FIRST AMERICAN TITLE BUILDING
5TH & MAIN
Santa Ana, California

Toll Brothers
4th & Main Project
Preservation Alternative Due Diligence Report
April 22, 2020
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prepared by:
DUNBAR ARCHITECTURE

PROJECT TEAM

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TABLE OF CONTENTS

PROJECT DESCRIPTION

Project Scope

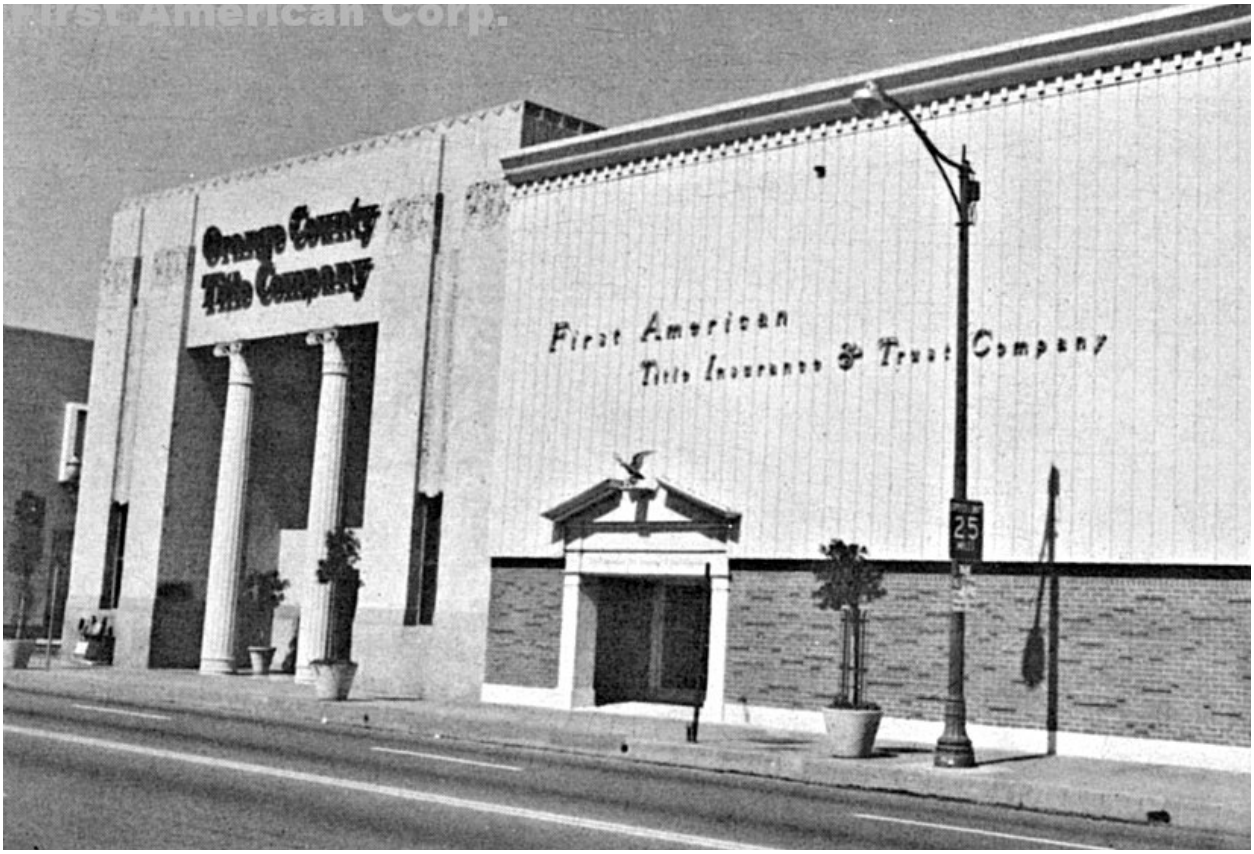
An Approved Preservation Alternative Project for a new mixed use residential and commercial development of the properties located at 114 East Fifth Street and 117 East Fifth Street seeks to retain the original façade of the First American Title Building located at the corner of 5th and Main Street in Santa Ana, California.

The Preservation Alternative Project, designed by MVE Architects for Toll Brothers Apartment Living, incorporates the facade and main entry of the original 1931 Art Deco building along Main Street and a portion of the building façade along 5th into the new ground floor retail plan as a double height space.

As a Condition of Approval for the project to move forward, the following report documents the due diligence to assess the feasibility of the City Approved Preservation Alternative project. Toll Brothers was tasked to hire preservation consultants to assess the condition of the facade and determine if it was structurally feasible to incorporate the two street facades into the new building complex.

This report will detail the team's approach to selectively remove portions of the facade in order to identify a) if the original building exterior was still intact b) if intact, what was the general state of the exterior c) how the current, non-historic facade system was attached to the building and d) if the original facade could be structurally incorporated into the new design of the building complex.

The First American Title Building, originally constructed in 1931, was designed with a combination of Art Deco and Classic Revival style façade and interiors that underwent extensive remodeling in the 1960s and 1970s. Currently, a continuous metal siding above a brick base envelops the entire structure. Remnants of original exterior architectural detailing suggests that the 1931 façade may still be intact.



View of First American Title Building, Main Street elevation looking north.
photo ca 1963

PRESERVATION CONSULTING TEAM

Preservation Architect:

Dunbar Architecture is a full-service firm specializing in context inspired design solutions for existing and historic buildings, interiors, and sites.

Jen Dunbar, AIA LEEP AP

With nearly twenty years of experience, Jen has extensive professional knowledge in architecture and interior design with a focus on historic preservation, adaptive reuse, restoration, new additions to existing buildings, and new structures on historic sites. Her work ranges from residential and commercial projects to educational, cultural, and civic projects. After years working for award-winning architectural firms Pfeiffer Partners and Architectural Resources Group,

Jen started her own firm in 2018. She continues to lead her design teams to find compatible and appropriate solutions, breathing fresh new life into historic structures while finding a balance between modern design interventions and historic preservation.

Ceiling Restoration Project - Los Angeles Union Station
J.Dunbar as Senior Project Architect for Architectural Resources Group
Completed in 2017

Jen received her Master's in Architecture from Cal Poly Pomona with a concentration in Historic Preservation and exceeds the requirements of the Secretary of the Interior's Professional Qualification Standards in Architecture and Historic Architecture. She is a California Architect's Board accredited licensed architect and has served as the founding president of the West Hollywood Preservation Alliance. As a LEED accredited professional, she also advises and coordinates. sustainable design strategies.

Ashley Powell, AIA

With ten years of experience, Ashley is a California Architect's Board accredited licensed architect. She has worked on projects varying in type, scale and complexity on both new construction and historic rehabilitation projects. Ashley has the valuable combination of design accumen, technical documentation and attention to project details. Her project experience includes all phases of planning, documentation, and construction as well as design presentations and agency approvals. As a project manager, Ashley has developed a reputation for excellent client service.

PRESERVATION CONSULTING TEAM

Architectural Historian & Planning Consultant:

JM Research and Consulting (JMRC)

Jennifer Mermilliod, M.A. Principal Historian/Architectural Historian

With 19 years of experience, Jen is a highly qualified professional who has directed many large- scale and complex projects and has a firm grasp on the integration of preservation and planning. She has completed numerous projects ranging in size from a single property to over 2000 parcels. As an expert in her field, Jen also presents professionally, is widely published, and is highly regarded for her professional counsel and ability to balance multiple interests in the management of extremely high-level, sensitive projects.

Jen exceeds the Secretary of the Interior's Professional Qualifications Standards as a Historian and Architectural Historian based on her Master of Arts degree in history/historic preservation from the University of California, Riverside and 19 years of professional work in southern California. She has extensive experience in the entitlement and management of a variety of projects, including National Register and California Register nominations, local designations, large-scale surveys. Jen is fluent in regulatory compliance and proficient in applying eligibility criteria, analyzing impacts/effects and developing successful recommendations for design and mitigation.

The JMRC portfolio boasts a wide variety of notable projects, including the Victoria Avenue National Register Streetscape Restoration and award-winning Home Front at Camp Anza in Riverside, the Dhammakaya Retreat Center in Azusa, Bumann Ranch in Encinitas, and Marywood in Orange. Jen continues to partner with project teams and clients throughout the Southern California region in worthy projects and is on the leading edge of the identification, preservation, and reimagination of Modern architecture in current projects like the Prado Dam Bicentennial Mural, the historic Covina Bowl, and the City of Riverside's new Main Library.

PRESERVATION CONSULTING TEAM

Structural Engineer:

Structural Focus

David Cocke, S.E., F.SEI, F.ASCE, F.SEAOC

David Cocke, S.E. has been practicing Structural Engineering since 1981. He received his Bachelors from Virginia Tech and his Masters from San Jose State University. David founded Structural Focus in 2001 after 20 years at Degenkolb Engineers. He is a registered Structural Engineer in California and several other states, with expertise in seismic evaluation, historic preservation, retrofits and new design.

David is very involved in numerous professional associations. He joined the Earthquake Engineering Research Institute in 1992 and is a Charter Member of the Southern California Chapter, has served on the EERI Board of Directors and is the current President-Elect of the organization. David has served on the Board of Directors of numerous other organizations including the California Preservation Foundation, Pasadena Heritage, USC Architectural Guild, SEAONC, SEAOSC, and SEAOC, and is currently on the Board of Los Angeles Conservancy. He is also on the Board of Governors of the Structural Engineers Institute (SEI) of ASCE and is the Immediate Past President of that organization. Starting in 2007, David has served as the SEAOC appointed Alternate Structural Engineer Member on the California Historical Building Safety Board. In 2014, David was named to Los Angeles Mayor Eric Garcetti's Mayoral Seismic Safety Task Force to perform a year-long study of seismic risk in Los Angeles, resulting in the Mayor's Resilience by Design report. The focus of the study was to improve community resilience. The report included the basis for the recent Los Angeles' seismic retrofit ordinances – the strictest seismic retrofit ordinances in the nation.

A few of David's more notable projects include the Wallis Annenberg Center for the Performing Arts, Wilshire Boulevard Temple, Red Bull North American Headquarters, John Anson Ford Amphitheatre, DreamWorks Animation Lakeside Annex, Warner Bros. Post-Production Facility, Sony Pictures Akio Morita building, and the Culver Studios/Netflix campus expansion. David has been leading the effort to bring Back to Business (B2B), a building occupancy resumption program, to southern California. In 2013, his team worked with DreamWorks to establish southern California's first B2B in the City of Glendale. Now the team is partnering with a multitude of clients and cities throughout Southern California to establish their B2B programs.

PROJECT APPROACH

Initial Planning Meetings

An initial on-site visit on January 23, 2020 to the First American Title Building was attended by representatives of Dunbar Architecture, JM Research and Consulting, Structural Focus, Toll Brothers, MVE Architects, Englekirk Engineering, and American Wrecking (demolition subcontractor).

Review of the project plans and multiple conference calls with team members were made around this time to discuss strategy and issues related to the selective removal process.

Dunbar Architecture and JMRC Consulting provided draft specifications for the selective demolition process so that the contractors could familiarize themselves with the requirements of working with a historic building. These specifications included the following sections and are attached as **Appendix A**:

011500 - General Requirements for Work on Historic Buildings
013591 - Historic Treatment Procedures
024119 - Selective Demolition
Facade Removal Specifications

On February 2, 2020, a Draft Removal Package prepared by Dunbar Architecture was provided to Toll Brothers for review with the City. This package identified on plan and with photos a proposed systematic exploratory removal of the building facade for initial condition assessment. This package included the specifications along with the plan and photo diagrams and is attached as **Appendix B.**

Selective removal of the facade occured over two days and was monitored and observed by Dunbar Architecture and JMRC. The following section details that observation.

SITE OBSERVATION

A pre-construction meeting was held on onsite to review the selective demolition plan (Appendix B) and methods prior to initiation.

On March 16, 2020, selective removal of the vertical metal panel facade started at the bay furthest along 5th Street from the Main Street corner and adjacent to the side entry.

This location was selected as safe test location just beyond the limits of the Preservation Alternative in the event that the original exterior was either non-extant or severly damaged by the application of the current facade, or damaged by approved selective demolition methods.

In attendance were Dunbar Architecture, JM Research and Consulting, Toll Brothers, and City Planner. Members of the preservation community were invited and were able to watch from the sidewalk across the street beyond the construction zone.

The removal approach, performed by experienced technicians from American Wrecking and supervised by the company owner, was to first take off one to two vertical panels of the metal siding and determine attachment before further removal.

American Wrecking used a lift to access the length of the panelling from the sidewalk, which was closed off to pedestrians. A combination of rivets and tack welds were carefully removed to allow the panels to be pulled off by hand (see Appendix A - Facade Removal Specifications). Because the construction and assembly of the cornice at the top was still unknown at that time, the metal panels were cut off at that point.

The first large removal portion revealed that the original Art Deco detailing at the top of the engaged column of the building was still intact.

SITE OBSERVATION

The close-up views show the decorative feature at the engaged column capital.

The green iron structure shows how the metal panel facade was attached to the original building.

SITE OBSERVATION

Exploratory removal of a portion of the cornice revealed:

The cornice is molded plaster off-set from the top of the original building by approximately two feet and attached with iron framing.

Decorative dentils at the bottom of the cornice were styrofoam pieces glued to the face of the cornice.

SITE OBSERVATION

The next step was to determine the brick attachment along the base of the building. A small area was removed with powered hand tools. The removal revealed a single wythe applied directly to the face of the engaged column and infill at the previous window location.

The removal also revealed that the oringial granite base detail was removed to apply the brick facade.

SITE OBSERVATION

It was determined on site that the next step would be to move to the corner of the building and remove paneling at the estimated area of a smaller window with Art Deco detailing.

The removal revealed that the detailing was still in place. Work continued to take off the brick base and confirm that similar attachment and conditions matched the previous brick removal area.

Historic photos of the original building were constantly referenced on-site for removal locations and on-site decisions and evaluations.

SITE OBSERVATION

Removal of panels adjacent to the column and pediment along the Main Street facade, revealed intact Art Deco detailing at the window header and capital.

However, the corner of the building at the entry had been chipped off to apply the plaster column face.

The removal of panels above the pediment did not allow for assessment of the pediment assembly and attachment.

SITE OBSERVATION

A small area on the underside of the pediment was opened and revealed that the pediment was entirely made of formed plaster and supported off of the original building with green painted iron.

SITE OBSERVATION

The final removal location was along Main Street on the right of the main entry. The goal of this removal location was to identify the end of the original building and determine if the original window and detailing were still intact.

The removal revealed that the window detailing was still there and the window was infilled with brick like the other two locations on the corner.

Heavy chipping was found at the building corner where a newer concrete masonry unit (CMU) wall was directly attached. No expansion joints were seen at this location.

RECOMMENDATIONS/ CONCLUSION

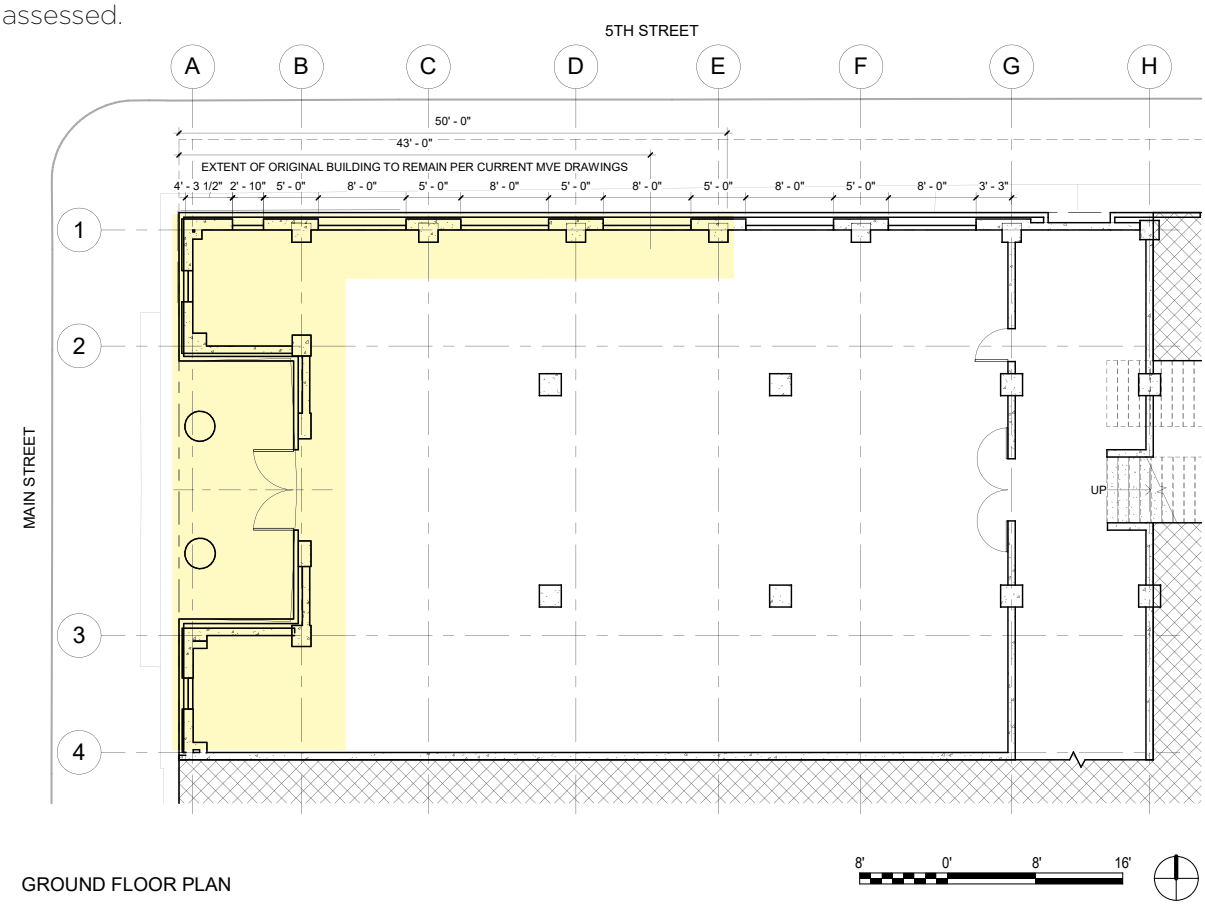
It is the preservation team's observation that the Art Deco facade of the building maintains enough character-defining features to support the exterior rehabilitation. Additionally, as stated in Structural Focus's draft letter (see Appendix C), it is believed that the "original structure and exterior facade is in good structural condition and can be feasibly and safely incorporated into the proposed project," (p.3).

The preservation team , in consultation with the whole project team, has discussed recommendations for the extent of the existing structure to remain. Structural Focus has provided detailed recommendations for two approaches in the draft letter. There may be additional approaches as the project proceeds.

Due to the recessed entry, the team recommends that one complete structural bay should remain from basement to roof. This area can be seen between grid lines A and B on the diagrammatic building plan shown below.

It is also the team's recommendation that the extent of the facade on 5th street extends so that the end of the building is cut past the end of an exterior engaged column. This may exceed the city's fifty foot approved cut-off location and is shown on the diagram below extending past gridline E.

Final removal of the non-historic facade elements will continue to follow updated guidelines in the Draft Removal Package (refer to Appendix B). Repair and treatment of historic features and materials will be later determined when condition of the entire original exterior is able to be fully assessed.



GROUND FLOOR PLAN

APPENDIX A

DRAFT SPECIFICATIONS

SECTION 011500

GENERAL REQUIREMENTS FOR WORK ON HISTORIC BUILDINGS

PART 1 - GENERAL

1.1 DESCRIPTION

A. The requirements of all other sections of the specifications apply to this section. This Section covers the general requirements for special project procedures pertaining to the Work.

B. Historic Significance:
   1. Due to its unique historical significance, special procedures and precautions must be used in selective demolition.
   2. Original historical construction and products are to be maintained and duplicated.

C. Related Sections:
   1. Section 013591: Historic Treatment Procedures
   2. Section 024119: Selective Demolition

1.2 DEFINITIONS:

A. Conservation: Activities performed by the Contractor to assure compliance with those portions of the contract documents relating to historic structures or materials.

B. Conservation Standards: Comply with Secretary of Interior's Standards for Historic Preservation with Guidelines for Applying Standards.

C. Consolidate: To strengthen loose or deteriorated materials in place.

D. Dismantle: To disassemble and detach items by hand from existing construction to the limits indicated, using small hand tools and small one-hand power tools, so as to protect nearby historic surfaces; and legally dispose of dismantled items off-site, unless indicated to be salvaged or reinstalled.

E. Existing to Remain: Existing items that are not to be removed or dismantled.

F. Historic: Word such as "historic", "historic fabric", "historic materials", "historic building materials" or words of similar meaning shall be understood to mean that the material or feature is considered to have aspects that require preservation and all work impacting the material or feature shall conform to the Secretary of the Interior's Standards for Historic Preservation.

G. Historic Structure: Shall be understood to mean all objects and materials contained within, attached to, or used in a construction assembly. Each object, component or material associated with a historic structure shall be handled, stored, treated and removed in accordance with the specifications of historic fabric unless stated otherwise.

H. Match: To blend with adjacent construction and manifest no apparent difference in material type, species, cut, form, detail, color, grain, texture, or finish; as approved by Architect and Owner's Representative.

I. Non-historic: Shall be understood to mean that the material, component or feature does not require treatment in accordance with that for historic building materials and may be modified in accordance with standard alteration procedures as indicated or specified.

J. Perform: The words "perform", "execute", and words of similar meaning shall mean that the Contractor, at Contractor's expense, shall perform all the operations necessary to complete the Work or the mentioned portions of the Work, including furnishing and installing materials as are indicated, specified or required to complete such performance.

K. Quality Assurance: Activities performed by Contractor, testing agencies or other persons or firms employed and paid by them to assure compliance with the Contract Documents.

L. Quality Control: Activities performed by the contractor to assure compliance with Contract Documents.

M. Reconstruct: To remove existing item, replicate damaged or missing components, and reinstall in original position.

N. Refinish: To remove existing finishes to base material and apply new finish to match original, or as otherwise indicated.

O. Reinstall: To protect removed or dismantled item, repair and clean it as indicated for reuse, and reinstall it in original position, or where indicated.

P. Remove: Specifically for historic spaces, areas, rooms, and surfaces, the term means to detach an item from existing construction to the limits indicated, using hand tools and hand-operated power equipment, and legally dispose of it off-site, unless indicated to be salvaged or reinstalled.

Q. Repair: To correct damage and defects, retaining existing materials, features, and finishes while employing as little new material as possible. Includes patching, piecing-in, splicing, consolidating, or otherwise reinforcing or upgrading materials.

R. Replace: To remove, duplicate, and reinstall entire item with new material. The original item is the pattern for creating duplicates unless otherwise indicated.

S. Replicate: To reproduce in exact detail, materials, and finish unless otherwise indicated.

T. Reproduce: To fabricate a new item, accurate in detail to the original, and in either the same or a similar material as the original, unless otherwise indicated.

U. Restore: To consolidate, replicate, reproduce, repair, and refinish as required to achieve the indicated results.

V. Retain: To keep existing items that are not to be removed or dismantled.

W. Reversible: New construction work, treatments, or processes that can be removed or undone in the future without damaging historic materials unless otherwise indicated.

X. Salvage: To protect removed or dismantled items and deliver them to Owner.

Y. Stabilize: To provide structural reinforcement of unsafe or deteriorated items while maintaining the essential form as it exists at present; also, to reestablish a weather-resistant enclosure.

Z. Strip: To remove existing finish down to base material unless otherwise indicated.

1.3 SUBMITTALS

A. Project Schedules: Include in Project Schedules information required in other Sections:
   1. Schedule for conservation, removal, and protection of each existing material.
   2. Schedule for mock-ups and their review.

B. Access Diagrams: Submit diagrams of proposed entrance and exit locations, paths of travel, and proposed security and protection procedures that safeguard historic materials.

C. Existing Conditions Documentation: Submit documentation required by Article 1.8.

D. Emergency Response Plan: Submit documentation as follows:
   1. Contractor shall be responsible for preparing, maintaining, and executing Emergency Response Plan in event of damage to historic items.
   2. Plan shall include means anticipated to stabilize and protect damaged materials, contact
   3. information of persons to be contacted in the event of an emergency.

1.4 REFERENCE STANDARDS

A. Specifying by reference to a reference standard type specification document or to another portion of Contract Documents shall be same as if referenced document or portion of Contract Documents referred to were exactly repeated at place where such reference is made. In case of conflict between requirements of regulatory agencies and referenced standard type specification documents, Contractor shall bring discrepancy to attention of Architect for clarification prior to proceeding with Work.

1.5 SPECIAL REQUIREMENTS FOR WORK ON HISTORIC STRUCTURES

A. All work on or with materials, features, or structures designated as historic in Contract Documents shall comply with following:
   1. All work shall comply with United States Secretary of Interior's Standards for Historic Preservation.
   2. Subcontractors and personnel working in areas of Historic Fabric shall have worked on at least 5 other historic buildings.
   3. All work is to comply with these specifications - whether stated explicitly in Contract Documents, implied by scope of work, or otherwise required in course of construction.

4. All existing building materials and components shall be considered very fragile and must be dismantled, removed, worked-on, transported, and in general handled with special care. Protection of existing materials, surfaces and finishes is of great importance.
5. Contractor shall repair, replace, or otherwise acceptable make good any historic fabric and art works under Contractor's care, custody, and protection that is damaged, lost, or stolen until building is accepted by Owner's Representative. Historic materials and art works may not be available for replacement. Owner's Representative will require restoration or re-creation to approved level of authenticity. Costs of such restoration or re-creation may be significant and shall be borne by Contractor.

1.6 DOCUMENTARY PHOTOGRAPHY

A. Where indicated under other Specification sections, provide Documentary Photography. Digital photographic documentation shall be in .jpg format. Color card chart, scale ruler, date, and item identification number (IIN) shall be visible in the photograph. All slides shall be labeled with date, item identification number (IIN), location, and orientation. The subject of the documentation shall be cleared of debris and illuminated to show all surface details clearly. Photographs shall be sharply focused and shot with as great a depth of field as possible. Black and white photographs shall be considered supplemental. Prints shall be on archival quality, 100 percent cotton, acid free paper.

B. Documentary photography shall conform to American Institute for Conservation (AIC) Guidelines.

C. Photographs shall be keyed to floor plan or elevation drawings and include, as minimum, color slides for all overall and detail views of following:
   1. Two (2) overall views and five (5) detailed views prior to start of work
   2. Two (2) overall views and five (5) detailed views as required during removals to document:
      a. process for labeling and tagging historic elements
      b. condition of adjacent surfaces prior to installation of protection
   3. Two (2) overall views and five (5) detailed views as required during repair and re-installation to document:
      a. process for repair of historic elements
      b. process for re-installation of historic elements
   4. Two (2) overall views and five (5) detailed views as required to document:
      a. Process for final cleaning of historic elements
      b. condition of adjacent surfaces after removal of protection

1.7 DOCUMENTATION OF EXISTING CONDITIONS

A. Create narrated video of photography surveys of all existing conditions at commencement of Work and prior to altering existing conditions.

B. Where indicated in other Specification sections, provide documentation of existing conditions, including following unless otherwise indicated:
   1. Archival quality measured drawings of historic element(s) including dimensions, method of attachment and/or construction assembly.

2. Written description, photographs and archival quality color slides showing color, finishes, textures, and overall layout of historic element(s).
3. Test data, where applicable, describing composition of historic material(s).

1.8 PROJECT CONDITIONS

A. Coordinate work of other sections to assure correct sequence, limits, methods, and times of performance. Arrange work to impose minimum of hardship on operation and use of facilities.

B. Verification of Existing Conditions: Intent of Contract Documents is to show existing site and building conditions with information developed from original construction documents, field surveys, and records from the Owner, and to generally show amount and types of removals required to prepare existing areas for new work. Perform detailed survey of existing site and building conditions pertaining to work before starting work. Report to Architect, Architectural Historian and Owner's Representative discrepancies or conflicts between drawings and actual conditions in writing and with sufficient detail including dimensions, limitations and other documentation, to enable Architect, Architectural Historian and Owner's Representative to request necessary modifications. Do not perform work where such discrepancies or conflicts occur prior to receipt of Architect, Architectural Historian and Owner's Representative instructions.

C. Access:
1. Confine entrance and exit operations to access routes indicated on approved access diagrams.
2. Historic building components that may be exposed to traffic, bumping, marring, excessive operation, temporary locking mechanisms or otherwise impacted by entrance and exit operations shall be removed and stored for protection and reinstallation. Include such removal and reinstallation in Removals Plan and Conservation Plan.

D. Hazardous Materials:
1. Inform Architect and Owner's Representative immediately upon discovery of asbestos products, radioactive materials, radon gas, toxic wastes, or other similar hazardous materials.
2. Strictly follow procedures and regulations applicable to hazardous materials.
3. Do not remove hazardous materials without Owner authorization.
4. Give special consideration to handling of material that may contain asbestos. Neither asbestos detection or removal is part of this Contract, and direction relating to that type of work will be given by the Owner.
5. Architect will have no responsibility for detection, evaluation, or removal of asbestos materials, or for construction contract administration of removal process.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3.1 RESTORATION

A. Basic Requirements:
1. Restore and refinish new and existing construction and improvements that are cut into, altered, damaged, relocated, reinstalled or left unfinished by removals to original condition or lo match adjoining work and finishes unless otherwise indicated.
2. Provide new fasteners, connectors, adhesives, and other accessory materials as required to fully complete approved reinstallations and restorations.
3. Where restorations and re-finishing are defective or are otherwise not acceptable to Architect, Architectural Historian and Owner's Representative, remove defective or rejected materials and provide new acceptable materials and finish at no cost to project.
4. Additional requirements at historic structures or where materials are designated as historic: All workmanship and materials shall conform to applicable provisions for specific historic material. If there is no provision, provide new acceptable materials and finishes that conform to Secretary of Interior's Standards and as accepted by Architect, Architectural Historian and Owner's Representative.

B. Cutting, Removals, and Demolition:
1. Refer to Section 024119 – Selective Demolition.
2. Execute cutting, excavation, fitting to make parts fit properly, removal and replacement of defective work, and removal and replacement of non-conforming work to extent necessary to install specified work in existing construction.
3. Give notices and comply with regulatory agencies. If it is necessary to cut work that affects the structural safety of project, or which affects the work of separate contractor, submit written request to Architect, Architectural Historian and Owner's Representative for consent to proceed with cutting.
4. Additional requirements at historic structures or where materials are designated as Historic, provide Removals Plan prepared in accordance with provisions of specification.

C. Disposal:
1. Removed material that is not designated as historic, or otherwise indicated to be saved, shall become property of the contractor. Remove from project property and locate material to be saved to designated storage area, and unwanted material shall be disposed of in legal manner.
2. Debris shall be cleaned up and disposed of promptly and continuously as Work progresses, and not allowed to accumulate. Sprinkle debris with water to prevent dust nuisance. Secure and/or pay for required hauling permits and dumping fees.
3. Comply with National Pollutant Discharge Elimination System (NPDES) requirements and the hauling and disposal regulations of authorities having jurisdiction.

D. Patching, Repairing and Finishing: Restore work that has been cut or removed, install new products to provide completed work in accordance with Contract Documents. Where existing surfaces are shown or required to receive new finish materials, and where such surfaces have cracks, holes, depressions, ridges, foreign materials, or other conditions that preclude proper installation of new finish materials, existing surfaces shaft be reconditioned. Refinish patched,

new and existing surfaces lo match adjacent, undisturbed construction. Where repainting is necessary, the painting shaft be carried out to natural breaks or natural terminations as approved, such as change in material or corner.

3.2 PROTECTION

A. Protection:
   1. Provide shoring, bracing, and covering as required to maintain structural integrity and provide protection. Obtain necessary permits.
   2. Use care to protect adjacent surfaces and improvements, including all floor surfaces and coverings, from damage.
   3. Equip mobile equipment with pneumatic tires.
   4. Maintain weather protection at all times to protect interior finishes and all equipment.
   5. For additional requirements at historic structures or where materials are designated as historic, refer to Section 013591 – Historic Treatment Procedures.

END OF SECTION 011500

SECTION 013591

HISTORIC TREATMENT PROCEDURES

PART 1 - GENERAL

1.1 DESCRIPTION

A. Section includes protection of historic fabric and improvements; these include, but are not limited to:
   1. Exterior façade.
   2. Stone patterned flooring.
   3. Exterior stone base.
   4. Decorative plaster.
   5. Windows.
   6. Decorative molding.
   7. Exterior columns.
   8. Decorative ceilings.
   9. Decorative concrete work.
   10. Historic doors and hardware.
   11. Historic stairs and railings.
   12. Decorative wainscoting.

B. Related Sections:
   1. Section 011500: General Requirements for Work on Historic Buildings
   2. Section 024119: Selective Demolition

C. Work Specified in this section:
   1. Preparation of a protection plan, including removal or dismantling of Historic materials, salvage, cleaning and archiving
   2. Protection of historic materials before, during and after restoration

1.2 CONSERVATION

A. General Requirements: It should be understood that the Work of this Section seeks to preserve the character of the historic building by leaving in-place and protecting the historic materials to the greatest extent possible. Protection of the existing materials, surfaces and finishes is of great importance.

B. Contractor's Qualifications: The protection of historic building materials is to be performed and supervised by subcontractors and personnel working in areas of Historic Fabric shall have worked on at least 5 other historic buildings.

C. Contractor is hereby directed to recognize the value and significance of the building and exercise special care during the work to ensure that the existing building, its details, materials, and finishes which are to remain are not damaged by the work being performed.

D. Protect all historic elements to remain in place during construction that may be damaged by construction activities. In the event that new damage occurs, contractor is to notify the Architect, the Architectural Historian and the Owner's Representative immediately as to the nature and extent of damage, the proposed method for repair and not proceed until directed by Architect, the Architectural Historian and the Owner's Representative. Contractor shall be responsible for repairs and replacement of newly damaged items to the satisfaction of the owner, at no additional cost. Be aware that the inherent value of an historic original element is higher than the value of a contemporary replication of that element.

E. Contractor shall be responsible for protection of all existing materials and components to remain in place, throughout the duration of construction. Extent of protection is to cover all historic elements to remain that are in the vicinity of construction activities or may be harmed to 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 and Architectural Historian's review. In the event of damage, such items shall be repaired or replaced by the contractor at their expense, to the satisfaction of the Architect, the Architectural Historian and the Owner's Representative.

F. Contractor shall use adequate numbers of skilled workmen, thoroughly trained and experienced in the necessary crafts, and completely familiar with specified requirements and methods needed for proper performance of work.

G. Protection Plan:
   1. Contractor shall establish a Protection Plan that details procedures, materials and sequence of operations necessary to protect existing materials from damage.
   2. Revise and resubmit protection plan as Work progresses and site conditions change as directed by Project Manager.

H. Protection:
   1. Insufficient protection of existing surfaces, materials, equipment, and improvements that results in damage related to work by the Contractor will result in the Contractor's responsibility to restore or re-create these items to the same specifications as the original material.
   2. The costs of such restoration or recreation may be significant and shall be borne by the Contractor.
   3. Comply with applicable portions of the Secretary of the Interior's Standards for Rehabilitating Historic Buildings.
   4. Secure protection adequately to maintain safe environment for works and other individuals using building.

1.3 MATERIALS OWNERSHIP

A. Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to Owner that may be encountered during removal and dismantling work remain Owner's property. Carefully dismantle and salvage each item or object.

B. Coordinate with Architect, Architectural Historian and Owner's Representative who will establish special procedures for dismantling and salvage.

1.4 SUBMITTALS

A. Following shall be submitted to and approved by Architect prior to any work and in sufficient detail to show full compliance with the specifications:
   1. Statement of Qualifications demonstrating that the Contractor complies with the Conservation requirements including:
      a. List of projects with dates and descriptions of project's qualification as historic.
      b. Names of personnel with dates worked and description of work performed on listed projects.
   2. Protection Plan(s) including:
      a. Narrative description of proposed procedures for protecting the existing historic fabric to remain in place during removals and construction. Describe adjacent work which each item is being protected from.
      b. Plans and graphics as necessary to indicate the locations, sizes and types of protection devices.
      c. Details and graphics as necessary to indicate the means of attachment of protection devices and panels.
      d. Documentation: Documentary photography in accordance with Section 011500 showing existing conditions prior to installation of historic fabric protection and as required during repair and re-installation.
   3. Fire-Prevention Plan: If any heat-generating or combustible tools and materials are proposed to be used, submit before work begins.

1.5 QUALITY ASSURANCE

A. Historic Treatment Specialist Qualifications: The consultant must be an experienced firm regularly engaged in historic treatments and architectural conservation similar in nature, materials, design, and extent to this work as specified in each section, and that has completed significant projects with a record of successful in-service performance that demonstrate the firm's qualifications to perform this work.
   1. Field Supervisor Qualifications: Full-time supervisors experienced in historic treatment work similar in nature, material, design, and extent to that indicated for this Project. Supervisors shall be on Project site during times that historic treatment work is in progress.
   2. Worker Qualification: Persons who are experienced in historic treatment work of types they will be performing.

B. Mockups: Prepare mockups of specific historic treatment procedures specified in each section to demonstrate aesthetic effects and to set quality standards for materials and execution.
   4. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect, Architectural Historian and Owner's Representative specifically approves such deviations in writing.

C. Regulatory Requirements: Comply with notification regulations of authorities having jurisdiction before beginning work. Comply with hauling and disposal regulations of authorities having jurisdiction.

D. Standards: Comply with ANSI/ASSE A10.6, and the Secretary of the Interior Standards.

5. Applicable preservation briefs include, but are not limited to:
    a. Preservation Briefs 1 - Cleaning and Water-Repellent Treatments for Historic Masonry Buildings. Robert C. Mack, FAIA, and Anne E. Grimmer. 2000.
    b. Preservation Briefs 2 - Repointing Mortar Joints in Historic Masonry Buildings. Robert C. Mack, FAIA, and John P. Speweik. 1998.
    c. Preservation Briefs 6 - Dangers of Abrasive Cleaning to Historic Buildings. Anne E. Grimmer. 1979.
    d. Preservation Briefs 7 - The Preservation of Historic Glazed Architectural Terra-Cotta. de Teel Patterson Tiller. 1979.
    e. Preservation Briefs 11 - Rehabilitating Historic Storefronts. H. Ward Jandl. 1982.
    f. Preservation Briefs 13 - The Repair and Thermal Upgrading of Historic Steel Windows. Sharon C. Park, AIA. 1984.
    g. Preservation Briefs 14 - New Exterior Additions to Historic Buildings: Preservation Concerns. Anne E. Grimmer and Kay D. Weeks. 2010.
    h. Preservation Briefs 15 - Preservation of Historic Concrete. Paul Gaudette and Deborah Slaton. 2007.
    i. Preservation Briefs 22 - The Preservation and Repair of Historic Stucco . Anne E. Grimmer. 1990.
    j. Preservation Briefs 23 - Preserving Historic Ornamental Plaster. David Flaharty. 1990.
    k. Preservation Briefs 42 - The Maintenance, Repair and Replacement of Historic Cast Stone. Richard Pieper. 2001.

E. Historic Treatment Preconstruction Conference: Conduct conference at Project site with Architect, Architectural Historian and Owner's Representative in attendance.
1. General: Review methods and procedures related to historic treatment including, but not limited to, the following:
    a. Review manufacturer's written instructions for precautions and effects of historic treatment procedures on materials, components, and vegetation.
    b. Review and finalize historic treatment construction schedule; verify availability of materials, equipment, and facilities needed to make progress and avoid delays.
    c. Review qualifications of personnel assigned to the work and assign duties.
    d. Review material application, work sequencing, tolerances, and required clearances.
    e. Review areas where existing construction is to remain and requires protection.

1.6 STORAGE, HANDLING AND PROTECTION OF HISTORIC MATERIALS

A. Existing Historic Materials to Remain: Protect construction indicated to remain against damage and soiling from construction work. Where permitted by Architect, Architectural Historian and Owner's Representative, items may be dismantled and taken to a suitable, protected storage location during construction work and reinstalled in their original locations after historic treatment and construction work in the vicinity is complete.

B. Storage and Protection: When taken from their existing locations, catalog and store historic items in accordance with Section 024291 – Selective Removal and Storage of Historic Building Materials

C. Handling:
   1. Handle historic material with clean gloves to prevent soiling.
   2. Handle historic materials to minimize stress. Handle materials as nearly as possible in to installed orientation.
   3. Use personnel trained in correct handling of historic elements.

D. Historic Materials for Reinstallation:
   1. Repair and clean historic items as indicated and to functional condition for reuse.
   2. Pack or crate items after cleaning and repairing; cushion against damage during handling. Label contents of containers.
   3. Protect items from damage during transport and storage.
   4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment unless otherwise indicated. Provide connections, supports, and miscellaneous materials to make item functional for use indicated.

1.7 PROJECT CONDITIONS

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

B. General Size Limitation in Historic Spaces: Materials, products, and equipment used for performing the Work and for transporting debris, materials, and products shall be of sizes that clear surfaces within historic spaces, areas, rooms, and openings, including temporary protection, by 12 inches or more.

C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with the Work.

D. Hazardous Materials:
   1. Inform Architect and Owner's Representative immediately upon discovery of asbestos products, radioactive materials, radon gas, toxic wastes, or other similar hazardous materials.
   2. Strictly follow procedures and regulations applicable to hazardous materials.
   3. Do not remove hazardous materials without Owner authorization.
   4. Give special consideration to handling of material that may contain asbestos. Neither asbestos detection or removal is part of this Contract, and direction relating to that type of work will be given by the Owner.
   5. Architect will have no responsibility for detection, evaluation, or removal of asbestos materials, or for construction contract administration of removal process.

PART 2 - PRODUCTS

1.8 PROTECTION MATERIALS

A. General: Furnish archival materials for protection of historic fabric.

B. Polyethylene sheets: 4 mil.

C. Lumber: Species to be selected by Contractor, sizes to fit field conditions. All lumber to be fire retardant.

D. Plywood: ½ inch, ¾ inch, or 1-inch fire retardant, as required.

E. Soft Fiberboard: Homasote Company, Box 7240, West Trenton, NJ 08628. (800) 320-5532.
   1. ½ inch Homasote 440
   2. ½ inch Homasote NCFR for applications requiring fire ratings.

F. Neoprene: ¼ inch or ½ inch strips, stock lengths.

G. Ethafoam: ½ inch thickness with a density of 2.3 to 3.3 pounds/cubic foot.

H. Semi-rigid polyurethane foam sheets: 2-inch and 4-inch thick, as required.

I. Brown paper: Kraft paper

J. Non-abrasive glassine paper

K. Preservation tape: 3M Scotch brand, number 4811

L. Sealant: Removable acrylic sealant

M. Breathable, water resistant sheet: Dupont Tyvek Commercial Wrap 1162B or equal.

N. Accessories: Fasteners, nails, screws, bolts, anchors or other devices required to complete installation, stainless steel, sizes as required.

O. Coat wood storage crates with non-oxygen permeable film or epoxy resin (minimum of 30 days prior to packing materials).

PART 3 - EXECUTION

1.9 GENERAL HISTORIC TREATMENT

A. Ensure that supervisory personnel are present when historic treatment work begins and during its progress.

B. Halt the process of deterioration and stabilize conditions unless otherwise indicated. Perform work as indicated on Drawings. Follow the procedures in subparagraphs below and procedures approved in historic treatment program:
   1. Retain as much existing material as possible; repair and consolidate rather than replace.
   2. Use additional material or structure to reinforce, strengthen, prop, tie, and support existing material or structure.
   3. Use reversible processes wherever possible.
   4. Use historically accurate repair and replacement materials and techniques unless otherwise indicated.
   5. Record existing work before each procedure (preconstruction) and progress during the work with drawings, photographs, and video.

C. Notify Architect, Architectural Historian and Owner's Representative of visible changes in the integrity of material or components whether due to environmental causes including biological attack, UV degradation, freezing, or thawing; or due to structural defects including cracks, movement, or distortion.

1. Do not proceed with the work in question until directed by Architect, Architectural Historian and Owner's Representative.

D. Where missing features are indicated to be repaired or replaced, provide features whose designs are based on accurate duplications rather than on conjectural designs, subject to approval of Architect, Architectural His and Owner's Representative.

E. Where Work requires existing features to be removed or dismantled and reinstalled, perform these operations without damage to the material itself, to adjacent materials, or to the substrate.

F. Identify new and replacement materials and features with permanent marks hidden in the completed work to distinguish them from original materials. Record a legend of identification marks and the locations of the items on record Drawings.

1.10 GENERAL PROTECTION

A. Ensure that supervisory personnel are on-site and on duty when historic protection work begins and during its progress.

B. Provide protection to existing historic materials wherever encountered adjacent to work to prevent damage to or marring of materials, surfaces, and finishes. Such protection shall be of sufficient size and thickness to withstand impact from falling debris; rolling objects such as equipment, machinery, and hand carts; movement of materials and debris; and residue from flame cuttings such as sparks.

C. Protect persons, motor vehicles, surrounding surfaces of building, building site, plants, and surrounding buildings from harm resulting from historic treatment procedures.
   1. Use only proven protection methods, appropriate to each area and surface being protected.
   2. Provide barricades, barriers, and temporary directional signage to exclude public from areas where historic treatment work is being performed.
   3. Erect temporary protective covers over walkways and at points of pedestrian and vehicular entrance and exit that must remain in service during course of historic treatment work.
   4. Contain dust and debris generated by work and prevent it from reaching the public or adjacent surfaces.
   5. Protect floors and other surfaces along haul routes from damage, wear, and staining.
   6. Provide supplemental sound-control treatment to isolate removal and dismantling work from other areas of the building.

D. Provide interior and exterior shoring, bracing, or support to prevent movement, settlement, or collapse of areas of work.

E. Cover and protect furniture, equipment, switchplates, covers, lighting fixtures, and all decorative items from damage, if such items have not been removed.

F. Construction of protective devices, barriers and coverings shall not prevent documentation of existing conditions, inspections, or access to adjacent areas of work. Any such barriers shall be removed and replaced by the Contractor as required to facilitate documentation, inspections, or work.

G. Protection materials shall not attach to Historic Fabric unless no other attachment is possible. Attach to existing joints or to non-exposed portions rather than to finished faces. Indicate in Protection Plan conditions where attachment to Historic Fabric is unavoidable. Installation of protection devices that require attachment to adjacent historic surfaces shall be reviewed by Architect, Architectural Historian and Owner's Representative. Attachments to historic fabric shall be made by persons qualified to work on that material under other Sections.

H. Maintain protection devices in sound condition until completion of the Work.

I. Repair or replace protection devices as necessary to maintain effectiveness of protection.

J. Comply with each product manufacturer's written instructions for protections and precautions. Protect against adverse effects of products and procedures on people and adjacent materials, components, and vegetation.

K. Existing Drains: Prior to the start of work in an area, test drainage system to ensure that it is functioning properly. Notify Architect immediately of inadequate drainage or blockage. Do not begin work in an area until the drainage system is in working order.
   1. Prevent solids such as stone or mortar residue from entering the drainage system. Clean out drains and drain lines that become sluggish or blocked by sand or other materials resulting from historic treatment work.
   2. Protect drains from pollutants. Block drains or filter out sediments, allowing only clean water to pass.

1.11 PROTECTION DURING APPLICATION OF CHEMICALS

A. Protect motor vehicles, surrounding surfaces of building being restored, building site, plants, and surrounding buildings from harm or damage resulting from applications of chemical cleaners and paint removers.

B. Cover adjacent surfaces with protective materials that are proven to resist chemicals selected for Project unless chemicals being used will not damage adjacent surfaces as indicated in historic treatment program. Use covering materials and masking agents that are waterproof, UV resistant, and will not stain or leave residue on surfaces to which they are applied. Apply protective materials according to manufacturer's written instructions. Do not apply liquid masking agents or adhesives to painted or porous surfaces. When no longer needed, promptly remove protective materials.

C. Do not apply chemicals during winds of sufficient force to spread them to unprotected surfaces.

D. Neutralize and collect alkaline and acid wastes and legally dispose of off Owner's property.

E. Collect and dispose of runoff from chemical operations by legal means and in a manner that prevents soil contamination, soil erosion, undermining of paving and foundations, damage to landscaping, or water penetration into building interior.

1.12 PROTECTION FROM FIRE

A. General: Follow fire-prevention plan and the following.
   1. Comply with NFPA 241 requirements unless otherwise indicated.

2. Remove and keep area free of combustibles including, rubbish, paper, waste, and chemicals, except to the degree necessary for the immediate work.
    a. If combustible material cannot be removed, provide fire blankets to cover such materials.
3. Prohibit smoking by all persons within Project work and staging areas.

B. Heat-Generating Equipment and Combustible Materials: Comply with the following procedures while performing work with heat-generating equipment or highly combustible materials, including welding, torch-cutting, soldering, brazing, paint removal with heat, or other operations where open flames or implements utilizing high heat or combustible solvents and chemicals are anticipated:
1. Use of open-flame equipment is not permitted.
2. As far as practical, restrict heat-generating equipment to shop areas or outside the building.
3. Do not perform work with heat-generating equipment in or near rooms or in areas where flammable liquids or explosive vapors are present or thought to be present. Use a combustible gas indicator test to ensure that the area is safe.
4. Use fireproof baffles to prevent flames, sparks, hot gases, or other high-temperature material from reaching surrounding combustible material.
5. Prevent the spread of sparks and particles of hot metal through open windows, doors, holes, and cracks in floors, walls, ceilings, roofs, and other openings.
6. Fire Watch: Before working with heat-generating equipment or highly combustible materials, station personnel to serve as a fire watch at each location where such work is performed. Fire-watch personnel shall have the authority to enforce fire safety. Station fire watch according to NFPA 51B, NFPA 241, and as follows.
    a. Train each fire watch in the proper operation of fire-control equipment and alarms.
    b. Prohibit fire-watch personnel from other work that would be a distraction from fire-watch duties.
    c. Cease work with heat-generating equipment whenever fire-watch personnel are not present.
    d. Have fire watch perform final fire-safety inspection each day beginning no sooner than 30 minutes after conclusion of work at Project site to detect hidden or smoldering fires and to ensure that proper fire-prevention is maintained.
    e. Maintain fire-watch personnel at Project site until 90 minutes, or as required, after conclusion of daily work.

C. Fire Extinguishers, Fire Blankets, and Rag Buckets: Maintain fire extinguishers, fire blankets, and rag buckets for disposal of rags with combustible liquids. Maintain each as suitable for the type of fire risk in each work area. Ensure that nearby personnel and the fire watch are trained in fire-extinguisher and blanket operation.

D. Sprinklers: Where sprinkler protection exists and is functional, maintain it without interruption while operations are being performed. If operations are performed close to sprinklers, shield them temporarily with guards.
1. Remove temporary guards at the end of work shifts, whenever operations are paused, and when nearby work is completed.

END OF SECTION 013591

SECTION 024119

SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 DESCRIPTION

A. Section Includes:
   1. Removal of designated building equipment, materials and fixtures.
   2. Removal of existing construction to accommodate new construction.
   3. Disconnecting and capping of identified utilities.

B. Related Sections:
   1. Section 011500: General Requirements for Work on Historic Buildings
   2. Section 013591: Historic Treatment Procedures

1.2 MATERIALS OWNERSHIP

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

B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
   1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.3 PRE-DEMOLITION CONFERENCE

A. Pre-demolition Conference: Conduct conference at Project site.
   1. Inspect and discuss condition of construction to be selectively demolished.
   2. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
   3. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
   4. Coordinate openings into building for access into building, specifically basement.
   5. Identify items to be protected and preserved before proceeding with work
   6. Conduct walking inspection to identify materials and equipment to be salvaged for re-installation and Owner use.
   7. During walking inspection, photograph or otherwise determine and record existing physical conditions of boundary areas. Surfaces, equipment, or other items damaged during demolition work are to be restored to original condition as recorded during walking inspection.
   8. Agree upon location where items salvaged for Owner are to be delivered and stored.

1.4 SUBMITTALS

A. Schedule of Selective Demolition Activities: Indicate the following:
   1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity.

2. Path of travel for removing debris and use of elevator and stairs.
3. Arranged coordination for shut-off, capping, and continuation of utility services.

B. Proposed Protection Measures: Submit report, including drawings, that indicates the measures proposed for protecting individuals and property, for dust control and for noise control. Indicate proposed locations and construction of barriers.
1. Protection Measures to be in accordance with Section 013591 – Historic Treatment Procedures.

C. Submit following Informational Submittals:
1. Certifications specified in Quality Assurance article.
2. Qualification Data: Submit demolition contractor's qualifications.

1.5 QUALITY ASSURANCE

A. Contractor Qualifications: Subcontractors and personnel working in areas of Historic Fabric shall demonstrate experience by having worked on at least 5 other historic buildings.

B. Regulatory Requirements:
1. Comply with applicable codes, ordinances, rules, regulations, and laws of local, municipal, state and federal authorities having jurisdiction.
2. Obtain and pay for necessary permits and notices; post where required.
3. Comply with safety requirements of local fire department.
4. Comply with governing EPA notification regulations before beginning selective demolition.
5. Comply with hauling and disposal regulations of authorities having jurisdiction.

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

D. Notify affected utility companies before starting work and comply with their requirements.

E. Do not close or obstruct egress width of fire exits or access.

F. Do not disable or disrupt building fire or life safety systems without 72 hours prior written notice to Owner.

1.6 PROJECT CONDITIONS

A. Historic Areas: Demolition and hauling equipment and other materials shall be of sizes that clear surfaces within historic spaces, areas, rooms, and openings, including temporary protection, by 12 inches or more.

B. Hazardous Materials:
1. Inform Architect and Owner’s Representative immediately upon discovery of asbestos products, radioactive materials, radon gas, toxic wastes, or other similar hazardous materials.
2. Strictly follow procedures and regulations applicable to hazardous materials.
3. Do not remove hazardous materials without Owner authorization.
4. Give special consideration to handling of material that may contain asbestos. Neither asbestos detection or removal is part of this Contract, and direction relating to that type of work will be given by the Owner.
5. Architect will have no responsibility for detection, evaluation, or removal of asbestos materials, or for construction contract administration of removal process.

C. Storage or sale of removed items or materials on-site is not permitted.

D. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
   1. Maintain fire-protection facilities in service during selective demolition operations.

E. Explosives: Not permitted.

F. Traffic and Passageways:
   1. Maintain accessibility for firefighting apparatus.
   2. Conduct demolition operations and debris removal to avoid interference with use of roads, streets, walks, and adjacent occupied facilities.
   3. Obtain written permission from authorities having jurisdiction prior to closing or obstructing streets, walks, or other adjacent occupied facilities.
   4. Provide alternate routes when closing or obstructing traffic ways when required by governing authorities.
   5. Ensure safe passage of persons around area of demolition. Provide and maintain temporary covered passageways; comply with requirements of governing authorities.

G. Protection:
   1. Perform Work in manner to eliminate hazards to persons or property and avoid interference with adjacent areas, utilities and structures.
   2. Provide and maintain temporary barricades, fences, warning signs, guardrails, warning lights, weatherproof and dust partitions, and other similar provisions as necessary or required by applicable regulatory authorities for protection of building occupants and workers.
   3. Provide and maintain fire extinguishers; comply with requirements of governing authorities.
   4. Maintain existing utilities which are to remain in service and protect from damage during demolition operations.
   5. Do not interrupt existing utilities serving occupied facilities, except when authorized by Owner's Representative in writing. Provide temporary services during interruptions to existing utilities.
   6. Coordinate in advance with Owner's Representative mechanical, electrical, and plumbing shutdowns.
   7. Protect existing work indicated to remain from damage. Refer to Section 013591 – Historic Treatment Procedures.
   8. Protect existing floors with suitable coverings when necessary. Refer to Section 013591 – Historic Treatment Procedures.
   9. Construct temporary dustproof partitions and seal return air plenums where necessary to areas where noisy or dirt and dust operations are being performed.
   10. Provide temporary weather protection for areas where existing exterior elements were removed to ensure no water leakage or damage occurs to structure or interior areas of existing building.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

1.1 EXAMINATION

A. Verify that utilities have been disconnected and capped before starting selective demolition operations.

B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

C. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect and Architectural Historian.

D. Verify demolition areas are unoccupied.

E. Document existing conditions in accordance with Section 01500, paragraph 1.8.

1.2 PREPARATION

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

B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
   1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
   2. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.

C. Prevent movement or settlement of adjacent structures. Provide bracing and shoring as necessary and be responsible for safety and support of structure. Assume liability for such movement, settlement, damage, or injury.

D. Cover and protect furniture, equipment, and fixtures scheduled to remain from soiling or damage when demolition work is performed in rooms or areas from which such items have not been removed.

E. Utilities:
   1. Mark and identify location of utilities to be disconnected.
   2. Notify affected utility company in advance of date and time when service needs to be disconnected.
   3. Disconnect and cap utility services; Comply with requirements of governing authorities.
   4. Do not commence demolition operations until associated disconnections have been completed.

1.3 SELECTIVE DEMOLITION

A. General:

1. Cease demolition operations immediately if adjacent structures appear to be in danger. Conduct safety operations as necessary. Do not resume demolition operations until directed.
2. Conduct operations with minimum interference to public or private accesses. Maintain egress and access at all times.
3. Sprinkle debris with water to minimize dust. Provide hoses and water connections as necessary.
4. Do not cause flooding or contaminated runoff.

B. Perform demolition in accordance with governing authorities.

C. Remove and immediately dispose of contaminated or vermin infested materials when encountered.

D. Do not burn or bury materials or debris on site. Leave structures and site in clean condition.

E. Demolish and remove existing modern construction covering original historic materials and finishes only to the extent required by the Work and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
1. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
3. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
4. Dispose of demolished items and materials promptly.

F. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition in
1. Protect historic materials in accordance with Section 013591 – Historic Treatment Procedures.

G. Removed and Salvaged items in accordance with Section 024291 – Selective Removal and Storage of Historic Building Materials.

1.4 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site.
1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

1.5 ADJUSTING

A. Repair demolition performed in excess of that required.

B. Return structures and surfaces to remain to conditions existing prior to commencement of selective demolition Work.

1.6 CLEANING

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

END OF SECTION 024119

JM Research and Consulting

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4th & Main Project
First American Title Company Building
Toll Brothers Apartment Living

Anticipated Façade Removal Specifications Based on Known Conditions to Date, February 13, 2020

Investigation of the feasibility of the Preservation Alternative is guided by Specific Conditions of Approval 10 and 10A for Site Plan Review No. 2019-01 and Density Bonus Agreement No. 2019-01, approved by the City of Santa Ana City Council on December 3, 2019. In partial compliance of the Conditions of Approval, specifications for the means and methods to remove material components of the inappropriate ca. 1970s façade are provided:

Cornice & Dentiled Band. Due to height above street level, field verification of material and existing attachment method is required. Removal method to be determined in the field in consultation with demolition contractor.

Metal Paneling. Using hand-operated power tools, metal rivets shall be removed using same-size drill bit in order to shallow counter sink rivet, eliminating flange and allowing rivet to be pulled free with no damage to metal paneling or surface beneath.

Brick. Brick base, and any brick found behind the metal paneling, shall be removed using hand-operated mechanical and power tools. According to conditions known at this time, a hand-operated power circular saw, cutting tool, or grinding tool shall be used to cut mortar joints. Blade guard shall be set at 3" or less, depending on depth of mortar. Hand chisels shall be used to break brick free of mortar embedment. Substrate and mortar embedment shall be evaluated for condition and further treatment.

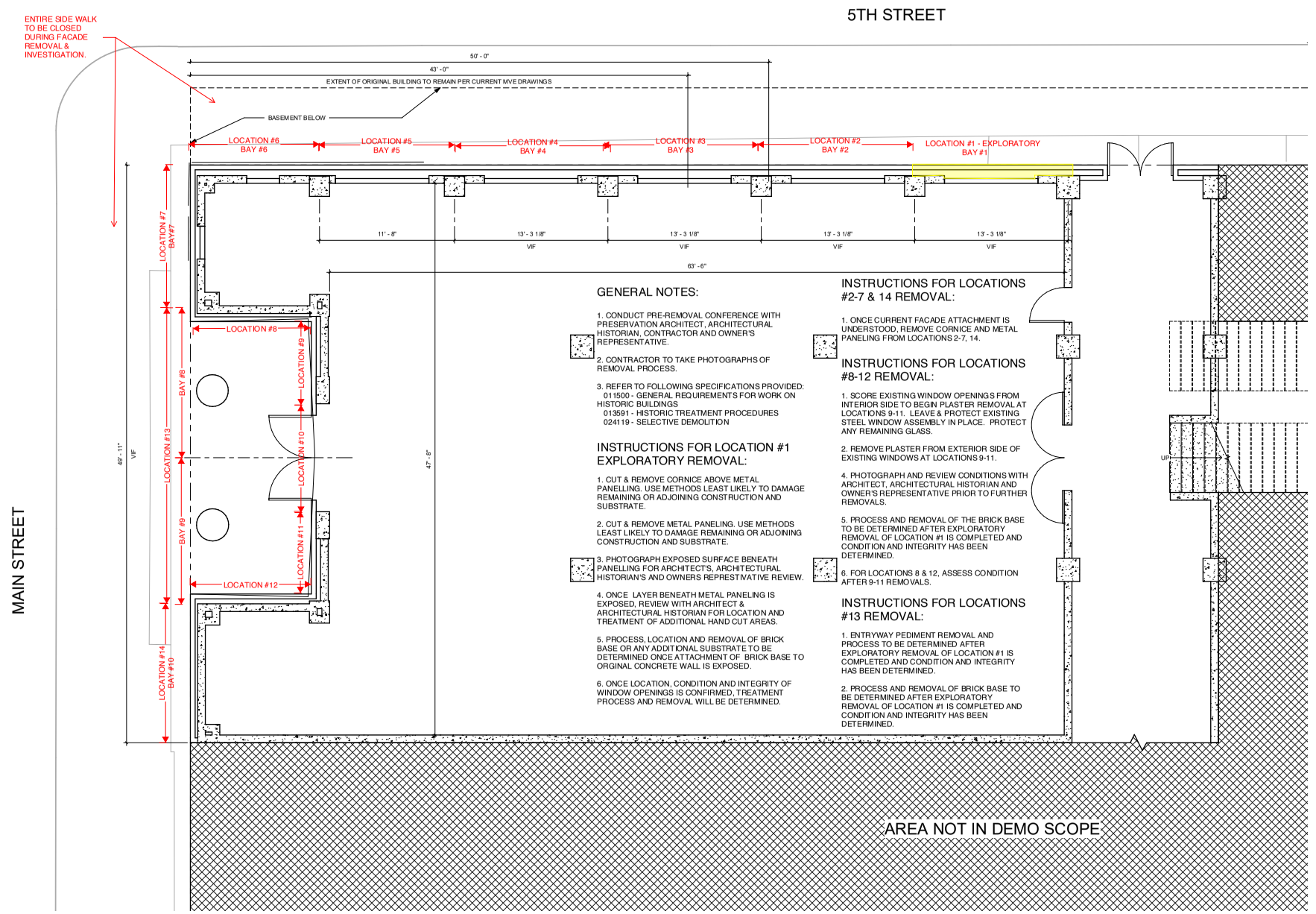
Plaster. Plaster over existing windows shall be scored from the interior using a hand-operated power circular saw or cutting tool to define limits of removal area for exterior removal using hand chisels.

Window Openings. Window openings, steel frame assembly, and any remaining glass shall be protected in place. Further treatment shall be determined once location, condition, and integrity can be assessed after façade removal.

Entry Pediment. Due to complexity of location atop entry columns, field verification of material and existing attachment method is required. Removal method to be determined in the field in consultation with demolition contractor.

APPENDIX B

DRAFT REMOVAL PACKAGE



GENERAL NOTES:

1. CONDUCT PRE-REMOVAL CONFERENCE WITH PRESERVATION ARCHITECT, ARCHITECTURAL HISTORIAN, CONTRACTOR AND OWNER'S REPRESENTATIVE.

2. CONTRACTOR TO TAKE PHOTOGRAPHS OF REMOVAL PROCESS.

3. REFER TO FOLLOWING SPECIFICATIONS PROVIDED:
   011500 - GENERAL REQUIREMENTS FOR WORK ON HISTORIC BUILDINGS
   013591 - HISTORIC TREATMENT PROCEDURES
   024119 - SELECTIVE DEMOLITION

INSTRUCTIONS FOR LOCATION #1 EXPLORATORY REMOVAL:

1. CUT & REMOVE CORNICE ABOVE METAL PANELLING. USE METHODS LEAST LIKELY TO DAMAGE REMAINING OR ADJOINING CONSTRUCTION AND SUBSTRATE.

2. CUT & REMOVE METAL PANELING. USE METHODS LEAST LIKELY TO DAMAGE REMAINING OR ADJOINING CONSTRUCTION AND SUBSTRATE.

3. PHOTOGRAPH EXPOSED SURFACE BENEATH PANELLING FOR ARCHITECT'S, ARCHITECTURAL HISTORIAN'S AND OWNERS REPRESTIVATIVE REVIEW.

4. ONCE LAYER BENEATH METAL PANELING IS EXPOSED, REVIEW WITH ARCHITECT & ARCHITECTURAL HISTORIAN FOR LOCATION AND TREATMENT OF ADDITIONAL HAND CUT AREAS.

5. PROCESS, LOCATION AND REMOVAL OF BRICK BASE OR ANY ADDITIONAL SUBSTRATE TO BE DETERMINED ONCE ATTACHMENT OF BRICK BASE TO ORGINAL CONCRETE WALL IS EXPOSED.

6. ONCE LOCATION, CONDITION AND INTEGRITY OF WINDOW OPENINGS IS CONFIRMED, TREATMENT PROCESS AND REMOVAL WILL BE DETERMINED.

INSTRUCTIONS FOR LOCATIONS #2-7 & 14 REMOVAL:

1. ONCE CURRENT FACADE ATTACHMENT IS UNDERSTOOD, REMOVE CORNICE AND METAL PANELING FROM LOCATIONS 2-7, 14.

INSTRUCTIONS FOR LOCATIONS #8-12 REMOVAL:

1. SCORE EXISTING WINDOW OPENINGS FROM INTERIOR SIDE TO BEGIN PLASTER REMOVAL AT LOCATIONS 9-11. LEAVE & PROTECT EXISTING STEEL WINDOW ASSEMBLY IN PLACE. PROTECT ANY REMAINING GLASS.

2. REMOVE PLASTER FROM EXTERIOR SIDE OF EXISTING WINDOWS AT LOCATIONS 9-11.

4. PHOTOGRAPH AND REVIEW CONDITIONS WITH ARCHITECT, ARCHITECTURAL HISTORIAN AND OWNER'S REPRESENTATIVE PRIOR TO FURTHER REMOVALS.

5. PROCESS AND REMOVAL OF THE BRICK BASE TO BE DETERMINED AFTER EXPLORATORY REMOVAL OF LOCATION #1 IS COMPLETED AND CONDITION AND INTEGRITY HAS BEEN DETERMINED.

6. FOR LOCATIONS 8 & 12, ASSESS CONDITION AFTER 9-11 REMOVALS.

INSTRUCTIONS FOR LOCATIONS #13 REMOVAL:

1. ENTRYWAY PEDIMENT REMOVAL AND PROCESS TO BE DETERMINED AFTER EXPLORATORY REMOVAL OF LOCATION #1 IS COMPLETED AND CONDITION AND INTEGRITY HAS BEEN DETERMINED.

2. PROCESS AND REMOVAL OF BRICK BASE TO BE DETERMINED AFTER EXPLORATORY REMOVAL OF LOCATION #1 IS COMPLETED AND CONDITION AND INTEGRITY HAS BEEN DETERMINED.

1 A1.01 FLOOR PLAN - LEVEL 1
1/4" = 1'-0"

4' 0' 4' 8'

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DRAFT

No.	Description	Date

TOLL BROTHERS

5TH + MAIN

114 East 5th Street
Santa Ana, CA 92701

FIRST FLOOR - DEMOLITION DIAGRAM

Project number	19013
Date	02/04/2020
Drawn by	JD/AP

A1.01

Scale 1/4" = 1'-0"

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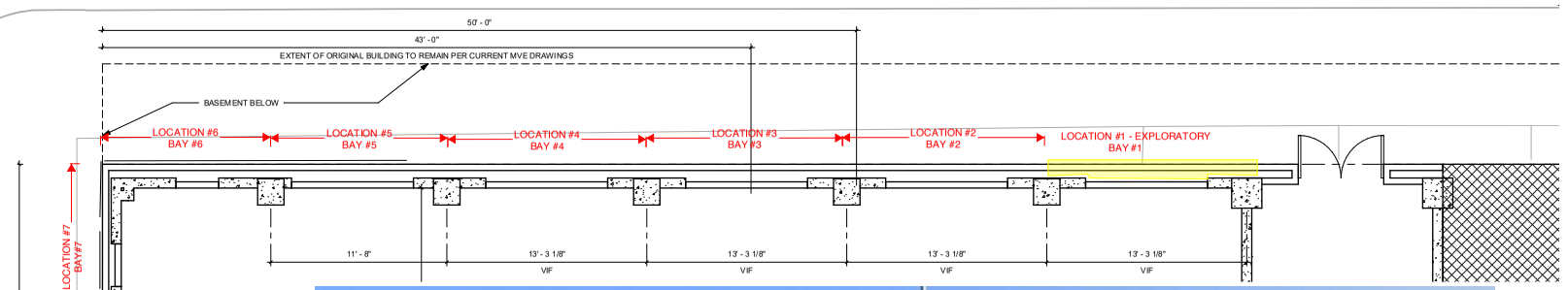
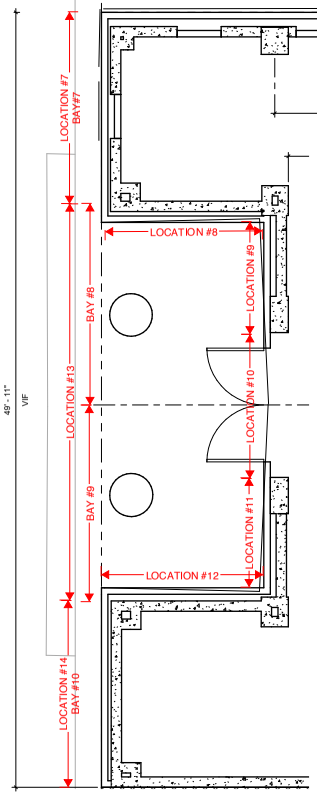
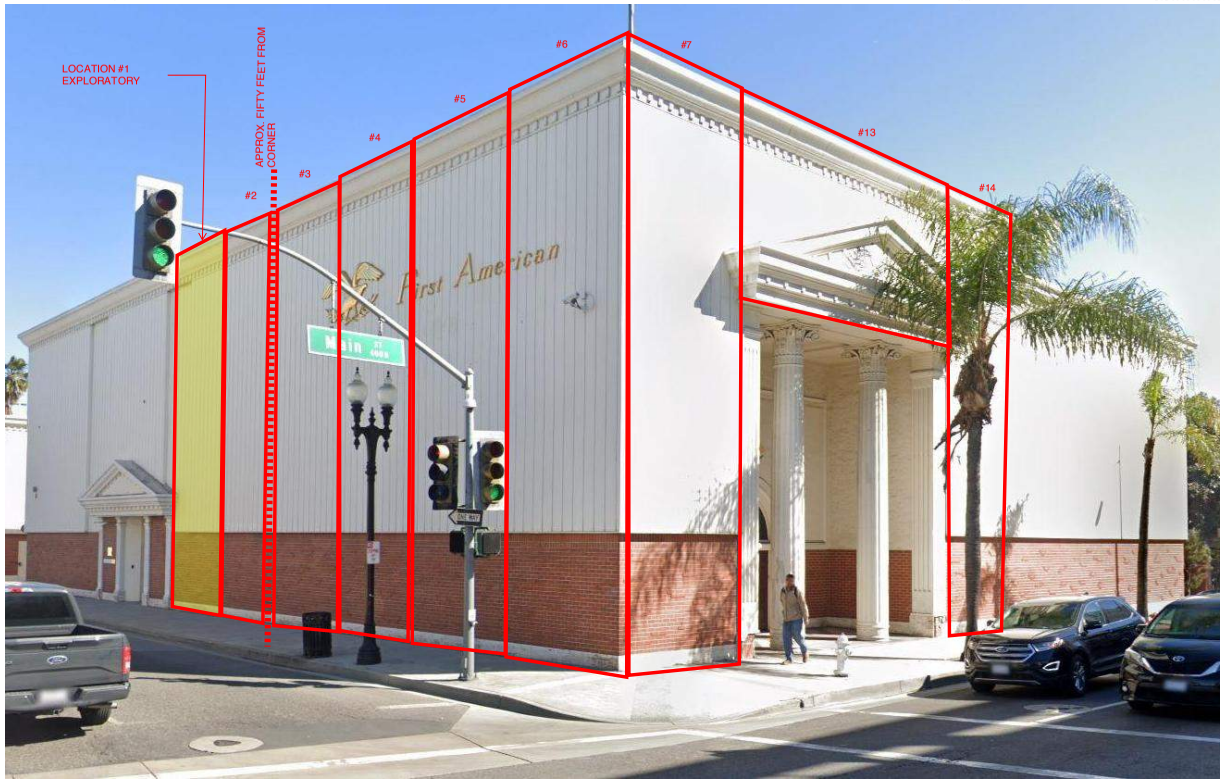
5TH STREET

MAIN STREET







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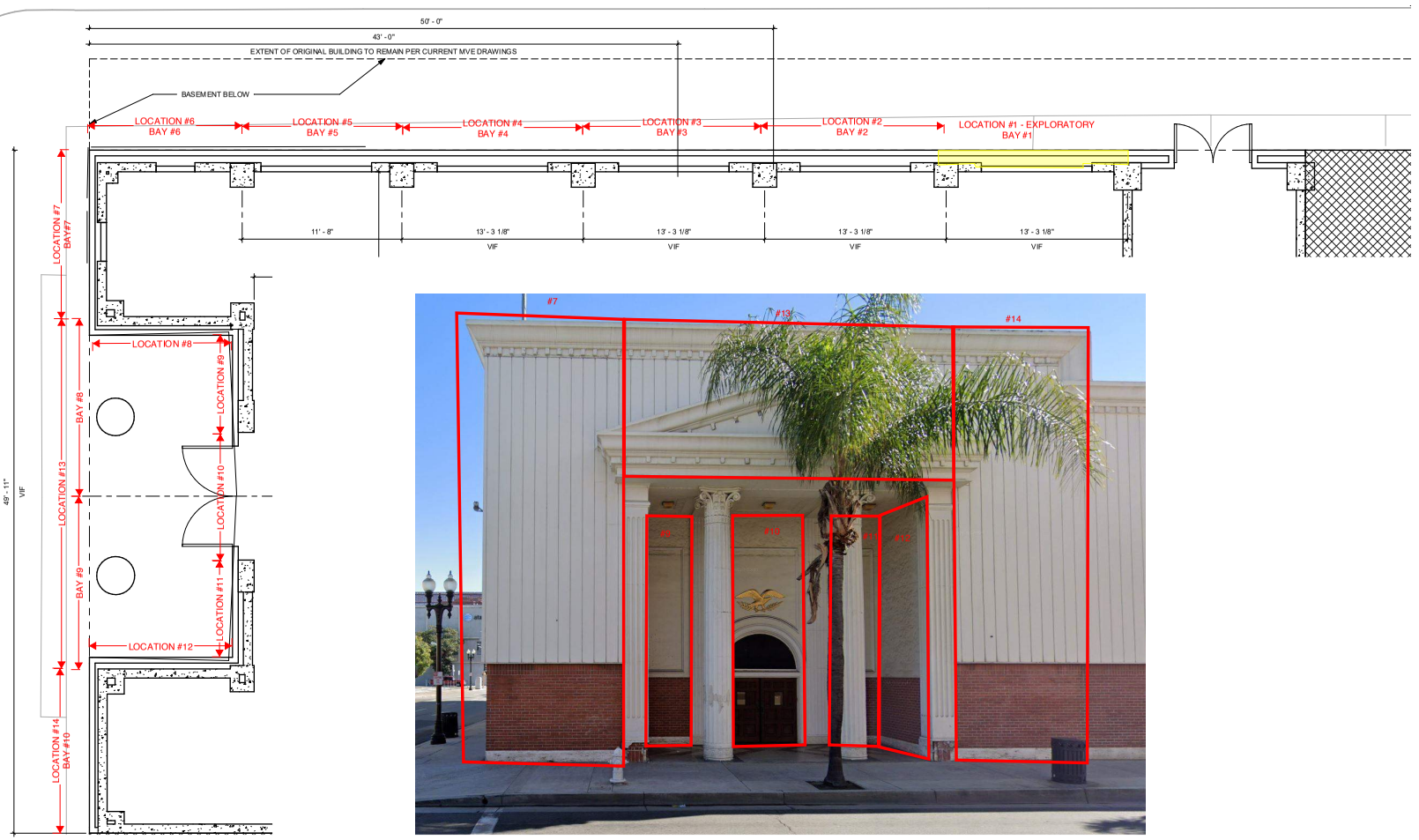

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APPENDIX C

STRUCTURAL DUE DILIGENCE REPORT

May 27, 2020

John Hyde
Sr. Project Manager
Toll Brothers Apartment Living
jhyde@tollbrothers.com

Reference: **STRUCTURAL ENGINEERING SERVICES**
PRESERVATION ALTERNATIVE DUE DILIGENCE REPORT
4TH & MAIN APARTMENT LIVING PROJECT
114 E. FIFTH ST., SANTA ANA, CA
[S.F. PROJECT #20018]

Dear John,

We have completed our structural assessment of the feasibility of preserving the historic façade of the existing building located at 114 E. Fifth Street in Santa Ana, California. We understand that a new project is proposed on the site and one of the preservation alternatives includes the preservation/restoration of the historic façade and up to one bay of structure immediately behind that façade to be incorporated into the new project. We have based our assessment and recommendations on our January 23, 2020 site visit, discussions with Dunbar Architecture and JM Research and Consulting, and our review of the following relevant documents:

- **2nd PC Submittal Structural Drawings** by Englekirk dated March 24, 2020.
- **Structural Calculations 4th & Main – Building #1 Plan Check Submittal** by Englekirk dated December 19, 2019.
- **2nd PC Submittal Architectural Drawings** by MVE+Partners, Inc. dated March 31, 2020.
- **Exhibit 7a Facade Preservation Alt Elevations** by MVE+Partners, Inc. dated August 30, 2019.
- **First American Mixed Use Project EIR Addendum** by Rincon Consultants, Inc dated August 2019.
- **Field Topo and Boundary Information - 4th + Main** by David Evans and Associates, Inc. dated December 22, 2019.
- **City of Santa Ana City Council Resolution No. 2019-xx**

Existing Building and Façade Description

The First American Title building was originally constructed in 1931 and is a two-story concrete structure with one basement level. The building's gravity force-resisting system consists of concrete slabs spanning to concrete pan joists which span to concrete beams that are supported on concrete columns. All concrete columns extend down through the basement level and are likely supported on concrete strip or spread footings. The basement extends to concrete retaining walls that are infilled between exterior concrete columns along Main Street. Along 5th Street the basement extends approximately 6 feet passed the exterior face of the building above and

underneath the existing sidewalk to a subgrade concrete retaining wall. The basement is supported on a concrete slab on grade.

The original exterior historic façade is composed of approximately 8-inch concrete walls with thickened wall sections adjacent to exterior concrete columns. Reinforcement was not encountered in the limited number of cores taken. It is likely that the existing concrete walls are either unreinforced or lightly reinforced. Walls and columns extend above the roof level forming a tall parapet. Window openings were present between thickened wall sections and are now infilled with brick or concrete masonry. A portion of the façade walls along Main Street extends inward to create the entry way and two columns support the exterior façade above. The exterior and inset façade along Main Street is supported on concrete beams and basement retaining walls below. The façade along 5th Street is supported on concrete beams below and not on concrete walls as the basement extends beyond underneath the sidewalk.

Renovations performed in the 1960s and 1970s included the addition of continuous metal siding installed over the original façade, a single wythe of brick masonry applied at the base of the original façade and brick or concrete masonry infills of the original window openings, as shown in Figure 1. The continuous metal siding is supported off steel angle framing or trusses that are anchored into the existing concrete façade with steel anchors.

Existing Building and Façade Condition

The existing concrete structure and original façade appears to be in good overall condition. Surface cracks on the thickened exterior existing concrete walls were observed in a few locations exposed during the selective removal of the continuous metal siding façade. The depth and cause of the cracking was not determined during this limited assessment and further investigation is recommended. Concrete spalling was observed on the corner of a thickened exterior walls at one exposed location at the original corner of the building along Main Street. It appears that this spall was infilled with concrete masonry as part of a prior building expansion, as shown in Figure 1. Surface chipping of the thickened concrete façade walls was observed in a few locations, most likely performed to allow for installation of the 1960s and 1970s façade. Limited observation of the other exposed areas showed no signs of overstress, water intrusion, steel corrosion or other deleterious activity.

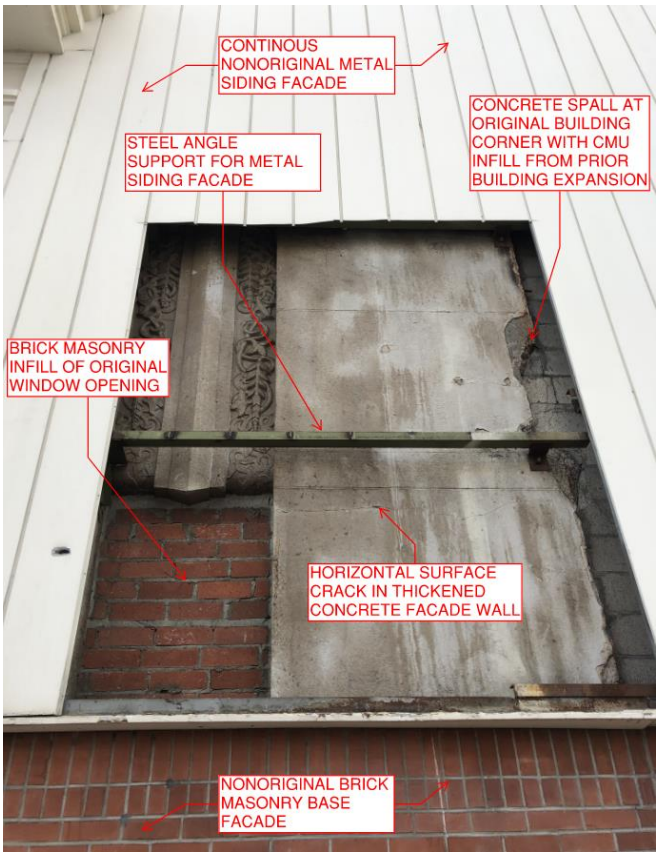

Figure 1: Exposed Exterior Facade Along Main St

Structural Feasibility of Preservation Alternative

Based on our site observations, discussions with the team and review of the documents listed above, we believe that the original structure and exterior façade is in good structural condition and can be feasibly and safely incorporated into the proposed project. We recommend consideration of the following structural recommendations to restore and preserve the original façade.

Structural Recommendations

Extent of Existing Structure to Remain

We recommend that structural members directly supporting the exterior façade remain in place down to their foundations. This includes the existing concrete façade walls selected to remain and their directly adjacent/integral columns, ceiling structure above the entryway along Main Street, supporting 1st Floor concrete beams, basement retaining walls and all supporting foundations.

Furthermore, we recommend that one complete bay of structure immediately behind the exterior façade along 5th Street and behind the inset entryway façade along Main Street remain in place. This includes one bay of concrete slab, joists, beams and interior columns and foundations. The advantage of keeping one interior bay of structure is that less shoring would likely be required because the remaining structure would be self-stabilizing since it would remain braced by the existing concrete slabs and framing. The new structure could then be built adjacent and connect to the remaining existing structure. It should be noted that if this preservation scheme is chosen, the existing framing that remains should be analyzed for the different boundary conditions that would result from demolishing the rest of the structure, and subsequent strengthening may be required. This preservation scheme of the exterior façade and one bay of structure remaining will be referred to as “Scheme 1” in the following sections.

We recognize that retaining one bay of structure may not be desired or conducive with the proposed layout of the new development. If this is the case, then we assume that only the structure directly supporting the concrete façade will remain as described in the first paragraph of this section. Additional shoring and bracing would likely be required for this scheme as described in the following sections. This preservation scheme of only the exterior façade remaining will be referred to as “Scheme 2.”

Depending on the location of the existing interior bays of framing behind the existing façade on both Main Street and 5th Street, and if it is compatible with the layout of the new project, a blended approach consisting of a combination of both Scheme 1 and Scheme 2 may be possible. For example, Scheme 1 could be applied to the façade along Main Street and Scheme 2 applied along 5th Street, or vice versa.

It should be noted that Scheme 1 and Scheme 2 described in this report are only two potential structural solutions and that other structural schemes may be possible.

Basement Level

The recommendations made in this section are valid for both Scheme 1 and Scheme 2.

The existing façade walls along Main Street continue down into the basement level following the inset due to the entryway and pose a conflict with the proposed extent of the subterranean parking of the new development. Parking layouts may need to be adjusted to accommodate the existing remaining basement structure.

Additionally, new concrete retaining walls appear to be located directly underneath the building exterior along both Main Street and 5th Street. Existing concrete retaining walls along Main Street may be strengthened as needed to resist increased soil retaining loads. Since the existing exterior wall along 5th Street is supported on concrete beams and no retaining wall is present (as the basement extends passed the existing façade along 5th Street) new concrete retaining walls can be infilled between existing concrete framing as needed to support new loads.

New proposed footings associated with the new perimeter concrete retaining walls as well as the new concrete columns located along GL 1 (as shown in the 2nd PC Submittal Structural Drawings by Englekirk dated March 24, 2020) may interfere/overlap with the existing concrete foundations recommended to remain. Existing foundations may need to be strengthened and/or incorporated with the new foundations. New foundation geometries may also need to be adjusted to accommodate the existing structure. It should be noted that removal of the existing basement concrete slab on grade will likely require lateral shoring in its place at the base of the existing retaining wall to temporarily resist soil retaining loads.

An alternative to incorporating the existing basement structure with the proposed new structure is to shore the existing structure and façade above the basement in place and provide a new supporting structure. This alternative approach is structurally possible but is not recommended due to the complexities and costs that may be associated with removing the existing gravity support and shoring the existing structure in place.

Level 1 (At Grade)

In both Scheme 1 and in Scheme 2, the restraint at the top of the existing retaining walls provided by the full existing slab will be removed and temporary shoring will likely be required in its place to resist soil retaining loads.

Scheme 1: The remaining one bay of framing may need to be strengthening to support an increase in gravity loads. The new structure should directly connect to the existing slab to provide lateral support for the top of the existing retaining wall.

Scheme 2: The new slab should extend to the remaining existing beams supporting the façade and be directly connected to provide lateral support for the top of the wall. Strengthening of the existing framing and/or supplemental structures may need to be provided to support loads from the new concrete slab.

Above Grade Levels

Scheme 1: If the remaining one bay of structure is intended to be occupied the existing concrete slabs and framing may need to be strengthened to support the intended loads. If the new building levels are located at the same elevation as the existing building levels, then the new structure should be connected directly to the existing structure. If the new building levels are located at different elevations as the existing levels, then new vertical elements spanning between the existing and new levels will likely be required to tie the existing structure to the new structure. These vertical elements would likely consist of concrete shear walls or steel trusses. Stairs or ramps will also be required for accessibility between the differential levels. Any existing façade parapet wall that remains should be analyzed for current out-of-plane loading and braced as needed.

Scheme 2: If the entire existing interior structure is demolished then the existing façade walls will not be braced by the existing slabs at the 2nd floor or the roof and would not be stable for lateral out-of-plane loads. Therefore, out-of-plane shoring for the entire façade height would likely be required until the new structure is installed. This shoring would likely consist of horizontal steel members bolted to the existing façade and connected to vertical steel trusses extending out towards the street and supported on temporary foundations or dead men. The adequacy of the existing façade to resist out-of-plane lateral loads will need to be analyzed with respect to the new floor levels and interior strengthening or supplemental structure may need to be provided. Strengthening may involve enlargement the interior face of existing concrete walls or columns and/or the addition of steel strong backs connected to the interior of the existing concrete façade. Furthermore, if additional gravity loads are transferred into the existing façade walls and/or columns, strengthening or supplemental structure may need to be provided. Any existing façade parapet wall that remains should be analyzed for current out-of-plane loading and braced as needed.

Seismic Considerations

The recommendations made in this section are valid for both Scheme 1 and Scheme 2.

The existing and new structure should be tied together to avoid pounding due to seismic movement. The existing façade walls and framing should be treated as architectural elements for seismic design purposes. Connections of the new structure to the existing facade should be detailed to ensure that the new building seismic loads are not transferred to the existing façade walls and framing, or additional analysis may be required to demonstrate that if tied together, the lateral loads will not increase in the existing façade structural elements. Lastly, the adequacy of the existing remaining façade to resist its own in-plane seismic loads should be analyzed and strengthening provided as required.

Infills

The recommendations made in this section are valid for both Scheme 1 and Scheme 2.

Original window openings were infilled with concrete masonry units or brick masonry during the 1960's and 1970's renovations. These masonry infills can likely be removed and the original openings restored upon further investigation of the condition and layout of the existing structure above and adjacent to the openings. If it is found that the existing structure is not adequate to support the original openings, a supplemental support structure may be needed and can be applied on the interior face of the façade.

Repair and Protection of Existing Concrete Members/Facade

The recommendations made in this section are valid for both Scheme 1 and Scheme 2.

We recommend a thorough investigation of existing concrete members to determine the extent, severity and cause of any concrete cracking, spalling, corrosion or other deterioration that may be present. Appropriate repair and protection measures should then be implemented and may include epoxy injection of cracks, removal and rebuilding of unsound or spalled concrete, cleaning of corroded reinforcement and application of corrosion-protective coatings, and possible member strengthening by enlargement or addition of supplemental structure.

The non-original steel angles that support the 1960's and 1970's continuous steel façade are attached to the existing concrete with steel anchors. To mitigate future damage to the original concrete due to corrosion expansion, we recommend complete removal of these steel anchors and infilling of the subsequent remaining holes with grout matching the color and texture of the surrounding concrete. If complete removal is not feasible, we recommend the steel anchors be cut off at or beneath the surface of the surrounding concrete and a corrosion-protective coating be applied. These recommendations apply to any exposed and unprotected steel selected to remain.

Further Investigation

As original and prior renovation construction drawings were not made available to us, our recommendations are based upon the existing building information gathered during the limited selective investigation. We recommend further investigation to determine the full layout of the existing concrete structure, including the direction of interior framing and the location of interior columns. This information would help to determine the validity of our assumptions and the feasibility/compatibility of Scheme 1 with the new project.

Thank you very much for the opportunity to work with you on this challenging and interesting project. If you have any questions, please feel free to contact us at your convenience.

Sincerely,

STRUCTURAL FOCUS

David W. Cocke, S.E.
President

Michael Daciolas, P.E.
Design Engineer