DEMOLISH OBSOLETE STRUCTURES
GATEWAY NATIONAL RECREATION AREA

GATE 308613

PROJECT SPECIFICATIONS

NATIONAL PARK SERVICE (NPS)

OCTOBER 2025

DEMOLITION DOCUMENTS
NON-HISTORIC STRUCTURES

SECTION 00 01 07 - SEALS PAGE

1.1 DESIGN PROFESSIONALS OF RECORD

A. Landscape Architect:

Professional Certification. I hereby certify that these documents were prepared or approved by me and that I am a duly registered Professional Landscape Architect.

License No.: 003020

Expiration Date: April 30, 2027

DHM Design

10/24/2025

1.2 DESIGN PROFESSIONALS OF RECORD

A. Civil Engineer:

Professional Certification. I hereby certify that these documents were prepared or approved by me and that I am a duly registered Professional Engineer.

License No.: 110770-01

Expiration Date: November 30, 2027

Martin/Martin Inc.

10/24/2025

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GATE 308613

SECTION 01 11 00 - SUMMARY OF WORK

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes the following:

1. Work Covered by Contract Documents
2. Contractor Use of Site
3. Public Use of Site
4. Conduct of Operations
5. Work Restrictions
6. Special Demolition Requirements
7. Additional Reports

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. Project Location: 12 buildings located within the two units of Gateway National Recreation Area (GATE): Jamaica Bay Unit, New York; Staten Island Unit, New York. The following is a list of each building name, location and coordinates.

Non-Historic Structures

Jamaica Bay Unit (New York), Floyd Bennett Field (NSFB)

1. NSFB - 126 Storage Building, Floyd Bennett Field, Kings County, NY.
   GPS Coordinates 40°35'7.38"N 73°53'40.03"W
2. NSFB - 272 Gateway Environmental Study Center, Floyd Bennett Field, Kings County, NY.
   GPS Coordinates 40°35'3.67"N 73°52'45.85"W
3. NSFB - 273 Radar Building, Floyd Bennett Field, Kings County, NY.
   GPS Coordinates 40°36'2.38"N, 73°53'7.62"W
4. NSFB - 274 Generator Building, Floyd Bennett Field, Kings County, NY.
   GPS Coordinates 40°36'0.75"N 73°53'4.83"W

Staten Island Unit (New York), Fort Wadsworth (FWHB)

5. FWHB - 406 Gatehouse/Quarters, Fort Wadsworth, Richmond County, NY.
   GPS Coordinates 40°35'59.49"N 74° 3'37.72"W
6. FWHB - 435 Storage, Fort Wadsworth, Richmond County, NY.
   GPS Coordinates 40°35'51.96" N 74° 3'40.40"W
7. FWHB - T354 USPP Swat Office, Fort Wadsworth, Richmond County, NY.
   GPS Coordinates 40°36'5.75" N 74° 3'23.63"W

Staten Island Unit (New York), Great Kills (GK)

8. GK - Ranger Trailer, Great Kills, Richmond County, NY.
   GPS Coordinates 40°32'47.23" N 74° 7'26.65"W

Staten Island Unit (New York), Miller Field (MFB)

9. MFB - 3 Maintenance Office, Miller Field, Richmond County, NY.
   GPS Coordinates 40°34'17.42" N 74° 5'59.69"W
10. MFB - 4 Swamp White Oak Center, Miller Field, Richmond County, NY.
   GPS Coordinates 40°34'20.66" N 74° 6'6.24"W
11. MFB - 5 Garage, Miller Field, Richmond County, NY.
   GPS Coordinates 40°34'16.23" N 74° 6'9.56"W
12. MFB - 7 Pump House, Miller Field, Richmond County, NY.
   GPS Coordinates 40°34'16.07" N 74° 6'10.11"W

B. The Work consists of:

1. This item consists of the demolition and removal of the existing structure and all associated appurtenances, all contents within the building, hazardous material abatement, and erosion controls. The project site shall be left in a clean, orderly condition free of demolition debris, litter, and refuse.
2. Hazardous material reports have not been completed for all structures included in the contract documents. Refer to Part 1.9 of this Section for hazardous material reports appended to this package. Contractor is responsible for all additional hazardous material assessment and testing required. The following structures are not included in the hazardous material reports appended to this package:
   1. Jamaica Bay Unit (New York), Floyd Bennett Field (NSFB)
      1) NSFB - 106 Barn Owl Building, Floyd Bennett Field, Kings County, NY.
3. Existing utilities associated with the structures to be abandoned shall be investigated, capped and abandoned without permanently impacting downstream utility services. Contractor is responsible for utility locates.
4. Concrete slabs on grade, walks, curbs, and stoops to be abandoned in place unless noted otherwise on contract drawings.
5. Unless noted otherwise on contract drawings, concrete foundation walls, piers, and stairs over 12” above grade shall be cut flush with grade, removed and disposed of legally. Any remaining concrete basements floors shall be mechanically breached or cracked in two or more places to allow for drainage, backfilled, and seeded to natural conditions, flush with surrounding grade.
6. Site disturbance shall be limited to the minimum feasible to facilitate demolition. Areas disturbed by demolition shall be evenly graded to eliminate ruts, depressions, or mounds, and seeded per specifications.

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

1.3 GOVERNMENT-FURNISHED MATERIALS

A. None.

1.4 CONSTRUCTION CONTRACTOR USE OF SITE

A. General: Confine operations to work limits of project. Prevent damage to natural surroundings. Restore damaged areas outside work limits, repair or replace damaged trees and plants, at no additional expense to NPS.

1. Limits of work shown represent recommended work boundary including access and staging. Contractor to coordinate final limits of work, access, and staging with Contracting Officer prior to start of construction.

B. Staging Areas: Limit demolition sites to smallest feasible area. Carefully control ground disturbance and site management to prevent undue damage to vegetation, soils, and archeological resources, and to minimize air, water, soil, and noise pollution.

1. Consult with Contracting Officer and develop staging area standards and methods for determining standards.
2. Structures such as trailers, storage, field offices, sheds and locations must be approved by Contracting Officer.
3. Staging areas should be coordinated and approved by the Contracting Officer prior to any mobilization.
4. Locate construction equipment and material storage in previously disturbed areas near demolition site preferably on hard surfaces such as pavement.
5. Once demolition is complete, return staging areas to pre-demolition conditions.

C. Parking: Confine parking to staging areas or adjacent visitor parking.

D. Stockpiling: Confine stockpiling to staging area.

E. Preservation of Natural Features:
1. Prevent damage to natural surroundings by keeping all work and staging with the limits of work. Restore damaged areas, repairing or replacing damaged trees and plants, at no additional expense to the Government.
2. Contractor shall ensure that all equipment has been thoroughly washed and contains no offsite plant material and/or seeds prior to mobilizing at each site.
3. Provide temporary barriers to protect existing trees and plants and root zones.
4. Do not remove, injure, or destroy trees or other plants without prior approval.
5. Consult with Contracting Officer (CO) and remove agreed-on roots and branches that interfere with demolition.
6. Do not fasten ropes, cables, or guys to existing trees.
7. Exercise caution and carefully supervise excavating, grading, filling, and other demolition operations near trees to prevent damage.
8. Implement the following mitigation measures to minimize impacts of demolition activities:
    1. Intact native topsoil from the project area shall be retained whenever feasible. Should additional fill be needed, all fills must be of quality suitable for use in a National Park Unit. Any substructure fill should be tested/inspected to ensure radionuclides are not present in a concentration that decay will result in release of radon gas in a concentration that would be a health concern. Any fill materials required for the project must be obtained from a park-approved source. Such materials are to be clean of contaminants and free of exotic seeds and spores. Written verification of such should be provided to the CO and COR prior to delivery of material. On-site native soils should not be amended.
    2. Any new soils brought on site must be tested and meet New York State Department of Environmental Conservation standards for general fill (6 CRR-NY 360.13), per applicable project sites.
    3. Protect against erosion and topsoil depletion. Seed-free straw bales must be deployed for sediment/erosion control. Seed-free straw is required for compliance with Federal Noxious Weed Control Act and Executive Order 13112.

4. To minimize the potential for impacts to wetlands, equipment should be operated from the upland side(s) of the building.

F. Wildlife:

1. Do not intentionally disturb wildlife nesting, breeding, or other activities. If exterior project work will be implemented during the period of March 15 to September 1, park Natural Resource Stewardship must be contacted to conduct an inspection of the work area prior to initiating work to determine if there is any nesting activity that could be impacted by the project. If nest building begins, birds must not be harassed in any manner to deter nesting activity. Park approval is required prior to placement of any structures to deter osprey nesting and any such structure may only be put in place between September 2 and March 14.
2. It is the Contractor responsibility to check any bird nest on buildings and notify the Contracting Officer in writing. If nests are found, all work should be suspended in that building and no work should proceed until Park Natural Resource Stewardship approval is obtained. The contractor shall adhere to a seasonal restriction on the use of heavy construction equipment/machinery within 300 meters of any active osprey nest along the project limit of disturbance from April 1 through August 31 of each calendar year.

G. Bat Habitat Limitations and Demolition Sequencing – All Locations

1. Bat surveys for the threatened northern long-eared bats are scheduled for late spring.
2. The Contractor shall visually inspect for roosting and/or hibernating bats two to three days prior to demolition at buildings that are safe to enter and not a risk to human health and safety. This survey shall be conducted in coordination with the Park Biologist by an approved USFWS qualified Bat Surveyor. The following shall be implemented based on the results of the survey.
    1) If no bats or bat signs are found during the visual inspection, the buildings can be demolished or hazardous material abated at any time.
    2) If federally-listed bat or bat sign are detected during the building inspection demolition and/or hazardous material abatements shall be timed to either (1) occur over winter (November 1 through March 31, when federally listed bats are hibernating in caves) or (2) will require exclusion one week prior to demolition/abatement during the months of August and September. These activities shall be restricted to occur from August 15 through March 31 which is outside of the maternity season for federally listed bats. The bat pupping season extends from March 31 through August 15. Any hazardous material abatement that includes removal of doors, windows or similar potential openings to the structure shall include installation of temporary exclusionary devices to prevent bats from roosting in the structure.
    3) If a building's condition is determined to be a risk to human health and safety and cannot be visually inspected, the building will be prioritized for removal during the hibernation season (November 1 – March 31). If building demolition needs to occur before November 1- March 31, a visual inspection of the exterior combined with an emergence survey shall be conducted to determine if federally listed bats are potentially using the structure.
    4) Exclusion devices shall include but not be limited to plywood, board up, and/or netting to allow for exiting bat movements, but not allow bats to enter. Exclusion approach and technique shall be reviewed and approved by the CO.

H. Driveways and Entrances: Keep driveways and entrances serving premises clear and available to Government employees, and emergency vehicles at all times. Do not use for parking or storage of materials.

1. Utilize existing driveway access. If no paved access exists, Contractor shall coordinate an alternate route with the Contracting Officer.
2. Schedule deliveries to minimize use of shared driveways and entrances.
3. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
4. Limit staging to areas shown on contract drawings unless otherwise directed by the Contracting Officer.

I. Construction Camp: Establishment of a camp within the park will not be permitted.

J. Air and Water Pollution Control:

1. Minimize tailpipe emissions, do not leave construction equipment idling longer than necessary for safety and mechanical reasons. idling shall comply with New York City and New York State anti-idling laws.
2. Minimize construction dust by applying water to problem areas. Limit equipment to fenced project area to minimize soil disturbance and dust generation.
3. Take necessary reasonable measures to reduce air and water pollution with material or equipment used during demolition. Keep volatile wastes in covered containers.
4. All machinery containing fuels and oils shall have a spill kit available to immediately use in the event of a spill. In the event of a fuel or oil leak or spill, the work shall cease immediately, spill containment deployed, and Gateway NRA Dispatch (718) 354-4700 shall be called immediately.

K. Demolition Debris:

1. Demolition debris shall be collected in appropriate containers and controlled such that the forces of nature cannot spread it beyond the collection point.
2. All demolition debris and removed material shall be transported outside the park and properly disposed of at an approved off-site location(s) in accordance with federal, state, and local regulations.

L. Light Pollution: If lighting is proposed, the project shall comply with NPS and park lighting guidelines to reduce impacts to the night sky and wildlife. This will include, but is not limited to, warm color hue, low-lumens, and minimized glare. Fixtures shall be downward focused with full shielding. They shall have adaptive technology controls such as timers, motion detectors, hue adapters, and dimmers.

M. Wheel Ruts and Divots: Any wheel ruts, holes or divots in lawn areas caused by the work shall be repaired by the contractor. Any bare soil areas created by the work shall be seeded with annual ryegrass and a native grass seed mix designed for the Northeast US region, where needed to restore area to pre-demolition condition. Seed shall be applied at a rate of ½ pound per 1,000 square feet unless otherwise required for compliance with applicable standards. The park's Resource Stewardship Division must approve all plant selections before they are purchased.

N. Hauling Restrictions: Comply with legal and local load restrictions. For delivery material and equipment coordinate with NPS and Park for routes, access, and escort to delivery site. Arrange delivery at least 48 hours in advance with NPS and get approval from Contracting Officer.

O. Bridge Restrictions: Identify jurisdictions, load restrictions, permit requirements, time and calendar restrictions as outlined.

1.5 PUBLIC USE OF SITE

A. The units and project location sites will be open to the public during demolition. Use freestanding fence, barricade, or other means to block immediate work area and prevent unauthorized entry. Erect and maintain fencing, barricades, lights, signals, and warning signs according to current version of Manual on Uniform Traffic Control Devices (MUTCD).

B. Contractor is responsible for site security and is required to report all incidents of crimes committed on the job site to GATE Dispatch (718) 354-4700, and the Project Manager, regardless of the magnitude.

C. Contractor shall conduct his operations to ensure the least inconvenience to public. Road closures will not be permitted. Should closure or rerouting of visitors be necessary, closures would be for the minimal time required to complete the work activity or correct the problem.

1.6 CONDUCT OF OPERATIONS

A. Contractor shall conduct his 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 or at night may not be performed without prior consent from the Contracting Officer. Submit requests 3 business/calendar days in advance of the work to the Contracting Officer for approval.

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

1.7 WORK RESTRICTIONS

A. On-Site Work Hours: Limit work and deliveries to weekday hours of 7:00 AM to 5:00 PM unless otherwise approved by the Contracting Officer. Any requested work on holidays or weekends requires approval from the Contracting Officer.

B. There are special events throughout the year which may require full day or partial day work shutdowns. Contractor shall coordinate all events.

C. Existing Utilities
   1. Existing Utilities: Notify Contracting Officer 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 the utility at no additional expense to the Government.
   3. Demolition procedures shall include preventing accidental disruptions to facilities outside project limits by investigating existing utilities and protection during demolition. Accidental disruptions shall be remedied at no cost to NPS.

4. In addition to the utility locate call, all mark-outs need to be called into the Water and Wastewater Treatment Plant to mark out water, sewer, fiber optics, and electric from the building to the transformer in addition to JCP&L markout for sites in New Jersey.

D. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by the 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 Contracting Officer not less than two business days in advance of proposed utility interruptions.
   2. Do not proceed with utility interruptions without Contracting Officer's written permission.

E. Nonsmoking Building/Tobacco Use/Vaping: Smoking is not permitted within building or within 25 feet of entrances, operable windows, or outdoor air intakes.

F. All vehicles shall be equipped with absorptive pads while on park property in order to quickly contain any spills of oil or hydraulic fluid. Any such spills must be reported to the Contracting Officer as soon as is safely possible.

1.8 SPECIAL DEMOLITION REQUIREMENTS

A. Gateway National Recreation Area (GATE) is home to former active military sites and there could be unexploded ordinance (UXO) contained within the ground and/or waters of the park. If a UXO is discovered, extreme caution is warranted, and it should be treated as a live/active munition until proven otherwise. If a UXO is discovered or suspected, immediately cease operations and notify the GATE Dispatch Center (24/7) by calling 718-354-4700. Advise all personnel to clear the area and do not touch the item(s). Emergency response officials will respond and investigate.
   1. Ordnance is defined as any material designed to be of a weapons or explosive nature. All items suspected of being ordnance will be treated as live and potentially dangerous until designated safe by the proper authorities.

B. Project Management and Communication Software: Software administered by NPS shall be used to manage communication and document sharing during demolition.
   1. See Section 01 31 00 "Project Management and Coordination" for requirements on using NPS project management and communication software.

C. The New York City Marathon utilizes sites throughout GATE both during, before and after the race. Coordinate work restrictions with the Contracting Officer.

D. Hurricane Season: Begins May 15 and terminates November 30. If hurricane threatens area, secure and close project site at least 24 hours before anticipated storm landfall. The Contractor should follow Park and state guidance.

E. The Contractor will engage a qualified independent geotechnical engineering testing agency to perform field quality-control testing in accordance with Section 312000 "Earth Moving".

F. The Contractor is responsible for engaging a design professional registered in New York to perform assessments of structures to be demolished as required for demolition planning, permitting, and execution. No building assessment or structural assessment is included or implied in the Contract Documents.

G. Comply with frost protection and excavation restrictions when freezing temperatures may be expected in accordance with Section 312000 “Earth Moving”.

H. Conduct removal of materials and debris from elevated portions of buildings by chute, hoist, or other device that will convey debris to grade level in a controlled descent to minimize ground impact and dust generation.

I. Pavement materials shall comply with the New York Department of Transportation standard specifications. The Contractor’s geotechnical engineer shall verify pavement section thicknesses prior to placement.

J. Damage to natural areas, existing grades, vegetation, pavements, underground utilities, and other improvements and areas of protection, caused during work under this Contract, shall be repaired to original condition or better at no additional cost to the National Park Service

K. Contractor to provide all third-party inspections and testing. Contractor to submit reports and results to the Contracting Officer.

L. Unforeseen circumstances or closures mandated by the Federal Government: the park is closed.

1.9 ADDITIONAL REPORTS

A. The report DRAFT Statement of Findings for Wetland prepared by WSP is an appendix with this package.

B. Hazardous Building Materials Survey Report, Gateway National Recreation Area, dated January 2025, prepared by Mabbett & Associates is an appendix with this package.

C. Additional Hazardous Materials Investigations, Gateway National Recreation Area, dated June 2025, prepared by Mabbett & Associates is an appendix with this package.

D. Asbestos Containing Building Material Survey, Gateway National Recreation Area, Jamaica Bay Unit, dated May 2009, prepared by Prizim, Inc. is an appendix with this package.

E. Asbestos Containing Building Material Survey, Gateway National Recreation Area, Staten Island Unit, dated May 2009, prepared by Prizim, Inc. is an appendix with this package.

F. In case of conflict between report and drawings or specifications, reports govern.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 11 00

GATE 308613

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: When contract modifications or changes are initiated, delays are experienced, or the Contractor revises project schedule, the Contractor shall submit to Contracting Officer a written time impact analysis illustrating influence of each modification, change, delay, or Contractor's request on the contract time.

1. Time Extensions: Activity delays shall not automatically mean an extension of contract time is warranted or due to the Contractor. It is possible that modification, change, or delay will not affect existing critical activities or cause non-critical activities to become critical. A modification, change, or delay may result in only absorbing a part of available total float that may exist within an activity chain of the project schedule,

thereby not effecting the contract time. Time extensions will be granted according with terms of contract.

2. Float is not for exclusive use or benefit for NPS or Contractor. Extension of contract time is granted only to 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.

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……8%
   Profit……6%

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 012601

Contract Price Schedule Template

National Park Service (NPS) - Denver Service Center (DSC) | 3-13-18

Solicitation Number:

PARK - PMIS: **GATE 308613**

(Project Management Information System)

Developed Area: **Jamaica Bay, Staten Island, Sandy Hook Administrative Units**

Project Title: **Demolish Obsolete Non-Historic Structures**

Notice: Offerors are required to submit, a minimum, an offer that conforms to the solicitation documents with pricing for Base line items and all option line items. Failure to do so may render the proposal unacceptable. On lump-sum line items, provide the total price only. For all unit-priced line items, provide the unit price and the extended total price. If no specific line item exists for a portion of the work, include the costs in a related item. In case of error in calculation of extended prices, the unit price governs. In case of error in summation, the total of the corrected amounts govern. Round totals and extended prices to whole dollars.

Contract Line Item Number (CLIN)	Contract Line Item (CLI) Title	Quantity	Unit of Measure	Unit Price	Total Price
1	NSFB - 126 Storage Building, Floyd Bennett Field	1	LS		$0.00
2	NOT IN CONTRACT	1	LS		$0.00
3	NSFB - 273 Radar Building, Floyd Bennett Field	1	LS		$0.00
4	NSFB - 274 Generator Building, Floyd Bennett Field	1	LS		$0.00
5	FWHB - 406 Gatehouse/Quarters, Fort Wadsworth	1	LS		$0.00
6	FWHB - 435 Storage, Fort Wadsworth	1	LS		$0.00
7	FWHB - T354 USPP Swat Office, Fort Wadsworth	1	LS		$0.00
8	GK - Ranger Trailer, Great Kills	1	LS		$0.00
9	MFB - 3 Maintenance Office, Miller Field	1	LS		$0.00
10	MFB - 4 Swamp White Oak Center, Miller Field	1	LS		$0.00
11	MFB - 5 Garage, Miller Field	1	LS		$0.00
12	MFB - 7 Pump House, Miller Field	1	LS		$0.00
TOTAL BASE PRICE (Contract Line Item Number 1 through 12) ----------					$0.00
TOTAL PROPOSED PRICE - BASE PLUS ALL OPTIONS (Contract Line Item Number 1 through 12) ----------					$0.00

All measurement and payment information is included in Division 01 Specifications Section 01 27 00 Definition of Contract Line Items.

GATE 308613

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, NON-HISTORIC STRUCTURES

Jamaica Bay Unit (New York), Floyd Bennett Field (NSFB)

A. Contract Line Item Number 01: NSFB - 126 Storage, Floyd Bennett Field

1. This item consists of the demolition and removal of the existing building and all associated above-grade structures and appurtenances. Work includes:
   a. Demolition and removal of single-story building.
      1) Construction: concrete.
      2) Foundation: concrete slab on grade to remain.
   b. Abatement of hazardous materials.
      1) No hazardous material report has been completed for this structure. Contractor is responsible for hazardous material assessment and testing.
   c. Erosion controls.
   d. Permitting.
   e. Existing utilities associated with the structure to be abandoned shall be investigated, disconnected, capped and abandoned without permanently impacting downstream utility services.
   f. Site disturbance shall be limited to the minimum required to facilitate demolition. Areas disturbed by demolition shall be evenly graded to eliminate ruts, depressions, or mounds, and seeded per specifications.
   g. Clearing or cutting of existing vegetation shall be limited to the minimum required to facilitate demolition.
   h. The project site shall be restored to a clean, orderly condition free of demolition debris, litter, and refuse.
2. Payment will be made at the contract lump sum price.

B. Contract Line Item Number 02: NOT IN CONTRACT

C. Contract Line Item Number 03: NSFB - 273 Radar Building, Floyd Bennett Field

1. This item consists of the demolition and removal of the existing building and all associated above-grade structures and appurtenances. Work includes:
   a. Demolition and removal of single-story building.
      1) Construction: brick masonry and cmu.
      2) Foundation: concrete slab on grade to remain.
   b. Abatement of hazardous materials.
   c. Erosion controls.
   d. Permitting.
   e. Existing utilities associated with the structure to be abandoned shall be investigated, disconnected, capped and abandoned without permanently impacting downstream utility services.
   f. Site disturbance shall be limited to the minimum required to facilitate demolition. Areas disturbed by demolition shall be evenly graded to eliminate ruts, depressions, or mounds, and seeded per specifications.
   g. Clearing or cutting of existing vegetation shall be limited to the minimum required to facilitate demolition.
   h. The project site shall be restored to a clean, orderly condition free of demolition debris, litter, and refuse.
2. Payment will be made at the contract lump sum price.

D. Contract Line Item Number 04: NSFB - 274 Generator Building, Floyd Bennett Field

1. This item consists of the demolition and removal of the existing building and all associated above-grade structures and appurtenances. Work includes:

a. Demolition and removal of single-story building.
   1) Construction: brick masonry and cmu.
   2) Foundation: concrete slab on grade to remain.
b. Abatement of hazardous materials.
c. Erosion controls.
d. Permitting.
e. Existing utilities associated with the structure to be abandoned shall be investigated, disconnected, capped and abandoned without permanently impacting downstream utility services.
f. Site disturbance shall be limited to the minimum required to facilitate demolition. Areas disturbed by demolition shall be evenly graded to eliminate ruts, depressions, or mounds, and seeded per specifications.
g. Clearing or cutting of existing vegetation shall be limited to the minimum required to facilitate demolition.
h. The project site shall be restored to a clean, orderly condition free of demolition debris, litter, and refuse.

2. Payment will be made at the contract lump sum price.

Staten Island Unit (New York), Fort Wadsworth (FWHB)

E. Contract Line Item Number 05: FWHB - 406 Gatehouse/Quarters, Fort Wadsworth

1. This item consists of the demolition and removal of the existing building and all associated above-grade structures and appurtenances. Work includes:
   a. Demolition and removal of two-story building.
      1) Construction: wood frame with vinyl siding.
      2) Foundation: brick and stone foundation walls to be selectively demolished. Backfill excavation..
   b. Remove concrete walks associated with building and backfill with topsoil.
   c. Place topsoil at and fine grade to cover exposed tree roots.
   d. Dewatering and filling existing cistern.
   e. Install sod at areas of backfill, grading and disturbance.
   f. Abatement of hazardous materials.
   g. Erosion controls.
   h. Permitting.
   i. Existing utilities associated with the structure to be abandoned shall be investigated, disconnected, capped and abandoned without permanently impacting downstream utility services.
   j. Site disturbance shall be limited to the minimum required to facilitate demolition. Areas disturbed by demolition shall be evenly graded to eliminate ruts, depressions, or mounds, and seeded per specifications.
   k. Clearing or cutting of existing vegetation shall be limited to the minimum required to facilitate demolition.
   l. The project site shall be restored to a clean, orderly condition free of demolition debris, litter, and refuse.
2. Payment will be made at the contract lump sum price.

F. Contract Line Item Number 06: FWHB - 435 Storage, Fort Wadsworth

1. This item consists of the demolition and removal of the existing building and all associated above-grade structures and appurtenances. Work includes:

a. Demolition and removal of single-story building.
   1) Construction: frame structure with aluminum siding, brick masonry.
   2) Foundation: concrete slab on grade to remain.
b. Abatement of hazardous materials.
c. Erosion controls.
d. Permitting.
e. Existing utilities associated with the structure to be abandoned shall be investigated, disconnected, capped and abandoned without permanently impacting downstream utility services.
f. Site disturbance shall be limited to the minimum required to facilitate demolition. Areas disturbed by demolition shall be evenly graded to eliminate ruts, depressions, or mounds, and seeded per specifications.
g. Clearing or cutting of existing vegetation shall be limited to the minimum required to facilitate demolition.
h. The project site shall be restored to a clean, orderly condition free of demolition debris, litter, and refuse.

2. Payment will be made at the contract lump sum price.

G. Contract Line Item Number 07: FWHB - T354 USPP Swat Office, Fort Wadsworth

1. This item consists of the demolition and removal of the existing building and all associated above-grade structures and appurtenances. Work includes:
   a. Demolition and removal of single-story building.
      1) Construction: brick masonry.
      2) Foundation: concrete slab on grade to remain.
   b. Abatement of hazardous materials.
   c. Erosion controls.
   d. Permitting.
   e. Existing utilities associated with the structure to be abandoned shall be investigated, disconnected, capped and abandoned without permanently impacting downstream utility services.
   f. Site disturbance shall be limited to the minimum required to facilitate demolition. Areas disturbed by demolition shall be evenly graded to eliminate ruts, depressions, or mounds, and seeded per specifications.
   g. Clearing or cutting of existing vegetation shall be limited to the minimum required to facilitate demolition.
   h. The project site shall be restored to a clean, orderly condition free of demolition debris, litter, and refuse.
2. Payment will be made at the contract lump sum price.

Staten Island Unit (New York), Great Kills (GK)

H. Contract Line Item Number 08: GK - Ranger Trailer, Great Kills

1. This item consists of the demolition and removal of the existing building and all associated above-grade structures and appurtenances. Work includes:
   a. Demolition and removal of prefabricated mobile structure.
      1) Construction: modular trailer.
      2) Foundation: stacked cmu and wood supporting trailer frame to be removed. Skirting to be removed.

b. Abatement of hazardous materials.
c. Erosion controls.
d. Permitting.
e. Existing utilities associated with the structure to be abandoned shall be investigated, disconnected, capped and abandoned without permanently impacting downstream utility services.
f. Site disturbance shall be limited to the minimum required to facilitate demolition. Areas disturbed by demolition shall be evenly graded to eliminate ruts, depressions, or mounds, and seeded per specifications.
g. Clearing or cutting of existing vegetation shall be limited to the minimum required to facilitate demolition.
h. The project site shall be restored to a clean, orderly condition free of demolition debris, litter, and refuse.

2. Payment will be made at the contract lump sum price.

Staten Island Unit (New York), Miller Field (MFB)

I. Contract Line Item Number 9: MFB - 3 Maintenance Office, Miller Field

1. This item consists of the demolition and removal of the existing building and all associated above-grade structures and appurtenances. Work includes:
   a. Demolition and removal of single-story building.
      1) Construction: wood frame, fiberboard siding.
      2) Foundation: concrete slab on grade. Remove concrete building slab and concrete apron. Backfill concrete removal area with topsoil, grade to meet surrounding natural grades and drainage patterns, and install sod.
   b. Abatement of hazardous materials.
   c. Erosion controls.
   d. Permitting.
   e. Existing utilities associated with the structure to be abandoned shall be investigated, disconnected, capped and abandoned without permanently impacting downstream utility services.
   f. Site disturbance shall be limited to the minimum required to facilitate demolition. Areas disturbed by demolition shall be evenly graded to eliminate ruts, depressions, or mounds, and seeded per specifications.
   g. Clearing or cutting of existing vegetation shall be limited to the minimum required to facilitate demolition.
   h. The project site shall be restored to a clean, orderly condition free of demolition debris, litter, and refuse.
2. Payment will be made at the contract lump sum price.

J. Contract Line Item Number 10: MFB - 4 Swamp White Oak Center, Miller Field

1. This item consists of the demolition and removal of the existing building and all associated above-grade structures and appurtenances. Work includes:
   a. Demolition and removal of single-story building.
      1) Construction: wood frame, fiberboard siding.
      2) Foundation: concrete slab on grade. Remove concrete building slab. Backfill concrete removal area with topsoil, grade to meet surrounding natural grades and drainage patterns, and install seed.

b. Abatement of hazardous materials.
c. Erosion controls.
d. Permitting.
e. Existing utilities associated with the structure to be abandoned shall be investigated, disconnected, capped and abandoned without permanently impacting downstream utility services.
f. Site disturbance shall be limited to the minimum required to facilitate demolition. Areas disturbed by demolition shall be evenly graded to eliminate ruts, depressions, or mounds, and seeded per specifications.
g. Clearing or cutting of existing vegetation shall be limited to the minimum required to facilitate demolition.
h. The project site shall be restored to a clean, orderly condition free of demolition debris, litter, and refuse.

2. Payment will be made at the contract lump sum price.

K. Contract Line Item Number 11: MFB - 5 Garage, Miller Field

1. This item consists of the demolition and removal of the existing building and all associated above-grade structures and appurtenances. Work includes:
   a. Demolition and removal of single-story building.
      1) Construction: wood frame, fiberboard siding.
      2) Foundation: concrete slab on grade. Remove concrete building slab and concrete apron. Backfill concrete removal area with topsoil, grade to meet surrounding natural grades and drainage patterns, and install seed.
   b. Abatement of hazardous materials.
   c. Erosion controls.
   d. Permitting.
   e. Existing utilities associated with the structure to be abandoned shall be investigated, disconnected, capped and abandoned without permanently impacting downstream utility services.
   f. Site disturbance shall be limited to the minimum required to facilitate demolition. Areas disturbed by demolition shall be evenly graded to eliminate ruts, depressions, or mounds, and seeded per specifications.
   g. Clearing or cutting of existing vegetation shall be limited to the minimum required to facilitate demolition.
   h. The project site shall be restored to a clean, orderly condition free of demolition debris, litter, and refuse.
2. Payment will be made at the contract lump sum price.

L. Contract Line Item Number 12: MFB - 7 Pump House, Miller Field

1. This item consists of the demolition and removal of the existing building and all associated above-grade structures and appurtenances. Work includes:
   a. Demolition and removal of single-story building.
      1) Construction: brick masonry.
      2) Foundation: concrete slab on grade. Remove concrete building slab. Backfill concrete removal area with topsoil, grade to meet surrounding natural grades and drainage patterns, and install seed.
   b. Abatement of hazardous materials.
   c. Erosion controls.

d. Permitting.
e. Existing utilities associated with the structure to be abandoned shall be investigated, disconnected, capped and abandoned without permanently impacting downstream utility services.
f. Site disturbance shall be limited to the minimum required to facilitate demolition. Areas disturbed by demolition shall be evenly graded to eliminate ruts, depressions, or mounds, and seeded per specifications.
g. Clearing or cutting of existing vegetation shall be limited to the minimum required to facilitate demolition.
h. The project site shall be restored to a clean, orderly condition free of demolition debris, litter, and refuse.

2. Payment will be made at the contract lump sum price.

END OF SECTION 01 27 00

GATE 308613

SECTION 01 31 00 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

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

1. Definitions
2. Demolition Coordination
3. Submittals
4. Coordination Drawings
5. Requests for Information (RFIs)
6. NPS Project Management and Communication Software
7. Project Meetings
8. Environmental Coordination
9. Permits

B. Related Requirements:

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

1.2 DEFINITIONS

A. Agency with Jurisdiction
B. Construction Permits – Contractor Provided
C. Government Furnished Permits

1.3 DEMOLITION COORDINATION

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

1. The Contractor shall work with Park Project Team and develop communication plan.
2. Schedule demolition 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.

3. Make provisions to accommodate items scheduled for later installation.
4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of components, including mechanical and electrical.
5. Properly plan demolition operations to include permit requirements. Allow enough time to execute permit provisions to maintain work schedule, site visits, inspections, and reporting deadlines.

B. Notifications: Contracting Officer provides necessary written notification and/or direction to the Contractor. On-site Contracting Officer's Representative from the Park coordinates the Contractor's construction efforts with daily operations and transmits/receives correspondence.

C. 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.

D. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other demolition activities and activities of other Contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to:

1. Preparation of Contractor 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 the Pre-demolition Conference. CO will notify Contractor of tentative date for the Pre-demolition Conference.

1. Letter designating Project Superintendent
2. Demolition Schedule
3. A Comprehensive Schedule of Values
4. A List of Subcontractors for this project
5. Written statements from Subcontractors certifying compliance with applicable labor standard clauses.
6. Certificates of Insurance and Standard Form SF1413 for Contactor and all Subcontractors.
7. Waste Management Plan
8. Quality Control Plan
9. Accident Prevention Plan
10. Spill Prevention Plan for refueling.
11. Signing and Traffic Maintenance Plan
12. Temporary Storm Water Pollution Prevention Plan (SWPP)
13. List of Required 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 Contracting Officer at least one week prior to Pre-Demolition Conference, or as directed by Contracting Officer.
1. Failure to submit items may result in:
a. Demolition conference may be cancelled, Notice to Proceed may not be issued, and Contracting Officer will consider other contractual remedies.
b. Work shall not commence until written Notice to Proceed has been issued and Certificates of Insurance and SF1413 documents are received for Contractor and all Subcontractors.

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 utilizing form created on NPS project management and communication software.

1. Contracting Officer 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 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. RFI Form: Complete and submit on NPS project management and communication software.

D. Contracting Officer’s Action: Contracting Officer will review each RFI, determine action required, and respond. Contracting Officer 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. Contracting Officer's action may include a request for additional information; time for response will date from time of receipt of additional information.
3. Contracting Officer'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 MANAGEMENT AND COMMUNICATION SOFTWARE

A. Use to manage project communication and document sharing during contract period on:

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. Reminder and tracking functions
12. Archiving functions
13. Notification of submittal and RFI statuses and current responsible party
14. Permits and addendums

B. Some documents are not suitable to be shared using NPS project management and communication software. Documents containing Personal Identifying Information (PII) (i.e. certified payrolls) shall not be shared and shall be coordinated with project team as appropriate.

1.7 PROJECT MEETINGS

A. Pre-demolition Conference: Before start of demolition, Contracting Officer 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. NPS project management and communication software
17. Acceptance/rejection of work
18. Progress meetings
19. Submittal procedures
20. Environmental requirements
21. Permit requirements
22. Saturday, Sunday, holiday and night work.
23. Reference materials
24. Value engineering
25. Schedule of Values

B. Progress Meetings: Contracting Officer 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. Requests for information (RFI) and other issues.
    d. Modifications
    e. Work in progress and projected.
        1) Status of required inspections (Special Inspections, Accessibility, etc.)
    f. Inspections of work in progress and projected (Special inspections, Accessibility, etc.)
    g. Demolition Schedule update (provide updated Critical Path Method (CPM)).
    h. Other business relating to work.
    i. Permit requirements

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 Contracting Officer 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. Sustainable design requirements.
i. Review of mockups
j. Possible conflicts
k. Compatibility requirements
l. Time schedules
m. Weather limitations
n. Manufacturer's written instructions
o. Warranty requirements
p. Compatibility of materials
q. Acceptability of substrates
r. Temporary facilities and controls
s. Space and access limitations
t. Regulations of agency(ies) with jurisdiction
u. Testing and inspecting requirements
v. Installation procedures
w. Coordination with other work
x. Required performance results
y. Protection of adjacent work
z. 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.

1. Qualifications: Minimum 3 years Demolition experience on projects of similar size and scope; with environmental procedures similar to this project; familiar with environmental regulations applicable to demolition 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 the HAZMAT Waste Removal Plan.

d. Implementation of Storm Water Pollution Prevention Plan (SWPPP).
e. Present overview of environmental issues and summarize site specific procedures relating to management plans at Pre-demolition conference.
f. Training for Contractor personnel in accordance with position requirements.
g. 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. Temporary Storm Water Pollution Prevention Environmental Management
5. Hazardous Material Abatement
6. Demolition Waste Management

C. Contractor's Environmental Training Program: Demolition Contractor shall provide environmental training for workers performing work on project site. Training shall include:

1. Overview of environmental issues related to building industry.
2. Overview of environmental issues related to Project.
3. Review of site-specific procedures and management plans:

a. Waste Management
b. Noise and Acoustics Management
c. Temporary Storm Water Pollution Prevention
d. Waste Diversion and Recycling
e. Hazardous Material Abatement

4. Compliance with environmental regulations: As specified in Regulatory Requirements. Submit Contractor 40 CFR (Code of Federal Regulations) employee training records upon request of Contracting Officer.

D. Provide documentation for environmental procedures as specified herein and in accordance with approved Waste Management Plan, and Storm Water Pollution Prevention Plan.

1.9 ACCIDENT PREVENTION

A. Prior to Pre-Demolition Meeting, submit accident prevention program. Program must be accepted by NPS before work on site begins and shall comply with Occupational Safety and Health Administration (OSHA) and project requirements. Include:

1. Name of responsible Safety Manager to carry out the program. Submit a complete resume.
2. Monthly safety meetings.
3. First aid procedures.
4. Outline of each phase of work, hazards associated with each phase, and methods proposed to ensure property protection and safety of the public, NPS staff, and DB Construction Contractor employees.
5. Training
6. Planning for possible emergency situations.

7. Housekeeping and fire protection.

B. Accident Reporting: Report incidents to GATE Dispatch

1. Any accident resulting in injury to contractor's personnel, NPS employees, or the public regardless of severity
2. Any incident that causes damage to property or equipment
3. Fires shall be reported immediately.

C. Complete Contractor Accident/Property Damage Report (DSC Form CM-22 or equivalent) and forward to Contracting Officer.

D. Quality Assurance

1. Ensure employees are physically qualified to perform assigned duties safely. Do not allow employees to work if their abilities are impaired. Operators of equipment shall be able to understand signs, signals and operating instructions, and capable of operating such equipment.

E. Accident Prevention Products

1. First aid facilities.
2. Personnel protective equipment shall meet requirements of NIOSH and MSHA (National Institute for Occupational Safety and Health and Mine Safety and Health Administration).
3. Emergency instructions including telephone numbers and reporting instructions for ambulance, physician, hospital, fire department, and park police. Place in conspicuous locations at work site.
4. Adequate egress at all times according to Standard for Safeguarding Construction, Alteration, and Demolition Operations (NFPA 241).
5. Hard hats for employees and for up to six visitors.
6. Designate and post signs in hard hat areas.

F. Training: Provide training for first aid and hazardous material handling and storage.

1.10 PERMITS

A. General:

Permits and Responsibilities: The Contractor shall, without additional expense to the Government, be responsible for obtaining any necessary licenses and permits, and for complying with any Federal, State and municipal laws, codes, and regulations applicable to the performance of the work. The Contractor shall also be responsible for all damages to persons or property that occur as a result of the Contractor's fault or negligence. The Contractor shall also be responsible for all materials delivered and work performed until completion and acceptance of the work.

1. For the purpose of this contract the Contractor will not be considered an agent of the Government. Therefore, the Contractor will comply with the 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.

a. NYS Department of Environmental Conservation – Article 24 Freshwater Wetland Permit
b. NYS Coastal Management Program – Consistency Assessment; NYS Department of State.
c. NYC Local Waterfront Revitalization Program – Consistency Assessment; NYC Department of Environmental Protection.
d. NJ Department of Environmental Protection – Coastal Zone Management Consistency Assessment

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 Construction 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 Construction Contractors' responsibility to determine means and methods and obtain required permits. Construction Contractor shall obtain all permits required to legally conduct work.

1. US EPA has delegated authority to issue NPDES permits to the NYS Department of Environmental Conservation.
2. NYS DEC Stormwater Permit for Construction Activity, State Pollutant Discharge Elimination System (SPDES).
   a. Contractor shall use the DEC eForm Portal (https://my.ny.gov/LoginV4/login.xhtml) to file the online eNOI and NOT.
   b. An MS4 SWPPP Acceptance Form is required to be filed with the eNOI. (https://www.dec.ny/gov/docs/water_pdf/swpppaccept.pdf)
3. Monmouth Soil Conservation District General NJPDES-DST Permit to Discharge Stormwater from Construction Activates
4. Request for Authorization – NJ Department of Environmental Protection (Erosion & Sedimentation Control).
5. General NJPDES-DST Permit to Discharge
6. Hazardous Material Abatement, Handling, Storage, Transportation and Disposal. NYSDEP.
7. NJDEP 901 License for Transpiration of Hazardous Materials
8. Contractor shall comply with NYCDEP Construction Noise Rules & Regulations, which includes a permit and online submission of a Construction Noise Mitigation Plan. https://www.nyc.gov/site/dep/environment/construction-noise-rules-regulations.page

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 NPS project management and communication software when permits are obtained.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 31 00

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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. Demolition 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 demolition project. Activities included in a demolition 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 Contracting Officer.

C. Critical Path Method (CPM): Method of planning and scheduling a demolition 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 project management and communication software as PDF (portable document format) files. 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-Demolition conference, submit schedule of dollar values based on Contract Price Schedule.

C. Construction Baseline Schedule: After contract award and before Pre-Demolition conference, submit two paper copies of baseline schedule, large enough to show entire schedule for entire demolition 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 demonstrating proposal to incorporate a modification, change, delay, or Contractor request.

1.4 QUALITY ASSURANCE

A. Contractor shall meet with Contracting Officer on day of the pre-demolition 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 work restrictions, and site security.
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 obtaining and activating permits.
7. Review and finalize list of demolition activities to be included in schedule.
8. Review baseline schedule comments, resolve issues and progress on incorporating them
9. Review procedures for updating schedule.
10. Discuss reporting requirements and establish protocol for naming and transmitting electronic schedules.

B. Contractor's Schedule Representative: Before the pre-demolition conference, designate an authorized representative to be responsible for preparing and maintaining the Construction Schedule. Submit resume outlining qualifications of Scheduler to Contracting Officer 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 demolition 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 demolition 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 used in the schedule 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. Contracting Officer may request data to verify accuracy of dollar values. Include mobilization, 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 mobilization, general condition costs, overhead or profit as a separate item.

B. Do not break down unit price items. Use only the contract price for unit price items.

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.

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 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. Project schedule shall cover entire contract period. Late finish date is same as contract's established completion date.
3. The Contractor shall provide a pdf and native file of the project baseline schedule.
4. A two-week lookahead schedule shall be submitted weekly and discussed at the Bi-Weekly virtual conference call. Update the project schedule monthly throughout contract period until project substantial completion. The period of performance can only be changed with a contract modification issued by the Contracting Officer. Status date of each schedule update shall be 10 days before progress payment request date.
5. Construction work cannot begin until Government approval is obtained for the work plan for each building, schedule, safety plan, materials and/or any Contractor certifications to be utilized for the work involved in this Contract.
6. The Contractor shall ensure project schedule includes own work and Subcontractor work.
7. 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: The Contractor shall use Critical Path Method (CPM) with limited use of lead or lag durations between schedule activities. The Contractor's project schedule shall consist of procurement activities (including mobilization, submittal, and delivery of key items) and demolition activities.

1. The Contractor's project schedule shall consist of, but not be limited to:

    a. Identify activities and numbers numerically (maximum 5-digit). Number activities in increments of 10.

b. Concisely describe work represented by activity (maximum 48 characters). Avoid using non-standard abbreviations. Limit work related to each activity to one work trade.
c. Activity duration shall be in whole working days with maximum duration 15 workdays each, unless otherwise approved by Contracting Officer, except for non-demolition activities including mobilization, and delivery of materials and equipment.

C. Project schedule shall show sequence and interdependence of activities required for complete performance of work and shall be cost and resource loaded. The Contractor shall ensure work sequences are logical and project schedule shows a coordinated work plan. Proposed durations assigned to each activity shall be the Contractor's best estimate of time required to complete activity, considering scope and resources planned. Resource loading of each activity shall list personnel by labor category and equipment type, and capacity proposed to complete activity in duration shown. Include permit requirements and constraints. Consider and include seasonal weather conditions in planning and scheduling of work influenced by high or low ambient temperatures and wind and/or precipitation, to ensure completion of work within contract time.

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

1. Use Latest version of Microsoft Project, Primavera Project Planner, SureTrak, or equal (Windows 7 and newer.)

PART 3 - EXECUTION

3.1 CONSTRUCTION SCHEDULE UPDATES

A. Progress Meeting Updates: Provide a 2 week look-ahead schedule, derived from the currently accepted schedule, before each progress meeting. Utilize look-ahead schedule to facilitate and take notes on discussions held during progress meeting.

B. Project Schedule Updates
1. Monthly updates of project schedule shall be an integral part and basic element of estimate upon which progress payments shall be made under this contract. If, in judgment of Contracting Officer, the Contractor fails or refuses to provide schedule of values and complete schedule update or revision as specified hereinafter, the Contractor shall be deemed to have not provided required information upon which progress payment may be made and shall be subject to retainage of a portion of the payment.

2. Each project update shall include a narrative consisting of, but not be limited to:

a. Brief description actual progress made during update period.
b. Actual and potential delaying activities.
c. Impediments to progress.
d. Issues related to inclement weather.
e. Progress toward established milestones.

f. Project float.
g. Brief description of work anticipated to be performed in next month.
h. Identify minor revisions to schedule for evaluation and accepted or rejected.

3. As work progresses, indicate Actual Completion percentage for each activity. If schedule update shows late finish date after contract completion date, at a minimum, include the following in narrative with submission:

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

4. Progress Payments: Progress payments will be based on percentage of work completed on items listed in approved schedule of values. Actual construction completed and in place will form basis for payment. The Contractor shall verify percent complete under direction of the Contracting Officer Representative unless Contracting Officer waives this requirement in a specific instance. Contractor shall make computations for payment based on Government's verification of work completed and in place for periods which progress payments are requested. Update currently accepted construction schedule monthly. If the Contractor fails to provide monthly updates or revisions to currently accepted construction schedule, a portion of monthly payment may be retained until updates/revisions made.

C. Distribution: Distribute copies of accepted schedule to Contracting Officer, Contracting Officers 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, Contracting Officer 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 Construction Contractor desires to make changes, Contractor shall notify Contracting Officer 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, Construction Contractor or Contracting Officer 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 Construction 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 are experienced, or the Contractor revises project schedule, the Contractor shall submit to Contracting Officer a written time impact analysis illustrating influence of each modification, change, delay, or Contractor's request on the contract time.
2. Time Extensions: Activity delays shall not automatically mean an extension of contract time is warranted or due to the Contractor. It is possible that modification, change, or delay will not affect existing critical activities or cause non-critical activities to become critical. A modification, change, or delay may result in only absorbing a part of available total float that may exist within an activity chain of the project schedule, thereby not effecting the contract time. Time extensions will be granted according with terms of contract.
3. Float: Float is not for exclusive use or benefit for NPS or Contractor. Extension of contract time is granted only to 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. 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.
5. 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 Construction 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 Construction 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.
6. 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.

END OF SECTION 01 32 16

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SECTION 01 32 33 – PHOTO DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for:

1. Existing condition images
2. Periodic construction images

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

C. See Section 31 20 00 “Earth Moving” for Pre-excavation Photographs or Videotape requirements.

1.2 SUBMITTALS

A. Construction Images: Submit images electronically within seven 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**.** Submit on USB flash drive compatible with USB 3.0, 3.1, or 3.2; Type-A.

1. Provide index as separate file on Disc. 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

A. Media: USB flash drive compatible with USB 3.0, 3.1, or 3.2; Type-A.

B. Media Labels: Key tag attached to USB drive with split ring.

C. 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 3200 by 2400 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 commencement of demolition 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 ten separate images to show existing conditions adjacent to property before starting Work. The images shall be uploaded to project management website for the project.
3. Take ten separate images of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.

C. Additional Images: Contracting Officer 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. Substantial Completion of a major phase or component of Work.
c. Extra record images at time of final acceptance.

END OF SECTION 01 32 33

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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. General: There are two primary types of submittals. *Action Submittals* require Government approval prior to construction. *Informational Submittals* are either accepted or rejected.

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

1. Product Data: Collect information in single submittal for each element of construction and type of product or equipment.
2. Samples: Submit Samples of kind, color, pattern, and texture for reviewing characteristics with other elements and comparing between submittal and actual component as delivered and installed.
3. Construction Materials: The Contractor is encouraged to submit, for approval, products made of recycled or environmentally responsible material. NPS will make every effort to approve these materials.

C. Informational Submittals: Written information not requiring Government's responsive action. Submittals may be rejected for not complying with requirements.

1. Key Personnel
2. Insurance and Bonds
3. Project Schedule
4. Submittal List
5. List of Subcontractors
6. Accident Prevention Program
7. Quality Control Management Plan
8. Site and Staging Plan
9. Waste Management Plan

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

C. Submittal List: A submittal list has been attached to the end of this Specification Section. The intent is to provide an overall summary of submittal requirements and not a comprehensive list. The requirements of the individual Specification Sections, terms and conditions of the Contract still apply regardless of what is shown on the submittal list.

D. Processing Time: Allow enough time for submittal review and re-submittals. Contract time extensions will not be authorized if submittals are not transmitted with enough time to permit processing, including re-submittals.

1. Action Submittals

a. Initial Review: Allow 15 days for initial review of each submittal. Allow 10 days if coordination with subsequent submittals is required.
b. Re-submittal Review: Allow 15 days for review of each re-submittal.

2. Informational submittals

a. Review: Allow 15 days for review of each submittal.

E. Submittals: Identify and incorporate information in each submittal file as follows:

1. Transmittal Form (CM-16): Utilize NPS Transmittal Form for all submittals. No action will be taken on a submittal item unless accompanied by this Transmittal Form.
2. Physical samples: Complete Transmittal Form and deliver physical sample to the Contracting Officer (or designee) on site for processing. All comments and actions will be documented on the Transmittal Form.

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

1. Submittal number shall use a sequential number (e.g. .001). Re-submittals shall include alphabetic suffix after another decimal point (e.g. .001.A).

G. 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".

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

I. 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.

1.4 CONSTRUCTION CONTRACTOR'S USE OF CAD/BIM FILES

A. General: At Construction Contractor's written request, copies of CAD/BIM (Computer Aided Design/Building Information Modeling) files will be provided to Construction Contractor for use in connection with Project, subject to:

1. Files provided as is; no format or other changes to files or changes to objects in the drawing will be done by the Government.

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 Contracting Officer 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. Printed performance curves.
   e. Operational range diagrams.
   f. Compliance with specified referenced standards.
   g. 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. Schedules
e. Notation of coordination requirements
f. Notation of dimensions established by field measurement
g. Relationship to adjoining construction clearly indicated
h. Seal and signature of professional engineer if specified

2. Submit shop drawings as PDF electronic file

2.2 INFORMATIONAL SUBMITTALS

A. General: Prepare and submit Informational Submittals required by individual Specification Sections.

1. Post informational submittals as PDF electronic files directly to the NPS project management and communication software.
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. 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.

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

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

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

N. 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.

O. 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.

P. 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.

Q. 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 CONSTRUCTION CONTRACTOR'S REVIEW

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

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities requiring sequential activity.
2. Partial submittals are not acceptable, will be considered non-responsive, and will be returned without review

3.2 CONTRACTING OFFICER'S ACTION

A. General: Contracting Officer will review each submittal, generate comments on corrections or modifications required, and indicate appropriate action:

B. Action Submittals

1. Approved: Acceptable with no corrections required.
2. Approved with Notations: Minor corrections or clarifications required. Comments are clear and no further review required. The Contractor shall address review comments when proceeding with work.
3. Disapproved – Resubmit: Rejected for not according with contract or requiring major corrections or clarifications. Contracting Officer will identify reasons for disapproval. The Contractor shall revise and resubmit with changes clearly identified.

C. Informational Submittal

1. Accepted
2. Rejected

D. Use for Construction: Use only final submittals marked with Approved or Approved with Notations. Ensure notations are incorporated and, at a minimum, keep one copy of final approved submittal on site during construction.

END OF SECTION 01 33 23

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SECTION 01 35 13.22 – ARCHEOLOGICAL PROTECTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section consists of protecting archeological resources contained in soil deposits.

1.2 DEFINITIONS

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

B. Archeologically Sensitive Areas: Areas having 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 state historic preservation officer and, if necessary, associated American Indian tribes.

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

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

E. Archeological Resources Protection Act (ARPA) of 1979 (Public Law (P.L.) 96-95; 93 United States Statues at Large (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.

1.3 SUBMITTALS

A. Daily Work Schedule: Detail construction work in archeologically sensitive areas. Submit to Contracting Officer (CO) 30 days before start of ground disturbing site work.

1.4 QUALITY ASSURANCE

A. At least one week before on-site work begins, Contractor shall meet with Contracting Officer and Archeological Monitor to discuss Daily Work Schedule, equipment, and special methods used in

archeologically sensitive areas. Contractor shall ensure approved Daily Work Schedule is followed throughout construction.

PART 2 - PRODUCTS

2.1 DAILY WORK SCHEDULE

A. Daily Work Schedule is required for 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:

1. Starting and ending dates of ground-disturbing construction.
2. Locations of temporary facilities, such as barriers, field offices, staging areas, sanitary facilities, borrow pits, and haul and access roads.
3. Types of construction, such as clearing, topsoil stripping, structure or trench excavation, landscaping, and post construction clean-up.
4. Methods and equipment used for each type of construction.
5. Plan for relocating work in the event of temporary work stoppages at each archeologically sensitive area

2.2 GROUND DISTURBANCE

A. If ground disturbance is anticipated, an Archeological Monitor will need to be present at work site. If archeological resources are discovered at project site while Archeological Monitor is absent, immediately stop work in vicinity of discovery and report discovery to Contracting Officer. If archeological monitoring is required for project ground disturbance, then the contractor will be required to obtain an ARPA permit.

PART 3 - EXECUTION

3.1 BARRICADES

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

3.2 ARCHEOLOGICAL INVESTIGATION

A. Archeological Monitoring will be by NPS staff.

3.3 OBSERVATION

A. Archeological Monitor will observe ground-disturbing site work, including construction of temporary facilities, at 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.

3.4 DISCOVERY OF RESOURCES

A. If Archeological Monitor discovers resources, immediate relocation of work to a non-sensitive area may be required for Monitor to identify and document resources and, if necessary, develop 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. If resources are discovered while Archeological Monitor is absent, stop work immediately and report the discovery to the Contracting Officer.

3.5 WORK STOPPAGE

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

END OF SECTION 01 35 13.22

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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. Demolition buildings may be structurally unsound with unknown contents, confined spaces, and hazardous materials.

B. Demolition sites may be subject to hazardous conditions including but not limited to:
   1. Coastal weather conditions, high winds, hurricanes, and flooding.
   2. Disease-carrying ticks, mosquitoes, and stinging insects.
   3. Poison ivy and other poisonous flora.
   4. Hazardous materials.
   5. Unexploded Ordinance (UXO) from formerly active military sites.

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. Refer to Section 02 84 33 “Abatement of PCB-Containing Caulk-Sealant Materials for additional requirements.

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

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. First aid facilities.
2. Name and qualifications of supervisor responsible to carry out program.
3. Personnel protective equipment shall meet requirements of NIOSH and MSHA (National Institute for Occupational Safety and Health and Mine Safety and Health Administration).
4. Emergency instructions including telephone numbers and reporting instructions for ambulance, physician, hospital, fire department, and park police. Place in conspicuous locations at work site.
5. Adequate egress at all times according to Standard for Safeguarding Construction, Alteration, and Demolition Operations (NFPA 241).
6. Hard hats for employees and for up to six visitors.

7. Fall protection equipment: certified and approved to be used by trained personnel when working elevated to protect against falling from an elevated work area.
8. Designate and post signs in hard hat areas.
9. Weekly and monthly safety meetings shall be documented with topics and attendees.
10. First aid and rescue procedures.
11. 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. Demolition buildings may be structurally unsound with unknown contents, confined spaces, and hazardous materials.
12. 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.
13. 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 Contracting Officer 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 PERSONNEL PROTECTIVE EQUIPMENT (PPE)

A. Selection shall conform to OSHA Subpart E.

B. Refer to Section 02 82 00 "Asbestos Abatement" for additional PPE and safety requirements.

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 2024 International Fire Code.

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 Contracting Officer within one day after meeting.

B. Conduct monthly safety meetings for personnel, contractors, and subcontractors performing work on the site. Notify Contracting Officer 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. Contracting Officers 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 Contracting Officer.

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 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

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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 32 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.

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 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 Contracting Officer before proceeding.

1.4 QUALITY CONTROL

A. The Contractor is responsible for quality of work. Independent testing laboratory is responsible for testing. Inspect and test work as needed to ensure quality of materials, workmanship, construction, and finish, and to ensure functional performance is in compliance with applicable scope of work

B. The Contractor accepts ultimate responsibility, liability and duty to control quality of services provided to the Government as stipulated in FAR Part 36.609-2. Contractor shall be responsible for professional quality, technical accuracy and other services furnished by the Contractor, their Employees, Agents, Assignees, and Subcontractors under the contract. Contractor shall, without additional compensation, correct or revise any errors or deficiencies.

C. The Contractor shall maintain a record of CQC Daily Reports, Daily Test Report Information Sheets, and Accessibility Inspection Reports of quality control activities and tests. CQC Daily Reports may not be substituted for other written reports required under clauses of the contract such as disputes, differing site conditions, or changes.

D. The Contractor shall demonstrate existence of a Quality Control (QC) system used for work submitted to NPS. Contractor and Subcontractors shall use this QC system and, at a minimum, include:

1. Coordination of all construction work required for each building.
2. Verification that documents to be submitted are accurate and correct.
3. Checklists for internal review of construction work, and cost estimates.
    a. Required documents for each submission are included and complete per contract requirements.
    b. Required documents have been through a QC review. NPS requires documentation and submittal of QC work performed.
4. CQC Supervisor will complete CQC Daily Reports.

E. Testing Laboratory and Equipment:

1. Person performing tests will complete test reports.
2. Contracting Officer may designate test locations.

1.5 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 Contracting Officer.
5. The plan shall include:
   a. A list of personnel responsible for quality control and assigned duties. Include each person's qualifications.
   b. A copy of a letter of direction to CQC Manager outlining assigned duties.
   c. Names, qualifications, and descriptions of laboratories to perform sampling and testing, and samples of proposed report forms.
   d. Methods of performing, documenting, and enforcing quality control of work.
   e. Methods of monitoring and controlling environmental pollution and contamination as required by regulations and laws.

B. Contractor Quality Control (CQC) Daily Reports: Submit showing inspections and tests on first workday following date covered by report.

C. Test Reports: Submit Test Information Sheets with CQC Daily Reports.

1. Submit failing test results and proposed remedial actions within four hours of noted deficiency.
2. Submit electronic copies of complete test results no later than one calendar day after test performed.
3. If CQC plan and CQC Daily Reports are not submitted as specified, Contracting Officer may retain payments until a plan is accepted and implemented. Or Contracting Officer may retain payments for work completed on days with no CQC Daily Reports.

D. If Contractor Quality Control plan and Quality Control Daily Reports are not submitted as specified, Contracting Officer 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.

E. 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.

1.6 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. CQC Manager, designated by the Contractor, shall be on project site whenever contract work is in progress.
2. Contractor's job supervisory staff may assist CQC Manager, as necessary, by adding certified testing technicians.

C. 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.

D. Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for activities indicated.

1. Requirement for specialists shall not supersede building codes and regulations governing Work.

E. 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 Contracting Officer.

1. Employ certified independent laboratories to perform sampling and testing. Testing laboratory organization shall be certified for type of testing work.
2. Calibrate measuring devices, laboratory equipment, and instruments at established intervals against certified standards according to National Bureau of Standards (NBS) requirements

1.7 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. Contracting Officer may designate test locations.

B. 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.

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

1. Notify Contracting Officer 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.

D. 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.

E. 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.

PART 3 - EXECUTION

3.1 ON-SITE CONTROL

A. Notification:

1. Notify Contracting Officer at least 48 hours in advance of preparatory phase meeting.
2. Notify Contracting Officer 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 control work. At a minimum, CQC Manager and Superintendent responsible for the feature of work shall attend.
2. Ensure copies of referenced standards, related to sampling, testing, and execution for the feature of work, are available on site.
3. Ensure provisions were made for field control testing.
4. Examine work area to ensure preliminary work completed.
5. Verify field dimensions and advise Contracting Officer of discrepancies with contract documents.
6. Ensure necessary equipment and materials are at project site and comply with approved shop drawings and submittals.
7. Document preparatory phase activities and discussions on CQC Daily Report.

C. Initial Phase: As soon as work begins, inspect and test representative portion of particular feature of work for quality of workmanship.

1. Review control testing procedures to ensure compliance with contract requirements.
2. 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.

3.2 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.

3.3 ENFORCEMENT

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

3.4 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.
2. Comply with Contract Document requirements for Section 01 73 29 "Cutting and Patching."

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

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SECTION 01 42 00 – REFERENCE STANDARDS

PART 1 - GENERAL

1.1 ENVIRONMENTAL DEFINITIONS

A. Recycled Content Materials: Products that contain pre-consumer or post-consumer materials as all or part of their feedstock. Recycled content claim shall be consistent Federal Trade Commission (FTC) Guide for Use of Environmental Marketing Claims.

B. Renewable Resource: A resource that is grown, naturally replenished, or cleansed, at a rate which exceeds depletion of the usable supply of that resource. A renewable resource can be exhausted if improperly managed. However, a renewable resource can last indefinitely with proper stewardship. Examples include trees in forests, grasses in grasslands, and fertile soil.

1.2 QUALITY ASSURANCE

A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into Contract Documents to the extent referenced. Such standards are made a part of Contract Documents by reference.

B. Publication Dates: Comply with standards in effect as of date of Contract Documents, unless otherwise indicated.

C. Conflicting Requirements: Where compliance with two or more standards is specified, and standards may establish different or conflicting requirements for minimum quantities or quality levels, comply with most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Contracting Officer (CO) for decision before proceeding.

1.3 INDUSTRY STANDARDS

A. Applicability of Standards: Unless Contract Documents include more stringent requirements, applicable construction industry standards have same force and effect as if bound or copied directly into Contract Documents to the extent referenced. Such standards are made a part of Contract Documents by reference.

B. Publication Dates: Comply with standards in effect as of date of Contract Documents unless otherwise indicated.

C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with Contract Documents.

1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.4 ABBREVIATIONS AND ACRONYMS

A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities found in Section 01 42 00 Sources for Reference Publications, Unified Facilities Guide Specifications (UFGS) (accessible via Masters website > Downloads section > click on UFGS Master (WBDG Website). Names, telephone numbers, and websites are subject to change and are believed to be accurate and up-to-date as of date of Contract Documents.

XX	EXAMPLE Association (The) www.EXAMPLE.org

B. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in following list. Names, telephone numbers, and websites are subject to change and are believed to be accurate and up-to-date as of date of Contract Documents.

DIN	Deutsches Institut fur Normung e.V. www.din.de	49 30 2601-3003
IAPMO	International Association of Plumbing and Mechanical Officials www.iapmo.org	(909) 472-4100
ICC	International Code Council www.iccsafe.org	(888) 422-7233
ICC-ES	ICC Evaluation Service, Inc. icc-es.org	(800) 423-6587 (562) 699-0543

C. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in following list. Names, and websites are subject to change and are believed to be accurate and up-to-date as of date of Contract Documents.

ABA & ABAAS United States Access Board	Architectural Barriers Act (ABA) Architectural Barriers Act Accessibility Standards (ABAAS) www.access-board.gov
CoE	Army Corps of Engineers www.usace.army.mil
CPSC	Consumer Product Safety Commission www.cpsc.gov

DOC	Department of Commerce www.commerce.gov
DOD	Department of Defense www.defense.gov
DOJ	Department of Justice www.justice.gov
DOE	Department of Energy www.energy.gov
EPA	Environmental Protection Agency www.epa.gov
FAA	Federal Aviation Administration www.faa.gov
FCC	Federal Communications Commission www.fcc.gov
FDA	Food and Drug Administration www.fda.gov
GSA	General Services Administration www.gsa.gov
HUD	Department of Housing and Urban Development www.hud.gov
LBL	Lawrence Berkeley National Laboratory www.lbl.gov
NCHRP	National Cooperative Highway Research Program (See TRB (Transportation Resource Board))
NIST	National Institute of Standards and Technology www.nist.gov
OSHA	Occupational Safety & Health Administration www.osha.gov
PHS	U.S. Department of Health and Human Services www.hhs.gov
RUS	Rural Utilities Service (See USDA (Department of Agriculture))
SD	State Department www.state.gov

TRB	Transportation Research Board www.nationalacademies.org/trb/transportation-research-board
USDA	Department of Agriculture www.usda.gov
USP	U.S. Pharmacopeia www.usp.org
USPS	Postal Service www.usps.com

D. Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in following list. Names, telephone numbers, and websites are subject to change and are believed to be accurate and up-to-date as of date of Contract Documents.

ABAAS	Architectural Barriers Act Accessibility Standards www.access-board.gov
CFR	Code of Federal Regulations Available from Government Printing Office www.govinfo.gov/app/collection/cfr
DOD	Department of Defense Military Specifications and Standards Available from Department of Defense Single Stock Point www.dsp.dla.mil/Specs-Standards/
DSCC	Defense Supply Center Columbus (See FS (Federal Specification))
FED-STD	Federal Standard (See FS (Federal Specification))
FS	Federal Specification Available from Department of Defense Single Stock Point www.dsp.dla.mil/Specs-Standards/ Available from General Services Administration www.gsa.gov Available from National Institute of Building Sciences www.nibs.org
FTMS	Federal Test Method Standard (See FS (Federal Specification))
MIL	(See MILSPEC (Military Specification and Standards))
MIL-STD	(See MILSPEC (Military Specification and Standards))

MILSPEC	Military Specification and Standards Available from Department of Defense Single Stock Point www.dsp.dla.mil/Specs-Standards/
UFAS	Uniform Federal Accessibility Standards Available from Access Board www.access-board.gov/guidelines-and-standards/buildings-and-sites/about-the-aba-standards/ufas *(UFAS is **only** for housing projects per Fair Housing Act. See also the Fair Housing Act Design Manual, www.huduser.gov/portal/publications/destech/fairhousing)*

1.5 ENVIRONMENTAL REFERENCE STANDARDS

A. American Forest and Paper Association:

1. Sustainable Forestry Initiative

B. American Association of State Highway and Transportation Officials (AASHTO):
- M288 Geotextile Specification for Highway Applications
- **MP009-06 Standard Specification for Compost for Erosion/Sediment Control (Filter Berms and Filter Socks)**
- **MP010-03 Standard Specification for Compost for Erosion/Sediment Control (Compost Blankets)**

C. American Society for Testing and Materials International (ASTM):
- C1240 Standard Specification for Silica Fume Used in Cementitious Mixtures
- C128 Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Fine Aggregate
- C131 Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
- C289 Standard Test Method for Potential Alkali-Silica Reactivity of Aggregates (Chemical Method)
- C311 Test Methods for Sampling and Testing Fly Ash or Natural Pozzolans for Use as a Mineral Admixture in Portland-Cement Concrete
- C33 Standard Specification for Concrete Aggregates
- C593 Standard Specification for Fly Ash and Other Pozzolans for Use With Lime
- C595 Standard Specification for Blended Hydraulic Cements
- C618 Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete
- C67 Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile
- D1557 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 foot pound force per cubic foot (ft-lbf/ft3) (2,700 kilonewton meter per cubic meter (kN-m/m3))
- D4840 Standard Guide for Sampling Chain-of-Custody Procedures
- D5268 Standard Specification for Topsoil Used for Landscaping Purposes
- D5359 Standard Specification for Glass Cullet Recovered from Waste for Use in Manufacture of Glass Fiber
- D5505 Standard Practice for Classifying Emulsified Recycling Agents
- D5509 Standard Practice for Exposing Plastics to a Simulated Compost Environment
- D5539 Standard Specification for Seed Starter Mix

- D5792 Standard Practice for Generation of Environmental Data Related to Waste Management Activities: Development of Data Quality Objectives
- D5834 Standard Guide for Source Reduction Reuse, Recycling, and Disposal of Solid and Corrugated Fiberboard (Cardboard)
- D5851 Standard Guide for Planning and Implementing a Water Monitoring Program
- D5852 Standard Test Method for Erodibility Determination of Soil in the Field or in the Laboratory by the Jet Index Method
- D6007 Standard Test Method for Determining Formaldehyde Concentration in Air from Wood Products Using a Small Scale Chamber
- D6330 Standard Practice for Determination of Volatile Organic Compounds (Excluding Formaldehyde) Emissions from Wood-Based Panels Using Small Environmental Chambers Under Defined Test Conditions
- D6629 Standard Guide for Selection of Methods for Estimating Soil Loss by Erosion
- E1609 Standard Guide for Development and Implementation of a Pollution Prevention Program

D. Environmental Protection Agency (EPA):
- **Comprehensive Procurement Guidelines**
- **Environmentally Preferable Purchasing Program Final Guidance**
- **Pollution Prevention (P2)**

E. International Organization of Standardization:
- **9660 Information processing -- Volume and file structure of CD-ROM for information interchange**

F. US Composting Council:
- Seal of Testing Assurance Program

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 42 00

GATE 308613

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 SUBMITTALS

A. Area Protection Fence: Submit manufacturer's product information and installation recommendations for area protection fence.

B. Construction Staging, Access, and Security Plan: Prior to commencing work, submit a plan for Contractor staging, access, and security. Show temporary facilities, temporary utility lines and connections, staging areas, construction site entrances, vehicle circulation, and parking areas for construction personnel. Include site enclosure fencing and gates, vehicle and pedestrian barriers, signage, lighting, and other security measures.

1.4 USE CHARGES

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

B. Water Service: Potable Water from existing water system is not available for use. Contractor shall provide water as needed for demolition operations and pay all costs.

C. Electric Power Service: Make arrangements with utility company for metered connection to existing utility and pay costs. Coordinate work with Contracting Officer. Temporary electrical work shall meet requirements of current version of NFPA 70 NEC Article 590 (National Fire Protection Association (NFPA), National Electrical Code (NEC)). When temporary connections are removed, restore existing utility services to original condition.

1. Availability of electric power service varies for each site. Contractor shall provide temporary electric service, including a generator, for electric power service as needed for demolition operations and pay all costs.

2. For all demolition work, the Contractor shall coordinate with the local electric service utility provider.
   a. Floyd Bennett Field – Consolidated Edison of New York (Con Edison)
   b. Fort Tilden – PSEG Long Island
   c. Miller Field – Consolidated Edison of New York (Con Edison)
   d. Sandy Hook – Jersey Central Power & Light (JCP&L)

1.5 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. Noise and Acoustics Management
3. Environmental Management
4. Hazardous Material Abatement
5. Construction Waste Management
6. Storm Water Pollution Prevention Plan (SWPPP)

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. Portable Chain-Link Fencing: Minimum 2 inch (50 millimeters), 9-gage, galvanized steel, chain-link fabric fencing; minimum 8 feet high with galvanized steel pipe posts; minimum 2-3/8 inch (60 millimeters) OD line posts and 2-7/8 inch (73 millimeters) OD corner and pull posts, with 1-5/8 inch (42 millimeters) OD top and bottom rails. Provide galvanized steel bases for supporting posts. Provide vehicular and pedestrian access gates as needed for demolition operations and emergency access.

C. Safety Barrier Fence: Orange plastic fence, minimum height, 4 feet may be used as approved by the Contracting Officer.

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 Contracting Officer'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. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.

C. 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 Contracting Officer.

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.

C. Non-potable water for construction 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. Furnish cool, potable water for construction personnel in locations convenient to work stations. Furnish water for dust control and demolition operations.

E. Sanitary Facilities: Provide temporary toilets, and wash facilities for use by construction personnel. Provide and maintain temporary toilet facilities according to State Health Department

and NPS regulations. Provide separate accessible facilities for men and women with privacy locks. Enclosures shall be weatherproof, sight proof, and of sturdy construction. Completely remove sanitary facilities on completion of work.

F. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.

1. Install electric power service above ground and/or provide generator..

G. 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.

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

I. Internet Service: Contractor shall make arrangements with service provider 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 Contracting Officer. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Contracting Officer.

B. Traffic Controls: Erect and maintain barricades, lights, danger signals, and warning signs in accordance with Manual on Uniform Traffic Control Devices (MUTCD), Part 6, 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 Contracting Officer. Keep a minimum of two rolls on site.

C. Parking: Use designated areas of existing shown on drawings parking areas for construction personnel. Coordinate parking area with Contracting Officer.

D. 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.

E. Project Identification and Temporary Signs: Provide Project identification and other signs as needed. 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.

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

G. 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.

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 "Temporary Storm Water Pollution Prevention".

D. Tree and Plant Protection: Refer to Section 01 56 39 “Tree Retention and Protection”.

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.

F. Site Enclosure Fence: Before demolition operations begin, secure site perimeter.

1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate demolition operations.
2. Locate vehicular gates to avoid interference with traffic on public thoroughfares.
3. Locate pedestrian entrance gates as required to provide controlled personnel entry.
4. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Provide Contracting Officer with one set of keys.

G. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.

H. Barricades, Warning Signs, and Lights: Comply with requirements of Manual on Uniform Traffic Control Devices (MUTCD), Part 6, latest edition for erecting structurally adequate barricades, including warning signs and lighting.

I. 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. Observe and enforce standards of fire prevention. No open fires allowed.
3. Tobacco Use, Smoking, and Vaping: Smoking within buildings or temporary storage sheds is prohibited.
4. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of NPS. Cutting by torch or welding shall be performed only when adequate fire protection is provided. Submit a Hot Work Permit to Park Law Enforcement and Contracting Officer for approval.
5. 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.
6. 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.
7. 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.
8. 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 Contracting Officer.

9. 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.

10. Vehicles and Equipment: Provide one extinguisher on each vehicle or piece of equipment. Extinguishers shall have a minimum UL (Underwriters Laboratory) rating of 2-A:10-B:C.
11. 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

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SECTION 01 56 39 – TREE RETENTION AND PROTECTION

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 general retention, protection and pruning of existing trees and plants that are affected by execution of the Work.

A. Related Requirements:

1. Section 015000 "Temporary Facilities and Controls" for temporary site fencing.
2. Section 311000 "Site Clearing" for removing existing trees and shrubs.
3. Section 329300 “Plants” for planting and maintaining new trees required to replace native trees over 4-inch caliper removed for execution of the Work.

1.3 GENERAL REQUIREMENTS

A. Contracting Officer may require a consulting arborist be hired to oversee operations such as root pruning, trimming and removal of trees near structures to remain.

B. If it appears that the completion of the work may cause damage to the branches, trunk, or roots of any tree, the Contractor shall contact the Contracting Officer’s Office. The Contracting Officer will make a determination as to whether such damage is imminent.

C. To prevent or minimize soil compaction, designated routes for equipment and foot traffic by work crews shall be determined prior to commencing demolition activities, and shall be indicated in the tree protection plan to be submitted by Contractor. These routes shall be marked at the site, prior to commencement of construction, with tree protection fencing and signage as specified in Articles 2.1 and 2.2 of this section. A Tree Protection Plan shall be submitted for approval by the Contracting Officer.

D. Motorized equipment and trailers, including tractors, bobcats, bulldozers, rubber-tired excavators, tracked excavators, trucks, cars, and carts shall not be allowed access within tree protection areas. Should access be necessary within designated tree protection areas, the existing grade shall be covered with 12-inches of wood mulch with overlapping 3/4-inch thick plywood on top to help distribute the weight of equipment and to minimize soil compaction and rutting. Plywood and/or mulch are not acceptable bridging materials for driving over exposed tree roots. Exposed tree roots shall not be driven over. The Contracting Officer or Project Consulting Arborist shall be notified and shall approve of the access and driving surface prior to its use.

E. Materials and supplies shall not be stockpiled or stored within the tree protection area.

F. Under no circumstances shall any objects or materials be leaned against or supported by a tree’s trunk, branches, or exposed roots. The attachment or installation to trees of any sign, cable, wire, nail, swing, or any other material that is not needed to help support the natural structure of the tree is prohibited. Standard arboricultural techniques such as bracing or cabling that are performed by

professional arborists are acceptable upon approval by the Contracting Officer or Project Consulting Arborist.

G. An approved Tree Protection Plan is required prior to beginning work.

1.4 DEFINITIONS

A. Tree Protection Area: The tree protection area should consist of the ground encompassing from 1.5 (minimum) to 2.0 times the distance between the trunk and drip line, or one linear foot away from the trunk base for every inch diameter of the trunk, whichever is greater (see definition of drip line, below). Areas of ground covered by pavement, buildings, or other permanent structures where the presence of roots is minimal or negligible are excluded. The area under or within the tree's drip line is also referred to as the "Critical Root Zone" (see definition of critical root zone, below).

1. With groups of trees or where an array effect is present, there may be discontinuous (non-overlapping) perimeters of tree protection areas, which result in difficult to maintain or ineffective tree protection fencing. In these cases, even though tree protection areas do not overlap, they should be treated as though they do if the distance between the perimeters of such areas is less than 30-feet. In effect, this will artificially enlarge the area of tree protection, but will result in a more clearly defined, manageable area.

B. Drip Line: The outermost edge of the tree's canopy or branch spread. The area within a tree's drip line is all the ground under the total branch spread.

C. Critical Root Zone: Shall be defined as the tree protection area encompassing from 1.5 (minimum) to 2.0 times the distance between the trunk and drip line, or one linear foot away from the trunk base for every inch diameter of the trunk, whichever is greater.

D. Diameter (Caliper): The size (in inches) of a tree's trunk is measured at:

Trunk Size	Where Measured
< 4"	6" above grade
4" – 8"	12" above grade
> 8"	54" above grade

Note: All measurements should be rounded up to the nearest inch.

E. High Value Tree: Any specimen tree with an appraised value of one-hundred dollars ($100.00) or more. Some High Value Trees previously identified by NPS are called out on the plans. High Value Trees are not limited to those previously identified and noted. Contractor is responsible for identification and protection of all High Value Trees potentially impacted by the Work.

F. Project Consulting Arborist: An independent consultant with a degree in a horticulture, arboriculture, and/or ISA Certified Arborist, and at least five years field experience in tree preservation or on-site monitoring of public works or construction projects involving tree retention and protection. The Consultant should be an active member in the American Society of Consulting Arborists and/or International Society of Arboriculture.

1.5 REFERENCE STANDARDS AND GUIDELINES

A. Contractor shall comply with applicable requirements and recommendations of the most current versions of the following standards and guidelines. Where these conflict with other specified requirements, the more restrictive requirements shall govern.

1. ANSI Z133.1-2006: American National Standard for Tree Care Operations.
2. ANSI A300: Tree, Shrub, and Other Woody Plant Management – Standard Practices.

3. Guide for Plant Appraisal – Current Edition: Authored by the Council of Tree and Landscape Appraisers; published by the International Society of Arboriculture.

1.6 SUBMITTALS

A. Qualification Data: For arborist and tree service firm.

B. Existing Conditions: Documentation of existing trees and plantings indicated to remain, which establishes preconstruction conditions that might be misconstrued as damage caused by construction activities.

1. Use sufficiently detailed photographs or video recordings.
2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plants designated to remain.

C. Tree Protection Plan: Submit tree protection plan including but not limited to: trees within or affected by the work zone and access routes, tree protection, tree pruning, tree removal and replacement, methods, materials, schedule, location, equipment and foot traffic routes and schedule for approval by the Contracting Officer. Work schedule shall also include a time frame for work near existing plants. Approval of such shall be obtained from the Contracting Officer prior to commencement of work near tree protection areas.

D. Tree Protection Sign: Contractor to submit a sample of the tree protection sign to the Contracting Officer for approval. Modify and resubmit as directed.

E. Maintenance Schedule: Submit maintenance schedule for existing tree retention and protection as necessary to Contracting Officer for approval. Proper maintenance shall include, but not be limited to: methods, materials, structural and remedial pruning, root pruning, branch pruning, watering, remediating soil compaction for methods during construction, and other maintenance through the project's final acceptance period per Section 01 77 00 Closeout Procedures.

1. The Contracting Officer or Appointee shall mark the location of root pruning lines in the field prior to the operation.
2. If possible, root pruning should occur between autumnal leaf fall and spring foliation.
3. Root pruning during the growing season shall require approval of the Contracting Officer or Appointee.

1.7 QUALITY ASSURANCE

A. Arborist Qualifications: Licensed arborist in jurisdiction where Project is located.

B. Tree Service Firm Qualifications: An experienced tree service firm that has successfully completed temporary tree and plant protection work similar to that required for this Project and that will assign an experienced, qualified arborist to Project site during execution of the Work.

1.8 PROJECT CONDITIONS

A. Final work schedule will be coordinated with and approved by Contracting Officer.

B. Do not perform work when climate and existing site conditions will not provide satisfactory results (e.g. wet, freezing). The Contracting Officer reserves the right to deny tree retention and protection procedures on days that are deemed to be unfavorable for installation. Proceed with tree retention

and protection only when existing and forecasted weather conditions permit tree retention and protection to be performed when beneficial and optimum results may be obtained.

C. See Division 01 Section 01 11 00 "Summary of Work" for contractor use of site, including but not limited to, access restrictions and vehicle and equipment restrictions by specific areas.

D. All work is being completed within a historic site and all work must adhere to the Secretary of Interior's Standards, as per Section 01 35 91 "Historic Preservation Treatment Procedures". Work must be completed without damage to historic structures, trees to remain, trails or walkways to remain, survey monuments or signs, roads, or other property. The Contractor will be financially liable to the Park for any costs incurred as a result of repairing and/or replacing any of the aforementioned items or for the value of the item as assessed by an archeologist, biologist, Government and the Contracting Officer.

E. Although attempts have been made to locate and evaluate archaeological sites and/or components prior to construction activities, there is a potential that previously unidentified archeological sites and/or components will be identified during construction activities. In the event that construction activities inadvertently discover a previously unidentified archeological site and/or component, the contractor will work cease in the immediate area and notify the contracting officer. Any willful destruction of the archeological site and/or component can result in the prosecution of individuals under the Archeological Resource Protection Act of 1979 (16 U.S.C. 470), and other statutes that protect the Park's cultural resources. Reference Section 01 35 13.22 "Archeological Protection" for protection and discovery of resources procedures.
   1. Any uncovered archeological resources must be protected. If archaeological resources are encountered during work, contractor shall stop work at that location immediately and notify the Contracting Officer. Any artifacts recovered are property of Gateway National Recreation Area.

F. Contractor's operations shall be conducted reasonably to prevent rutting or other soil damage. Skidding of logs will not be permitted. No work shall be allowed for at least a 24-hour period following a rain accumulation of one (1) inch or more during the proceeding 24-hour period. After any work stoppage, it will be the responsibility of the Contracting Officer to determine when work may re-commence.

G. All vehicles and other heavy equipment involved in the completion of this contract will be restricted to paved areas and areas within the limits of work indicated in the Plans unless given case-specific permission by the Contracting Officer. Off road equipment use is solely at the discretion of the Contracting Officer and subject to change based on current or anticipated conditions. Rutting or other resource damage will not be tolerated. All work from trails will be considered off road and must adhere to the same guidelines and restrictions.

H. All vehicles should be equipped with absorptive pads while on park property in order to quickly contain any spills of oil or hydraulic fluid. Any such spills must be reported to the Contracting Officer as soon as is safely possible.

I. Damage to natural areas, existing grades, vegetation, pavements, underground utilities, and other improvements and areas of protection, caused during work under this section, shall be repaired to original condition or better at no additional cost to the National Park Service.

J. Vehicular accessibility on site shall be as directed by Contracting Officer. Repair damage to existing surfaces, caused by vehicular access and movement during work under this section, to original condition at no additional cost to the National Park Service.

PART 2 PRODUCTS

2.1 TREE PROTECTION FENCING

A. Tree protection fences should be constructed of the following, as approved by the Contracting Officer:
   1. Plastic Protection-Zone Fencing: Plastic construction fencing constructed of high-density extruded and stretched polyethylene fabric with 2-inch maximum opening in pattern and supported by tubular or T-shape galvanized-steel posts with stand stabilized with concrete blocks or equal, spaced not more than 5’-10’feet on center. No post ground penetrations. Color: Orange. Fence shall be 4 feet in height minimum.

2.2 TREE PROTECTION SIGNAGE

A. A standard Tree Protection sign shall be mounted on tree protection fencing at 50-foot intervals maximum warning construction personnel and the public to keep out of the tree protection areas.
   1. Submit a draft tree protection sign to the Contracting Officer for review and approval. Modify the sign as directed.

PART 3 EXECUTION

3.1 CONSTRUCTION REQUIREMENTS

A. This section provides standards and guidelines for the retention and protection of high-value trees and shrubs for any proposed construction project.

3.2 PREPARATION

A. Locate and clearly identify trees, shrubs, and other vegetation to remain. Flag each tree trunk at 54 inches above the ground.

B. Protect tree root systems from damage caused by runoff or spillage of noxious materials while mixing, placing, or storing construction materials. Protect root systems from ponding, eroding, or excessive wetting caused by dewatering operations.

3.3 PROTECTION ZONES

A. Protection-Zone Fencing: Install protection-zone fencing along edges of protection zones before materials or equipment are brought on the site and construction operations begin in a manner that will prevent people from easily entering protected areas except by entrance gates. Construct fencing so as not to obstruct safe passage or visibility at vehicle intersections where fencing is located adjacent to pedestrian walkways or in close proximity to street intersections, drives, or other vehicular circulation.

B. Tree protection fencing locations should be staked for approval by the Contracting Officer or Project Consulting Arborist prior to installation.

C. Fencing should be installed to completely surround the limits of tree protection areas, and should extend at least 10-feet beyond the designated construction limits unless otherwise directed by the Contracting Officer.

D. Protection-Zone Signage: Install protection-zone signage in visibly prominent locations in a manner approved by Contracting Officer. Install one sign spaced approximately every 50 feet on protection-zone fencing, but no fewer than two signs with each facing a different direction.

E. Maintain protection zones free of weeds and trash.

F. Maintain protection-zone fencing and signage in good condition as acceptable to Contracting Officer and remove when construction operations are complete and equipment has been removed from the site.

1. Do not remove protection-zone fencing, even temporarily, to allow deliveries or equipment access through the protection zone.

3.4 DEMOLITION OF EXISTING TREES

A. Caution should be used during removal of trees, to minimize injury to tree root systems to remain.

B. When removing trees next to root systems to remain, care should be taken to avoid injury to the critical root zone. Prior to tree removal, the roots are to be pruned with a hand-operated, mechanical root pruner. Root pruning is to be along the outside edge of the critical root zone of the nearby trees to remain. Tree roots inaccessible by a hand-operated, mechanical root pruner, stumps shall be ground in place, as approved by the Contracting Officer.

C. In areas where roots have to be removed, roots shall be severed prior to excavation to eliminate unnecessary tearing of roots by equipment, refer to Article 3.3 - Root Pruning.
   1. Excavate soil at the construction cut limit to a depth of 30-inches or to the depth of the required root cut, whichever is less.
   2. Prune roots as specified.
   3. Protect exposed roots as specified.

D. During the removal of trees, surrounding exposed soils shall not be unnecessarily disturbed. Review extent of disturbance with Contracting Officer.

E. Motorized equipment and trailers, including but not limited to tractors, skid steers, bulldozers, rubber-tired excavators, tracked excavators, trucks, cars, and carts are to be limited to access on the existing paved street only. Access is not allowed within tree protection areas.

F. Should access be necessary within designated tree protection areas, the existing grade shall be covered with double, overlapping sheets of 3/4-inch thick plywood and 12-inches of wood mulch to help distribute the weight of equipment and to minimize soil compaction and rutting.
   1. Place a sheet of 6-mil over the grade within affected portions of tree protection prior to placing plywood and mulch.
   2. Plywood and/or mulch are not acceptable bridging materials for driving over exposed tree roots. Exposed tree roots shall not be driven over.
   3. The Contracting Officer or Project Consulting Arborist shall be notified and shall approve of the access and driving surface prior to its use.

G. Keep all materials and equipment within the street bounded by existing curbs, where feasible.

H. Protect exposed roots from contamination by stabilization materials.

I. When excavating for stump removal, excavated soil shall be deposited temporarily on 3/4-inch thick plywood outside the critical root zone of trees to remain. Excavated and fill soil shall not be deposited, even temporarily, on unprotected natural grade within tree protection zones.

J. After proper pruning, as needed, cover exposed roots within 30 minutes to minimize desiccation. Roots may be covered with soil, mulch, or moistened burlap (7 ounce or equal), and shall be kept moist during the period until the final grade is established.

K. Where possible, tree removal equipment is to avoid disturbance within the dripline of existing trees to remain to prevent damage to existing roots. Where tree removal equipment maneuverability is not possible, access in a manner with the least amount of impact/damage to roots.

L. Grading within the critical root zone shall consist of the ground encompassing from 1.5 (minimum) to 2.0 times the distance between the trunk and drip line, or one linear foot away from the trunk base for every inch diameter of the trunk, whichever is greater. Grading within the critical root zone is not anticipated. Any fill material that needs to be placed in the critical root zone shall be limited to a maximum of 1-inch of fill material over the critical root zone area. Fill should consist of sandy loam topsoil. Clay soils shall not be used as fill. When using fill soil, the existing surface to receive fill should be scarified by hand to a maximum depth of 1-inch from the finished grade prior to placing fill material, to ensure proper incorporation of fill material. Any filling operation should not occur during water saturated soil conditions.

M. Existing Trees: The Contracting Officer or Project Consulting Arborist shall be notified prior to any excavation known or suspected to disturb more than 10% of the critical root zone.

3.5 ROOT PRUNING

A. Tree roots shall not be pruned or cut unless their removal is unavoidable or absolutely necessary. The Contracting Officer shall be notified prior to any operation known or suspected to involve cutting of more than:
   1. The Contracting Officer or Project Consulting Arborist shall be notified immediately in the event that roots in excess of one-half the diameter of the tree, as measured per Paragraph 1.4.D, are cut, torn, ripped, or otherwise injured.

B. Upon approval by the Contracting Officer, prior to any excavation, removal of sidewalk, or other activity that will result in removal of soil and tree roots, all tree roots within a designated area will be pruned to a depth of 14-inches. Pruning shall occur with a hand operated, mechanical root pruner, in accessible areas.

C. Removal of roots greater than one-half the diameter of the tree, as measured per Paragraph 1.4.D, or parts of roots that are injured or diseased should be performed as follows:
   1. Preserve the root bark ridge (similar in structure and function to a branch bark ridge). Directional root pruning technique shall be used during excavation around tree roots. Roots are similar to branches in their response to pruning practices. With directional root pruning, objectionable and severely injured roots are properly cut to a lateral root 1/3 the size of the root being cut, if possible, that is growing downward or in a favorable direction.
   2. All roots needing to be pruned or removed shall be cut cleanly with sharp tools, with oversight by the Contracting Officer or Project Consulting Arborist. No wound dressings shall be used.
   3. Recommended root pruning tools:
      a. Scissor-type lopper.
      b. Scissor-type pruner.

c. Large and small hand saws.
d. Wound scriber.

D. All roots one-half the diameter of the tree caliper as measured per Paragraph 1.4.D shall be examined by the Contracting Officer or Project Consulting Arborist in terms of their role in anchoring the tree.
   1. All roots that contribute significantly to anchorage should be preserved. Remove all other roots in this size range to sound, downward growing lateral roots that are at least 1/3 the size of the root being removed.
   2. All roots larger than one-half the diameter of the tree caliper as measured per Paragraph 1.4.D diameter are to be preserved unless their removal is absolutely necessary and approved by the Contracting Officer.

3.6 UTILITY DEMOLITION

A. Protection of Trees and High Value Plantings: Contractor shall protect all trees and high-value shrubs from injury due to utility related work. All injuries to trees and high-value plantings shall be mitigated to the satisfaction of the Contracting Officer as defined in section 3.7 below.

B. Existing Trees: The Contracting Officer or Project Consulting Arborist shall be notified prior to any trenching or excavation known or suspected to disturb more than 10% of the critical root zone.

C. Where it is necessary to excavate within the critical root zone of existing trees, the Contractor shall use all possible care to avoid injury to trees and tree roots. Where more than 10% of the critical root zone area is to be disturbed the Contractor shall notify the Contracting Officer or Project Consulting Arborist to review the conditions. Final approval must be provided by Contracting Officer or Project Consulting Arborist prior to excavation work. In areas where tunneling or boring are to occur all exposed roots shall be covered with moistened burlap to prevent drying of roots.

E. All trenching or other work within the drip line of any tree shall be done by hand or other methods approved by the Contracting Officer, which will prevent breakage or other injury to branches and roots.

F. Wherever a trenching machine exposes roots extending through the trench wall, those roots shall be hand pruned immediately, refer to Article 3.5 - Root Pruning. All trenches within critical root zones shall be closed within 12-hours; if this is not possible, the trench walls shall be covered with burlap and kept moistened. Prior to backfilling, the Contractor shall contact the Contracting Officer or Project Consulting Arborist to inspect the condition and treatment of roots injured by trenching.

3.7 CROWN PRUNING

A. Prune branches that are affected by the Work. Prune branches as directed by arborist.

   1. Prune to remove only injured, broken, dying, or dead branches unless otherwise indicated. Do not prune for shape unless otherwise indicated.
   2. Do not remove or reduce living branches to compensate for root loss caused by damaging or cutting root system.
   3. Pruning Standards: Prune trees according to ANSI A300 (Part 1).

B. Unless otherwise directed by arborist and acceptable to Contracting Officer, do not cut tree leaders.

C. Cut branches with sharp pruning instruments; do not break or chop.

D. Do not paint or apply sealants to wounds.

E. Provide subsequent maintenance pruning during Contract period as recommended by arborist.

F. Chip removed branches and dispose of off-site.

3.8 PROJECT SITE MONITORING

A. As determined by the Contracting Officer for projects of sufficient size to warrant such, a Project Consulting Arborist shall be retained to enforce and monitor the Tree Retention and Protection objectives.
   1. The project site should be monitored a minimum of two times weekly (more frequently at the start of the project) until all procedures and specifications are understood and properly executed by all parties.
   2. Specific monitoring schedules should be developed at preconstruction meetings and modified as deemed necessary by the appropriate parties.
   3. Schedules shall be relayed to the Contracting Officer along with reports of site visits.

3.9 TREE REPLACEMENT

A. General: Replace native trees greater than four-inch caliper that are removed as part of the Work, in a manner approved by Contracting Officer.

   1. Provide new trees of same species as those being replaced.
   2. Replacement trees shall be 3” caliper minimum and shall comply with the applicable requirements in ANSI Z60.1.
   3. Total caliper value of replacement trees shall equal 2x the total caliper of trees removed, i.e., (4) 3” caliper replacement trees for (1) 6” caliper native tree removed.
   4. Plant and maintain new trees as specified in Section 329300 "Plants."

3.10 INJURIES TO EXISTING PLANTS - DAMAGE PENALTIES

A. High-Value Tree and High-Value Plantings Appraisal: Prior to commencing demolition, Contractor shall submit a list of all high-value trees and high-value plantings including evaluation and appraisal for approval by the Contracting Officer. The Contractor shall maintain the approved list of all tree values for the project on site at all times work is being conducted.
   1. Any tree or other plant requiring retention or protection that is not on the list shall be appraised by the Contracting Officer or Project Consulting Arborist as necessary to comply with this damage penalty.

B. Documentation for appraisals will consist of:
   1. Measurement of plant size.
   2. Identification by common and botanical names.
   3. Current condition (overall health, injuries, overt hazard status, etc.).
   4. Location factors as described in the most current addition of “Guide for Plant Appraisal”. Photographs may be taken of certain trees and shrubs to document debilitating condition factors.

C. The threshold level for plants to be appraised shall be one-hundred dollars ($100.00); only those trees and shrubs estimated to have a monetary value greater than one-hundred dollars ($100.00) shall be appraised.

D. Trees and other plants designated as requiring retention or protection shall be identified and located on construction plans. Loss of, or partial injury to, any of these plants due to Contractor neglect or improper construction activities will result in a penalty of up to three times the damages of the assessed value of the tree as determined by the Contracting Officer.

E. Trees determined as requiring "general protection" or "special protection" in the construction areas and in other key locations should be clearly identified by the Contracting Officer. Loss or partial injury to any of these trees due to Contractor neglect or improper construction activities will result in a penalty of up to triple damages for the assessed value of the trees as determined by the Contracting Officer or Project Consulting Arborist. Injury to a portion of these trees will be assessed by the Contracting Officer or Project Consulting Arborist and a corresponding portion of the liquidated damages will be assessed to the Contractor.

F. A fine as determined by Contracting Officer and/or NPS will be levied against the Contractor for each incident of construction damage (including construction traffic) within designated tree protection areas. Any fine shall be independent of any applicable damages for the assessed value of the tree or tree part.

G. Trees or roots visibly and unnecessarily injured, in the opinion of the Contracting Officer and/or Project Consulting Arborist will cause the Owner to withhold from the Contractor an assessed amount conforming to the requirements stipulated above, for a period of one full year. After that period the impact of the injury to any tree will be assessed by the Contracting Officer or the Appointee.

3.11 TREE AND OTHER PLANT MAINTENANCE DURING AND AFTER COMPLETION OF CONSTRUCTION

A. Tree Maintenance: Proper maintenance shall include, but be limited to: structural and remedial pruning, watering and remediating soil compaction during construction and through the project's final acceptance period per Section 01 77 00 "Closeout Procedures".

B. The timing, duration, and frequency of necessary maintenance practices shall be as approved by the Contracting Officer, based on factors associated with the site and affected plants.

C. Submit maintenance schedule to Contracting Officer for approval prior to work beginning.

3.12 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Disposal: Remove excess excavated material, displaced trees, trash, and debris and legally dispose of them off Government property.

END OF SECTION 01 56 39

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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 deconstruction and demolition operations.

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: The hours indicated in Section 01 11 00"Summary of Work".

C. Nighttime: All non-daytime hours.

D. Property line: The real or imaginary line along the ground surface and its vertical extension, which separates real property owned or controlled by one person from contiguous real property owned or controlled by another person or from any public right-of-way or from any public space.

E. Receiving noise area: Any real property where people live or work and where noise is heard, excluding the project or source area.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 NOISE MANGEMENT

A. Noise Control: Perform demolition 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: Permitted only during Daytime.

1. Do not exceed the following dB(A) limitations at 50 feet:

Sound Level in dB(A)	Time Duration of Impact Noise
70	More than 12 minutes in any hour

80	More than 3 minutes in any hour

2. Maximum permissible construction equipment noise levels at 50 feet:

EARTHMOVING	dB(A)	MATERIALS HANDLING	dB(A)
Front Loaders	75	Concrete Mixers	75
Backhoes	75	Concrete Pumps	75
Dozers	75	Cranes	75
Tractors	75	Derricks Impact	75
Scrapers	80	Pile Drivers	95
Graders	75	Jack Hammers	75
Trucks	75	Rock Drills	80
Pavers, Stationary	80	Pneumatic Tools	80
Pumps	75	Saws	75
Generators	75	Vibrators	75
Compressors	75		

C. Ambient Noise:

1. Maximum noise levels (dB (decibel)) for receiving noise area at property line shall be as follows:

a. Residential receiving area
   Daytime: 65 dB
   Nighttime: 45 dB

b. Commercial/Industrial receiving area
   Daytime: 67 dB
   Nighttime: 65 dB

c. In the event the existing local ambient noise level exceeds the maximum allowable receiving noise level (dB), the receiving noise level maximum for construction operations shall be adjusted as follows:

d. Residential receiving area: Maximum 3 additional dB above the local ambient as measured at property line.

e. Commercial/Industrial receiving area: Maximum 5 additional dB above the local ambient as measured at the property line.

3.2 FIELD QUALITY CONTROL

A. Assess potential effects of construction noise on adjacent neighbors in accordance with ASTM E1686 and as follows:

1. Ambient noise measurement: Measure at property line at a height of at least four (4) feet above the immediate surrounding surface. Average the ambient noise level over a period of at least 15 minutes.
2. Ambient noise measurement at urban sites: Conduct during morning peak traffic hour between 7 A.M. and 9 A.M. and afternoon peak traffic hour between 4 P.M. and 6 P.M. In

addition, conduct a 24-hour measurement at the proposed project site to document the noise pattern throughout the day. Adjust and weight for seasonal and climatic variations.

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

END OF SECTION 01 57 19.12

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SECTION 01 57 23 - TEMPORARY STORM WATER POLLUTION PREVENTION

PART 1 - GENERAL

1.1 SUMMARY

A. Federal Regulations for controlling discharges of pollutants (including chemicals, erodible material, and trash) from municipal separate storm sewer systems, construction sites, and industrial activities, were brought under the National Pollution Discharge Elimination System (NPDES) permit process by amendments to the Clean Water Act (CWA), and promulgation of federal stormwater regulations issued by the United States Environmental Protection Agency (USEPA). The USEPA uses amount of ground disturbance as a measure of a project potential to generate pollution from erosion. NPDES Phase I regulates discharges from construction sites that disturb 5 acres or more. NPDES Phase II regulations expand existing General Permit requirements under Phase I to include/regulated discharges from construction sites that disturb land equal to or greater than one (1) acre and less than 5 acres, known as Small Construction Activity. Construction disturbances 1 acre and above typically require a formal NPDES permit and a formal Stormwater Pollution Prevention Plan (SWPPP) must be submitted to Agency(ies) with Jurisdiction for review and approval.

B. The work of this section consists of implementing measures to prevent discharges of pollutants, including temporary storm water pollution during construction activities through compliance with NPDES permit program.

1.2 DEFINITIONS

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

B. 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.

C. National Pollution Discharge Elimination System (NPDES) Phase I: Regulates discharges from construction sites that disturb 5 acres or more.

D. NPDES Phase II: Regulations expand existing General Permit requirements under Phase I to include and regulate discharges from construction sites that disturb land equal to or greater than one (1) acre and less than 5 acres, known as Small Construction Activity.

E. Storm Water Pollution Prevention Plan (SWPPP): Developed and implemented stormwater management measures to protect surface water from pollutants during construction activities disturbing an acre or more in compliance with federal, state, and local requirements for permit approval under NPDES program.

1.3 SUBMITTALS

A. After contract award and before pre-construction conference, prepare and submit:
   1. A SWPPP showing SWPPP satisfies Federal and State NPDES permit requirements.

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

C. Erosion Control Products: Submit manufacturer's product information and installation recommendations for silt fence, filter fabric, rock sock, filter logs, erosion control blanket, 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.

B. Orientation Meeting: Contractor shall arrange and conduct an Erosion and Sediment Control and Pollution Prevention meeting/briefing to inform parties, scheduled to be on-site during project, of measures to be implemented for proper erosion and sediment control (may be included as part of Pre-Construction Meeting).

   1. Installation of silt fences, storm drain protection, and other forms of erosion and sediment control shall not begin until after this meeting has occurred.

C. Pollution Prevention and Erosion Control Manager: Contractor shall designate a Pollution Prevention and Erosion Control Manager (also known as a "Trained Contractor") responsible for implementation, inspection, maintenance, and amendments to approved plan.

   1. Pollution Prevention and Erosion Control Manager shall be familiar with temporary storm water pollution prevention procedures and Best Management Practices and ensure emergency procedures and plan are updated as needed and available for inspection.

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

PART 2 - PRODUCTS

2.1 TEMPORARY STORM WATER POLLUTION PREVENTION PLAN

A. Provide SWPPP which satisfies Federal and State NPDES permit requirements and includes:

   1. Site description.
   2. Identification and contract information for Pollution Prevention and Erosion Control Manager.
   3. Expected sequencing of operations and construction schedule.
   4. Weather monitoring procedure.

5. Descriptions and details Best Management Practices for of pollution prevention and erosion controls, including dust control.
6. Pollution prevention and erosion control plans.
7. Controls for other potential onsite storm water pollutants.
8. Applicable specifications.
9. Maintenance and inspection procedures and forms.
10. Description of potential non-storm water discharges at site.
11. Notice of Intent (NOI) form.
12. Notice of Termination (NOT) form.
13. Contractor and Sub-contractor Certification forms.
14. Other record keeping forms and procedures.
15. Housekeeping Best Management Practices, including vehicle wash-down areas, protection of equipment storage and maintenance areas, and sweeping of roadways related to hauling activities.

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 REGULATORY REQUIREMENTS

A. Permits: Contractor shall obtain required NPDES permits resulting in no impacts to scheduled work. Contractor shall account for possibility of significant lead time in scheduling and executing work.

1. Implement requirements of NPDES permit for erosion control due to storm water runoff during construction.
2. Implement good housekeeping practices, inspections and record keeping.
3. Prior to construction, Contractor and Subcontractors shall sign certifications (included in the plan) that they understand requirements of NPDES permit.

4. Subcontractors shall comply with requirements of NPDES under supervision of Contractor.
5. Accepted plan shall comply with terms and conditions of EPA permit.

B. Notice of Intent (NOI): Contractor shall file a Notice of Intent and formal SWPPP as required to the Agency(ies) with Jurisdiction.

C. Notice of Termination (NOT): After Substantial Completion of Work, file a Notice of Termination (NOT) with the Agency(ies) with Jurisdiction.

D. Contracting Officer Notification: Contractor shall notify Contracting Officer in writing and by telephone of these events:

1. Erosion and sediment control meeting/briefing.
2. Following installation of required sediment control structures.
3. Prior to removal of or modification to sediment control structures.
4. Prior to removal of sediment control structures.

3.3 TEMPORARY STORM WATER 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.

C. SWPPP (including inspection forms) and data used to complete the NOI shall be provided to Contracting Officer after Substantial Completion of project.

3.4 SITE INSPECTIONS AND PLAN REVISIONS

A. Inspections: Contractor and Contracting Officer will perform a daily 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.

3.5 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. Follow the SWPPP for spill prevention and control and Section 3.8 below for reporting of spills.

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

3.6 EROSION CONTROL MEASURES

A. Erosion control measures shall consist of Best Management Practices for storm water discharges, including silt fencing, barrier protectors, 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 SWPPP.

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

3.7 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 daily and after each significant rainfall. Promptly repair breaches which occur.

C. Contractor shall remove entrapped sediment from behind excelsior drainage filter when the sediment reaches one third the height of the fence or filter sock.

3.8 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.

3.9 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.

3.10 REMOVAL OF TEMPORARY STORM WATER 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

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SECTION 01 73 29 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes procedural requirements for cutting and patching on buildings that do not contain Historic Fabric.

1.2 SUBMITTALS

A. Cutting and Patching Plan: Submit Plan describing procedures at least 10 days before cutting and patching will be performed, requesting approval to proceed. Include:

1. Extent: Describe cutting and patching, show how performed, and indicate why they cannot be avoided.
2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
3. Products: List products to be used and firms or entities that will perform Work.
4. Dates: Indicate when cutting and patching will be performed.
5. Utility Services: List services/systems that cutting and patching procedures will disturb or affect. List services/systems that will be relocated and those that will be temporarily out of service. Indicate how long services/systems will be disrupted.
6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure. Do not cut and patch structural elements in a manner that could change their load carrying capacity or increase deflection.
7. Contracting Officer’s (CO) Approval: Obtain approval of cutting and patching plan before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

1.3 QUALITY ASSURANCE

A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.

B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.

C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to

perform as intended, or that results in increased maintenance or decreased operational life or safety.

D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on exterior or in occupied spaces in a manner that would, in Contracting Officer's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

1.4 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that will match the visual and functional performance of in-place materials when installed.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.

1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Temporary Support: Provide temporary support of Work to be cut.

B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

D. Existing Utility Services: Where existing services/systems are required to be removed, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

3.3 PERFORMANCE

A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at earliest feasible time. Complete without delay.

1. Cut in-place construction to provide for installation of other components or performance of other construction subsequently. Patch as required to restore surfaces to original condition.

B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer and original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Finished Surfaces: Cut or drill from exposed or finished side into concealed surfaces.
3. Concrete and Masonry: Cut using an abrasive saw or a diamond-core drill.
4. Excavating and Backfilling: Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.
5. Proceed with patching after construction operations cutting are complete.

C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

D. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials.

END OF SECTION 01 73 29

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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
2. Progress cleaning
3. General demolition

1.2 SUBMITTALS

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

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 the existence and location of site utilities and other construction affecting the Work.

2. Before demolition or abandonment of utilities, verify the location and points of termination of utility services.

B. Existing Utilities: Existence and location of underground and other utilities and construction indicated as existing is 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 and gas services.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

C. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

3.2 COORDINATION WITH UTILITY SERVICE PROVIDERS

A. Coordination with Utility Service Providers: Contact following Utility Service providers, sufficiently in advance to avoid delaying the work, to coordinate Contractor's portion of Work, testing requirements, inspections, etc.:

1. Electrical: Contact
   a. Fort Tilden - PSEG Long Island (PSEGLI)
   b. Miller Field - Consolidated Edison of New York (Con Edison)
   c. Floyd Bennett Field - Consolidated Edison of New York (Con Edison)
   d. Sandy Hook - Jersey Central Power & Light (JCP&L)

   to coordinate Electrical service requirements.

2. Water Service: Contact
   a. Fort Tilden – New York Water Board
   b. Miller Field – National Park Service
   c. Floyd Bennett Field - New York Water Board
   d. Sandy Hook – National Park Service

   to coordinate Water service requirements.

3. Wastewater Service: Contact
   a. Fort Tilden – New York Water Board
   b. Miller Field- National Park Service
   c. Floyd Bennett Field - New York Water Board
   d. Sandy Hook – National Park Service

   to coordinate Wastewater service requirements.

4. Gas Service: Contact
   a. Fort Tilden – National Grid Keyspan
   b. Miller Field - National Grid
   c. Floyd Bennett Field - National Gird Brooklyn Union Gas
   d. Sandy Hook – not applicable

   to coordinate Gas service requirements.

3.3 PREPARATION

A. 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 in accordance with Section 01 31 00 "Project Management and Coordination."

3.4 DEMOLITION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
B. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
C. Hazardous Materials: Use products, cleaners, and installation materials that are not considered

3.5 INSTALLATION

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

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.

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

3.6 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. Contractor shall provide progress cleaning that minimizes sources of food, water, and harborage available to pests.

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

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

F. 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.

3.7 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Section 01 73 29 "Cutting and Patching."

1. Repairing includes refinishing damaged surfaces with matching materials.

B. Complete extent of demolition per the specified requirements and per the Contracting Officer.

END OF SECTION 01 73 40

GATE 308613

SECTION 01 74 19 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for:
   1. Recycling nonhazardous demolition waste.
   2. Disposing of nonhazardous demolition 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.

1.3 PERFORMANCE REQUIREMENTS

A. General: Project shall minimize creation of 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, 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 40 percent 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. Concrete (can be ground and used for fill on site)
3. Metals (from banding, stud trim, piping, rebar, roofing, other trim, steel, iron, galvanized sheet steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze)
4. Non-hazardous paint and paint cans
5. Beverage containers: Aluminum, glass, and plastic containers
6. Ductwork
7. Wiring
8. 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.

1. Refer to the following Sections for additional hazardous waste information:
   a. Section 028200 “Asbestos Abatement”.
   b. Section 028313 “Lead Hazard Control”.
   c. Section 028433 “Abatement of PCB Containing Caulk-Sealant Materials”.

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 Contracting Officer for approval. Submit 3 copies of plan. Revise and resubmit Plan as required by Contracting Officer. 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. 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.

D. 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.

E. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating refrigerant that was present was recovered and recovery was performed according to Environmental Protection Agency (EPA) regulations. Include name and address of technician and date refrigerant was recovered.

F. 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. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.

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 and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
3. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
4. 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. 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 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.
4. Revenue from recycling.
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 Contracting Officer. 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 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 Contracting Officer 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 RECYCLING DEMOLITION 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.

3.3 RECYCLING DEMOLITION WASTE

A. Asphaltic Concrete Paving: Break up and transport paving to asphalt-recycling facility.

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

1. Pulverize concrete to maximum 4 inch (100 millimeter) size.

C. Masonry: Remove metal reinforcement, anchors, and ties from masonry and sort with other metals.
1. Clean and stack undamaged, whole masonry units on wood pallets.

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

E. 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.

F. Asphalt Shingle Roofing: Separate organic and glass-fiber asphalt shingles and felts. Remove and dispose of nails, staples, and accessories.

G. Equipment: Drain tanks, piping, and fixtures. Seal openings with caps or plugs. Protect equipment from exposure to weather.

H. Plumbing Fixtures: Separate by type and size.

I. Piping: Reduce piping to straight lengths and store by type and size. Separate supports, hangers, valves, sprinklers, and other components by type and size.

J. Lighting Fixtures: Separate lamps by type and protect from breakage.

K. Electrical Devices: Separate switches, receptacles, switchgear, transformers, meters, panelboards, circuit breakers, and other devices by type.

L. Conduit: Reduce conduit to straight lengths and store by type and size.

M. Electronic Products: Ensure non-usable electronic products are reused, donated, sold, or recycled using environmentally sound management practices at end of life.

3.4 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

Project Waste Management Plan Worksheet Sample

National Park Service (NPS) - Denver Service Center (DSC) | 10-13-21

	A	B	C	D	E	F	G	H	I	J
Material	**Quantity Recycled (in tons)**	**Quantity Salvaged or Reused (in tons)**	**A + B = Total Quantity Diverted from Landfill**	**Quantity to Landfill (in tons)**	**C + D = Total Quantity Generated (in tons)**	**Tip Fee/Ton at Landfill**	**C x F = Tip Fee Savings resulting from Landfill Diversion**	**Cost of Recycling (R), Salvage (S), or Reuse (Re)** (Specify R, S, or Re)	**Revenue from Recycling (R), Salvage (S), or Reuse (Re)** (Specify R, S, or Re)	**G - H + I = Total Cost (-) or Savings (+) from Diversion**
Asphalt/Concrete										
Brick/Masonry/Tile										
Building Materials (doors, windows, fixtures, shingles, lumber, insulation, sheet goods, etc.)										
Carpet										
Carpet Padding, Foam Only										
Cardboard										
Ceiling Tile										
Drywall										
Glass										
Scrap Metal Aluminum										
Copper										
Steel										
Unpainted Wood & Pallets										
Yard Trimmings, Brush, Trees, Stumps, etc.										
Garbage/Trash										
Other										
Column Totals										
	Total Quantity Recycled	Total Quantity Reused or Salvaged	Total Quantity Diverted from Landfill	Total Quantity to Landfill	Total Quantity Generated		Tip Fee Savings from Diversion	Total Cost of Recycling, Salvage, or Reuse	Revenue from Recycling, Salvage, or Reuse	Total Cost (-) or Savings (+) from Diversion

Percentage Diverted = _____ (C divided by E from Column Totals). Should meet 60% diversion goal.

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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

1.2 PROJECT RECORD DRAWINGS

A. Maintain one complete record of all construction documentation. Clearly mark changes, deletions and additions, using NPS standards to show actual constructed conditions. Certification of accuracy and completeness are required for monthly payment requisitions. On completion of total project, submit complete project documentation.

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, Contracting Officer 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. Submit the following before requesting final inspection:

1. Specific warranties, guarantees, workmanship bonds, final certifications, and similar documents.
2. Project Record Documents, operation and maintenance manuals, final completion construction digital images recorded on USB flash drive compatible with USB 3.0, 3.1, or 3.2, Type A, with index and descriptions, and similar final record information.
3. Environmental Record Documents: As follows:
   a. Final Summary of Solid Waste Disposal and Diversion: As specified in Section “01 74 19 Construction Waste Management.”

1.4 FINAL INSPECTION, SUBSTANTIAL COMPLETION AND ACCEPTANCE PROCEDURES

A. Submit written certification to Contracting Officer indicating project, or designated portion of project, is substantially complete, and request inspection. Upon receiving certification, Contracting Officer and Contracting Officer's Representative will proceed with inspection within 10 days or advise the Contractor of items preventing project from being designated as substantially complete.

B. When work is determined substantially complete, Contracting Officer will prepare a list of deficiencies (Punch List) for corrections before final acceptance and issue a Letter of Substantial Completion. If work is not determined substantially complete, Contracting Officer will notify the Contractor in writing. After completing work, the Contractor shall resubmit certification and request new final inspection.

C. If work is not determined substantially complete following final inspection, Contracting Officer 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. Following final inspection, if work is determined substantially complete, Contracting Officer will prepare list of deficiencies for corrections before final acceptance and issue a Letter of Substantial Completion. Contractor shall complete work described on list of deficiencies within 30 calendar days, as weather permits. If the Contractor fails to complete the work within this time frame, Contracting Officer may either replace or correct the work with an appropriate reduction in contract price or charge for re-inspection costs according to the contract's Inspection of Construction clause.

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

F. If Contractor fails to complete work within the time frame, Contracting Officer 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 Contracting Officer 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, Park shall be informed of permit provisions completed and responsibilities transferring to Park staff.

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. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. 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. Remove snow and ice to provide safe access.

f. Clean exposed exterior hard-surfaced finishes to dirt-free condition, free of stains, films, and foreign substances.

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

END OF SECTION 01 77 00

Closeout and Operation & Maintenance (O&M) Requirements **Template**

National Park Service (NPS) - Denver Service Center (DSC) | 1-27-21

Topic	Specification Section	Requirement	Submittal Date	Completed	Received by Park
Project Record Drawings	01 77 00	Closeout Submittals			
	31 10 00	Record Drawings: locations of capped utilities and other subsurface structural, electrical, and mechanical conditions			
System Demonstration and Training					
Tools Spare Parts Equipment					
Extra Stock					
Reports	01 32 33	Complete Set of Digital Images and Index			
	01 74 19	Project Waste Management Plan Summary			
	02 41 16	Inventory: List of items that have been removed and recycled			
Keys & Keying Schedule					
O&M Data Warranties Guarantees	32 92 23	Turf Maintenance Data			
	32 93 00	Tree Mainenance Data			

SUBMITTAL LIST

Park Acronym/Project Management Information System (PMIS) Number: **GATE 308613**

Project Title: **Address Deferred Maintenance - Demolish Obsolete Structures**

ACTION SUBMITTAL REVIEW ESTIMATE

(Complete this portion for Architect / Engineer (A/E) construction service task order negotiation.)

SUBMITTAL			REQUIREMENTS (Indicate with **X**)								ARCHITECT / ENGINEER REVIEW TIME (Indicate in whole or partial hours.)						
			INFORMATIONAL				ACTION										
SPECIFICATION SECTION	PARAGRAPH NUMBER	DESCRIPTION	CERTIFICATIONS OR LABORATORY TESTS	REPORTS OR CALCULATIONS OR PLAN	MANUFACTURER DATA AND INSTRUCTIONS	OTHER	SAMPLES	SHOP DRAWINGS	MANUFACTURER DATA AND INSTRUCTIONS	OTHER	ARCHITECT	CIVIL ENGINEER	STRUCTURAL ENGINEER	MECHANICAL ENGINEER	ELECTRICAL ENGINEER	PROJECT MANAGER COORDINATION	LANDSCAPE ARCHITECT
01 31 00		**Project Managment and Coordination**															
	1.4.A	Letter designating Project Superintendent				X											
	1.4.A	Demolition Schedule				X											
	1.4.A	Comprehensive Schedule of Values				X											
	1.4.A	List of Subcontractors for this project				X											
	1.4.A	Written statements from Subcontractors certifying compliance with applicable labor standard clauses.				X											
	1.4.A	Certificates of Insurance and Standard Form SF1413 for Contactor and all Subcontractors.				X											
	1.4.A	Waste Management Plan				X											
	1.4.A	Quality Control Plan				X											
	1.4.A	Accident Prevention Plan				X											
	1.4.A	Spill Prevention Plan for refueling.				X											
	1.4.A	Signing and Traffic Maintenance Plan				X											
	1.4.A	Temporary Storm Water Pollution Prevention Plan (SWPP)				X											
	1.4.A	List of Required Permits				X											
01 32 16		**Construction Schedule**															
	1.3.B	Schedule of Values				X											
	1.3.C	Construction Baseline Schedule				X											
	1.3.D	Critical Path Method Reports				X											
	1.3.E	Construction Schedule Updates				X											
	1.3.F	Construction Schedule Revisions & Time Impact Analysis				X											
01 32 33		**Photo Documentation**															
	1.2.A	Construction Images				X											
	1.2.B	Closeout - Complete Set of Digital Images and Index				X											
01 35 13.22		**Archeological Protection**															
	1.3.A	Daily Work Schedule				X											
01 35 23		**Safety Requirements**															
	1.3.A	Accident Prevention Plan (APP)				X											
01 40 00		**Quality Requirements**															
	1.5.A	Contractor Quality Control Plan (CQC)				X											
01 50 00		**Temporary Facilities and Controls**															
	1.3.A	Area Protection Fence product info and installation recommendations			X												
	1.3.B	Construction Staging, Access, and Security Plan				X											
01 56 39		**Tree Retention and Protection**															
	1.6.A	Arborist's Qualifications				X											
	1.6.B	Existing Conditions documentation															
	1.6.C	Tree Protection Plan		X													
	1.6.D	Tree Protection Sign				X											
	1.6.E	Maintenance Schedule				X											
01 57 23		**Temporary Storm Water Pollution Prevention**															
	1.3.A	Storm Water Pollution Prevention Plan (SWPPP)		X													
	1.3.B	Inspection Schedule				X											
	1.3.C	Erosion Control Products, product information and installation recommendations							X			2					
01 73 29		**Cutting and Patching**															
		Cutting and Patching Plan		X													
01 73 40		**Execution**															
	1.2.A	Landfill Receipts				X											
01 74 19		**Construction Waste Management and Disposal**															
	1.4.A	Waste Management Plan				X											
	1.4.B	Progress documentation				X											
	1.4.C	Recycling and Processing Facility Records				X											
	1.4.D	Lanfill and Incinerator Disposal Records				X											
	1.4.E	Statement of Refrigerant Recovery				X											
	1.4.F	Closeout - Project Waste Management Plan Summary				X											
01 77 00		**Closeout Procedures**															
	1.3.A	Closeout Submittals				X											
02 41 16		**Structure Demolition**															

SUBMITTAL LIST

Park Acronym/Project Management Information System (PMIS) Number: **GATE 308613**

Project Title: **Address Deferred Maintenance - Demolish Obsolete Structures**

ACTION SUBMITTAL REVIEW ESTIMATE

(Complete this portion for Architect / Engineer (A/E) construction service task order negotiation.)

SUBMITTAL			REQUIREMENTS (Indicate with **X**)								ARCHITECT / ENGINEER REVIEW TIME (Indicate in whole or partial hours.)						
			INFORMATIONAL				ACTION										
SPECIFICATION SECTION	PARAGRAPH NUMBER	DESCRIPTION	CERTIFICATIONS OR LABORATORY TESTS	REPORTS OR CALCULATIONS OR PLAN	MANUFACTURER DATA AND INSTRUCTIONS	OTHER	SAMPLES	SHOP DRAWINGS	MANUFACTURER DATA AND INSTRUCTIONS	OTHER	ARCHITECT	CIVIL ENGINEER	STRUCTURAL ENGINEER	MECHANICAL ENGINEER	ELECTRICAL ENGINEER	PROJECT MANAGER COORDINATION	LANDSCAPE ARCHITECT
	1.6.A	Qualification Data				X											
	1.6.B	Proposed Protection Measures				X											
	1.6.C	Schedule of Building Demolition Activities				X											
	1.6.D	Utility Capping Methods and Materials				X											
	1.7.A	Closeout Submittals - Inventory: List of items that have been removed and recycled				X											
02 82 00		**Asbestos Abatement**															
	1.11.A	Copy of the Contractor's Asbestos License or accreditation				X											
	1.11.B	Schedule of Work Phases with estimated times of completion				X											
	1.11.C	A copy of the Contactor's "Work Procedures and Asbestos Abatement Plan"				X											
	1.11.D	A copy of the Contractor's "Health and Safety Plan"				X											
	1.11.E	A copy of the Contractor's "Lead Mitigation Plan"				X											
	1.11.F	Hazard Communication				X											
	1.11.G	Proof of written notifications required for permits, state licenses and notifications and proof that all required permits and variances have been obtained				X											
	1.11.H	Proof of written notification to the Contracting Officer that asbestos abatement work is being conducted				X											
	1.11.I	Proof that the job supervisor, foremen, and asbestos abatement workers meet state license requirements or EPA accreditation				X											
	1.11.J	Proof of a current medical surveillance program for all personnel				X											
	1.11.K	Completed and notarized Certificate of Worker's Release for each asbestos abatement worker, workers of other trades, or supervisory personnel who enter the work area or otherwise contact ACM				X											
	1.11.L	Proof of a respiratory protection program				X											
	1.11.M	Proof of historic airborne fiber data				X											
	1.11.N	Waste Transportation: Submit information on the asbestos waste hauler				X											
	1.11.O	Waste Disposal: Submit information on the approved waste disposal site				X											
	1.11.P	Manufacturer's literature for all proposed equipment and products. Include Safety Data Sheets (SDS) for encapsulant, fire retardant plastics, and other chemicals				X											
	1.11.Q	Specimen of the daily log proposed for use including the dates and times when all personnel enter and leave the work areas				X											
	1.11.R	Results of all air monitoring, posted within 24 hours for all workers to see				X											
	1.11.S	Certified, signed, and completed copy of each "Waste Shipment Record" form and receipts from the landfill operator that acknowledge the delivery of material, within 30 days following removal of ACM				X											
	1.11.T	Copies of a daily log showing the dates and times of entrance to and exit from the work areas for all persons				X											
	1.11.U	Compilation in chronological order of all air monitoring records				X											
	1.11.V	Compilation of all completed and signed Waste Shipment Record forms, bills of lading, or disposal receipts				X											
	1.11.W	Copies of notifications and checks to applicable agencies that the asbestos abatement project has been completed				X											
	1.11.X	Copies of notifications (and all correspondence with government regulatory agencies) to the necessary governmental agencies in accordance with regulatory requirements, including 10 or 20 day pre notification requirements				X											
02 83 13		**Lead Hazard Control**															
	1.2.B	Worker Protection Submittals - Lead (Heavy Metal) Health and Safety Compliance Program				X											
02 84 33		**Abatement of PCB Containing Caulk-Sealant Materials**															
	1.6.A	Product Data			X												
	1.6.B	Worker's Qualifications Data				X											
	1.6.B	Work Plan				X											
	1.6.B	Waste Transporter Permit				X											
	1.6.C	Disposal Site Receipts				X											

SUBMITTAL LIST

Park Acronym/Project Management Information System (PMIS) Number: **GATE 308613**

Project Title: **Address Deferred Maintenance - Demolish Obsolete Structures**

ACTION SUBMITTAL REVIEW ESTIMATE

(Complete this portion for Architect / Engineer (A/E) construction service task order negotiation.)

SUBMITTAL			REQUIREMENTS (Indicate with **X**)								ARCHITECT / ENGINEER REVIEW TIME (Indicate in whole or partial hours.)						
			INFORMATIONAL				ACTION										
SPECIFICATION SECTION	PARAGRAPH NUMBER	DESCRIPTION	CERTIFICATIONS OR LABORATORY TESTS	REPORTS OR CALCULATIONS OR PLAN	MANUFACTURER DATA AND INSTRUCTIONS	OTHER	SAMPLES	SHOP DRAWINGS	MANUFACTURER DATA AND INSTRUCTIONS	OTHER	ARCHITECT	CIVIL ENGINEER	STRUCTURAL ENGINEER	MECHANICAL ENGINEER	ELECTRICAL ENGINEER	PROJECT MANAGER COORDINATION	LANDSCAPE ARCHITECT
31 10 00		**Site Clearing**															
	1.6.A	Existing Conditions Documentation				X											
	1.6.B	Proposed pesticide and herbicide treatments				X											
	1.6.C	Record Drawings: locations of capped utilities and other subsurface structural, electrical, and mechanical conditions				X											
31 20 00		**Earth Moving**															
	1.4.A	Material Test Reports	X														
	1.4.B	Pre-excavation photographs or video				X											
	1.4.C	Hydraulic Fill Mix Design							X			2					
	1.4.D	CLSM Mix Design							X			2					
32 91 13		**Soil Preparation**															
	1.2.B	Soil Sampling test results and recommendations	X														
	1.2.C	Product Data							X								4
	1.2.D	Samples					X										4
	1.2.E	Material Certificates	X														
	1.2.E	Material Analysis	X														
32 91 19		**Topsoil**															
	1.5.A	Topsoil Storage Plan		X													
	1.5.B	Soil Testing Reports	X														
32 92 19		**Seeding and Mulching**															
	1.4.A	Certification of grass seed mixture	X														
	1.4.B	Product Certificates	X														
	1.4.C	Proposed pesticide treatments				X											
32 92 23		**Sodding**															
	1.5.A	Qualification data for landscape installer				X											
	1.5.B	Certification of grass seed	X														
	1.5.C	Product Certificates			X												
	1.5.D	Proposed pesticide treatments			X												
	1.6.D	Closeout Submittal: Turf Maintenance Data				X											
32 93 00		**Plants**															
	1.4.A	Product Data								X							4
	1.4.B	Samples					X										4
	1.5.A	Qualification Data for Landscape Installer				X											
	1.5.B	Product Certificates	X														
	1.5.C	Proposed pesticide treatments				X											
	1.5.D	Sample warranty				X											
	1.6.A	Closeout - Maintenance Data				X											
											Total:	0	6	0	0	0	0	16

GATE 308613

SECTION 02 41 16 - STRUCTURE DEMOLITION

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.

B. Refer to Section 01 35 23 “Safety Requirements” for establishing an effective accident prevention program and providing a safe working environment for personnel and visitors.

1.2 SUMMARY

A. Section Includes:

1. Demolition and removal of buildings and foundation walls including hazardous materials abatement, site appurtenances and site restoration.
2. Abandoning in-place below-grade construction.
3. Disconnecting, capping or sealing, and abandoning in-place site utilities.

1.3 DEFINITIONS

A. Remove: Detach items from existing construction and dispose of them off-site.

1.4 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

1.5 PREINSTALLATION MEETINGS

A. Pre-demolition Conference: Conduct conference at Project site.

1. Inspect and discuss condition of construction to be demolished.
2. Review permit requirements for building demolition.
3. Inspect and discuss conditions of existing utilities and its appurtenances to be removed.
4. Discuss hazardous materials to be expected and review procedures for hazmat abatement.
5. Review Hazardous Materials Removal Plan.
6. Review and finalize building demolition schedule and verify availability of demolition
7. personnel, equipment, and facilities needed to make progress and avoid delays.
8. Review and finalize protection requirements.
9. Review Accident Prevention and Safety Plan.
10. Review procedures for noise control and dust control.
11. Review Traffic Control Plan.

12. Review Tree Protection Plan.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For refrigerant recovery technician.

B. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control and, for noise control. Indicate proposed locations and construction of barriers.

C. Schedule of Building Demolition Activities: Indicate the following:

1. Detailed sequence of demolition work, with starting and ending dates for each activity.
2. Temporary interruption of utility services, not to exceed 90 minutes.
3. Shutoff and capping or re-routing of utility services.

D. Utility Capping Methods and Materials
1. Contractor shall submit, for approval, details and information regarding means, methods and materials for the capping of all utility lines to be capped and abandoned as identified in the plans.

1.7 CLOSEOUT SUBMITTALS

A. Inventory: Submit a list of items that have been removed and recycled.

1.8 QUALITY ASSURANCE

A. Hazardous Material Remover Qualifications: Certified by EPA and State's approved certification program.

1.9 FIELD CONDITIONS

A. Buildings to be demolished will not be occupied.

B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

C. Hazardous Materials: Present in buildings and structures to be demolished. A report on the presence of hazardous materials is on file for review and use, included in the project specifications. Examine report to become aware of locations where hazardous materials are present.

1. Hazardous material remediation is specified in Division 2.
2. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified elsewhere in the Contract Documents.

D. On-site storage or sale of removed items or materials is not permitted.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

2.2 SOIL MATERIALS

A. Satisfactory Soils: Comply with requirements in Section 312000 "Earth Moving."

PART 3 - EXECUTION

3.1 EXAMINATION

1. Prior to the commencement of any demolition, the contractor shall contact all utilities to coordinate schedules. Refer to Utility Abandonment plans for additional requirements.
2. Verify that utilities have been disconnected and capped before starting building demolition operations.
3. Review Project Record Documents of existing construction or other existing condition and hazardous material information provided by Govenment. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents and Contractor shall field verify. Discrepancies shall be brought to the attention of the Contracting Officer.
4. Perform an assessment of condition of building to determine whether removing any element might result in unplanned collapse of any portion of structure or adjacent structures during building demolition operations.
5. Verify that hazardous materials have been remediated before proceeding with building demolition operations.

3.2 PREPARATION

1. Hazardous Material: Before starting demolition, abate hazardous materials in accordance with Federal and State Regulations.
    1. Hazardous material abatement is specified in Section 02 82 00 “Asbestos Abatement”, Section 02 83 13 “Lead Hazard Control”, and Section 02 84 33 “Abatement of PCB Containing Caulk-Sealant Materials”.

3.3 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

1. Existing Utilities to be Disconnected: Locate, identify, disconnect, and seal or cap off utilities serving buildings and structures to be demolished.

    1. Verify all utilities serving buildings to be demolished have been previously shutoff/disconnected within the building and arrange to shut off utilities with utility companies as needed. Service lines and piping to the building shall be disconnected at their source, coordinate with applicable utility. Refer to the plans for additional detail.
    2. If removal, relocation, or abandonment of utility services will affect adjacent occupied buildings, then provide temporary utilities that bypass buildings and structures to be demolished and that maintain continuity of service to other buildings and structures.
    3. Refer to Utility Abandonment Plans and notes for requirements.
    4. Do not start demolition work until utility disconnecting and sealing have been completed and verified in writing.

3.4 PROTECTION

1. Temporary Shoring: Provide and maintain interior and exterior shoring, bracing, or structural support to preserve stability and prevent unexpected movement or collapse of construction being demolished.

    1. Strengthen or add new supports when required during progress of demolition.

2. Existing Utilities to Remain: Protect utilities to remain in place.

3. Temporary Protection: Erect temporary protection, such as walks and fences, where required by authorities having jurisdiction and as indicated. Comply with requirements in Section 015000 "Temporary Facilities and Controls."

    1. Protect existing site improvements, appurtenances, and landscaping to remain.
    2. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line of groups of trees to remain.
    3. Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
    4. Clearly mark and delineate the limits of work activities by flagging, staking, or signposts.

4. Remove temporary barriers and protections where hazards no longer exist. Where open excavations or other hazardous conditions remain, leave temporary barriers and protections in place.
5. Temporary wetland impacts: Contactor shall minimize impact at all times. No temporary access or crossing of wetland areas is permitted without prior approval of the Contracting Officer and New York/New Jersey authorities with jurisdiction.

3.5 DEMOLITION, GENERAL

1. General: Demolish indicated buildings and appurtenances completely including interior contents. Use methods required to complete the Work within limitations of governing

regulations and as follows:

1. Do not use cutting torches until work area is cleared of flammable materials. Maintain portable fire-suppression devices during flame-cutting operations.
2. Maintain fire watch during and for at least 2 hours after flame-cutting operations.
3. Maintain adequate ventilation when using cutting torches.
4. Locate building demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.

2. Site Access and Temporary Controls: Conduct building demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Do not close or obstruct streets, walks, walkways, or other adjacent occupied or used facilities without permission from Contracting Officer and authorities having jurisdiction. Provide alternate routes around closed or obstructed trafficways if required by authorities having jurisdiction.
2. At least five (5) working days prior to the beginning of demolition, a traffic control plan shall be submitted to the Contracting Officer for review for NPS roads and to New York/New Jersey authorities having jurisdiction for state/county/local roads. The traffic control plan shall be prepared by a certified traffic control supervisor and shall be in conformance with the Manual on Uniform Traffic Control Devices. No work shall begin until all traffic control devices have been placed in accordance with the plan. The contractor shall continuously maintain the traffic control devices for the entire duration of the project or until the roadway has been opened and the permanent traffic control devices have been installed.
3. Use water mist and other suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations. Do not use water when it may damage adjacent construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.
4. All efforts shall be made to minimize equipment and vehicular traffic while on site to reduce further soil compaction and aid future site restoration.

3. Burning of any portion of the buildings and waste materials shall not be allowed.

4. Explosives: Use of explosives is not permitted.

5. Demolition operations shall include cap, removal and abandon of existing electrical, telecom, gas, sewer, water, and other utilities as indicated in the plans.

3.6 DEMOLITION BY MECHANICAL MEANS

1. Proceed with demolition of structural framing members systematically, from higher to lower level. Complete building demolition operations above each floor or tier before disturbing supporting members on the next lower level.

2. Remove debris from elevated portions of the building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.

1. Remove structural framing members and lower to ground by method suitable to minimize ground impact and dust generation.

3. Below-Grade Construction: Abandon foundation walls and other below-grade construction. Cut below-grade construction flush with grade. Pulverized concrete or masonry rubble less than 4-inches in diameter, separated from any reinforcing steel may be used as backfill to a depth of two feet below grade.

    1. Concrete slabs shall be mechanically breached or cracked in two or more places to allow for drainage prior to depositing backfill material.
    2. Basement walls shall be stripped of all wood, metal, or insulation materials.

4. At-Grade Construction: Concrete slabs, walks, curbs, and stoops to be abandoned in place unless noted otherwise on drawings. Stoops and stairs over 12” above grade shall be cut flush with grade, removed and disposed.

5. Existing Utilities: Refer to drawings

3.7 SITE RESTORATION

1. Below-Grade Areas: Completely fill below-grade areas and voids resulting from building demolition operations with satisfactory backfill materials according to backfill requirements in Section 312000 "Earth Moving."
    1. Clean backfill shall be used to within one foot of grade, and topsoil shall be used from one foot depth to finish grade.
    2. Bituminous asphalt pavement material shall be not used as backfill.

2. Site Grading: Uniformly grade areas of demolished construction to match adjacent grades and free from irregular surface changes. Provide a smooth transition between adjacent existing grades and new grades.

3.8 DISPOSAL OF DEMOLISHED MATERIALS

1. Remove demolition waste materials from Project site and recycle or dispose of them according to Section 017419 "Construction Waste Management and Disposal."

    1. Do not allow demolished materials to accumulate on-site.
    2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

2. Do not burn demolished materials.

3.9 CLEANING

1. Clean adjacent structures and improvements of dust, dirt, and debris caused by building demolition operations. Return adjacent areas to condition existing before building demolition operations began.

    1. Clean roadways of debris and/or soil as a result of the project and/or caused by debris transport immediately.
    2. A strong magnetic sweeper/pickup tool shall be used in the vicinity of the roadway at

the site entrance to collect potential loose nails and materials.

END OF SECTION 02 41 16

GATE 308613

SECTION 02 82 00 - ASBESTOS ABATEMENT

PART 1 – GENERAL

1.1 SUMMARY

A. The work in this Specification outlines the requirements for the removal and cleanup of Asbestos Containing Building Materials (ACM) for the Deferred Maintenance and Building Demolition Project, Gateway National Recreation Area administered by the National Park Service. The contractor shall be required to perform the abatement in accordance with all applicable federal, state and local laws, rules and regulations.

B. Related Documents

1. Hazardous Building Materials Survey Report, Gateway National Recreation Area NIKE Launch Site Buildings 431, 432, 434, Fort Hancock Building 124, Miller Field Building 7, GATE Deferred Maintenance and Building Demolition Project at Multiple Sites, Mod 1 by Mabbett & Associates, Inc., dated August 11, 2025.

2. Hazardous Building Materials Survey Report, Gateway National Recreation Area (Gate) Miller Field Building 5, Fort Tilden Building T148, Fort Wadsworth, Building 354, Great Kills Ranger Trailer, NIKE Launch Site Building 435, Deferred Maintenance and Building Demolition Project by Mabbett & Associates, Inc., dated August 11, 2025.

3. Hazardous Building Materials Survey Report, Gateway National Recreation Area (Gate) Deferred Maintenance and Building Demolition Project by Mabbett & Associates, Inc., dated January 31, 2025.

4. Additional Hazardous Materials Investigations, Gateway National Recreation Area GATE Deferred Maintenance at Multiple Sites, Mod 1 Project by Mabbett & Associates, Inc., dated June 12, 2025.

5. Asbestos Containing Building Materials Survey, Gateway National Recreation Area – Jamaica Bay Unit by PRIZIM Inc. Gaithersburg, Maryland, dated May 2009.

6. Asbestos Containing Building Materials Survey, Gateway National Recreation Area – Sandy Hook Unit by PRIZIM Inc. Gaithersburg, Maryland, dated May 2009.

7. Asbestos Containing Building Materials Survey, Gateway National Recreation Area – Staten Island Unit by PRIZIM Inc. Gaithersburg, Maryland, dated May 2009.

C. Scope of Work: The intent of this project is to repair, cleanup, remove and legally dispose of asbestos containing building materials that may be impacted by the work as listed below and detailed on Drawings H1.

SCOPE OF WORK

1. Buildings

a. Abatement and removal of asbestos building materials at 12 non-historical buildings associated with the Gateway National Recreation Area located in New York.

D. The Asbestos Removal Portion of this Project shall be in accordance with the Occupational Safety and Health Act (OSHA) Section 29 CFR 1926.1101 Asbestos.

E. Air Monitoring for Class I and Class II shall follow OSHA requirements for perimeter verification during work in addition to the OSHA personal monitoring of asbestos abatement workers.

F. Depending on the location of the work the removal of asbestos containing material shall be performed in accordance with New York Industrial Code Rule 56, Asbestos Regulation and in New Jersey in accordance with New Jersey, Asbestos Control and Licensing Act and Regulations (ACLA) N.J.S.A. 34:5A-32 et seq. Asbestos Services, Subchapter 7. Asbestos Work Notification Requirements.

1.2 SECTION INCLUDES

A. Requirements for the removal of asbestos-containing materials. All asbestos material shall be disposed of as asbestos-containing material waste.

B. The definitions of specific terms used in these Specifications are verbatim with those of the OSHA Section 29 CFR 1926.1101 Asbestos

1.3 GOVERNMENT'S RIGHT TO CARRY OUT THE ASBESTOS ABATEMENT WORK

A. If the Contractor defaults or neglects to carry out the activities applicable to the Asbestos Abatement Work in accordance with the Contract Documents and fails within a 24-hour period after receipt of a written notice from the Government to commence and continue correction of such default or neglect with diligence and promptness (collectively the "deficiencies"), the Government may, without prejudice to other remedies the Government may have, act to correct such deficiencies.

B. If the Contractor conducts the Work in a manner which would cause endangerment to public health or safety, the Government may, without written notice, or prejudice to other remedies the Government may have, require the Contractor to remedy the situation, or the Government may act to correct same at the Contractor's expense.

C. In the above cases, an appropriate Change Order or Construction Change Directive shall be issued deducting from payments then or thereafter due the Contractor the cost of correcting such

deficiencies, including compensation for the Government's Consultants additional services and expenses made necessary by such deficiencies. Such action by the Government and amounts charged to the Contractor are both subject to prior direction and approval of the Government's Consultants. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Government.

1.4 LIABILITY FOR DELAYS ASSOCIATED WITH INSUFFICIENT WORK SCOPE

A. It is the Contractor's sole responsibility to arrange for the Asbestos Abatement Work scope to be completed in an expeditious and cost-effective manner. A critical consideration is the definition of the Work to be sufficient to allow for all Asbestos Abatement Work to be completed as scheduled and prior to the start of other Work on this contract. The Government shall not be held responsible for delays and duplicative costs associated with the possible eventuality that the Contractor needs to arrange for some Asbestos Abatement Work to be completed at a time following the initial Asbestos Abatement Work due to the Contractor's failure to properly define and execute the Asbestos Abatement Work as part of that first mobilization. The Contractor shall be responsible for all consultant fees incurred by the Government due to insufficient work scope or failure to comply with the schedule defined elsewhere in these contract documents.

1.5 QUALIFICATIONS OF CONTRACTOR

A. Depending on the location of the work, the Contractor must be licensed by the State of New York Department of Labor as an Asbestos Abatement Contractor and have a valid asbestos handling license, in accordance with New York Industrial Code Rule 56, 56-3.1 Licensing Requirements and Procedures. In New Jersey the Asbestos Abatement Contractor shall be licensed / certified by the State of New Jersey. Work activities shall comply with Federal and State of New Jersey requirements and comply with the following.
New Jersey Regulations

a. N.J.S.A. 34:5A-32 et seq. (Asbestos Services)

b. N.J.A.C. 8:60 and N.J.A.C. 12:120 et seq. (Licensing and Permits)

c. N.J.A.C. 7:26-1 et seq. (Waste Transport).

1.6 INSURANCE

A. In addition to the insurance requirements in the General Provisions, the Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project site is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations under the Contractor and for which the Contractor may be legally liable, whether such operations be by the Contractor or by anyone directly employed by any of them, or by anyone for whose acts any of them may be liable:

1. Contractor's asbestos abatement liability insurance in the occurrence form, $3,000,000.00 per occurrence, $5,000,000.00 aggregate.

B. The existence of the above insurance shall in no way relieve any Contractor or any Subcontractor of any responsibility for which they are liable in excess of the amount recoverable under the insurance provided above.

C. Any increase of limits of liability of any type of insurance not described above that any Contractor may require for its protection or on account of statute, shall be its own responsibility and at its own expense. Any policy covering any Contractor's own equipment against loss by physical damage shall include an endorsement providing that the underwriters waive their right of subrogation against the Government, Architects, Construction Managers, Consultants, other Contractors or Subcontractors.

D. All insurance required by this Section or any other insurance required by the Contract Documents shall be provided by insurers acceptable to the Government.

E. All insurance required by this Section or any other insurance required by the Contract Documents shall identify the Government, the Government's Architect, the Government's Construction Manager, and Government's Consultants, each as an "additional insured".

1.7 CLEANING UP

A. The Contractor is notified that the work area shall be maintained in an orderly condition as possible during the entire Contract period. Unsalvageable materials and debris (non-asbestos or non-asbestos contaminated) resulting from the project operations shall be promptly disposed of, off property, in approved areas.

B. No pay estimates will be processed while the Contractor is in nonconformance with the above requirements. Furthermore, before final inspection and acceptance of the Contract and all areas occupied by the Contractor in connection with the work shall be cleaned of all rubbish, excess materials, temporary structures and equipment, and all parts of the work shall be left in an acceptable condition.

C. No separate payment will be made for the work of cleaning up, but all cost thereof shall be included under the lump sum bid for this project.

1.8 CONTROL OF WORK

A. The Contractor shall provide a contact phone number that will be reachable 24 hours a day - 7 days a week in case of an emergency.

B. Complete all of the Work specified in the time frame submitted and approved by the Government. The Work shall begin on a date determined at the Government's sole discretion and may require work outside normal weekdays, Monday through Friday, and extended work hours.

C. Due to the critical time frame allowed for this project, the contractor shall provide a sufficient number of abatement workers during prep, removal and cleanup. The contractor shall assign an asbestos supervisor to each work area. The supervisors shall be onsite at all times during work activities.

1.9 RESTRICTIONS AND QUALITY CONTROL

A. ACM shall be properly handled, packaged, and transported for disposal in an asbestos-only landfill.

B. The Contractor shall be responsible for monitoring his own construction safety work practices for compliance with OSHA regulations.

C. Obtain appropriate permit and variances from regulatory agencies as required to complete the safe removal of asbestos containing material.

D. Noise Controls: Provide mufflers on all equipment. Observe local laws.

E. Wastewater: All water used during asbestos abatement activities shall be collected and placed in the asbestos waste bags.

F. Health and safety:

1. Toxic Effects: Assume all responsibility for any toxic effects to workers from the air supplied to respirators, or from toxic or damaging vapors or residues resulting from the use of encapsulant and/or wetting agents or other substances used during construction.
2. Chemical/Biological hazards: The known chemical and or biological hazards on site are asbestos-containing material and lead in paint. Provide materials, equipment and training to ensure worker protection from these and any other chemical/biological hazards that may be identified during the course of this work.

G. Work Supervision and Coordination:

1. From the start of work through completion, provide an on-site responsible and competent supervisor possessing valid Asbestos Supervisor certification.
2. Quality of Work: Asbestos Supervisor shall supervise, inspect and direct the Work.

H. Minimum Experience: Experience with abatement work, as evidenced through participation in at least two asbestos abatement projects of size and complexity comparable to this project.

I. Experience and Training: Supervisors, foremen, and workers shall be adequately trained and knowledgeable in the field of asbestos abatement. All personnel engaged in asbestos abatement or related activities shall have a state permit and/or EPA accreditation.

J. Skilled craftsman experienced in each respective trade shall execute all phases of the work. Proof of such experience shall be submitted upon request. Improperly trained, untrained, or inexperienced personnel shall not be allowed in the work areas.

K. On-Site job supervisor shall have experience with abatement work, as evidenced through participation in at least two asbestos abatement projects of size and complexity comparable to this project.

L. Job supervisors and foremen shall be thoroughly familiar with and experienced in asbestos removal and related work and shall meet the requirements of a competent person set forth in OSHA Standard 29 CFR 1926.1101.

M. All asbestos abatement workers shall be knowledgeable, qualified, and trained in the removal, handling, and disposal of asbestos material and in subsequent cleaning of the affected environment. All asbestos abatement workers shall be certified as having attended and satisfactorily completed asbestos worker training in accordance with OSHA standard 29 CFR 1926.1101(k)(3).

N. Asbestos abatement workers shall have a state permit and/or EPA accreditation.

O. Prior to commencement of the work, all personnel who are to enter the work area shall be instructed in and shall be knowledgeable of the appropriate procedures for personnel protection and asbestos abatement. On-site training in the use of equipment and facilities unique to this job site shall be performed. Emergency evacuation procedure from the work area shall also be included in worker training.

P. Worker Medical Examinations: Provide medical examinations for all employees engaged in asbestos removal and disposal operations in accordance with OSHA Standard 29 CFR 1910.134(b), 1926.1101, and applicable State regulations. Ensure that all employee examination results are on file, available for review and maintained in accordance with OSHA Standard 29 CFR 1926.1101 (n)(3).

1.11 SUBMITTALS

The Contractor shall prepare the following submittals due before the actual start of the fieldwork:

A. Copy of the Contractor's Asbestos License or accreditation.

B. Schedule of Work Phases with estimated times of completion.

C. A copy of the Contactor's "Work Procedures and Asbestos Abatement Plan".

D. A copy of the Contractor's "Health and Safety Plan".

E. A copy of the Contractor's "Lead Mitigation Plan".

F. Hazard Communication: Procedure on how physical and health hazards associated with the ACM abatement and removal are identified and communicated to employees, and name of the person responsible for implementation of a Hazard Communication Program.

G. Proof of written notifications required for permits, state licenses and notifications and proof that all required permits and variances have been obtained.

H. Proof of written notification to the Government that asbestos abatement work is being conducted. As a minimum, the notification letter shall include the address of the project, dates work is to be performed, and drawings indicating the areas to undergo abatement.

I. Proof that the job supervisor, foremen, and asbestos abatement workers meet state license requirements or EPA accreditation.

J. Proof of a current medical surveillance program for all personnel.

K. Completed and notarized Certificate of Worker's Release for each asbestos abatement worker, workers of other trades, or supervisory personnel who enter the work area or otherwise contact ACM.

L. Proof of a respiratory protection program: Submit level of respiratory protection intended for each operation required by the project.

M. Proof of historic airborne fiber data: Submit airborne asbestos fiber monitoring data from an independent air-monitoring firm to substantiate selection of respiratory protection proposed. Data shall include the following for each procedure required by the work:

1. Date of measurement.
2. Type of work task monitored.
3. Methods used for sample collection and analysis.
4. Number, duration, and results of samples taken.

N. Waste Transportation: Submit information on the asbestos waste hauler, including; names, address, telephone number, and EPA identification number.

O. Waste Disposal: Submit information on the approved waste disposal site that will be used including; name, address, telephone number, and EPA identification number, contact name and facility name. Also submit any required generator certification forms for review.

P. Manufacturer's literature for all proposed equipment and products. Include Safety Data Sheets (SDS) for encapsulant, fire retardant plastics, and other chemicals.

Q. Specimen of the daily log proposed for use including the dates and times when all personnel enter and leave the work areas.

R. Results of all air monitoring, posted within 24 hours for all workers to see. A copy of the results shall also be given to the Government or its representative.

S. Certified, signed, and completed copy of each "Waste Shipment Record" form and receipts from the landfill operator that acknowledge the delivery of material, within 30 days following removal of ACM.

T. Copies of a daily log showing the dates and times of entrance to and exit from the work areas for all persons.

U. Compilation in chronological order of all air monitoring records.

V. Compilation of all completed and signed Waste Shipment Record forms, bills of lading, or disposal receipts.

W. Copies of notifications and checks to applicable agencies that the asbestos abatement project has been completed.

X. Notifications: Copies of notifications (and all correspondence with government regulatory agencies) to the necessary governmental agencies in accordance with regulatory requirements, including 10 or 20 day pre-notification requirements. All notifications shall include the following information:

i. Name, Address, designated contact person and telephone number of facility Owner.
ii. Name, Address, designated contact person, telephone number, EPA numbers and license numbers of the Asbestos Abatement Contractor.
iii. The address and description of the facility where the Work will take place.
iv. Construction Contract Number.
v. Description of the type and quantity of asbestos-containing material that will be abated and the procedures that will be used.
vi. Schedules for the Project including start and finished dates for abatement work.
vii. Name, Address, telephone number, EPA, DOT and DEP numbers and license numbers of the Asbestos Waste Hauler.
viii. Name, Address, telephone number, EPA numbers and license numbers of the Asbestos Waste Disposal Site.

1.12 LAWS TO BE OBSERVED

1. Occupational Safety and Health Act of 1970 (OSHA).
2. Licenses – Depending on the location of the work the contractor must maintain all New York State Department of Health and State of New Jersey, Department of Labor and Workforce Development License and Permits.

1.13 DOCUMENTS

The current issue of each document incorporated by reference herein shall govern. Where conflict among requirements or with the specification exists, the more stringent requirements shall apply.

A. OSHA Regulations: Provide special attention the following:

1. CFR 1910 (general industry).
2. CFR 1910.134 (respiratory protection)
3. CFR 1910.141 (sanitation)
4. CFR 1910.300-399 (electrical)
5. CFR 1910.1001 (asbestos)
6. CFR 1910.1200 (hard communication)
7. CFR 1926 (construction safety)
8. CFR 1926.52 (noise)
9. CFR 1926.62 (lead)

10. CFR 1926.1101 (asbestos)
11. CFR 1926.59 (hazard communication)
12. CFR 1926.40-449 (electrical)
13. CFR 1926.450-452 (ladders and scaffolding)

B. U.S. Environmental Protection Agency (EPA) including but not limited to:

1. NESHAP Asbestos National Emission Standards for Hazardous Air Pollutants. 40 CFR 61, Subparts A (General Provisions, Sections 01-10) and M (Asbestos, Sections 140-157).

C. DOT Regulations: Provide special attention to the Hazardous Materials Regulations, 49 CFR 171-180, in particular:

1. 49 CFR 171.14(b)(4) (placarding)
2. 49 CFR 172.300-308, 324 (marking)
3. 49 CFR 174.400, 466 (labeling)
4. 49 CFR 172.500, 504, 560 (placarding)

D. Other Standards

1. American National Standards Institute

a. ANSI Standard Z9.2: Fundamentals Governing the Design and Operation of Local Exhaust Systems.
b. ANSI Standard A40.8: National Plumbing Code.

2. National Fire Protection Association
3. NFPA 70: National Electrical Code
4. NFPA 70E: Standard for Electrical Safety Requirements for Employee Workplaces.

E. New York and New Jersey Regulations

1. New York Industrial Code Rule 56, Asbestos Regulation

2. New Jersey N.J.S.A. 34:5A-32 et seq. (Asbestos Services)

1.14 HEALTH AND SAFETY PROVISIONS

A. Personal Monitoring:

1. The Contractor shall perform Personal Air Monitoring in accordance with OSHA Standards, 29 CFR 1926.1101 (and 29 CFR 1926.62 Lead). Such records shall be made available to any authorized personnel and copies will be submitted to the Government's Consultants.

B. Progress Monitoring:

1. The Asbestos Contractor or a firm retained by the Contractor shall perform Progress Air Monitoring as required by OSHA for Class I and Class II work.

2. Progress air samples will be analyzed by Phase Contrast Microscopy (PCM) at an accredited laboratory or onsite.

C. Clearance Monitoring:

1. The Asbestos Contractor or a firm retained by the Contractor shall perform Clearance Air Monitoring in accordance with OSHA for Class I and Class II work.
2. Clearance air samples for full containment shall be analyzed by Transmission Electron Microscopy (TEM) by an accredited laboratory. Limited containment activities may be cleared by PCM.

D. Emergency Procedures:

1. The Contractor shall establish written emergency procedures to be posted within each work area. These procedures shall include plans for medical emergencies, fire evacuations, temporary loss of electrical power or water, and procedures for repair and clean-up following temporary breach of containment barriers.

E. Training:

1. In accordance with 29 CFR 1926.1101 and other pertinent regulations, all employees shall receive training in the proper methods to handle asbestos-containing materials including proper work procedures and equipment and methods.
2. Each employee shall participate in a medical monitoring program and shall understand the importance of monitoring airborne asbestos fibers as related to the proper of respiratory equipment. The training program shall comply with Federal and State regulatory requirements.

F. Protective Clothing:

1. Work clothes shall consist of fire retardant disposable full-body coveralls, head covers, boots, rubber gloves, non-skid boots or equivalent.
2. In addition, eye protection and hard hats shall be available to all Workers according to applicable Federal and State regulations.
3. The Contractor shall provide all Authorized Visitors with required protective clothing, including coveralls, respirator, hardhat, eye protection and footwear.

1.15 BARRICADES AND WARNING SIGNS

A. Caution Signs and Warning Labels:

1. The Contractor shall provide and display Caution signs so that said signs may be read from a distance so as to prevent accidental entry into the work area(s). The signs shall comply with OSHA and EPA regulations. In addition, warning labels shall be affixed to all raw materials, mixtures, scrap, waste, debris, and other materials containing asbestos fibers, or to containers. The signs at entrances to the facility and work areas shall be removed upon project completion.

PART 2 - PRODUCTS

2.1 MATERIALS

The Contractor shall furnish, supply, provide and utilize the following materials or their quality equivalent in the performance of this Contract. No materials, equipment or tools belonging to the Government shall be used by the Contractor.

A. Utilize only material (e.g., polyethylene sheeting, lumber, etc.) shall be rated to be fire retardant, as tested by ASTM Standard E-84. Additionally, utilize only polyethylene sheeting conforming to the requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-Resistant Textiles and Firms.

B. Materials shall be standard products of manufacturers regularly engaged in the production of the items and shall conform to OSHA Standard 29 CFR 1926.1101; EPA Standard 40 CFR 61, Subpart M; Department of Transportation Standards 49 CFR 171, 172, and 173; and applicable state regulations.

C. Plastic: Fire retardant, 6-mil thickness provided in rolls of sizes that minimize joints, for plasticizing the enclosed work area, preparation of the decontamination enclosure system, and waste packaging.

D. Reinforced Fire Retardant Plastic: Reinforced polyethylene sheet for the floor area of the decontamination enclosure system; 19 mil, 3-ply, high density flame resistant.

E. Duct Tape: Capable of sealing joints of adjacent sheets of plastic and attaching plastic sheeting to finished surfaces without damage to existing finish; capable of adhering under both dry and wet conditions, including use of amended water. When used on windows the tape shall be ultra violet light stable, shall not leave residue when removed and shall be Nashua 357 Black Duct Tape or approved equal.

F. Surfactant: Resin materials in a water base that have been tested to ensure materials are non-toxic and non-hazardous.

G. Lockdown Sealants: Use after asbestos removal to lockdown fugitive fibers; Class “A” fire resistance rating with an ASTM E-162 flame spread index of 15 or less.

H. Caulking Sealant: Single component, non-sag elastomer with 1,600% elongation capacity. Meet the requirements of Federal Specification TT-S-00230C, Class A type II. Sealant shall be used to form an airtight seal around plywood separation barriers or temporary partitions, seal along the seams of the decontamination enclosure system’s plywood sheathing, and seal around piping or other small penetrations of the work area.

I. Foam Sealant: Expanding urethane Class 1 with a UL 723 flame spread index of 25 or less, smoke developed index of 0, and a minimum operating temperature range between -30 ^{0} F and 250 ^{0} F.

J. Plywood: Use for separation barriers, temporary partitions, decontamination enclosure systems, and tunnels; exterior grade and a minimum 1/2-inch thick.

K. Spray Adhesive: Aerosol, specially formulated to stick to sheet polyethylene (3M 76, 3M 77, or approved equal).

L. Disposal Bags: The waste disposal bags shall be, at a minimum, six (6) mil polyethylene bags, labeled according to Federal and State regulations. Fiber Drums will be utilized to contain ACM material and any materials which may puncture waste disposal bags. The fiber drums shall be labeled in accordance with State and Federal Regulations.

M. Shipping Containers: Impermeable, suitable to receive and retain any asbestos-containing or asbestos-contaminated materials until they are disposed of at an approved landfill. Containers shall be labeled in accordance with this Section and shall be both airtight and watertight and conform to DOT Standard 49 CFR 178.224. Each container shall be constructed of fiber, hard plastic, or metal, with locking, airtight lids.

N. Markings and Labels: Disposal bags and shipping containers shall bear danger labels, transportation packaging labels, and generator identification information. Labels shall be permanently affixed to all bags and shipping containers containing ACM, in accordance with OSHA Standard 29 CFR 1926.1101(k)(2), DOT Standard 49 CFR Part 171 and 172, and EPA Standard 40 CFR Part 61.150(a)(1)(v).

2.2 EQUIPMENT

A. Spraying Equipment: To apply amended water or removal encapsulant shall be of a low-pressure type to prevent disturbance of the asbestos prior to physical controlled removal. Airless spray equipment shall be provided for the application of asbestos encapsulant.

B. Digital Manometer with Continuous Printout - The Contractor must utilize a sufficient number of Digital Manometers to monitor the pressure differential between the work area and the area outside the work area and within pressurized seals. Digital Manometers shall have audio and visual alarms that indicate a drop in pressure below the project set limit. One additional back-up digital manometer shall be on-site should any one fail during the project. Additional digital manometers will be required if the Contractor needs to utilize make-up air from any window, door, etc., within the work area.

C. Vehicles: Trucks or vans used for the transportation of asbestos waste shall be enclosed and suitable for loading, temporary storage, transit, and unloading of asbestos-contaminated waste without exposure to persons or property.

D. Fall Protection equipment: certified and approved to be used by trained personnel when working elevated to protect against falling from an elevated work area.

E. Fire Extinguisher: Type ABC dry chemical extinguisher or a combination of NFPA recommended types for the fire hazard exposures in each location. Minimum size of extinguisher shall be 4-A, and 40-B:C. Supply a minimum of one extinguisher for every 1,000 SF of floor area, with a maximum travel distance to an extinguisher of 75 feet. Supply at least one extinguisher in each decontamination enclosure equipment room and clean room.

F. First Aid: First Aid Supplies shall comply with governing regulations and recognized recommendations within the construction industry.

G. Ladders: The Contractor shall provide all ladders and staging equipment, as necessary, to complete the Work of this Contract. All ladders and staging materials shall comply with all applicable OSHA regulations.

H. Warning Labels and Signs: All warning signs and labels will comply with 29 CFR 1910.1001, 29CFR 1926.1101 and/or other Federal and State Regulations.

I. Waste Container: A secure and lockable container for the storage of the double bagged asbestos waste shall be provided prior to removal operations begin, and shall be utilized on a daily basis of waste generated during the work shift. An open topped dumpster with a tie down tarp is not acceptable.

J. Power Tools: When used directly for asbestos removal, equip with a dust collection system. Attach a shroud connected to a HEPA vacuum system for capture of dust.

K. Electrical Service

1. General – Electrical Service is not available at buildings/properties. The Contractor shall provide electrical power to buildings/property for abatement activities. The Contractor shall comply with applicable NEMA, NECA and UL standards and governing regulations for materials and layout of temporary electric service.
2. Temporary Power - Provide service to Work Area subpanel with minimum 60 amp, 2 pole circuit breaker. Subpanel and disconnect shall be sized and equipped to accommodate all electrical equipment required for completion of the Work. The contractor shall arrange service connections with the Government and/or the local power utility. Portable generators may only be used for short term (8 hours or less) O&M work.
3. Voltage Differences - Provide identification warning signs at power outlets that are other than 110-120 volt power. Provide polarized outlets for plug-in type outlets, to prevent insertion of 110-120 volt plugs into higher voltage outlets. Dry type transformers shall be provided where required to provide voltages necessary for Work operations.
4. Ground Fault Protection - Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button and pilot light, for plug-in connection of power tools and equipment.
5. Electrical Power Cords - Use only grounded extension cords; use "hard-service" cords where exposed to abrasion and traffic. Use single lengths or use waterproof connectors to connect separate lengths of electric cords if single lengths will not reach Work Areas.
6. Lamps and Light Fixtures - Provide general service incandescent lamps of wattage indicated or required for adequate illumination. Protect lamps with guard cages or tempered glass enclosures, where fixtures are exposed to breakage by construction operations.

L. Water Service/Sanitary

1. Water Service is not available at buildings/property. - The Contractor shall provide water to building/property for abatement activities.

2. Water Hoses - Employ heavy-duty abrasion-resistant hoses with a pressure rating greater than the maximum pressure of the water distribution system to provide water into each Work Area and to each Decontamination Unit. Provide fittings, as required, to allow for connection to existing wall hydrants or spouts, as well as temporary water heating equipment, branch piping, showers, shut-off nozzles, and other equipment.
3. Hot Water - The Contractor shall provide a hot water system.

2.3 PROTECTIVE CLOTHING AND EQUIPMENT

2.3.01 Respirators

A. General

1. The Contractor shall instruct and train each worker in the proper use of respirators. The Contractor shall require that each worker always wear a respirator in the Work Area, properly fitted on the face, from the start of any operation that may cause the release of airborne asbestos fibers. In addition, the Contractor shall provide a copy of the Respiratory Protection Program to the Government's Consultants prior to the beginning of Work as well as maintain a copy of the program on the job site throughout the performance of the Work.

B. Standards

1. Respiratory protective equipment is required in accordance with the 29 CFR 1910.1001, 29 CFR 1910.134, and 29 CFR 1926.1101 regulations and any State regulations, unless specified elsewhere.

C. Contractor Responsibility

1. The Contractor shall assure that workers always wear a respirator, properly fitted on the face, in the Work Area, from the initiation of the Asbestos Abatement Work until all areas have been cleared by means of TEM clearance air samples. All clearance samples must be below the regulatory limit of 0.01 f/cc.
2. The Contractor shall provide Authorized Visitors with suitable respirators and respirator training whenever they are required to enter the Work Area. Provide at least two (2) extra air hoses when supplied-air respirators are required.

2.3.02 Protective Clothing

A. Coveralls - The Contractor shall provide, at a minimum, fire retardant disposable full-body coveralls and head covers, and require that they be worn by all workers in the Work Area. Provide a sufficient number for the number of employees and their required changes.

B. Foot Coverings - The Contractor shall provide foot coverings with non-skid soles, and where required by OSHA, foot protection for all workers. Do not allow shoes to be removed from the Work Area for any reason after being contaminated with asbestos fibers. The shoes will either be disposed of as asbestos-containing waste or placed in double poly bags and removed from the site.

C. Hard Hats - The Contractor shall provide head protection (hard hats) as required by OSHA for all workers, and provide additional units for use by authorized personnel.

D. Goggles - The Contractor shall provide eye protection as required by OSHA for all workers involved with grinding, spraying, or any other type of process or activity that may potentially cause eye injury.

2.4 AIR FILTRATION SYSTEM

A. The Contractor shall supply the required number of air filtration systems equipped with a HEPA filter capable of creating a pressure differential of 0.02 inches of water column or greater to the work areas and seals of separation barriers in accordance with the following specifications. Each unit shall include the following:

1. A cabinet able to withstand damage from rough handling and transportation.
2. The final filter assembly shall be HEPA type.
3. The unit shall have a minimum of a two-stage pre-filter to protect the HEPA filter from damage resulting from impact with large particles.
4. The unit shall have at a minimum, the instrumentation described below:

    a. Magnehelic gauge (pressure differential meter) or manometer to measure pressure drop between filters.
    b. A table indicating usable air-handling capacity for various static pressure readings.
    c. A meter that keeps track of the time that the unit has been in operation.
    d. A mechanical or electrical lockout to prevent the unit from operating without a HEPA filter in place.
    e. An alarm system consisting of lights and an audio alarm to warn of a major rupture in the HEPA filter, blocked air discharge, or abnormal pressure drop.
5. The unit shall be approved by the National Electrical Manufacturers Association (NEMA) and the Underwriters Laboratory (UL).

PART 3 - EXECUTION

3.1 PREPARATION

A. Transmit submittals required by this Section.

B. Furnish products as indicated.

C. Ensure that the substrates are in suitable condition to receive the work.

3.2 SPECIAL CONDITIONS

A. The Contractor shall not begin Asbestos Abatement Work until all tools and equipment and materials are on hand, all notices and permits have been obtained, and locking waste storage

containers are on-site.

B. The contractor shall provide onsite, locking waste storage container(s) for the asbestos waste, with the required warning signs, until transportation for offsite disposal is arranged.

C. The Contractor shall protect all wiring during removal activities.

3.3 DECONTAMINATION AND ENCLOSURE SYSTEMS

A. Personnel Decontamination Unit shall be contiguous to the Work Area, consisting of three (3) totally enclosed chambers as described in the following. A minimum of two layers of polyethylene sheeting shall be required for floors, walls, and the ceiling. The on-site constructed decontamination unit shall be constructed of 2 x 4 frames. Disposable/pop-up decontamination units may **not** be used.

B. Waste/Equipment Decontamination Unit System: Locate adjacent to the work area. The waste/equipment decontamination unit shall consist of two totally enclosed spaces. The waste/ equipment decontamination unit shall be sized for the removal of all waste.

C. Optional Attached /Combined Personal / Waste Decontamination Unit: For full containment areas, provide an attached, combined, personal / waste decontamination unit, in compliance with OSHA Standard 29 CFR 1926.1101.

3.3.01 Execution

The Contractor shall follow and adhere to the following procedures for the construction of a Decontamination Unit for an Asbestos Abatement Project:

A. The Contractor shall construct one chamber to be classified as an Equipment Room with an airlock doorway between it and the work area and another airlock doorway between it and the Shower Room. This Room shall contain provisions for the storage of contaminated clothing and equipment. Each airlock doorway shall consist of three alternating flaps, each flap shall be sealed at the top and at one side to the wall, in the alternating “Z” pattern. The bottom of each flap shall be weighted.

B. The Contractor shall construct one chamber to be classified as a Shower Room with an airlock doorway (three alternating flaps) between it and the Clean Room. This Room shall possess a shower with provisions for hot and cold running water (heated water to be provided by the Contractor) that allows for the complete showering of workers during decontamination.

C. The Contractor shall construct one chamber to be classified as a Clean Room with an airlock doorway (three alternating flaps) at its entrance. This Room shall contain provisions for the storage of the worker's street clothing and unused protective clothing and equipment.

3.3.02 Execution of Equipment/Waste-Out Unit

The Contractor shall follow and adhere to the following procedures for the construction of an Equipment Decontamination/Waste-Out Unit for this Asbestos Hazard Abatement Project:

A. The Contractor shall construct one chamber to be classified as a Wash Room with an airlock doorway between it and the Work Area and an airlock doorway between it and the Holding Area.

B. The Contractor shall construct one chamber to be classified as a Holding Area with an airlock doorway at its entrance. This Room will be used to temporarily store the bags and/or drums of asbestos waste prior to transporting to the disposal container.

3.4 PERSONAL PROTECTION AND DECONTAMINATION

A. Take all safety measures and precautions necessary to protect employees in accordance with OSHA Standard 29 CFR 1926, EPA Standard 40 CFR, Part 61, Subpart M, and applicable state regulations.

B. Provide authorized visitors with suitable properly fitting protective disposable clothing, headgear, hard hats, eye protection, respiratory protection, and footwear (up to four sets per 8-hour shift) whenever they are required to enter the work area.

3.5 SEQUENCE OF WORK - EXECUTION

3.5.01 Operations & Maintenance Activities (Not Anticipated)

A. The following procedures shall be followed while performing the O&M activities:

1. No asbestos O&M work including preparation shall be performed or continued without having proper notification and a certified supervisor at the site.
2. Provide and display danger signs at every entrance to the work areas in clearly visible locations indicating that asbestos removal work is being conducted and unauthorized and not protected persons should not enter.

   Signs must use the following legend:

   DANGER
   ASBESTOS
   CANCER AND LUNG DISEASE HAZARD
   RESPIRATORS AND PROTECTIVE CLOTHINGS
   ARE REQUIRED IN THIS AREA

   Signs shall be posted which meet the specifications set forth in 29 CFR 1926.1101 at all approaches to the work area. Signs shall be posted at a sufficient distance from the work area to permit a person to read the sign and take precautionary measures to avoid exposure to asbestos.
3. A contiguous space surrounding the work area shall be roped off and regulated to allow only certified workers and authorized visitors to enter.
4. All asbestos handlers shall wear disposable suits, including gloves, hood and footwear, and appropriate respiratory equipment, prior to entering the containment area.
5. Damaged plater shall be wetted and loose pieces removed/picked up and placed in a plastic waste bag. Plaster to be removed for installation of ducts, pipes and wires shall; have a

sheet of plastic placed on the ground below the area to be cut; the material shall be wetted; if power tools are used to cut the plaster, appropriate attachments to a HEPA vacuum shall be used; all waste shall be doubled bagged for disposal; and the work area shall be HEPA vacuumed and wet washed.

6. The O&M cleanup of the floors of crawlspaces shall include: sealing all penetrations from the crawlspace to the floor above; a hygiene facility/equipment room shall be constructed above the hatchway into the crawlspace, an airlock shall be attached to the hygiene room with three curtains separating the rooms and at the exit/entrance to the air lock; HEPA air filtration shall be installed at the exterior vents to the crawlspaces (special attachments to the HEPA air units will be required); thermal system insulation on the floors of the crawlspaces shall be wetted, picked up and placed in plastic bags; the ground surface shall be raked to ensure no pieces of TSI remain; and all waste shall be doubled bagged for disposal. Workers will HEPA vacuum their coveralls in the hygiene room and remove and dispose of before exiting the air lock.

3.5.02 Limited Containment Enclosure with Glove Bag Removal (Not Anticipated)

A. The following procedures shall be followed while performing limited containment removals:

1. The work area shall consist of a limited containment "tent" or an area sealed off and appropriate caution and/or danger signs posted on the perimeter to prevent unauthorized personnel from entering the work area.
2. All necessary materials and supplies shall be brought into the work area before any removal begins.
3. Remove the asbestos containing materials utilizing two person teams. The insulation shall be removed within a glove bag. The contractor shall provide a suitable number, size and configuration of glove bags for the project.
4. The substrate shall be washed with a damp cloth and sealed with a lockdown sealant.
5. All waste shall be doubled bagged for disposal.
6. The work area shall be HEPA vacuumed and wet washed following the bag out of the waste material.

3.5.03 Full Containment Work Area (Not Anticipated)

The Contractor shall follow and adhere to the following procedures for the Work Area preparation of this Asbestos Hazard Abatement Project.

A. FIRST - The Contractor shall construct the decontamination chamber and waste decontamination chamber, prior to any other onsite activity.

B. SECOND -The Contractor shall clean the work areas prior to the installation of the polyethylene, using HEPA vacuum equipment and wet-cleaning methods as appropriate. Air filtration units will be utilized during this clean-up phase of work. All carpeting shall be removed and disposed as asbestos contaminated waste. Any item that may disturb ACM during its removal shall be removed/cleaned by the contractor.

C. The Contractor shall isolate the Work Area for the duration of the project with a minimum of two layers of six (6) mil polyethylene as critical barriers secured to cleaned surfaces.

D. All electric shall be shut down in the Work Area.

E. All grossly contaminated objects located within the Work Area will be treated as asbestos-containing material and will be disposed of in the appropriate manner.

F. The Contractor shall seal any sump pits or floor drains to prevent asbestos contaminated water from entering.

G. The Contractor shall construct temporary walls with 2 x 4 and plywood as needed where no walls are present to hang the wall and ceiling polyethylene.

H. The Contractor shall cover floors with a minimum of two (2) layers of six (6) mil polyethylene. Other horizontal surfaces shall be covered in accordance with federal, state and local requirements. Vertical surfaces shall be covered with a minimum of one (1) layer of six (6) mil polyethylene. Sheeting shall be sized to minimize the number of seams. No seams shall be allowed within 12 inches of corners or where floor and wall join. Seams shall overlap at least 12 inches between seams of adjacent layers. Second layer floor seams shall be offset at least 12 inches from the first layer floor seams. The exception to the above is where Floor Covering will be removed.

I. The Contractor shall seal all wall, plumbing, duct and other openings with an additional layer of polyethylene or other suitable material to prevent materials from entering such cavities.

J. The Contractor shall regularly check all isolation barriers for punctures, loose seals, and contact with heat-generating devices, and general integrity. Any problems shall be remedied immediately.

K. The Contractor shall maintain emergency and fire exits from the Work Areas. The Contractor will provide fire extinguishers.

L. The Contractor shall provide lighting and power to the work areas, ensure safe and proper installation according to codes and have a backup source of power available if needed.

M. The Contractor shall install and maintain air pressure differential equipment during the removal and decontamination phases of the project until the Clearance Tests have been analyzed and fiber levels are within acceptable limits. The Contractor shall have a sufficient number of units to maintain a pressure differential of 0.02 inches of water column. The Contractor shall have at least one backup unit on site should any one unit fail. Additional units will be required where separation barriers seals are required.

N. Prior to removal, the Contractor shall spray asbestos materials with Amended Water. The asbestos materials shall be sufficiently saturated without causing excessive dripping to prevent emission of airborne fibers. Asbestos containing materials shall be sprayed repeatedly during the Work Process to maintain a wet condition. If the materials are not easily saturated, then the Work Area shall be constantly misted to keep fiber emission minimal.

O. The Contractor shall remove asbestos in manageable sections and/or volumes by a multi-person team. Any material that falls to the floor shall be wetted and picked up immediately. ACM shall not be allowed to dry out. Prior to the start of the next area, the asbestos waste must be packaged in an approved manner in an approved waste container appropriately marked according to regulations and this Contract.

P. The Contractor shall keep and maintain the Work Area in a clean and orderly manner. All waste materials shall be placed in the proper containers and labeled accordingly.

Q. The Contractor shall clean and store all waste packages in a Holding Area until that time when moved to the waste container for storage until transported to the disposal site. The packages shall be stored in piles no higher than four (4) feet or in a manner that will result in damage to the packages or drums.

R. The Contractor shall clean all surfaces of contaminated equipment thoroughly by wet sponging or wiping and sealed in polyethylene before moving such items into the Washroom of the Equipment Unit (Equipment Room of the Decontamination Unit if Equipment Unit is not required) for final cleaning and removal into uncontaminated areas.

3.6 ASBESTOS ABATEMENT DECONTAMINATION AND CLOSEOUT

A. The Contractor shall be responsible for the proper and complete decontamination of the Work Area and contaminated equipment as well as any area that may become contaminated through the performance of this Contract. The Work described in this section includes the decontamination of the air in the Work Area, which has been contaminated by airborne fibers through abatement activities.

3.6.01 Execution

The Contractor shall follow and adhere to the following procedures for the decontamination of the Work Area:

A. Remove all visible accumulations of asbestos material and debris. Wet Clean all surfaces inside the Work Area to remove asbestos residue.

B. After Wet Cleaning, the Contractor shall perform a complete visual inspection of the Work Area to ensure that the Work Area is free of all asbestos residue or debris.

C. Upon successful review, the Contractor shall apply sealant to all surfaces where ACM has been removed. All surfaces within ceiling (e.g., the tops of the wood joints, beams, etc.) and other accessible cavities where asbestos materials have been removed shall also be sealed. Apply sealant in sufficient amounts to render the affected surface tacky to the touch. The sealant shall be compatible with the existing substrate and shall be rated to withstand the temperature of the items to which it is applied.

D. Upon completion of the sealant work and allowing the sealant to dry, the Contractor shall conduct clearance testing.

E. All sealed drums, bags, and other equipment used in the Work Area shall be included in the clean-up and shall be removed from the Work Area at the appropriate time in the cleaning sequence.

F. Upon written notification from the Contractor that the Work Area has passed the Clearance Tests, the Contractor shall remove the plastic sheeting within the Work Area. In the event that the work area does not pass clearance Tests, the area shall be fully re-cleaned as per this section.

G. Upon notification, the Government or its representative shall make a final visual inspection of the Work Area. Evidence of ACM identified during the review will necessitate further cleaning as heretofore specified at the Contractor's expense.

H. After written notification from the Government or its representative, the Contractor shall remove the containment barriers and proceed with any remaining repairs or refinish work.

3.7 TESTING AND INSPECTION

A. Visual inspections and air monitoring, if required, shall be performed during and after asbestos abatement to document airborne asbestos fiber concentrations.

B. Should a delay occur due to failures of clearance air testing, all associated expenses such as PCM and TEM analysis, and air testing, shall be the responsibility of the Contractor.

C. Provide OSHA monitoring and all other tests required by specified applicable regulations, codes, and standards. The use of a testing laboratory shall not release the Contractor from providing tests required for the protection and safety of his employees.

D. Collect and analyze (OSHA) personal air monitoring samples, repeated during each different work activity, from each work area. Sample collection and analysis shall be performed using the OSHA Reference Method outlined in 29 CFR 1926.1101, Appendix A.

E. Results of all air monitoring shall be posted within 24 hours of the abatement after collection for all workers to see. A copy of the results shall be submitted to the Government.

F. Perform an inspection of the Work to evaluate completeness prior to requesting an inspection by the Government.

H. Where visual inspections are performed by the Government, the Contractor shall allow for the following response time for completion of the inspection.

3.8 CLEAN-UP

A. Asbestos Related Clean Up: All clean-up work related to asbestos abatement work shall be in strict accordance with general technical requirements.

B. Final Site Cleaning: Upon completion of the work, remove all temporary construction and decontamination facilities; put the premises in a neat and clean condition; and sweep, clean, and wash to restore the condition of the site to its original condition.

3.9 CONTINGENCY PLAN

A. Air Monitoring will occur during the project and around the work area. The air monitoring will be performed in accordance with Federal and State requirements. This contingency plan has been

prepared in order to address appropriate response actions in the event of a failure in the containment system or in the event of a release or suspected release of asbestos fibers.

3.9.01 Pressure Loss

A. In the event that the pressure differential drops below 0.02 inches w.c.:

1. The contractor supervisor shall investigate and evaluate the engineering controls to determine the source of the pressure loss.
2. The contractor shall institute corrective action such as: additional sealing, critical barrier maintenance and construction, changing of exhaust unit filters, adjustment of make-up air, operation of additional exhaust units or other necessary measures to reestablish an acceptable pressure differential.

B. If the pressure differential drops below 0.01 inches w.c., the following procedures shall be implemented:

1. The contractor shall cease abatement activity in the work area.
2. The contractor supervisor shall investigate and evaluate the engineering controls and determine the source of the pressure loss.
3. The contractor shall institute corrective action such as: additional sealing, critical barrier maintenance and construction, changing of exhaust unit filters, adjustment of make-up air, operation of additional exhaust units or other necessary measures to reestablish an acceptable pressure differential.
4. Abatement work will not resume until a pressure differential of 0.02 inches w.c. or greater is not reestablished.

3.9.02 Elevated Air Sample

A. In the event that an air monitoring sample result is elevated (>0.01 f/cc (plus background) outside of containment or >0.02 f/cc inside clean room):

1. The contractor supervisor shall investigate and evaluate the engineering controls to determine the source of the high air level.
2. An additional/second PCM air sample shall be taken at each place at which a high air level was obtained. The additional/second PCM sample may be split, and if the result of the air sample is less than 0.010 f/cc the contingency plan is terminated. If the result of the air sample exceeds 0.010 f/cc, the contractor shall choose the option of cleaning and retesting by PCM analysis or analyzing the split sample by TEM analysis. If the result of the TEM analysis exceeds 0.010 f/cc, then cleaning shall be undertaken.
3. Cleaning shall include, but not be limited to, wet wiping and misting the air. Cleaning the affected area shall be continued outside of containment and PCM sampling shall also be continued until the result in the area is less than 0.010 f/cc by either PCM or TEM analysis.
4. If laboratory analysis of air samples does not yield a reading less than 0.010 f/cc within 24 hours of receipt of the first test result above 0.010 f/cc, all abatement work will cease until acceptable results are obtained.

3.09.03 Power Outage

A. If a power outage occurs during active abatement work, all work will stop until power is restored.

END OF SECTION 02 82 00

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SECTION 02 83 13 - LEAD HAZARD CONTROL

PART 1 – GENERAL

1.1 SUMMARY

A. The Contractor shall comply with the requirements regarding lead including lead based paint of all applicable federal and local laws, codes, and regulations including but not limited to the regulations of the United States Environmental Protection Agency (USEPA), Occupational Safety and Health Administration (OSHA) and the local authority even if they are not specifically referenced herein. If an applicable law, code or regulation is more restrictive than any of the requirements, the Contractor shall follow the more restrictive requirements.

1. Painted surfaces may contain lead concentrations in excess of the U.S. Department of Housing and Urban Development definition of Lead-based paint (LBP) of 0.5% lead by weight. The Contractor shall comply with all applicable regulations, including but not limited to the OSHA Lead in Construction Standard.
2. The Occupational Safety and Health Administration (OSHA) regulation 29 CFR 1926.62 Lead in Construction, states that workers must be protected through use of engineering controls, personal protective equipment, and personal exposure monitoring during each phase and task of the project. It is the Contractors responsibility to familiarize themselves with existing conditions and the extent of painted surfaces to be remedied at the project site.
3. The Contractor shall not soley rely on the information provided by Government but shall treat all existing coatings which will be disturbed, affected or demolished by the work of this Contract as potential hazards for lead and other heavy metals unless the Contractor has received the Engineer's prior written approval to treat them otherwise based upon the Contractor's comprehensive survey and testing which demonstrate that no such hazards exist at a particular location.

B. Related Documents

1. Hazardous Building Materials Survey Report, Gateway National Recreation Area NIKE Launch Site Buildings 431, 432, 434, Fort Hancock Building 124, Miller Field Building 7, GATE Deferred Maintenance and Building Demolition Project at Multiple Sites, Mod 1 by Mabbett & Associates, Inc., dated August 11, 2025.

2. Hazardous Building Materials Survey Report, Gateway National Recreation Area (Gate) Miller Field Building 5, Fort Tilden Building T148, Fort Wadsworth, Building 354, Great Kills Ranger Trailer, NIKE Launch Site Building 435, Deferred Maintenance and Building Demolition Project by Mabbett & Associates, Inc., dated August 11, 2025.

3. Hazardous Building Materials Survey Report, Gateway National Recreation Area (Gate) Deferred Maintenance and Building Demolition Project by Mabbett & Associates, Inc., dated January 31, 2025.

4. Additional Hazardous Materials Investigations, Gateway National Recreation Area GATE Deferred Maintenance at Multiple Sites, Mod 1 Project by Mabbett & Associates, Inc., dated June 12, 2025.

5. Asbestos Containing Building Materials Survey, Gateway National Recreation Area – Jamaica Bay Unit by PRIZIM Inc. Gaithersburg, Maryland, dated May 2009.

6. Asbestos Containing Building Materials Survey, Gateway National Recreation Area – Sandy Hook Unit by PRIZIM Inc. Gaithersburg, Maryland, dated May 2009.

7. Asbestos Containing Building Materials Survey, Gateway National Recreation Area – Staten Island Unit by PRIZIM Inc. Gaithersburg, Maryland, dated May 2009.

C. OSHA Construction Standard for Lead

The OSHA Construction Standard for lead is cited as Title 29 Code of Federal Regulations 1926.62 (29 CFR 1926.62). This regulation requires employers to protect their employees from exposure to lead during demolition, renovation (including maintenance) and construction projects.

D. Regulations

1. Comply with laws, ordinances, rules, and regulations of Federal, State, and Local authorities having jurisdiction regarding removing, handling, storing, transporting, and disposing lead waste materials.

    1. Comply with applicable requirements of 29 CFR Part 1926.62.

    2. Notify Contractor and request resolution of conflicts between regulations and specified requirements before starting work.

    3. Comply with the following local laws, ordinances, criteria, rules and regulations regarding removing, handling, storing, transporting, and disposing lead-contaminated materials:

    4. New York State Department of Public Health

    5. State of New Jersey, Department of Environmental Protection, Division of Solid Waste and Hazardous Waste, Lead-based Paint Abatement Debris Disposal

    6. State of New Jersey, Department of Community Affairs, Lead Hazard and Abatement

1. Construction work is defined as work for construction, alteration and/or repair, including painting and decorating. It includes but is not limited to the following:

    a. Demolition or salvage of structures where lead or materials containing lead are present;
    b. Removal or encapsulation of materials containing lead;
    c. New construction, alteration, repair, or renovation of structures, substrates, or portions thereof, that contain lead, or materials containing lead;
    d. Installation of products containing lead;
    e. Lead contamination/emergency cleanup;
    f. Transportation, disposal, storage, or containment of lead or materials containing lead on the site or location at which construction activities are performed; and
    g. Maintenance operations associated with the construction activities described in this paragraph.
2. The Standard has set an airborne Action Level of 30 ug/m^3 of lead. Employees that are exposed above the action level must then participate in a medical and biological monitoring program and receive training on lead that includes health effects, proper handling and protective actions that should be utilized.
3. Until the employer performs an employee exposure assessment as required by the regulations and determines actual employee exposure, the employer shall provide to employees performing the tasks with interim protection as follows:

    a. Appropriate respiratory protection (refer to 29 CFR1926.62) and training per 29 CFR 1910.134;
    b. Appropriate personal protective clothing and equipment;

        (i) Coveralls or similar full-body work clothing;
        (ii) Gloves, hats, and shoes or disposable shoe coverlets; and
        (iii) Face shields, vented goggles, or other appropriate protective equipment, which complies with 29 CFR 1910.133.
    c. Change areas;
    d. Hand washing facilities;
    e. Biological to consist of blood sampling and analysis for lead and zinc protoporphyrin levels, and
    f. Training regarding:

        (i) 29 CFR 1926.59 - Hazard Communication;
        (ii) 29 CFR 1926.62 - Lead:
        (iii) 29 CFR 1926.21 - Safety training and education.
4. Exposure assessment: Each employer who has a workplace or operation covered by the OSHA standard shall initially determine if any employee may be exposed to lead at or above the action level. Employee exposure is that exposure which would occur if the employee were not using a respirator. The employer shall collect personal samples representative of a full shift including at least one sample for each job classification in each work area either for each shift or for the shift with the highest exposure level. Full shift personal samples shall be representative of the monitored employee's regular, daily exposure to lead.

5. Note that the requirements for employees that are exposed to unknown concentrations are the same as those that are exposed above the action level. Once the concentrations are determined by the exposure assessment, those that are not exposed above 30 ug/m^3 do not have to have further medical monitoring, use of respiratory protection or training.
6. Those exposed above 30 ug/m^3 get continued medical surveillance. Those exposed above the PEL of 50 ug/m^3 continue medical surveillance and includes respiratory protection program. Both are required to have annual refresher training.
7. Employees that are exposed above the Permissible Exposure Level (PEL) of 50 ug/m^3 must also be provided with respiratory and personal protective equipment, medical monitoring, etc.

E. Other applicable OSHA standards include:

29 CFR 1910.133 – Eye and Face Protection
29 CFR 1910.134 – Respiratory Protection
29 CFR 1926.59 – Hazard Communication

1.2 SUBMITTALS

A. All submittals required under Section 02 83 13 must be submitted to the Engineer for his review prior to the start of any work operations. All Health and Safety plans shall by sealed/signed by a Certified Industrial Hygienist. All plans and/or submittals must conform to these specifications. After the Engineer has reviewed each submittal, the Contractor shall comply with the terms thereof. Note that the Engineer will perform a cursory review of the submittal and make comment if warranted, this does not constitute an approval of the plan nor excuse the Contractor for his employer responsibilities required by any regulation.

B. Worker Protection Submittals. The Contractor shall submit the following plans, programs and information a minimum of five (5) calendar days prior to any anticipated work.

1. Lead (Heavy Metal) Health and Safety Compliance Program. A written Project-specific Compliance Program, prepared under the direction of and signed by a Certified Industrial Hygienist (CIH) in accordance with 29 CFR 1926.62, for the protection of workers from lead and other heavy metals in the paint being removed or disturbed. Include the name of the competent person who will be making routine inspections of paint removal activities to ensure compliance with the program in accordance with 29 CFR 1926.62. Verify that any Subcontractors working for the Contractor are included in the program or are in a separate program, which meets the requirements of this Section. If Subcontractors are operating under a separate program, include the program with the Submittals required there under. This Compliance Program shall contain, without limitation, the following information:

a. Regulated Areas. A plan for the establishment of regulated areas around equipment and operations that may generate emissions of dust, vapors or debris containing lead or other heavy metals. A typical work area sketch and the methods that will be used for monitoring and designating the regulated areas shall be included.

b. Personnel Qualifications. The name, experience, and qualifications of both the CIH who will be overseeing the development of the Compliance Program, and the competent person who will be assigned to the project.

c. Outside Laundry. The name, address, and qualifications of the laundry facility, if one will be used, for the cleaning of reusable clothing. A letter from the laundry facility indicating that is permitted to handle clothing contaminated with lead and/or the other heavy metals of concern shall be included.

d. Laboratory Qualifications. Prior to using any laboratory to perform laboratory services in connection with the worker and area monitoring required under this Section, the Contractor shall submit certificates of accreditation for each such laboratory to the Engineer for review and approval.

   (i) Any such analytical laboratory shall be accredited for metals analysis by the American Industrial Hygiene Association AIHA, and a successful participant in the AIHA program for at least one (1) year, and accredited for environmental lead samples under the National Lead Laboratory Accreditation Program (NLLAP) and a successful participant in the ELPAT program for at least one (1) year.

e. Cleaning Solutions. Identify methods to be used for cleaning of surfaces and equipment when wet wiping or washing is employed.

f. MSDS. Three copies of the manufacturer's Material Safety Data Sheets (MSDS) for all chemicals and other potential hazardous material brought on Site.

PART 2 – PRODUCTS (Not used)

PART 3 – EXECUTION (Not used)

END OF SECTION 02 83 13

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SECTION 02 84 33 - ABATEMENT OF PCB CONTAINING CAULK-SEALANT MATERIALS

PART 1 - GENERAL

1.1 SUMMARY

A. This section specifies the procedures for removal of existing polychlorinated biphenyls (PCB) containing caulking materials, and disposal of removed materials.

B. Disturbance or dislocation of polychlorinated biphenyls (PCB) containing caulking materials may cause a health hazard to work persons and building occupants. Contractor shall appraise all of his workers, supervisory personnel, subcontractors and consultants who will be at job site of the seriousness of the hazard and of proper work procedures which must be followed.

C. Where in the performance of the work, workers, supervisory personnel, subcontractors, or consultants may encounter, disturb or otherwise function in the immediate vicinity of polychlorinated biphenyls (PCB) containing caulking materials, appropriate, continuous measures as necessary to protect all building occupants from the hazard of exposure shall be taken. Such measures shall include the procedures and methods described herein, regulations of the U.S. Occupational Safety & Health Administration (OSHA), U.S. Environmental Protection Agency (EPA), the New York State Department of Labor, and the New York State Department of Environmental Conservation and New Jersey Department of Environmental Protection (NJDEP) and USEPA PCB Remediation Policies, and NJDEP 40 CFR Part 761 PCB.

D. The results of the testing for PCB containing caulking/sealants and glazing are listed in the Regulated Building Materials Report Survey Report by Mabbett dated January 31, 2025, in section 4.0 Building Material PCB Survey.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Hazardous Building Materials Survey Report, Gateway National Recreation Area NIKE Launch Site Buildings 431, 432, 434, Fort Hancock Building 124, Miller Field Building 7, GATE Deferred Maintenance and Building Demolition Project at Multiple Sites, Mod 1 by Mabbett & Associates, Inc., dated August 11, 2025.

B. Hazardous Building Materials Survey Report, Gateway National Recreation Area (Gate) Miller Field Building 5, Fort Tilden Building T148, Fort Wadsworth, Building 354, Great Kills Ranger Trailer, NIKE Launch Site Building 435, Deferred Maintenance and Building Demolition Project by Mabbett & Associates, Inc., dated August 11, 2025.

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E. Asbestos Containing Building Materials Survey, Gateway National Recreation Area – Jamaica Bay Unit by PRIZIM Inc. Gaithersburg, Maryland, dated May 2009.

F. Asbestos Containing Building Materials Survey, Gateway National Recreation Area – Sandy Hook Unit by PRIZIM Inc. Gaithersburg, Maryland, dated May 2009.

G. Asbestos Containing Building Materials Survey, Gateway National Recreation Area – Staten Island Unit by PRIZIM Inc. Gaithersburg, Maryland, dated May 2009.

H. Asbestos Abatement: Section 028200.

I. Lead Hazard Control: Section 028313.

1.3 REFERENCES

A. TSCA (Toxic Substances Control Act)

B. CERCLA (Federal "Superfund")

C. New York State Department of Environmental Conservation (DEC) 6NYCRR:

1. Part 360 Solid Waste Management Facilities.
2. Part 364 Waste Transporter Permits.
3. Part 370 Hazardous Waste Management System-General.
4. Part 371 Identification and Listing of Hazardous Wastes.
5. Part 372 Hazardous Waste Manifest System and Related Standards for Generators, Transporters and Facilities.
6. Part 373 Hazardous Waste Management Facilities.

D. New Jersey Department of Environmental Protection, Disposal of Building Materials with PCBs

1. 40 CFR Part 761.62

E. OHSA (Occupational Safety and Health Administration) CFR Title 29.

F. EPA (Environmental Protection Agency)

G. CDC (Center for Disease Control): Air Pollution and Respiratory Health.

1.4 DEFINITIONS

A. Authorized Personnel: Facility or the Director's Representative, and all other personnel who are authorized officials of any regulating agency, be it State, Local, Federal or Private entity who possess legal authority for enforcement or inspection of the work.

B Containment: The enclosure within the building which establishes a contaminated area and surrounds the location where hazardous material remediation is taking place and establishes a Lead Control Work Area.

C. Clearance Criteria: A Visual Inspection of all removal surfaces, performed by the independent testing lab employed by the Director's Representative, conforming to all standards set forth by all authorities having jurisdiction, mentioned in the references.

D. Fixed Object: Mechanical equipment, electrical equipment, fire detection systems, alarms, and all other fixed equipment, fixtures or other items which cannot be removed from the work area.

E. HEPA: High Efficiency Particulate Absolute filtration efficiency of 99.97 percent down to 0.3 microns. Filtration provided on specialized vacuums and air filtration devices to trap particles.

F. PCB Solid Hazardous Waste: Materials containing one or more PCB compounds totaling 50 parts per million (ppm) or greater.

G. PPE: Personal Protective Equipment.

1.5 ABBREVIATIONS

A. ASTM: American Society for Testing and Materials
1916 Race Street
Philadelphia, PA 19103

B. CFR: Code of Federal Regulations
Government Printing Office
Washington, DC 20402

C. DOT: New York State Department of Transportation
Main Office, 50 Wolf Road
Albany, NY 12232

D. NIOSH: National Institute for Occupational Safety and Health
Building J.N.E. Room 3007
Atlanta, GA 30333

E. NJDOT: New Jersey Department of Transportation
Main Office, 1035 Parkway Avenue
Trenton, NJ 08625

F. OSHA: Occupational Safety and Health Administration
200 Constitution Avenue
Washington, DC 20210

G. USEPA: United States Environmental Protection Agency
401 M Street SW
Washington, DC 20460

1.6 SUBMITTALS

A Product Data: Catalog sheets, specifications, and application instructions for any removal products, if used.

B. Quality Control Submittals:

1. Worker's Qualifications Data:

   a. Name of each person who will be performing the Work and their employer's name, business address and telephone number.
   b. Names and addresses of 3 similar projects that each person has worked on during the past 3 years and documentation of completion of appropriate PCB/Hazardous Waste training program and supervisors with appropriate PCB/Hazardous Waste supervisor training.
2. Work Plan: Submit one copy of the work plan required under Quality Assurance Article.
3. Waste Transporter Permit: One copy of transporter's current waste transporter permit.

C. PCB Work Closeout Submittals:
1. Disposal Site Receipts: Copy of waste shipment record and disposal site receipt showing the PCB-containing materials have been properly disposed of.

1.7 QUALITY ASSURANCE

A. Contractor shall provide and assure that the quality of work practices and procedures are consistent with the below listed agencies. Contractor shall utilize the latest edition, including all addenda, revisions and supplements for all regulatory agencies codes, etc., including but not limited to:

1. Environmental Protection Agency (EPA).
2. Occupational Safety and Health Administration.
3. State of New York and New Jersey codes and laws.
4. All local codes.

B. Worker's Qualifications: The persons performing PCB Caulk abatement and their supervisor shall be personally experienced in PCB abatement work and shall have been regularly employed by a company performing PCB abatement for a minimum of 3 years.

C. Regulatory Requirements: Comply with the referenced standards.

D. Pre-Work Conference: Before the Work of this Section is scheduled to commence, a conference will be held by the Director's Representative at the Site for the purpose of reviewing the Contract Documents, discussing requirements for the Work, and reviewing the Work procedures.

1. The conference shall be attended by the Contractor, the PCB Caulk removal subcontractor, and the testing/monitoring laboratory employed by the Director.

E. PCB Containing Caulk Removal Work Plan: At the conclusion of the pre-work conference, before the physical PCB containing caulk abatement Work begins, prepare a detailed PCB-containing material removal work plan.

1. The work plan shall include, but not be limited to, a drawing indicating the location, size, and details of PCB Caulk Collection Areas (drop cloths etc.,) staging areas for PCB caulk removal from identified area, location and details of containment, decontamination facilities, sequencing of window/caulk removal, work procedures, types of equipment, crew size, and emergency procedures for fire and medical emergencies.

1.8 PROJECT CONDITIONS

A. Install 2 layers of 6 mil fire retardant polyethylene sheeting over the inside of all openings within 25 feet of the removal area to prevent contamination of the interior of the affected spaces.

B. Provide 6 mil fire retardant polyethylene drop cloths to collect debris from removal operation. Remove caulk to the exterior and place into drum/container.

1. Using wet methods, scrape all residual PCB containing caulking from rough building opening down to a bare, clean surface.
2. Contractor shall collect all removed caulking and contaminated poly sheeting and properly drum/containerize for disposal or incineration in accordance with applicable State and Federal regulations.

C. Remove polyethylene sheeting from openings after the Director's testing/ monitoring laboratory has confirmed complete removal of PCB containing caulking. Include removed poly sheeting in disposal drum/container for disposal as PCB contaminated material.

1.9 PERSONAL PROTECTIVE CLOTHING AND EQUIPMENT

A. Workers must wear protective suits, protective gloves, eye protection and a minimum of half-face respirator with HEPA filter cartridge for all projects. Respiratory protection shall be in accordance with OSHA regulation 1910.134 and ANSI Z88.2.

B. Workers must be trained as per OSHA and EPA requirements, have medical clearance and must have recently received pulmonary function test (PFT) and respirator fit tested by a trained professional.

1. A personal air sampling program shall be in place as required by OSHA.
2. The use of respirators must also follow a complete respiratory protection program as specified by OSHA.

1.10 JOB CONDITIONS

A. Posting of regulations: Display the following documents in the clean changing area, in public view, for the full duration of the work:

1. Instructions for removing injured persons from work area.
2. Post emergency action plan at the work site. This plan shall also include telephone numbers for hospital, doctor and Fire Company.

PART 2 - PRODUCTS

2.1 ABATEMENT PRODUCTS

A. Disposal Drums: Metal or fiberboard with locking ring tops, with warning labels as required by OSHA, NYSDEC and/or EPA.

B. Respirators:

1. Type: Approved by the Mine Safety and Health Administration (MSHA), Department of Labor, or the National Institute for Occupational Safety and Health (NIOSH), Department of Health and Human Services.

C. Vacuum Cleaners:

1. Type: Vacuums equipped with HEPA filters.

D. Plastic Sheets:

1. Type: Minimum 6 mil., opaque, fire retardant polyethylene sheets.
2. Floor Protective Layer: Minimum 10 mil., reinforced polyethylene sheets.

2.2 GENERAL EQUIPMENT

A. A sufficient supply of disposable mops, rags, and sponges for work area decontamination shall be available.

B. A sufficient supply of scaffolding, ladders, lifts, and hand tools, (e.g., scrapers, wire cutters, brushes, utility knives, wire saws, etc.) shall be provided as needed.

2.4 PERSONNEL PROTECTION

A. Safety equipment (e.g., hard hats meeting the requirements of ANSI Standard Z89.1-1981, eye protection meeting the requirements of ANSI Standard Z87.1-1979, safety shoes meeting the requirements of ANSI Standard Z41.1- 1967, disposable PVC gloves or other work gloves), shall be provided to all workers and authorized visitors.

B. Nonskid footwear shall be provided to all abatement workers. Disposable clothing shall be adequately sealed to the footwear to prevent body contamination.

PART 3 - EXECUTION

3.1 EMERGENCY PLANNING

A. Description: The Contractor shall prepare an emergency preparedness plan detailing at least the information required in this section and in any applicable federal, state or local regulations.

B. Details of Plan:

1. Emergency planning shall be developed prior to abatement initiation and submitted to the Director for review.
2. Emergency procedures shall be in written form and prominently posted in the clean change area of the worker decontamination area.
3. Emergency planning shall include written notification of police, fire and emergency medical personnel of planned abatement activities, work schedule and layout of work area, particularly barriers that may affect response capabilities.
4. Emergency planning shall include considerations of fire, electrical hazards, slips, trips, and falls, spills or releases of hazardous materials and heat related injury. Written procedures shall be developed and employee training in procedures shall be provided.
5. Employees shall be trained in evacuation procedures in the event of work place emergencies.

    a. For Non-Life-Threatening Situations: Employees injured or otherwise incapacitated shall decontaminate following normal procedures with assistance from fellow workers, if necessary, before exiting the work place to obtain proper medical treatment.
    b. For Life-Threatening Injury or Illness: Worker decontamination shall take least priority. After measures to stabilize the injured worker, the injured worker shall be removed from the work place and secure proper medical treatment.

C. Telephone numbers of all emergency response personnel shall be prominently posted in the clean area and equipment room, along with the location of the nearest telephone.

3.2 NOTIFICATION

A. Notify the Director's Representative a minimum of 5 working days prior to the start of PCB Caulk removal work.

3.3 EMPLOYEE PROTECTION

A. Comply with all applicable Occupational Safety and Health Administration (OSHA) Requirements.

3.4 WORK AREA PROTECTION

A. Protection of Existing Construction: Perform PCB caulk removal work without damage or contamination of adjacent areas and existing construction.

3.5 PCB-CONTAINING MATERIAL REMOVAL

A. Perform removal of PCB-containing materials in accordance with approved PCB-containing material removal work plan.

B. Use procedures and equipment as required to limit occupational and environmental exposure to PCB's when PCB-containing caulk is removed in accordance with referenced standards.

1. Limit the production and dissemination of caulk debris as much as possible.
2. Perform manual wet scraping to the maximum extent feasible.

3.6 CERTIFICATION OF ABATEMENT

A. Schedule visual clearance inspection with the Director's Representative at the site, when work area is ready for clearance testing.

B. Director's Representative will employ the services of an independent testing/monitoring lab to perform visual clearance inspection. Clearance Criteria requirements are specified in PART 1 of this Section.

1. Prior to removal of any isolation barrier, the Director's Representative will obtain a written affidavit and a final assessment report from the monitoring lab stating that the visual clearance assessment conforms to all standards set forth by all authorities having jurisdiction, mentioned in the references.
2. Schedule a walk-through inspection with the Director's Representative and obtain the Director's Representative's written approval.

C. The Director's Representative shall have final determination of an acceptable clearance level.

3.7 DISPOSAL OF PCB CONTAINING CAULKING MATERIALS

A. Properly containerized waste must be transported by a licensed hauler and shipped to an EPA approved PCB Recycling or incineration facility. Waste manifests must show chain of custody. Provide one copy of the waste manifests to the Government.

B. All contaminated waste shall be carefully loaded on trucks or other appropriate vehicles for transport. Before and during transport, care shall be exercised to insure that no unauthorized persons have access to the material.

C. Transporters of the waste are prohibited from "back hauling" any freight after the disposition of the Government's waste stream until decontamination of the vehicle and/or trailer is assured.

3.8 WASTE MANAGEMENT AND DISPOSAL

A. The Contractor shall be responsible for all packaging, labeling, transport, disposal and record-keeping associated with PCB waste in accordance with all federal, state and local regulations.

B. The Contractor shall ensure that the person transporting the waste holds a valid permit issued in accordance with appropriate federal, state, and local regulations.

C. The Contractor shall provide to the transporter at the time of transfer appropriate shipping records as required by the federal, state and local regulations with a copy to the project engineer.

D. Contractor shall maintain proper follow up procedures to assure that waste materials have been received by the designated waste site in a timely manner and in accordance with all federal, state and local regulations.

E. The Contractor shall assure that disposal of polychlorinated biphenyls (PCB) containing caulking material is at a facility approved to accept such waste and shall provide a tracking/manifest form signed by the landfill's authorized representative.

3.9 RESTORATION

A. Remove temporary decontamination facilities and restore area designated for these facilities to its original condition or better.

B. Where existing construction is damaged or contaminated, restore work to its original condition or better.

END OF SECTION 02 84 33

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SECTION 31 10 00 - SITE CLEARING

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:

1. Protecting existing vegetation to remain.
2. Removing existing vegetation.
3. Clearing and grubbing.
4. Stripping and stockpiling topsoil.
5. Stripping and stockpiling rock.
6. Removing above- and below-grade site improvements.
7. Disconnecting, capping or sealing, and abandoning site utilities in place.
8. Temporary erosion and sedimentation control.

1.3 DEFINITIONS

A. Subsoil: Soil beneath the level of subgrade; soil beneath the topsoil layers of a naturally occurring soil profile, typified by less than 1 percent organic matter and few soil organisms.

B. Surface Soil: Soil that is present at the top layer of the existing soil profile. In undisturbed areas, surface soil is typically called "topsoil," but in disturbed areas such as urban environments, the surface soil can be subsoil.

C. Topsoil: Top layer of the soil profile consisting of existing native surface topsoil or existing in-place surface soil; the zone where plant roots grow.

D. Tree-Protection Area: Area surrounding individual trees or groups of trees to be protected during demolition and indicated according to requirements in Section 015639 " Tree Retention and Protection."

E. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.5 MATERIAL OWNERSHIP

A. Except for materials indicated to be stockpiled or otherwise remain Government property, cleared materials shall become Contractor's property and shall be removed from Project site.

1.6 INFORMATIONAL SUBMITTALS

A. Existing Conditions: Documentation of existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by site clearing.

1. Use sufficiently detailed photographs or video recordings.
2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plant designated to remain.

B. Proposed pesticide and herbicide treatments. Include product label and manufacturer's application instructions specific to Project.

C. Record Drawings: Identifying and accurately showing locations of capped utilities and other subsurface structural, electrical, and mechanical conditions.

1.7 FIELD CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.

1. At least five (5) working days prior to the beginning of demolition, a traffic control plan shall be submitted to the Contracting Officer for review for NPS roads and to New York/New Jersey authorities having jurisdiction for review for state/county/local roads. The traffic control plan shall be prepared by a certified traffic control supervisor and shall be in conformance with the Manual on Uniform Traffic Control Devices. No work shall begin until all traffic control devices have been placed in accordance with the plan. The contractor shall continuously maintain the traffic control devices for the entire duration of the project or until the roadway has been opened and the permanent traffic control devices have been installed.

2. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Contracting Officer and authorities having jurisdiction.
3. Provide alternate routes around closed or obstructed trafficways if required by Contracting Officer or authorities having jurisdiction.

B. Utility Locator Service: Notify utility locator service for area where Project is located before site clearing.

C. Do not commence site clearing operations until temporary erosion- and sedimentation-control and plant-protection measures are in place.

D. Tree- and Plant-Protection Areas: Protect according to requirements in Section 015639 " Tree Retention and Protection."

E. Soil Stripping, Handling, and Stockpiling: Perform only when the soil is dry or slightly moist.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Satisfactory Soil Material: Requirements for satisfactory soil material are specified in Section 312000 "Earth Moving."

1. Obtain approved borrow soil material off-site when satisfactory soil material is not available on-site.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect and maintain benchmarks and survey control points from disturbance during construction.

B. Verify that trees, shrubs, and other vegetation to remain or to be relocated have been flagged and that protection zones have been identified and enclosed according to requirements in Section 015639 " Tree Retention and Protection."

C. Protect existing site improvements to remain from damage during construction.

1. Restore damaged improvements to their original condition, as acceptable to Contracting Officer.

3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL

A. Provide temporary erosion- and sedimentation-control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to erosion- and sedimentation-control Drawings and requirements of authorities having jurisdiction.

B. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.

C. Inspect, maintain, and repair erosion- and sedimentation-control measures during construction until permanent vegetation has been established.

D. Remove erosion and sedimentation controls, and restore and stabilize areas disturbed during removal.

3.3 TREE AND PLANT PROTECTION

A. Protect trees and plants remaining on-site according to requirements in Section 015639 " Tree Retention and Protection."

B. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations according to requirements in Section 015639 "Tree Retention and Protection."

3.4 EXISTING UTILITIES

A. Locate, identify, disconnect, and seal or cap utilities indicated to be removed or abandoned in place.

1. Arrange with utility companies to shut off indicated utilities.

B. Locate, identify, and disconnect utilities indicated to be abandoned in place.

C. Interrupting Existing Utilities: 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 Contracting Officer not less than two days in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without Contracting Officer's written permission.

D. Removal of underground utilities is included in Section 312000 “Earth Moving” and in Section 024116 "Structure Demolition."

3.5 CLEARING AND GRUBBING

A. Remove obstructions, trees, shrubs, and other vegetation to permit installation of new construction.

1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
2. Remove vegetation approved for clearing by Contracting Officer by cutting cleanly, flush with grade.
3. When non-native woody vegetation is removed, apply cut stump treatment or other appropriate method of herbicide treatment to prevent resprouting.
   a. Submit proposed herbicide treatment to the Contracting Officer for approval.
   b. Only NPS-approved chemical herbicides, insecticides, or soil sterilants shall be proposed for use.
   c. All proposed work must be reviewed by the Integrated Pest Management coordinator in the Park.

d. Any use of herbicide/bait/pesticide requires prior approval and chemical use tracking in the NPS Pesticide Use Proposal System.
e. Application of herbicides/baits/pesticides shall be by licensed applicators and in compliance with state law.
f. Use of any pesticide/herbicide requires submission of a pesticide use proposal and prior NPS approval. Allow a minimum of 30 days for approval. Pesticide use proposal must include: chemical name, EPA registration number, application method, species to be treated, application rate, area to be treated, and SDS sheet(s).

4. Use only hand methods or air spade for grubbing within protection zones.
5. Chip removed tree branches and dispose of off-site
6. Replacement is required for native trees greater than four-inch caliper that are removed. Total caliper value of replacement trees shall equal the total caliper of trees removed, i.e., (4) 1.5" caliper replacement trees for (1) 6" caliper native tree removed. Replacement trees shall be 1.5" caliper minimum and shall comply with the applicable requirements in ANSI Z60.1.
7. Refer to Section 015639 "Tree Retention and Protection" for additional information.
8. Refer to Section 329300 "Plants" for tree planting requirements.

B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.

1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches (200 mm), and compact each layer to a density equal to adjacent original ground.

3.6 SITE IMPROVEMENTS

A. Remove existing above- and below-grade improvements as directed by the Contracting Officer and as necessary to facilitate demolition.

3.7 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Government property.

B. Separate recyclable materials produced during site clearing from other nonrecyclable materials. Store or stockpile without intermixing with other materials, and transport them to recycling facilities in compliance with Section 017419 "Construction Waste Management and Disposal.". Do not interfere with other Project work.

END OF SECTION 31 10 00

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SECTION 31 20 00 – EARTH MOVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1, specification sections, apply to this section.

B. Additional information concerning earth moving may be found on the civil drawings, in the City of New York Department of Environmental Protection Bureau of Water and Sewer Operations Standard Sewer and Water Main Specifications, and in the New Jersey Department of Transportation Standard Specifications for Road and Bridge Construction. In case of conflict between the drawings, jurisdictional criteria, and the information specified herein, the more stringent requirements shall govern.

1.2 SUMMARY

A. This Section includes the following:

1. Preparing and grading subgrades for walks, pavements, lawns and grasses.
2. Excavating and backfilling for utility, building, and structure demolition.
3. Base course for asphalt or concrete paving.

B. Related Sections include the following:
1. Division 31, Section "Site Clearing" site stripping, grubbing, stripping and stockpiling topsoil, and removal of above-grade and below-grade improvements and utilities.
2. Division 01, Section "Temporary Storm Water Pollution Prevention" for erosion and sedimentation control measures.

C. References:
1. City of New York Department of Environmental Protection Bureau of Water and Sewer Operations Standard Sewer and Water Main Specifications, current edition and all appropriate standard special provisions.
2. City of New York Department of Environmental Protection General Specification 11 – Concrete, current edition and all appropriate standard special provisions.
3. New Jersey Department of Transportation Standard Specifications for Road and Bridge Construction, current edition and all appropriate standard special provisions.

D. New York Department of Environmental Protection Bureau of Water and Sewer Operations Standard General Specifications 11 Concrete. Permits and Fees: Obtain and pay for all permits and fees required for the work of this section, including erosion and sediment control and water quality permits required by the New York State Department of Environmental Conservation and the New Jersey Department of Environmental Protection.

1.3 DEFINITIONS

A. Backfill: Soil material used to fill an excavation.

1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
2. Final Backfill: Backfill placed over initial backfill to fill a trench.

B. Base Course: Course placed between the subbase course and hot-mix asphalt paving.

C. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill approved by the Geotechnical Engineer.

D. Excavation: Removal of all material of various characteristics required for the work encountered above subgrade elevations and to lines and dimensions indicated, including boulders. See Section 3.4 “EXCAVATION, GENERAL” for definition of unclassified and classified excavation.

E. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions, as directed or approved by the Contracting Officer and the testing and inspections agency to correct unsatisfactory conditions. Authorized additional excavation and replacement material will be paid for according to contract provisions for changes in the work.

F. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by the Contracting Officer. Unauthorized excavation, including disposition of over-excavated materials and other work resulting from slides, cave-ins, swelling, upheaval, or remedial work, as well as remedial work directed by the Owner's Representative, shall be without additional compensation.

G. Fill: Fill is all material placed to raise the grade of the site or to backfill excavation, upon which the Geotechnical Engineer has made sufficient tests and observations to enable him/her to issue a written statement that, in his/her opinion, the fill has been placed and compacted in accordance with the requirements of these specifications.

H. Hydraulic Fill - Fill used in the process for abandoning water and sewer pipes for lines 12 inches or greater.

I. Controlled Low Strength Material (CLSM): Controlled Low Strength Materials (CLSM) consists of a well-graded mixture of mineral aggregates, cementitious materials, water and admixtures. Other common names for CLSMs include: flowable fill, flowfill, non-shrink backfill, fly ash fill and controlled density fill. For use in lieu of backfill for filling trench limits within roadways.

J. Rock Excavation: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material that exceed 3/4 cu. yd. for excavation which in the Geotechnical Engineer’s opinion cannot be removed by rock excavating equipment equivalent to the following in size and performance ratings, without systematic drilling, ram hammering, ripping, or blasting, when permitted:

1. Excavation of Footings, Trenches, and Pits: Late-model, track-mounted hydraulic excavator; equipped with a 42-inch-wide, maximum, short-tip-radius rock bucket; rated at not less than 138-hp (103-kW) flywheel power with bucket-curling force of not less than

28,090 lbf (125 kN) and stick-crowd force of not less than 18,650 lbf (83 kN); measured according to SAE J-1179.

2. Bulk Excavation: Late-model, track-mounted loader; rated at not less than 210-hp (157-kW) flywheel power and developing a minimum of 48,510-lbf (216-kN) breakout force with a general-purpose bare bucket; measured according to SAE J-732.

K. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.

L. Subgrade: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below topsoil materials.

M. Utilities: Include on-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

1.4 SUBMITTALS

A. Material Test Reports: Provided by the Contractor from a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated:

1. Classification according to ASTM D2487 of each on-site or borrow soil material proposed for fill and backfill.
2. Laboratory compaction curve according to ASTM D698 for each on-site or borrow soil material proposed for fill and backfill.

B. Pre-excavation Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by earth moving operations. Submit before earth moving begins.

C. Hydraulic Fill: The contractor will be required to submit a mix design and test data for approval, prior to abandoning utilities where hydraulic fill is proposed for use.

D. CLSM: The Contractor will be required to submit a mix design and test data for approval, prior to excavating the area for which CLSMs are proposed for use. All materials of this category placed without previous approval, or which do not perform as specified, will be rejected by the Government and all costs incurred for removal and replacement of these materials will be at the Contractor's expense.

1.5 QUALITY ASSURANCE

A. Comply with applicable codes, ordinances, regulations, references, and standards in effect at bid date:

1. Uniform Building Code (UBC) or International Building Code (IBC) per jurisdiction criteria.
2. American Society for Testing and Materials (test methods as specified hereafter) (ASTM).
3. State and local codes.

B. In case of conflict between the above codes, regulations, references and standards, and these specifications, the more stringent requirements shall govern.

C. Testing Agency: The Contractor will employ a qualified independent geotechnical testing agency. The Contractor shall furnish testing agency access to work, facilities and incidental labor required for testing. Notify the testing and inspection agency not less than 48 hours in advance of all work requiring testing.

D. Geotechnical Engineer: All materials and operations under this section of the specifications shall be executed under the supervision of a Geotechnical Engineer who will place qualified personnel on the site during earth moving operations as necessary.

The Geotechnical Engineer shall approve all excavations and give written approval of the completed foundations to the Contracting Officer at the following times:

1. When excavations are first open.
2. Just prior to placing of backfill, shall test and control the fill compaction, approve the materials and method of placing and compacting and give written approval to the Contracting Officer that all bearing surfaces and fill requirements have been inspected.
3. The Contractor shall be responsible to notify the Geotechnical Engineer when tests are to be made.

E. For approval of imported or on-site fill material, notify the Geotechnical Engineer at least four working days in advance of intention to import material, designate the proposed borrow area, and permit the Geotechnical Engineer to sample, as necessary, from the borrow area for the purpose of making acceptance tests to prove the quality of the material. The Geotechnical Engineer report on the acceptability shall be final and binding.

F. Reference Standards:

Compaction Standard: Standard Proctor Density ASTM D698.

G. Preconstruction Conference: Conduct conference at Project site as directed by the Contracting Officer prior to start of construction. The Contractor is to comply with requirements, which may also be included in Division 1, Section “Project Management and Coordination.”

1.6 PROJECT CONDITIONS

A. Existing Utilities: Locations, sizes and depths, or invert elevations of existing utilities, as shown on the drawings, are based on information provided by others and believed to be correct but may not be absolutely so. Such information is therefore presented only as approximations and should be verified prior to construction. Protect from damage any sewer, water, gas, electric, phone, or other pipe lines or conduits uncovered during the work and that are not shown to be demolished until they have been examined by the Contracting Officer. If such lines are found to be abandoned and not in use, remove affected sections without extra cost. If such lines are found to be in use, carefully protect and carry on work around them. If the Contracting Officer deems it advisable to move such lines, the Government will pay cost of moving. Do not interrupt utilities serving facilities that are not in the scope to be demolished and that are occupied by the Government or others unless permitted in writing by the Contracting Officer and then only after arranging to provide temporary utility services according to requirements indicated.

1. Contact utility-locator service for area where project is located before excavating.
2. Notify the Contracting Officer not less than two days in advance of proposed utility interruptions.
3. Do not proceed with utility interruptions without the Contracting Officer's written permission.

B. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies to shut off services if lines are active. Verify that utilities serving buildings to remain will not be impacted by demolition of services to buildings to be demolished.

C. Verification of Existing Conditions: Visit the site prior to submission of bids. Verify existing conditions, including locations of existing utilities. In the event of discrepancies between existing conditions and those indicated on the contract documents or survey, contact the Contracting Officer for clarification.

D. Existing Benchmarks: Carefully preserve and maintain existing benchmarks, monuments, property line pins, and other reference points. if disturbed or destroyed, restore or replace by a professional land surveyor at no additional cost to the Government.

E. Frost Protection: When freezing temperatures may be expected, do not excavate to the full depth indicated unless backfill is anticipated to occur immediately after the excavation has been completed. If placing of backfill is delayed, protect the bottoms of excavations from frost until backfill is placed.

1.7 WARRANTY

A. Settlement in backfill, fill, or in paving built over backfill or fill, which may occur within the specified project warranty period, shall be corrected at no cost to the Government. Any structures damaged by settlement shall be restored to their original condition by the Contractor, at no cost to the Government.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.

B. Satisfactory Soils: Shall meet approval of the Geotechnical Engineer and shall be free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter. Clean, on-site, natural soils, or imported materials, as approved by the Geotechnical Engineer.

C. Unsatisfactory Soils: Soil Classification Groups A-2-6, A-2-7, A-4, A-5, A-6, and A-7 according to AASHTO M 145, or a combination of these groups, as identified by the Geotechnical Engineer.

1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.

D. Backfill and Fill: Approved by the Geotechnical Engineer. Fills must be of a quality suitable for use in a National Park Unit and meet the following criteria. Substructure fill shall be tested/inspected to ensure radionuclides are not present in a concentration that decay will result in release of radon gas in a concentration that would be a health concern. Fill materials required for the project must be obtained from a park-approved source. Such materials are to be clean of contaminants and free of exotic seeds and spores. Written verification of such shall be provided to the Contracting Officer prior to delivery of material. Soils shall not be amended.

1. In New York, new soils brought on site must be tested and meet the New York State Department of Environmental Conservation standards for general fill (6 CRR-NY 360.13).
2. In New Jersey, new soils brought on site must be tested and meet the New Jersey Standards for residential ingestion-dermal and residential inhalation exposures (N.J.A.C. 7:26D Appendix 1, Tables 1 and 3).

E. Hydraulic Fill:

1. Cement must be Type-I or Type-II Portland Cement that conforms to the City of New York Department of Environmental Protection General Specification 11 – Concrete, as modified in the City of New York Department of Environmental Protection Standard Sewer and Water Main Specifications Section 23.01. Each bag of cement must be one (1) cubic foot.
2. Fine Aggregate – Sand must be Concrete Sand or Natural Sand and must conform to the requirements of General Specification 11- Concrete, as modified in Section 23.01.
3. Fly Ash must conform to the chemical and physical requirements for Mineral Admixture, Class F listed in ASTM C618 including Table 1A (except for Footnote A) within the ASTM C816 standard. Loss on ignition must not exceed four percent (4%).
4. Water must be fresh, clean and free from oils, acids, alkali or organic matter.
5. Admixtures may be use in the Hydraulic Fill Mix to enhance certain properties. (Air entraining or water reduction admixtures must not be used.) No admixtures may be used without the prior approval of the Contracting Officer Laboratory test results or Manufacturer's data must be submitted by the Contractor to the Contracting Officer proving that the admixture will not detract from the specified twenty-eight (28) day compressive strength.
6. All admixtures considered for inclusion in the Hydraulic Fill Mix must comply with the State of New York, Department of Transportation, Standard Specifications, Section 711-08 "Admixtures". The name of the admixture must be found on the "Approval List" issued by the NYS DOT Materials Bureau. The brand name of the approved admixture must be plainly marked on the admixture container.

F. Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940; with at least 95 percent passing a 1-1/2-inch sieve and not more than 8 percent passing a No. 200 sieve.

G. Sand: ASTM C33; fine aggregate, natural, or manufactured sand.

2.2 CONTROLLED LOW STRENGTH MATERIAL (CLSM)

A. Controlled Low Strength Material: Self compacting, flowable concrete material produced from the following:

1. Portland Cement: ASTM C 150, Type II minimum 50 lbs/cu. yd. Per the City of New York Department of Environmental Protection General Specification 11 – Concrete, as modified in the City of New York Department of Environmental Protection Standard Sewer and Water Main Specifications Section 23.01

2. Fly Ash: ASTM C618, Class C or F. Can be substituted up to 40% of weight of Portland Cement.
3. Coarse Aggregate: In accordance with the grading and quality requirements of ASTM C 33 for Size No. 467, No. 57, or No. 67.
4. Fine Aggregate: In accordance with the grading and quality requirements of ASTM C33.
5. Foaming Agent: ASTM C 869.
6. Water: ASTM C94/C 94 M.
7. Air-Entraining Admixture: ASTM C 260.
8. Admixtures: Admixtures that do not contain calcium chloride and are in accordance with ASTM C 494 for concrete may be used. Admixtures shall be compatible with the cement and other admixtures.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth moving operations.

B. Preparation of subgrade for earth moving operations including removal of vegetation, topsoil, debris, obstructions, and deleterious materials from ground surface is specified in Division 31, Section "Site Clearing."

C. Protect and maintain erosion and sedimentation controls, which are specified in Division 01, Section "Temporary Storm Water Pollution Prevention," during earth moving operations. Provide erosion control measures to prevent erosion or displacement of soils and discharge of soil bearing water runoff or airborne dust to adjacent properties and rights-of-way.

D. Protect subgrades and foundation soils against freezing temperatures or frost. Provide protective insulating materials, as necessary.

E. Cold Weather Work: Prevent frost from entering bearing stratus upon which construction will take place or in areas where fill will be placed in that season.

3.2 DEWATERING

A. Prevent surface water and subsurface ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.

B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.

1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.
2. Install a dewatering system to keep subgrades dry and convey groundwater away from excavations. Maintain until dewatering is no longer required.
3. Obtain and comply with all provisions of the New York City Department of Environmental Protection Bureau of Wastewater Treatment Groundwater Discharge Permit and the New

Jersey Department of Environmental Protection Division of Water Supply and Geoscience Temporary Dewatering Permit.

C. Protection of Persons and Property:

1. Provide all necessary measures to protect workmen and passersby. Barricade open excavations occurring as part of the work, as required by municipal or other authorities having jurisdiction.
2. Protect adjacent streets, roadways, and properties throughout the entire operation. Protect newly graded areas from destruction by weather or runoff. Protect structures, utilities, sidewalks, pavements, and other improvements from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth moving operations.

3.3 EXPLOSIVES

A. Explosives: Do not use explosives.

3.4 EXCAVATION, GENERAL

A. Unclassified Excavation: All excavation (other than rock excavation) is considered as unclassified and is defined as removal of all material encountered, regardless of soil type. Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include soil materials, and obstructions. Unclassified excavation is considered normal excavation and no extra costs will be allowed.

1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.
2. Remove material of every nature or description encountered in performing demolition activities. Excavate and/or place and compact fill to provide for demolition activities required by drawings.
3. Pitch grading around excavations to prevent water from running into excavated areas.
4. Pre-rip hardpan and soft bedrock with single-tooth ripper or other suitable equipment to facilitate excavation with conventional earth-moving equipment.
5. Bearing soils disturbed by excavating equipment must be recompacted to 95 percent of maximum Standard Proctor Density (ASTM D698) prior to placing concrete.
6. Exposed areas which will receive fill once properly cleaned, shall be scarified to a minimum depth of 8 inches, conditioned to near optimum moisture content, and compacted.

B. Classified Excavation: Excavate to required elevations for demolition activities. Material to be excavated will be classified as earth excavation and rock excavation. Do not excavate rock until it has been classified and cross sectioned by the Owner's Representative.

1. Earth excavation includes excavating pavements and obstructions visible on surface, underground structures, utilities, and other items indicated to be removed; together with soil, boulders, and other materials not classified as rock or unauthorized excavation.
   a. Intermittent drilling; ram hammering; or ripping of material not classified as rock excavation is earth excavation.

C. Stability:

1. Slope sides of excavations in compliance with OSHA requirements and local codes or ordinances. Shore and brace where sloping is not possible because of space restrictions or stability of material excavated.
2. Continuously monitor cut slopes for distress. Take all necessary precautions to safeguard workers, structures, and utilities.
3. Provide all necessary shoring, sheeting, or bracing of sides of excavations required to prevent caving, erosion, and gullying. Provide underpinning of existing structures or other improvements adjacent to excavations which are subject to damage.

D. Unanticipated Conditions: Notify the Contracting Officer immediately upon finding evidence of previous structures or filled materials which penetrate below designated excavation levels, groundwater or water-bearing strata, or other conditions which are not shown, or which cannot be reasonably assumed from existing surveys. Secure the Contracting Officer instruction before proceeding with further work in such areas.

E. Rock Excavation: Includes removal and disposal of rock. Remove rock to lines and subgrade elevations indicated to permit demolition activities. Rock excavation in unconfined areas is defined as removal and disposal of material which in the Geotechnical Engineer's opinion, cannot be excavated without continuous and systematic drilling and blasting, or continuous use of a suitable ripper or other special equipment.

1. Unanticipated Rock Excavation: Rock excavation that is not indicated on existing surveys or which cannot be reasonably assumed from geotechnical studies of the site and which could not have been anticipated without extensive investigations. Unanticipated rock excavation shall be subject to change order procedures or previously agreed upon unit prices.

3.5 EXCAVATION FOR DEMOLITION

A. Excavate to indicated elevations and dimensions to allow for demolition activities. If applicable, extend excavations a sufficient distance from structures for removal and for inspections.
1. Excavation for Removal of Underground Tanks, Basins, Manholes, Valves, and Mechanical or Electrical Utility Structures: Excavate to elevations and dimensions to allow for removal of tops of structures down to a minimum of 4-feet below existing grade.
2. Excavation for Removal of Utility Lines in Trenches: excavate trenches to uniform widths to allow for removal of existing utilities.
   a. Slope sides of trenches or provide shoulders in accordance with OSHA requirements and as required by Utility Agency standards.
   b. Continuously monitor cut slopes and trenches for distress or movement. Provide all necessary shoring and bracing required to protect the life and safety of workmen performing excavation or installing piping or conduit.

3.6 SUBGRADE INSPECTION

A. Notify the Geotechnical Engineer when excavations have reached required subgrade and prior to commencing backfilling.

B. If the Contracting Officer and Geotechnical Consultant determine that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.

C. Authorized additional excavation and replacement material will be paid for according to contract provisions for changes in the work.

D. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Contracting Officer, without additional compensation.

3.7 UNAUTHORIZED EXCAVATION

Fill unauthorized excavations under demolition areas, as directed by the Contracting Officer.

3.8 STORAGE OF SOIL MATERIALS

A. Stockpile borrow soil materials and excavated satisfactory soil materials in approved locations without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.

1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.9 BACKFILL

A. Place and compact backfill in excavations promptly, but not before completing the following:
1. Removing, disconnecting, capping, filling utilities as shown and specified.
2. Removing trash and debris.
3. Removing temporary shoring and bracing, and sheeting.
4. Installing permanent or temporary horizontal bracing on horizontally supported walls.
5. Acceptance of subgrade by the Geotechnical Engineer.

B. Place backfill on subgrades free of mud, frost, snow, or ice.

C. Controlled Low Strength Material: Place initial backfill of controlled low strength material to a height of 12 inches over the subgrade.

D. Controlled Low Strength Material: Place final backfill of controlled low strength material to final subgrade elevation.

E. When CLSMs are placed within the right-of-way, or they are to be covered by paving materials, the final set product must achieve a maximum indentation diameter of 3 inches prior to covering and opening the area to traffic. Penetration resistance shall be as measured by ASTM C6024, “Standard Test Method for Ball Drop on Controlled Low Strength Material to Determine Suitability for Load Application”.

F. CLSM must be placed in a uniform manner that will prevent voids or segregation of the backfill and shifting of pipelines, structures and appurtenances. Foreign material that falls into the trench prior to, or during placement shall be immediately removed.

3.10 SOIL FILL

A. Preparation: Remove vegetation, topsoil, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface before placing fills.

1. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.
2. In areas of fill, scarify natural soil following removal of unsatisfactory material, to a depth of 8 inches.

B. Place and compact fill material in layers to required elevations per the geotechnical report and as follows:

1. Under grass and planted areas, use satisfactory soil material.

2. Place minimum 12-inches of topsoil fill at areas to be revegetated.

C. Place soil fill on subgrades free of mud, frost, snow, or ice.

3.11 Hydraulic Fill

A. Mix Design
1. The Contractor shall prepare a design mix and produce a trial batch to show compliance with the specifications and submit design mix and test results to the Contracting Officer for approval prior to construction. The approved Hydraulic Fill Mix shall not be altered unless otherwise directed by the Contracting Officer. The mix design proportion parameters per cubic yard shall be as follows:

MIX DESIGN PROPORTION PARAMETERS PER CUBIC YARD
Cement (lbs.) 30 - 70
Fly Ash (lbs.) 250 - 600
Fine Aggregate (lbs.) 2500 - 3000
Water (lbs.) (gal.) 350 (41.9) - 500 (59.9)
Slump (in.) 8 - 10 28-
Day Comp. Strength (psi) 50 – 100

B. The hydraulic fill shall be thoroughly mixed, in a mechanical mixer, to the desired consistency and in accordance with ACI 506R-90 before being placed in a calibrated hopper for discharge into the abandoned sewer and/or water main through nozzles and or other suitable apparatus. Calibration of the hopper shall be subject to inspection, verification and approval of the Contracting Officer. Hydraulic fill may be supplied from an established concrete plant that has been approved by the Contracting Officer. The hydraulic fill mix that has gone for a period of forty-five (45) minutes or longer from the time of mixing without being incorporated into the work shall be discarded. Remixing or tempering shall not be permitted. Application
1. The hydraulic fill mix shall not be placed during freezing weather at the site of application. The hydraulic fill mix shall not be placed when it is anticipated that the temperature during the following twenty-four (24) hours will drop below forty (40) degrees Fahrenheit at the site of application. The proposed method of application shall be submitted to the Contracting Officer for prior approval and shall be in a manner that will thoroughly hydraulically fill the abandoned sewer and water main from bottom to top of existing sewer and water main and from bulkhead to bulkhead, complete, as directed by the Contracting Officer. Included in this submittal shall be the recommended maximum distances for hydraulically filling the abandoned sewer and water main, together with drawings showing the locations of any sections of abandoned sewer and water main that require removal in order to facilitate the hydraulic filling operation.

3.12 SOIL MOISTURE CONTROL

A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to optimum or to 3 percent over optimum moisture content for clay soils, or within 2 percent of optimum moisture content for granular soils.

1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
2. Remove and replace, or scarify and air dry otherwise satisfactory soil material that exceeds optimum moisture content beyond the tolerances described above and is too wet to compact to specified dry unit weight.

3.13 COMPACTION OF SOIL BACKFILLS AND FILLS

A. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.

B. Place backfill and fill soil materials evenly on all sides of structures to existing elevations, and uniformly along the full length of each structure.

C. Compact bedding and soil materials to not less than 95 percent of maximum dry unit weight according to ASTM D698.

3.14 GRADING

A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and return grades to existing elevations while providing positive drainage downstream and away from buildings.

1. Provide a smooth transition between adjacent existing grades and disturbed grades.
2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.
3. Mound grade at buildings to be removed to allow drainage away from building footprint.

B. Site Grading: Grading tolerances identified herein apply to non-accessible routes, unless within this paragraph or specifically stated. Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:

1. Lawn or Unpaved Areas: Plus or minus 0.10 feet.

3.15 FIELD QUALITY CONTROL

A. Testing Agency: The Contractor will engage a qualified independent geotechnical engineering testing agency to perform field quality-control testing.

B. Allow the testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test the results for the previously completed work comply with requirements.

C. Testing agency will test compaction of soils in place according to ASTM D1556, ASTM D2167, and ASTM D 2937, as applicable. Perform field moisture tests in accordance with ASTM D6031. Tests will be performed at the following locations and frequencies at a minimum:

1. Demolished Sidewalks, Pavement and Building Slab Backfill: At subgrade and at each compacted fill and backfill layer, at least 1 test for every 2,000 sq. ft. or less of paved area or building slab, but in no case fewer than three tests.
2. Demolished Foundation Wall Backfill: At each compacted backfill layer, at least one test for each 100 feet or less of wall length, but no fewer than two tests.
3. Demolished Utility Structure or Trench Backfill: The density tests shall be performed during backfilling at specified depths in the trench to ensure that the required density and moisture is obtained throughout. For trenches less than 30-inches in depth, density tests shall be taken within 18-inches above the top of subgrade and at the surface/toplift as a minimum. For trenches greater than 30-inches in depth, density tests shall be taken within 18-inches of the top of subgrade, and at 2-foot vertical intervals to the top of the trench with the final test at the surface/toplift. For demolished utility mains conduct one (1) set of tests per 100 feet of linear trench at specified depths and for demolished service lines conduct one (1) test per every service line per utility type at specified depths. At a minimum, test intervals and quantities shall meet or exceed the requirements of the local utility agency.

D. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil to depth required; recompact and retest until specified compaction is obtained.

3.16 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

1. Scarify or remove and replace soil material to depth as directed by the Contracting Officer; reshape and recompact.

C. Where settling occurs before the Project correction period elapses, remove finished surfacing and backfill with additional soil material, compact, and reconstruct surfacing.

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.17 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off the Government's property.

END OF SECTION 31 20 00

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SECTION 32 91 13 – SOIL PREPARATION

PART 1 - GENERAL

1.1 SUMMARY

A. The Work of this Section includes preparation of soil for the purpose of soil conditioning for all seeding and planting areas.
   1. Soil preparation consists of decompaction, soil conditioning and fine grading the topsoil. Soil preparation as specified herein MUST precede all seeding, and planting.

1.2 SUBMITTALS

A. See Division 01 Section 01 33 23 "Submittal Procedures" for submittal requirements.

B. Soil Sampling test results and recommendations.

C. Product Data: For each type of product.
   1. Include recommendations for application and use.
   2. Include test data substantiating that products comply with requirements.
   3. Include sieve analyses for aggregate materials.
   4. Material Certificates: For each type of soil amendment and fertilizer before delivery to the site, according to the following:
      a. Manufacturer's qualified testing agency's certified analysis of standard products.

D. Samples: For each bulk-supplied material, 1-gallon volume of each in sealed containers labeled with content, source, and date obtained. Each Sample shall be typical of the lot of material to be furnished; provide an accurate representation of composition, color, and texture.

E. Quality Control Submittals:
   1. Certificates: State, Federal and other inspection certificates shall accompany invoice for materials showing source or origin. Submit to Contracting Officer prior to acceptance of material.
   2. Material Analysis: Provide soil conditioner analysis performed no more than three months prior to delivery to site.

1.3 DELIVERY, STORAGE, AND HANDLING

A. Notify Contracting Officer of delivery schedule in advance so material can be inspected upon arrival at project site. Immediately remove unacceptable material from project site.

1.4 PROJECT/SITE CONDITIONS

A. General: Do not perform work when climate and existing site conditions will not provide satisfactory results.

B. Vehicular site access shall be limited to the area(s) indicated on the drawings or as defined by the Contracting Officer.

C. Damage to lawns, natural areas, pavements, irrigation systems, underground utilities, and other improvements shall be repaired by the contractor at no additional cost to the NPS.

1.5 QUALITY ASSURANCE

A. Testing Agency Qualifications: An independent, state-operated, or university-operated laboratory; experienced in soil science, soil testing, and plant nutrition; with the experience and capability to conduct the testing indicated; and that specializes in types of tests to be performed.

1. Laboratories: Subject to compliance with requirements:
2. Multiple Laboratories: At Contractor's option, work may be divided among qualified testing laboratories specializing in physical testing, chemical testing, and fertility testing.

1.6 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: The General Contractor is to engage a qualified testing agency approved by the Contracting Officer to perform preconstruction soil analyses on existing and imported soil.

B. Existing In-Situ and Imported Soil Analyses: For each unamended soil source, the General Contractor is to perform testing on soil samples and furnish soil analysis and a written report containing soil-amendment recommendations by a qualified testing agency performing the testing according to "Soil-Sampling Requirements" and "Testing Requirements" articles.
1. Have testing agency identify and label samples and test reports according to sample collection and labeling requirements.

1.7 SOIL-SAMPLING REQUIREMENTS

A. General: Extract soil samples according to requirements in this article.

B. Sample Collection and Labeling: Have samples taken and labeled by Contractor in presence of General Contractor under the direction of the testing agency.
1. Number and Location of Samples: Minimum of six representative soil samples from varied locations in the Project Limits.
2. Procedures and Depth of Samples: According to USDA-NRCS's "Field Book for Describing and Sampling Soils."
3. Division of Samples: Split each sample into two, equal parts. Send half to the testing agency and half to NPS for its records.
4. Labeling: Label each sample with the date, location keyed to a site plan or other location system, visible soil condition, and sampling depth.
5. Imported topsoil to be tested at the source for approval prior to use and delivery, per the above requirements.

1.8 TESTING REQUIREMENTS

A. General: Perform tests on soil samples according to requirements in this article.

B. Physical Testing:
1. Soil Texture: Soil-particle, size-distribution analysis by one of the following methods according to SSSA's "Methods of Soil Analysis - Part 1-Physical and Mineralogical Methods":
   a. Sieving Method: Report sand-gradation percentages for very coarse, coarse, medium, fine, and very fine sand; and fragment-gradation (gravel) percentages for fine, medium, and coarse fragments; according to USDA sand and fragment sizes.
   b. Hydrometer Method: Report percentages of sand, silt, and clay.

2. Total Porosity: Calculate using particle density and bulk density according to SSSA's "Methods of Soil Analysis - Part 1-Physical and Mineralogical Methods."
3. Water Retention: According to SSSA's "Methods of Soil Analysis - Part 1-Physical and Mineralogical Methods."
4. Saturated Hydraulic Conductivity: According to SSSA's "Methods of Soil Analysis - Part 1-Physical and Mineralogical Methods"; at 85% compaction according to ASTM D 698 (Standard Proctor).

C. Chemical Testing:

1. CEC: Analysis by sodium saturation at pH 7 according to SSSA's "Methods of Soil Analysis - Part 3- Chemical Methods."
2. Clay Mineralogy: Analysis and estimated percentage of expandable clay minerals using CEC by ammonium saturation at pH 7 according to SSSA's "Methods of Soil Analysis - Part 1-Physical and Mineralogical Methods."
3. Metals Hazardous to Human Health: Test for presence and quantities of RCRA metals including aluminum, arsenic, barium, copper, cadmium, chromium, cobalt, lead, lithium, and vanadium. If RCRA metals are present, include recommendations for corrective action.
4. Phytotoxicity: Test for plant-available concentrations of phytotoxic minerals including aluminum, arsenic, barium, cadmium, chlorides, chromium, cobalt, copper, lead, lithium, mercury, nickel, selenium, silver, sodium, strontium, tin, titanium, vanadium, and zinc.

D. Fertility Testing: Soil-fertility analysis according to standard laboratory protocol of SSSA NAPT NCR-13, including the following:

1. Percentage of organic matter.
2. CEC, calcium percent of CEC, and magnesium percent of CEC.
3. Soil reaction (acidity/alkalinity pH value).
4. Buffered acidity or alkalinity.
5. Nitrogen ppm.
6. Phosphorous ppm.
7. Potassium ppm.
8. Manganese ppm.
9. Manganese-availability ppm.
10. Zinc ppm.
11. Zinc availability ppm.
12. Copper ppm.
13. Sodium ppm and sodium absorption ratio.
14. Soluble-salts ppm.
15. Presence and quantities of problem materials including salts and metals cited in the Standard protocol. If such problem materials are present, provide additional recommendations for corrective action.
16. Other deleterious materials, including their characteristics and content of each.

E. Organic-Matter Content: Analysis using loss-by-ignition method according to SSSA's "Methods of Soil Analysis - Part 3- Chemical Methods."

F. Recommendations: Based on the test results, state recommendations for soil treatments and soil amendments to be incorporated to produce satisfactory planting soil suitable for healthy, viable plants indicated. Include, at a minimum, recommendations for nitrogen, phosphorous, and potassium fertilization, and for micronutrients.

1. Soil Amendment Rates: State recommendations in weight per 1000 sq. ft.

2. Soil Reaction: State the recommended liming rates for raising pH or sulfur for lowering pH according to the buffered acidity or buffered alkalinity in weight per 1000 sq. ft.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and compliance with state and Federal laws if applicable.

Bulk Materials:

1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
3. Do not move or handle materials when they are wet or frozen.
4. Accompany each delivery of bulk fertilizers and soil amendments with appropriate certificates.

PART 2 - PRODUCTS

2.1 MATERIALS

A. On-Site Topsoil and Imported Topsoil as required in Section 32 91 19 “Topsoil”.

2.2 PLANTING SOILS

A. Planting-Soil Type: On-Site Topsoil shall not be amended.

B. Planting-Soil Type: Imported Topsoil shall be tested and modified as required to produce viable planting soil. Using preconstruction soil analyses and materials specified in other articles of this Section, amend imported topsoil as required to become planting soil complying with the following:

1. Particle Size Distribution by USDA Textures: Classified as silty clay with loam at A horizon soil according to USDA textures.
2. Percentage of Organic Matter: Minimum 3 percent by volume at grasses, 6 percent at planting beds
3. Soil Reaction: pH of 6.5 to 7
4. CEC of Total Soil: Minimum 7 meq/100 mL at pH of 7.0
5. Soluble-Salt Content: 5 to 10 dS/m measured by electrical conductivity.
6. Bulk Density: 1.1 g/cu. cm to 1.5 g/cu. cm at 85 percent compaction.
7. Total Porosity: Minimum 50 percent at 85 percent compaction.
8. Macro Porosity: Minimum 10 percent at 85 percent compaction.

2.3 INORGANIC SOIL AMENDMENTS

A. Lime: ASTM C602, agricultural liming material containing a minimum of 80 percent calcium carbonate equivalent.

B. Sulfur: Granular, biodegradable, and containing a minimum of 90 percent elemental sulfur, with a minimum of 99 percent passing through a No. 6 (3.35-mm) sieve and a maximum of 10 percent passing through a No. 40 (0.425-mm) sieve.

C. Iron Sulfate: Granulated ferrous sulfate containing a minimum of 20 percent iron and 10 percent sulfur.

D. Agricultural Gypsum: Minimum 90 percent calcium sulfate, finely ground with 90 percent passing through a No. 50 (0.30-mm) sieve.

E. Sand: Clean, washed, natural or manufactured, free of toxic materials, and according to ASTM C33/C33M.

2.4 ORGANIC SOIL AMENDMENTS

A. Compost: Well-composted, stable, and weed-free organic matter produced by composting feedstock, and bearing USCC's "Seal of Testing Assurance," and as follows:

1. Feedstock: Limited to leaves, may include animal waste
2. Reaction: pH of 5.5 to 8
3. Soluble-Salt Concentration: Less than 4 dS/m.
4. Moisture Content: 35 to 55 percent by weight.
5. Organic-Matter Content: 30 to 40 percent of dry weight.
6. Particle Size: Minimum of 98 percent passing through a 2-inch (50-mm).

B. Muck Peat: Partially decomposed moss peat, native peat, or reed-sedge peat, finely divided or of granular texture, a pH of 6 to 7.5, a soluble-salt content measured by electrical conductivity of maximum 5 dS/m, having a water-absorbing capacity of 1100 to 2000 percent, and containing no sand.

C. Wood Derivatives: Shredded and composted, nitrogen-treated sawdust, ground bark, or wood waste; of uniform texture and free of chips, stones, sticks, soil, or toxic materials.

D. Manure: Well-rotted, unleached, stable or cattle manure containing not more than 25 percent by volume of straw, sawdust, or other bedding materials; free of toxic substances, stones, sticks, soil, weed seed, debris, and material harmful to plant growth.

2.5 FERTILIZERS

A. Superphosphate: Commercial, phosphate mixture, soluble.

B. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium.

C. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium.

PART 3 - EXECUTION

3.6 GENERAL

A. Place planting soil and fertilizers according to requirements in other Specification Sections.

1. Grades: Inspect to verify rough grading is within +/- 0.1-foot of grades indicated and specified.

B. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in planting soil.

1. Damaged Earth: Inspect to verify that soil rendered unfit to support planting due to compaction, concrete, water, mortar, limewater or any other contaminant dumped on it has been removed and replaced with clean soil from a source approved by the Contracting Officer.

3.7 PREPARATION OF UNAMENDED, ON-SITE SOIL

A. Excavation: Excavate soil from designated area(s) and stockpile until amended.

B. Unacceptable Materials: Clean soil of concrete slurry, concrete layers or chunks, cement, plaster, building debris, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, acid, and other extraneous materials that are harmful to plant growth.

C. Unsuitable Materials: Clean soil to contain a combined maximum of 8 percent by dry weight of stones, roots, plants, sod, clay lumps, and pockets of coarse sand.

D. Screening: Pass unamended soil through a 3-inch (75-mm) sieve to remove large materials.

3.8 PLACING AND MIXING PLANTING SOIL OVER EXPOSED SUBGRADE

A. General: Apply and mix unamended soil with amendments on-site to produce required planting soil. Do not apply materials or till if existing soil or subgrade is frozen, muddy, or excessively wet.

B. Provide Contracting Officer ten (10) days' notice before the start of topsoil placement. Do not place topsoil when the ground or topsoil is frozen, excessively wet or otherwise in a condition detrimental to work. Spread topsoil to a depth that, after settlement, provides the required depth.

C. Install topsoil when seeding and mulching can be completed within 10 days following topsoil installation.

D. Subgrade Preparation: Till subgrade to a minimum depth of 6 inches (150 mm). Remove stones larger than 3 inches (75 mm) in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.

E. If areas for seed have been compacted by construction activities, the area to be planted should be decompacted. Decompaction shall be performed by equipment capable of decompacting soil down to a depth of 12-18 inches. Equipment shall make 6 inch overlapping passes to decompact all disturbed areas.

F. Mixing: Spread unamended soil to total depth of 6 inches (150 mm) but not less than required to meet finish grades after mixing with amendments and natural settlement. Do not spread if soil or subgrade is frozen, muddy, or excessively wet.

1. Amendments: Apply soil amendments and fertilizer, if required, evenly on surface, and thoroughly blend them with unamended soil to produce planting soil.

   a. Mix lime and sulfur as needed with dry soil before mixing fertilizer.
   b. Mix fertilizer with planting soil no more than seven days before planting.

2. Lifts: Apply and mix unamended soil and amendments in lifts not exceeding 8 inches 200 mm) in loose depth for material compacted by compaction equipment, and not more than 6 inches (150 mm) in loose depth for material compacted by hand-operated tampers.

G. Compaction: Compact each blended lift of planting soil to 75 percent of maximum Standard Proctor density according to ASTM D698.

H. Finish Grading: Grade planting soil to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.

3.9 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.

B. Perform the following tests:

1. Compaction: Test planting-soil compaction after placing each lift and at completion using a densitometer or soil-compaction meter calibrated to a reference test value based on laboratory testing according to ASTM D698. Space tests at no less than one for each 1000 sq. ft. (100 sq. m of in-place soil or part thereof.
2. Performance Testing: For each amended planting-soil type, demonstrating compliance with specified performance requirements. Perform testing according to "Soil-Sampling Requirements" and "Testing Requirements" articles.

C. Soil will be considered defective if it does not pass tests.

D. Prepare test reports.

E. Label each sample and test report with the date, location keyed to a site plan or other location system, visible conditions when and where sample was taken, and sampling depth.

3.10 PROTECTION AND CLEANING

A. Protection Zone: Identify protection zones according to Section 01 56 39 "Temporary Tree and Plant Protection."

B. Protect areas of in-place soil from additional compaction, disturbance, and contamination. Prohibit the following practices within these areas except as required to perform planting operations:

1. Storage of construction materials, debris, or excavated material.
2. Parking vehicles or equipment.
3. Vehicle traffic.
4. Foot traffic.
5. Erection of sheds or structures.
6. Impoundment of water.
7. Excavation or other digging unless otherwise indicated.

C. Remove surplus soil and waste material including excess subsoil, unsuitable materials, trash, and debris and legally dispose of them off Owner's property unless otherwise indicated.

1. Dispose of excess subsoil and unsuitable materials on-site where directed by Owner.

END OF SECTION 32 91 13

SECTION 32 91 19 – TOPSOIL

PART 1 GENERAL

1.1 SUMMARY:

A. Work Includes: Furnishing, stockpiling, and placing topsoil on a previously prepared subgrade.

1.2 DEFINITIONS

A. Topsoil: Natural or cultivated surface-soil layer containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shade of brown, gray, or red then underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than two inches (2") in diameter; and free of subsoil and weeds, roots, toxic materials, or other non-soil materials.

1.3 QUALITY ASSURANCE:

A. All topsoil is to be sourced from near the project site or as determined by the Contracting Officer.

B. Submit vendor certificate of quality and soil composition including soil textural classification (percentages of sand, silt, and clay), pH, percentage organic matter, and soluble salts (electric conductivity in millimos/centimeter)

1.4 DELIVERY, STORAGE AND HANDLING:

A. Do not deliver or place topsoil in a frozen, wet, or muddy condition.

B. Store topsoil in windrows no higher than 36".

1.5 SUBMITALS:

A. Topsoil Storage Plan: Submit a topsoil storage plan identifying the methods, locations, erosion control and schedule for approval by the Contracting Officer.

B. Soil Testing Reports: for imported topsoil, submit topsoil test reports certifying compliance with the state requirements of Part 2.2.B of this Section as applicable.

PART 2 PRODUCTS

2.1 ON-SITE TOPSOIL: Intact native topsoil from the project area shall be retained whenever feasible, for re-use on site. On-site topsoil shall not be amended.

2.2 IMPORTED TOPSOIL: Should additional topsoil be needed, all topsoil must be of quality suitable for use in a National Park Unit. Any substructure fill should be tested/inspected to ensure radionuclides are not present in a concentration that decay will result in release of radon gas in a concentration that would be a health concern. Any topsoil materials required for the project must be obtained from a park-approved source. Such materials are to be clean of contaminants and free of exotic seeds and spores. Written verification of such should be provided to the CO and COR prior to delivery of material. Imported soils shall not be amended prior to testing/inspection. At least ten (10) days prior to topsoil delivery, notify Contracting Officer of the source(s) from which topsoil is to be furnished. Topsoil shall be a natural, friable soil representative of productive soils and shall meet the following conditions;

A. Imported topsoil shall be weed free and pest free and must be checked for exotic plants and

seeds.

B. In New York, any new soils brought on site must be tested and meet New York State Department of Environmental Conservation standards for general fill (6 CRR-NY 360.13).

C. In New Jersey, any new soils brought on site must be tested and meet the New Jersey Standards for residential ingestion-dermal and residential inhalation exposures (N.J.A.C. 7:26D Appendix 1, Tables 1 and 3).

D. Imported topsoil shall be obtained from the top twelve (12) inches of well-drained areas.

E. Fertile, friable, reasonably free from subsoil, refuse, roots, heavy or stiff clay, stones larger than one inch (1”), coarse sand, noxious seeds, sticks, brush, litter, and other deleterious substances; suitable for the germination of seeds and the support of vegetative growth.

F. Soil Texture: To match in situ material.

PART 3 - EXECUTION

3.1 TOPSOIL

A. Topsoil refers to the uppermost soil horizon, usually darker in color, in which the majority of roots grow.

B. Stockpile topsoil materials away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust.
   1. Care will be taken to assure that topsoil and fill material are not mixed and are stockpiled in separate areas (i.e., topsoil to the right of the trench and fill to the left).
   2. Equipment capable of working around areas of designated vegetation or tree stumps prior to grubbing operations will be required to perform the work.
   3. Limit height of topsoil stockpiles to 36 inches (900 mm) unless authorized by Contracting Officer.
   4. Do not stockpile topsoil within drip line of remaining trees.
   5. Dispose of excess topsoil as specified for waste material disposal.
   6. Stockpile surplus topsoil to allow for re-spreading a thicker layer of topsoil.

C. Topsoil Handling: Topsoil may not be stockpiled over the winter or for longer than (6) months in grass and tree dominated zones. Any deviation must be approved by the Contracting Officer.
   1. Topsoil may not be used as bedding material. Separate bedding material must be obtained from sources approved by the Contracting Officer.
   2. All imported topsoil is to be stockpiled on-site with erosion control surrounding the pile in the location established at the pre-demolition meeting.

3.2 PLACING TOPSOIL:

A. Comply with Section 32 91 13 “Soil Preparation”.

END OF SECTION 32 91 19

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SECTION 32 92 19 – SEEDING AND MULCHING

PART 1 - GENERAL

1.1 SUMMARY

A. The work of this section consists of seeding and hydromulching with tackifier and maintaining all seeded and mulched areas, as designated on the plans until final acceptance.

1.2 DEFINITIONS

A. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth. See Section 32 91 13 "Soil Preparation".

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 INFORMATIONAL SUBMITTALS

A. Certification of grass seed.

1. Certification of each seed mixture.

B. Product certificates: For hydromulch and tackifier, from manufacturer.

C. Proposed pesticide treatments. Include product label and manufacturer's application instructions specific to Project.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: A qualified landscape Installer whose work has resulted in successful turf establishment.

1. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
2. Personnel Certifications: Installer's field supervisor shall have certification in one of the following categories from the National Association of Landscape Professionals:

a. Landscape Industry Certified Technician - Exterior.
b. Landscape Industry Certified Lawn Care Manager.
c. Landscape Industry Certified Lawn Care Technician.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of compliance with state and Federal laws, as applicable.

1.7 FIELD CONDITIONS

A. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions

B. Seeding to occur from April 1 to May 15 or October 1 to November 15.

PART 2 - PRODUCTS

2.1 SEED:

A. Seed to be provided by the Contractor.

B. Seed Species: Shall not be less than 95 percent pure seed, and not more than 0.5 percent weed seed.

C. Seed Mixes:

1. Maintained turf areas:
   a. 90% Tall Fescue / 10% Kentucky Bluegrass mix, consisting of:
   b. 30% Infernal Tall Fescue, 30% Spyder Tall Fescue, 30% Monet Tall Fescue, 10% Scenic Kentucky Bluegrass.

2. Un-mowed natural areas:

Common Name *(Botanical Name)*	**Total PLS lbs./acre**
Coastal Panic Grass *(Panicum amarum)* or	2
Switchgrass *(Panicum virgatum)*	
Indiangrass *(Sorghastrum nutans)*	5
Sideoats grama *(Bouteloua curtipendula)*	1
Deertongue *(Dichanthelium clandestinum)*	6
Little Bluestem *(Achizachyrium scoparium)*	3

3. Submit proposed mixes and seeding rates for review and approval by the Contracting Officer.

2.2 WATER: No watering for seeded and mulched areas.

2.3 TOPSOIL: Material to be on-site topsoil or imported topsoil per Section 32 91 19 “Topsoil”.

2.5 HYDROMULCH: 100% weed free, virgin long strand wood fiber.

2.6 TACKIFIER: Non-toxic, natural and biodegradable plant-base psyllium alpha/plantago tackifier.

PART 3 - EXECUTION

3.1 AREA PREPARATION

A. General: Prepare planting area for soil placement and mix planting soil according to Section 32 91 13 "Soil Preparation."

B. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

C. Limit preparation to areas which will be planted in the immediate future.

D. Prior to the application of seed, the area shall be thoroughly ripped, disked, or cultivated to a depth of six inches (6") if practical and conditions allow and lines must be smoothed over before seeding and mulching.

E. Apply topsoil to areas to be seeded. See Section 32 91 13 “Soil Preparation”.

F. Grade areas to be seeded to a smooth, even surface with a loose, uniformly fine texture. Roll, rake and remove ridges and fill depressions, as required to meet finish grades. Limit fine grading to areas which can be planted within the immediate future. Maintain positive drainage, prevent ponding and direct run-off into catch basins, drainage structures, etc., and provide well-contoured surface prior to proceeding. A firm weed-free seed bed is required. Protect structures, utilities, sidewalks, pavements, and other facilities, trees, shrubs, and plantings from damage caused by planting operations. Obtain Contracting Officer approval of finished grade prior to proceeding with seeding operations.

G. Before seeding, obtain Contracting Officer’s acceptance of finish grading; restore seeding areas if eroded or otherwise disturbed after finish grading.

3.2 INSTALLATION

A. Sow seed with spreader or seeding machine. Hand broadcast in small areas and/or areas difficult to access with mechanical seeding equipment. Do not broadcast or drop seed when wind velocity exceeds 5 mph (8 km/h).

1. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.
2. Do not use wet seed or seed that is moldy or otherwise damaged.
3. Do not seed against existing trees. Protect existing trees from damage by seeding operations.

B. Sow seed at a total rate per part 2.1.C.3 of this Section..

C. Rake seed lightly into top 1/8 inch (3 mm) of soil, roll lightly, and water with fine spray.

D. Hydromulching

1. Mulch Application: Use 2,000 lbs,/acre of weed free long strand virgin wood fiber and non-toxic, natural and biodegradable plant-base psyllium alpha/plantago tackifier. Tackifier to be applied at rate of 80 lbs./acre on slopes less than 3:1 and apply at a rate of 100 lbs./acre on slopes greater than 3:1 (rates may vary depending on product, verify product with Contracting Officer). Integrate non-toxic, 100% environmentally safe tracer dye material at a rate of around 200-300 pounds per acre to provide visible evidence of uniform application.

2. All hydromulch mixing shall be performed in a clean tank. The tank and all hoses must be rinsed a minimum of three times, to remove any seed prior to arriving at the project site. The CO or authorized representative shall inspect the hydroseed equipment prior to operations and the contractor should assume a demonstration of clean water running through the tank/hoses shall be required.

3. The hydromulcher must be equipped with a built-in continuous agitation and recirculation system of sufficient operating capacity to produce homogeneous slurry and a discharge system that shall apply slurry to the designated areas at a continuous and uniform rate. No fertilizers, mycorrhizae, or other amendments shall be added to the hydromulch slurry.

4. The Contractor shall spray designated areas with the slurry in a sweeping motion and in an arched stream until a uniform coat is achieved, with no slumping or shadowing, as the material is spread at the required rate. The hydromulch slurry should float down from the arched stream, as opposed to being shot directly at the ground. During hydroseeding the existing native vegetation must be protected from damage (including, but not limited to, coating with mulch, damage by direct spray, and dragging hose). Notify the Contracting Officer three weeks before hydroseeding to ensure that NPS oversight of seeding operations can be coordinated.

3.3 PROTECTION

A. Protect existing utilities, paving and other facilities from damage caused by seeding and mulching operations, Contractor shall repair any damage at no additional cost to the NPS.

B. Restrict vehicular and pedestrian traffic from seeded areas until grass is established. Erect signs and barriers as required or directed by the Contracting Officer at no additional cost to the NPS. During landscape work, keep pavements clean and work area in an orderly condition. Any damage to other work done by landscape crew is to be reported and repaired immediately.

C. Erosion Control: Take measures and furnish equipment and labor necessary to control and prevent soil erosion, blowing soil and accumulation of wind-deposited materials on the site throughout the duration of work.

D. Protect landscape work and materials from damage due to landscape operations, operations by other Contractors and trades and trespassers. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged landscape work as directed until final acceptance.

E. Upon completion of work, remove debris and leave area in clean, acceptable condition.

3.4 SATISFACTORY ESTABLISHMENT IN MAINTAINED TURF AREAS

A. Grass seed installations shall be minimally established to meet the following criteria by Substantial Completion as determined by Contracting Officer:

1. The turf in the mowed areas needs to be fully developed and alive after three mowings.

3.5 SATISFACTORY ESTABLISHMENT IN UN-MOWED NATURAL AREAS

A. Grass seed installations shall be minimally established to meet the following criteria by Substantial Completion as determined by Contracting Officer:

1. Within three months, total vegetation cover in all zones seeded with cover crop shall exceed 70% (by aerial cover). Dryland grass shall be free of weeds, foreign grasses, disease and harmful insects.
2. By the end of the first full growing season after seeding, total vegetation cover including cover crop shall exceed 90% (by aerial cover) and 10% of all species present shall be native.
3. By the end of the first full growing season, seedling from 20% of planted forb species shall be present.
4. At any time during the contract period the seeded area should be dominated by aggressive exotic species such as, but not limited to, red clover (*Trifolium* spp.), white or yellow sweet clover (*Melilotus* spp.), Canada thistle (*Cirsium arvense*), tall fescue (*Festuca elatior*), bindweed*(Convolvulus arvensis*) etc.
5. Until final acceptance seeded areas that fail after having been replaced previously, shall be replaced until it meets establishment as required above. Replacement materials shall be identical to those originally specified. Provide seed tags to the Contracting Officer for verification.
6. Remedial action: If seeded areas greater than 10 square feet fail to meet the terms of the guarantee shown above, the Landscape Contractor will develop and submit to the Contracting Officer a remedial action plan that takes into consideration the site goals and specific deficiencies causing the remedial action. Contractor will implement the remedial action plan and submit a report that describes the remedial action taken. If remedial seeding or planting is required, Contractor will not be required to perform additional remedial seeding or planting in the same area for a minimum of two growing seasons.
7. Seeded areas will not be accepted in parts. Each time any portion or section of the entire seeded area requires replacement or remedial action, the maintenance period shall extend until all seeded areas meet the minimum establishment requirements stated above.
8. All expense incurred for the replacement and or establishment of the seed areas are the responsibility of the Contractor.
9. If seeded in the fall, review for establishment shall be no later than June 15 of the following year.

3.6 MAINTENANCE

A. General: Maintain and establish native by fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable grass. Roll, regrade, and

replant bare or eroded areas and remulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.

3.7 SATISFACTORY GRASS

A. Grass installations shall meet the following criteria as determined by Contracting Officer:

2. Satisfactory Seeded Grass: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. (0.92 sq. m) and bare spots not exceeding 5 by 5 inches (125 by 125 mm).

E. Use specified materials to reestablish grass that does not comply with requirements and continue maintenance until grass is satisfactory.

3.8 ACCEPTANCE

A. Final review and inspection shall be made by the Contracting Officer before the work is accepted.

END OF SECTION 32 92 19

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SECTION 32 92 23 - SODDING

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:

1. Sodding.

1.3 DEFINITIONS

A. Finish Grade: Elevation of finished surface of planting soil.

B. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. Pesticides include insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. They also include substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.

C. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. Pests include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.

D. Planting Soil: Existing, on-site soil; or imported soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth. See Section 329113 "Soil Preparation" and drawing designations for planting soils.

E. Subgrade: The surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For landscape Installer.

B. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture, stating the botanical and common name, percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.

1. Certification of each seed mixture for turfgrass sod. Include identification of source and name and telephone number of supplier.

C. Product Certificates: For fertilizers, from manufacturer.

D. Proposed pesticide treatments. Include product label and manufacturer's application instructions specific to Project.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: Recommended procedures to be established by Park for maintenance of turf during a calendar year. Submit before expiration of required maintenance periods.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful turf establishment.

1. Professional Membership: Installer shall be a member in good standing of either the National Association of Landscape Professionals or AmericanHort.
2. Experience: Three years' experience in turf installation in addition to requirements in Section 014000 "Quality Requirements."
3. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
4. Personnel Certifications: Installer's field supervisor shall have certification in one of following categories from the National Association of Landscape Professionals:

   a. Landscape Industry Certified Technician - Exterior.
   b. Landscape Industry Certified Lawn Care Manager.
   c. Landscape Industry Certified Lawn Care Technician.

5. Pesticide Applicator: State licensed, commercial.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of compliance with state and Federal laws, as applicable.

B. Sod: Harvest, deliver, store, and handle sod according to requirements in "Specifications for Turfgrass Sod Materials" and "Specifications for Turfgrass Sod Transplanting and Installation" sections in TPI's "Guideline Specifications to Turfgrass Sodding." Deliver sod within 24 hours of harvesting and in time for planting promptly. Protect sod from breakage and drying.

C. Bulk Materials:

1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
2. Provide erosion-control measures to prevent erosion or displacement of bulk materials; discharge of soil-bearing water runoff; and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
3. Accompany each delivery of bulk materials with appropriate certificates.

1.9 FIELD CONDITIONS

A. Planting Restrictions: Plant during one following periods. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of planting completion.

1. Spring Planting: April - June.
2. Summer Planting: July- September.

B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

PART 2 - PRODUCTS

2.1 TURFGRASS SOD

A. Turfgrass Sod: Number 1 Quality/Premium, including limitations on thatch, weeds, diseases, nematodes, and insects, complying with "Specifications for Turfgrass Sod Materials" in TPI's "Guideline Specifications to Turfgrass Sodding." Furnish viable sod of uniform density, color, and texture that is strongly rooted and capable of vigorous growth and development when planted.

B. Turfgrass Species:
1. 90% Tall Fescue / 10% Kentucky Bluegrass mix, consisting of:
2. 30% Infernal Tall Fescue, 30% Spyder Tall Fescue, 30% Monet Tall Fescue, 10% Scenic Kentucky Bluegrass.

2.2 FERTILIZERS

A. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:

1. Composition: 2 lbs/1000 sq. ft. (0.90 kg/92.9 sq. m of actual nitrogen, 4 percent phosphorous, and 2 percent potassium, by weight.
2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

B. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:

1. Composition: 20 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.
2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

2.3 PESTICIDES

A. General: Pesticide, registered and approved by the EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.
   1. Submit proposed pesticide or herbicide treatment to the Contracting Officer for approval.
   2. Only NPS-approved chemical herbicides, insecticides, or soil sterilants shall be proposed for use.
   3. All proposed work must be reviewed by the Integrated Pest Management coordinator in the Park.
   4. Any use of herbicide/bait/pesticide requires prior approval and chemical use tracking in the NPS Pesticide Use Proposal System.
   5. Application of herbicides/baits/pesticides shall be by licensed applicators and in compliance with state law.
   6. Use of any pesticide/herbicide requires submission of a pesticide use proposal and prior NPS approval. Allow a minimum of 30 days for approval. Pesticide use proposal must include: chemical name, EPA registration number, application method, species to be treated, application rate, area to be treated, and SDS sheet(s).

B. Pre-Emergent Herbicide (Selective and Nonselective): Effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the mulch layer.

C. Post-Emergent Herbicide (Selective and Nonselective): Effective for controlling weed growth that has already germinated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas to be planted for compliance with requirements and other conditions affecting installation and performance of the Work.

   1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
   2. Suspend planting operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
   3. Uniformly moisten excessively dry soil that is not workable or which is dusty.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Contracting Officer and replace with new planting soil.

3.2 PREPARATION

A. Protect structures; utilities; sidewalks; pavements; and other facilities, trees, shrubs, and plantings from damage caused by planting operations.

1. Protect grade stakes set by others until directed to remove them.

B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

3.3 TURF AREA PREPARATION

A. General: Prepare planting area for soil placement and mix planting soil according to Section 329113 "Soil Preparation."

B. Placing Planting Soil: Blend planting soil in place.

1. Reduce elevation of planting soil to allow for soil thickness of sod.

C. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

D. Before planting, obtain Contracting Officer's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.4 SODDING

A. Lay sod within 24 hours of harvesting unless a suitable preservation method is accepted by Contracting Officer prior to delivery time. Do not lay sod if dormant or if ground is frozen or muddy.

B. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod; do not stretch or overlap. Stagger sod strips or pads to offset joints in adjacent courses. Avoid damage to soil or sod during installation. Tamp and roll lightly to ensure contact with soil, eliminate air pockets, and form a smooth surface. Work sifted soil or fine sand into minor cracks between pieces of sod; remove excess to avoid smothering sod and adjacent grass.

1. Lay sod across slopes exceeding 1:3.
2. Anchor sod on slopes exceeding 1:6 with wood pegs spaced as recommended by sod manufacturer but not less than two anchors per sod strip to prevent slippage.

C. Saturate sod with fine water spray within two hours of planting. During first week after planting, water daily or more frequently as necessary to maintain moist soil to a minimum depth of 1-1/2 inches (38 mm) below sod.

3.5 TURF MAINTENANCE

A. General: Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, regrade, and replant bare or eroded areas to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.

1. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence.
2. Apply treatments as required to keep turf and soil free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards.

B. Watering: Install and maintain temporary piping, hoses, and turf-watering equipment to convey water from sources and to keep turf uniformly moist to a depth of 4 inches (100 mm).

1. Water turf with fine spray at a minimum rate of 1 inch (25 mm) per week unless rainfall precipitation is adequate.

C. Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than one-third of grass height. Remove no more than one-third of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowings to maintain the following grass height:

1. Mow Tall Fescue / Kentucky Bluegrass mix to a height of 1-1/2 to 2 inches (38 to 50 mm).

3.6 SATISFACTORY TURF

A. Turf installations shall meet the following criteria as determined by Contracting Officer:

1. Satisfactory Sodded Turf: At end of maintenance period, a healthy, well-rooted, even-colored, viable turf has been established, free of weeds, open joints, bare areas, and surface irregularities.

B. Use specified materials to reestablish turf that does not comply with requirements, and continue maintenance until turf is satisfactory.

3.7 PESTICIDE APPLICATION

A. Apply pesticides and other chemical products and biological control agents according to requirements of authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Government operations and others in proximity to the Work. Notify Contracting Officer before each application is performed.

B. Post-Emergent Herbicides (Selective and Nonselective): Apply only as necessary to treat already-germinated weeds and according to manufacturer's written recommendations.

3.8 CLEANUP AND PROTECTION

A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

B. Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose of them off Government's property.

C. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established.

3.9 MAINTENANCE SERVICE

A. Turf Maintenance Service: Provide full maintenance by skilled employees of landscape Installer. Maintain as required in "Turf Maintenance" Article. Begin maintenance immediately after each area is planted and continue until acceptable turf is established, but for not less than the following periods:

1. Sodded Turf: 30 days from date of planting completion.

END OF SECTION 32 92 23

SECTION 32 93 00 - PLANTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Plants.
2. Mulches.

1.2 DEFINITIONS

A. Backfill: The earth used to replace or the act of replacing earth in an excavation.

B. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. Pesticides include insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. They also include substances or mixtures intended for use as a plant regulator, defoliant, or desiccant. Some sources classify herbicides separately from pesticides.

C. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth. See Section 329113 "Soil Preparation "for drawing designations for planting soils.

D. Root Flare: Also called "trunk flare." The area at the base of the plant's stem or trunk where the stem or trunk broadens to form roots; the area of transition between the root system and the stem or trunk.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Plant Materials: Include quantities, sizes, quality, and sources for plant materials.
2. Plant Photographs: Include color photographs in digital format of each required species and size of plant material as it will be furnished to Project. Take photographs from an angle depicting true size and condition of the typical plant to be furnished. Include a scale rod or other measuring device in each photograph. For species where more than 10 plants are required, include a minimum of three photographs showing the average plant, the best quality plant, and the worst quality plant to be furnished. Identify each photograph with the full scientific name of the plant, plant size, and name of the growing nursery.

B. Samples for Verification: For each of the following:

1. Trees and Shrubs: Three Samples of each variety and size delivered to site for review. Maintain approved Samples on-site as a standard for comparison.
2. Organic Mulch: 1-quart volume of each organic mulch required; in sealed plastic bags labeled with composition of materials by percentage of weight and source of mulch. Each Sample shall be typical of the lot of material to be furnished; provide an accurate representation of color, texture, and organic makeup

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For landscape Installer. Include list of similar projects completed by Installer demonstrating Installer's capabilities and experience. Include project names, addresses, and year completed, and include names and addresses of owners' contact persons.

B. Product certificates: For each type of manufactured product, from manufacturer, and complying with the following:

1. Manufacturer's certified analysis of standard products.
2. Analysis of other materials by a recognized laboratory made according to methods established by the Association of Official Analytical Chemists, where applicable.

C. Proposed pesticide treatments. Include product label and manufacturer's application instructions specific to Project.

D. Sample warranty.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: Recommended procedures to be established by Owner for maintenance of plants during a calendar year.

1.7 QUALITY ASSURANCE

A. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.

1. Pesticide Applicator: State licensed, commercial.

B. Provide quality, size, genus, species, and variety of plants indicated, complying with applicable requirements in ANSI Z60.1.

C. Measurements: Measure according to ANSI Z60.1. Do not prune to obtain required sizes.

1. Trees and Shrubs: Measure with branches and trunks or canes in their normal position. Take height measurements from or near the top of the root flare for field-grown stock and container-grown stock. Measure main body of tree or shrub for height and spread; do not

measure branches or roots tip to tip. Take caliper measurements 6 inches above the root flare for trees up to 4-inch caliper size, and 12 inches above the root flare for larger sizes.

D. Plant Material Observation: Contracting Officer may observe plant material either at place of growth or at site before planting for compliance with requirements for genus, species, variety, cultivar, size, and quality. Contracting Officer may also observe trees and shrubs further for size and condition of balls and root systems, pests, disease symptoms, injuries, and latent defects and may reject unsatisfactory or defective material at any time during progress of work. Remove rejected trees or shrubs immediately from Project site.

1. Notify Contracting Officer of sources of planting materials seven days in advance of delivery to site.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Do not prune trees and shrubs before delivery. Protect bark, branches, and root systems from sun scald, drying, wind burn, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees or shrubs in such a manner as to destroy their natural shape. Provide protective covering of plants during shipping and delivery. Do not drop plants during delivery and handling.

B. Handle planting stock by root ball.

C. Deliver plants after preparations for planting have been completed, and install immediately. If planting is delayed more than six hours after delivery, set plants and trees in their appropriate aspect (sun, filtered sun, or shade), protect from weather and mechanical damage, and keep roots moist.

1.9 FIELD CONDITIONS

A. Field Measurements: Verify actual grade elevations, service and utility locations, irrigation system components, and dimensions of plantings and construction contiguous with new plantings by field measurements before proceeding with planting work.

B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions and warranty requirements.

1.10 WARRANTY

A. Special Warranty: Installer agrees to repair or replace plantings and accessories that fail in materials, workmanship, or growth within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Death and unsatisfactory growth, except for defects resulting from abuse, lack of adequate maintenance, or neglect by Owner.
b. Structural failures including plantings falling or blowing over.

2. Warranty Periods: From date of planting completion.

a. Trees, Shrubs, Vines, and Ornamental Grasses: 12 months.
b. Ground Covers, Biennials, Perennials, and Other Plants: 12 months.

PART 2 - PRODUCTS

2.1 PLANT MATERIAL

A. General: Furnish nursery-grown plants true to genus, species, variety, cultivar, stem form, shearing, and other features indicated in Plant List, Plant Schedule, or Plant Legend indicated on Drawings and complying with ANSI Z60.1; and with healthy root systems developed by transplanting or root pruning. Provide well-shaped, fully branched, healthy, vigorous stock, densely foliated when in leaf and free of disease, pests, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement.

1. Trees with damaged, crooked, or multiple leaders; tight vertical branches where bark is squeezed between two branches or between branch and trunk ("included bark"); crossing trunks; cut-off limbs more than 3/4 inch in diameter; or with stem girdling roots are unacceptable.

B. Provide plants of sizes, grades, and ball or container sizes complying with ANSI Z60.1 for types and form of plants required. Plants of a larger size may be used if acceptable to Contracting Officer, with a proportionate increase in size of roots or balls.

C. Root-Ball Depth: Furnish trees and shrubs with root balls measured from top of root ball, which begins at root flare according to ANSI Z60.1. Root flare shall be visible before planting.

D. Labeling: Label each plant of each variety, size, and caliper with a securely attached, waterproof tag bearing legible designation of common name and full scientific name, including genus and species. Include nomenclature for hybrid, variety, or cultivar, if applicable for the plant.

2.2 MULCHES

A. Organic Mulch: Free from deleterious materials and suitable as a top dressing of trees and shrubs, consisting of the following:

1. Type: Shredded wood
2. Size Range: finely shredded, 3 inches maximum length shreds.
3. Color: Natural.

2.3 PESTICIDES

A. General: Pesticide registered and approved by the EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.

1. Submit proposed pesticide treatment to the Contracting Officer for approval.
2. Only NPS-approved pesticides shall be proposed for use.
3. All proposed work must be reviewed by the Integrated Pest Management coordinator in the Park.
4. Any use of herbicide/bait/pesticide requires prior approval and chemical use tracking in the NPS Pesticide Use Proposal System.
5. Application of herbicides/baits/pesticides shall be by licensed applicators and in compliance with state law.
6. Use of any pesticide/herbicide requires submission of a pesticide use proposal and prior NPS approval. Allow a minimum of 30 days for approval. Pesticide use proposal must include: chemical name, EPA registration number, application method, species to be treated, application rate, area to be treated, and SDS sheet(s).

PART 3 - EXECUTION

3.1 PLANTING AREA ESTABLISHMENT

A. General: Prepare planting area for soil placement and mix planting soil according to Section 32 9113 "Soil Preparation."

B. Placing Planting Soil: Place and mix planting soil in-place over exposed subgrade.

C. Before planting, obtain Contracting Officer's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.2 EXCAVATION FOR TREES AND SHRUBS

A. Planting Pits and Trenches: Excavate circular planting pits.

1. Excavate planting pits with sides sloping inward at a 45-degree angle. Excavations with vertical sides are unacceptable. Trim perimeter of bottom leaving center area of bottom raised slightly to support root ball and assist in drainage away from center. Do not further disturb base. Ensure that root ball will sit on undisturbed base soil to prevent settling. Scarify sides of planting pit smeared or smoothed during excavation.
2. Excavate approximately three times as wide as ball diameter.
3. Excavate at least 12 inches wider than root spread and deep enough to accommodate vertical roots for bare-root stock.
4. Do not excavate deeper than depth of the root ball, measured from the root flare to the bottom of the root ball.

B. Backfill Soil: Subsoil and topsoil removed from excavations may be used as backfill soil unless otherwise indicated.

3.3 TREE AND SHRUB PLANTING

A. Inspection: At time of planting, verify that root flare is visible at top of root ball according to ANSI Z60.1. If root flare is not visible, remove soil in a level manner from the root ball to

where the top-most root emerges from the trunk. After soil removal to expose the root flare, verify that root ball still meets size requirements.

B. Roots: Remove stem girdling roots and kinked roots. Remove injured roots by cutting cleanly; do not break.

C. Set each plant plumb and in center of planting pit or trench with root flare 1 inch above finish grades.

1. Backfill: Planting soil from amended, on-site soil
2. Balled and Burlapped Stock: After placing some backfill around root ball to stabilize plant, carefully cut and remove burlap, rope, and wire baskets from tops of root balls and from sides, but do not remove from under root balls. Remove pallets, if any, before setting. Do not use planting stock if root ball is cracked or broken before or during planting operation.
3. Container-Grown Stock: Carefully remove root ball from container without damaging root ball or plant.
4. Fabric Bag-Grown Stock: Carefully remove root ball from fabric bag without damaging root ball or plant. Do not use planting stock if root ball is cracked or broken before or during planting operation.
5. Bare-Root Stock: Support stem of each plant and spread roots without tangling or turning toward surface. Plumb before backfilling, and maintain plumb while working. Carefully work backfill around roots by hand. Bring roots into close contact with the soil.
6. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
7. Continue backfilling process. Water again after placing and tamping final layer of soil.

D. Slopes: When planting on slopes, set the plant so the root flare on the uphill side is flush with the surrounding soil on the slope; the edge of the root ball on the downhill side will be above the surrounding soil. Apply enough soil to cover the downhill side of the root ball.

3.4 TREE AND SHRUB PRUNING

A. Remove only dead, dying, or broken branches. Do not prune for shape.

B. Prune, thin, and shape trees, shrubs, and vines as directed by Contracting Officer.

C. Prune, thin, and shape trees, shrubs, and vines according to standard professional horticultural and arboricultural practices. Unless otherwise indicated by Contracting Officer, do not cut tree leaders; remove only injured, dying, or dead branches from trees and shrubs; and prune to retain natural character.

D. Do not apply pruning paint to wounds.

3.5 TREE STABILIZATION

A. Trunk Stabilization by Upright Staking and Tying: Install trunk stabilization as follows unless otherwise indicated:

1. Upright Staking and Tying: Stake trees with two stakes for trees up to 12 feet high and 2-1/2 inches or less in caliper; three stakes for trees less than 14 feet high and up to 4 inches in caliper. Space stakes equally around trees.
2. Support trees with bands of flexible ties at contact points with tree trunk. Allow enough slack to avoid rigid restraint of tree.
3. Support trees with two strands of tie wire, connected to the brass grommets of tree-tie webbing at contact points with tree trunk. Allow enough slack to avoid rigid restraint of tree.

3.6 GROUND COVER AND PLANT PLANTING

A. Set out and space ground cover and plants other than trees and shrubs, as indicated on Drawings.

B. Use amended, on-site planting soil backfill.

C. Dig holes large enough to allow spreading of roots.

D. Work soil around roots to eliminate air pockets and leave a slight saucer indentation around plants to hold water.

E. Water thoroughly after planting, taking care not to cover plant crowns with wet soil.

F. Protect plants from hot sun and wind; remove protection if plants show evidence of recovery from transplanting shock.

3.7 PLANTING AREA MULCHING

A. Mulch backfilled surfaces of planting areas and other areas indicated.

1. Trees: Apply organic mulch ring of 3-inch average thickness, with 24-inch radius around trunks or stems. Do not place mulch within 3 inches of trunks or stems.

3.8 INSTALLING SLOW-RELEASE WATERING DEVICE

A. Provide one device for each tree.

B. Place device on top of the mulch at base of tree stem and fill with water according to manufacturer's written instructions.

3.9 PLANT MAINTENANCE

A. Maintain plantings by pruning, cultivating, watering, weeding, fertilizing, mulching, restoring planting saucers, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings.

B. Fill in, as necessary, soil subsidence that may occur because of settling or other processes. Replace mulch materials damaged or lost in areas of subsidence.

C. Apply treatments as required to keep plant materials, planted areas, and soils free of pests and pathogens or disease. Use integrated pest management practices when possible to minimize use of pesticides and reduce hazards. Treatments include physical controls such as hosing off foliage, mechanical controls such as traps, and biological control agents.

D. Apply pesticides and other chemical products and biological control agents according to authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Government's operations and others in proximity to the Work. Notify Contracting Officer before each application is performed.

3.10 CLEANING AND PROTECTION

A. During planting, keep adjacent paving and construction clean and work area in an orderly condition. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

B. Remove surplus soil and waste material including excess subsoil, unsuitable soil, trash, and debris and legally dispose of them off Government property.

C. Protect plants from damage due to landscape operations and operations of other contractors and trades. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged plantings.

D. After installation and before Substantial Completion, remove nursery tags, nursery stakes, tie tape, labels, wire, burlap, and other debris from plant material, planting areas, and Project site.

E. At time of Substantial Completion, verify that tree-watering devices are in good working order and leave them in place. Replace improperly functioning devices.

3.11 MAINTENANCE SERVICE

A. Maintenance Service: Provide maintenance by skilled employees of landscape Installer. Maintain as required in "Plant Maintenance" Article. Begin maintenance immediately after plants are installed and continue until plantings are acceptably healthy and well established, but for not less than maintenance period below:

1. Maintenance Period for Trees and Shrubs: 12 months from date of planting completion.
2. Maintenance Period for Ground Cover and Other Plants: 12 months from date of planting completion.

END OF SECTION 32 93 00