



## **PROTECTION OF HISTORIC FEATURES**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. Includes (but Is Not Necessarily Limited to):
  - 1. Protection of all historic features to remain from damage due to construction activities.
  - 2. Cataloguing, removal and storage of all historic features indicated or as required to accommodate new construction.

#### **1.2 REFERENCES**

- A. Preservation Tech Note. Temporary Protection Number 2, "Specifying Temporary Protection of Historic Interiors During Construction and Repair", National Park Service, Preservation Assistance Division, P.O. Box 37127, Washington DC 20013.
- B. NFPA 241. Safeguarding Building Construction and Demolition Operations, National Fire Protection Agency, Quincy, MA.

#### **1.3 DEFINITIONS**

- A. "Historic features" are defined as those materials, finishes, components and areas identified as significant in the Historic Structure Report, and in this case, are indicated to remain in place, or to be removed and reinstalled as a part of the work.
- B. "Salvage Features" are defined as any historic feature to be removed from the existing construction and to be retained, repaired and/or modified for reinstallation and potential reuse.
- C. "Off-Site Facility" is defined as any storage facility to be provided by the contractor or any subcontractor for storage of salvage features.
- D. "Primary Path of Construction Travel" is defined as those areas that will require a high level of protection.
- E. "Secondary Path of Construction Travel" is defined as those areas required for access to construction procedures.
- F. "Artifact Log" is defined as the log form supplied by the contractor and approved by the Architect for cataloging of salvage features.



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**1.4 QUALITY ASSURANCE**

- A. Contractor shall recognize the value and significance of the complex and exercise special care during the work to ensure that existing buildings, details, materials and finishes which are to remain are not damaged by the work being performed. Damage is to be prevented: replacement is not an equivalent treatment.
- B. Contractor shall be responsible for protection of all existing materials and components to remain in place or be salvaged throughout the duration of construction. Extent of protection is to cover all historic features to remain that are in the vicinity of construction activities, or may be harmed by the movement of materials through the building, whether specifically called out on the drawings, or not. All questionable protection requirements should be identified for Architect's review. In the event of damage, such items shall be repaired or replaced by the contractor at his expense, to the satisfaction of the Architect and Owner.
- C. The contractor responsible for the repair or rehabilitation of salvaged features shall also be responsible for the cataloging, disassembly, storage and reinstallation of the features.
- D. Protection is to be secured adequately so as to maintain a safe environment for workers throughout the duration of the project.

**1.5 SUBMITTALS**

- A. Submit contractor qualifications as listed in Quality Assurance section above.
- B. Work Description. Submit work description detailing proposed methods and operations for cataloging, removal of features, and transportation of items to off-site storage, protection of features in storage, and protection of features to remain on site.
- C. Artifact Log. Submit sample artifact log prior to commencement of the work. Submit completed artifact log at the completion of feature removal from the building, and periodically as the work progresses.
- D. Off-site Storage Facilities. Submit detailed description of building and/or other areas proposed for storage of removed historic features. Include location, size, physical attributes, security techniques and procedures and other pertinent information relating to the storage of salvaged features.
- E. Shop Drawings. Submit complete set of shop drawings recording on elevations or plans the location, configuration and description of any features removed for salvage that will require reconstruction in its original location. Include location of features, joint locations, size, spacing, surface mounted features) materials, conditions and all dimensions so that wall, floor or ceiling can be reconstructed in its entirety. Minimum scale 1/4" = 1'-0". Existing construction drawings may be used as base sheets for shop drawings.



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**1.6 SITE CONDITIONS**

- A. Coordinate the performance of work of this section with related or adjacent work. Removal and protection of items shall be completed prior to commencement of demolition or new construction activities in each area. At a minimum, install protection in its entirety for a given floor or area prior to commencement of any demolition activities on that given floor or area.
- B. At the end of each working day, or during inclement weather, cover work exposed to weather with waterproof coverings, securely anchored.
- C. Protection of historic features shall remain in place for the duration of the entire project, unless determined otherwise by the Owner.

**PART 2 -PRODUCTS**

**2.1 SALVAGE**

- A. Carefully catalog, label, disassemble, transport and store salvage features using submitted and approved methods.

**2.2 PROTECTION MATERIALS**

- A. Polyethylene sheets: 4 mil. (general protection purposes)
- B. Lumber: Species to be selected by contractor, sizes to fit field conditions. All lumber to be fire retardant. Lumber shall not be in direct contact with an historic feature.
- C. Plywood: 1/2 inch, 3/4 inch or 1 inch, fire retardant as required. For “hard” protection at floors and selected features; shall not be in direct contact with an historic feature.
- D. Soft Fiberboard: Homasote Company, Box 7240, West Trenton, NJ 08628.
  - 1. 1/2 inch Homasote 440.
  - 2. 1/2 inch Homasote NCFR for applications requiring fire ratings.
- E. Neoprene: 1/4 inch or 1/2 inch strips, stock lengths.
- F. Polyurethane foam sheets: 2" and 4" thick, as required, and flexible wraps, as required.
- G. Papers: Brown paper: Kraft paper; permeable wrap: “Tyvek”
- H. Preservation tape: 3M Scotch brand, number 4811.
- I. Accessories: Fasteners, nails, screws, bolts, anchors or other devices required to complete installation, sizes as required, but shall not be in direct contact with a historic feature.



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**2.3 OFF-SITE FACILITY REQUIREMENTS**

- A. Size: Furnish off-site facility of sufficient size and capacity to store and retrieve salvage features. More than one facility can be provided as long as all physical requirements listed below are met for each facility.
- B. Physical Requirements:
1. Adequate floor loading capacity to support salvage features.
  2. Covered loading and unloading area to allow for transport of features without exposure to inclement weather conditions.
  3. Temperature and humidity. Maintain ambient temperature from a minimum of 45 degrees F to a maximum of 100 degrees F. Maintain relative humidity between 20 percent and 80 percent. Climate control is not required if these conditions can be met. Configure space to allow for adequate ventilation of stored features. Provide mechanical devices to circulate air if natural ventilation is inadequate.
  4. Artificial light. Provide adequate artificial light to allow for proper handling of features and for potential examination of features while being stored.
  5. Sunlight. Provide adequate protection from sunlight to prevent ultraviolet damage to stored features.
  6. Water protection. Protect stored features and packing materials from exposure to water~ water vapor or high levels of humidity.
  7. Vermin control. Protect all stored features from vermin and pests.
  8. Fire protection. Storage space must have a functioning smoke alarm. Contractor may be required to have a fire detection and notification system in place, depending of the space and the number and value of features being stored.
- C. Security: Facility must be bonded with sufficient bonding capacity to suitably replicate and replace all features stored within the space.

**PART 3- EXECUTION**

**3.1 GENERAL**

- A. Historic Features to remain in-situ:
1. Install protection in its entirety before commencement of demolition or other work that may harm historic features.



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2. Protect all historic features to remain in place during construction that may be damaged by construction activities. In the event of new damage, contractor is to notify the architect and owner immediately as to the nature and extent of damage and the proposed method for repair. Contractor shall be responsible for repairs and replacement of newly damaged items to the satisfaction of the architect and owner, at no additional cost to the owner. Be aware that the inherent value of an historic original feature is higher than the value of a modern replication of that feature.
  3. Do not attach protection materials directly to historic features.
  4. Secure protection adequately so as to maintain a safe environment for workers and other individuals using the building throughout the duration of the project.
- B. Features to be removed for Salvage:
1. Catalog, label, disassemble, transport and store historic features which have been identified for removal. Contractor is responsible for handling, transporting and storage of the items in the storage facility.
  2. Catalog all salvage features that have been removed on an artifact log. At a minimum, document feature type, unique number, size, configuration, quantity, condition, original location, disposition and location in storage.
  3. Store all salvage features in a neat, orderly fashion to allow for access and retrieval. Store like type features together in groups. Store particularly fragile features in a manner to prevent damage while in storage.

### **3.2 PREPARATION**

- A. Remove all debris and impediments to allow for full access as required to perform protection of historic features, and for demolition and construction. Protect all historic features from damage during the removal procedures as specified.
- B. Verify condition of the off-site facility to ensure that there is adequate capacity and access to store and retrieve salvage features.
- C. Transport items to the off-site facility as often as necessary to avoid stockpiling items on site.

### **3.3 INSTALLATION OF PROTECTION**

- A. General:
  1. Alternative methods to specified protection may be acceptable if equal or greater protection is provided. Submit alternate methods to Architect and Owner for review and approval. Do not proceed with alternate methods until approvals are secured.



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2. Protection shall be required to remain in place for the duration of the Project or repaired. Install materials to provide protection throughout the duration of the project. Protection may have to be removed during the project for access to protected features, etc. If protection is temporarily removed, reinstall after work is complete and maintain protection throughout the duration of the project, including repair and replacement due to wear and tear.
  3. Extent of protection covers all historic features that will remain during construction, whether specifically called out on the drawings or not. Temporary protection may be required in areas to perform specific work activities.
  4. All protection assemblies shall be self-supporting and self-bracing. Protection assemblies may be secured to floor protection as long as fasteners do not penetrate through the plywood layer.
- B. Floors, All Materials:
1. Primary path of construction travel. (Historic areas considered contributing). Defined as those areas that will experience a high level of traffic with finish materials that require a high level of protection care.
    - a. Vacuum floor surface of all loose dust and debris. Cover entire pathway surface with Kraft paper, then with fiberboard covered by 1 sheet of polyethylene and 1/2 inch plywood. Fasten edges to prevent slippage. Tape all polyethylene edges to create a watertight seal. Stagger edges of materials with joints below to provide a Uniform flush surface.
  2. Secondary path of construction travel. Defined as those areas required for access to perform construction procedures.
    - a. Vacuum floor surface of all loose dust and debris. Cover entire pathway surface with Kraft paper, then with 1/2 inch fiberboard and 1/2 inch plywood. Stagger edges of materials with joints below to provide uniform flush surface.
- C. Wall and wainscot surfaces in the path of construction travel in historic areas considered contributing. Defined as all other areas required for access to perform construction activities and typically includes painted plaster walls.
1. Cover walls with acid-free moisture permeable building paper, such as “Tyvec,” or equal, 1/2 inch “Homasote” board, or equal, and 1/2 inch plywood screwed to shoring braces. Provide neoprene pads glued to braces that are in contact with historic features. Locate braces out of the path of travel and out of construction areas to the greatest extent possible.
- D. Original plaster ceilings (contributing). Defined as those areas requiring restoration and/or patching and repair as a result of new work. Reference demolition drawings for the extent of original plaster ceilings to be protected and restored.



### **3.4 REMOVAL OF SALVAGE FEATURES**

- A. General:
1. Exercise extreme care in removing features for salvage and materials attached to historic features that are to remain.
  2. Unbolt bolted connections; leave any embedded connector undisturbed and in place.
  3. Unscrew screwed connections; leave embedded connector undisturbed and in place.
  4. Do not pry apart members whose finish will be damaged by chipping, crazing or cracking, or whose structural integrity will be compromised.
  5. Remove all nails from wood features from the backside. Drive nails through or pull from the back so that the head does not splinter the finish face.
  6. Remove items whole whenever possible. Where cuts are required, make cuts cleanly and with the proper tool at logical break points.
- B. Door Assemblies. Remove components in whole sections. Store door in frame together when both are removed for salvage or reinstallation. Store all hardware components together. Protect door frames to remain in place.
- C. Window Assemblies. Remove window sash and components in whole sections. Label all window assembly features. Store sash and frame together where both are removed for salvage or reinstallation.
- D. Light Fixtures. Remove light fixtures in whole units. Protect existing wiring if wiring will be reused. Wrap with Tyvek, pad with foam, and package in large corrugated cardboard moving boxes, or custom fabricated plywood crates.

### **3.5 CATALOGING OF SALVAGE FEATURES**

- A. General. Label features in a manner to permit identification of object and its original location and configuration. Contractor to submit proposed method for labeling and cataloging salvage features.
- B. Numbering and cataloging. Each item removed for salvage shall be given a unique catalog number which is to be marked on the feature in a permanent medium (e.g., permanent marker; inscription, or attached metal tag), and listed on the artifact log. Label the features on the backside or in another obscure location. Contractor to submit proposed artifact log.



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**3.6 STORAGE**

- A. Transport items to off-site storage facility. Store features in the same orientation as they are installed in the building. Store doors and windows upright.
- B. Organize features so that they are readily retrievable. Store like features together. All packaging and all features shall be labeled and keyed to a location plan.

**3.7 REINSTALLATION**

- A. Reinstall features removed for rehabilitation in their original location unless otherwise indicated.
- B. Contractor is responsible for proper inventorying and distribution to appropriate subcontractors of salvaged material for reinstallation. Chain of custody from removal to storage to reinstallation shall be noted and signed by responsible construction staff for each item.

END OF SECTION