

NATIONAL PARK SERVICE
NORTHEAST REGION
DEPARTMENT OF THE INTERIOR
UNITED STATES OF AMERICA

Thomas Stone NHS

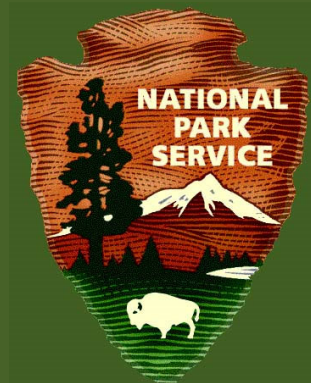
**Renovate Visitor Center
Restrooms**

PMIS No. 303931

PROJECT MANUAL



Thomas Stone National Historic Site
6655 Rose Hill Rd
Port Tobacco, MD



AP 2025



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The complete Project Manual for the Project consists of this entire electronically bound volume, which is not to be separated for any reason. The Government is not responsible for any assumptions made by a Contractor, a Subcontractor, Consultant or Specialist, as applicable, who does not receive a complete Project Manual containing all sections and documents listed in the Table of Contents, below.

The following listing of documents comprises the Project Manual for the Project, entitled:

**Visitor Center Restrooms Renovation
Thomas Stone National Historic Site
6655 Rose Hill Rd
Port Tobacco, MD**

Where numerical sequence of Specification Sections or Divisions is interrupted, such interruptions are intentional. It is the responsibility of each entity to review and become familiar with all Project Documents to execute the Project efficiently and in a timely manner. Failure to do so is not the responsibility of the Government.

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LIST OF DRAWINGS - All Drawings listed are a part of this Project Manual and will not be issued separately.

COVER

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A2 VISITOR CENTER REST ROOMS INTERIOR ELEVATIONS

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SECTION 01 10 00 - SUMMARY OF WORK

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
 - 1. Work covered by the Contract Documents
 - 2. Contractor use of premises
 - 3. Public use of site
 - 4. Occupancy requirements for buildings
 - 5. Work Restrictions
 - 6. Special Construction Requirements
 - 7. Additional Reports

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. Project Location: Thomas Stone National Historic Site, 6655 Rose Hill Rd, Port Tobacco, MD.
- B. The Work consists of the following:
 - 1. Demolition of all toilet partitions, restroom accessories, plumbing fixtures, light fixtures, floor and wall tile in both men's and women's restrooms of the visitor center as noted on the construction drawings.
 - 2. Limited work in the utility chase between restrooms of the visitor center as necessary for plumbing and electrical demo and reconnections.
 - 3. Surface repairs and replacement of removed items, including all required electrical and plumbing connections, as noted on the construction drawings.
 - 4. Installation of new surface mounted door openers for both restrooms as noted on the construction drawings.
 - 5. Photographic and written documentation of the performance of the above listed items.
 - 6. Supply of all labor and materials to perform the above listed items.
 - 7. Legal disposal of all removed materials associated with the performance of the above listed items.
 - 8. Final cleanup as needed for a proper and workmanlike repair project.
- C. Project will be constructed under a single prime contract.

1.3 CONTRACTOR USE OF SITE

- A. General: Contractor shall have limited use of the site for construction operations. Limit use of premises to work in areas indicated, subject to adjustments made by mutual agreement with Contracting Officer (CO), confine construction operations to within areas designated on the construction drawings.
 - 1. Contractor will have access to water and electricity in the work areas as agreed to by Park management.
 - 2. Contractor will provide and maintain 2 portable toilets during the construction period, one for Contractor use and one for use by the public.
 - 3. Storage of Materials: Confine storage of materials to locations designated by the Contracting Officer and Park managers as acceptable storage/laydown areas. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

- B. Driveways and Entrances: Keep driveways, sidewalks and entrances serving premises clear and available to Government's employees, the public and emergency vehicles always. Do not use these areas for parking or storage of materials.
 - 1. Schedule deliveries to minimize use of driveways and entrances.
- C. Construction Camp: Establishment of a camp within the park will not be permitted.
- D. Hauling Restrictions: Comply with all legal load restrictions in the hauling of materials. Load restrictions on park roads are identical to state load restrictions with such additional regulations as may be imposed by the Park Superintendent. Information regarding rules and regulations for vehicular traffic on park roads may be obtained from the Office of the Park Superintendent. A special permit will not relieve Contractor of liability for damage which may result from moving of equipment.

1.4 PUBLIC USE OF SITE

- A. Park grounds will remain open every day from 9AM to 5PM or as seasonally adjusted.
- B. Visitor Center will remain open Friday through Sunday 9AM to 5PM.

1.5 OCCUPANCY REQUIREMENTS FOR BUILDINGS

- A. Existing Buildings
 - 1. Government will occupy the non-construction areas of the Visitor Center during entire construction period on Friday through Sunday.
 - 2. Other Park buildings will remain in use by Government personnel during the construction period.
 - 3. Cooperate with Government during construction operations to minimize conflicts and facilitate Government usage. Perform the Work so as not to interfere with Government's operations.
 - 4. Maintain existing exits, unless otherwise indicated. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from the Government (CO).

1.6 CONDUCT OF OPERATIONS

- A. At all times the contractor shall conduct operations in conformance with the rules and regulations promulgated by the Secretary of the Interior for the National Park Service, and applicable park rules and regulations prescribed by the Park Superintendent.
- B. No signs or advertisements (except those specified herein) shall be displayed on the construction site or within the park unless approved by the Government.

1.7 WORK RESTRICTIONS

- A. On-Site Work Hours: Work shall be generally performed during normal business working hours of 7:30 a.m. to 4:00 p.m., Monday through Friday, except when otherwise indicated.
- B. Weekend Hours: Weekend work is not allowed without prior approval of the Government. Request weekend work a minimum of one week prior to performing the work.
- C. Existing Utilities

1. Contractor shall be responsible for preventing damage to known utilities. If damage occurs, repair utility at no additional expense to the Government.
 2. If damage occurs to an unknown utility, repair utility. An equitable adjustment will be made in accordance with the Changes clause of the contract.
 3. 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:
 - a. Notify The Government not less than three (3) days in advance of proposed utility interruptions.
 - b. Do not proceed with utility interruptions without prior, written approval of the Government.
 - c. Hours for Utility Shutdowns: Utility shutdowns shall only take place during regular business hours. Maximum utility shutdown shall not exceed four (4) hours.
- D. Nonsmoking Buildings: Smoking is not permitted within buildings or within 25 feet of entrances, operable windows, or outdoor air intakes.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 10 00

SECTION 01 26 01 – CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. The work of this section consists of administrative and procedural requirements for contract modifications.

1.2 DEFINITIONS AND ALLOWANCES

- A. Home Office Overhead: Those 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 the preparation of modifications will not be allowed. The 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, 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: These are 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 present and working on the 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: This is the hourly rate paid directly to the worker.
 - b. Labor Burden: Employer payments of all applicable burdens, this includes insurance and taxes that 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) FUTA– Cap Rate and percentage to be proportionally allocated over one year.
 - 5) 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 the contractor from claims resulting from bodily injury or property damage to a third party. Include this 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 that the contractor will pay the labor and material costs he/she has incurred. Banks and insurance companies charge a premium for each individual project based on a sliding scale which relates to the size of the project. Include this as a separate line item in modification proposals and provide current company bonding rates upon request.
 - H. Builder's Risk Insurance: This covers the contractor's loss due to fire, high winds, or other natural forces. This is not reimbursed by the National Park Service (NPS) and shall not be included in modification proposals.

1.3 MODIFICATION PROPOSAL PRICING REQUIREMENTS

- A. General:
 1. Contractor's proposal must be received in the format and within the time frame specified in the Request for Proposal letter. Costs or delays resulting from failure of contractor to submit within the time frame specified will not be compensable.
 2. The proposal must be detailed with itemized lists of equipment, materials, labor, production rates, overhead, profit, and bond markup for each item. Labor costs must be itemized by craft and hourly rate, including Fringe Benefits and Labor Burden. If the costs of Fringe Benefits and Labor Burden are not itemized, it is assumed that they are included in the hourly rate shown, or contractor is not requesting reimbursement. Contractor may utilize the government provided [Contractor Estimate Form](#), or his/her own form, provided that it contains the same information and level of detail as the Government-provided form.
 3. Requests for extensions of contract time because of this change must be justified with a Time Impact Analysis (TIA). Refer to Division 01 Specification, "Construction Schedule" for time impact analysis requirements. TIA and associated costs must be received with the proposal by the date shown within the Request for Proposal letter. Contractor's failure to submit within the specified time frame will be construed as the Contractor waiving the right for additional time, and no time extension will be allowed.
 4. All supporting documentation used to justify the proposed modification shall be made available to the Government upon request.
 5. Contractor must review and approve all subcontractor/supplier pricing in detail for proper format, scope, production rates and pricing prior to submission to the NPS. All delay costs associated with not reviewing and approving subcontractor/supplier pricing shall be borne by the Contractor.
 6. All pricing and production rates within the estimate must be based on fair and reasonable pricing and cannot include built-in contingency.

- B. Labor:
1. Contractor shall estimate the cost of labor by itemizing each craft involved, indicating worker hourly rate (base rate + labor burden + fringe benefits) for each and itemizing the hours required for each craft that will be directly engaged in modification work. Any work proposed that will require overtime work or premium pay shall be itemized separately. All 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, 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. The labor cost for foremen shall only be costs for related work required for the modification.
- C. Materials:
1. The estimated cost for materials shall include quotes from multiple sources. Material prices must include all 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 the NPS.
- D. Equipment:
1. Equipment used for the project must be appropriately sized for the work being performed.
 2. Do not include costs for "miscellaneous tools and equipment" in any proposal for a replacement value of \$500 or less. Costs shown in excess of \$500 must be broken out separately.
 3. Regardless of ownership, the rates to be used in determining equipment rental costs shall be the lowest cost from one of the following sources:
 - a. 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. The estimated equipment rates shall include the 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 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 the full rate for equipment only for the duration that the equipment will be utilized to accomplish the work of the modification.
 6. Standby unit rates used are to be in accordance with paragraph 1.3, D, 2, above. If the US Army Corp of Engineers is utilized, then their standby rates prevail. If Bluebook or local equipment pricing is accepted, one half (1/2) of the 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, the established standby rate shall apply from the first day of the delay.
 8. Equipment that is not used and on the jobsite for up to five consecutive days may be classified at standby rates, provided that the equipment is or has been used solely to perform work on the modification and will be necessary to complete additional modification work. Equipment that is 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 31 which 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 = 10% Profit = 10%
 2. Total aggregate limit of markup OH&P for contractor and subcontractors on modification work shall not exceed 25%. The NPS will not be responsible for allocation of percentages between contractor and subcontractors at any tier.
 3. If contractors form a partnership, then the partnership may only receive home office overhead and profit in the same amount as an individual contractor (refer to paragraph 1.3.E.1 above). It is the responsibility of the partners to decide on the division of revenue.
 4. Combined Increases and Decreases: On proposals involving both increases and decreases in the Contract Price, the overhead and profit mark-ups are required on the 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 (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012601

SECTION 01 27 00 – DEFINITION OF CONTRACT LINE ITEMS

PART 1 - GENERAL

1.1 SUMMARY

- A. The intent of this section is to explain, in general, what is and what is not included in a contract line-item, and the limits or cut-off points where one item ends, and another begins.
- B. If no contract line item exists for a portion of the work, include the costs in a related item.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 LIST OF CONTRACT LINE-ITEMS

- A. Contract Line-Item No. 1, Renovation of Visitor Center Men's and Women's Restrooms
 - 1. Work is to be bid as identified on Construction Drawings and the Specifications.
 - 2. Measurement for payment will be percentage complete of line item per scheduled value.
 - 3. Payment will be made at the contract lump sum price.

END OF SECTION 012700

SECTION 01 31 00 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. Definitions
 - 2. Construction Coordination.
 - 3. Submittals
 - 4. Coordination Drawings.
 - 5. Requests for Information (RFIs).
 - 6. Project meetings.
 - 7. Environmental Coordination.
 - 8. Permits

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

1.2 DEFINITIONS

- A. Authority Having Jurisdiction (AHJ): For the purposes of this contract the AHJ is the Northeast Regional Director as represented by the NPS Fire Protection Engineer.

1.3 CONSTRUCTION COORDINATION

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, which depend on each other for proper installation, connection, and operation.
 - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 - 2. Coordinate installation of different components with other Contractors to ensure maximum accessibility for required maintenance, service, and repair.
 - 3. Make adequate 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 all components, including mechanical and electrical.
 - 5. Properly plan construction operations to include permit requirements. Allow enough time to execute permit provisions to maintain work schedule, site visits, inspections, and reporting deadlines.

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

- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of subcontractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
1. Preparation of Contractor's Construction Schedule
 2. Preparation of the Schedule of Values
 3. Installation and removal of temporary facilities and controls
 4. Delivery and processing of submittals
 5. Progress meetings
 6. Pre-installation conferences
 7. Project closeout activities
 8. Commissioning activities

1.4 SUBMITTALS

- A. Division 01 documents: The following items shall be submitted a minimum of one (1) week prior to the Preconstruction Conference. Government will notify Contractor of tentative date for the Pre-Construction Conference.
1. Letter designating Project Superintendent
 2. Construction Schedule
 3. Schedule of Values
 4. Accident Prevention Plan
 5. A list of Subcontractors for this project
 6. Written statements from subcontractors certifying compliance with applicable labor standard clauses
 7. Satisfactory evidence of liability insurance coverage and workman's compensation for the Contactor and all subcontractors
 8. Waste Management Plan
 9. Quality Control Plan
- B. All items listed must be provided to the Government before the Pre-Construction Conference is held. If all these documents have not been received one (1) week prior to the scheduled Pre-Construction Conference date, the conference may be cancelled, Notice to Proceed may not be issued, and the Government may consider other contractual remedies. Work shall not commence until written Notice to Proceed has been issued.

1.5 REQUESTS FOR INFORMATION (RFI's)

- A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, during either the Bid process of construction, Contractor shall prepare and submit an RFI utilizing the form provided in Division 00 of this specification or the Contractor's own form containing all information required by para 1.5.B, below.
1. The Government will not respond to RFI's submitted by other entities controlled by Contractor
 2. Coordinate and submit RFI's in a prompt manner to avoid delays in the work

- B. Content of the RFI: Include a 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.
 - a. If Contractors suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the 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. Government Action:
1. The Government will review each RFI, determine action required, and respond to Contractor. The Government will determine the critical nature of each RFI and issue a response accordingly.
 2. CO's action may include a request for additional information, in which case time for response will date from time of receipt of additional information.
 3. CO's action on RFIs may result in the need for a change to the Contract Time or the Contract Sum. All contract changes will be processed following the terms and conditions of the contract.
- D. The following are not considered to be RFI's and will receive no action:
1. Requests for approval of submittals
 2. Requests for approval of substitutions
 3. Requests for approval of Contractor's means and methods
 4. Requests for coordination information already indicated in the Contract Documents
 5. Requests for adjustments in the Contract Time or the Contract Sum
 6. Requests for interpretation of the Government's actions on submittals
 7. Incomplete RFI's or inaccurately prepared RFI's

1.6 PROJECT MEETINGS

- A. Preconstruction Conference: Before start of construction, Government will arrange an on-site meeting with Contractor.
1. Attendees: Government Representatives, the Contractor, and appropriate Subcontractors as determined by the Contractor and other entity shall be represented at these meetings. All participants at the meeting shall be familiar with the Project and authorized to conclude matters relating to the Work.
 2. The meeting agenda will include the following as a minimum:
 - a. Roles & Responsibilities/ Lines of Authority
 - b. Park rules and regulations
 - c. Jobsite Safety
 - d. Resolution of comments on required Division 01 documents
 - e. Coordination of Subcontractors

- f. Labor law application
- g. Modifications
- h. Payments to Contractor
- i. Payroll reports
- j. Contract time
- k. Liquidated damages
- l. Contractor Performance Evaluation
- m. Display of Hotline posters
- n. Notice to proceed
- o. Permit requirements
- p. Correspondence procedures
- q. Acceptance/rejection of work
- r. Progress meetings
- s. Submittal procedures
- t. NPS Final Accessibility Inspection
- u. Environmental requirements
- v. As-constructed drawings/operation and maintenance (O&M) manuals
- w. Saturday, Sunday, holiday and night work
- x. Reference materials
- y. Value engineering

- B. Progress Meetings: The Contracting Officer will schedule weekly meetings with the 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 at these meetings. All participants at the meeting shall be familiar with the 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. The meeting agenda will also include the following:
 - a. Approval of minutes of previous meetings
 - b. Submittal status
 - c. Review of off-site fabrication and delivery schedules
 - d. Requests for information (RFI) and other issues
 - e. Modifications
 - f. Work in progress and projected:
 - 1) Status of required inspections (Special Inspections, Accessibility, etc.)
 - g. Inspections of work in progress and projected
 - h. Construction Schedule update (provide updated CPM)
 - i. Status of Project Record Drawings and O&M manuals
 - j. Other business relating to work
- C. Preinstallation Conferences: Conduct a preinstallation conference 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 the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise CO of scheduled meeting dates

2. Agenda: Review progress of other construction activities and preparations for the activity under consideration, including requirements for the following:
 - a. Deliveries.
 - b. Submittals.
 - c. Review of mockups.
 - d. Possible conflicts.
 - e. Time schedules.
 - f. Weather limitations.
 - g. Compatibility of materials.
 - h. Acceptability of substrates.
 - i. Temporary facilities and controls.
 - j. Space and access limitations.
 - k. Installation procedures.
 - l. Protection of adjacent work.

1.7 ENVIRONMENTAL COORDINATION

- A. Comply with all applicable Federal, State, and local environmental regulations, including maintaining required documentation.
- B. Designate an on-site party responsible for overseeing the Contractor's conformance to environmental regulations and goals for the project and implementing procedures for environmental protection.

1.8 RESPONSIBILITIES, CODES AND PERMITS

- A. Responsibilities:
 1. For this contract the Contractor will not be considered an agent of the Government.
 2. The Contractor will comply with the appropriate Federal, State, and local laws.
 3. The Contractor shall be responsible for all damages to persons or property that occur because of the Contractor's fault or negligence.
 4. The Contractor shall be responsible for all materials delivered and work performed until completion and acceptance of the work.
- B. Codes:
 1. Prevailing Code: The work shall comply with the requirements of the International Building Code, all applicable sections and divisions, latest edition and including all state and local amendments, unless otherwise authorized by the Government.
 2. Ordinances and Regulations: All local, municipal, state and federal laws, codes and regulations governing or relating to all portions of this work are hereby incorporated into and made a part of these Specifications.
 3. Anything contained in these Specifications shall not be construed to conflict with any of the above codes, regulations, or requirements. In the event this occurs consult the Government for resolution.
 4. When these Specifications and Drawings call for or describe materials, workmanship or construction of a better quality, higher standard, or larger size than is required by applicable codes and regulations, the provisions of these Specifications and Drawings shall take precedence.
 5. Furnish all additional materials and labor required to comply with applicable codes and regulations at no additional cost to the Government.
- C. Permits:

1. City or County Building Permits are not required for projects on Federal Government owned property. All other permits pertinent to the Work of this Contract required by Authority Having Jurisdiction shall be obtained and paid for by the Contractor.
2. 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.
3. Coordination: Contact the Agency with Jurisdiction as needed and sufficiently in advance to avoid delaying the work. Coordinate meetings, reporting requirements, inspections, or any other requirements.
4. Administrative Procedures:
 - a. Coordinate scheduling and timing of required administrative provisions of project permits with Agency with Jurisdiction, Construction Manager, and Park to avoid conflicts and to ensure orderly execution of the Work.
 - b. Supply all needed information to Agency with Jurisdiction issuing permits, pay any fees required and provide all material needed to comply with the permit's conditions and provisions.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 31 00

SECTION 01 32 16 – CONSTRUCTION SCHEDULE

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section consists of Construction Schedule requirements including but not limited to the following:
 - 1. Schedule of Values
 - 2. Construction Schedule Requirements.
 - 3. Construction Schedule Updates.
 - 4. Time Impact Analysis.
- B. Purpose: The purpose of the Construction Schedule is to ensure adequate planning, coordination, scheduling, and reporting during execution of the work by the Contractor. The Construction Schedule will assist the Contractor and Government in monitoring the progress of the work, evaluating proposed changes, and processing the Contractor's monthly progress payment.
- C. Related Requirements:
 - 1. Section 01 31 00 - Project Management and Coordination.
 - 2. Section 01 33 23 - Submittal Procedures.

1.2 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
 - 1. Critical activities are activities on the critical path. They must 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: The allocation of the Schedule of Values for the completion of an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum, unless otherwise approved by the Government.
- C. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.
- D. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- E. Float: The measure of leeway in starting and completing an activity.
 - 1. Float: Float is not for the exclusive use or benefit of either the Government or the Contractor but is jointly owned.
 - 2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity
 - 3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.

- F. Resource Loading: The allocation of manpower and equipment necessary for the 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. Except for material samples, submittals shall be made in electronic format. Email documents to COR or route through contractor's project admin web site.
 - 1. Schedule of Values: After contract award and before the Pre-Construction conference submit a schedule of dollar values based on the Contract Price Schedule.
 - 2. Construction Schedule: After contract award and before the Pre-Construction conference, submit electronic copies of baseline schedule, showing entire schedule for entire construction period.
 - 3. Construction Schedule Updates: On or before the 7th day preceding the progress payment request date, submit estimates of the percent completion of each schedule activity and necessary supporting data.
 - 4. Construction Schedule Revisions and Time Impact Analysis: For each Construction Schedule revision submit electronic copies of a Time Impact Analysis. Each Time Impact Analysis shall include a Fragmentary Network (Fragnet), incorporated into the currently accepted Construction Schedule, demonstrating how the Contractor proposes to incorporate a modification, change, delay, or Contractor request.

1.4 QUALITY ASSURANCE

- A. Prior to completing the Construction Schedule, the Contractor shall review the following with the Government:
 - 1. Software limitations, content and format for reports.
 - 2. Review delivery dates for Government-furnished products, when applicable.
 - 3. Review schedule for work of separate Government contracts, when applicable.
 - 4. Review time required for review of submittals and re-submittals, when applicable.
 - 5. Review requirements for tests and inspections by independent testing and inspecting agencies.
 - 6. Review time required for completion and startup procedures.
 - 7. Review time required for obtaining and activating permits.
 - 8. Review and finalize list of construction activities to be included in schedule.
 - 9. Review baseline schedule comments, resolve issues and progress on incorporating.
 - 10. Review procedures for updating schedule.

1.5 COORDINATION

- A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate Contractors.
- B. Coordinate Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.
 - 1. In developing the Construction Schedule, ensure that the Subcontractor's work at all tiers, as well as the prime Contractor's work, is included and coordinated.

2. Secure time commitments for performing critical elements of the Work from parties involved.
3. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 SCHEDULE OF VALUES

- A. The total cost of all items shall equal the contract price. The Schedule of Values will form the basis for progress payments.
- B. Breakdown each lump-sum item shown in the Contractor Bid Form into component work activities used in the schedule, for which progress payments may be requested.
 1. The work activities broken out within the schedule of values shall be integrated into and made a logical part of the Construction Schedule submitted under this specification.
 2. The total costs for the component work activities shall equal the contract price for that lump-sum item.
 3. Include mobilization, general condition costs, overhead and profit in the total dollar value of the component work activities for each lump-sum item and unit price items.
 - a. Do not include mobilization, general condition costs, overhead or profit as a separate item.
 4. Unit Prices: Do not break down unit price items. Use only the contract price for unit price items. Include mobilization, general condition costs, overhead and profit in the total dollar value of the unit price items.
 5. The Government may request data to verify accuracy of dollar values.
- C. An acceptable Schedule of Values shall be agreed upon by the Contractor and the Government before the first progress payment is processed.

2.2 CONSTRUCTION SCHEDULE REQUIREMENTS

- A. Construction Schedule: Prepare Construction Schedule for the Work using a computerized, resource-loaded, time-scaled CPM network analysis diagram.
 1. Develop and finalize Construction Schedule so it can be accepted for use no later than fifteen (15) days after date established for the Notice of Award.
 - a. Failure to include any work item required for performance of this Contract shall not excuse Contractor from completing all work within applicable completion dates, regardless of Governments acceptance of the schedule.
 2. Establish procedures for monitoring and updating Construction Schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.
- B. Construction Schedule Preparation: Prepare a list of all activities required to complete the Work. Using the CPM network diagram, identify probable critical paths as follows:
 1. Activities: Indicate the estimated duration, sequence requirements, and relationship of each activity in relation to other activities.
 2. Critical Path Activities: Identify critical path activities, including those for interim completion dates.
 - a. Scheduled start and completion dates shall be consistent with Contract milestone dates.
 3. Show the sequence and interdependence of activities required for complete performance of the Work. Ensure all work sequences are logical, and the Construction Schedule shows a

- coordinated plan of the work;
4. Resource loading of each activity shall include all personnel by labor category and equipment type and capacity proposed to complete the activity in the duration shown.
 5. Consider seasonal weather conditions in planning and scheduling all work influenced by high and low ambient temperatures, wind, or precipitation to ensure completion of all work within the Construction Period.
 6. Time Frame: Proposed duration assigned to each activity shall be the Contractor's best estimate of time required to complete the activity considering the scope and resources planned for the activity:
 - a. An early finish date may be shown but the late finish date must be the same date as the last day of the contract period.
 - b. Contract completion date shall not be changed by submission of a schedule that shows an early completion date.
 - c. The Contractor shall limit use of lead or lag durations between schedule activities.
 - d. Procurement Activities: Include procurement activities.
 - e. Submittal Review Time: Include review and re-submittal times indicated. Coordinate submittal review times in Construction Schedule For more information, refer to Division 01 Specification 01 33 23 Closeout Procedures.)
 - f. Startup and Testing Time: Include not less than seven (7) days for startup and testing.
 - g. Substantial Completion: Allow time for Government administrative procedures necessary for certification of Substantial Completion. (For more information, refer to Division 01 Specification 01 77 00 Closeout Procedures.)
 7. Constraints: Include constraints and work restrictions indicated in the Contract Documents.
 - a. Work Restrictions: Show the effect of the following items on the schedule:
 - 1) Coordination with existing construction.
 - 2) Use of premises restrictions.
 - 3) Environmental control.
 8. Work Stages: Indicate important stages of construction for each major portion of the Work.
 - 1) Submittals.
 - 2) Purchases.
 - 3) Mockups.
 - 4) Deliveries.
 - 5) Installation.
 9. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion.
- C. Joint Review, Revision, and Acceptance:
1. Within seven (7) calendar days of receipt of the Contractor's proposed Construction Schedule, the Government and Contractor shall meet for joint review, correction, or adjustment of the initial Construction Schedule. Any areas which, in the opinion of the Government, conflict with timely completion of the project shall be subject to revision by the Contractor.
 2. Within seven (7) calendar days after the joint review between the Contractor and Government, the Contractor shall revise and resubmit the Construction Schedule in accordance with agreements reached during the joint review.

3. In the event the Contractor fails to define any element of work, activity, or logic, and the Government review does not detect this omission or error, such omission or error, when discovered by the Contractor or Government, shall be corrected by the Contractor within seven (7) calendar days and shall not affect the Contract Period.
 4. Upon acceptance of the Construction Schedule by the Government, save the schedule as a baseline and update as necessary as agreed upon by the Contractor and the Government.
- D. The Construction Schedule update will be used to evaluate the Contractor's monthly applications for payment
- E. Recovery Schedule: When periodic schedule update indicates the Work is fourteen (14) or more calendar days behind the current accepted schedule, a separate recovery schedule indicating means by which Contractor intends to regain compliance with the accepted Construction Schedule shall also be submitted. Indicate changes to working hours, working days, crew sizes, and equipment required to achieve compliance. Provide date by which recovery will be accomplished.
- F. Computer Software: Prepare schedules using a program that has been developed specifically to manage construction schedules.

PART 3 - EXECUTION

3.1 CONSTRUCTION SCHEDULE UPDATES

- A. Progress Meeting Updates: Provide a two (2) week look-ahead schedule, derived from the currently accepted schedule, before each weekly progress meeting. Utilize the look-ahead schedule to facilitate and take notes on discussions held during the progress meeting.
- B. Distribution: Distribute copies of accepted Construction Schedule to Government representatives, Subcontractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
- C. Construction Schedule Revisions:
1. Required Revisions: If, because of the monthly schedule update, it appears the currently accepted Construction Schedule no longer represents the actual prosecution and progress of the work, the Government will request, and the Contractor shall submit, a revision to the Construction Schedule.
 2. The Contractor may also request reasonable revisions to the currently accepted Construction Schedule in the event the Contractor's planning for the work is revised.
 3. Procedure: If revision to the currently accepted Construction Schedule is contemplated, the Contractor or the Government shall so advise the other in writing at least seven (7) calendar days prior to the next schedule review, describing the revision and reasons for the revision.
 4. Accepted revisions will be incorporated into the currently accepted Construction Schedule.

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 desires to revise the currently accepted Construction Schedule, the Contractor shall submit to the Government a written time impact analysis illustrating the influence of each modification, change, delay, or Contractor request on the contract time.

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

END OF SECTION 01 32 16

SECTION 01 32 33 – PHOTO DOCUMENTATION

PROJECTS PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for the following:
 - 1. Preconstruction Images
 - 2. Periodic Construction Images
 - 3. Government requested Additional Images

- B. Purpose: The purpose of photo documentation is twofold:
 - 1. Preconstruction Photos document the condition of the Area(s) of Work prior to the start of construction. The purpose of these photographs is to document the existing condition of areas within and adjacent to the Area of Work and document existing damage or deterioration that might be misconstrued as damage caused by the Contractor while performing the Work of this Contract.
 - 2. Construction Photos provide a record of the progress of the Work daily. They allow the Government to track the work when not on site.

- C. Related Requirements:
 - 1. Section 01 31 00 – Project Management.
 - 2. Section 01 40 00 – Quality Requirements.
 - 3. Section 01 77 00 – Closeout Procedures.

PART 2 – PRODUCTS (not used)

PART 3 - EXECUTION

3.1 PHOTOGRAPHIC DOCUMENTATION

- A. General:
 - 1. Sequentially number all images.
 - 2. Include date, time and sequence number in filename.
 - 3. Include description of vantage point, indicating location, direction (by compass point) and elevation or story of construction
 - 4. Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
 - 5. Submit in *.jpg or *.png format via a file transfer site, contractor's construction management website, or other form of electronic transfer. Limit image file size to 2M.

- B. Preconstruction Images: Before starting construction, take color digital images of work area and adjacent features, including existing items to remain during construction, from different vantage points, as required to clearly show all the existing conditions and document all damage and/or deterioration. Submit all Preconstruction Photos to the Government for review and acceptance prior to beginning any work on site.
 - 1. Take at least eight (8) separate images to show existing conditions before starting the Work.

- C. Periodic Construction Images:

1. Take at least three (3) color, digital images daily, clearly illustrating the Work performed on each day.
 2. Submit all fifteen (15) images weekly.
 3. Select vantage points to show status of construction and progress.
- D. Additional Images: Contracting Officer may issue requests for additional images, in addition to periodic Construction images specified.
1. Three days' notice will be given, where feasible.
 2. In emergency situations, take additional images within 24 hours of request.
 3. Circumstances that could require additional images include, but are not limited to, the following:
 - a. Immediate follow-up when on-site events result in construction damage or losses.
 - b. Images to be taken at fabrication locations away from Project site.
 - c. Extra record images at time of final acceptance.

END OF SECTION 01 32 33

SECTION 01 33 23 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

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

1.2 DEFINITIONS

- A. Action Submittals: Written, graphic information, and physical samples that require Government's responsive action.
- B. Informational Submittals: Written information that does not require Government's responsive action. Submittals may be rejected for not complying with the requirements.
- C. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

1.3 GENERAL SUBMITTAL PROCEDURES

- A. General: Provide submittals required by individual Specification Sections. Types of submittals are indicated in individual specific sections.
 - 1. The Government reserves the 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 them for legibility, accuracy, completeness, and compliance with Contract Documents.
 - 1. Coordinate each 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 the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Government reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
 - 3. Contractor shall sign the transmittal form for each submittal to indicate that submittal has been thoroughly reviewed for all requirements.
- C. Submittal List: A submittal list has been attached to the end of this 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, including time for re-submittals, as follows. Time for review shall commence when the submittal is received by the Government Representative (or designee). When the Government has completed their review and processed the submittal, it will be returned to the Contractor by email. No extension of the

Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including re-submittals. Submittal review times are as follows:

1. Action Submittals
 - a. Initial Review: Allow fifteen (15) days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required.
 - b. Re-submittal Review: Allow fifteen (15) days for review of each re- submittal.
 2. Informational submittals
 - a. Review: Allow 10 days for review of each submittal.
- E. Approved Equals: Pursuant to Sections 01 67 00 – Product Requirements:
1. For each item proposed as an “approved equal,” submit supporting data, including:
 - a. Drawings and samples as appropriate.
 - b. Comparison of the characteristics of the proposed item with that specified.
 - c. Changes required in other elements of the work because of the substitution.
 - d. Name, address, and telephone number of vendor.
 - e. Manufacturer’s literature regarding installation, operation, and maintenance, including schematics for electrical and hydraulic systems, lubrication requirements, and parts lists. Describe availability of maintenance service, and state source of replacement materials.
 2. A request for approval constitutes a representation that Contractor:
 - a. Has investigated the proposed item and determined that it is equal or superior in all respects to that specified.
 - b. Will provide the same warranties for the proposed item as for the item specified.
 - c. Has determined that the proposed item is compatible with interfacing items.
 - d. Will coordinate the installation of an approved item and make all changes required in other elements of the work because of the substitution.
 - e. Waives all claims for additional expenses that may be incurred because of the substitution.
- F. Electronic Submittals: Submit one (1) electronic copy of each submittal to the Government or to the contractor construction admin website with notifications to the Government COR.
1. If submittals cannot be submitted electronically, deliver three (3) hardcopies to the Government Representative (or designee). The Government will retain two (2) copies and return one (1) hardcopy to the Contractor.
 2. Transmittal Form: All submittals shall be transmitted using National Park Service form CM-16 form (a sample of which is included at the end of this section). No action will be taken on a submittal item unless accompanied by the CM-16 transmittal form. All Government comments and actions will be documented on the Transmittal form and returned to the Contractor.
 - a. Complete the general information at the top of the form.
 - b. Provide all required information based on the submittal type.
 - c. Attach all related documents.
 - d. Sign the Transmittal in the contractor section at the bottom of the form.
 3. Physical samples: Complete the CM-16 Transmittal as described above. Deliver the physical sample to the Government Representative (or designee) for processing.

- G. 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 an alphabetic suffix after another decimal point (e.g., .001.A).
- H. Re-submittals: Make re-submittals using the same process used with the initial submittal.
 - 1. Note date and content of previous submittal.
 - 2. Note date and content of revision in the title block on the CM-16 and clearly indicate the extent of revision.
 - 3. Re-submit submittals until they are marked “Approved” or “Approved with notations”.
- I. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, and others as necessary for performance of construction activities.
- J. Use for Construction: Use only final submittals with mark indicating “Approved” or “Approved with notations”. Ensure all notations have been incorporated and, at a minimum, keep one copy of the final approved submittal on site for use during construction and review by the Government, if requested.

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. Submittals shall be project specific.
 - a. Do not submit electronic copies of manufacturers’ full catalogues and/or line(s) of products.
 - b. Clearly mark each submittal to show which products and options are being submitted.
 - 3. Include the following information, as applicable:
 - 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 Government 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. Compliance with specified referenced standards.
 - e. Testing by recognized testing agency, where applicable.

- B. Samples: Submit physical samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 2. Complete the CM-16 Transmittal for processing and documentation of action on submitted samples. If samples are delivered to the site or other specified Government location(s), email an electronic copy of the Transmittal to the Government Representative (or designee).
 3. Identification: Attach label on unexposed side of Samples that includes the following:
 - a. Generic description of Sample.
 - b. Product name and name of manufacturer.
 - c. Color, finish and or model number(s).
 - d. Sample source.
 - e. Number and title of appropriate Specification Section.
 4. Number of Samples: Provide three (3) sets of all samples. The Government will retain one (1) set of samples; and return two (2) sets of samples to the Contractor. One set of samples shall remain at the Project Site throughout construction.
 5. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 6. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 - a. Submit full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line.
Government will return submittal with options selected.
 7. Samples for Verification: Submit full-size units or samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

2.2 INFORMATIONAL SUBMITTALS

- A. General: Prepare and submit Informational Submittals required by individual Specification Sections.
1. Email electronic copies of Informational Submittals in *.pdf format to the government Representative (or designee).
 2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
 3. Informational submittals that do not comply with the requirements specified in the Contract Documents will be rejected and one copy will be returned.
- B. Coordination Drawings: Comply with the requirements specified in Section 01 31 00 "Project Management and Coordination."

- C. Contractors Construction Schedule: Comply with the requirements specified in Section 01 32 16 “Construction Schedule.”
- D. Accident Prevention Plan: Comply with the requirements specified in Section 01 35 23 “Safety Requirements.”
- E. Schedule of Values: Comply with the requirements specified in Section 01 32 16 “Construction Schedule.”
- F. Waste Recycling Plan: Comply with the requirements specified in Section 01 74 19 “Construction Waste Management and Disposal.”
- G. Quality Control Plan: Comply with the requirements specified in Section 01 40 00 “Quality Requirements.”
- H. Qualification Data: Prepare written information that demonstrates 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.
- I. Welding Certificates: Prepare written certification that welding procedures and personnel comply with the requirements in the Contract Documents. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.
- J. Installer Certificates: Prepare written statements on manufacturer’s letterhead certifying that Installer complies with the requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- K. Manufacturer Certificates: Prepare written statements on manufacturer’s letterhead certifying that manufacturer complies with the requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- L. Product Certificates: Prepare written statements on manufacturer’s letterhead certifying that product complies with the requirements in the Contract Documents.
- M. Material Certificates: Prepare written statements on manufacturer’s letterhead certifying that material complies with the requirements in the 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 the requirements in the Contract Documents.
- O. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with the requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- P. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project.

- Q. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
- R. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- S. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with the requirements in the Contract Documents.
- T. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with the requirements specified in Section 01 78 23 "Operation and Maintenance Data."
- U. Design Data: Prepare written and graphic information, including, but not limited to, 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.
- V. Manufacturer's Instructions: Prepare written or published information that documents 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.
- W. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
 - 1. Statement on condition of substrates and their acceptability for installation of product.
 - 2. Summary of installation procedures being followed, whether they comply with the requirements and, if not, what corrective action was taken.
 - 3. Results of operational and other tests and a statement of whether observed performance complies with the requirements.
- X. Permit Compliance Products: Prepare required information for compliance with permit provisions. Products include written notification of project startup, suspension, and completion of work; photo-documentation of site conditions; reports; and drawings.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

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

3.2 GOVERNMENT'S ACTION

- A. General: Submittals will be disapproved without technical review if identification information is missing, not filled in, or if placed on the back of the submittal; an incorrect format of submittals is provided; the transmittal form is incorrectly filled out; submittals are not coordinated; or submittals do not show evidence of Contractor's approval.
 - 1. Any work done or orders for materials or services placed before approval shall be at the Contractor's own risk.

- B. Action Submittals: Government will review each submittal, generate comments on corrections or modifications required, and indicate the appropriate action on the CM-16 Transmittal Form. The submittal will be marked in one of three ways as defined below:
 - 1. APPROVED: Acceptable with no corrections.
 - 2. APPROVED WITH NOTATIONS: Minor corrections or clarifications required. All comments are clear, and no further review is required. The Contractor shall address all review comments when proceeding with the work.
 - 3. DISAPPROVED - RESUBMIT: Rejected as not in accordance with the contract or as requiring major corrections or clarifications. The Government will identify the reasons for disapproval. The Contractor shall revise and resubmit with changes clearly identified.

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

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

END OF SECTION 01 33 23

SECTION 01 35 23 - SAFETY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. This section includes establishing an effective accident prevention program and providing a safe working environment for all personnel and visitors.

1.2 DEFINITIONS

- A. Hot Work: Any work that involves burning, welding, using fire- or spark-producing tools, or that produces a source of ignition.

1.3 SUBMITTALS

- A. Accident Prevention Plan (APP): After contract award and a minimum of seven (7) days before the Preconstruction conference, Contractor shall submit the Accident Prevention Plan as an Informational Submittal (see Section 01 33 23 - Submittals Procedures for further information).
 - 1. If the plan requires any revisions or corrections, the Contractor shall resubmit the Plan within ten (10) days. No progress payments will be made until the Plan is accepted.

1.4 QUALITY ASSURANCE

- A. All site and working conditions shall comply with applicable Occupational Safety and Health Administration (OSHA) standards and requirements.
- B. Equipment or tools not meeting applicable OSHA requirements will not be allowed on the project sites. Failure to comply with the requirements of this section and related sections may result in suspension of work.
- C. Qualifications of Employees:
 - 1. All employees must be physically and able to perform their assigned duties in a safe manner.
 - 2. Do not allow employees to perform work 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.
 - 3. Operators of vehicles, hoisting equipment, and hazardous plant equipment shall be able to understand signs, signals, and operating instructions, and be fully capable of operating such equipment.
 - a. Provide operating instructions for all equipment.
 - b. Newly hired operators shall be individually tested by an experienced operator or supervisor to determine if they are capable of safely operating equipment.
 - c. Retain copies of all operators' licenses and/or certifications onsite.

1.5 ACCIDENT REPORTING

- A. Reportable Accidents (per OSHA 29CFR 1904): A project reportable accident is defined as death, occupational disease, traumatic injury to employees or the public, fires, and property damage by accident more than \$100. Notify the Government immediately in the event of a reportable accident. Within seven (7) days of a reportable accident, fill out and forward to an

Accident/Property Damage Report (Form CM-22) to the Government. Form may be obtained from the Government.

PART 2 - PRODUCTS

2.1 ACCIDENT PREVENTION PLAN (APP)

- A. The Plan shall comply with OSHA requirements and be project specific (a generic plan is not acceptable). At a minimum, the APP shall include the following:
 - 1. Name of responsible supervisor to carry out the program.
 - 2. Weekly and monthly safety meetings shall be documented with topic and attendees.
 - 3. First-aid and rescue procedures.
 - 4. Outline of each phase of the work, the hazards associated with each major phase, and the methods proposed to provide for property protection and safety of the public, National Park Service personnel, and Contractor's employees. Identify the work included under each phase, with a Job Hazard Analysis (JHA)/Job Safety Analysis (JSA), etc.;
 - 5. Training, both initial and continuing.
 - 6. Planning for possible emergency situations, e.g., cave-ins, earthquake, explosions, fires, floods, power outages, slides and wind storms, which shall take into consideration the nature of construction, site conditions and degree of exposure of persons and property.

2.2 FIRST AID FACILITIES

- A. Provide adequate facilities for the number of employees and appropriate to the hazards associated with the types of ongoing construction work at the site.

2.3 PERSONNEL PROTECTIVE EQUIPMENT (PPE)

- A. Meet requirements of applicable ANSI standards. Selection shall conform to OSHA 29CFR 1926.95 Subpart E.

PART 3 - EXECUTION

3.1 EMERGENCY INSTRUCTIONS

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

3.2 FIRE AND LIFE SAFETY

- A. Comply with the requirements of NFPA 241 (Standard for Safeguarding Construction, Alteration, and Demolition Operations).
- B. Provide fire extinguishers throughout the building, located as required by prevailing code, for the duration of construction.
- C. All "hot work" requires a Hot Work Permit. Permit application can be obtained from the Park's safety officer and/or the NPS Authority Having Jurisdiction (AHJ) - the NPS Northeast Regional Fire Engineer.

3.3 HAZARDOUS MATERIALS

- A. Store hazardous materials in accordance with manufacturers and OSHA 29CFR1926 Subpart D requirements. Maintain MSDS/Safety Data Sheets readily available, on site for each chemical.
- B. Hazardous material spills:
 - 1. Immediately report all 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 the emergency response kit.

3.4 PROTECTIVE EQUIPMENT

- A. Inspect personal protective equipment daily and maintain in a serviceable condition.
- B. Inspect, maintain, and document other protective equipment and devices before use and on a periodic basis to ensure safe operation. Retain inspection documentation onsite.

3.5 SAFETY MEETINGS

- A. As a minimum, conduct one weekly 15-minute "toolbox" safety meetings. These meetings shall be conducted by a foreman or supervisor and attended by all construction personnel at the worksite. Topics need to coincide with work scheduled for the following week. The meeting attendees and topics shall be noted in the Contractor's Daily Quality Control Report required by Sections 01 40 00 – Quality Requirements of these specifications.
- B. Conduct monthly safety meetings for all levels of supervision. All contractors and subcontractors performing work on the site shall be attended meeting. These meetings shall be used to review the effectiveness of the Contractor's safety effort, to resolve current health and safety problems, to provide a forum for planning safe construction activities, and for updating the Accident Prevention Plan, if necessary. The meeting attendees and topics shall be noted in the Contractor's Daily Quality Control Report.

3.6 HARD HATS AND PROTECTIVE EQUIPMENT AREAS

- A. A hard-hat use area shall be designated by the Contractor. The Hard-hat Area shall be posted by the Contractor in a manner satisfactory to the Government.
- B. It is the Contractor's responsibility to require all those working on or visiting the site to always wear hard hats and other necessary PPE in good repair. In addition to contractors' personnel PPE, provide four (4) additional hard-hats and all other required PPE for visitors.

3.7 TRAINING

- A. First Aid: Provide adequate training to an adequate number of 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. Hazardous materials are defined as explosive, flammable, poisonous, corrosive, oxidizing, irritating, or otherwise harmful substances that could cause death or injury.

END OF SECTION 01 35 23

SECTION 01 42 00 - DEFINITIONS AND REFERENCES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes definitions and reference standards for the Work or this contract.

1.2 DEFINITIONS

- A. Definitions pertaining to sustainable development: As defined in ASTM E2114 and as specified herein.
- B. Chain-of-Custody: Process whereby a product or material is maintained under the physical possession or control during its entire life cycle.
- C. Deconstruction: Disassembly of buildings for the purpose of recovering materials.
- D. DFE (Design for the Environment): A technique that includes elements of resource conservation and pollution prevention as applied in various product sectors. A technique that incorporates approaches which are part of product (or assembly) concept, need and design. Considerations involve material selection, material and energy efficiency, reuse, maintainability and design for disassembly and recyclability. Refer to ISO Guide 64 for additional clarification.
- E. Environmentally preferable products: Products and services that have a lesser or reduced effect on the environment in comparison to conventional products and services. Refer to EPA's Final Guidance on Environmentally Preferable Purchasing at <http://www.epa.gov/oppt/epp/>.
- F. Non-Renewable Resource: A resource that exists in a fixed amount that cannot be replenished on a human time scale. Non-renewable resources have the potential for renewal only by geological, physical, and chemical processes taking place over of millions of years. Examples include: iron ore, coal, and oil.
- G. 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 with Federal Trade Commission (FTC) Guide for the Use of Environmental Marketing Claims.
- H. 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.

1.3 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 the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents, unless otherwise indicated.
- C. Conflicting Requirements: Where compliance with two or more standards is specified, and the standards may establish different or conflicting requirements for minimum quantities or quality levels comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Contracting Officer for a decision before proceeding.

1.4 INDUSTRY STANDARDS

- 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 the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with standards in effect as of date of the 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. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source and maintain a copy at the Project Site.

1.5 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 indicated in Thomson Gale's "Encyclopedia of Associations" or in Columbia Books' "National Trade & Professional Associations of the U.S."
- B. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

ANSI - American National Standards Institute (202) 293-8020
www.ansi.org

ASTM - American Society for Testing and Materials International (610) 832-9500
www.astm.org

- C. 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 the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

ADA, ABA, AG - Americans with Disabilities Act; Architectural Barriers Act, Accessibility Guidelines (202) 272-0080
www.access-board.gov

CFR - Code of Federal Regulations (866) 512-1800
Available from Government Printing Office (202) 512-1800

www.gpoaccess.gov/cfr/index.html

GSA - General Services Administration

(202) 619-8925
www.gsa.gov

UFAS - Uniform Federal Accessibility Standards
Available from Access Board

(800) 872-2253
(202) 272-0080
www.access-board.gov

1.6 REFERENCE STANDARDS

- A. See individual Specifications Sections for requirements.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 42 00

SECTION 01 67 00 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and environmental requirements.
- B. Related Work: All Technical Specification Sections.

1.2 DEFINITIONS

- A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
 - 3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.
- C. Sustainable Development Definitions: As defined in ASTM E2114.
- D. Environmentally Preferable Products: Products and services that have a lesser or reduced effect on the environment in comparison to conventional products and services. Refer to EPA's Final Guidance on Environmentally Preferable Purchasing at link below for more information.
<http://www.epa.gov/oppt/epp/>.
- E. Construction Materials: The Contractor is encouraged to submit for approval products comparable to those specified made of recycled or environmentally responsible material. Every effort will be made by the Government to approve these materials.
- F. Stewardship: Responsible use and management of resources in support of sustainability.
- G. Sustainability: The maintenance of ecosystem components and functions for future generations.

H. Sustainable Products:

1. 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 with ISO 140001 Standard for the Use of Environmental Marketing Claims.
2. Rapidly Renewable Material: Material made from plants that are typically harvested within a ten-year cycle.
3. Regional Materials: Materials that are manufactured and extracted, harvested, or recovered within a radius of 500 miles from the Project location.

1.3 SUBMITTALS

A. Product Literature as required by individual Specifications Sections.

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

1. Affirmative Procurement Reporting Form. Submit on form in Appendix A of this Section, or similar form as approved by Contracting Officer.
2. Material Safety Data Sheets (MSDS): For each product required by OSHA to have a MSDS, submit a MSDS in their entirety. MSDS shall be prepared within the previous five years. Include information for MSDS Sections 1 – 16 in accordance with ANSI Z400.1 and as follows:
 - a. Section 1: Chemical Product and Company Identification.
 - b. Section 2: Composition/Information on Ingredients.
 - c. Section 3: Hazards Identification.
 - d. Section 4: First Aid Measures.
 - e. Section 5: Fire Fighting Measures.
 - f. Section 6: Accidental Release Measures.
 - g. Section 7: Handling and Storage.
 - h. Section 8: Exposure Controls/Person Protection.
 - i. Section 9: Physical and Chemical Properties.
 - j. Section 10: Stability and Reactivity Data.
 - k. Section 11: Toxicological Information. Include data used to determine the hazards cited in Section 3. Identify acute data, carcinogenicity, reproductive effects, and target organ effects.
 - l. Section 12: Ecological Information. Include data regarding environmental impacts during raw materials acquisition, manufacture, and use. Include data regarding environmental impacts in the event of an accidental release.
 - m. Section 13: Disposal Considerations. Include data regarding the proper disposal of the chemical. Include information regarding recycling and reuse. Indicate whether or not the product is considered to be "hazardous waste" according to the US EPA Hazardous Waste Regulations 40 CFR 261.
 - n. Section 14: Transportation Information. Identify hazard class for shipping.
 - o. Section 15: Regulatory Information. Identify federal, state, and local regulations applicable to the material.

1.4 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use in the Work, product selected shall be compatible with products previously selected, even if previously selected products were also options.
- B. Substitutions: Contractor shall provide all product information necessary to support that their recommended substitution meets all requirements of the specified product(s) and so that the Government can determine that substitution is comparable to specified product.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
 - 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
 - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 - 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 - 4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
 - 5. Contractor is encouraged to obtain materials in biodegradable or recyclable/reusable packaging which uses the minimum amount of packaging possible.
- C. Storage:
 - 1. Store products to allow for inspection and measurement of quantity or counting of units.
 - 2. Store materials in a manner that will not endanger existing and/or new structure.
 - 3. Store products that are subject to damage by the elements, under cover in a weather tight enclosure above ground, with ventilation adequate to prevent condensation.
 - 4. Store cementitious products and materials on elevated platforms.
 - 5. Store foam plastic protected from exposure to sunlight, except to extent necessary for period of installation and concealment.
 - 6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
 - 7. Protect stored products from damage and liquids from freezing.
 - 8. Store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter.

1.6 PACKAGING

- A. Where Contractor has the option to provide one of the listed products or equal, preference shall be given to products with minimal packaging and easily recyclable packaging as defined in ASTM D5834.
- B. Maximize use of source reduction and recycling procedures outlined in ASTM D5834 and in accordance with EPA's Comprehensive Procurement Guidelines and ASTM D5663 for packaging.

1.7 ENVIRONMENTALLY PREFERABLE PRODUCTS

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

1.8 PRODUCT WARRANTIES

- A. Warranties specified in individual specifications sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
 2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for the Government.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.
1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 2. Specified Form: When specified forms are included with the Specifications, prepare a written document using appropriate form properly executed.
 3. Refer to Divisions 02 through 49 Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Division 01 Section "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 3. Government reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.

4. Where products are accompanied by the term "as selected," Contracting Officer will make selection.
5. Where products are accompanied by the term "match sample," sample to be matched is Government's.
6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.

B. Product Selection Procedures:

1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements or approved equal.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements or approved equal.
3. Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements or approved equal.
4. Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements or approved equal.
5. Available Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
6. Available Manufacturers: Where Specifications include a list of manufacturers, provide a product by one of the manufacturers listed, or an unnamed manufacturer, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
7. Product Options: Where Specifications indicate that sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the specified product, system, or approved equal.
8. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product by one of the other named manufacturers, or approved equal. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named.
9. Visual Matching Specification: Where Specifications require matching an established Sample, select a product that complies with requirements and matches Architect's sample. Contracting Officers decision will be final on whether a proposed product matches.
 - a. If no product available within specified category matches and complies with other specified requirements, comply with provisions in Part 2 "Product Substitutions" Article for proposal of product.
10. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product that complies with other specified requirements.
 - a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Contracting Officer will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.
 - b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Contracting Officer will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

- A. Conditions: Contracting Officer will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Contracting Officer will return requests without action, except to record noncompliance with these requirements:
1. Evidence that the proposed product does not require revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
 2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 3. Evidence that proposed product provides specified warranty.
 4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
 5. Samples, if requested.

PART 3 - EXECUTION

3.1 GENERAL

- A. This Part sets forth the general procedural requirements for the execution of the Work of this Contract.
- B. See individual Specifications Section for specific Execution requirements.

3.2 FIELD-VERIFICATION

- A. The Contractor shall verify all existing conditions and new and existing dimensions prior to the commencement of work and/or ordering of products and materials that may affect the Work of this contract.
- B. All discrepancies shall be forwarded to the Government in writing for clarification prior to the commencement of work.

3.3 INSPECTION

- A. Contractor shall inspect all areas to receive Work under this Contract to determine acceptability of substrate. Any conditions that may affect the performance of the Work shall be corrected prior to beginning Work.
- B. Commencement of Work shall indicate acceptance of substrate.

3.4 PROTECTION

- A. Contractor shall protect all areas of existing site and/or structure not scheduled for Work under this Contract from damage due to the Work of this Contract.
- B. Throughout the course of the Work, do not put excessive loads on existing structure.

3.5 PROTECTION AFTER INSTALLATION

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

END OF SECTION 01 67 00

TRANSMITTAL - NATIONAL PARK SERVICE				Transmittal No.: Sheet: 1 of:				
Park:		Project:		Contract No.:				
Contractor:		Subcontractor/Supplier:						
Item No.	Specification Section No.	Paragraph No.	Description of Item (Size, Type, Name, Manufacturer, Use, Etc.)	No. of Copies Submitted	No. of Copies Returned	Approved	Approved with Notations	Disapproved - Resubmit
NPS ACTION								
Contractor Signature			Recommended by					
Title, Date			Title			Date		
I hereby certify that this submittal has been reviewed for accuracy, completeness, and compliance with contract requirements (FAR 52.236-21)								
Review Comments			Action By			Date		
			Contracting Officer's Representative					
Approval of this submittal is subject to the provisions of the contract drawings and specifications. This action is for general concurrence only and the Government is not responsible for errors or omission.								
SUBMITTAL LOG DATES: From contractor [____]; To reviewer [____]; To reviewer [____]; From reviewer [____]; To Contractor [____] Distribution: () Contractor () DSC File () COR () A/E () DSC Interim () COR Interim () Contractor Interim								

SECTION 01 73 40 – EXECUTION

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:
 - 1. General installation of products.
 - 2. Progress and final cleaning.
 - 3. Starting and adjusting.
 - 4. Protection of installed construction.
 - 5. Correction of the Work.

- B. Related Work:
 - 1. Work of all other sections of this project manual.

1.2 SUBMITTALS

- A. As required by individual technical specifications sections.

1.3 QUALITY ASSURANCE

- A. Project drawings are diagrammatic and are not meant to show every detail. Significant differences between the drawings and existing conditions shall be brought to the attention of the Government for resolution prior to beginning the Work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: Contractor shall verify all existing conditions prior to beginning Work.
 - 1. Review of Contract Documents and Existing Conditions prior to performing and work. Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of the Contractor, submit a request for information to the Government in accordance with Division 01 Specification 01 31 00 “Project Management and Coordination”.
 - 2. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.
 - 3. Before construction, verify the location and points of connection of utility services.

- B. Acceptance of Conditions: Examine substrates, areas, and conditions for compliance with requirements for installation tolerances and other conditions affecting performance.
 - 1. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 - 2. Proceed with installation only after unsatisfactory conditions have been corrected.
 - 3. Proceeding with the Work indicates acceptance of substrates, surfaces, and conditions.

3.2 PREPARATION

- A. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product.
- B. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- C. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication.

3.3 PROTECTION

- A. Protect existing site and building elements to remain from damage throughout the performance of the Work. If existing elements to remain are damaged they shall be repaired restored to their original condition in function and appearance, at no additional cost to the Government.
- B. The Work will be performed at a historic site and in a historic building. All historical materials scheduled to remain shall be protected from damage. If historical material is damaged, contact the Government immediately for resolution. Refer to Division 01 Specification Section “Historic Preservation Treatment Procedures” for additional requirements.
- C. Protection of Installed Work: Supervise construction operations to ensure that no part of the construction completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.4 INSTALLATION

- A. Comply with manufacturer's written instructions and recommendations for installation of products.
- B. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- C. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- D. Anchors and Fasteners: Provide anchors and fasteners as indicated or required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
 - 1. See Division 01 Specification Section “Historic Preservation Treatment Procedures” for requirements for anchoring into historic materials.
 - 2. Allow for building movement, including thermal expansion and contraction.
- E. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- F. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.
- G. Quantity surveys: Shall be conducted, and the data derived from these surveys shall be used in computing the quantities of work performed and the actual construction completed and in place.
 - 1. The Contractor shall conduct the original and final surveys and surveys for any periods for which progress payments are requested. All these surveys shall be conducted under the direction of a representative of the Contracting Officer, unless the Contracting Officer

waives this requirement in a specific instance. The Government shall make such computations as are necessary to determine the quantities of work performed or finally in place. The Contractor shall make the computations based on the surveys for any periods for which progress payments are requested.

2. Promptly upon completing a survey, the Contractor shall furnish the originals of all field notes and all other records relating to the survey or to the layout of the work to the Contracting Officer, who shall use them as necessary to determine the amount of progress payments. The Contractor shall retain copies of all such material furnished to the Contracting Officer.

3.5 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce cleaning requirements strictly. Dispose of materials lawfully.
 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F.
 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: Keep Work Areas clean and orderly. Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
 1. Remove liquid spills promptly.
 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
 3. Contractor shall provide progress cleaning that minimizes sources of food, water, and harborage available to pests.
- D. Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
 1. Utilize non-toxic cleaning materials and methods for work other than masonry restoration and cleaning.
 - a. Comply with GS 37 for general-purpose cleaning and bathroom cleaning.
 - b. Use natural cleaning materials where feasible.
- E. Voids and Concealed Spaces: Remove debris from concealed voids and spaces before enclosing them.
- F. Waste Disposal: Dispose of all waste off site in a legal manner.
 1. Burying or burning waste materials within the park is not permitted.
 2. Washing waste materials down sewers or into waterways is not permitted.
- G. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

3.6 STARTING AND ADJUSTING

- A. Adjust operating components (such as re-hung wood window sashes) for proper operation without binding.

3.7 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.8 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes.
 - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating components.
- B. Restore facilities and landscape areas used during construction to their conditions found just prior to commencement of the Work.
- C. Repair components that do not operate properly.

3.9 FINAL CLEANING

- A. Final Cleaning: At completion of Work, remove all remaining waste materials, rubbish, tools, equipment, machinery, and surplus materials, and clean all exposed surfaces; leave Project clean and ready for occupancy.
 - 1. Provide final cleaning in accordance with ASTM E1971.

END OF SECTION 01 73 40

SECTION 01 74 19 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for the following:
 - 1. Recycling nonhazardous construction waste (including packaging).
 - 2. Disposing of nonhazardous demolition and construction waste.

1.2 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Solid Waste: Garbage, debris, sludge, or other discharged material (except hazardous waste) including solid, liquid, semisolid, or contained gaseous materials resulting from domestic, industrial, commercial, mining, or agricultural operations.
- D. Debris: Non-hazardous solid waste generated during the construction, demolition, or renovation of a structure which exceeds 2.5 inch 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 the mixture is comprised primarily of debris by volume, based on visual inspection.
- E. Disposal: Removal of waste from demolition and construction site and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- F. 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 the utility of the environment for aesthetic, cultural, or historical purposes.
- G. Garbage: Refuse and scraps resulting from preparation, cooking, dispensing, and consumption of food.
- H. Hazardous Materials: Any material that is regulated as a hazardous material in accordance with 49 CFR 173, 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 that meet, or have the potential to meet, the definition of a Hazardous Waste in accordance with 40 CFR 261.
- I. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

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

1.3 PERFORMANCE REQUIREMENTS

- A. General: Project shall minimize creation of construction, deconstruction, and demolition waste to protect and restore natural habitat and resources. Factors that contribute to waste such as over packaging, improper storage, ordering error, poor planning, breakage, mishandling, and contamination shall be minimized. To the greatest extent possible waste shall be reused, salvaged, or recycled. Waste disposal in landfills shall be minimized.
- B. Salvage /Recycle Requirements: At a minimum the following waste categories, shall be diverted from a landfill:
 - 1. Clean dimensional wood, palettes
 - 2. Plywood, OSB, and particle board
 - 3. Cardboard, paper, packaging, newsprint
 - 4. Metals (from banding, roofing, steel, iron, galvanized sheet steel, copper, zinc, lead)
 - 5. Beverage containers: Aluminum, glass, and plastic containers
 - 6. Other mixed construction and demolition waste as appropriate
- C. If any waste materials encountered during the deconstruction/demolition or construction phase are found to contain lead, asbestos, PCBs, (such as fluorescent lamp ballasts), or other harmful substances, they are to be handled and removed in accordance with local, state, and federal laws and requirements concerning hazardous waste.
- D. Existing items and material to be removed during the deconstruction/demolition phase shall be reused in the construction phase of the Project, as indicated or required. Items (such as sound, relatively undamaged bricks) that cannot be reused shall be neatly stockpiled and delivered to the Park. Items considered for reuse must be in condition for refurbishment and must meet the quality standards set forth in these specifications. During construction, deconstruction, or demolition the Contracting Officer may designate other objects or materials for reuse or for proper offsite disposal.
- E. Salvage Requirements: Government goal is to salvage for possible reinstallation as much nonhazardous deconstruction/demolition waste as possible including the following materials:
 - 1. Sound and relatively undamaged clay bricks.
- F. Recycle Requirements: Government goal is to recycle as much nonhazardous construction waste as possible. Government has established minimum goals for the following materials:
 - 1. Shipping palettes.
 - 2. Product packaging.
 - 3. Beverage containers.

1.4 SUBMITTALS

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

1.5 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Waste Management Meeting: Conduct separate meeting or cover in the Pre-Construction Conference and comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures related to waste management including, but not limited to, the following:
 - 1. Review and discuss waste management plan.
 - 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.
- B. Waste Identification: Indicate anticipated types and quantities of demolition and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.
- C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator.
 - 1. Salvaged Materials for Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work.
 - 2. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
 - 3. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
 - 4. 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.

PART 3 - EXECUTION

3.1 WASTE MANAGEMENT IMPLEMENTATION

- A. General: Implement waste management plan as approved by the Contracting Officer. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan throughout the entire duration of the Work.
- B. 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.
- C. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.

1. Distribute waste management plan to everyone concerned within three days of submittal return.
 2. Distribute waste management plan to entities when they first begin work on site. Review plan procedures and locations established for salvage, recycling and disposal.
- D. 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.
- E. Separation facilities:
1. Contractor shall designate and the Government shall approve a specific area or areas to facilitate separation of materials for potential reuse, salvage, recycling, and return.
 2. Waste and recycling bins are to be placed near each other, and close to the point of waste generation but out of the traffic pattern.
 3. Recycling and waste bin areas are to be kept neat and clean and clearly marked in order to avoid co-mingling of materials.
 4. Bins shall be protected during non-working hours from off-site contamination.
 5. Garbage dumpsters should be checked periodically to monitor recyclables being thrown away or if there are undocumented materials that could be recycled.
- F. Materials handling procedures: Materials to be recycled shall be protected from contamination and shall be handled, stored, and transported in a manner that meets the requirements set by the designated facilities for acceptance. Establish a defined area for the operations of each trade, especially woodcutting so that off-cuts will be kept in one area and can be sorted by dimension for future reuse.

3.2 RECYCLING CONSTRUCTION WASTE, GENERAL

- A. General: Recycle paper and beverage containers used by on-site workers.
- B. Recycling Incentives: Revenues, savings, rebates, tax credits and other incentives received for recycling waste materials shall accrue to Contractor.
- C. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical.
1. Provide appropriately marked containers or bins for controlling recyclable waste until they are 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 recyclable materials on-site without intermixing with other materials.
 - a. Stockpile materials away from construction area.
 - b. Place, grade, and shape stockpiles to drain surface water.
 - c. Store recyclable materials off the ground and protect from the weather.
 - d. Cover to prevent windblown dust.
 - e. Do not store within drip line of remaining trees
 3. Remove recyclable waste off Government's property and transport to recycling receiver or processor.

3.3 RECYCLING CONSTRUCTION WASTE

- A. Packaging:

1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
 2. Polystyrene Packaging: Separate and bag materials.
 3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
 4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.
- B. Wood Materials:
1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
 2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.

3.4 DISPOSAL OF WASTE

- A. Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning of waste materials within the park is not allowed.
- C. Disposal: Transport waste materials off Governments property and legally dispose of them.

END OF SECTION 01 74 19

SECTION 01 77 00 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Project Record Drawings
 - 2. Closeout Submittals
 - 3. Substantial Completion and Final Inspection
 - 4. Final Acceptance of the Work
 - 5. Warranties

1.2 PROJECT RECORD DRAWINGS

- A. Throughout the Contract Period the maintain one complete full-size set of contract drawings and one full-size set of vendor-supplied drawings and one project manual as Record Documents. Clearly mark changes, deletions, and additions using National Park Service drafting standards (link to Standards <https://www.nps.gov/dscw/ds-cad-drafting.htm>) to show actual construction conditions. Show additions in red, deletions in green and special instructions in blue.
- B. Keep Record Drawings current. Make Record Drawings available to the Government for inspection at the time of monthly progress payment requests. If project Record Drawings are not current, the Government may retain an appropriate amount of the progress payment.
- C. On completion of the project, submit complete Record Drawings. Ensure that all record information is clearly and legibly indicated. Include shop drawings, sketches and additional drawings that are to be included in the 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. NPS required forms or certificates.
 - 3. Project Record Documents.
 - 4. Operation and Maintenance Manuals, where applicable.
 - 5. Final electronic submittals pursuant to the requirements of specifications section 01 32 23.
 - 6. Final completion construction digital images pursuant to the requirements of specifications section 01 32 33.
 - 7. Deliver tools, spare parts, extra materials, and similar items to location designated by Government. Label with manufacturer's name and model number where applicable.
 - a. Special Tools (as applicable): One set of special tools required to operate, adjust, dismantle, or repair components. Special tools are those not normally found in possession of mechanics or maintenance personnel.
 - 8. Test reports.

9. Terminate and remove temporary facilities from Project site, along with mockups (if not incorporated in Work), construction tools and similar elements.
10. Complete final cleaning requirements.
11. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

1.4 FINAL INSPECTION SUBSTANTIAL COMPLETION AND ACCEPTANCE PROCEDURES

- A. Contractor shall inspect all work to verify that it is substantially complete and complies the requirements of the Contract Documents.
 1. When all work is substantially complete, request a final inspection by the Government in writing. The Government will proceed with the inspection within ten (10) days of receipt of the written request or will advise the Contractor of items that prevent the project from being substantially complete.
- B. Following the final inspection, if the work is determined to be substantially complete, the Government will prepare a list of all deficiencies with the Work (Punch List) and issue a Letter of Substantial Completion.
- C. Contractor shall complete the Punch List within fifteen (15) calendar days of receipt, documented weather permitting.
- D. If the work is not determined to be substantially complete following the final inspection, Government will notify Contractor in writing. Contractor shall promptly complete the work and request a new final inspection. Re-inspection costs may be charged against the Contractor in accordance with the Inspection of Construction contract clause.
- E. If Contractor completes all items of work on the Punch List and all contractually required items, Government will issue Letter of Final Acceptance of work.
- F. If the Contractor fails to complete the work within the specified time frame, the Government may correct the work with an appropriate reduction in Contract Price, or charge for re-inspection costs in accordance with the Inspection of Construction contract clause.

1.5 WARRANTIES

- A. Submittal Time: Submit written warranties on request of Government for designated portions of the Work, where commencement of warranties other than date of Substantial Completion is indicated.
- B. Organize warranty documents into an orderly sequence based on the Table of Contents of the Project Manual.
 1. Bind warranties and bonds in vinyl-covered heavy-duty 3-ring loose-leaf binders of thickness required to accommodate contents and sized to receive 8-1/2-by-11-inch paper.
 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address and telephone number of Installer and manufacturers' contact information.
 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

4. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked Table of Contents at the beginning of document.
- C. Include additional copies of each warranty in Operation and Maintenance Manuals (where applicable).

PART 2 - PRODUCTS

2.1 MATERIALS

- A. See Division 01 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 prior to requesting final inspection.
- 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 cleaning product manufacturer's written instructions.
 1. Complete the 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 within all Project areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Remove tools, construction equipment, machinery and surplus material from Project site.
 - d. Clean exposed hard-surfaced finishes to a dirt-free condition, free of stains, films and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces.
 - e. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 - f. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials.
 - g. Remove labels that are not permanent.
 - h. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
- C. Waste Disposal: Comply with requirements of Division 01 section, "Waste Management.

END OF SECTION 01 77 00

SECTION 08 71 13
AUTOMATIC DOOR OPERATORS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Automatic operators for swinging doors.

1.2 APPLICABLE PUBLICATIONS

- A. Comply with references to extent specified in this section.
- B. Builders Hardware Manufacturers Association (BHMA):
 - 1. BHMA A156.10-11 - Power Operated Pedestrian Doors.
- C. Underwriters Laboratories (UL):
 - 1. 325-13 - Standard for Doors, Drapery, Gate, Louver, and Window Operators and Systems.

1.3 SUBMITTALS

- A. Submittal Procedures: Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Submittal Drawings:
 - 1. Show size, configuration, and fabrication and installation details.
- C. Manufacturer's Literature and Data:
 - 1. Description of each product.
 - 2. Installation instructions.
 - 3. Warranty.
- D. Sustainable Construction Submittals:
 - 1. Recycled Content: Identify post-consumer and pre-consumer recycled content percentage by weight.
- E. Test reports: Certify each product complies with specifications.
- F. Operation and Maintenance Data:
 - 1. Care instructions for each exposed finish product.
 - 2. Start-up, maintenance, troubleshooting, emergency, and shut-down instructions for each operational product.

1.4 QUALITY ASSURANCE

- A. Manufacturer's Qualifications:
 - 1. Regularly manufactures specified products.
 - 2. Manufactured specified products with satisfactory service on five similar installations for minimum five years.
 - a. Provide contact names and addresses for completed projects when requested by Contracting Officer's Representative.

- B. Installer's Qualifications: Experienced installer, approved by the manufacturer.

1.5 WARRANTY

- A. Construction Warranty: FAR clause 52.246-21, "Warranty of Construction."
- B. Manufacturer's Warranty: Warrant automatic door operators against material and manufacturing defects.
 - 1. Warranty Period: Two years.

PART 2 - PRODUCTS

2.1 SYSTEM PERFORMANCE

- A. Comply with requirements of BHMA A156.10. Unless otherwise indicated on Drawings, provide operators that move doors from fully closed to fully opened position in seven seconds maximum time interval, when speed adjustment is at maximum setting.
- B. Equipment: Conforming to UL 325. Provide key operated power disconnect wall switch for each door installation.
- C. Electrical Wiring, Connections and Equipment: Motors, starters, controls, associated devices, and interconnecting wiring required for installation. Equipment and wiring as specified in Division 26, ELECTRICAL.

2.2 PRODUCTS - GENERAL

- A. Basis of Design: LCN Benchmark III Swing Operator Models 91X0.
- B. Provide door operators from one manufacturer.
- C. Provide one type of operator throughout project.
- D. Sustainable Construction Requirements:
 - 1. Steel Recycled Content: 30 percent total recycled content, minimum.
 - 2. Aluminum Recycled Content: 80 percent total recycled content, minimum.

2.3 SWING DOOR OPERATORS

- A. General:
 - 1. Type: Institutional type.
 - 2. Size: As recommended by manufacturer for door weight and sizes.
- B. Function:
 - 1. Provide operators, enclosed in housing, permitting opening of door by energizing motor and stopped by electrically reducing Voltage and stalling motor against mechanical stop.

2. Door to close by means of spring energy, and closing force controlled by gear system and motor being used as dynamic brake without power or controlled by hydraulic closer in electro-hydraulic operators.
 3. Opening and Closing Speeds: Field adjustable.
 4. Operators with checking mechanism providing cushioning action at last part of door travel, in both opening and closing cycle.
 5. Operators capable of recycling doors instantaneously to fully open position from any point in closing cycle when control switch is activated.
 6. When automatic power is interrupted or shut-off, permit doors to easily open manually without damage to automatic operator system.
- C. Connect hardware with drive arm attached to door with pin linkage rotating in a self-lubricating bearing. Prevent doors from pivoting on shaft of operator.
- D. Operator Housing:
1. ASTM B209, Type 6063-T5 aluminum alloy, 112 mm (4-1/2 inches) wide by 140 mm (5.5 inches) high by 3.2 mm (0.125 inch) thick, aluminum extrusions with enclosed end caps for application to 100 mm (4 inches) and larger frame systems.
- E. Power Operator:
1. Completely assembled and sealed unit including gear drive transmission, mechanical spring and bearings, located in aluminum case and filled with special lubricant for extreme temperature conditions. Rubber mounted units with provisions for easy maintenance and replacement, without removing door from pivots or frame.
- F. Motors:
1. Provide with interlock to prevent operation when doors are electrically locked from opening.
- G. Electrical Control:
1. Self-contained electrical control unit, including necessary transformers, relays, rectifiers, and other electronic components for proper operation and switching of power operator.
 2. Connecting Harnesses: Interlocking plugs.
- H. Accessories:
1. Metal mounting supports, brackets and other accessories necessary for installation of operators at head of door frames.

I. Microprocessor Controls:

1. Multi-function microprocessor control providing adjustable hold open time (1-30 seconds) with fully adjustable opening speed, LED indications for sensor input signals and operator status and power assist close options. Control capable of receiving activation signals from any device with normally open dry contact output.
2. Hold doors held open by low Voltage applied to the continuous duty motor.
3. Controls:
 - a. Adjustable safety circuit that monitors door operation and stops opening direction of door if obstruction is sensed.
 - b. Recycle feature that reopens door if obstruction is sensed at any point during closing cycle.
 - c. Standard three position key switch with functions for ON, OFF, and HOLD OPEN, mounted on operator enclosure, door frame, or wall, as indicated on drawings.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Examine and verify substrate suitability for product installation.
 1. Verify door opening is correctly sized and within acceptable tolerances.
- B. Protect existing construction and completed work from damage.

3.2 INSTALLATION

- A. Install products according to manufacturer's instructions and approved submittal drawings.
 1. When manufacturer's instructions deviate from specifications, submit proposed resolution for Contracting Officer's Representative consideration.
- B. Coordinate door installation with other related work.
- C. Install manual controls and power disconnect switches recessed or semi-flush mounted in partitions.
- D. Secure operator components to adjacent construction with suitable fastenings.
- E. Conceal conduits, piping, and electric equipment, in finish work.
- F. Install power units in locations shown.
 1. Where units are mounted on walls, provide metal supports or shelves for units.

2. Ensure equipment, including time delay switches, are accessible for maintenance and adjustment.
- G. Ensure operators are adjusted and function properly for type of expected traffic.
- H. Install controls at positions shown and ensuring convenience for expected traffic.
- I. Push Plate Wall Switches Mounting Height: 1000 mm (40 inches) maximum, unless otherwise approved by Contracting Officer's Representative.

- - E N D - -

SECTION 092900 GYPSUM BOARD

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. This Section includes the following:
 - 1. Interior gypsum board.
- 1.3 SUBMITTALS
 - A. Product Data: For each type of product indicated.
- 1.4 STORAGE AND HANDLING
 - A. Store materials inside under cover and keep them dry and protected against damage from weather, condensation, direct sunlight, construction traffic, and other causes. Stack panels flat to prevent sagging. In addition, follow the guidelines found in GA-801.
- 1.5 PROJECT CONDITIONS
 - A. Environmental Limitations: Comply with ASTM C 840 or GA-216 requirements, whichever are more stringent.
 - B. Do not install interior products until installation areas are enclosed and conditioned.
 - C. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

- 2.1 PANELS, GENERAL
 - A. Size: Provide in maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.
- 2.2 INTERIOR GYPSUM BOARD
 - A. General: Complying with ASTM C 1396/C1396M as applicable to type of gypsum board indicated.
 - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. American Gypsum Company
 - b. United States Gypsum Corporation
 - B. Replace existing demo damaged or removed wall tile substrate with thickness and type to match existing:
- 2.3 TRIM ACCESSORIES
 - A. Interior Trim: ASTM C 1047.
 - 1. Material: Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized steel sheet.
 - 2. Shapes:
 - a. Cornerbead.
 - b. Bullnose bead.
 - c. LC-Bead: J-shaped; exposed long flange receives joint compound.
 - d. L-Bead: L-shaped; exposed long flange receives joint compound.
 - e. U-Bead: J-shaped; exposed short flange does not receive joint compound.
 - f. Expansion (control) joint.
 - g. Curved-Edge Cornerbead: With notched or flexible flanges.
 - B. Aluminum Trim: Extruded accessories of profiles and dimensions indicated.
 - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Fry Reglet Corp.
 - b. Gordon, Inc.
 - c. Pittcon Industries.
 3. Aluminum: Alloy and temper with not less than the strength and durability properties of ASTM B 221/B221M, Alloy 6063-T5.
 4. Finish: Corrosion-resistant primer compatible with joint compound and finish materials specified.
- 2.4 JOINT TREATMENT MATERIALS
- A. General: Comply with ASTM C 475/C 475M.
 - B. Joint Tape:
 1. Interior Gypsum Wallboard: Paper.
 2. Tile Backing Panels: As recommended by panel manufacturer.
 - C. Joint Compound for Interior Gypsum Wallboard: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.
 1. Prefilling: At open joints, rounded or beveled panel edges, and damaged surface areas, use setting-type taping compound.
 2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use drying-type or setting-type taping compound.
 - a. Use drying-type or setting-type compound for installing paper-faced metal trim accessories.
 3. Fill Coat: For second coat, use drying-type or setting-type, sandable topping compound.
 4. Finish Coat: For third coat, use drying-type or setting-type, sandable topping compound.
 5. Skim Coat: For final coat of Level 5 finish, use drying-type or setting-type, sandable topping compound.
- 2.5 AUXILIARY MATERIALS
- A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.
 - B. Acoustical Sealant: As specified in Division 07 Section "Joint Sealants."
 1. Provide sealants that have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

PART 3 - EXECUTION

- 3.1 EXAMINATION
- A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames and framing, for compliance with requirements and other conditions affecting performance.
 - B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
 - C. Proceed with installation only after unsatisfactory conditions have been corrected.
- 3.2 APPLYING AND FINISHING PANELS, GENERAL
- A. Comply with ASTM C 840, GA-216 or GA-214.
 - B. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.
 - C. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.
 - D. Form control and expansion joints with space between edges of adjoining gypsum panels.
 - E. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.
 1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area.
 2. Fit gypsum panels around ducts, pipes, and conduits.
 3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4 to 3/8 inch (6 to 9 mm) wide joints to install sealant.
 - F. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide 1/4 to 1/2 inch wide spaces at these locations, and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.
 - G. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.
 - H. Wood Framing: Install gypsum panels over wood framing, with floating internal corner construction. Do not

attach gypsum panels across the flat grain of wide-dimension lumber, including floor joists and headers. Float gypsum panels over these members, or provide control joints to counteract wood shrinkage.

- I. STC-Rated Assemblies: Seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C 919 and with manufacturer's written recommendations for locating edge trim and closing off sound-flanking paths around or through assemblies, including sealing partitions above acoustical ceilings.
- J. Install sound attenuation blankets before installing gypsum panels, unless blankets are readily installed after panels have been installed on one side.
- K. Single-Layer Application:
 - 1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing, unless otherwise indicated.
 - 2. On partitions/walls, apply gypsum panels vertically (parallel to framing), unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.
 - a. Stagger abutting end joints not less than one framing member in alternate courses of panels.
 - b. At stairwells and other high walls, install panels horizontally, unless otherwise indicated or required by fire-resistance-rated assembly.
 - 3. On furring members, apply gypsum panels vertically (parallel to framing) or horizontally (perpendicular to framing) with vertical joints offset at least one furring member. Locate edge joints of base layer over furring members.
 - 4. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

3.3 INSTALLING TRIM ACCESSORIES

- A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.
- B. Control Joints: Install control joints at locations indicated on Drawings and if not shown, according to ASTM C 840 or GA-216 and in specific locations approved by Architect for visual effect.
- C. Interior Trim: Install in the following locations:
 - 1. Cornerbead: Use at outside corners, unless otherwise indicated.
 - 2. LC-Bead: Use at exposed panel edges.
- D. Aluminum Trim: Install in locations indicated on Drawings.

3.4 FINISHING GYPSUM BOARD

- A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.
- B. Prefill open joints, rounded or beveled edges, and damaged surface areas.
- C. Apply joint tape over gypsum board joints, except those with trim having flanges not intended for tape.
- D. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840, GA-216 or GA-214:
 - 1. Locations to receive Level 0 finish (no taping, finishing, or accessories required): Non-fire-rated, non-sound-rated, and non-smoke-rated assemblies in ceiling plenums and concealed areas, and in temporary construction
 - 2. Locations to receive Level 1 finish (all joints and interior angles shall have tape set in joint compound. Surface shall be free of excess joint compound. Tool marks and ridges are acceptable): Fire rated, sound rated, and smoke rated assemblies in plenum areas above ceilings, in attics, and in areas where the assembly would generally be concealed.
 - 3. Locations to receive Level 2 finish (all joints and interior angles shall have tape embedded in joint compound and wiped with a joint knife leaving a thin coating of joint compound over all joints and interior angles. Fastener heads and accessories shall be covered with a coat of joint compound): Surfaces to receive moisture resistant gypsum board as a surfacing.
 - 4. Locations to receive Level 3 finish (all joints and interior angles shall have tape embedded in joint compound and one additional coat of joint compound applied over all joints and interior angles. Fastener heads and accessories shall be covered with two separate coats of joint compound): Areas which are to receive heavy or medium-texture (spray or hand applied) before final painting, or where heavy-grade wall coverings are to be applied as the final decoration. This level of finish is not recommended where smooth painted surfaces or light to medium wall coverings are specified.
 - 5. Locations to receive Level 4 finish (all joints and interior angles shall have tape embedded in joint compound and two separate coats of joint compound applied over all flat joints): All flat and eggshell paints, light textures, or wall coverings.
 - 6. Locations to receive Level 5 finish (all joints and interior angles shall have tape embedded in joint compound and two separate coats of joint compound applied over all flat joints. A thin skim coat of joint compound trowel applied, or a material manufactured especially for this purpose and applied in

accordance with manufacturer's recommendations, shall be applied to the entire surface. The surface shall be smooth and free of tool marks and ridges): Gloss or semi-gloss paints, and areas where severe lighting conditions occur.

3.5 PROTECTION

- A. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- B. Remove and replace panels that are wet, moisture damaged, and mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION

SECTION 09 30 00
TILING

1 GENERAL

1.1 SECTION INCLUDES

1.1.1 Tile and Accessories:

- 1.1.1.1 ColorBody Porcelain.
- 1.1.1.2 Setting Materials.

1.2 RELATED SECTIONS

1.3 REFERENCES

1.3.1 American National Standards Institute (ANSI):

- 1.3.1.1 ANSI A108.10 - Specifications for Installation of Grout in Tilework.
- 1.3.1.2 ANSI A118.1 - Standard Specification for Dry-Set Portland Cement Mortar.
- 1.3.1.3 ANSI A118.3 - Chemical-Resistant, Water-Cleanable, Tile-Setting and -Grouting Epoxy and Water-Cleanable Tile-Setting Epoxy Adhesive.
- 1.3.1.4 ANSI A118.4 - Latex-Portland Cement Mortar.
- 1.3.1.5 ANSI A118.5 - Chemical-Resistant Furan Mortar and Grout.
- 1.3.1.6 ANSI A118.6 - Standard Ceramic Tile Grouts.
- 1.3.1.7 ANSI A118.7 - Polymer Modified Cement Grouts
- 1.3.1.8 ANSI A118.8 - Modified Epoxy Emulsion Mortar/Grout.
- 1.3.1.9 ANSI A118.10 - Load bearing, Bonded, Waterproof Membranes for Thinsset Ceramic Tile and Dimensional Stone.
- 1.3.1.10 ANSI A137.1 - Specifications for Ceramic Tile.

1.3.2 ASTM International (ASTM):

- 1.3.2.1 ASTM C 1028 - Standard Test method for Determining the Static Coefficient of Friction or Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull meter Method.

1.3.3 Tile Council of North America (TCNA): TCA Handbook for Ceramic Tile Installation, 2007.

1.4 PERFORMANCE REQUIREMENTS

1.4.1 Static Coefficient of Friction: Tile on walkway surfaces shall be provided with the following values as determined by testing in conformance with ASTM C 1028.

- 1.4.1.1 Level Surfaces: Minimum of 0.6 (Wet).
- 1.4.1.2 Step Treads: Minimum of 0.6 (Wet).
- 1.4.1.3 Ramp Surfaces: Minimum of 0.8 (Wet).

1.5 SUBMITTALS

1.5.1 Submit under provisions of Section 01 30 00 - Administrative Requirements.

1.5.2 Product Data: Manufacturer's data sheets on each product to be used, including:

- 1.5.2.1 Preparation instructions and recommendations.
- 1.5.2.2 Storage and handling requirements and recommendations.
- 1.5.2.3 Installation methods.

1.5.3 Shop Drawings: Indicate tile layout, patterns, color arrangement, perimeter conditions, junctions with dissimilar materials, control and expansion joints, thresholds, ceramic

accessories, and setting details.

1.5.4 Manufacturer's Certificate:

1.5.4.1 Certify that products meet or exceed specified requirements.

1.5.4.2 For each shipment, type and composition of tile provide a Master Grade Certificate signed by the manufacturer and the installer certifying that products meet or exceed the specified requirements of ANSI A137.1.

1.5.5 Maintenance Data: Include recommended cleaning methods, cleaning materials, stain removal methods, and polishes and waxes.

1.6 QUALITY ASSURANCE

1.6.1 Installer Qualifications: Company specializing in performing the work of this section with minimum two years' experience.

1.6.2 Single Source Responsibility: Obtain each type and color of tile from a single source. Obtain each type and color of mortar, adhesive and grout from the same source.

1.7 DELIVERY, STORAGE, AND HANDLING

1.7.1 Deliver and store products in manufacturer's unopened packaging until ready for installation.

1.7.2 Protect adhesives and liquid additives from freezing or overheating in accordance with manufacturer's instructions.

1.7.3 Store tile and setting materials on elevated platforms, under cover and in a dry location and protect from contamination, dampness, freezing or overheating.

1.8 ENVIRONMENTAL REQUIREMENTS

1.8.1 Do not install adhesives in an unventilated environment.

1.8.2 Maintain ambient and substrate temperature of 50 degrees F (10 degrees C) during tiling and for a minimum of 7 days after completion.

1.9 EXTRA MATERIALS

1.9.1 Provide for Owner's use a minimum of 2 percent of the primary sizes and colors of tile specified, boxed and clearly labeled.

2 PRODUCTS

2.1 MANUFACTURERS

2.1.1 Acceptable Manufacturer: Daltile Corporation, which is located at: 7834 C.F. Hawn Fwy. P. O. Box 170130; Dallas, TX 75217; Toll Free Tel: 800-933-TILE; Tel: 214-398-1411; Fax: 214-309-4584; Email: [request info \(eric.hebert@mohawkind.com\)](mailto:request info (eric.hebert@mohawkind.com)); Web: <https://www.daltile.com>

2.1.2 Substitutions: Not permitted.

2.1.3 Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 TILE

2.2.1 General: Provide tile that complies with ANSI A137.1 for types, compositions and other characteristics indicated. Provide tile in the locations and of the types colors and pattern

indicated on the Drawings and identified in the Schedule and the end of this Section. Tile shall also be provided in accordance with the following:

- 2.2.1.1 Factory Blending: For tile exhibiting color variations within the ranges selected under Submittal of samples, blend tile in the factory and package so tile taken from one package shows the same range of colors as those taken from other packages.
- 2.2.1.2 Mounting: For factory mounted tile, provide back or edge mounted tile assemblies as standard with the manufacturer, unless otherwise specified.
- 2.2.1.3 Factory Applied Temporary Protective Coatings: Where indicated under tile type, protect exposed surfaces of tile against adherence of mortar and grout by pre-coating with a continuous film of petroleum paraffin wax applied hot. Do not coat unexposed tile surfaces.

2.2.2 ColorBody Porcelain Tile:

- 2.2.2.1 Product: Harmonist.
 - 2.2.2.1.1 Color: Amity
 - 2.2.2.1.2 Size and Shape: 12 inches square, nominal.
 - 2.2.2.1.3 Application: Floor
 - 2.2.2.1.4 Pattern: Diagonal
- 2.2.2.2 Product: Composition
 - 2.2.2.2.1 Color: Providential Gloss
 - 2.2.2.2.2 Size: 24 x 12
 - 2.2.2.2.3 Application: Walls
 - 2.2.2.2.4 Pattern: Running bond
- 2.2.2.3 Provide to provide transition between tile surface and adjoining finishes and at the following locations:
 - 2.2.2.3.1 At doorways where tile terminates.
 - 2.2.2.3.2 At open edges of floor tile where adjacent finish is a different height.

2.3 SETTING MATERIALS

- 2.3.1 Organic Adhesive: ANSI A136.1, thinset bond type; use Type I in areas subject to prolonged moisture exposure.
- 2.3.2 Epoxy Adhesive: ANSI A118.3, thinset bond type.
- 2.3.3 Mortar Bed Materials:
 - 2.3.3.1 Portland cement: ASTM C150, type 1, gray or white.
 - 2.3.3.2 Hydrated Lime: ASTM C207, Type S.
 - 2.3.3.3 Sand: ASTM C144, fine.
 - 2.3.3.4 Latex additive: As approved.
 - 2.3.3.5 Water: Clean and potable.
- 2.3.4 Mortar Bond Coat Materials:
 - 2.3.4.1 Dry-Set Portland Cement type: ANSI A118.1.
 - 2.3.4.2 Latex-Portland Cement type: ANSI A118.4.
 - 2.3.4.3 Epoxy: ANSI A118.3, 100 percent solids.
- 2.3.5 Standard Grout: Cement grout, sanded or unsanded, as specified in ANSI A118.6; color as selected.
- 2.3.6 Polymer modified cement grout, sanded or unsanded, as specified in ANSI A118.7; color as selected.
- 2.3.7 Epoxy Grout: ANSI A118.8, 100 percent solids epoxy grout; color as selected.
- 2.3.8 Silicone Sealant: Silicone sealant, moisture and mildew resistant type, white; use for shower

floors and shower walls.

2.3.9 Cleavage Membrane:

2.3.9.1 No. 15 (6.9 kg) asphalt saturated felt, ASTM D226, Type 1.

2.3.9.2 Polyethylene film, ASTM D4397, 4.0 mil thickness.

3 EXECUTION

3.1 EXAMINATION

3.1.1 Verify that wall surfaces are free of substances which would impair bonding of setting materials, smooth and flat within tolerances specified in ANSI A137.1, and are ready to receive tile.

3.1.2 Verify that sub-floor surfaces are dust-free, and free of substances which would impair bonding of setting materials to sub-floor surfaces, and are smooth and flat within tolerances specified in ANSI A137.1.

3.1.3 Verify that concrete sub-floor surfaces are ready for tile installation by testing for moisture emission rate and alkalinity; obtain instructions if test results are not within limits recommended by tile manufacturer and setting materials manufacturer.

3.1.4 Verify that required floor-mounted utilities are in correct location.

3.2 PREPARATION

3.2.1 Protect surrounding work from damage.

3.2.2 Remove any curing compounds or other contaminants.

3.2.3 Vacuum clean surfaces and damp clean.

3.2.4 Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.

3.2.5 Install cementitious backer board in accordance with ANSI A108.11 and board manufacturer's instructions. Tape joints and corners, cover with skim coat of dry-set mortar to a feather edge.

3.2.6 Prepare substrate surfaces for adhesive installation in accordance with adhesive manufacturer's instructions.

3.3 INSTALLATION - GENERAL

3.3.1 Install tile and grout in accordance with applicable requirements of ANSI A108.1 through A108.13, manufacturer's instructions, and TCA Handbook recommendations.

3.3.2 Lay tile to pattern indicated. Arrange pattern so that a full tile or joint is centered on each wall and that no tile less than 1/2 width is used. Do not interrupt tile pattern through openings.

3.3.3 Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly. Align floor joints.

3.3.4 Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make joints watertight, without voids, cracks, excess mortar, or excess grout.

3.3.5 Form internal angles square and external angles bullnosed.

3.3.6 Install ceramic accessories rigidly in prepared openings.

- 3.3.7 Sound tile after setting. Replace hollow sounding units.
 - 3.3.8 Keep expansion joints free of adhesive or grout. Apply sealant to joints.
 - 3.3.9 Allow tile to set for a minimum of 48 hours prior to grouting.
 - 3.3.10 Grout tile joints. Use standard grout unless otherwise indicated.
 - 3.3.11 Apply sealant to junction of tile and dissimilar materials and junction of dissimilar planes.
- 3.4 INSTALLATION - FLOORS - THIN-SET METHODS
- 3.4.1 Over interior concrete substrates, install in accordance with TCA Handbook Method F113, dry-set or latex-portland cement bond coat, with standard grout, unless otherwise indicated.
 - 3.4.1.1 Where waterproofing membrane is indicated, install in accordance with TCA Handbook Method F122, with latex-portland cement grout.
 - 3.4.1.2 Where epoxy bond coat and grout are indicated, install in accordance with TCA Handbook Method F131.
- 3.5 INSTALLATION - FLOORS - MORTAR BED METHODS
- 3.5.1 Over interior concrete substrates, install in accordance with TCA Handbook Method F111, with cleavage membrane, unless otherwise indicated.
 - 3.5.1.1 Where waterproofing membrane is indicated, with standard grout or no mention of grout type, install in accordance with TCA Handbook Method F121.
 - 3.5.1.2 Where epoxy bond coat and grout are indicated, install in accordance with TCA Handbook Method F132, bonded.
 - 3.5.1.3 Where epoxy or furan grout is indicated, but not epoxy or furan bond coat, install in accordance with TCA Handbook Method F114, with cleavage membrane.
 - 3.5.2 Cleavage Membrane: Lap edges and ends.
 - 3.5.3 Waterproofing Membrane: Install as specified in ANSI A108.13.
 - 3.5.4 Mortar Bed Thickness: 1-1/4 to 2 inch (32 to 51 mm) maximum, unless otherwise indicated.
- 3.6 INSTALLATION - WALL TILE
- 3.6.1 Over gypsum wallboard on wood or metal studs install in accordance with TCA Handbook Method W243, thin-set with dry-set or latex-portland cement bond coat, unless otherwise indicated.
 - 3.6.1.1 Where mortar bed is indicated, install in accordance with TCA Handbook Method W222, one coat method.
 - 3.6.1.2 Where waterproofing membrane is indicated other than at showers and bathtub walls, install in accordance with TCA Handbook Method W222, one coat method.
- 3.7 CLEANING
- 3.7.1 Clean tile and grout surfaces.
- 3.8 PROTECTION OF FINISHED WORK
- 3.8.1 Do not permit traffic over finished floor surface for 72 hours after installation.
 - 3.8.2 Cover floors with kraft paper and protect from dirt and residue from other trades.
 - 3.8.3 Where floor will be exposed for prolonged periods cover with plywood or other similar type walkways

END OF SECTION

SECTION 09 91 23 - INTERIOR PAINTS AND COATINGS

Part 1 GENERAL

1.1 SECTION INCLUDES

- A Interior paint and coatings systems including: paint, stains, transparent coatings, and opaque finishes

1.2 RELATED SECTIONS

- A Section 09 67 00 - Fluid Applied Flooring for Concrete

1.3 SUBMITTALS

- A Submit under provisions of Section 01 33 00, Submittal Procedures.
- B Product Data: Manufacturer's data sheets on each paint and coating product should include:
 - 1 Product characteristics
 - 2 Surface preparation instructions and recommendations
 - 3 Primer requirements and finish specification
 - 4 Storage and handling requirements and recommendations
 - 5 Application methods
 - 6 Clean-up Information
- C Selection Samples: Submit a complete set of color chips that represent the full range of manufacturer's color samples available.

1.4 MOCK-UP

Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider all the major different types of painting on the project.

- A Finish surfaces for verification of products, colors & sheens
- B Finish area designated by Architect
- C Provide samples that designate prime & finish coats
- D Do not proceed with remaining work until the Architect approves the mock-up samples

1.5 DELIVERY, STORAGE, AND HANDLING

- A Delivery: Deliver manufacturer's unopened containers to the work site. Packaging shall bear the manufacturer's name, label, and the following list of information:

- Product name and type (description)
- Application & use instructions
- Surface preparation
- VOC content
- Environmental handling and an SDS
- Batch date
- Color number

- B Storage: Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction. Store materials in an area that is within the acceptable temperature range, per manufacturer's instructions. Protect from freezing.

- C Handling: Maintain a clean, dry storage area to prevent contamination or damage to the coatings.

1.6 PROJECT CONDITIONS

- A Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not apply coatings under environmental conditions outside manufacturer's absolute limits.

Part 2 PRODUCTS

2.1 MANUFACTURERS

- A Acceptable Manufacturer:
The Sherwin-Williams Company
101 Prospect Avenue NW
Cleveland, OH 44115
Tel: (800) 321-8194
www.sherwin-williams.com
- B Substitutions: Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 Product Requirements. When submitting request for substitution, provide complete product data specified above under Submittals, for each substitute product.

2.2 MATERIALS - GENERAL REQUIREMENTS

- A Paints and Coatings - General:
 - 1 Unless otherwise indicated, provide factory-mixed coatings. When required, mix coatings to correct consistency in accordance with manufacturer's instructions before application. Do not reduce, thin, or dilute coatings or add materials to coatings unless such a procedure is specifically described in manufacturer's product instructions. VOCs need to be confirmed by using the products EDS sheets.
- B Primers:
 - 1 Where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.

2.3 ACCESSORIES

- A Coating Application Accessories:
 - 1 Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials required, per manufacturer's specifications.

Part 3 EXECUTION

3.1 EXAMINATION

- A Do not begin application of coatings until substrates have been properly examined and prepared. Notify Architect of unsatisfactory conditions before proceeding.
- B If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- C Proceed with work only after conditions have been corrected and approved by all parties, otherwise application of coatings will be considered as an acceptance of surface conditions.

- D Previously Painted Surfaces: Verify that existing painted surfaces do not contain lead based paints, notify Architect immediately if lead based paints are encountered.

3.2 SURFACE PREPARATION:

WARNING! Removal of old paint by sanding, scraping or other means may generate dust or fumes that contain lead. Exposure to lead dust or fumes may cause brain damage or other adverse health effects, especially in children or pregnant women. Controlling exposure to lead or other hazardous substances requires the use of proper protective equipment, such as a properly fitted respirator (NIOSH approved) and proper containment and cleanup. For more information, call the National Lead Information Center at 1-800-424-LEAD (in US) or contact your local health authority. Removal must be done in accordance with EPA Renovation, Repair and Painting Rule and all related state and local regulations. Care should be taken to follow all state and local regulations which may be more strict than those set under the federal RRP Rule.

- A Proper product selection, surface preparation and application affect coating performance. Coating integrity and service life will be reduced because of improperly prepared surfaces. Selection and implementation of proper surface preparation ensures coating adhesion to the substrate and prolongs the service life of the coating system.
- B Selection of the proper method of surface preparation depends on the substrate, the environment, and the expected service life of the coating system. Economics, surface contamination, and the effect on the substrate will also influence the selection of surface preparation methods.
- C The surface must be dry and in sound condition. Remove oil, dust, dirt, loose rust, peeling paint or other contamination to ensure good adhesion. Recognize that any surface preparation short of total removal of the old coating may compromise the service length of the system.
- D Prior to attempting to remove mildew, it is always recommended to test any cleaner on a small, inconspicuous area prior to use. Bleach and bleaching type cleaners may damage or discolor existing paint films. Bleach alternative cleaning solutions may be advised. Mildew may be removed before painting by washing with a solution of 1-part liquid bleach and 3-parts water. Apply the solution and scrub the mildewed area. Allow the solution to remain on the surface for 10 minutes. Rinse thoroughly with water and allow the surface to dry before painting. Wear protective eyewear, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach/water solution.
- E Methods
 - 1 Aluminum
Remove all oil, grease, dirt, oxide, and other foreign material by cleaning per SSPC-SP1, Solvent Cleaning.
 - 2 Block (Cinder and Concrete)
Remove all loose mortar and foreign material. Surface must be free of laitance, concrete dust, dirt, form release agents, moisture curing membranes, loose cement, and hardeners. Concrete and mortar must be cured at least 30 days at 75°F unless the manufacturer's products are designed for application prior to the 30-day period. The pH of the surface should be between 6 and 9 unless the products are designed to be used in high pH environments. On tilt-up and poured-in-place concrete, commercial detergents and abrasive blasting may be necessary to prepare the surface. Fill bug holes, air pockets, and other voids with a cement patching compound.
 - 3 Drywall—Interior
Must be clean and dry. All nail heads must be set and spackled. Joints must be taped and covered with a joint compound. Spackled nail heads and tape joints must be sanded smooth and all dust removed prior to painting.
 - 4 Galvanized Metal

Clean per SSPC-SP1 using detergent and water or a degreasing cleaner to remove greases and oils. Apply a test area, priming as required. Allow the coating to dry at least one week before testing. If adhesion is poor, Brush Blast per SSPC-SP16 is necessary to remove these treatments.

- 5 Steel: Structural, Plate, etc.
Should be cleaned by one or more of the surface preparations described below. These methods are used throughout the world for describing methods for cleaning structural steel. Visual standards are available through the Society of Protective Coatings. A brief description of these standards together with numbers by which they can be specified follow.
- 6 Wood
Must be clean and dry. Knots and pitch streaks must be scraped, sanded, and spot primed before a full priming coat is applied. Patch all nail holes and imperfections with a wood filler or putty and sand smooth.

3.3 INSTALLATION

- A Apply all coatings and materials with the manufacturer's specifications in mind. Mix and thin coatings according to manufacturer's recommendations.
- B Do not apply to wet or damp surfaces.
 - 1 Wait at least 30 days before applying to new concrete or masonry or follow manufacturer's procedures to apply appropriate coatings prior to 30 days.
 - 2 Test new concrete for moisture content.
 - 3 Wait until wood is fully dry.
- C Apply coatings using methods recommended by manufacturer.
- D Uniformly apply coatings without runs, drips, or sags, without brush marks, and with consistent sheen.
- E Apply coatings at spreading rate required to achieve the manufacturer's recommended dry film thickness.
- F Regardless of number of coats specified, apply as many coats as necessary for complete hide, and uniform appearance.
- G Inspection: The coated surface must be inspected and approved by the Architect or Engineer just prior to the application of each coat.

3.4 PROTECTION

- A Protect finished coatings from damage until completion of project.
- B Touch-up damaged coatings after substantial completion, following manufacturer's recommendation for touch up or repair of damaged coatings. Repair any defects that will hinder the performance of the coatings.

END OF SECTION 06102021

SECTION 102113.19
PLASTIC TOILET COMPARTMENTS - ASI
ASI - ACCURATE PARTITIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Solid plastic toilet compartments.
- B. Solid plastic urinal screens.

1.02 RELATED REQUIREMENTS

- A. Section 061000 - Rough Carpentry: Blocking and supports.
- B. Section 102800 - Toilet, Bath, and Laundry Accessories.

1.03 ABBREVIATIONS AND ACRONYMS

- A. HDPE: High-density polyethylene.

1.04 REFERENCE STANDARDS

- A. Architectural Barriers Act (ABA) of 1968.
- B. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel
- C. ASTM B86 - Standard Specification for Zinc and Zinc-Aluminum (ZA) Alloy Foundry and Die Castings; 2023.
- D. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.
- E. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2021.
- F. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.
- G. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.
- H. ICC (IBC) - International Building Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- I. NFPA 286 - Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth; 2024.

1.05 ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate work with placement of support framing and anchors in walls and ceilings.

1.06 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on panel construction, hardware, accessories, and finishes.
- C. Shop Drawings:
 - 1. Indicate plans, elevations, and dimensions. Include door swings, toilet fixture centerlines, and floor drains on plans.
 - 2. Indicate details of wall and floor supports and attachments.
 - 3. Indicate cutouts for through-partition toilet accessories.
- D. Samples:
 - 1. For Initial Selection: Submit samples for each type of toilet compartment material.
 - 2. For Verification: Submit two samples of partition materials, 3 inches by 3 inches in size, indicating color.

1.07 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with at least three years of documented experience.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. See Section 017419 - Construction Waste Management and Disposal for packaging waste requirements.
- B. Deliver, store, and handle materials and products in accordance with manufacturer's instructions and recommendations and industry standards.
- C. Do not deliver materials or begin installation until building is enclosed, with complete protection from outside weather, and building temperature maintained at minimum of 60 degrees F.
- D. Store products indoors in manufacturer's or fabricator's original containers and packaging, with labels clearly identifying product name and manufacturer. Protect from damage.
- E. Lay cartons flat, with adequate support to ensure flatness and prevent damage to prefinished surfaces.
- F. Do not store where ambient temperature exceeds 120 degrees F.

1.09 FIELD CONDITIONS

- A. Ambient Conditions: Maintain environmental conditions such as temperature, humidity, and ventilation within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
- B. Ambient Conditions: Maintain building temperature at minimum of 60 degrees F for 24 hours before, during, and after installation of toilet partitions.
- C. Existing Conditions: Verify actual locations of toilet fixtures, walls, columns, ceilings, and other construction contiguous with toilet compartments by field measurements before fabrication.

1.10 WARRANTY

- A. See Section 017800 - Closeout Submittals for additional warranty requirements.
- B. Manufacturer Warranty: Provide 25-year manufacturer warranty for HDPE material against breakage, corrosion, and delamination.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Basis of Design Manufacturer: ASI Accurate Partitions: www.asi-accuratepartitions.com/#sle.
- B. Other Acceptable Manufacturers:
 - 1. Bobrick
 - 2. Scranton Products
 - 3. Products by listed manufacturers are subject to compliance with specified requirements found in specification and in Technical Data Sheet of selected ASI model "Solid Plastic Partitions with Floor Anchored/Overhead Braced Mounting Style" and prior approval of Architect.
- C. Substitutions: Not permitted.
 - 1. Products other than Basis of Design are subject to compliance with specified requirements and prior approval of Architect. By using products other than Basis of Design, Contractor accepts responsibility for costs associated with necessary modifications to related work, including design fees.
- D. Source Limitations: Furnish products obtained from single supplier.

2.02 PLASTIC TOILET COMPARTMENTS

- A. Toilet Compartments: Solid plastic (HDPE), standard privacy, floor anchored, overhead braced.
- B. Urinal Screens: Solid plastic (HDPE), wall hung with floor-mounted post.

- C. Design Criteria:
 - 1. Accessibility: Design compartments indicated on drawings to comply with Architectural Barriers Act (ABA) of 1968.
 - 2. Fire Performance: Provide assemblies that pass when tested in accordance with NFPA 286.
 - 3. Surface Burning Characteristics: Provide assemblies with flame spread index of 75 or less and smoke developed index of 450 or less (Class B), when tested in accordance with ASTM E84.
- D. Fabrication:
 - 1. Fabricate toilet compartment components to sizes indicated.
 - 2. Coordinate requirements and provide cutouts for through-partition toilet accessories.
 - 3. Provide shoes and caps at pilasters and posts to conceal anchorage, supports, and leveling mechanisms.
 - a. Provide Easy-Stall shoes at floor anchored, overhead braced toilet compartments.
 - 4. Provide manufacturer's standard corrosion-resistant supports, leveling mechanisms, anchors, and anchoring assemblies for pilasters and posts.
 - 5. Floor-Anchored, Overhead-Braced Units: Provide supports, leveling mechanisms, Easy-Stall shoes, and anchors at pilasters to suit floor conditions.
 - 6. Urinal and Entrance Screen Posts: Provide anchoring assemblies with leveling adjustment.

2.03 COMPONENTS

- A. Doors and Panels: Single sheets of solid molded homogenous high-density polyethylene (HDPE).
 - 1. Finish:
 - a. Color: ASI - Olive
 - b. Texture: Manufacturer's standard for selected color.
 - 2. Edges: 1/4-inch (6 mm) radius machined edges.
 - 3. Heat Sink: Extruded aluminum attached to bottom of doors and panels.
 - 4. No Sight-55 Privacy Option: Provide compartments with no-sightline privacy strips.
- B. Door and Panel Dimensions:
 - 1. Thickness: 1 inch.
 - 2. Door Width: 24 inches.
 - 3. Door Width for Handicapped Use: 36 inches, in swinging.
 - 4. Door Panel Height: 55 inches.
 - 5. Door Height Above Floor: 14 inches.
 - 6. Panel Depth: As indicated on drawings.
 - 7. Urinal Screen Panel Height: 55 inches.
 - 8. Urinal Screen Panel Height Above Floor: 14 inches.
- C. Pilasters: 1 inch thick, of sizes required to suit compartment width and spacing; minimum 3 inches wide.
 - 1. Pilaster Height: 82 inches.
 - 2. Easy-Stall Pilaster Shoes: Formed 20-gauge, 0.0359 inch, ASTM A666 Type 304 stainless steel with No.4 finish, 3 inches high, concealing floor fastenings and leveling bolts; secured to pilaster with stainless steel tamper-resistant screws; secured to floor with concrete anchors.
 - a. Provide height and leveling adjustment with machine thread leveling bolts and bottom of pilaster threaded inserts.
 - b. Provide Easy-Stall shoes at floor anchored, overhead braced toilet compartments.
- D. Urinal Screen Post: Manufacturer's standard post design of square aluminum tube with satin finish 1-3/4 by 1-3/4 inches, with shoe matching that on pilaster.

- E. Head Rails: Hollow anodized aluminum tube, 1- by 1-5/8-inch size, with anti-grip surface and cast-socket wall brackets.

2.04 MATERIALS

- A. Aluminum Castings: ASTM B26/B26M.
- B. Aluminum Extrusions: ASTM B221 (ASTM B221M), 6063 alloy, T6 temper.
- C. High-Density Polyethylene (HDPE):
 - 1. Composition: Formed from waterproof, nonabsorbent, high-density polyethylene resins.
 - 2. Properties: Mark-resistant self-lubricating surface.
 - 3. Fire Resistance: ASTM E84, Class B.
 - 4. Material Fire Ratings: NFPA 286, Pass.
 - 5. Material Fire Ratings: ICC (IBC), Class B.
- D. Stainless Steel Sheet: ASTM A240/A240M or ASTM A666, Type 304, stretcher-leveled standard of flatness.
- E. Stainless Steel Castings: ASTM A743/A743M.
- F. Zamac: ASTM B86, commercial zinc-alloy die castings, chrome-plated.

2.05 HARDWARE AND ACCESSORIES

- A. Brackets:
 - 1. Stirrup Type: Clear anodized aluminum, three per panel connection.
- B. Door Hardware: Clear anodized aluminum:
 - 1. Hinges: 8-inch wrap-around pivot hinges, gravity type, adjustable for door close positioning; two per door.
 - 2. Latch and Keeper: 6-inch slide latch with wrap-around keeper.
 - 3. Coat Hook: Chrome-plated zamac. Manufacturer's standard coat hook with rubber bumper; one per compartment, mounted on door panel.
 - 4. Door Pull: Chrome-plated zamac. Provide door pull for out swinging doors. Provide on both sides of doors designated as accessible.
 - 5. Door Bumper: Chrome-plated zamac. Provide rubber-tipped door bumpers at out-swinging doors.
- C. Attachments, Screws, and Bolts: Chrome-plated zamac, tamper-resistant type..
 - 1. For Attaching Panels and Pilasters to Brackets: Sex-type through-bolts and nuts, tamper-resistant.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated on shop drawings.
- B. Verify correct spacing of and between plumbing fixtures.
- C. Verify correct location of built-in framing, anchorage, and bracing.

3.02 INSTALLATION

- A. Install partitions secure, rigid, plumb, and level in accordance with manufacturer's instructions.
- B. Attach Easy Stall shoe system to floor with 1/4 by 2-inch screws. Insert pilaster into Easy Stall shoe and secure after height adjustment.
- C. Maintain maximum 1/2-inch space between pilasters and panels.
- D. Maintain maximum 1-inch space between wall and panels.
- E. Attach panel brackets securely to walls using anchor devices.
- F. Attach panels and pilasters to brackets. Locate head rail joints at pilaster centerlines.
- G. Do not permit field touch-up of scratches or damaged finish. Replace damaged or scratched materials with new materials.

3.03 TOLERANCES

- A. Maximum Variation from True Position: 1/4 inch.
- B. Maximum Variation from Plumb: 1/8 inch.

3.04 ADJUSTING

- A. Adjust and align hardware to uniform clearance at vertical edge of doors, not exceeding 3/16 inch.
- B. Adjust hinges to locate doors in partially opened position when unlatched. Return out swinging doors to closed condition.
- C. Adjust adjacent components for consistency of line or plane.

3.05 CLEANING

- A. See Section 017000 - Execution and Closeout Requirements for additional requirements.
- B. Clean partition and screen surfaces with materials and cleansers in accordance with manufacturer's recommendations.

END OF SECTION

SECTION 102800
TOILET, BATH, AND LAUNDRY ACCESSORIES - ASI

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Baby changing stations.
- B. Feminine hygiene vendors and disposals.
- C. Mirrors.
- D. Paper towel combination units.
- E. Paper towel dispensers.
- F. Toilet tissue dispensers.

1.02 REFERENCE STANDARDS

- A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials; Current Edition.
- B. Architectural Barriers Act of 1968.
- C. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test; 2015 (Reaffirmed 2020).
- D. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2017.
- E. ASTM A269/A269M - Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service; 2022.
- F. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.
- G. ASTM B456 - Standard Specification for Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium; 2017 (Reapproved 2022).
- H. ASTM C1036 - Standard Specification for Flat Glass; 2021.
- I. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass; 2018.
- J. ASTM C1503 - Standard Specification for Silvered Flat Glass Mirror; 2024.
- K. ASTM F2285 - Standard Consumer Safety Performance Specification for Diaper Changing Tables for Commercial Use; 2022.
- L. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.

1.03 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Manufacturer's Installation Instructions: Indicate special procedures and conditions requiring special attention.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Basis of Design Manufacturer: American Specialties, Inc: www.americanspecialties.com/#sle.
- B. Other Acceptable Manufacturers:
 - 1. Bobrick
 - 2. Bradley Corp.
 - 3. Products by listed manufacturers are subject to compliance with specified requirements found in specification and in Technical Data Sheet of selected ASI model and prior approval of Architect.
- C. Substitutions: See Section 016000 - Product Requirements.

1. All proposed substitutions (clearly delineated as such) must be submitted in writing for approval by Architect minimum of 10 working days prior to bid date and must be made available to all bidders. Proposed substitutes must be accompanied by review of specification and ASI Technical Data Sheets noting compliance on line-by-line basis.

2.02 BABY CHANGING STATIONS

- A. Baby Changing Station: Wall-mounted folding baby changing station for use in commercial toilet facilities, meeting or exceeding ASTM F2285.
 1. Material: As indicated in product listing.
 2. Mounting: As indicated in product listing.
 3. Products:
 - a. Model 9013 - Recessed - Roval Collection - Baby Changing Station - Horizontal - Stainless Steel.
 - b. Substitutions: 016000 - Product Requirements.

2.03 FEMININE HYGIENE VENDORS AND DISPOSALS

- A. Sanitary Napkin Disposal Unit: Stainless steel, self-closing door, locking bottom panel with full-length heavy-duty stainless steel multi-staked piano hinge, removable receptacle.
 1. Mounting: As indicated in product listing.
 2. Cabinet and Door: Fully welded, 22-gauge, 0.03 inch (0.8 mm) thick sheet.
 3. Products:
 - a. ASI Model #0473-1A
 - b. Substitutions: Section 016000 - Product Requirements.

2.04 MIRRORS

- A. Mirrors: Stainless steel framed, 1/4 inch (6 mm) thick annealed float glass, ASTM C1036.
 1. Annealed Float Glass: Silvering, protective and physical characteristics in compliance with ASTM C1503.
 2. Size: 24 inches wide by 36 high.
 3. Products:
 - a. ASI Model 0600 Series - Stainless Steel Inter-Lok Angle Frame - Plate Glass Mirror.
 - b. Substitutions: Section 016000 - Product Requirements.

2.05 PAPER TOWEL COMBINATION UNITS

- A. Combination Towel Dispenser/Waste Receptacle: Stainless steel; seamless wall flanges, continuous heavy-duty stainless steel multi-staked piano hinges, tumbler locks on upper and lower doors.
 1. Mounting: As indicated in product listing.
 2. Stainless Steel Thickness: As indicated on Technical Data Sheet for selected ASI model.
 3. Waste Receptacle Liner: Reusable, heavy-duty vinyl.
 4. Towel Type: As indicated in product listing.
 5. Folded Towel Dispenser Capacity: As indicated in product listing.
 6. Waste Receptacle Capacity: As indicated in product listing.
 7. Products:
 - a. Model 0469 - Recessed - Traditional Collection - Paper Towel Dispenser and Waste Receptacle - Multi, C-Fold - 12 gal (45.4 L).
 - b. Substitutions: Section 016000 - Product Requirements.

2.06 PAPER TOWEL DISPENSERS

- A. Paper Towel Dispenser: Folded paper type, stainless steel, with viewing slots on sides as refill indicator, tumbler lock.
 1. Mounting: As indicated in product listing.
 2. Stainless Steel Thickness: As indicated on Technical Data Sheet for selected ASI model.
 3. Folded Towel Dispenser Capacity: 400 C-fold.
 4. Products:

- a. Model 0457-2 - Semi-recessed - Traditional Collection - Paper Towel Dispenser - Multi, C-Fold.
- b. Substitutions: Section 016000 - Product Requirements.

2.07 TOILET TISSUE DISPENSERS

- A. Toilet Tissue Dispenser: Roll-in-reserve type, designed to allow automatic activation of reserve roll when needed, or manual activation by pressing release bar, semi-recessed, stainless steel unit with pivot hinge, tumbler lock.
 1. Products:
 - a. Model 0030 - Surface-mounted - Toilet Tissue Dispenser - Twin Hide-A-Roll.

2.08 SEAT COVER DISPENSERS

- A. Seat Cover Dispenser: Stainless steel, reloading by concealed opening at base, tumbler lock.
 1. Mounting: As indicated in product listing.
 2. Minimum Capacity: 250 seat covers.
 3. Products:
 - a. Model 0477-SM - Satin Stainless Steel Finish - Toilet Seat Cover Dispenser - Surface-mounted.
 - b. Substitutions: Section 016000 - Product Requirements.

2.09 FABRICATION

- A. Roval Collection:
 1. Basic Construction Requirements:
 - a. Doors: Curved design, one piece Type 304, 18-gauge, 0.05 inch (1.27 mm) stainless steel.
 - b. Cabinets: Type 304, 22 gauge, 0.0312 inch (0.79 mm) stainless steel, trim less; joints welded, sight-exposed welds finished to match sheet finish. Full access back panels.
 - c. Hinges: Concealed, heavy-duty stainless steel multi-staked piano hinge, full length of cabinet.
 - d. Locks: Two flush, rimless tumbler locks, keyed alike other toilet accessory locks, with one key for each lock.
 - e. Exposed Finish: No.4 satin finish, unless noted otherwise.
- B. Traditional Collection:
 1. Basic Construction Requirements:
 - a. Doors: Type 304, 22-gauge, 0.0312 inch (0.79 mm) stainless steel, double pan construction, with 1/4 inch (6 mm) thick structural fiberboard core.
 - b. Cabinets: Type 304, 22-gauge, 0.0312 inch (0.79 mm) stainless steel, formed perimeter trim with 1/4 inch (6 mm) return to wall four sides; joints welded, sight-exposed welds finished to match sheet finish.
 - c. Hinges: Heavy-duty stainless steel multi-staked piano hinge, 3/16-inch (5 mm) diameter barrel, full length of cabinet; hinge leaves spot-welded to door and cabinet body.
 - d. Locks: Tumbler locks, keyed alike other toilet accessory locks, with one key for each lock.
 - e. Cabinet and Door Finish: No.4 satin finish.

2.10 FINISHES

- A. Stainless Steel: Satin finish, unless otherwise noted.
- B. Shop Primed Ferrous Metals: Pretreat and clean, spray apply one coat primer and bake.
- C. Back paint components where contact is made with building finishes to prevent electrolysis.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify exact location of accessories for installation.

3.02 PREPARATION

- A. Deliver inserts and rough-in frames to site for timely installation.
- B. Provide templates and rough-in measurements as required.

3.03 INSTALLATION

- A. Install accessories in accordance with manufacturers' instructions in locations indicated on drawings.

3.04 PROTECTION

- A. Protect installed accessories from damage due to subsequent construction operations.

END OF SECTION

SECTION 224213.13 - COMMERCIAL WATER CLOSETS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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:
 - a. Water Closets
 - b. Flush Valves
 - c. Toilet Seats
 - d. Supports

1.3 DEFINITIONS

- A. Effective Flush Volume: Average of two (2) reduced flushes and one (1) full flush per fixture.
- B. Remote water closet: Located more than 30 feet (9.1 m) from other drain line connections or fixture and where less than 1.5 drainage fixture units are upstream of the drain line connection.

1.4 ACTION SUBMITTALS

- A. Product Data: for each type of product
 - a. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for water closets.
 - b. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
- B. Sustainable Design Submittals
 - a. Product Data: For water consumption.
- C. Shop Drawings: Include diagrams for power, signal, and control wiring.

1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For flushometer valves **and electronic sensors** to include in operation and maintenance manuals.

1.6 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that are packaged with protective covering for storage and identified with labels describing contents.

- B. Flushometer-Valve Repair Kits: Equal to 10 percent of amount of each type installed, but no fewer than one of each type.

PART 2: PRODUCTS

2.1 FLOOR-MOUNTED, BOTTOM-OUTLET, TOP SPUD WATER CLOSETS

- A. Water Closets: Floor mounted, bottom outlet, top spud.

Basis of Design Product: Subject to compliance with requirements, provide Sloan Valve Company: **ST-2009-STG** with SloanTec hydrophobic Glaze and 1000g Map score. Buy American Act (BAA) Compliant.

Product: Sloan ST 2009-STG ([Specification](#))

Standard: ASME A112.19.2/CSA B45.1

Material: Vitreous China

Bowl: Standard

Type: Siphon Jet

Style: Flushometer Valve

Rim Height: 15"

Rim Contour: Elongated

Water Consumption: 1.1 - 1.6 gpf (4.2 - 6.0 Lpf)

Spud Size and Location: IPS 1 1/2", Top inlet

Color: White

Bowl to Drain Connection: [ASTM A 1045] or [ASME A112.4.3.]

2.8 FLUSHOMETER VALVES

- A. Battery-Powered, Solenoid-Actuator, Diaphragm Flushometer Valves:

Basis of Design Product: Subject to compliance with requirements, provide Sloan Valve Company: **G2 8111** sensor activated flushometer with low battery indicator, PERMEX® Synthetic Rubber Diaphragm with Dual Filtered Fixed Bypass, Infrared Sensor with Multiple-focused, Lobular Sensing Fields for high and low target detection and Valve Body, Cover, Tailpiece and Control Stop shall be in conformance with ASTM Alloy Classification for Semi- Red Brass. Valve shall be Made in the USA.

Product: G2 8111 ([Specification](#))

Standard: ASSE 1037

Minimum Pressure Rating: 15 PSI (103 kPa)

Features: Dual filter bypass diaphragm with PERMEX® rubber components

Material: Semi Red Brass Body with Corrosion Resistant Components

Exposed Flushometer – Finish: Polished Chrome, PVD Brushed Nickel, PVD Brushed Stainless, PVD Graphite, PVD Polished Brass

Style: Exposed Flushometer

Actuator: Solenoid complying with UL 1951, and listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

Operation: Operates using battery power up to 6 years with low battery indicator light

Trip Mechanism: Battery powered electronic sensor complying with UL 1951, and listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

Consumption: 1.28 gal. (4.8 L) per flush, 1.6 gal. (6 L) per flush.

Minimum Inlet: NPS 1 (DN 25).

Minimum Outlet: NPS 1-1/2 (DN 40).

2.4 TOILET SEATS

A. Toilet Seats:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Bemis
 - b. Church

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Examine roughing-in of water supply and sanitary drainage and vent piping systems to verify actual locations of piping connections before water-closet installation.
- B. Examine walls and floors for suitable conditions where water closets will be installed.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Water-Closet Installation:

1. Install level and plumb according to roughing-in drawings.

2. Install floor-mounted water closets on bowl-to-drain connecting fitting attachments to piping or building substrate.
3. Install accessible, wall mounted water closet at mounting height for handicapped/elderly according to ICC/ANSI A117.1

B. Support Installation

1. Install supports, affixed to building substrate, for floor-mounted, back-outlet water closets.
2. Use carrier supports with waste-fitting assembly and seal.
3. Install floor-mounted, back-outlet water closets attached to building floor substrate, onto waste-fitting seals; and attach to support.
4. Install wall-mounted, back-outlet water-closet supports with waste-fitting assembly and waste-fitting seals; and affix to building substrate.

C. Flush Valve Installation

1. Install flushometer-valve, water-supply fitting on each supply to each water closet.
2. Attach supply piping to supports or substrate within pipe spaces behind fixtures.
3. Install flushometer valve for accessible water closets with handle on open side of closet.
4. Install actuators in locations that are easy for people with disabilities to reach.
5. Install fresh batteries in battery-powered, electronic-sensor mechanisms.

D. Install Toilet Seats on Water Closets

E. Wall Flange and Escutcheon Installation:

1. Install wall flanges or escutcheons at piping wall penetrations in exposed, finished locations and within cabinets and millwork.
2. Comply with escutcheon requirements specified in section 220518 "Escutcheons for Plumbing Piping."
3. Install deep pattern escutcheons if required to conceal protruding fittings.

F. Joint Sealing

1. Seal joints between water closets, walls and floors using sanitary type, one part, mildew resistant silicone sealant.
2. Match sealant color to water closet color.
3. Comply with sealant requirements specified in Section 079200 "Joint Sealants."

3.3 CONNECTIONS

A. Connect water closets with water supplies and soil, waste, and vent pipe. Use size fittings required to match water closets.

1. Comply with water piping requirements specified in Section 221116 "Domestic Water Piping."
2. Comply with soil and waste piping requirements specified in Section 221316 "Sanitary Waste and Vent Piping."
3. When installing piping adjacent to water closets, allow space for service and maintenance.

B. Adjusting

1. Operate and adjust water closets and controls. Replace damaged and malfunctioning water closets, fittings, and controls.
2. Adjust water pressure at flushometer valve to produce proper flow.
3. Install fresh batteries in battery powered, electronic sensor mechanisms.

3.4 CLEANING AND PROTECTION

1. Clean water closets and fittings with Manufacturers' recommended cleaning methods and materials.
2. Install protective covering for installed water closets and fittings.
3. Do not allow use of water closets for temporary facilities unless approved in writing by owner.

END OF SECTION 224213.13

SECTION 224213.13 - COMMERCIAL URINALS

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
 - a. Urinals
 - b. Flush Valves
 - c. Supports

1.3 ACTION SUBMITTALS

- A. Product Data: for each type of product
 - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for water closets.
 - 2. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
- B. Sustainable Design Submittals
 - 1. Product Data: For water consumption.
- C. Shop Drawings: Include diagrams for power, signal, and control wiring.

1.4 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For flushometer valves [**and electronic sensors**] to include in operation and maintenance manuals.

1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that are packaged with protective covering for storage and identified with labels describing contents.
- B. Flushometer-Valve Repair Kits: Equal to **10** percent of amount of each type installed, but no fewer than **one** of each type.
- C. Waterfree Urinal trap seal Cartridges: Equal to 200 % of each type installed but no fewer than 12 of each type.

PART 2: PRODUCTS

2.1 WALL HUNG URINALS

- A. Urinal: Wall hung, Back outlet, top spud, washdown.

Basis of Design Product: Subject to compliance with requirements, provide Sloan Valve Company: **SU1209-STG** Vitreous China Washdown Urinal with SloanTec hydrophobic Glaze.

Product: SU1209-STG ([Specification](#))

Standard: ASME A112.19.2/CSA B45.1

Material: Vitreous China

Type: Washdown

Strainer or Trapway: Manufacturer's standard strainer with integral Trap.

Water Consumption: 0.125–1.0 gpf (0.5–3.8 Lpf)

Spud Size and Location: NPS 3/4-inch (DN 20) Top

Waste Fitting: NPS 2-inch (DN 50) Back

Color: White

Support: [Type I Urinal Carrier] with fixture support plates and coupling with seal and fixture bolts and hardware matching fixture. [Include rectangular, steel uprights.] <Insert carrier>.

Urinal Mounting Height: [Standard] [Child] [Handicapped/elderly according to ICC A117.1].

2.2 URINAL FLUSHOMETER VALVES

- A. Battery-Powered, Solenoid-Actuator, Diaphragm Flushometer Valves <Insert designation>:

Basis of Design Product: Subject to compliance with requirements, provide Sloan Valve Company: **ECOS 8186** dual flush, Sensor operated flushometer. Rubber components must be chloramine resistant PERMEX® rubber with dual filter diaphragm assembly. Valve body shall be in compliance with ASTM Alloy Classification for Semi-Red Brass Free spinning vandal resistant stop cap with back check control stop. Valve shall be Made in the USA.

Product: ECOS 8186 ([Specification](#))

Standard: ASSE 1037

Minimum Pressure Rating: 15 PSI (103 kPa)

Features: Water conserving dual flush technology, Chloramine resistant rubber components

Material: Semi-Red brass body with corrosion resistant components

Exposed Flushometer – Valve Finish: Polished Chrome, PVD Brushed Nickel, PVD Brushed Stainless, PVD Graphite, PVD Polished Brass

Style: Exposed Flushometer

Actuator: 6 VDC actuator complying with UL and listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application

Operation: Operates using battery power up to 6 years with low battery indicator light

Trip Mechanism: Battery powered electronic sensor complying with UL 1951, and listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

Consumption: 0.125 gpf (0.5 L), .25 gpf (0.9 L), .5 gpf (1.9 L), 1.0 gpf (3.8 L), 1.5 gpf (5.7 L)

Minimum Inlet: 3/4" (DN 20)

Minimum Outlet: 3/4" (DN 20)

2.4 SUPPORTS

A. Type 1 Urinal Carrier

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Jay R Smith Mfg.
 - b. Josam
 - c. Mifab
 - d. Watts
2. Standard: ASME A112.6.1M

B. Type II Urinal Carrier

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Jay R Smith Mfg
 - b. Josam
 - c. Mifab
 - d. Watts
2. Standard: ASME A112.6.1M

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Examine roughing-in of water supply and sanitary drainage and vent piping systems to verify actual locations of piping connections before urinal installation.
- B. Examine walls and floors for suitable conditions where urinal will be installed.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Urinal Installation:

- 1. Install level and plumb according to roughing-in drawings.
- 2. Install wall hung urinal onto waste fitting seals and attach to supports.
- 3. Indicate on Drawings those water closets that are required to be accessible.
- 4. Install wall hung urinal with tubular waste piping attached to supports.
- 5. Install accessible, wall-mounted urinals at mounting height for the handicapped/elderly, according to ICC/ANSI A117.1.
- 6. Install trap-seal liquid in waterless urinals.

B. Support Installation

- 1. Install supports, affixed to building substrate, for wall hung urinals.
- 2. Use off floor carrier supports with waste-fitting assembly and seal for back outlet urinals.
- 3. Use carriers without waste fitting for urinals with tubular waste piping.
- 4. Use chair-type carrier supports with rectangular steel uprights for accessible urinals.

C. Flush valve Installation

- 1. Install flushometer-valve, water-supply fitting on each supply to each urinal.
- 2. Attach supply piping to supports or substrate within pipe spaces behind fixtures.
- 3. Install lever-handle flushometer valves for accessible urinals with handle mounted on open side of compartments.
- 4. Install fresh batteries in battery-powered, electronic-sensor mechanisms.

D. Wall Flange and Escutcheon Installation:

- 1. Install wall flanges or escutcheons at piping wall penetrations in exposed, finished locations and within cabinets and millwork.
- 2. Comply with escutcheon requirements specified in Section 220518 "Escutcheons for Piping."
- 3. Install deep pattern escutcheons if required to conceal protruding fittings.

E. Joint Sealing

1. Seal joints between water closets, walls & floors using sanitary-type, one-part, mildew-resistant silicone sealant.
2. Match sealant color to water-closet color.
3. Comply with sealant requirements specified in Section 079200 "Joint Sealants."

3.3 CONNECTIONS

- A. Connect urinals with water supplies and soil, waste, and vent piping. Use size fittings required to match urinals.
- B. Comply with water piping requirements specified in Section 221116 "Domestic Water Piping."
- C. Comply with soil and waste piping requirements specified in Section 221316 "Sanitary Waste and Vent Piping."
- D. Where installing piping adjacent to water closets, allow space for service and maintenance.

3.4 ADJUSTING

- A. Operate and adjust urinals and controls. Replace damaged and malfunctioning urinals, fittings, and controls.
- B. Adjust water pressure at flushometer valves to produce proper flow.
- C. Install fresh batteries in battery-powered, electronic-sensor mechanisms.

3.5 CLEANING AND PROTECTION

- A. Clean urinals and fittings with manufacturers' recommended cleaning methods and materials.
- B. Install protective covering for installed urinals and fittings.
- C. Do not allow use of urinals for temporary facilities unless approved in writing by Owner.

END OF SECTION 224213.16

SECTION 22 42 16 COMMERCIAL LAVATORIES AND FAUCETS

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 SECTION INCLUDES

- A. Commercial lavatories.
- B. Commercial faucets.
- C. Commercial soap dispensers.

1.3 RELATED SECTIONS

- A. Division 10 Section "Toilet, Bath and Laundry Accessories" for matching design soap dispensers.

1.4 REFERENCES:

- A. American National Standards Institute (ANSI):
 - 1. ANSI Z 124.3 - Plastic Lavatories.
 - 2. ANSI Z 124.6 - Plastic Sinks.
- B. American Society of Mechanical Engineers (ASME):
 - 1. ASME A112.18.1 Plumbing Supply Fittings.
- C. ASTM International (ASTM):
 - 1. ASTM C 531 - Standard Test Method for Linear Shrinkage and Coefficient of Thermal Expansion of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes.
 - 2. ASTM D 570 - Standard Test Method for Water Absorption of Plastics.
 - 3. ASTM D 638 - Standard Test Method for Tensile Properties of Plastics.
 - 4. ASTM D 785 - Standard Test Method for Rockwell Hardness of Plastics and Electrical Insulating Materials.
 - 5. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
- D. GREENGUARD Environmental Institute (GEI):
 - 1. GREENGUARD listed and certified low emitting products.
- E. International Association of Plumbing and Mechanical Officials (IAPMO):
 - 1. Universal Plumbing Code (cUPC both U.S. and Canada).
- F. Public Law 102-486, Energy Policy Act, requires that public lavatories manufactured after December 31, 1996, have flow rate or consumption not greater than 0.5 gpm (1.5 L/min.) or 0.25 gal. (0.95 L) per metering cycle.
- G. US Federal Government:
 - 1. Public Law 102-486 - Energy Policy Act. 1992.
 - 2. U.S. Architectural & Transportation Barriers Compliance Board. Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG).

1.5 ACTION SUBMITTALS

- A. Product Data: For each product:

1. Manufacturer's data sheets indicating operating characteristics, materials and finishes.
2. Include details of electrical and mechanical operating parts.
3. Provide mounting requirements and rough-in dimensions.
4. Mark each sheet with product drawing designation.

1.6 INFORMATION SUBMITTALS

- A. Sample warranty.
- B. Operation, care and cleaning instructions.

1.7 MAINTENANCE SUBMITTALS

- A. Furnish indicated spare parts that are packaged with identifying labels listing associated products.
- B. Operation and Maintenance data.

1.8 QUALITY ASSURANCE

- A. Laminar-Flow, Faucet-Spout Outlets:
 1. NSF Standard: Comply with NSF 372 for faucet-spout outlet materials that will be in contact with potable water.
 2. Description: Chrome-plated-brass, faucet-spout outlet that produces non-aerating, laminar stream. Include external or internal thread that mates with faucet outlet for attachment to faucets where indicated and flow-rate range that includes flow of faucet.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- C. Comply with Public Law 102-486, Energy Policy Act.
- D. Comply with NSF 372, Drinking Water System Components – Health Effects.
 1. Product shall meet a weighted average of not more than 0.25 percent lead as required by the U.S. Safe Drinking Water Act.
- E. Solid surface material GREENGUARD certified as low-emitting material.

1.9 WARRANTY

- A. Special Manufacturer's Warranty: Provide manufacturer's standard form in which manufacturer agrees to repair or replace products that fail in materials or workmanship.
 1. Terreon lavatories: 10 years.
 2. Soap Dispenser: Three years.
 3. Faucets: Three years.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide commercial lavatories manufactured by Bradley Corporation, Menomonee Falls, WI 53051, (800)272-3539, fax (262)251-5817; Email info@BradleyCorp.com; Website www.bradleycorp.com.
 1. Submit requests for substitution in accordance with Instructions to Bidders and Division 01 General Requirements.
 2. Provide specified designer matched soap dispenser and faucet products; Owner will not consider substitution requests for designer matched soap dispenser and faucet products.

2.2 MATERIALS

- A. Solid Surface Material: Where indicated as constructed of solid surface material, fabricate plumbing fixtures from thermoset bio-based resin certified by approved independent testing agency (IAMPO R&T) as complying with applicable national building codes, with the following minimum properties:
1. Basis of Design Product: **Bradley**, or a comparable product fabricated from one of the following materials:
 - a. DuPont, Corian Products.
 - b. Wilsonart International, Inc., Gibraltar Products.
 2. Thickness: 1/2 inch (13 mm), minimum.
 3. Liquid Absorption: 0.03 percent in 24 hours, per ASTM D 570.
 4. Tensile Strength: 5000 psi (34 MPa), minimum, per ASTM D 638.
 5. Thermal Expansion: 2.96, per ASTM C 531.
 6. Hardness: 3-4 Mohs Scale, per ASTM D785.
 7. Fire Resistance: Class 1, per ASTM E 84.

2.3 LAVATORIES, MULTIPLE USER SYSTEMS

- A. Multi-Person Lavatory Fixture: Wall-mounted lavatory constructed of solid surface material with linear integral bowl that eliminates flat areas that puddle water. Unit includes waste and supply connections to wall with stop, strainer, and check valves, concealed by high impact polymer access panel/trap cover.
1. Basis of Design Manufacturer/Model: **Bradley, Express Lavatory System, TLX-Series Model No. TLX-2.**
 2. Product Compliance:
 - a. ADA / ICC ANSI A117.1.
 - b. IAPMO IGC 156 and requirements of CSA B45.5/IAPMO Z124 and ASME A112.18.1/CSA B125.1.
 - c. NSF/ANSI 372.
 - d. Texas Accessibility Standards (TAS).
 3. Overall Unit Size (TLX-2): 55-5/16 inches (1404 mm) by 20-5/8 inches (525 mm).
 4. Overall Unit Size (TLX-3): 85-1/4 inches (2166 mm) by 20-5/8 inches (525 mm).
 5. Bowl/Deck Color: **TBD FROM MANUFACTURERS STANDARD OPTIONS.**
 6. Drain Connection: chrome-plated waste assembly.
 7. Water Supply: Thermostatic mixing valve assembly.

2.4 MATCHED FAUCETS

- A. Deck Mounted Faucet – General:
1. Basis of Design Manufacturer/Model: **Bradley Verge**
 2. Touch free dual sensor activation.
 3. Compliance and Certifications:
 - a. ADA ANSI/ICC A117.1, Citation 609.3.
 - b. ASME A112.18.1/CSA B125.1.
 - c. NSF/ANSI 372 – Lead Free.
 - d. NSF/ANSI 61.
 - e. cUPC.
 - f. CE electrical components.
 4. Vandal-resistant construction shall include concealed sensor package, durable finish, and rotation resistant gasket/washer.
 5. In-line filter supplied with either mixing assembly or tempered line assembly to trap debris.
 6. Operation: Dual sensors utilizing time of flight and diffuse reflective sensors.
 - a. Operating Water Pressure Range: 20 to 125 psi.

- b. Faucet activates water flow only when user's hands enter the infrared detection zone.
 - c. Faucet turns off after user's hands are removed from the lavatory bowl area.
 - d. Sixty (60) second auto system rinse every 24 hours. Option for sanitary manual flush.
7. Chrome Finish: "PC" Polished Chrome.
- B. Electronic Lavatory Faucets:
1. Sensor-Operated, Tubular Design Metering Faucet with Infrared Control: Vandal-resistant accessible faucet meeting ASME A112.18.1/CSA B125. ADA/ANSI A117.1 compliant.
 - a. Basis of Design Manufacturer/Model: **Bradley Verge, Linea Series, Model S53-3500.**
 - b. Body: Commercial solid cast brass.
 - c. Water Supply: Navigator Thermostatic Mixing Assembly (Supply Hose and Shut-Off Included).
 - d. Flow Type: 0.35 gpm (1.3 Lpm) Silicone Tip, multiple individual laminar flow streams.
 - e. Drain Strainer: Finish to match.
 - f. Sensor Module: Water-conserving, vandal-resistant dual sensors utilizing time of flight and diffuse reflective sensors with timing turn-off delay and stationary object automatic timed cutoff.
 - g. Power Supply: Battery (standard).
 - h. Power Supply: 120VAC/6VDC, 50/60Hz plug-in transformer adapter with battery back-up. 4x AA batteries (included). Low battery indicator on spout.
 - i. Power Supply: Provide power supply "splitter" for 2, 3 or 4 faucets as required. Provide 14 feet (4.3 m) extension power cable as required.

2.5 MATCHED SOAP DISPENSERS

- A. Deck Mounted Soap Dispensers – General:
1. Touch free infrared sensor operated.
 2. Multi-station system shall supply up to six soap dispensers.
 3. Compliance and Certifications:
 - a. ADA / ICC ANSI A117.1, Citation 609.4.
 - b. UL electrical components.
 - c. CE electrical components.
 4. Vandal-resistant construction shall include concealed sensor package, durable finish, and anti-rotational gasket/washer.
 5. Chrome Finish: "PC" Polished Chrome.
- B. Sensored Soap Dispenser: Deck-mounted, sensor-operated, cast brass, with LED battery and soap level indicators, with maximum of 6 dispenser 120VAC powerpack. Multi-feed Tank: 166.5 oz (5026 ml).
1. Basis of Design Manufacturer/Model: Bradley Verge Deck-mounted Soap Dispenser, Linea Series, Model 6-3500.

2.6 SENSORED SOAP DISPENSER

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Assemble fixtures and associated fittings and trim in accordance with manufacturer's instructions.

- B. Install fixture supports attached to building structure for fixtures requiring supports.
- C. Install fixtures onto waste-fitting seals or flanges and attach to supports or building structure.
- D. Install accessible wall-mounted sinks at handicapped/elderly mounting height according to ICC/ANSI A117.1.
- E. Install fixtures level, plumb, and firmly in place in accordance with manufacturer's rough-in requirements. Refer to Drawings for rim height requirements.
- F. Install water supply piping to each fixture requiring water supply connection. Provide stop on each supply in readily serviced location. Fasten supply piping to supports or substrate.
- G. Install trap and waste piping to each fixture requiring sanitary system connection.
- H. Install escutcheons at exposed piping penetrations in finished locations and within cabinets.
- I. Seal joints between fixtures and walls, floors, and countertops with mildew-resistant silicone sealant.

3.2 CLEANING AND PROTECTION

- A. Repair or replace defective work, including damaged fixtures and components.
- B. Clean unit surfaces, test fixtures, and leave in ready-to-use condition.
- C. Install new batteries in battery-operated devices at time of Substantial Completion.
- D. Turn over keys, tools, maintenance instructions, and maintenance stock to Owner.
- E. Protect units with water-resistant temporary covering. Do not allow temporary use of plumbing fixtures unless approved in writing by Architect. Remove protection at Substantial Completion and dispose.

3.3 TESTING AND ADJUSTING

- A. Set field-adjustable temperature set points of temperature-actuated water mixing valves. Adjust set point within allowable temperature range.
- B. Test and adjust installation.
- C. Remove and replace malfunctioning thermostatic mixing valves and retest.

END OF SECTION

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.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Interior lighting fixtures, lamps, and ballasts.
 - 2. Interior solid-state luminaires that use LED technology.

1.3 DEFINITIONS

- A. BF: Ballast factor.
- B. CRI: Color-rendering index.
- C. CU: Coefficient of utilization.
- D. LER: Luminaire efficacy rating.
- E. Luminaire: Complete lighting fixture, including ballast housing if provided.
- F. RCR: Room cavity ratio.

1.4 SUBMITTALS

- A. Product Data: For each type of lighting fixture, arranged in order of fixture designation. Include data on features, accessories, finishes, and the following:
 - 1. Physical description of lighting fixture including dimensions.
 - 2. Energy-efficiency data.
 - 3. Life, output, and energy-efficiency data for lamps.
 - 4. Photometric data, in IESNA format, based on laboratory tests of each lighting fixture type, outfitted with lamps, ballasts, and accessories identical to those indicated for the lighting fixture as applied in this Project.
 - a. For indicated fixtures, photometric data shall be certified by a qualified independent testing agency. Photometric data for remaining fixtures shall be certified by the manufacturer.
 - b. Photometric data shall be certified by a manufacturer's laboratory with a current accreditation under the National Voluntary Laboratory Accreditation Program (NVLAP) for Energy Efficient Lighting Products.
- B. Shop Drawings: Show details of nonstandard or custom lighting fixtures. Indicate dimensions, weights, methods of field assembly, components, features, and accessories.

1. Wiring Diagrams: Power and control wiring.
 - C. Field quality-control test reports.
 - D. Operation and Maintenance Data: For lighting equipment and fixtures to include in emergency, operation, and maintenance manuals.
 - E. Warranties: Special warranties specified in this Section.
- 1.5 QUALITY ASSURANCE
- F. Luminaire Photometric Data Testing Laboratory Qualifications: Provided by manufacturers' laboratories that are accredited under the National Volunteer Laboratory Accreditation Program for Energy Efficient Lighting Products.
 - G. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a third party testing agency.
 - H. Comply with NFPA 70.
- 1.5 COORDINATION
- A. Coordinate layout and installation of lighting fixtures and suspension system with other construction that penetrates ceilings or is supported by them, including HVAC equipment, fire-suppression system, and partition assemblies.
- 1.6 WARRANTY
- A. Manufacturer's standard form in which manufacturer of lighting unit agrees to repair or replace components that fail in materials or workmanship within specified warranty period.

PART 2 - PRODUCTS

- 2.1 MANUFACTURERS
- A. Basis of design: OLS-WDI-LED 4 by Oracle Lighting. Provide 2 8 foot sections mounted end to end for each rest room.
- 2.2 LIGHTING FIXTURES AND COMPONENTS, GENERAL REQUIREMENTS
- A. Recessed Fixtures: Comply with NEMA LE 4 for ceiling compatibility for recessed fixtures.
 - B. LED Fixtures: Comply with UL 1598.
 - C. Metal Parts: Free of burrs and sharp corners and edges.
 - D. Sheet Metal Components: Steel, unless otherwise indicated. Form and support to prevent warping and sagging.
 - E. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under

operating conditions, and designed to permit relamping without use of tools. Designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position.

2.3 LED FIXTURES

A. Construction/Finish

1. No visible welding, no plane-protruding screws, latches, springs, hooks, rivets or plastic supports viewed from the occupied (room) side are allowed.

B. Maintenance

1. Power supplies/drivers/ballasts, LED arrays, boards or light engines shall be easily field replaceable using common hand tools (e.g., screwdrivers, pliers, etc.) and without uninstalling the luminaire

C. Electrical and Photometric Requirements

1. Electrical

- a. Operating voltage: 24 Vdc, 120 Vac at 60 Hz, 277 Vac at 60Hz, or universal voltage (120, 220/240, 277 Vac at 50/60 Hz)
- b. Power factor: ≥ 0.90 (at full luminaire output and across specified voltage range)
- c. Total harmonic distortion: $\leq 20\%$ (at full luminaire output and across specified voltage range)
- d. Transient and surge protection: ANSI C62.41-2002 Category A surge protection standards up to and including 2.5 kV for interior fixtures.
- e. Sound: Class A not to exceed a measured value of 24dB
- f. Maximum standby power: 1W
- g. Warranty: 5 year non-prorated on complete fixture including driver.
- h. LED arrays in the product(s) will be considered defective in material or workmanship if a total of 10% or more of the individual light-emitting diodes in the product(s) fail to illuminate during normal operation after installation. Energy Efficient Lighting Guidance Document for New Construction: State of the North Carolina
- i. LED Power Supply/Driver
 1. Driver efficiency (at full load):
 2. $\geq 85\%$ for drivers capable of ≥ 50 watts
 3. $\geq 80\%$ for drivers capable of < 50 watts
 4. Federal Communications Commission (FCC) compliance: FCC 47 Part 15 Non-Consumer limits for EMI/RFI emissions

j. Temperature Rating

1. Each luminaire shall be designed to operate at an average operating temperature

- of 25°C.
 - 2. The operating temperature range shall be 0°C to 25°C.
- k. Thermal management
- 1. The thermal management (of the heat generated by the LEDs) shall be of sufficient capacity to assure proper operation of the luminaire over the expected useful life.
 - 2. The LEDs manufacturer's maximum junction temperature for the expected life shall not be exceeded at the average operating ambient temperature.
 - 3. The LED manufacturer's maximum junction temperature for the catastrophic failure shall not be exceeded at the maximum operating ambient temperature.
 - 4. The driver manufacturer's maximum case temperature shall not be exceeded at the maximum operating temperature. Thermal management shall be passive by design. The use of fans or other mechanical cooling devices shall not be allowed.
- l. EMI/RFI
- 1. The luminaire and associated on-board circuitry must meet Class A emission limits referred in Federal Communications Commission (FCC) Title 47, Subpart B, Section 15 Non-Consumer requirements for EMI/RFI Emissions.
- m. Manufacturer Criteria
- 1. Manufacturers shall be firms regularly engaged in the manufacture of recessed lighting fixtures of types and ratings required, who have a service organization in the continental US, and whose products have been satisfactorily used in similar service for not less than 5 years. The manufacture of the fixtures shall comply with the provisions of all applicable code and standards. All fixtures shall be tested before shipping.
 - 2. Photometric & Colorimetric Performance
 - a. Photometric
 - 1. Minimum initial delivered luminaire lumens
 - a. Identify each type of fixture and the expected delivered luminaire lumens.
 - 2. Minimum Luminaire Efficacy (LE) or Luminaire Efficacy Rating (LER)
 - a. Energy Star and DLC certified products are a source of potentially acceptable luminous efficacy levels.
- o. Colorimetric
- 1. Correlated Color Temperature (CCT): 3500K.
 - 2. Acceptable tolerances as provided in ANSI C78.377-2015 (LED)
 - 3. Color Rendering Index (CRI) [Ra] ≥ 80 with a positive R9 value
 - 4. Color shift of no less than $\Delta u'v' < 0.007$ during the warranty period

D. EXECUTION

3.1 INSTALLATION

- A. Lighting fixtures: Set level, plumb, and square with ceilings and walls. Install lamps in each fixture.
 - 1. Install as indicated on construction drawings.

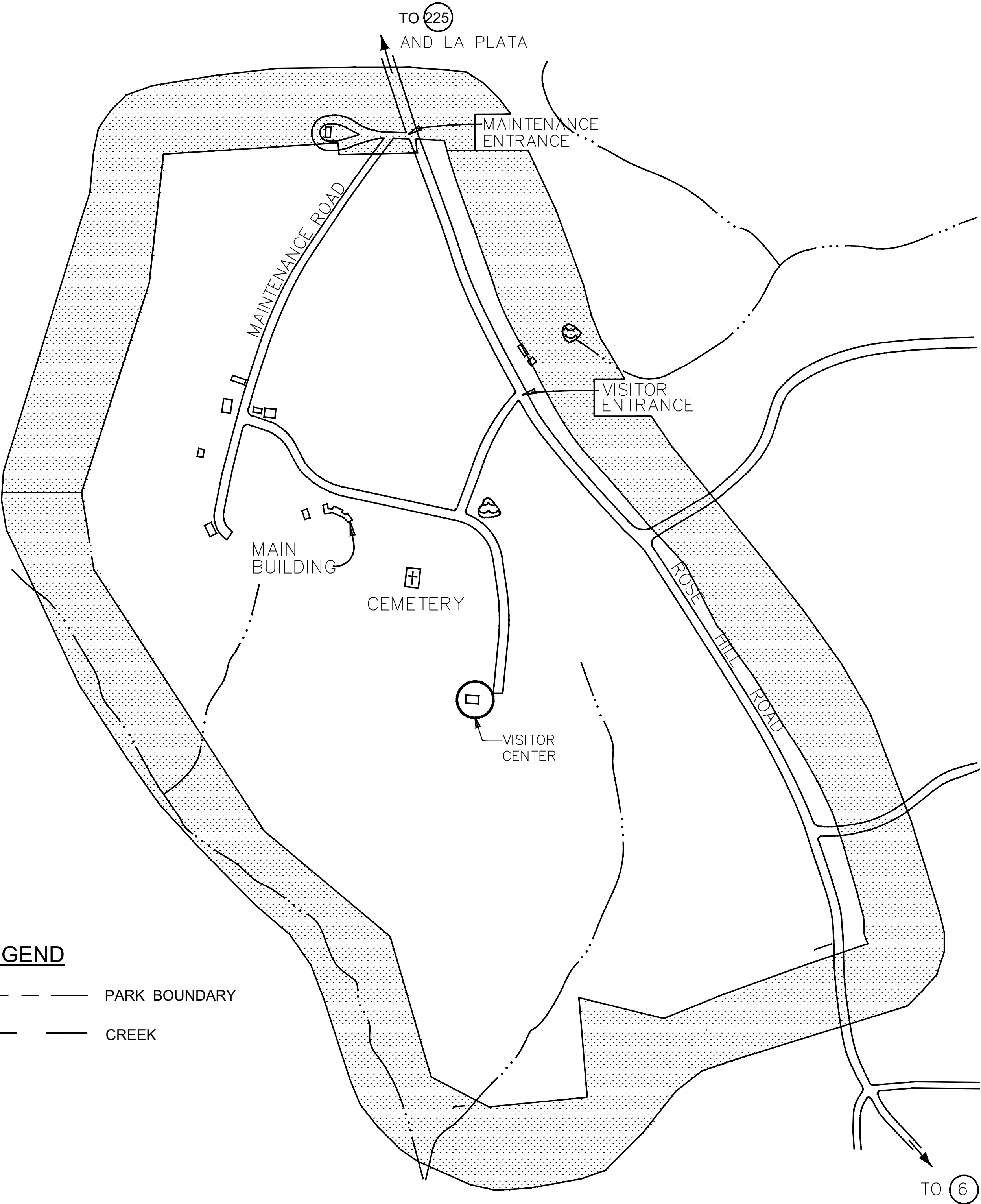
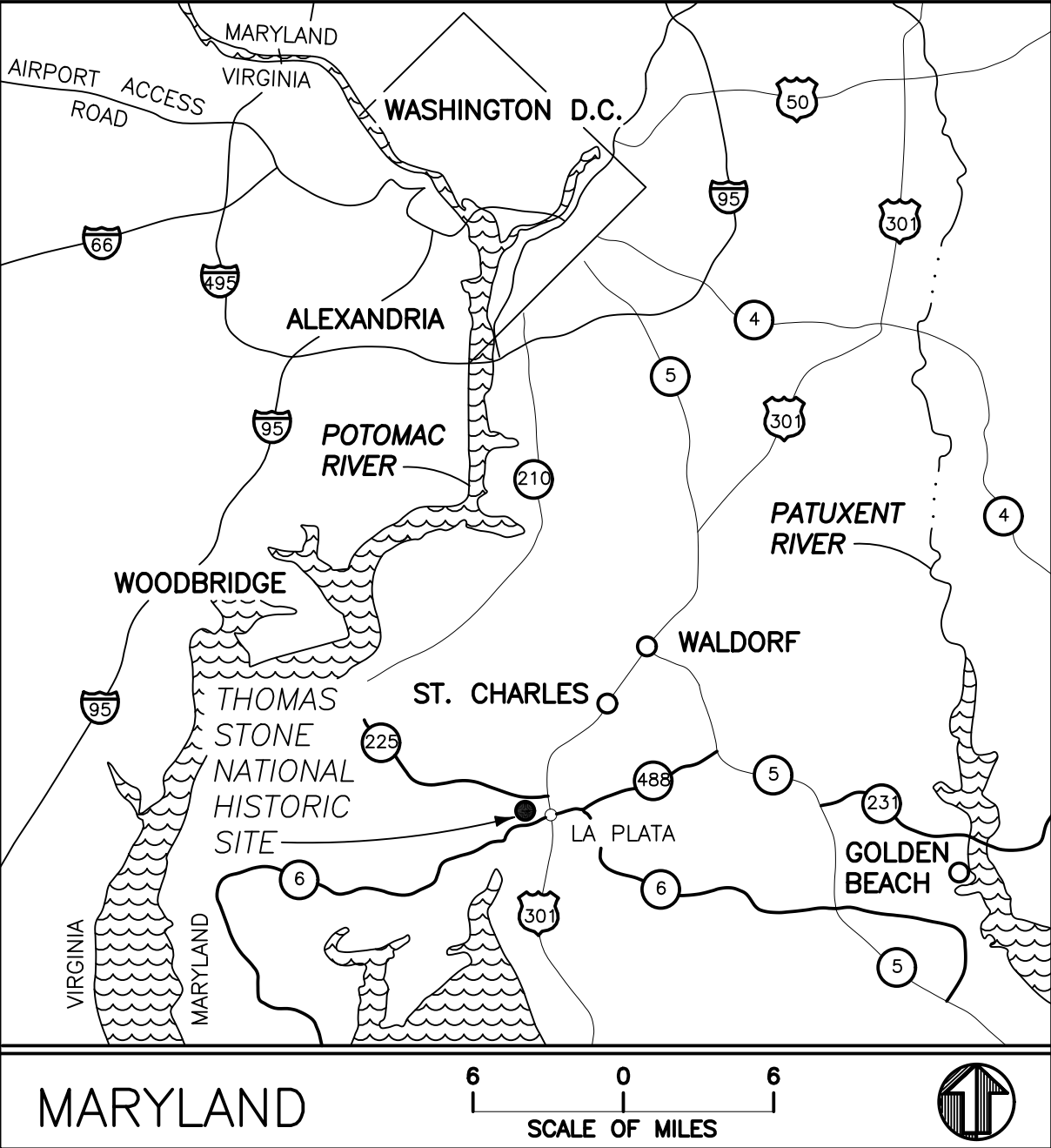
END OF SECTION 265100

RENOVATE VISITOR CENTER RESTROOMS

PMIS No. 303931

LIST OF DRAWINGS

- COVER SHEET
- A1 VISITOR CENTER REST ROOMS DEMO AND NEW PLAN
- A2 VISITOR CENTER REST ROOMS INTERIOR ELEVATIONS



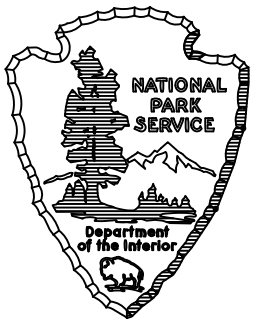
LEGEND

- PARK BOUNDARY
- CREEK

THOMAS STONE NATIONAL HISTORIC SITE

6655 ROSE HILL RD
PORT TOBACCO, MARYLAND

REV	DATE	ISSUES/REVISIONS DESCRIPTION
1	MAR2025	ISSUE FOR BID
2	YYMMDD	
3	YYMMDD	
4	YYMMDD	
5	YYMMDD	
6	YYMMDD	



CONSTRUCTION DRAWINGS

UNITED STATES
DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE
NER HACE

TITLE OF SHEET COVER

LOCATION WITHIN PARK
VISITOR CENTER
NAME OF PARK
THOMAS STONE NATIONAL HISTORIC SITE
PORT TOBACCO, MD

DRAWING NO.
XXX
XXXXXX
PMIS/PKG NO.
303931
SHEET
1 OF **3**

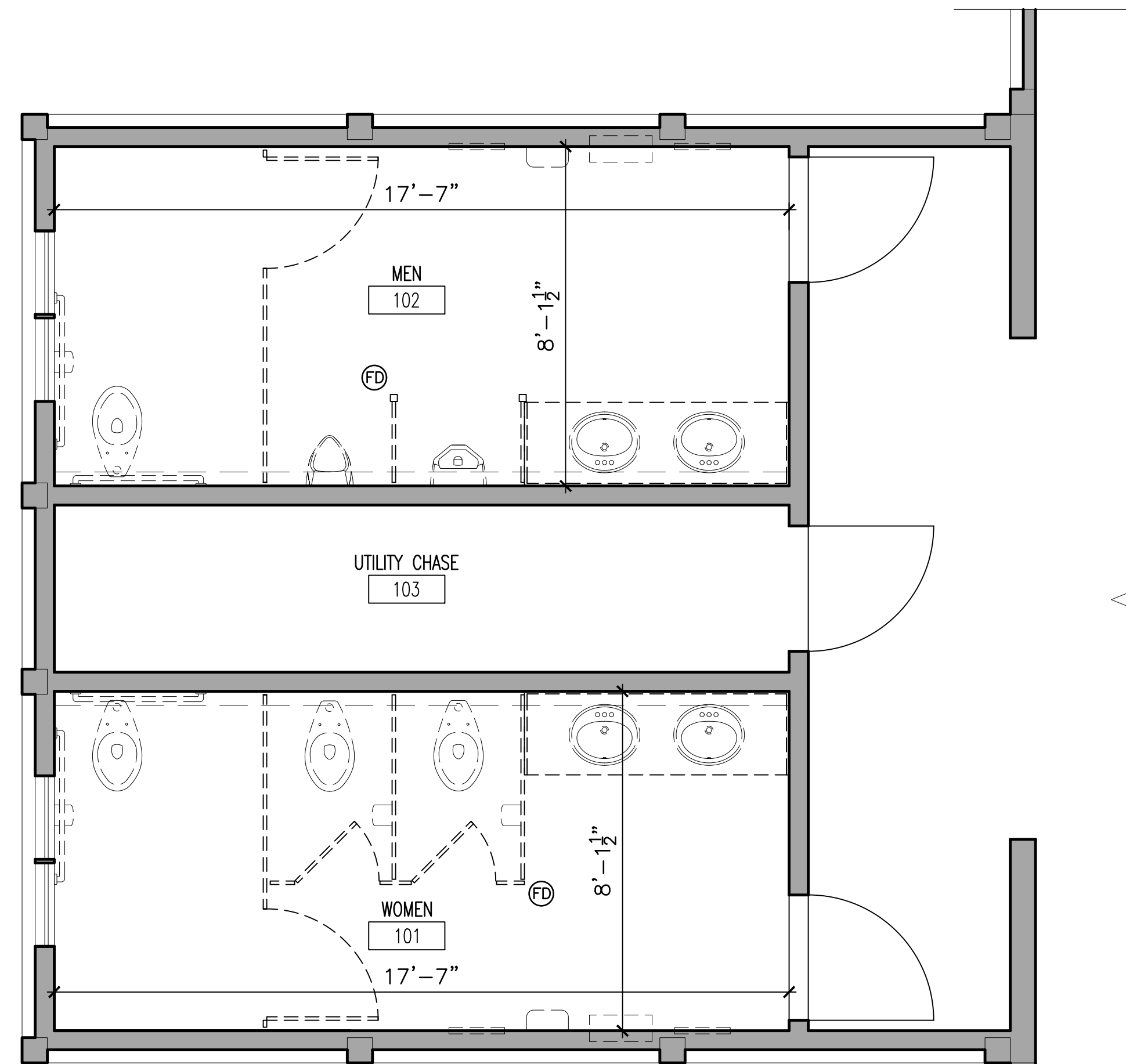
C:\Users\ghermon\OneDrive - DOW\Desktop\THST\CAD\THST_VC-restrooms_2025.dwg, 3/27/2025 8:58:35 AM



3 TYPICAL EXISTING CONDITIONS
A1.1 NO SCALE



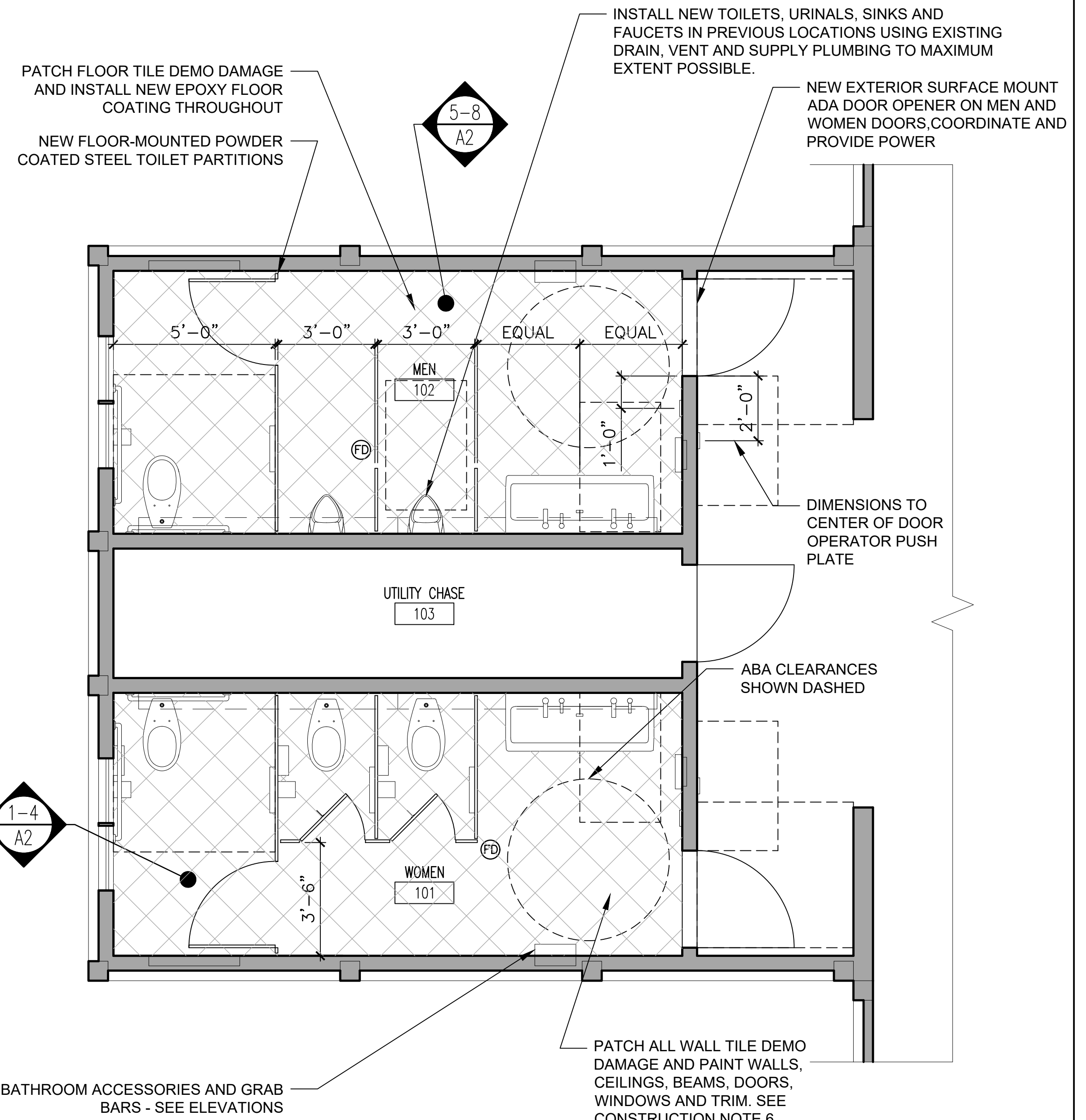
4 TYPICAL EXISTING CONDITIONS
A1.1 NO SCALE



1 DEMO PLAN - SEE DEMO NOTES
A1.1 3/8"=1'-0"

DEMO NOTES:

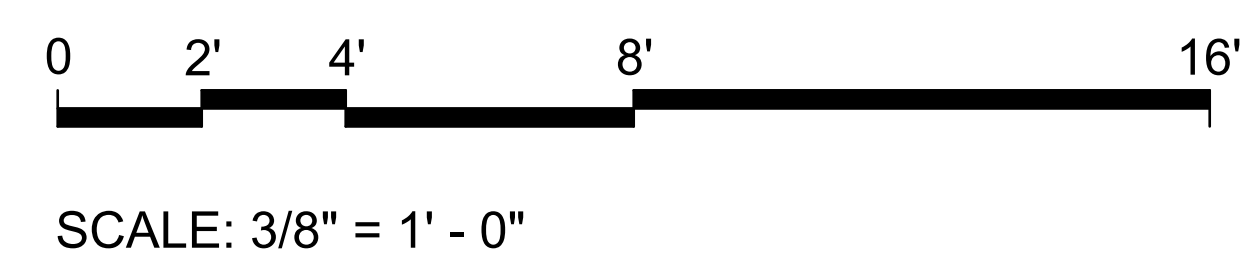
- LIMIT OF WORK IS WITHIN THE EXISTING WALLS OF THE MEN'S RESTROOM, WOMEN'S RESTROOM, AND THE UTILITY CHASE AT THE VISITOR CENTER AT THOMAS STONE NATIONAL HISTORIC SITE.
- IN BOTH RESTROOMS, DEMO COVE LIGHTING, HAND DRYERS, PAPER TOWEL AND SEAT COVER DISPENSERS, WASTE RECEPTACLES, TOILET PARTITIONS, WALL TILE, FLOOR TILE, SINK COUNTERS, SINKS, FAUCETS, URINALS, GRAB BARS, AND TOILETS.
- NEW LIGHTING, TOILET PARTITIONS, URINALS, AND TOILETS, WILL BE INSTALLED IN OR NEAR EXISTING LOCATIONS.
- DOORS, WINDOWS, ASSOCIATED FINISH TRIM, ELECTRICAL OUTLETS, FIRE ALARM DEVICES, AND TOILET EXHAUST FAN DUCTWORK AND DIFFUSER TO REMAIN.



2 NEW PLAN
A1.1 3/8"=1'-0"

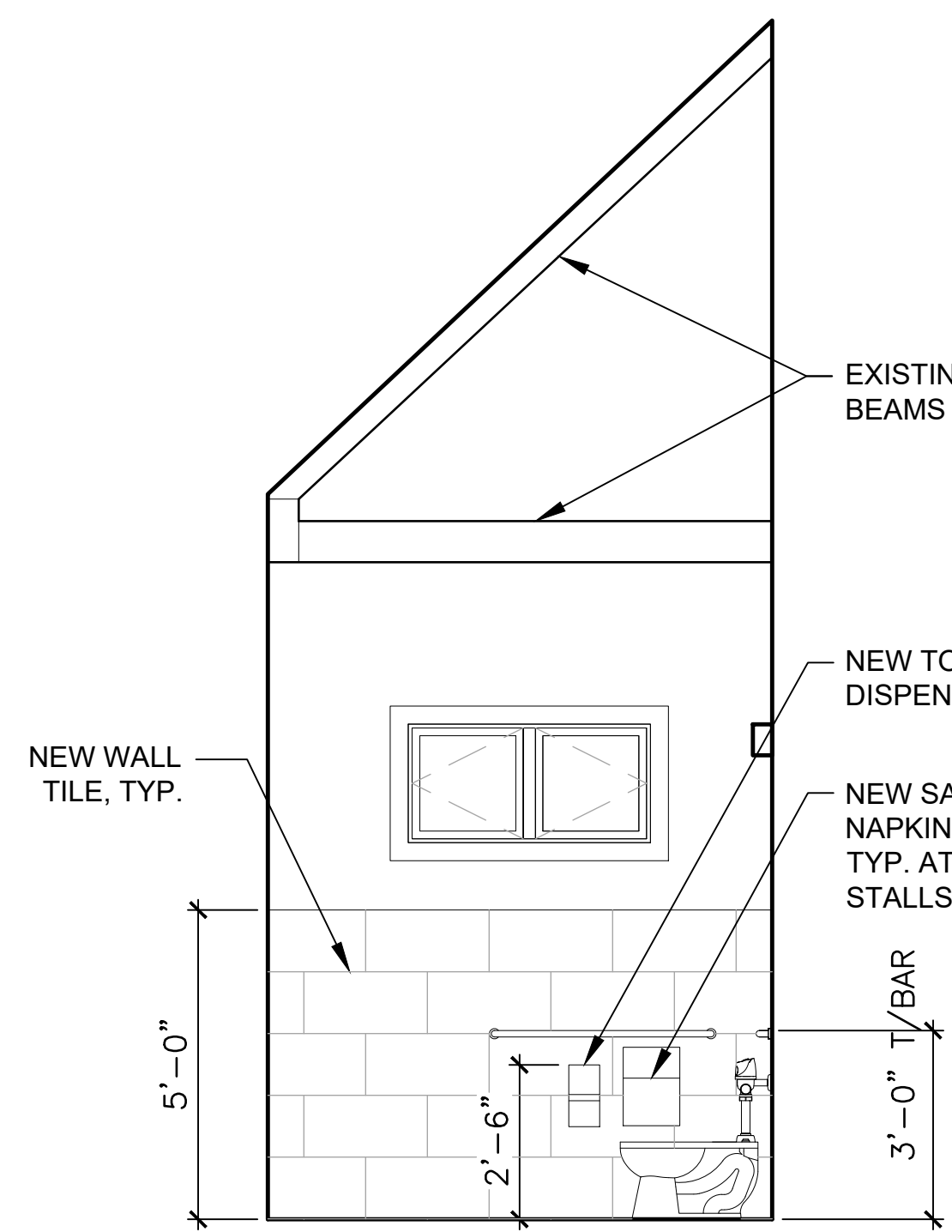
CONSTRUCTION NOTES:

- PLAN NOTES AND DIMENSIONS ARE TYPICAL FOR BOTH MEN AND WOMEN REST ROOMS.
- SEE SPECIFICATIONS FOR INFORMATION ON NOTED FIXTURES AND FINISHES.
- LIMIT WORK IN UTILITY CHASE TO THAT REQUIRED FOR PLUMBING AND ELECTRICAL CONNECTIONS.
- PROVIDE PAPER TOILET SEAT COVER DISPENSERS AND TOILET PAPER DISPENSERS IN ALL STALLS.
- PROVIDE SANITARY DISPOSAL RECEPTACLES IN WOMEN'S STALLS.
- ANY LARGE SECTIONS OF GYPSUM WALL BOARD REMOVED DURING DEMO OF TILE SHALL BE REPLACED WITH THICKNESS AND TYPE OF BOARD TO MATCH EXISTING.

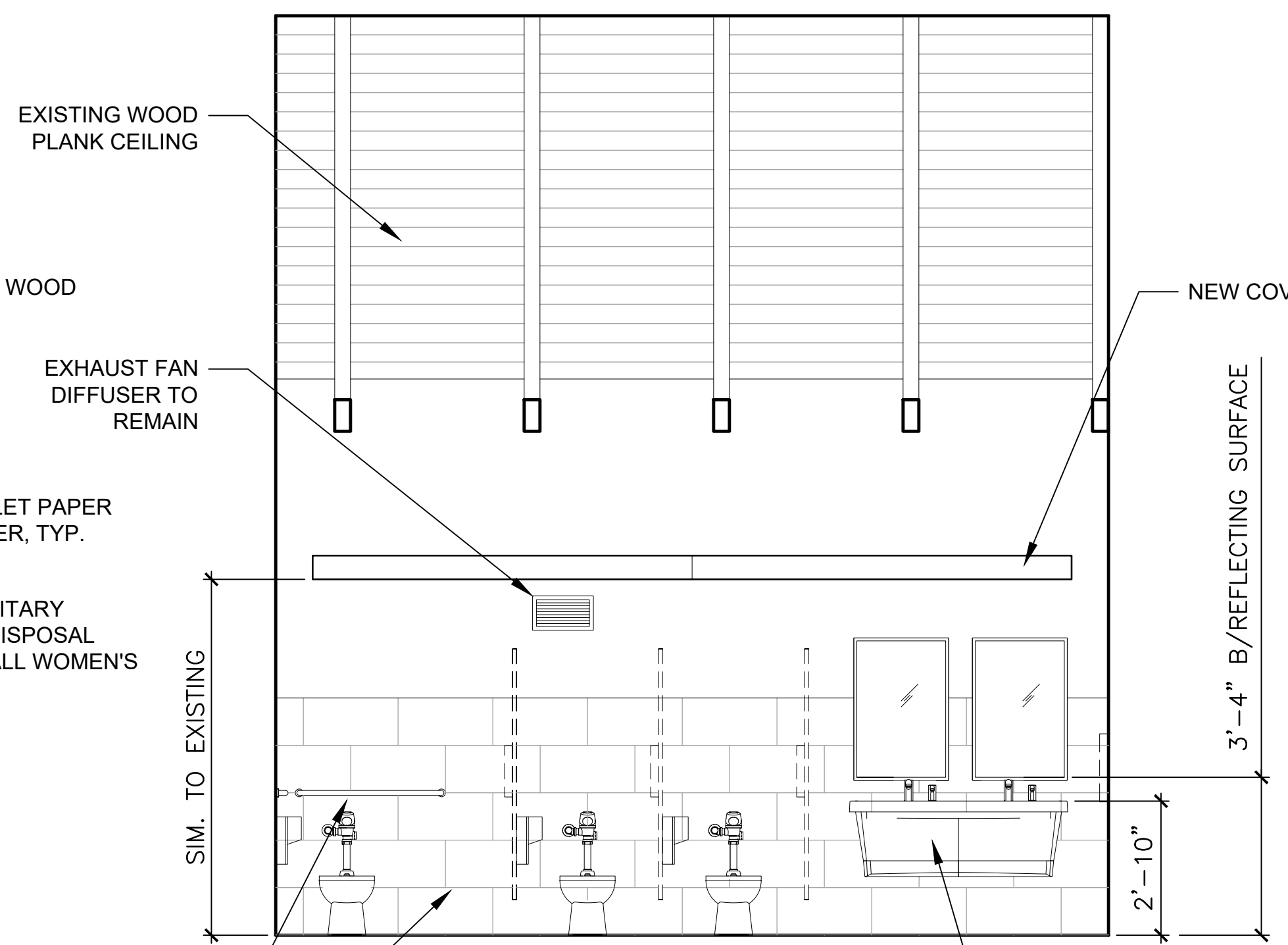


DESIGNED: GAD GH	SUB SHEET NO. A1	TITLE OF SHEET VISITOR CENTER REST ROOMS DEMOLITION AND NEW PLANS	DRAWING NO. XXX
TECH. REVIEW:		THOMAS STONE NATIONAL HISTORICAL SITE PORT TOBACCO, MD	PMIS/PKG NO. 303931
DATE: MAR2025			SHEET 2 OF 3

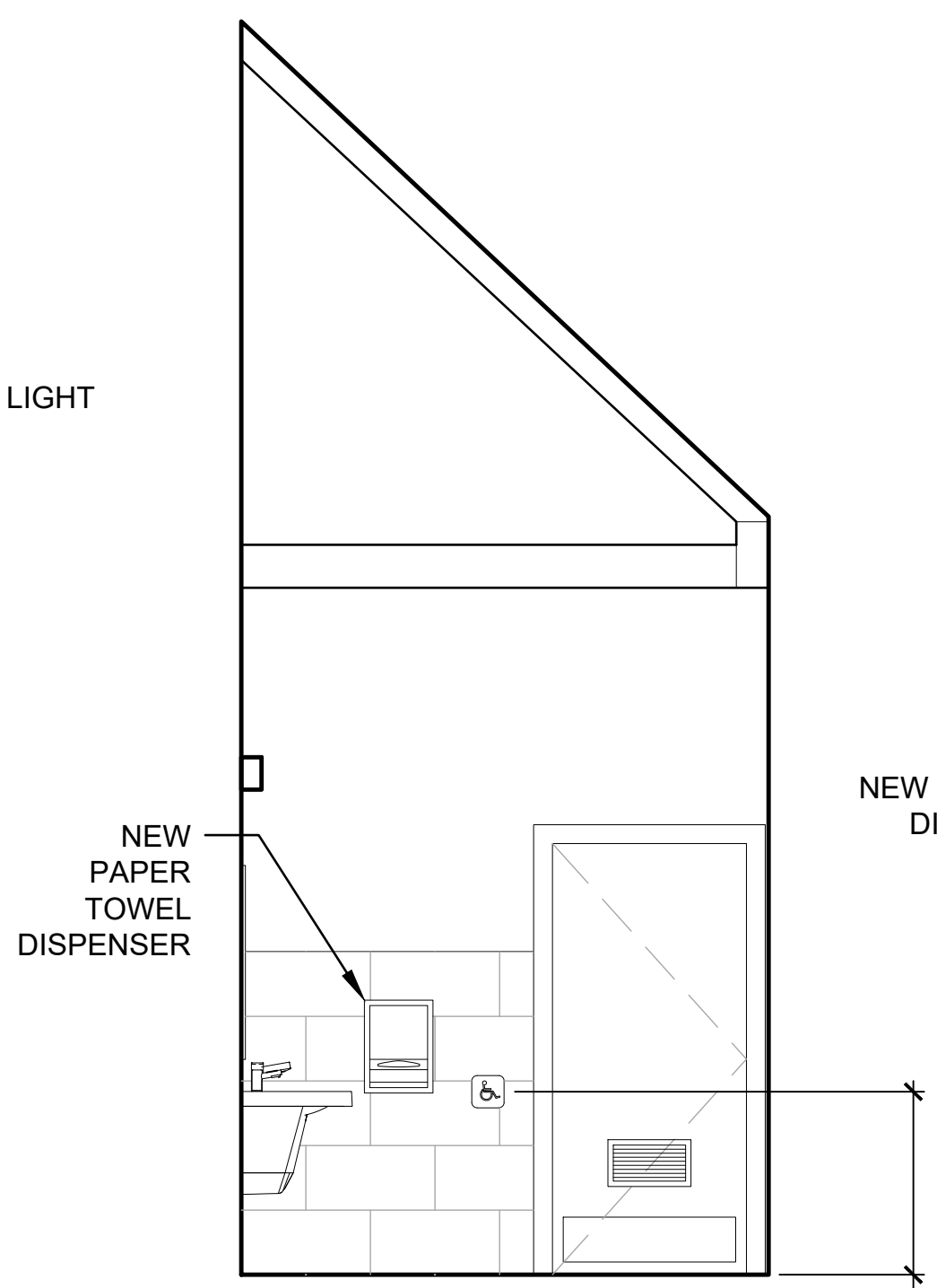
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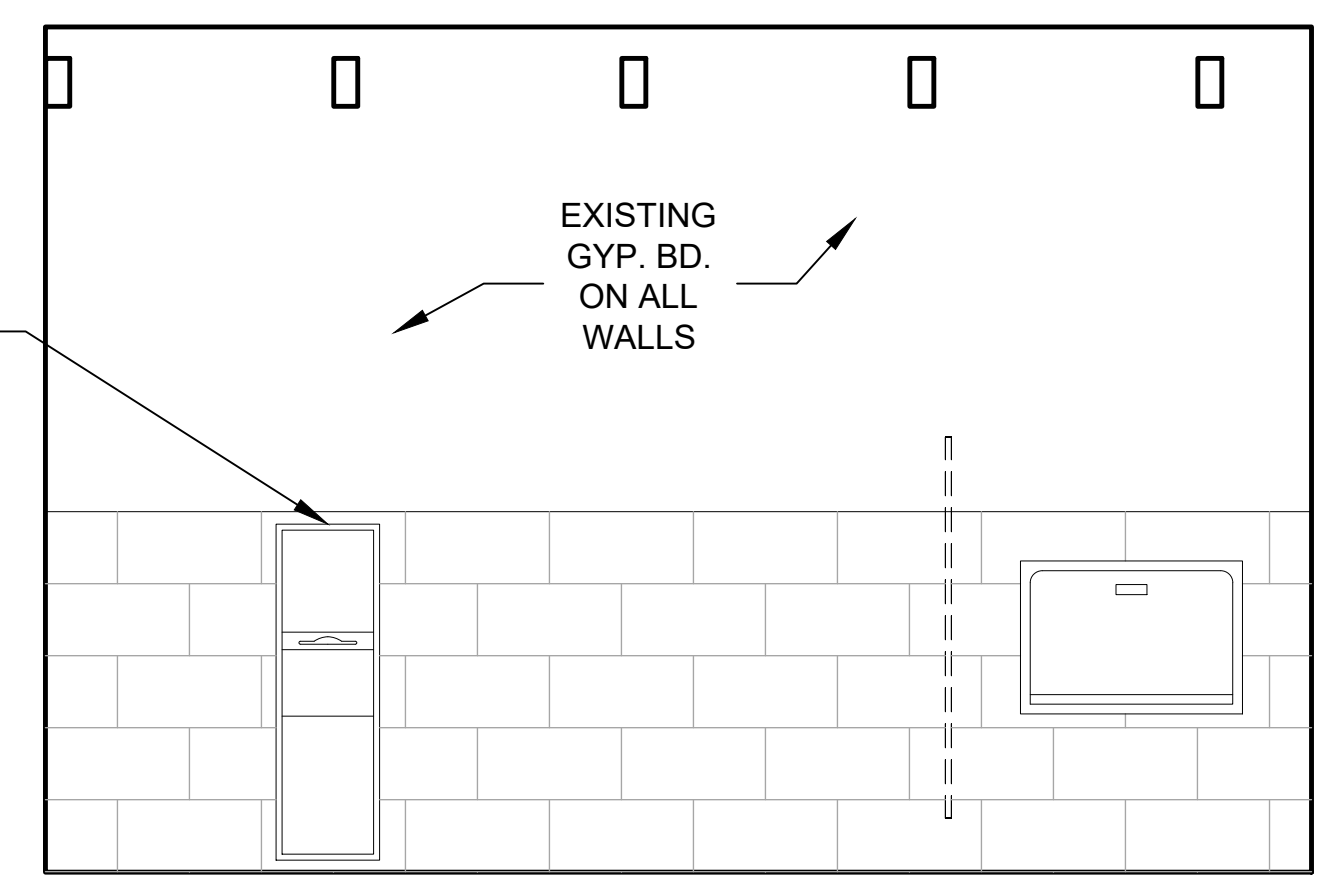
1 01 WOMENS - WEST
A1.1 3/8"=1'-0"



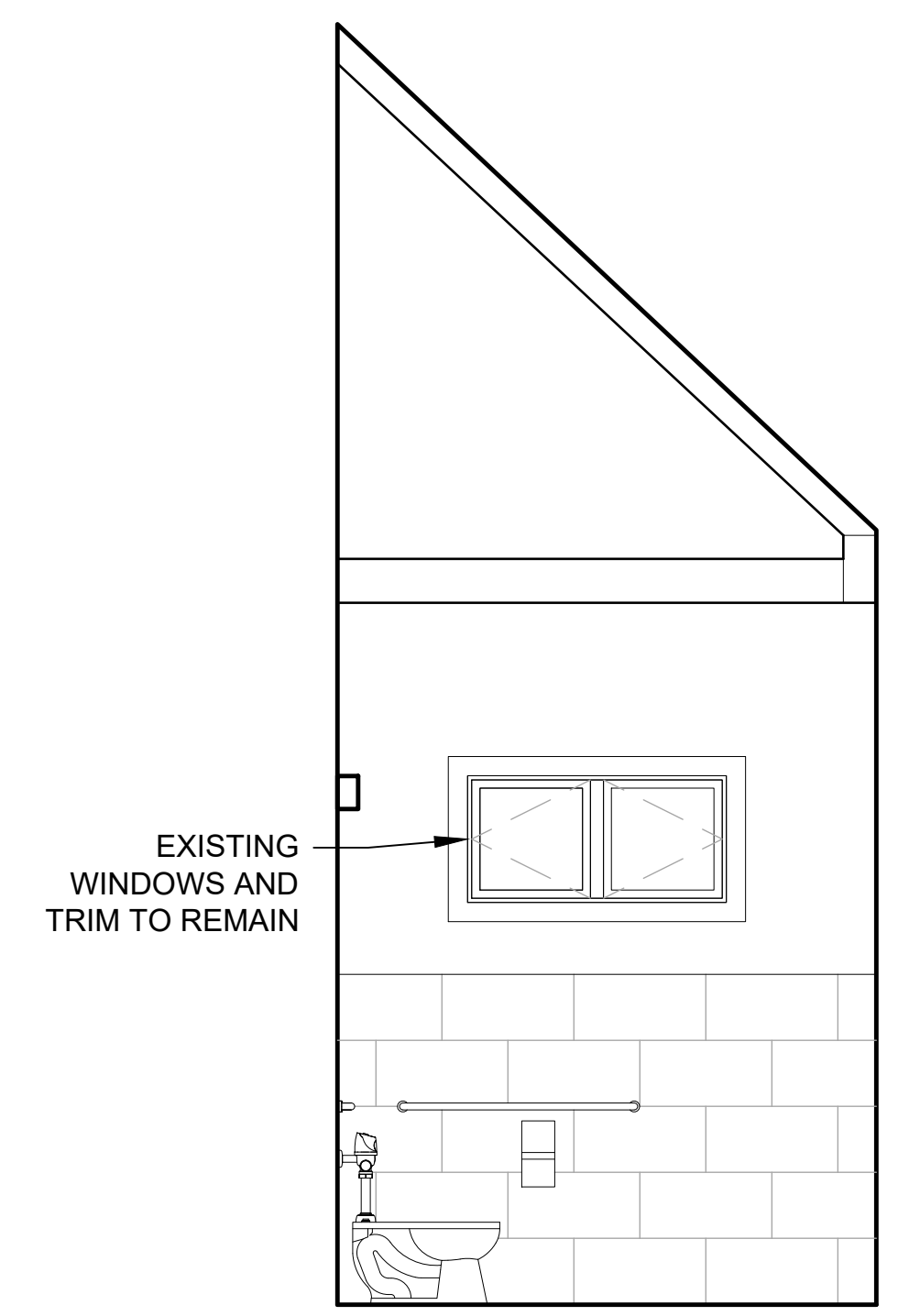
2 01 WOMENS - NORTH
A1.1 3/8"=1'-0"



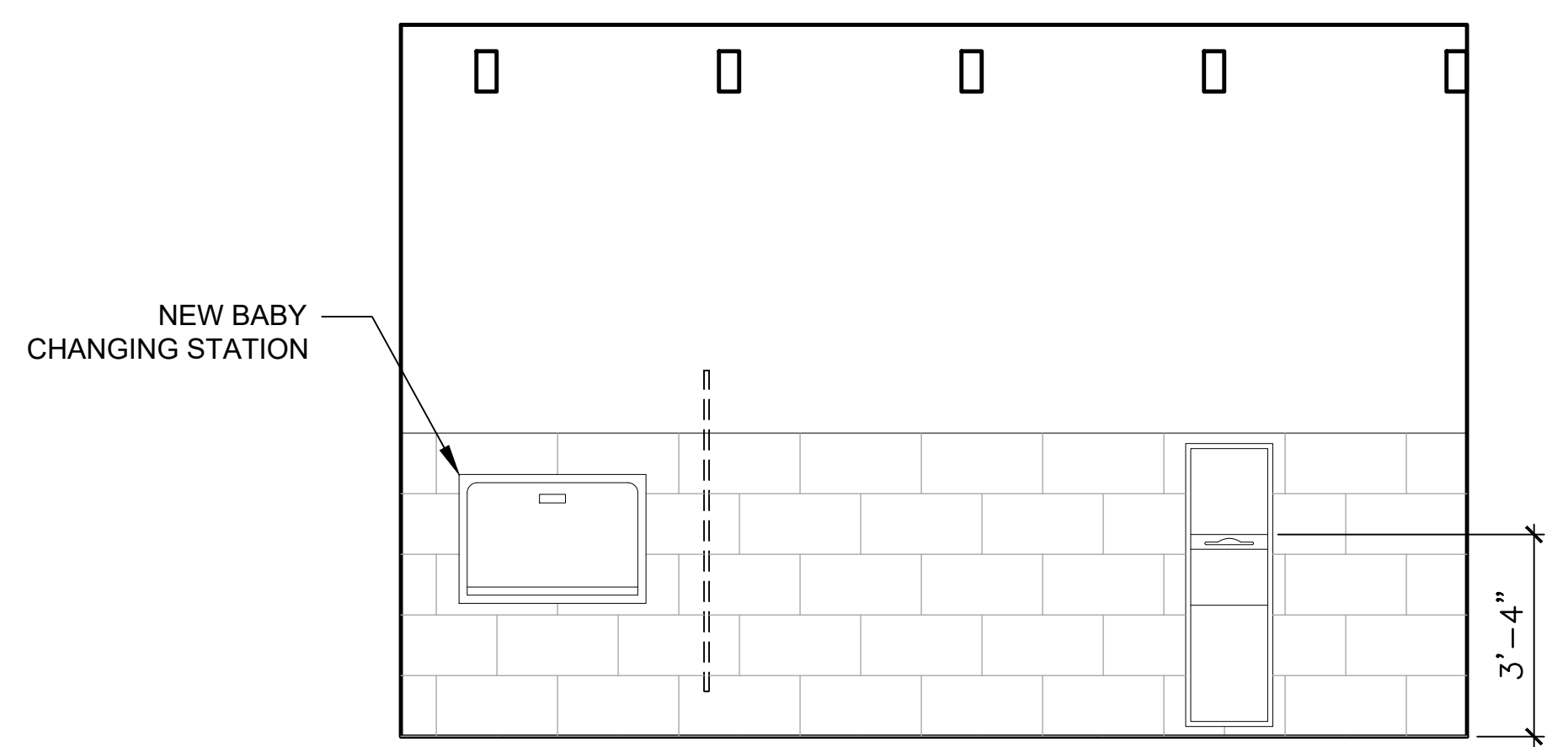
3 01 WOMENS - EAST
A1.1 3/8"=1'-0"



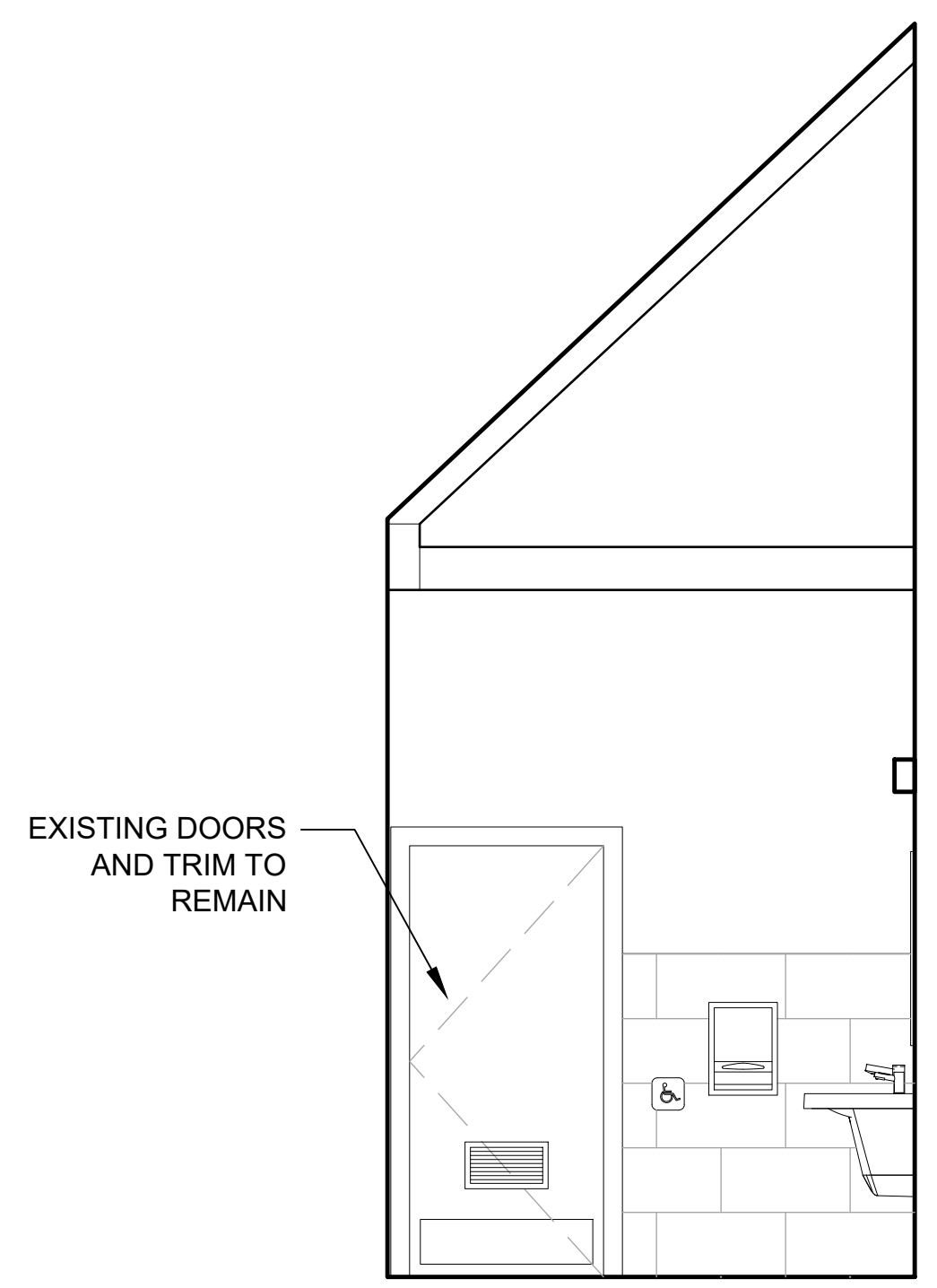
4 01 WOMENS - SOUTH
A1.1 3/8"=1'-0"



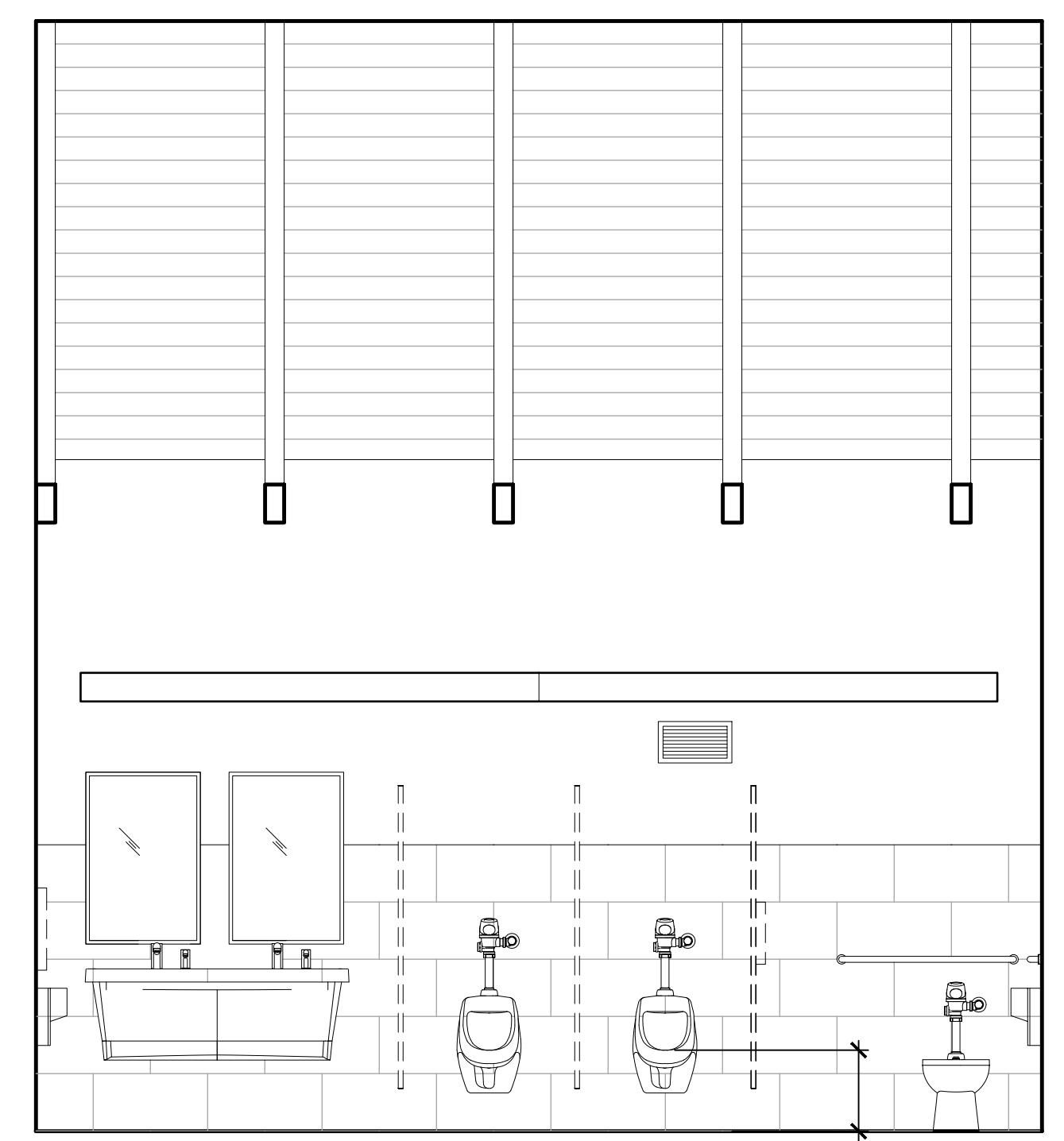
5 02 MENS - WEST
A1.1 3/8"=1'-0"



6 02 MENS - NORTH
A1.1 3/8"=1'-0"

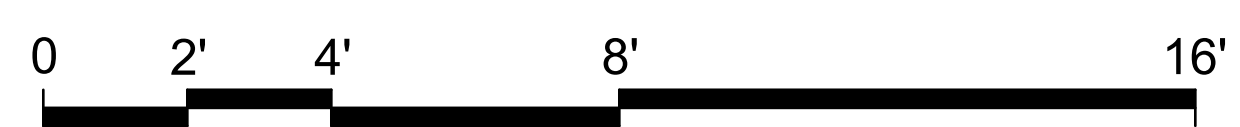


7 02 MENS - EAST
A1.1 3/8"=1'-0"



8 02 MENS - SOUTH
A1.1 3/8"=1'-0"

- NOTES:
1. ALL PLUMBING FIXTURES, ACCESSORIES, AND CLEARANCES SHALL COMPLY WITH ARCHITECTURAL BARRIERS ACT ACCESSIBILITY STANDARDS.
 2. NOTES AND DIMENSIONS ON DRAWINGS ARE SIMILAR FOR BOTH MEN AND WOMEN REST ROOMS UNLESS NOTED OTHERWISE.
 3. PAINT ALL EXISTING PAINTED SURFACES.



SCALE: 3/8" = 1' - 0"

DESIGNED: GAD GH	SUB SHEET NO. A2	TITLE OF SHEET VISITOR CENTER REST ROOMS INTERIOR ELEVATIONS	DRAWING NO. XXX
TECH. REVIEW:		THOMAS STONE NATIONAL HISTORICAL SITE PORT TOBACCO, MD	XXXXXX
DATE: MAR2025			PMIS/PKG NO. 303931
			SHEET 3 OF 3

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