and berms.

B. Berms and excelsior drainage filters shall be used to form sediment traps and control run-on and run-off into other areas, including creeks, streams, marshes, access roads, well areas, and staging areas.

C. Erosion control measures shall be used to contain only direct precipitation in construction zone. Contained water shall be allowed to percolate into ground or drain slowly through drainage filter sediment traps.

D. Earthen sediment traps or holding ponds shall not be used unless accepted by Contracting Officer.

E. Reduce runoff velocity and direct surface runoff around and away from fuel containment, storage, and borrow areas.

F. Divert surface runoff around and away from cut and fill slopes.

G. Place drainage filters around catch basins to create sediment traps to control run-off from construction area.

H. Excess water used for dust control shall be contained within demolition areas by erosion control measures.

I. Contractor shall prevent deposition of materials onto paved areas. Contractor shall inspect paved areas for deposited materials weekly and remove materials immediately.

J. Furnish, install, maintain, and operate necessary control measures and other equipment necessary to prevent erosion as described in approved UPPP.

K. Before work begins, sufficient equipment shall be available on site to assure operation and adequacy of erosion control system can be maintained.

3.6 MAINTENANCE OF TEMPORARY FACILITIES

A. Ensure erosion and sediment control structures remain effective throughout excavation and grading operations. Relocate structures as necessary.

B. Inspect control structures after each significant rainfall. Promptly repair breaches which occur.

C. Contractor shall remove entrapped sediment from behind excelsior drainage filter after each storm.

3.7 REPORTING

A. If a discharge occurs or if project receives written notice or order from regulatory agency, Contractor shall immediately notify Contracting Officer and shall file written report to Agency(ies) with Jurisdiction within 7 days of discharge event, notice, or order. Corrective measures shall be implemented immediately following discharge, notice, or order. The report to the Agency(ies) with Jurisdiction shall contain:

1. Date, time, location, nature of operation, and type of discharge, including cause or nature of notice or order.
2. Best Management Practices deployed before discharge event, or prior to receiving notice or order.
3. Date of deployment and type of Best Management Practices deployed after discharge event, or after receiving notice or order, including additional Best Management Practices installed or planned to reduce or prevent re-occurrence.
4. An implementation and maintenance schedule for affected Best Management Practices.

3.8 SEDIMENT DISPOSAL

A. Sediment excavated from temporary sediment control structures shall be disposed on site with general fill, or with topsoil. Sediment shall be allowed to dry out as required before reuse.

B. Contractor shall place sediment removed from traps and other structures where it will not enter a storm drain or watercourse and where it will not immediately reenter the basin.

3.9 REMOVAL OF TEMPORARY POLLUTION CONTROL MEASURES

A. Temporary control measures shall be removed with permission of Contracting Officer within 20 working days after final acceptance of project, and/or once grading is complete and slopes have stabilized.

END OF SECTION 01 57 23

HARPERS FERRY NATIONAL HISTORICAL PARK – 242454

SECTION 01 67 00 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and environmental requirements.

1.2 DEFINITIONS

A. Products: Items purchased for incorporating into Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes "material," "equipment," "system," and terms of similar intent.

1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, current as of date of Contract Documents.
2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
3. Comparable Product: Product demonstrated and approved through submittal process, or where indicated as a product substitution, to have indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Definitions pertaining to sustainable development: As defined in ASTM E2114.

C. Biobased Materials: As defined in Farm Security and Rural Investment Act, for purposes of Federal procurement of biobased products, "biobased" means a "commercial or industrial product (other than food or feed) composed, in whole or in significant part, of biological products or renewable domestic agricultural materials (including plant, animal, and marine materials) or forestry materials." Biobased materials also include fuels, chemicals, building materials, or electric power or heat produced from biomass as defined by The Biomass Research and Development Act of 2000.

1. Biobased content: Amount of biobased carbon in material or product as a percentage of weight (mass) of total organic carbon in material or product.

D. Chain-of-Custody: Process whereby a product or material is maintained under physical possession or control during its entire life cycle.

E. Environmentally preferable products: Products and services with lesser or reduced effect on the environment in comparison to conventional products and services. Refer to Environmental Protection Agency's (EPA) Final Guidance on Environmentally Preferable Purchasing for more information.

F. Stewardship: Responsible use and management of resources in support of sustainability.

G. Sustainability: Maintenance of ecosystem components and functions for future generations.

1. Recycled Content Materials: Products containing pre-consumer or post-consumer materials as all or part of their feedstock. Recycled content claim shall be consistent with International Organization for Standardization (ISO) 140001 Standard for the Use of Environmental Marketing Claims.
2. Rapidly Renewable Material: Material made from plants typically harvested within a ten-year cycle.
3. Regional Materials: Materials manufactured and extracted, harvested, or recovered within a radius of 500 miles from Project location.

1.3 SUBMITTALS

A. Record Submittals as specified in – Sustainable Design Close-Out Documentation, submit:

1. Affirmative Procurement Reporting Form. Submit on form in Appendix A of this Section, or similar form as approved by Contracting Officer (CO).
2. Submit environmental data in accordance with Table 1 of ASTM E2129 for these products:
   a. Concrete
   b. Epoxy mortar
   c. Joint Sealers
   d. Paints
   e. Bridge Expansion joints
   f. Asphalt Concrete
   g. Pavement Marking
   h. Mortar for Stone Repointing
3. Material Safety Data Sheets (MSDS): For each product required by OSHA to have a MSDS, submit an MSDS. MSDS shall be prepared no earlier than June 1998. Include information for MSDS Sections 1 to 16 in accordance with ANSI Z400.1 and as follows:

   a. Section 1: Chemical Product and Company Identification
   b. Section 2: Composition/Information on Ingredients
   c. Section 3: Hazards Identification
   d. Section 4: First Aid Measures
   e. Section 5: Fire Fighting Measures
   f. Section 6: Accidental Release Measures
   g. Section 7: Handling and Storage
   h. Section 8: Exposure Controls/Person Protection
   i. Section 9: Physical and Chemical Properties
   j. Section 10: Stability and Reactivity Data
   k. Section 11: Toxicological Information. Include data used to determine the hazards cited in Section 3. Identify acute data, carcinogenicity, reproductive effects, and

target organ effects. Provide written description of the process used in evaluating chemical hazards relative to preparation of the MSDS.

l. Section 12: Ecological Information. Include data regarding environmental impacts during raw materials acquisition, manufacture, and use. Include data regarding environmental impacts in event of accidental release.

m. Section 13: Disposal Considerations. Include data regarding proper disposal of the chemical. Include information regarding recycling and reuse. Indicate whether or not product is considered to be "hazardous waste" according to United States EPA Hazardous Waste Regulations 40 CFR 261 (Code of Federal Regulations).

n. Section 14: Transportation Information. Identify hazard class for shipping.

o. Section 15: Regulatory Information. Identify federal, state, and local regulations applicable to the material.

p. Section 16: Other Information. Include additional information relative to recycled content, biobased content, and other information regarding environmental and health impacts. [Identify the date MSDS was prepared.]

1.4 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.

B. Delivery and Handling:

1. Schedule delivery to minimize long-term storage at Project site and prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in undamaged condition; in manufacturer's original sealed container or other packaging system; complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products on delivery to ensure compliance with Contract Documents. Ensure products are undamaged and properly protected.
5. Obtain materials in biodegradable or recyclable/reusable packaging which uses minimum amount of packaging possible.

C. Storage:

1. Allow for inspection and measurement of quantity or counting of units.
2. Store materials in manner to not endanger Project structure.
3. Store products subject to damage by the elements, under cover in weather tight enclosure above ground, with ventilation adequate to prevent condensation.
4. Store cementitious products and materials on elevated platforms.

5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
7. Protect stored products from damage and liquids from freezing.
8. Store loose granular materials in well-drained area on solid surfaces to prevent mixing with foreign matter.

1.6 PACKAGING

A. Where Contractor has option to provide one of listed products or equal, preference shall be given to products with minimal packaging and easily recyclable packaging as defined in ASTM D5834.

B. Maximize use of source reduction and recycling procedures outlined in ASTM D5834.

C. Provide minimum 45 percent post-consumer recycled content and minimum 100 percent recovered fiber content of industrial paperboard in accordance with EPA's Comprehensive Procurement Guidelines and ASTM D5663.

D. Provide minimum 10 percent post-consumer recycled content and minimum 10 percent recovered fiber content of carrier board in accordance with EPA's Comprehensive Procurement Guidelines and ASTM D5663.

E. Provide minimum 5 percent post-consumer recycled content and minimum 5 percent recovered fiber content of brown papers (e.g., wrapping papers and bags) in accordance with EPA's Comprehensive Procurement Guidelines and ASTM D5663.

1.7 ENVIRONMENTALLY PREFERABLE PRODUCTS

A. Provide environmentally preferable products to greatest extent possible.

1. To greatest extent possible, provide products and materials with a lesser or reduced effect on the environment considering raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance, and/or disposal of the product.
2. Eliminate use of ozone depleting compounds during and after construction where alternative environmentally preferable products are available, consistent with either Montreal Protocol and Title VI or Clean Air Act Amendments of 1990, or equivalent overall air quality benefits that take into account life cycle impacts.
3. Use products meeting or exceeding EPA's recycled content recommendations for EPA-designated products. Use materials with recycled content such that the sum of post-consumer recycled content plus one-half of the pre-consumer content constitutes at least 10% (based on cost) of total value of the materials in project.

1.8 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by Contract Documents. Manufacturer's disclaimers and limitations on

product warranties do not relieve Contractor of obligations under requirements of Contract Documents.

1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for product specifically endorsed by manufacturer to Owner.
2. Special Warranty: Written warranty required by or incorporated into Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.

B. Special Warranties: Prepare written document containing appropriate terms and identification, ready for execution. Submit draft for approval before final execution.

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
2. Specified Form: When specified forms are included with Specifications, prepare written document using appropriate form properly executed.
3. Refer to Divisions 2 through 49 Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Section 01 77 00 "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products to comply with Contract Documents, undamaged and, unless otherwise indicated, new at time of installation.

1. Provide products complete with accessories, and other items needed for a complete installation and indicated use and effect.
2. Government reserves right to limit selection to products with warranties not in conflict with requirements of Contract Documents.
3. Where products are accompanied by term "as selected," CO will make selection.
4. Where products are accompanied by term "match existing or sample," match existing or sample to be matched is Governments.
5. Descriptive, performance, and reference standard requirements in Specifications establish "salient characteristics" of products.

B. Product Selection Procedures:

1. Product: Where Specifications name single product and manufacturer, provide named product that complies with requirements or approved equal.
2. Manufacturer/Source: Where Specifications name single manufacturer or source, provide product by named manufacturer or source that complies with requirements or approved equal.
3. Products: Where Specifications include list of names of both products and manufacturers, provide one of the products listed that complies with requirements or approved equal.

4. Manufacturers: Where Specifications include list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements or approved equal.
5. Available Products: Where Specifications include list of names of both products and manufacturers, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
6. Available Manufacturers: Where Specifications include list of manufacturers, provide a product by one of the manufacturers listed, or an unnamed manufacturer, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
7. Product Options: Where Specifications indicate sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide specified product, system, or approved equal.
8. Basis-of-Design Product: Where Specifications name product and include a list of manufacturers, provide specified product or a comparable product by one of the other named manufacturers, or approved equal. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics based on the product named.
9. Visual Matching Specification: Where Specifications require matching an established Sample, select product that complies with requirements and matches Architect's sample. COs decision will be final on whether a proposed product matches.

    a. If no product available within specified category matches and complies with other specified requirements, comply with provisions in Part 2 "Product Substitutions" Article for proposal of product.

10. Visual Selection Specification: Where Specifications include phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product that complies with other specified requirements.

    a. Standard Range: Where Specifications include phrase "standard range of colors, patterns, textures" or similar phrase, CO will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.
    b. Full Range: Where Specifications include phrase "full range of colors, patterns, textures" or similar phrase, CO will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

A. Conditions: CO will consider Contractor's request for comparable product when the following conditions are satisfied. If following conditions are not satisfied, CO will return requests without action, except to record noncompliance with these requirements:

1. Evidence proposed product does not require revisions to Contract Documents, that it is consistent with Contract Documents and will produce indicated results and is compatible with other portions of Work.
2. Detailed comparison of significant qualities of proposed product with those named in Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
3. Evidence proposed product provides specified warranty.

4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
5. Samples, if requested.

PART 3 - EXECUTION

3.1 PROTECTION AFTER INSTALLATION

A. Provide adequate coverings as necessary to protect installed materials from damage resulting from natural elements, traffic, and subsequent construction. Remove when no longer needed.

END OF SECTION 01 67 00

HARPERS FERRY NATIONAL HISTORICAL PARK – 242454

SECTION 01 73 40 – EXECUTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes general procedural requirements governing execution of Work including:

1. Coordination with utility service providers, as applicable
2. Construction layout
3. General installation of products
4. Progress cleaning
5. Starting and adjusting
6. Protection of installed construction
7. Correction of the Work

1.2 SUBMITTALS

A. Landfill Receipts: Submit copy of receipts issued by landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

B. Quantity Surveys: Submit 2 copies showing quantities of work performed and actual construction completed in place.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: Existence and location of site improvements and other construction indicated as existing are not guaranteed.

1. Before beginning work, investigate and verify existing and other construction affecting the Work.

2. Before construction, verify the location and points of connection of utility services.

B. Existing Utilities: Existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify existence and location of underground utilities and other construction affecting Work.

1. Before construction, verify location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services in the vicinity of the Work. If utilities are identified that interfere with the execution of the Work, notify the CO immediately and do not commence with effected work without CO approval. If utilities are identified adjacent to Work, utilities shall not be disturbed and/or protected to the extent applicable for the Contractor to complete the work.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

3.2 PREPARATION

A. Field Measurements: Take field measurements as required to fit Work properly. Recheck measurements before installing each product. Where portions of Work are indicated fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying Work.

B. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

C. Review of Contract Documents and Field Conditions: Immediately on discovery of need for clarification of the Contract Documents caused by differing field conditions outside control of Contractor, submit request for information to Contracting Officer (CO) in accordance with Section 01 31 00 "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

A. Verification: Verify layout information shown on Drawings, in relation to the existing benchmarks before proceeding to lay out Work. Notify CO promptly if discrepancies are discovered.

B. Site Improvements: Locate and lay out site improvements, including grading, erosion protection, fill and topsoil placement.

C. Record Log: Maintain log of layout control work. Record deviations from required from drawings. Make log available for review by National Park Service (NPS).

3.4 INSTALLATION

A. General: Locate Work and components of Work accurately in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions for best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions.

E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

F. Templates: Obtain and distribute to parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm adequate provisions are made for locating and installing products to comply with indicated requirements.

G. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of Work.

H. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for best visual effect.

I. Hazardous Materials: Use products, cleaners, and installation materials not considered hazardous.

J. Quantity surveys: Shall be conducted, and data derived from these surveys shall be used in computing quantities of work performed and actual construction completed and in place.

1. Contractor shall conduct original and final surveys and surveys for any periods for which progress payments are requested. These surveys shall be conducted under direction of a representative of the CO, unless CO waives requirement in a specific instance. Government shall make such computations as are necessary to determine quantities of work performed or finally in place. Contractor shall make computations based on surveys for any periods for which progress payments are requested.
2. Promptly upon completing a survey, Contractor shall furnish originals of field notes and other records relating to survey or layout of Work to CO. Contractor shall retain copies of all such material furnished to CO.

3.5 PROGRESS CLEANING

A. General: Clean Project site, work areas, and common areas daily. Coordinate progress cleaning for joint-use areas where more than one Installer has worked. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in National Fire Protection Association (NFPA) 241 for removal of combustible waste materials and debris at the end of every work session.
2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 degrees Fahrenheit (27 degrees Celsius).
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to level of cleanliness necessary for proper execution of Work.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of Work, broom-clean or vacuum entire work area, as appropriate.
3. Contractor shall provide progress cleaning that minimizes sources of food, water, and harborage available to pests.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials not hazardous to health or property and will not damage exposed surfaces.

1. Utilize non-toxic cleaning materials and methods.

a. Comply with Green Seal Standard (GS) 37 for general purpose cleaning and bathroom cleaning.
b. Use natural cleaning materials where feasible. Natural cleaning materials include:

1) Abrasive cleaners: substitute 1/2 lemon dipped in borax.
2) Ammonia: substitute vinegar, salt and water mixture, or baking soda and water.
3) Disinfectants: substitute 1/2 cup borax in gallon water.
4) Drain cleaners: substitute 1/4 cup baking soda and 1/4 cup vinegar in boiling water.
5) Upholstery cleaners: substitute dry cornstarch.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways.

H. Clean and protect construction in progress and adjoining materials already in place during handling and installation. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations so that no part of construction completed or in progress, is subject to harmful, dangerous, damaging, or deleterious exposure during construction period.

K. Final Cleaning: At completion of Work, remove remaining waste materials, rubbish, tools, equipment, machinery and surplus materials. Clean exposed surfaces and leave Project clean and ready for occupancy.

1. Provide final cleaning in accordance with ASTM E1971.

3.6 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.7 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes.

1. Repairing includes replacing defective parts, refinishing damaged surfaces, and touching up with matching materials.

B. Restore permanent facilities used during construction to specified condition.

C. Remove and replace damaged surfaces exposed to view if surfaces cannot be repaired without visible evidence of repair.

END OF SECTION 01 73 40

NPS DSC Division 1 Specifications

HARPERS FERRY NATIONAL HISTORICAL PARK – 242454

SECTION 01 74 19 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for:

1. Salvaging nonhazardous demolition and construction waste.
2. Recycling nonhazardous demolition and construction waste.
3. Disposing of nonhazardous demolition and construction waste.

1.2 DEFINITIONS

A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.

C. Solid Waste: Garbage, debris, sludge, or other discharged material (except hazardous waste) including solid, liquid, semisolid, or contained gaseous materials resulting from domestic, industrial, commercial, mining, or agricultural operations.

D. Debris: Non-hazardous solid waste generated during construction, demolition, or renovation of a structure which exceeds 2.5 inch (60 millimeter) particle size that is: a manufactured object; plant or animal matter; or natural geologic material (e.g. cobbles and boulders). A mixture of debris and other material such as soil or sludge is also subject to regulation as debris if mixture is comprised primarily of debris by volume, based on visual inspection.

E. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.

F. Environmental Pollution and Damage: Presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances; or degrade utility of environment for aesthetic, cultural, or historical purposes.

G. Garbage: Refuse and scraps resulting from preparation, cooking, dispensing, and consumption of food.

H. Hazardous Materials: Material regulated as a hazardous material in accordance with 49 CFR 173 (Code of Federal Regulations), requires a Material Safety Data Sheet (MSDS) in accordance with 29 CFR 1910.1200, or which during end use, treatment, handling, storage, transportation or disposal meets or has components which meet or have potential to meet the definition of Hazardous Waste in accordance with 40 CFR 261.

I. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

J. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

K. Single-use plastic products: Plastic items intended to be disposed of immediately after use, including plastic and polystyrene food and beverage containers, bottles, straws, cups, cutlery, and disposable plastic bags.

1.3 PERFORMANCE REQUIREMENTS

A. General: Project shall minimize creation of construction, deconstruction, and demolition waste to protect and restore natural habitat and resources. Minimize factors contributing to waste such as over packaging, improper storage, ordering error, poor planning, breakage, mishandling, single-use plastic products, and contamination. A Waste Management Plan shall be developed to ensure that existing site and building materials are reused, salvaged, or recycled. Minimize waste disposal in landfills.

B. Salvage/Recycle Requirements: Develop waste management plan resulting in end-of-Project rates for salvage/recycling of 50 percentage, to extent possible, by weight of total waste generated by the Work. The following waste categories, at a minimum, shall be diverted from a landfill:
1. Land clearing debris (chipped debris can be used on site for mulch or erosion control)
2. Clean dimensional wood, palettes
3. Plywood, OSB (oriented strand board), and particle board
4. Concrete
5. Asphaltic concrete
6. Cardboard, paper, packaging, newsprint
7. Metals (steel, iron, galvanized sheet steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze)
8. Beverage containers; Aluminum, glass, and plastic containers
9. Other mixed construction and demolition waste as appropriate.

C. If waste materials encountered during deconstruction/demolition or construction phase are found to contain lead, asbestos, polychlorinated biphenyls (PCBs), (such as fluorescent lamp ballasts), or other harmful substances, they are to be handled and removed in accordance with local, state, and federal laws and requirements concerning hazardous waste.

D. Existing items and material to be removed during deconstruction/demolition phase shall be reused in construction phase of the Project. Items that cannot be reused shall be recycled. Items considered for reuse must be in refurbishable condition and must meet quality standards set forth in these specifications. Contractor shall ensure quality of the item(s) in question will meet or exceed accepted industry or trade standards for first quality commercial grade application. During

construction, deconstruction, or demolition Contracting Officer (CO) may designate other objects or materials for reuse.

E. Salvage/Recycle Requirements: Government goal is to salvage and recycle as much nonhazardous demolition and construction waste as possible including the following materials:
   1. Wood timbers
   2. Recycled concrete

1.4 SUBMITTALS

A. Waste Management Plan: After award of contract and prior to scheduled Pre-Construction Conference, Contractor shall submit a draft Waste Management Plan to CO for approval. Submit 3 copies of plan. Revise and resubmit Plan as required by CO. Approval of Contractor's Plan will not relieve Contractor of responsibility for compliance with applicable environmental regulations.

B. Progress Documentation: Supplemental to Waste Management Plan, document solid waste disposal, diversion, and cost/revenue analysis and submit completed worksheet on a monthly basis. See Project Waste Management Plan Worksheet Sample, attached to the end of the Division 1 Specifications, and report totals to date for column headings.

C. Waste Reduction Calculations: Before request for Substantial Completion, submit 3 copies of calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.

D. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.

E. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.

F. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

G. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

H. Qualification Data: For Waste Management Coordinator.

I. Progress payment requirements:

   1. With each Application for payment, submit an updated Project Waste Management Plan worksheet for solid waste disposal and diversion.
   2. With each Application for Payment, submit manifests, weight tickets, receipts, and invoices specifically identifying the Project and waste material.

J. Closeout Submittals

   1. With Closeout Submittals, submit a summary of a Project Waste Management Plan worksheet for solid waste disposal and diversion.

1.5 QUALITY ASSURANCE

A. Waste Management Coordinator Qualifications: Experienced firm, with record of successful waste management coordination of projects with similar requirements.

B. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.

C. Waste Management Meeting: Conduct separate meeting or cover in Pre-Construction Conference and comply with requirements in Section 01 31 00 "Project Management and Coordination." Review methods and procedures related to waste management including:

1. Review and discuss waste management plan including responsibilities of Waste Management Coordinator.
2. Review requirements for documenting quantities of each type of waste and its disposition.
3. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
4. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
5. Review procedures for reduction of single-use plastic products on site.
6. Review waste management requirements for each trade.

PART 2 - PRODUCTS

2.1 WASTE MANAGEMENT PLAN

A. General: Develop plan consisting of waste identification and waste reduction work plan. Include separate sections in plan for demolition and construction waste. Indicate quantities by weight or volume but use same units of measure throughout waste management plan.

B. Waste Identification: Indicate anticipated types and quantities of demolition, site-clearing and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.

C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.

1. Salvaged Materials for Reuse: For materials salvaged and reused in Project, describe methods for preparing salvaged materials before incorporation into the Work.
2. Salvaged Materials for Sale: For materials sold to individuals and organizations, include list of names, addresses, and telephone numbers.
3. Salvaged Materials for Donation: For materials donated to individuals and organizations, include list of names, addresses, and telephone numbers.
4. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
5. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.

6. Handling and Transportation Procedures: Include method used for separating recyclable waste including sizes of containers, container labeling, and designated location on Project site where materials separation will be located.
7. Reduction of single-use plastic products: Include methods for water distribution to include bottle refilling stations if available for personnel.

D. Cost/Revenue Analysis: Indicate total cost of waste disposal as if there was no waste management plan and net additional cost or net savings resulting from implementing waste management plan. Include:

1. Landfill tip fees per ton.
2. If diverted, tip fee savings from landfill diversion.
3. Costs of recycling, salvage, or reuse.
4. Revenue from recycling, salvage, or reuse.
5. Total cost or savings from diversion. (Calculate by using tip fee savings and subtracting costs of recycling or adding revenue from recycling.)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

A. General: Implement waste management plan as approved by CO. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during entire duration of Contract.

B. Waste Management Coordinator: Engage waste management coordinator responsible for implementing, monitoring, and reporting status of waste management work plan. Coordinator shall be present at Project site full time for duration of Project.

C. Contractor shall establish contacts with local recycling and reuse companies to set up lines of responsibility. Contractor shall be responsible for coordination in terms of identifying materials, pickup schedules, and standard quality for recycled materials.

D. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.

1. Distribute waste management plan to everyone concerned within [**three**] days of submittal return.
2. Distribute waste management plan to entities when they begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.

E. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

F. Separation facilities:

1. Contractor shall designate and CO shall approve specific area or areas to facilitate separation of materials for potential reuse, salvage, recycling, and return.

2. Place waste and recycling bins near each other, and close to point of waste generation but out of traffic pattern.
3. Keep recycling and waste bin areas neat, clean, and clearly marked in order to avoid co-mingling of materials.
4. Protect bins during non-working hours from off-site contamination.
5. Check garbage dumpsters periodically for recyclables being thrown away and undocumented materials that could be recycled.

G. Materials handling procedures: Material to be recycled shall be protected from contamination and shall be handled, stored, and transported in a manner that meets requirements set by designated facilities for acceptance. Establish defined area for operations of each trade, especially woodcutting so off-cuts are kept in one area and can be sorted by dimension for future reuse.

3.2 SALVAGING DEMOLITION WASTE

A. Salvaged Items for Reuse in the Work:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in secure area until installation.
4. Protect items from damage during transport and storage.
5. Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.

B. Salvaged Items for Sale Not permitted on Project site.

3.3 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

A. General: Recycle paper and beverage containers used by on-site workers.

B. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall accrue to Contractor.

C. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to maximum extent practical.

1. Provide appropriately marked containers or bins for controlling recyclable waste until removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.

    a. Inspect containers and bins for contamination and remove contaminated materials if found.

2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
4. Store components off ground and protect from weather.

5. Remove recyclable waste off Government property and transport to recycling receiver or processor.

3.4 RECYCLING DEMOLITION WASTE

A. Concrete: Remove reinforcement and other metals from concrete and sort with other metals.

1. Get CO approval for recycling concrete on site or haul to concrete recycling facility.

B. Wood Materials: Sort and stack members according to size, type, and length. Separate lumber, engineered wood products, panel products, and treated wood materials.

C. Metals: Separate metals by type.

1. Structural Steel: Stack members according to size, type of member, and length.
2. Remove and dispose of bolts, nuts, washers, and other rough hardware.

3.5 RECYCLING CONSTRUCTION WASTE

A. Packaging:

1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in dry location.
2. Polystyrene Packaging: Separate and bag materials.
3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

B. Site-Clearing Wastes: Chip brush, branches, and trees at landfill facility.

C. Wood Materials:

1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
2. Clean Sawdust: Bag sawdust not containing painted or treated wood.

3.6 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose in landfill or incinerator acceptable to authorities having jurisdiction.

1. Except as otherwise specified, do not allow waste materials to accumulate on-site.
2. Remove and transport debris in manner preventing spillage on adjacent surfaces and areas.

B. Burning: Do not burn waste materials.

C. Disposal: Transport waste materials off Government property and legally dispose of them.

END OF SECTION 01 74 19

NPS DSC Division 1 Specifications

HARPERS FERRY NATIONAL HISTORICAL PARK – 242454

SECTION 01 77 00 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for contract closeout, including:

1. Project Record Drawings
2. Closeout Submittals
3. Substantial Completion and Final Inspection
4. Permit Closure and Transfer
5. Final Acceptance of the Work
6. Warranties

1.2 PROJECT RECORD DRAWINGS

A. Maintain one complete full-size set of contract drawings and one full-size set of vendor-supplied drawings. Clearly mark changes, deletions, and additions using National Park Service (NPS) drafting standards to show actual construction conditions. Show additions in red, deletions in green and special instructions in blue.

B. Keep record drawings current. Make record drawings available to Contracting Officer (CO) for inspection at the time of monthly progress payment requests. If project record drawings are not current, CO may retain an appropriate amount of progress payment.

C. Submit complete record drawings on completion of total project. Include shop drawings, sketches, and additional drawings to be included in final set, with clear instructions showing the location of these drawings.

1.3 CLOSEOUT SUBMITTALS

A. A list of closeout requirements has been attached at the end of the Division 1 Specifications for your convenience. The intent is to provide an overall summary of requirements and not a comprehensive list. Terms and conditions of the contract require satisfaction of requirements of individual specification sections regardless of what is shown on the list. Submit the following before requesting final inspection:

1. Specific warranties, guarantees, workmanship bonds, final certifications, and similar documents.

2. Project Record Documents, final completion construction digital images shall be provided and posted to government provided construction management platform with index and descriptions, and similar final record information.
3. Terminate and remove temporary facilities, construction tools, and similar elements from Project site, complete final cleaning requirements, including touchup painting.
4. Touch up and repair and restore marred exposed finishes to eliminate visual defects.

1.4 FINAL INSPECTION, SUBSTANTIAL COMPLETION AND ACCEPTANCE PROCEDURES

A. Request final inspection in writing when project or designated portion of project is substantially complete. CO will proceed with inspection within 10 days of receipt of written request or will advise Contractor of items that prevent project from being substantially complete.

B. If work is determined substantially complete, following final inspection, CO will prepare Punch List and issue a Letter of Substantial Completion.

C. If work is not determined substantially complete following final inspection, CO will notify Contractor in writing. Contractor shall request new final inspection after completing work. Re-inspection costs may be charged against Contractor in accordance with Inspection of Construction contract clause.

D. Contractor shall complete Punch List within 30 calendar days, documented weather permitting.
   1. Prior to requesting final inspection:
      a. Provide all Daily Reports.
      b. Provide all Payrolls.
      c. Submit NPS required certificates.
      d. Terminate and remove temporary facilities from Project site.
      e. Complete final cleaning requirements.

E. If Contractor completes items of work on Punch List and contractually required items, CO will issue Letter of final acceptance of work.

F. If Contractor fails to complete work within the time frame, CO may correct work with an appropriate reduction in contract price or charge for re-inspection costs in accordance with Inspection of Construction contract clause.

1.5 PERMIT CLOSURE AND TRANSFER

A. When work covered by the permits is complete, create list of tasks required to close or transfer permits to Park. Submit to CO for approval.

B. After substantial completion and Punch List completion, permits shall be closed and documented by Agency(ies) with Jurisdiction for the permit.

C. If responsibility for permits is to be transferred to Park, the CO shall be informed of permit provisions completed and responsibilities transferring to Park staff.

1.6 WARRANTIES

A. Workmanship Warranty: The Contractor shall provide a one-year warranty on all project materials, products and workmanship. The warranty period shall commence upon issuance of the letter of final acceptance of work. Remedial work identified by the CO during the warranty period shall be completed by the Contractor at no additional cost to the government.

PART 2 - PRODUCTS

2.1 MATERIALS

A. See Division 1 Specification Section "Execution" for information on cleaning agents.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Conduct final cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Comply with manufacturer's written instructions.

1. Complete following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:

a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
c. Rake grounds that are neither planted nor paved to smooth, even-textured surface.
d. Remove tools, construction equipment, machinery, and surplus material from Project site.
e. Clean exposed exterior and interior hard-surfaced finishes to dirt-free condition, free of stains, films, and foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to original condition.
f. Touch up, repair, and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
g. Leave Project clean and ready for occupancy.

C. Waste Disposal: Comply with requirements of Section 01 74 19 "Construction Waste Management and Disposal."

END OF SECTION 01 77 00

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SECTION 02 41 00 – SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. Furnish labor, materials, tools, equipment, and services for removal of unsound concrete NS asphalt pavement other work items as indicated on the drawings and in accordance with provisions of Contract Documents.

B. Completely coordinate with work of other trades.

C. Work Includes:
   1. Removal of existing asphalt. The Work also includes incidental filling and grading, and disposal of unsalvageable materials.
   2. Removal of debris.
   3. Containment of debris.

1.2 QUALITY ASSURANCE

A. Conduct work in accordance with OSHA and EPA requirements.

B. National Fire Protection Association (NFPA):

   1. NFPA 241 Standards for Safeguarding Construction, Alteration, and Demolition Operations.

C. Design, engineering, and construction of containment system for concrete removal, bracing, temporary supports, and debris containment control measures are responsibility of Contractor.

1.3 JOB CONDITIONS

A. Perform preliminary site investigations prior to submitting a bid proposal to ascertain extent of work.
   1. Conditions apparent by investigation shall not be allowed as claim for extra cost.

B. Obtain and pay for permits that may be required by authorities having jurisdiction and notify interested utilities companies prior to commencement of activities.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION

3.1 GENERAL DEMOLITION PROCEDURES

A. Existing Asphalt Removal:

1. Existing roadway asphalt shall be pulverized, maintained on-site for re-use as fill to raise existing grades immediately under the proposed roadway.
2. Asphalt removed not intended for re-use either for recycled asphalt pavement or pulverized for fill, shall be removed from the site and disposed in accordance with all local, state and federal regulations.

B. Conduct operations to ensure minimum interference with roadway, and adjacent facilities.

1. Do not obstruct or close roadway, adjacent pullouts and shoulders without CO approval.

C. All demolition activities shall prevent demolition materials and any other debris from entering the waterways.

D. Provide barricades and safety lights as required.

3.2 PROTECTION OF FACILITIES TO REMAIN

A. Protect all site facilities designated to remain:
1. Conduct operations to prevent damage to roadway and from falling debris or other cause to structures, and other facilities as well as persons. Contractor to submit methods of debris containment for approval.

3.3 CLEAN-UP AND DISPOSAL OF DEMOLITION MATERIALS

A. Remove debris, rubbish, and materials resulting from demolition operations.

1. Remove and legally dispose of off-site.
2. Do not burn materials on site.

B. Dispose of items and materials not designated for salvage or reuse.

1. Promptly remove from site.
2. Do not store or sell Contractor salvaged items or materials on site.

C. Clean adjacent improvements of dust, dirt, and debris caused by demolition operations.

D. Return adjacent areas to condition existing prior to start of work.

END OF SECTION 02 41 00

SECTION 31 10 00 - TREE TRIMMING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Tree Trimming Work to Accommodate Construction Vehicles, including:
   a. Tree protection, selective removals, and selective trimming.
   b. Disposal and cleaning.

B. Related Requirements: Included but are not necessarily limited to:

1. Division 00 – Procurement and Contracting Requirements
2. Division 01 – General Requirements

1.2 REFERENCES

A. Terminology:

1. Terms indicated below are not defined terms indicated with initial capital letters but, when used in this Section, have the meanings indicated below:
   a. "Arborist" means Subcontractor retained to perform Work requiring a specialist in trees, shrubs, brush, other vegetation of the types existing at the Site, and possessing not less than the required qualifications indicated in this Section.

2. "Selective trimming" means removal of selected parts of trees, shrubs, brush, and other vegetation, performed by arborist, for the purpose of either: (1) allowing installation of new construction adjacent to or through the tree, shrub, brush, or vegetation, or)2) removing damaged or unhealthy growth, to allow balance of the subject tree, shrub, brush, or vegetation to continue normal, healthy growth.

B. Reference Standards:
1. American National Standards Institute (ANSI):.
   a. A300, Standard for Tree Care Operations – Tree, Shrub, and Other Woody Plant Maintenance – Standard Practices.
2. International Society of Arboriculture (ISA):
   a. High Branched Crown Observation.
   b. Low Branched Crown Observation.
   c. Multiple Low Branches Crown Observation.
   d. Protection Maintenance.

1.3 ADMINISTRATIVE REQUIREMENTS

A. Pre-Tree Trimming Meeting:

1. Prior to commencing tree trimming work, the Contractor shall meet with the CO on site.

2. Participants:
   a. Required Participants: Contractor's project manager, Contractor's site superintendent, arborist (CO will determine if an arborist is required)
3. CO will document the meeting and distribute meeting minutes.
4. Participants shall be prepared to discuss:
   a. Project requirements and the Contract requirements for tree trimming Work.
   b. Submittals required for tree trimming Work.
   c. Schedule for tree trimming Work and availability of resources.
   d. Locations and types of tree trimming Work, Limits of clearing and grubbing. Proposed locations for cuttings and debris.
   e. Environmental and other conditions at the Site.
   f. Growth, vegetation, and existing construction requiring protection.
   g. Required observations and field quality control for tree trimming Work.
5. If additional information affecting tree trimming Work subsequently comes to light, reconvene the meeting at earliest opportunity.

1.4 QUALITY ASSURANCE

A. Qualifications:

1. Arborist (if required by the CO):
   a. Where selective removal, selective trimming, or both are required or necessary, retain the services of, and employ in the Work, accredited arborist, possessing qualifications acceptable to CO.
   b. Arborist shall be skilled, trained, and possess documented experience in successfully protecting, trimming, and restorative care of trees and shrubs of the types necessary for the Work.
   c. Certification: Arborist shall be certified by either International Society of Arboriculture (ISA) or American Society of Consulting Arborists (ASCA).
   d. Arborist shall use in selective removal and selective trimming Work only workers with specific skill and successful experience in this type of Work required. Such workers shall work under the direct, personal supervision of arborist.
   e. Submit to CO names, employer(s), certifications, other relevant qualifications and record of relevant experience, as indicated below, for not less than [three] successful projects involving same species of trees, shrubs, and vegetation as involved in the tree trimming Work:
      1) Names and telephone numbers of site owners, architects or engineers responsible for projects.
      2) Approximate contract price of the selective removal and selective trimming of trees, shrubs, and vegetation.
      3) Approximate time of year work was performed on each referenced project.
      4) Approximate quantity and types of selective removal and selective trimming of performed.
      5) General indication of species of trees, shrubs, and vegetation involved.

1.5 SUBMITTALS

A. Informational Submittals: Submit the following:
   1. Provide all certification information to CO.

PART 2 - PRODUCTS

2.1 MATERIALS (NOT APPLICABLE TO THIS SPECIFICATION SECTION)

PART 3 - EXECUTION

3.1 TREE TRIMMING – GENERAL

A. Limits of Tree trimming Work:

1. Limits of tree trimming Work as indicated in the drawings.

B. General Provisions for Tree trimming:
1. Contractor shall provide all labor, materials, equipment, tools, services, and incidentals necessary and required to perform tree trimming Work in accordance with the Contract Documents.
2. Perform tree trimming Work to avoid creating nuisances, pollution, and preventable adverse effects on the environment. Protect existing features that remain in place.

3.2 PREPARATION

A. Approvals:

1. Do not commence tree trimming Work without CO approval.

B. Delineation of Limits of Tree trimming Work Areas:
1. Locate and clearly flag at the Site:
   a. Trees, shrubs, and other vegetation to be selectively trimmed.
2. Review with CO:
   a. Before starting tree trimming Work, other than flagging, review at the Site with CO.
   b. Make corrections as necessary.
   c. Review all trees, 12-inch diameter (measured one foot above ground) and larger, to be selectively trimmed.

C. Protection: Establish protection of trees, shrubs, and vegetation to remain, in accordance with this Section's Article, "Tree Protection, Selective Removals, and Selective Trimming", and other applicable provisions of the Contract Documents.

3.3 TREE PROTECTION, AND SELECTIVE TRIMMING

A. General Provisions for Tree Protection, Selective Removals, and Selective Trimming:

1. Provide temporary fencing, barricades, or guarding measures, as recommended by arborist or approved by the CO.
2. Protect root systems from damage caused by noxious materials, storm water runoff, tree trimming, planting and landscaping, other Work, and storage of materials and equipment. Protect root systems from flooding, erosion, and excessive wetting resulting from dewatering of excavations, drainage of tanks, and other construction activities.
3. Fires are not allowed.
4. Do not store matter resulting from tree trimming or demolition, topsoil, or other excavated material within drip line of trees and shrubs to remain. Vehicles are not allowed within drip line. Restrict foot, vehicle and equipment traffic to prevent compaction of soil over root systems.

5. Cut branches and roots, when necessary, with sharp pruning instruments; do not break or chop. Fully paint cuts 1/2-inch and larger in size with tree wound dressing.

B. Tree and Shrub Pruning (Selective Trimming):
1. Perform pruning and selective trimming if determined it is needed and approved by the CO.
2. Remove branches from trees and shrubs to remain only after CO's concurrence, only to extent necessary to clear location of permanent construction, using branch removal methods in accordance with ANSI A300 and applicable ISA standards indicated in this Section's "References" Article.

C. Selective Trimming:
1. In addition to pruning (as required above), perform other selective trimming if determined it is needed and approved by the CO.
2. Comply with ANSI A300 and applicable ISA standards indicated in this Section's "References" Article.
3. Where shown or indicated, and as directed by CO, carefully remove larger branches, when necessary, using appropriate methods.
4. Repair cut branches in accordance with this Section.
5. During selective trimming, avoid damaging healthy (to remain) elements of trees and shrubs.
6. Dispose of trimmings as indicated in this Section's "Disposal and Cleaning" Article.

3.4 DISPOSAL AND CLEANING

A. Disposal – General:

1. Dispose of matter resulting from selective trimming, at appropriate offsite location.
2. Dispose of cleared, grubbed, and trimmed material, and other materials, rubbish, and debris, in accordance with Laws and Regulations.
3. Pay all costs associated with transporting and disposing of materials and debris resulting from tree trimming Work.

END OF SECTION 31 10 00

SECTION 32 01 13.65 – CHIP SEAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Apply one or two seal coats or a prime coat followed by one or two seal coats as specified. The seal coat consists of emulsified asphalt followed by an application of aggregate. The prime coat, when required, consists of preparing and treating an existing surface with emulsified asphalt.

1.3 SUBMITTALS

A. At least 30 days prior to the start of placement of the chip seal surface treatment, submit a proposed mix design plan.

B. Include the following:
   1. Equipment and material sources
   2. Spread rate of aggregate
   3. Spray rate of emulsified asphalt

C. Test the mix design in accordance with Section 01 40 00. The mix design report shall show that the materials meet the following:

MATERIAL	APPLICATION	SIZE OR GRADE	SPREAD RATE (lb/yd^2)	SPRAY TEMP (F)	SPRAY RATE SINGLE COAT OR FIRST COAT (gal/yd^2)	SPRAY RATE SECOND COAT (Double) (gal/yd^2)
Aggregate	Single or First Coat	No 7	25-50	-	-	-
	Second (Double Coat)	NO 8	20-35	-	-	-
Emulsified Asphalts	Seal Coat	CRS-1		70-140	0.3-0.5	0.2-0.4
		CRS-2		140-160	0.3-0.5	0.2-0.4
		RS-1		70-140	0.3-0.5	0.2-0.4
		RS-2		140-160	0.3-0.5	0.2-0.4

PART 2 - PRODUCTS

2.1 MATERIALS

A. Aggregates shall be crushed stone, compatible with the emulsion, and shall conform to the grading requirements when tested in conformance with AASHTO T 27 and AASHTO T 11. Aggregates shall also meet the physical requirements for chip seal in this section.

B. Aggregates shall match the following properties:

MATERIAL	SIEVE SIZE									
	¾”	½”	3/8”	No. 4	No. 8	No. 16	No. 30	No. 50	No. 100	No. 200
	19.0 mm	12.5 mm	9.5 mm	4.75 mm	2.36 mm	1.18 mm	600 µm	300 µm	150 µm	75 µm
CHIP SEAL SURFACE TREATMENT	7	100	90-100	40-70	0-15	0-5	-	-	-	-
	8	-	100	85-100	10-30	0-10	0-5	-	-	-

C. Emulsified Asphalt: Emulsified asphalt shall be neat, cationic or polymer modified cationic. The polymer shall be milled or blended into the asphalt or emulsifier solution prior to the emulsification process. The polymer modified emulsion shall contain 3.0 percent polymer solids minimum by weight of asphalt and be a modified cationic quickset Grade CSS-1h or CQS-1h. Each load of emulsified asphalt shall be accompanied by a Certificate of Analysis/Compliance that indicates the emulsion meets specification requirements.

PART 3 - EXECUTION

3.1 CERTIFICATION

A. Furnish certified weigh tickets daily for the emulsion, residual asphalt content, latex emulsion, and aggregate. The weigh tickets will be used to determine in-place application rates.

3.2 SAMPLING AND TESTING

A. Soil Sample the asphalt emulsion seal mixture and the asphalt emulsion at least once daily during paving. Provide samples for asphalt content from the completed mix produced by each mixing unit to be tested by the approved quality control facility. Asphalt content will be determined by Ignition Method. Engineer to witness and submit the samples and proper documentation/certification to the CO. Residual asphalt content and gradation will be determined in accordance with the approved mix design. The residual asphalt content shall be within +/- 1.5 percent of the Job Mix Formula (JMF). When successive tests for a mixing unit fail, or one test fails by more than 2 percent, that unit shall be removed from service until approved.

3.3 WEATHER RESTRICTIONS

A. Place when the ambient air and surface temperatures are at least 50F and rising and the pavement is clean and dry. When weather conditions differ from these limits, placement of material en route from the plant to the job site shall be at the Contractor's risk. When the CO stops placement of the material, dispose of all material en route at no additional cost to the project.

3.4 ASPHALT DISTRIBUTING EQUIPMENT

A. This equipment shall be inspected and calibrated by the CO prior to use and shall bear a calibration and inspection tag. A calibration chart showing the total capacity in gallons of the distributor tank, and the fractional capacity for each 1/4in of tank depth, shall be carried in the unit. The unit shall be capable of uniformly applying the specified material on variable widths of surface at the rates specified in this section. In addition the equipment shall include the following:
   1. A fifth wheel tachometer for maintaining uniform speed.
   2. A thermometer graduated in 2F increments to determine the specified temperature ranges.
   3. Heaters for uniformly heating the materials to the proper temperatures.
   4. Full circulation spray bars that are laterally and vertically adjustable, plus a hand spray.
   5. A calibrated tank to determine the quantity of asphalt in each load and the amount used.
   6. A valve or petcock built into the equipment for sampling the asphalt
   7. A motor driven pump with pressure gauges to deliver the material to the spray bars. When a variable speed pump and metering system is used, provide charts prepared by the manufacturer for selecting the proper pump speed for each application.

3.5 SPREADING EQUIPMENT

A. Spreading Equipment – Use equipment that is either self propelled or attached to a truck tailgate.

3.6 ROLLER EQUIPMENT

A. Rollers shall be self-propelled, reversible, and steel wheeled or pneumatic tired. Inspect all rollers and present them for approval before use. Rollers shall be operated as follows:
   1. In conformance with the manufacturer's recommendations
   2. In a manner that does not damage the pavement
   3. In a manner that delivers the optimal combination of density and ride requirements
   4. In a manner that protects bridge decks. Do not use rollers in vibratory mode when paving bridge decks.

3.7 QUALITY CONTROL PLAN (QCP)

A. Submit a QCP for approval at least 30 days prior to the placement of any asphalt emulsion seal. The Plan shall contain a list of technicians working on the project and their qualifications, current equipment calibration data and a statistically based procedure of random sampling.

B. The Plan shall document the proposed methods for controlling the equipment, materials, production, and asphalt emulsion seal operation to ensure conformance. Discuss the Plan requirements at the pre-pave meeting.

3.8 SURFACE PREPARATION

A. When paving over existing pavement, repair ruts and potholes to provide a smooth surface for the application of the chip seal surface treatment.

B. Protect manholes, valve boxes, drop inlets and other service/utility entrances from the asphalt emulsion seal by a suitable method, as approved.

C. Clean the existing surface and remove all loose, foreign and objectionable materials. Ensure the pavement surface is dry prior to applying tack coat and asphalt emulsion seal.

D. Uniformly apply the prime coat to the surface at the application rate specified in this section. Remove pooled material before applying the next coat.

3.9 APPLICATION

A. No sooner than 24 hours after the application of the prime coat, spray emulsified asphalt on the surface at the application rate specified in this section.

B. Immediately following this asphalt application, spread a dry dust free aggregate on the surface at the application rate specified in this section. Remove excess aggregate and correct all areas containing insufficient aggregate.

3.10 DEFECTIVE AREA CORRECTION

A. Immediately following this asphalt application, spread a dry dust free aggregate on the surface at the application rate specified in this section. Remove excess aggregate and correct all areas containing insufficient aggregate.

3.11 ROLLING

A. Immediately following the aggregate application, roll the surface until the aggregate is uniformly embedded into the asphalt. Discontinue rolling if the aggregate begins to crush.

3.12 FINISHED SURFACE

A. Provide a finished, uniform surface texture meeting the following requirements:
   1. Limit areas of excessive asphalt (flushing) to less than 10 percent of the finished surface area. Areas of excessive asphalt are characterized by a smooth, shiny surface that may be tacky to the touch. Bleeding at joints is not allowed.
   2. No tear and/or drag marks greater than 1 in. wide and 3 in. long.
   3. No more than 12 tear and/or drag marks greater than 1/2 in. wide and 4 in. long per 10 ft of a lane.

4. No clumps and/or other foreign objects greater than 1-1/2 in. in diameter.
5. No transverse ripples or joints with greater than a 1/4 in. ridge, bump or depression as measured with a 10 ft straightedge.
6. No longitudinal streaks with greater than a 1/4 in. ridge, bump or depression, as measured with a 10 ft straightedge.

B. Other. Submit a proposal for approval for other correction methods not listed above.

C. Make tie-ins at entrances and connecting roads as directed.

D. Maintain active access control at intersections and entrances. When it is necessary to open to traffic early, lightly sand the surface using the same aggregate as in the mix. Remove excess aggregate from the roadway in curb and gutter sections as required. Broadcast clean aggregate used in the seal treatment over the mix at intersections and/or entrances for temporary access as directed. Repair traffic-damaged asphalt emulsion seal at no additional cost.

E. Place temporary pavement markings as specified in Section 01 50 00 after the mix has cured and as directed. Place permanent pavement markings, including thermoplastic pavement markings, at least seven days after curing. Open the roadway to traffic within one hour after placement unless otherwise directed.

F. Close completed sections to traffic until the final seal coat has completely cured. Maintain the treated surface after it has been opened to traffic until final acceptance.

G. Furnish certified weigh tickets for all materials as specified in Section 01 33 23 or as required by the CO.

END OF SECTION 32 01 13.65

SECTION 32 01 13.75 – SLURRY SEAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Construct an asphalt emulsion seal coat using Slurry Seal (SS).

1.3 SUBMITTALS

A. Submit mix design data for approval at least three weeks in advance of the paving operation.

B. Include the following:
1. Source, percentage, and grade of emulsified asphalt.
2. Source, gradation and proportion of each component aggregate.
3. Source and percentage of additional additives.
4. Target gradation and residual asphalt content of mix.
5. Mix design worksheets.

C. Test the mix design in accordance with Section 01 40 00. The mix design report shall show that the test results meet the following:

TEST PROPERTY	TEST METHOD	SPECIFICATION LIMITS
Consistency Test (Mix Time), 77F, s, maximum	D3910	180
Set Time 77F s, minimum	D3910	15
Wet Track Abrasion, g/ft2, max One-hour soak	*ISSA TB-100	75
Residual Asphalt: Type II	T 164 or T 308	7.5% - 13.5%
Residual Asphalt: Type III	T 164 or T 308	6.5% - 12.0%

*International Slurry Seal Association

PART 2 - PRODUCTS

2.1 MATERIALS

A. Aggregates shall be crushed stone, compatible with the emulsion, and shall conform to the grading requirements when tested in conformance with ASTM D3910 and ASTM D6372. Aggregates shall also meet the physical requirements for Slurry Seal (SS) in this section.

B. Mineral Filler: Mineral filler shall be Portland cement or hydrated lime that is free of lumps with a T 90 maximum PI of 4.

C. Emulsified Asphalt: Emulsified asphalt shall be neat or polymer modified. The polymer shall be milled or blended into the asphalt or emulsifier solution prior to the emulsification process. The polymer modified emulsion shall contain 3.0 percent polymer solids minimum by weight of asphalt and be a modified cationic quickset Grade CSS-1h or CQS-1h. Each load of emulsified asphalt shall be accompanied by a Certificate of Analysis/Compliance that indicates the emulsion meets specification requirements.

PART 3 - EXECUTION

3.1 CERTIFICATION

A. Furnish certified weigh tickets daily for the emulsion, residual asphalt content, latex emulsion, aggregate, and mineral filler. The weigh tickets will be used to determine in-place application rates.

3.2 SAMPLING AND TESTING

A. Soil Sample the asphalt emulsion seal mixture and the asphalt emulsion at least once daily during paving. Provide samples for asphalt content from the completed mix produced by each mixing unit to be tested by the approved quality control facility. Asphalt content will be determined by Ignition Method. Engineer to witness and submit the samples and proper documentation/certification to the CO. Residual asphalt content and gradation will be determined in accordance with the approved mix design. The residual asphalt content shall be within +/- 1.5 percent of the Job Mix Formula (JMF). When successive tests for a mixing unit fail, or one test fails by more than 2 percent, that unit shall be removed from service until approved.

3.3 WEATHER RESTRICTIONS

A. Place asphalt emulsion seal when the air and surface temperatures are at least 50 F. The morning minimum surface temperature may be 40 F provided the ambient temperature is expected to rise to or above 60 F and is not expected to fall below 32 F within 24 hours after placement. Cease placement when the surface or air temperature falls below the specified limits. Ensure surface is dry, with no standing water. Place asphalt emulsion seal when it is not raining or foggy.

3.4 MIXING EQUIPMENT

A. Place Use a self-propelled, front feed, continuous loading mixing machine. The machine shall proportion and deliver the materials to a revolving, multi-blade, shafted mixer; and discharge it continuously and uniformly.

B. The mixer shall have devices that control the proportioning of each material. Calibrate the mixer for the mix design in the presence of an Administration representative or submit certified calibration documents for approval to ensure the SS treatment meets the job mix formula.

C. Calibrate the equipment using actual project materials and every time there is a change in material source or composition. Submit a source of materials and a mix design for approval, with corresponding test data from an approved lab at least three weeks in advance of the paving operation.

D. The machine shall have sufficient storage capacity for aggregate, emulsified asphalt, mineral filler, additives, and water to maintain an adequate supply of the materials for the proportioning controls. Add the proper amount of mineral filler to the aggregate before introduction into the mixer. Use mixing machines equipped with water pressure systems and nozzle spray bars to provide a water spray ahead of and outside the spreader box when required.

E. Truck mounted machines with positive, non-slipping aggregate delivery systems, but without a front feed continuous loading feature, may be used on project segments of less than 15,000 yd2 or for spot repairs. Have at least two truck mounted machines on the project prior to construction.

F. Provide the data for each unit in graphic form indicating the stone gate setting required to obtain the residual asphalt content as determined in the mix design.

G. Individual volume or weight controls for proportioning each material shall be provided and meters or counters shall be such that the Engineer may determine the amount of each material used at any time. Provide aggregate weigh tickets, a daily delivery summary, and an estimate of aggregate lost or otherwise not used.

3.5 SPREADING EQUIPMENT

A. Spreading Equipment
   1. Spread the asphalt emulsion seal uniformly by means of a mechanical squeegee box attached to the mixer and equipped with paddles mounted on an adjustable shaft to continuously agitate and distribute the materials.
   2. Use equipment that provides sufficient turbulence to prevent the mix from setting in the box or causing excessive side buildup or lumps.
   3. Attach flexible seals where the box contacts the road, front and rear, to prevent loss of the mixture.
   4. Do not spray additional water into the spreader box.

3.6 QUALITY CONTROL PLAN (QCP)

A. Submit a QCP for approval at least 30 days prior to the placement of any asphalt emulsion seal. The Plan shall contain a list of technicians working on the project and their qualifications, current equipment calibration data and a statistically based procedure of random sampling.

B. The Plan shall document the proposed methods for controlling the equipment, materials, production, and asphalt emulsion seal operation to ensure conformance. Discuss the Plan requirements at the pre-pave meeting.

3.7 SURFACE PREPARATION

A. Perform surface preparation prior to applying the tack coat and placing the asphalt emulsion seal as directed and as follows:
   1. Clean the existing surface of loose material, dirt, or other deleterious material by approved methods.
   2. Seal cracks with a width greater than 3/8 in. as specified in Section 32 12 16.
   3. Ensure the crack sealer is a compatible material (with no rejuvenating agents or solvents).
   4. Ensure that cracks are not overfilled, and that the manufacturer's recommended cure time is adhered to prior to placing the asphalt emulsion seal.
   5. Remove pavement markings as required to meet installation requirements specified in Section 32 17 23.

B. Protect manholes, valve boxes, drop inlets and other service/utility entrances from the asphalt emulsion seal by a suitable method, as approved.

C. Clean the existing surface and remove all objectionable materials. Ensure the pavement surface is dry prior to applying tack coat and asphalt emulsion seal.

D. Use an emulsion type and grade that is compatible with the asphalt emulsion seal. Apply at a rate of 0.05 gal/yd2 to 0.10 gal/yd2.

3.8 APPLICATION

A. Spread the asphalt emulsion seal to repair slight irregularities and to achieve a uniform, skid resistant surface free of skips, lumps, or tears.

B. Use squeegees and lutes to spread the mixture in areas that are inaccessible to the spreader box and in areas that require hand spreading.

C. Additives may be used to provide a slower setting time when hand spreading is necessary. Pour the slurry seal in a small windrow along one edge of the surface to be covered and spread the material uniformly. Construct a smooth, neat seam where two passes meet. Remove excess material immediately from the ends of each run.

D. Slurry Seal. Apply in one coat at the following target application rates and tolerances, based on the dry aggregate weight, unless otherwise specified:

AGGREGATE TYPE	TARGET APPLICATION RATE AND TOLERANCE	
Type II Mix	16 ±2 lb/yd2	one coat is specified

E. Furnish certified weigh tickets for all materials as specified in Section 01 33 23 or as required by the CO.

3.9 DEFECTIVE AREA CORRECTION

A. Correct defective work not meeting the following criteria, unless otherwise directed in writing and as determined; to the satisfaction of the Government and at no additional cost.

B. Application Rate - Areas where application rates deviate from the acceptable ranges in paragraph 3.8.B above will be considered defective work.

C. Finished Surface
   1. Provide a finished, uniform surface texture meeting the following requirements:
      a. Limit areas of excessive asphalt (flushing) to less than 10 percent of the finished surface area. Areas of excessive asphalt are characterized by a smooth, shiny surface that may be tacky to the touch. Bleeding at joints is not allowed.
      b. No tear and/or drag marks greater than 1 in. wide and 3 in. long.
      c. No more than 12 tear and/or drag marks greater than 1/2 in. wide and 4 in. long per 10 ft of a lane.
      d. No clumps and/or other foreign objects greater than 1-1/2 in. in diameter.
      e. No transverse ripples or joints with greater than a 1/4 in. ridge, bump or depression as measured with a 10 ft straightedge.
      f. No longitudinal streaks with greater than a 1/4 in. ridge, bump or depression, as measured with a 10 ft straightedge.
   2. Other. Submit a proposal for approval for other correction methods not listed above.

D. Make tie-ins at entrances and connecting roads as directed.

E. Maintain active access control at intersections and entrances. When it is necessary to open to traffic early, lightly sand the surface using the same aggregate as in the mix. Remove excess aggregate from the roadway in curb and gutter sections as required. Broadcast clean aggregate used in the seal treatment over the mix at intersections and/or entrances for temporary access as directed. Repair traffic-damaged asphalt emulsion seal at no additional cost.

F. Place temporary pavement markings as specified in Section 01 50 00 after the mix has cured and as directed. Place permanent pavement markings, including thermoplastic pavement markings, at least seven days after curing. Open the roadway to traffic within one hour after placement unless otherwise directed.

END OF SECTION 32 01 13.75

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SECTION 32 12 16 – ASPHALT PAVING AND CRACK SEALING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes hot mix asphalt (HMA) for bridge approaches and tack coat.

B. Work under this Section shall also consist of installing hot applied pourable sealant to seal joints or cracks in bituminous surfaces. Furnish all labor, material, and equipment necessary to complete the work according to the contract.

C. Repair flexible pavements by removing part or all of the section of the existing pavement and replace with asphalt paving material. The locations and extent of the repairs will be as specified on the plans or as directed by the CO.

D. Partial Depth Patching (PDP). PDP consists of removing areas of unsound pavement up to 50 percent of the pavement thickness and replacing with an asphalt mix. The pavement thickness is defined as the thickness of all bound materials in the pavement structure including asphalt mix, and any other asphalt modified material.

1.3 SUBMITTALS

A. Product Data for the following:

1. Asphalt, aggregate, asphalt binder, asphalt mix design, crack sealant or job mix formula.

B. Asphalt mix design submittal shall be submitted in writing by the Contractor at least 30 days prior to the start of paving operations and shall include as a minimum:

1. Percent passing each sieve size.
2. Percent of asphalt binder.
3. Performance graded asphalt binder certified test results and Material Certificate certifying the PG grade, including source and location.
4. Mixing temperature.

5. Compaction temperature.
6. Percent anti-stripping additive.
7. Maximum specific gravity(density) as determined by AASHTO T 209.

PART 2 - PRODUCTS

2.1 AGGREGATES

A. General: Use materials and gradations that have performed satisfactorily in previous installations.

B. Coarse Aggregate: ASTM D 692, sound; angular crushed stone, crushed gravel, or cured, crushed blast-furnace slag.

C. Fine Aggregate: ASTM D 1073 sharp-edged natural sand or sand prepared from stone, gravel, cured blast-furnace slag, or combinations thereof.

1. For hot-mix asphalt, limit natural sand to a maximum of 20 percent by weight of the total aggregate mass.

D. Mineral Filler: ASTM D 242 rock or slag dust, hydraulic cement, or other inert material.

2.2 ASPHALT MATERIALS

A. Asphalt Binder: AASHTO M 320, PG 64-22.

B. Asphalt Cement: ASTM D 3381 for viscosity-graded material, ASTM D 946 for penetration-graded material.

C. Cutback Prime Coat: ASTM D 2027, medium-curing cutback asphalt, MC-30.

D. Emulsified Asphalt Prime Coat: ASTM 977 emulsified asphalt, or ASTM D 2397 cationic emulsified asphalt, slow setting, diluted in water, of suitable grade and consistency for application.

E. Tack Coat: ASTM D 977 emulsified asphalt, or ASTM 2397 cationic emulsified asphalt, slow setting, diluted in water, of suitable grade and consistency for application.

F. Fog Seal: ASTM D 977 emulsified asphalt, or ASTM D 2397 cationic emulsified asphalt, slow setting, factory diluted in water, of suitable grade and consistency for application.

G. Water: Potable.

H. Undersealing Asphalt: ASTM D 3141; pumping consistency.

2.3 HOT APPLIED POURABLE SEALANT: Sealant material shall meet the requirements of classification Type II according to D6690 as modified by MSMT 404. The manufacturer shall furnish certification to verify that the material and work complies with the applicable

specifications and includes the actual test results to confirm the statement. Manufacturer's recommendations regarding heating and pouring temperatures will be used when testing these materials. If a range of temperatures is recommended, the midpoint shall be used as the pour point.

2.4 MIXES

A. Hot-Mix Asphalt: Dense-graded, hot-laid, hot-mix asphalt plant mixes designed according to procedures in AI MS-2, "Mix Design Methods for Asphalt Concrete and Other Hot-Mix Types"; and complying with the following requirements:

1. Provide mixes with a history of satisfactory performance in geographical area where Project is located.

Base Course: Asphalt Base Course, Superpave, 0.75 inches PG64S-22, LVL 2

2. Surface Course: Asphalt Surface Course, Superpave, 0.375 inches PG64S-22, LVL 2.

PART 3 - EXECUTION

3.1 GENERAL

A. Provide alternate routes around closed or obstructed traffic ways.

B. Where HMA is placed in areas not retained by curb faces, walls, and other vertical surfaces, the closed edges of the asphalt concrete shall be compacted to meet the same density requirements as the other asphalt surfaces.

C. Where a new asphalt surface joins an existing asphalt surface, tack coat shall be applied to the existing surface at the rate of 0.1 gallons per square yard. Fine building sand shall be swept into the joint to function as filler. Joints shall be trimmed to form near vertical surfaces and neat lines prior to asphalt placement.

D. HMA lifts shall be no more than 2-inches thick. If more than one lift is required, lift thickness shall be adjusted to create equal depth lifts.

3.2 PREPARATION

A. Soil subgrades should be proof-rolled with a loaded dump truck or heavy compactor to verify density. Any areas of yielding subgrade disclosed during this proof-rolling operation should be overexcavated and replaced with a suitable structural fill material.

B. The upper 2 feet of soils underlying pavement section should be compacted to at least 95 percent, and all soils below 2 feet should be compacted to at least 90 percent (based on ASTM D-1557).

C. The subgrade and base course material shall be compacted to at least 95 percent of the Modified Proctor maximum dry density (ASTM D-1557).

D. Contractor shall be responsible for protection of the subgrade.

E. Surface preparation
   1. Clean the existing surface of loose material, dirt, or other deleterious material by approved methods. Apply an asphalt tack coat to contact surfaces of pavements, curbs, gutters, manholes, and other structures.

3.3 EXISTING PAVEMENT

A. Complete all repairs on the same day in which excavation is completed. Do not leave open excavated areas at the end of the workday.

3.4 REMOVAL OF PAVEMENT FOR PARTIAL DEPTH PATCHING (PDP)

A. Remove existing pavement by milling, grinding, or saw cutting to the specified depth. Maintain square vertical faces after removal.
   1. If concrete is encountered during removal, limit the depth of the patch to the top elevation of the Portland Pavement Cement (PCC) pavement.
   2. For PDP of composite pavements, protect the PCC from damage during removal of the asphalt mix.
   3. When the material at the bottom of the PDP is determined to be unsuitable, remove the unsuitable material until sound material is encountered.
   4. When any PCC present in a composite pavement is determined to be unsuitable, follow the removal and replacement procedures for a FDP.
   5. Remove all loose and foreign materials before placing the patch, then treat all spalled cracks and joints by tack coating, filling and tamping with asphalt.

3.5 REMOVAL OF PAVEMENT FOR FULL DEPTH PATCHING (FDP)

A. Make a perpendicular saw cut full depth around the perimeter and remove the existing pavement to the top of the aggregate base. Maintain square vertical faces after saw cutting.

3.6 MILLING FOR PARTIAL DEPTH PATCHING

A. Equipment
   1. Milling machine shall meet the following requirements:
      a. Self-propelled.
      b. Sufficient power, traction, and stability to accurately maintain depth of cut.
      c. Capable of removing the pavement thickness to provide profile and cross slope.
      d. System to effectively limit dust and other particulate matter from escaping removal operations.
      e. Loading system or adequate support equipment to completely recover milled material at removal rate.

B. GENERAL

1. Mill the surface to conform to 3.9.A.
2. Use a sweeper immediately behind the milling operations to remove and completely recover loose material. Minimize the escape of dust into the air by misting. Dispose of recovered milled material in a manner consistent with state and local regulations.
3. Before opening to traffic, patch defects in milled surface according to the CO.

3.7 WEATHER LIMITATIONS

A. Place asphalt concrete mix on a dry, unfrozen surface when the air temperature in the shade is above 40 degrees F and rising. For HMA, conform to Table 2.

Table 2

Compacted Lift Thickness	**< 2 inches**	**2 – 3 inches**
Road Surface Temperature, Degrees F	**Minimum Lay-Down Temperature, Degrees F**	
<35	Do not pave	Do not pave
35 – 39.9	Do not pave	Do not pave
40 – 49.9	Do not pave	285
50 – 59.9	295	280
60 – 69.9	285	275
70 – 70.9	280	270
80 – 89.9	270	265
≥90	265	260

Do not heat the asphalt concrete mix above the temperature specified in the approved asphalt concrete mix design.

3.8 HAULING

A. Use vehicles with tight, clean, and smooth metal beds for hauling asphalt concrete mixes.

B. Coat the beds with an approved material to prevent the asphalt concrete mix from adhering to the beds. Do not use petroleum derivatives or other coating material that contaminates or alters the characteristics of the mix. Drain the bed before loading.

C. Equip each truck with a canvas cover or other suitable material of sufficient size to protect the asphalt concrete mix from the weather. When necessary to maintain temperature, use insulated truck beds and securely fastened covers. Provide access ports or holes for checking temperature of asphalt concrete mix in the truck.

3.9 PLACING AND FINISHING

A. Do not use mixes produced from different plants unless the mixes are produced according to the same job mix formula (JMF), use material from the same sources, and are approved.

B. Spread and finish each course by hand raking, screeding, or by other approved methods.

3.10 COMPACTING

A. Thoroughly and uniformly compact the asphalt surface by rolling. In places inaccessible to rollers, use alternate equipment approved by the CO. Do not cause cracking, shoving or undue displacement.

B. Monitor the compaction process with nuclear density gauges calibrate according to the ASTM D2950 calibration section within 6 months before use. Check the standard and reference on each day of use according to the ASTM D2950 standardization and reference check sections. Compact to at least 91.0 percent of the maximum specific gravity (density) determined in 2.1.A/B.

C. Continue compaction until surface marks are eliminated and cracks are sealed.

3.11 JOINTS, TRIMMING EDGES, AND CLEANUP

A. Make transverse joints vertical to the depth of the new pavement at connections to existing pavements and previously placed lifts. Form transverse joints by cutting back the previous run to expose the full-depth course.

B. Apply an asphalt tack coat to the edge of both transverse and longitudinal joints according to 3.13.

C. Place the asphalt concrete mix as continuously as possible. Do not pass rollers over an unprotected edge of freshly laid asphalt concrete mix.

D. Dispose of material trimmed from the edges and other discarded asphalt concrete mix in a manner consistent with state and local regulations. Asphalt material may be considered hazardous waste. Submit copies of the disposal permits.

3.12 TACK COAT

A. Equipment
   1. Asphalt distributor shall have the following:
      a. Heater for uniformly heating the asphalt;
      b. Positive controls including tachometer, pressure gauge, volume measuring device, or calibrated tank to uniformly deposit asphalt over the full width within 0.02 gallons per square yard of the required rate; and
      c. Thermometer for measuring asphalt temperature in the tank.

B. Surface Preparation
   1. Clean the existing surface of loose material, dirt, or other deleterious material by approved methods. When the surface is concrete, remove excess joint and crack filler.

C. Weather Limitations
   1. Apply asphalt tack only when the following apply:
      a. Surface is dry and unfrozen;

b. Ambient air temperature is above 40°F and rising; and
c. Weather is not foggy and rainy.

3.13 PATCH CONSTRUCTION

A. Furnish equipment and perform placement, compaction, and quality control procedures as specified. Manual placement of the asphalt patches is permissible. Thoroughly clean and tack the exposed vertical surface of adjacent pavement prior to placing the asphalt patch as specified. Patches in excess of 50 ft in length and 10 ft or greater in width shall have the final riding surface placed by a paver. Lower lifts may be placed by a paver or other methods as necessary. Do not place asphalt patches on a frozen base.

3.14 PATCH PLACEMENT

A. Maintain lift thickness in conformance with the following:

ASPHALT LIFT THICKNESS		
MIX DESIGNATION (mm)	**MINIMUM (in.)**	**MAXIMUM (in.)**
0.375	1.0	2.0
0.500	1.5	3.0
0.750	2.0	4.0
1.000	3.0	5.0
1.500	4.0	6.0

3.15 PATCH SURFACE CHECKS

A. Have an approved 10 ft straightedge available as directed. The patch surface, after final compaction, shall be sufficiently smooth and true to the established line and grade. Test the surface with the straightedge in the longitudinal and transverse direction immediately behind the final roller. The tested surface shall not deviate by more than 3/16 in.

B. Correct any portions that deviate by more than 3/16 in. by removal and replacement or by diamond grinding at no additional cost.

C. Recheck all corrected pavement sections, including any additional transverse paving joints created, to determine if the sections meet specifications.

3.16 HOT APPLIED POURABLE SEALANT

A. Routing
1. Rout, clean, and seal cracks in a continuous operation. Do not allow traffic to close or damage routed cracks.

   Rout ⅛- to ½-inch (3- to 13-millimeter) wide cracks to produce vertical, intact walls and a flat bottom with a reservoir centered over the crack. Make the reservoir two to three

times the width of the crack. Rout cracks to a depth of ½ to ¾ inches (13 to 19 millimeters).

B. Cleaning
1. Prevent debris from entering waterways, travel lanes open to public traffic, or areas designated not to be disturbed. Remove dirt, dust, and other deleterious material from the crack walls and cavity using a stream of air or other approved methods. Blow or brush dry material off the pavement surface.

C. Sealing and Filling
1. Dry the crack surfaces with the hot air lance before sealing or filling. Do not seal or fill cracks when the pavement surface temperature is below 40 °F and weather conditions are rainy or foggy.
   a. Sealing (routed cracks or cracks averaging ¼ to 1 inch wide)
      1) Submit a copy of and adhere to the manufacturer's recommendations for heating and applying the hot applied crack material. Heat the material to pouring temperature in a heating kettle and continuously agitate the material.
      2) Discard sealant when:
         a) Heated above the safe heating temperature recommended by the manufacturer;
         b) Held at pouring temperature for more than 12 hours;
         c) Reheated more than once;
         d) Not consistent or uniform in appearance.
      3) Warm and dry the crack surfaces using a hot-compressed air lance if the pavement temperature is lower than 50 °F (10 °C) or moisture is present. Keep the lance moving to prevent burning the pavement surface. Place and finish the material within 5 minutes after heating the pavement surface with the lance. Use an application wand to place material in each crack from the bottom up. Insulate the wand to maintain pouring temperature while placing material. Return the wand to the heating kettle immediately after sealing each crack. Use a squeegee or screed to strike off the material.
   b. Filling (cracks averaging more than 1 inch wide)
      1) Fill each crack with an asphalt mix according to Section 2.4. Use a squeegee, screed, or other suitable equipment to force the mix into the crack. Fill each crack flush with the pavement surface and compact the asphalt mixture.
2. Do not allow traffic on sealed or filled cracks until the sealant or filler has cured or is treated with debonding material recommended by the manufacturer and approved by the CO.

3.17 FIELD QUALITY CONTROL TESTING

A. Placement temperature
1. Sample temperature of first load and as determined by the CO thereafter.
2. Sampling shall occur in hauling vehicle before dumping.

B. Density Testing
1. Take nuclear gauge density readings.
   a. Density testing shall be in accordance with AASHTO T 166.

b. Sampling frequency shall be one per 15 tons or as directed by CO.
c. Sample in-place after compacting.

C. Monitor the compaction process with nuclear density gauges and compact according to:
1. The lower specification limit is 91.0 percent of the maximum specific gravity (density) determined according to AASHTO T 166 and AASHTO T 209.
2. The percent compaction will be determined using the average maximum specific gravity (AASHTO T 209) from all samples tested each day.

3.18 QUALITY CONTROL / QUALITY ASSURANCE

A. The contractor is responsible for performing Quality Control monitoring and/or testing. Take samples and perform tests as described in Section 3.18.

END OF SECTION 32 12 16

HARPERS FERRY NATIONAL HISTORICAL PARK – 242454

SECTION 32 17 23 - PAVEMENT MARKINGS

PART 1 - GENERAL

1.1 SUMMARY

A. As indicated on the plans, remove pavement markings by sandblasting or other methods that do not damage the surface or texture of the pavement, as approved by the CO.

B. Replace pavement markings per requirements in Part 2 – Products, as approved by the CO.

C. As indicated on the plans, furnish and install epoxy markings, as approved by the CO.

D. As indicated on the plans, furnish and install temporary retroreflective raised pavement markings, as approved by the CO.

E. Prior to microsurfacing all parking areas, measure all parking stalls and provide a sketch with dimensions of stall widths, curbs, and aisle widths and provide to the CO. Use NPS provided guidance to develop a plan to maximize the number of parking spaces using minimum widths.

1.2 REFERENCE STANDARDS

A. American Association of State Highway and Transportation Officials (AASHTO):

1. AASHTO M 247 – Standard Specification for Glass Beads Used in Pavement Markings
2. AASHTO M 248 – Standard Specification for Ready-Mixed White and Yellow Traffic Paints

B. ASTM International (ASTM):

1. ASTM D126 – Standard Test Methods for Analysis of Yellow, Orange, and Green Pigments Containing Lead Chromate and Chromium Oxide Green
2. ASTM D476 – Standard Classification for Dry Pigmentary Titanium Dioxide Products
3. ASTM D711 – Standard Test Method for No-Pick-Up Time of Traffic Paint
4. ASTM D713 – Standard Practice for Conducting Road Service Tests on Fluid Traffic Marking Materials
5. ASTM D1652 – Standard Test Method for Epoxy Content of Epoxy Resins
6. ASTM D1729 – Standard Practice for Visual Appraisal of Colors and Color Differences of Diffusely-Illuminated Opaque Materials
7. ASTM D2074 – Standard Test Methods for Total, Primary, Secondary, and

Tertiary Amine Values of Fatty Amines by Alternative Indicator Method

8. ASTM D2240 – Standard Test Method for Rubber Property – Durometer Hardness

9. ASTM D4060 – Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser

10. ASTM D4280 – Standard Specification for Extended Life Type, Nonplowable, Raised Retroreflective Pavement Markers

11. ASTM D4383 – Standard Specification for Plowable, Raised Retroreflective Pavement Markers

12. ASTM D4505 – Standard Specification for Preformed Retroreflective Pavement Marking Tape for Extended Service Life

13. ASTM D4592 – Standard Specification for Preformed Retroreflective Pavement Marking Tape for Limited Service Life

14. ASTM E1347 – Standard Test Method for Color and Color-Difference Measurement by Tristimulus Colorimetry

1.3 SUBMITTALS

A. Shop Drawings:

1. See Specification Section 01 33 23 for requirements for the mechanics and administration of the submittal process.
2. Product technical data including:
   a. Acknowledgement that products submitted meet requirements of standards referenced.
   b. Manufacturer's installation instructions.
   c. Manufacturer's data sheet on each product.
3. Parking lot area survey sketches and parking stall maximization plans.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Epoxy Markings: Furnish a 2-component, 100 percent solids type system for hot-spray application conforming to the following:

1. Pigments: Component A. Percent by mass.

   a. White:

Titanium dioxide (TiO_2), ASTM D476, Type IV	18 percent min.
Epoxy resin, ASTM D1652	75 to 82 percent

   b. Yellow:

Chrome yellow ($PbCrO_4$), ASTM D126	23 percent min.
Epoxy resin, ASTM D1652	70 to 77 percent

c. Non-Lead Yellow:

Titanium dioxide (TiO_2), ASTM D476, Type II and Type III	14 percent min.
Organic yellow	7 to 8 percent
Epoxy resin, ASTM D1652	75 to 79 percent

2.	Epoxy content: Component A. Mass per epoxy equivalent, ASTM D1652	Manufacturer's target value ±50
3.	Amine value: Component B, ASTM D2074	Manufacturer's target value ±50
4.	Toxicity: Toxic or injurious fumes at application temperature	None

5. Color: 15 mil (0.38 millimeter) film thickness specimen (cured).

a. White, ASTM D1729	Match FHWA standard highway white
b. Yellow, ASTM D1729	Match FHWA standard highway yellow

6. Directional reflectance: (Without glass beads)

a. White, ASTM E1347	84 percent relative to magnesium oxide standard
b. Yellow, ASTM E1347	55 percent relative to magnesium oxide standard

7. Drying time: 15-mil (0.38-millimeter) film thickness with glass beads (cured).

a. Laboratory at 72 °F (22 °C), ASTM D711	30 minutes max. to no-pick-up condition
b. Field at 77 °F (25 °C), viewed from 50 ft (15 m), ASTM D713	10 minutes max. to no-tracking condition

8.	Abrasion resistance: Wear index with a CS-17 wheel under a 35.3 oz (1000 g) load for 1000 cycles, ASTM D4060	82 max.
9.	Hardness: Type D hardness with 72-hour cure at 72 °F (22 °C), ASTM D2240	75 to 100

B. Pavement Markers:

1. Non-plowable, extended life, retroreflective, pavement markers: Conform to ASTM D4280.

2. Plowable, retroreflective, pavement markers: Conform to ASTM D4383.

3. Non-reflective pavement markers: Furnish ceramic, plastic, or thermoplastic markers that are 4±⅛ inch (100±3 millimeters) in diameter at the base, 11/16±1 /16 inch (17.5±1.6 millimeters) in height, and where the base of the marker does not deviate from a flat plane by more than 1 /16 inch (1.6 millimeters).

Furnish markers of uniform composition, without surface irregularities, cracks, checks, chipping, peeling, spalling, crazing, and other physical damage interfering with appearance, application, or durability. Furnish precast markers in the form of a single based spheroidal segment terminating in a rounded or squared shoulder.

C. Temporary Pavement Markings:

1. Preformed retroreflective tape: Furnish 4-inch (100-millimeter) wide tape conforming to ASTM D4592, Type I (removable).

2. Pavement markers: Furnish temporary pavement markers conforming to ASTM D4280 or flexible pavement markers not exceeding approximately 2 inches (50 millimeters) high, with retroreflective tape on both faces of the vertical section, capable of retroreflecting light from opposite directions, and with an adhesive on the base.

3. Traffic paint: Conform to AASHTO M 248, Type N or Type F traffic paint. Use volatile organic content (VOC) compliant solventborne paint with a VOC of 0.134 ounces per gallon (150 grams per liter) or less. Yellow pigment must be without lead, chrome, and other heavy metals as defined by the EPA.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Replacement of all pavement markings are in-kind. Layout and note all pavement marking material type, color, and location prior to removal.

B. For each parking area, use the contractor produced existing parking lot survey for reestablishment or parking stall maximization plan as approved by the CO.

C. Placement of permanent pavement markings after surface treatment cure time as specified in Section 32 01 13.65.

D. Install products in accordance with manufacturer's instructions.

E. Do not install pavement markings when the ambient temperature is below 45 DEG F or per the manufacturer’s requirements.

END OF SECTION 32 17 23

HARPERS FERRY NATIONAL HISTORICAL PARK – 242454

SECTION 34 20 00 - MAINTENANCE OF TRAFFIC

PART 1 - GENERAL

1.1 DESCRIPTION

A. Section Includes:

1. Requirements for maintenance of traffic throughout the Project construction areas.

B. Related Sections include but are not necessarily limited to:

1. Division 00 - Procurement and Contracting Requirements.
2. Division 01 - General Requirements.

C. All requirements for maintenance of traffic shall be in accordance with the latest edition of the Manual on Uniform Traffic Control Devices and all reference documents.

D. This work consists of controlling and protecting public traffic adjacent to and within the project. See FAR Clause 52.236-13 Accident Prevention.

E. Definitions:

1. Contracting Officer (CO)

2. FHWA – Federal Highway Administration

F. Completely coordinate with work of other trades.

G. Temporary center line markings during surface treatment cure time shall be furnished and installed in accordance with Section 715.040 – Temporary Pavement Markings of West Virginia Department of Transportation.

1.2 QUALITY ASSURANCE

A. Reference Standards:

1. Manual on Uniform Traffic Control Devices (MUTCD)
2. National Cooperative Highway Research Program (NCHRP)
   a. NCHRP 350 – Recommended Procedures for the Safety Performance Evaluation of Highway Features
3. Manual for Assessing Safety Hardware (MASH)

4. American Association of State Highway Transportation Officials (AASHTO)
   a. AASHTO M 247 – Standard Specification for Glass Beads Used in Pavement Markings
5. American Society for Testing and Materials (ASTM)
   a. ASTM A 36 – Standard Specification for Carbon Structural Steel
6. MDSHA Book of Standards

1.3 SUBMITTALS

A. Traffic Control Plans
   1. Provide a traffic control plan for each construction location addressing proposed operations and materials to take place a minimum of 30 days prior to beginning the associated construction activities. This plan shall address location of warning signs, type of signs, placement of flaggers, placement of cones/fencing, barricades, duration of anticipated delays, detour routes, use of pilot cars, etc. This plan shall address pedestrian, cyclist and vehicle safety within the construction zone. Traffic control plans to follow the West Virginia Department of Transportation Manual on Temporary Traffic Control for Streets and Highways. Address contingencies in the submitted plan. Deviations or modifications from the submitted traffic control plan may be made to address field conditions if approved by the CO. Limit inconvenience to the traveling public as much as practicable and account for the safety of both the traveling public and project personnel.

B. Certification of work zone traffic control devices

PART 2 - PRODUCTS

2.1 MATERIALS

C. Use temporary traffic control devices that meet the testing requirements of the *Manual for Assessing Safety Hardware* (MASH) or NCHRP-350, test level 3. Submit certification of compliance for work zone traffic control devices that certifies each type of traffic control device in use or to be used on the project meets retro-reflectivity and NCHRP-350 or MASH requirements.

   A. Use temporary traffic control devices and flagger paddles fabricated with retroreflective sheeting in accordance with following table:

Traffic Control Device	Specification	Type
Any sign size on portable mounts; signs mounted on single posts (sign faces up to 40 sf); signs mounted on two posts (sign faces up to 59.9 sf); signs mounted on barricades (sign faces up to 20 sf); Barricade; Portable Barricade; Portable vertical panels; and all other work zone sign faces (e.g. flag person paddles, pilot car signs, etc.)	ASTM D4956	XI, X, IX, VIII, VII or VI
Hinged flexible guide posts 36" height and all cones and tubular markers	ASTM D4956	III or V
Plastic drums	ASTM D4956	IV or higher

B. Drums, Cones, and Tubular Markers - Use drums, cones, 42-inch cones, and tubular markers that are plastic and predominantly orange. Use drums and 42-inch cones that have alternating stripes, two orange and two white with orange on top, that are retroreflective and equal width.

C. Signs - Use the same sign sheeting material for each sign face on any sign installation. If hinged signs are used, ensure that the hinge does not block any part of the sign message. Permanent sign posts that meet MASH or NCHRP - 350, test level 3 may be used as approved by the CO. Use surfaced, four-sided (S4S), untreated timber for sign posts.

D. Sign Panels – Construct Sign Panels of either Plywood or Aluminum.

E. Plywood sign panels. At least 2 in, medium density, exterior grade B-B, overlaid fir plywood sheets meeting the requirements of the Product Standards PS1-95 for construction and industrial plywood published by the U.S. Department of Commerce.

F. Aluminum sign panels. Sheet aluminum 0.125 in or 0.080 in thick. Aluminum alloy in accordance with the Aluminum Association alloy AA5052-H38 or AA60061-T6. Other materials meeting MASH or NCHRP-350.

G. Backing Angles – Use sign panels backed with 2in x 2in x 3/16 in galvanized steel or aluminum backing angles and mounted to the post with 2in x 2in x 3/16 in galvanized steel clip or aluminum angles except that sign panels 48 in x 60 in or smaller may be backed as follows:

H. Aluminum sign panels 0.080 in thick and backed with metal backing angles or 2 in × 4 in dimensional lumber.

1. Aluminum panels 0.125 in thick and unbacked.
2. Plywood panels 2in thick and unbacked

Use galvanized bolts, locknuts, and washers that meet the requirements of ASTM A153 or ASTM B63, to attach the sign panels to the backing members. Use locknuts that have a fiber or nylon insert. Use elevator bolts with heads flush with the surface of the sign panel.

I. Striping Paint and Glass Beads - Use commercially manufactured yellow or white highway striping paint for temporary pavement markings, and apply it without dilution. Make the painted pavement markings reflective by dropping or spraying glass beads onto the wet paint. Use retroreflective beads that meet the requirements

of AASHTO M 247, Type I.

J. Flags - Use flags 24 in square, except on signs use flags 16 in square or larger. Use flags with weighted corners or reinforcing to keep the flag extended away from the post. Do not use mesh flags.

K. Portable Plastic Water Filled Barrier - Use portable, longitudinal, crashworthy plastic barrier that meets the following requirements:
   1. MASH or NCHRP-350, test level 3.
   2. Approximate dimensions of 78 in × 21 in × 32 in (length × width × height).
   3. White and orange striped in accordance with the MUTCD.
   4. Provide a crashworthy end terminal, or barrier that acts as its own crashworthy end treatment, or flare barrier outside the clear zone.

L. Temporary concrete Barrier and End Treatment - Provide temporary concrete barrier and terminals meeting the requirements of the contract. If the barrier is to remain the property of the contractor and does not have to connect to state furnished barrier, it is acceptable to furnish another temporary concrete barrier type meeting the requirements of MASH or NCHRP-350, test level TL-3 with a maximum dynamic deflection of 4 ft. Furnish FHWA letter of acceptance for the barrier type and connection detail and evidence of maximum

dynamic deflection to the CO. Provide crashworthy terminals where terminated within the clear zone or flare outside clear zone.

Use bidirectional delineators that match the color of the adjacent edgeline pavement stripe. Attach delineators to the barrier and terminal in accordance with the manufacturer's recommendations.

M. Sequential Chevron - Use portable, wheel-mounted units that meet the requirements of the MUTCD and provide or are capable of all the following:
   1. A 48 in × 96 in panel.
   2. Flash in both the left and right directional modes.
   3. An automatic dimmer switch for reducing the nighttime illumination level by 50 percent or other levels as needed.
   4. A manual override backup switch.

Replace units that are not reliable or do not provide the necessary constant light source.

Maintain sequential chevrons in working order at all times. Chevrons may be powered by a generator on site, utility power, or solar power. Ensure that the power source is able to maintain constant operation. Generator power will be allowed only as approved by the CO.

N. Portable Message Sign Panel. Portable message sign panel shall be furnished as a device fully self-contained on a portable trailer, capable of being licensed for normal highway travel, and shall include leveling and stabilization jacks. The panel shall display a minimum of three eight character lines. The panel shall be a dot matrix type with an LED legend on a flat black background. LED signs shall have a pre-default message that activates before a power failure. The sign shall be solar powered with independent back up battery power. The sign shall be capable of 360 degrees rotation and shall be able to be elevated to a height of at least five feet above the ground

measured at the bottom of the sign. The sign shall be visible from one half mile under both day and night conditions. The message shall be legible from a minimum of 750 feet. The sign shall automatically adjust its light source to meet the legibility requirements during the hours of darkness. The sign enclosure shall be weather tight and provide a clear polycarbonate front cover.

Solar powered message signs shall be capable of operating continuously for 10 days without any sun. All instrumentation and controls shall be contained in a lockable enclosure. The sign shall be capable of changing and displaying sign messages and other sign features such as flash rates, moving arrows, etc.

Each sign shall also conform to the following:

1. In addition to the onboard solar power operation with battery back-up, each sign shall be capable of operating on a hard wire, 100-110 VAC, external power source.
2. All electrical wiring, including connectors and switch controls necessary to enable all required sign functions shall be provided with each sign.
3. Each sign shall be furnished with an operating and parts manual, wiring diagrams, and trouble-shooting guide.
4. The portable message sign shall be capable of maintaining all required operations under inclement weather conditions.
5. Each sign shall be furnished with an attached license plate and mounting bracket.
6. Each sign shall be wired with a 7-prong male electric plug for the brake light wiring system.

O. Submit request for substitutions to the CO for approval.

PART 3 - EXECUTION

3.1 ACCOMMODATING TRAFFIC DURING WORK

A. Accommodate traffic according to the MUTCD, approved contract traffic control plan, and this Section. Perform work in a manner that ensures the safety and convenience of the public and the natural environment. Accommodate public traffic on roads adjacent to and with the project until the project is accepted.

B. Construction Flagging: Flaggers shall be provided at each end of project work zones during the entire period that traffic restrictions, including lane closures or encroachments into the traveled way, are in place. Provide supplemental flagging for any work activity as directed by the CO.

C. If traffic or workers may be affected, do not begin work until the necessary construction traffic control devices are in place and approved by the CO.

D. When placing, maintaining, and removing traffic control devices, provide the traffic control necessary for the safety of the public and the workers, at no additional cost to

the government.

E. Schedule work to minimize the number and duration of required traffic control set-ups. Whenever possible, sequence work operations so that traffic control can be removed at night to allow full use of the roadway.

F. Installation constitutes acceptance of substrates and responsibility for system performance.

3.2 MAINTAINING ROADWAYS DURING WORK

A. Construct and remove roads as required by the approved traffic control plan

B. Snow removal to facilitate the work is the Contractor's responsibility. Snow removal to provide public access is the responsibility of the maintaining agency and will be performed at the maintaining agency's discretion. Allow the maintaining agency access to perform show removal.

C. Maintain a dust-free traveled way such that visibility and air quality are not affected and a hazardous condition is not created.

D. Remove accumulations of soil and other material from traveled way

E. Do not allow water to pond on the traveled way

F. Maintain the roadway, detours, and diversions in a safe and acceptable condition. If corrective action is required and the corrective actions is not taken immediately, the condition may be corrected and the cost of corrective action deducted from monies due the Contractor.

G. Prior to leaving the work site at the end of the day, review the site with the CO and document all the Traffic Control devices are in place and functional as per the approved traffic control plan.

H. Completely cover or remove existing traffic control devices conflicting with construction traffic control, as approved by the CO, and return them to their previous locations, as necessary, at the completion of the work. Ensure the method of cover does not damage or puncture the existing sign. Remove construction traffic control devices during seasonal suspensions and when not in use or needed.

I. Protection of in-place conditions:

3.3 MAINTAINING ROADWAYS DURING NON-WORK PERIODS

A. Maintain roadways and traffic control for public traffic during periods when work is not in progress.

3.4 LIMITATIONS ON CONSTRUCTION OPERATIONS

A. When the roadway is open to public traffic, restrict operations as follows:

B. Operate equipment in the direction of traffic, where practical

C. For shoulder drop-offs of 3 inches or less, provide "Low Shoulder" warning signs. For shoulder drop-offs in excess of 3 inches, provide a 1V:3H fillet with Shoulder Drop off warning signs. Complete the construction of shoulder adjacent to traffic lanes to the same elevation within 14 days

D. Provide minimum lane widths of 10 feet. Use barricades, drums, or other

acceptable devices to delineate traffic lanes through areas where the edge of pavement or intended path has been obliterated by construction operations

E. Locate staging areas at least 30 feet from the traveled way or behind acceptable traffic barriers. Obtain approval of the location and access to staging areas. Store unused traffic control devices at staging areas.

F. Park equipment at least 30 feet from the traveled way or behind acceptable traffic barriers.

G. Provide parking areas for employee's personal vehicles in approved areas

H. Provide uninterrupted two-way communications between flaggers and also between flaggers and pilot cars unless flaggers are able to see each other and communicate. Use communications devices approved by the CO. Citizen band radios are unacceptable. Make communications devices available to the CO as necessary.

I. Where switching traffic to complete lane, provide adequate personnel and equipment to set or relocate traffic control devices.

J. Limit construction-caused delays to public traffic to a maximum of 15 minutes per passage through the project or as approved by CO.

K. Maintain existing guardrails, barriers, and bridge railings until removal is necessary for construction. Use a temporary barrier or appropriate channelizing devices while the guardrails and bridge rails are absent. Install permanent barriers, guardrails, and bridge rails as soon as possible to minimize risk to the public.

L. Perform work such that no more than one lane in either direction is restricted at any time.

3.5 NIGHTTIME OPERATIONS

A. Where night operations are permitted, submit a night lighting system for approval. Include the light types, locations, and the manner in which the lights will be moved. Submit the proposed system at least 4 days before use. Use an independent source other than vehicle headlights. Do not use incandescent lights. Furnish and install the approved system to illuminate the entire work area. Position the lights so they do not shine directly at motorists traveling from any direction. Provide lighting at each flagger location. Equip vehicles with an exterior flashing yellow dome light.

3.6 TRAFFIC CONTROL SUPERVISOR

A. Provide a traffic control supervisor. Furnish the traffic control supervisor's name, address, and 24- hour telephone numbers at the preconstruction conference. During the contract, including periods of suspensions and work stoppages, perform the following:

1. Implement the approved traffic control plan.
2. Coordinate traffic control operations, including those of subcontractors and suppliers.
3. Ensure the condition, position, and applicability of traffic control devices in use.
4. Immediately correct traffic control deficiencies.
5. Coordinate traffic control maintenance operations with the CO.
6. Coordinate and ensure that traffic control devices are furnished, installed,

maintained, removed, stored, replaced, relocated and cleaned as required by the CO. Ensure unused traffic control devices are properly handled and stored.

7. Conduct weekly traffic safety meetings for construction workers, and invite the CO to these weekly meetings.
8. Submit a weekly certification that inspections and reviews were conducted and that the traffic control devices meet contract requirements. Include the number and types of devices in use. Report with the weekly certification, changes or corrective actions taken to ensure the safe passage of public traffic through the project.
9. Inspect traffic control devices, including those in staging, storage, material sources and disposal areas as follows:
   a. Daily during daylight hours when daylight work is being performed
   b. Daily during hours of darkness when nighttime work is being performed
   c. Weekly during:
      1) Daylight hours and hours of darkness when work is suspended for periods of more than one week, except when the project has been shut down for the winter
   d. Additional inspections, day or night, as directed by the CO
   e. Submit reports of inspections in an acceptable format within 2 days.
10. Temporary flagging assistance is not permitted by the dedicated Traffic Control supervisor.

END OF SECTION 34 20 00

Appendix A

HARPERS FERRY NATIONAL HISTORICAL PARK – 242454

APPENDIX A – CONTACT LIST

Name	Phone Number	Email	Role
Tanya Gossett	202-302-3933	Tanya_Gossett@nps.gov	Harpers Ferry National Park Superintendent
Kevin McDonald	681-320-2026	kevin.a.mcdonald@wv.gov	West Virginia Division of Highways, District Development Engineer
Daniel Schaible	301-583-6281	Daniel_Schaible@nps.gov	NPS Project Coordinator
Mike Will	303-956-5054	Mike_Will@nps.gov	NPS DSC Project Manager
Bryant Gonsalves	303-618-5368	Bryant.Gonsalves@hdrinc.com	A/E Project Manager