GARAVAGLIA • ARCHITECTURE, INC.

COMMERCIAL

HISTORIC PRESERVATION

RESIDENTIAL

Relocation Feasibility Study:

Presidio of San Francisco National Landmark District
Buildings 201, 204 and 228

DRAFT REPORT

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PRESIDIO OF SAN FRANCISCO

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Relocation Feasibility Study

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I. EXECUTIVE SUMMARY

Garavaglia Architecture, Inc. has been contracted to evaluate the feasibility of relocating Buildings 201 and 204, as well as the feasibility of raising Building 228 of the Presidio of San Francisco National Historic Landmark District. All three buildings are listed as contributing structures to the district and all three fall within the contextual period of Nationalistic Expansion: 1891-1914 as identified in the national register update dated October 1993. This relocation study was commissioned as part of the proposed Presidio Parkway Alternative (alternative 5) of the Doyle Drive replacement project. Under this alternative, a proposed tunnel in the vicinity of Halleck Street would impact Buildings 201 and 204. This would also require regarding Halleck Street, resulting in a higher elevation for the roadbed along Buildings 201 and 228.

At the current time Building 201 is proposed for eventual relocation to its current site. However, only the second level of the building is proposed for reinstallation. Building 204 is proposed for relocation just south of the Crissy Center within the footprint of the current Building 605, which is slated for demolition. Building 228 would remain on its current site but be potentially raised to maintain its current relationship with Halleck Street once final regrading is complete.

As of the completion of this draft, key elements of the project remain undetermined. This include:

- Level of preservation to be used regarding Buildings 201, 204 and 228
- Proposed uses of Buildings 201, 204 and 228.

The impacts of these undetermined elements should be studied in greater depth as part of the documentation and preparation of the three buildings associated with their relocations. The remainder of this feasibility study assumes that this will be the case and the final draft of this document will not undertake any impact evaluations that may result from decisions regarding the levels of preservation or the proposed uses of the buildings.

Garavaglia Architecture, Inc. presents several options for each building based on the current understanding of project depth, sequencing and scope. Recommendations follow this section and are given in a prioritized list. Where essential information has not yet been determined, suggestions for implementing the recommended course of action are provided. In general, Garavaglia Architecture, Inc. recommends that Building 228 remain in place at its current elevation. Building 201 should be cut into a maximum of three sections and stored on a temporary foundation in the parking lot immediately south of the project site until all regrading work on Halleck Street is complete. Building 204 should be cut into a maximum of three sections and prepped for transportation while construction on the at-grade detour is finalized. Once the at-grade detour is complete and the existing Doyle Drive concrete viaduct and Building 605 are demolished, Building 204 should be transported in sections to its proposed location behind the Crissy Center. It can be permanently placed on its new foundation prior to completion of the remainder of the Doyle Drive project.

Several different foundation types are possible for the relocated buildings. When dealing with a relocated building, general a slab foundation is the simplest option. It should be poured several feet larger than the anticipated footprint of the relocated building to accommodate any deviations in wall

construction. However, a continuous concrete footing with interior slab is also a viable option. In such a case, all trenching should be completed prior to relocation of the building on the site. The building would then be lowered to within 4' of grade and the cripple walls built up to meet the building. Once the building has been lowered, the slab can be poured. This method requires highly exact construction that accommodates all construction idiosyncrasies associated with the building. In either case, it is highly recommended that the Building Mover Contractor work closely with the Cement Contractor to determine the proper sequencing and construction methodology for each building.

Additional recommendations on protecting the historic structures before, during and after their relocations are also provided, as are thoughts and suggestions for future studies regarding the buildings that will may allow for a higher quality rehabilitation of the buildings once final uses are determined. Changes to the level of preservation desired as well as the treatment of specific features and/or specific buildings may occur after further historical documentation has been reviewed.

II. METHODOLOGY

Before undertaking any alterations to a historic building or site, it is important to first understand the significance of the building, its physical and historical context and how that information is communicated through its architectural features.

A. Document Review

As part of this informational gathering and education phase, Garavaglia Architecture, Inc. has reviewed the following documentation.

1. Existing historical documents.
   - "Building No. 204 M.P. Storeroom H.N. C.A. Shop, Presidio of San Francisco," plan and section, dated August 28, 1940
   - "Building No. 228 Storehouse," plan, section and southern elevation, dated October 27, 1946
   - "Plan of Proposed Colored E.M. Club, Bldg. No. 228," undated
   - "Building No. 201 Post Exchange Store & Office," plans and section, dated April 16, 1940
   - "Rehabilitation of Building 201," plans and elevations, dated September 30, 1966

2. Previously completed historical documentation.
   - "Presidio of San Francisco National Register of Historic Places Registration Forms, Section 7: Contributing Resources for the Nationalistic Expansion Period (1891-1914)," dated October 1993
   - "Presidio of San Francisco National Register of Historic Places Registration Forms, Section 7: Development of the Designed Landscape for the Nationalistic Period (1891-1914)," dated October 1993

3. Previously completed physical characteristics analyses.
   - "Presidio Physical History Report Building Inventory, Building 228," dated September 1992
   - "Presidio Physical History Report Building Inventory, Building 204," dated September 1992
   - "Presidio Physical History Report Building Inventory, Building 201," dated September 1992

4. Current project documentation.
   - "Draft Environmental Impact Statement / Report and Draft Section 4(f) Evaluation: South Access to the Golden Gate Bridge, Doyle Drive," dated December 2005
   - Current maps
   - Various project related documents from the electronic staging website

B. Physical Verification

The next phase involved verifying the physical information contained in the historical documents and existing reports. Several site visits were arranged. The first, on October 11, 2006, was limited to interior surveying of Building 228 and exterior surveying of Buildings 201, 204 and 228. Interior access to Buildings 201 and 204 was granted for a second site visit on October 12, 2006. Also at this time, consultation with Kelly Brothers House Movers was conducted on site. The main purpose of these two site visits was to verify materials, conditions and physical layout, and construction methodology of each of the buildings. The current conditions were thoroughly photodocumented and recorded on custom survey sheets prepared by Garavaglia Architecture, Inc. Initial comparisons to architectural plans from the 1940's were also completed onsite.

A third site visit was conducted on October 20, 2006. At this time, the locations and extent of previously identified character-defining features were surveyed and photodocumented. During the course of this verification, sketches of the existing interior layouts were prepared and later compared to those represented on the 1940's drawings.

Once all the field data was gathered, comparison to historic documents was undertaken. Additionally, approximate dates of the interior and exterior finishes and features were made based on historic documentation and professional knowledge of building technology evolution and material development history. This stage was particularly important in the determination of historic verses non-historic elements and for determining a historically sensitive set of recommendations for selective demolition prior to relocation.

Additional historical documentation has been requested but not yet reviewed. The following recommendations reflect Garavaglia Architecture, Inc.'s current understanding of the historical significance and building histories of the resources in question. This understanding may be influenced by the requested documentation, and may result in changes to the recommendations put forth in this draft report.

C. Building relocation summary

The initial steps for preparing a building for relocation are very similar regardless of building materials or construction type. After a determination has been made as to whether or not the building is sound enough to undergo relocation the next step is to assess the possible sites proposed to accept the relocated building. If no such site has been determined, an interim storage site must be chosen and evaluated. The following questions should be considered as part of this step.

- Is the future site suitable for the new building?
- Does a viable transportation route exist between the current and proposed site?
- What sorts of site preparation must take place prior to relocation?
- Is the site subject to any additional work related to the Doyle Drive Presidio Parkway Alternative?
- Is the interim site easily securable?

- Can the building remain on this site for the duration of the project or must it be moved at a later date prior to installation at its final location?
- What are the relative costs associated with preparation of the interim and/or final sites?

Once a final and/or temporary storage site have been selected, the next step is to determine a route to the interim storage or final location. The route, in general, should be as level as possible. Height and width restrictions may also come into play. The two building slated for relocation are approximately 32' and 34' wide respectively. While some overhang of the buildings is usually permissible, the proximity of historic structures to the edges of potential route roads could be a severely limiting factor. Additionally, overhead utility wires, underground features subject to heavy loads, condition of roads, topography and traffic restrictions all must be considered.

Once the restrictions of the route and the proposed sites are clearly understood, a methodology for relocating the buildings can be developed. Restrictions on height, width or weight may require the disassembly or sectioning of the building. The number and size of these segments are determined by route, site restrictions, budget and available equipment.

While the proposed site is being evaluated, all non-historic interior elements are usually removed to lighten the building prior to relocation. These include all furniture and storage features, lighting and plumbing fixtures and non-historic partitions and finishes. In some cases, non-historic additions may be removed and discarded so that only the historic resource, in a more original form, is relocated.

1. Specifics for wood-frame buildings
   For wood-frame buildings, the building can be moved as a single unit or in sections depending on the size of the structure and the circumstances regarding its transportation. Segmenting of the structure is usually done with a handheld circular saw. The locations of cuts are determined by the structural elements of the building and their material integrity. Roofs can be removed, disassembled or "topped" to lower the height. For board-wall construction, it may be more practical to disassemble the entire building rather than move it as a whole erect structure.

   The site is then cleared of obstructions, including landscaping. After an analysis of the building's structure and massing, trenches are excavated around the foundation and steel beams are placed under the structure in both the longitudinal and transverse directions. Hydraulic jacks are then put in place at closely spaced intervals along the steel beams. These jacks are connected to a common hydraulic system control, which slowly raises (or lowers) the building in a controlled and uniform fashion.

   On the interior, the building is braced with lumber and windows, doors and historic features are protected in place. Such bracing serves to limit torsion and lateral movements. Once the jacks are loaded, the pony or support walls are removed from under the building. Crawl spaces and basements are filled with shoring so that the dollies can roll on a level surface. These dollies are typically eight-wheeled trailers approximately 32" high and five-feet

square. They are placed under the building and it is then lowered. All subsequent moving is done from this movable platform.

2. Specifics for unit masonry buildings
   For brick buildings, segmenting the building is a less practical undertaking. Instead of making even cuts, disassembly locations are determined and cuts are made through the mortar joints. Every effort is made to disassemble the wall at the location of the "cut" rather than to cut individual units into pieces. For stability, roofs are generally left intact when possible to provide lateral resistance to the outer walls, however then can be "topped" to reduce overall height.

   The site is then cleared of all obstructions and landscaping. Excavation along the foundation is undertaken, down to a level slightly below the base of the footings. Steel straps are then run underneath the walls at pre-determined intervals. These straps are run under the outer walls, under the building, and out under a parallel exterior wall, thereby creating a sort of woven cradle to support the building. The free ends of these straps are attached to a steel frame that is erected around the building. Jacks are then applied to the steel frame to lift the building in the manner described above for wooden buildings. In this way, all pressure is applied to the steel frame rather than to specific points along the masonry walls.

   Once the building has been raised a sufficient height, crawl spaces and basements are filled with shoring so that dollies can be inserted on a level surface. The building is then moved in a manner similar to that described above for wooden buildings. Or if the building is simply being raised, a new foundation is constructed to support the building at its desired height.

D. Site Preparation

While the buildings are being prepared for relocation, the reception site must be readied to accept the relocated building. The site must be leveled and a proper foundation, either permanent or temporary must be built. Typically the foundation is only partially finished before the building arrives at the site. Once the building is lowered into place, the foundation is finished and attached to the relocated structure. (See Section I: Executive Summary for a more detailed description of foundation options.)

E. Thoughts on the proposed project including level of desired preservation efforts

The Secretary of the Interior's Standards and Guidelines for the treatment of historic properties identify four different approaches: Preservation, Rehabilitation, Restoration and Reconstruction. Each embodies a slightly different philosophy and each has a unique set of Standards to guide treatment. The following definitions are quoted from the National Parks Service's *Introduction to the Standards and Guidelines.*

- Preservation "places a high premium on the retention of all historic fabric through conservation, maintenance and repair. It reflects a building's continuum over time, through successive occupancies, and the respectful changes and alterations that are made."

- Rehabilitation "emphasizes the retention and repair of historic materials, but more latitude is provided for replacement because it is assumed the property is more deteriorated prior to work. (Both Preservation and Rehabilitation standards focus attention on the preservation of those materials, features, finishes, spaces, and spatial relationships that, together, give a property its historic character.)"

- Restoration "focuses on the retention of materials from the most significant time in a property's history, while permitting the removal of materials from other periods."

- Reconstruction "establishes limited opportunities to re-create a non-surviving site, landscape, building, structure, or object in all new materials."

Generally, the type of treatment is dictated by the goals of the project, level of financial resources, condition of the resource and desired level of historic preservation. Even though no specific course of action as been identified, rehabilitation seems to be the most appropriate for this project. However, even within a specific treatment, there are degrees of material retention and preservation philosophy. For example, in Building 204 there are several floor constructions on the ground level. Which of these is reconstructed at the new site will be an important feature of the relocated building. As might be expected, reconstructing the floor as it currently exists has a different associated preservation value and monetary cost than eliminating this character-defining feature altogether in favor of a new, non-historically accurate floor. The level of retention has not been determined. This could dramatically affect the costs associated with the project. Therefore, a preservation treatment should be determined before any work commences. Any tenant improvement work to accommodate new uses after the buildings are in place and Doyle Drive has been completed, should also follow the Standards and Guidelines of the selected historic preservation approach.

In reviewing the DEIS/R, there are several instances where an impact on the resources in question is acknowledged. However, no discussion of the nature of these impacts takes place. While it is understood that such discussions may take place at a later date in subsequent documentation phases, it is important here to note that while these impacts may be lessened through sensitive preservation-minded approaches, it may not be possible to mitigate them to a less than significant level.

III. FINDINGS

Here is a summary of the options available within the parameters, as outlined in the DEIS/R, of the project as it relates to buildings 201, 204 and 228. Each option is discussed separately for each building. After all options for the buildings relocation are put forth, general stabilization strategies are presented. These strategies apply to all of the options and all of the buildings and are intended to further inform the scope of work involved with the relocation of the resources in question.

A. Building 201

1. Construction

Building 201 is a two-story, rectangular, hip-roofed, wood-frame building, measuring approximately 32' by 190', and built into a hillside to the south. The first floor is composed of rough-cut stone and CMU retaining walls on the south and east sides, a board and batten wall on the west side and a wood framed, lap siding covered wall on the north side. The second floor is clad in lapped wood siding covered by a thin layer of polystyrene insulation and vinyl siding. Many of the building's 10" square support posts are exposed on the first floor. Originally this level was open and may have served as stables or for temporary storage for the Post Exchange store above. The second floor is at grade along Halleck Street, and still retains its original wooden sidewalk immediately adjacent to the building. When first constructed, the only access to this level was from along Halleck Street. At grade on the west side of Building 201, half of the open bays were enclosed in the 1940's to serve as garages. The board and batten siding and many of the first floor windows date to this period.

The building has two different structural framing systems. The first floor is supported by 10" square posts placed approximately 10' on center that rest on concrete footings and a poured-in-place concrete floor. The northern half of the first floor has a raised wood plank floor that is level with the exterior loading dock. The rear (east) retaining wall and the wood posts are the primary structural framing for the entire floor. The second floor joists rest on 10"x12" girders spanning the 10" posts. The walls are wood framed and spanned by a simple king-post truss structural roof system. Drawings from 1940 indicate that at that time the 2nd floor was finished with a tongue-and-groove wood ceiling.

There are several rooms with finishes dating to the period of use as a post exchange store. These include tongue-and-groove ceilings and wall finishes, celotex and batten wall partitions, celotex, batten and glass partitions and wall trim. Additional character-defining features that remain include an original meat locker, which now serves as storage and a restroom for the PresidiGo dispatch office.

A matrix outlining the locations of CDF is included as an appendix of this report.

2. Relocation Preparation – General procedure for Building 201

The preferred alternative, Alternative 5: Presidio Parkway, calls for the second level of Building 201 to be moved off-site during construction then placed back approximately in its present location. The first floor will not be retained under this proposal.

Because Building 201 has a fair amount of original finishes, doors and windows remaining from its period of use as a Post Exchange Store and Offices, protection of these elements should be installed prior to moving the building from its current site. These interior protections and stabilization strategies are discussed at the end of this section.

A structural assessment of the building should first be conducted to determine the most appropriate bearing points for the hydraulic jacks and temporary support members. Generally, these points will be equally spaced around the perimeter as well as underneath the building. Once these bearing points have been determined, temporary cribbing will be built at each location. This cribbing, and the hydraulic jacks, will support the full weight of the building once the first floor posts and retaining walls have been disconnected from the upper level of the structure.

When the upper level is freed of all existing connections to the first floor, and all interior preparation activities are complete, selective demolition of the first floor partitions and support elements will be required to clear an area into which to lower the building onto dollies or a wheeled platform for transportation to the interim storage site. To lower (or to raise) the building, the hydraulic jacks are carefully set up to a common control that enables them to be simultaneously activated for uniform and controlled building movement. When the jacks are properly engaged, the cribbing can be removed, one layer at a time. In this way, the building is lowered only a small amount at a time and is only fully supported by the jacks for brief periods of time. Eventually, the building reaches a point low enough to be supported on wheeled dollies. Once on the dollies, it is ready to be pulled to the interim storage site where a temporary foundation has already been constructed. As an alternative, the building could remain on the dollies indefinitely provided occupancy is not desired. However, this option is much more expensive than placing the building on a temporary foundation. It may be more economical to purchase the dollies rather than renting (the most typical arrangement) them for the purpose of building storage.

To move the building to its final placement, the building is either lifted a second time onto dollies for transportation, or if the dollies remain in place for the duration of storage, they are simply pulled to the new site. A permanent foundation should be partially constructed prior to bringing the building to the site. After the building is lowered to within a short distance of the foundation, the foundation is finished and the building is attached. The jacks and temporary shoring are then removed. Building 201 will have floor framing already in place and may be lend itself to a crawl space or larger basement level if that is desired. There are no structural limits to the final height of the building on its new site.

3. Transportation routes and storage

Current project documentation (as communicated on November 8, 2006) shows 201 being placed on a temporary foundation approximately 150' south of its present location and perpendicular to its current orientation. The positioning of a steep, 10' high embankment poses a challenge for transportation to this site, however the grade is not insurmountable. Eventually, the entire area surrounding the building will require some regrading work, which includes both excavation and filling. Consequently, the safest and most practical option for storage of Building 201 is to move it off its present location and away from all proposed work. The proposed site accomplishes this goal and no further movement of the building should be required prior to placement on its final location.

This proposed site is not the only option for temporary storage. Garavaglia Architecture, Inc. presents the following options regarding the transportation and storage of Building 201:

a. Option 1: South Parking Lot
   Under this option, Building 201 would be stored on a temporary foundation in the existing parking lot just south of the site. This lot is approximately 10' higher in elevation than grade along the western side of Building 201. Transportation would have to be along a route that travels up the bluff along Halleck Street. Given the width of Halleck along this portion, and the proximity of historic resources adjacent to the road, transportation could occur only over the short distance to the parking lot. Traveling any further north or south on Halleck Street would require additional segmented of the building. This transportation option is valid for all three relocation options below.

b. Option 2: Building 231 lot
   This option would store Building 201 on a temporary foundation just east of the current site where Building 231 now stands. This building is slated for demolition under the current Preferred Alternative and while this site will be subject to regrading once Doyle Drive is complete, sequencing of the work may allow Building 201 to be stored on this location while its final location is regraded and a permanent foundation is constructed.

c. Option 3: Under Doyle Drive to a site elsewhere (partitioning lengthwise)
   Because of Building 201's current location, it must be moved prior to demolition of the existing Doyle Drive and construction of the at-grade detour. To move Building 201 anywhere along Halleck Street, either under Doyle Drive or beyond the two lots already identified would require the building to be segmented lengthwise. While possible, doing so would greatly reduce the structural integrity of the building as well as increase the costs associated with protecting it during storage and repairing after final placement. The design of the roof trusses utilizes their triangular and cross-braced form to support the roof and provide rigidity to the outer walls. These forms would be greatly disrupted if cut along the ridgebeam. Additional bracing would be necessary. As an alternative to this, the roof could be removed and completely replaced. Once under Doyle Drive or beyond the narrowest portions of Halleck Street,

the building pieces could be relocated to just about any site for partial reassembly and protection in the interim period.

4. Relocation Option 1: Move Whole

The description above primarily describes the process for moving Building 201 as a whole unit.

Pros
- Retains the most original fabric
- Retains the highest degree of material and historical integrity
- Lowest repair costs after final placement
- Lowest chance of damage during the relocation preparation stage

Cons
- The length of the building makes this the most difficult, physically of the options
- The length of the building severely limits the possible relocation routes as well as temporary storage site options
- May be more time consuming than other options
- May be more expensive than other options

Structural issues
Building 201 is approximately 186' long. Moving a building of this length as a single unit presents several structural issues. Because many of the interior partitions are celotex and batten, they provide little lateral structural strengthening. This leaves much of the northern half of the building subject to racking and twisting during the transportation phases. On a level and relatively straight transportation route, this may not pose much of a problem. However, slopes and modest turns in the route may become problematic.

Qualifiers
The success and feasibility of this option is dependent on several factors.

- Grade differentials – As discussed above, extreme grade differentials between the present, storage and final sites, as well as along the transportation route, could be a significant limiting factor on the feasibility of this option should a storage location other than that proposed be selected.
- Projected length of storage – Finding a site to store a building of this length may be difficult and multiple sites may be needed during the duration of construction. Additionally, it is most cost efficient if the building only has to be moved to a single storage location. In general, security of the storage site and protection of the building from weather and impact damage are also key concerns. The longer the building remains on the storage site, the more robust and less "temporary" these protection measures must be.
- Construction Sequencing - Depending on the location of the interim storage site and anticipated uses and changes effecting this location during the construction of Doyle

Drive, more than one storage site may have to be used to adequately protect the building from construction-related damage. Once work is complete on the projected final location site, preparations can take place to enable the site to receive Building 201. This can occur before the completion of the entire Doyle Drive project as long as no further impact on the relocation site is anticipated.

5. Relocation Option 2: Cut into transverse pieces and reassemble

Under this option, Building 201 is cut into two or more transverse segments, each of which is moved and stored as single units. These sections need not be of uniform length. The preparation of the building for relocation follows along a similar sequencing to that described for Option 1. However, prior to being lowered onto dollies for transportation, the building envelope, including roof and flooring, is carefully cut with a handheld circular saw. The cuts are made in predetermined locations, chosen to minimize impact on historically significant rooms and/or finishes and elements. Internal shoring, including construction of new, temporary bearing walls, are installed on either side of the cuts to prevent any loss of interior support or deformation of the building in these locations. The ends are usually wrapped in plastic prior to transportation to protect interior spaces during the move as well as to prevent moisture or debris from collecting during storage.

Transportation and storage is similar to that described above. More care is required during the storage phase to protect the saw cut locations from weather and moisture-related damage. One option is to construct a temporary shelter over the building segments to effectively shed rain and protect the buildings from sun exposure. Another option is to install temporary drainage in the form of flashing, gutters and rain leaders, along the cut locations. Any roofing damaged from the cutting or moving phases should be immediately repaired once the building is secured on its temporary site. Installing plywood over the openings may provide more protection than heavy plastic should the buildings be in storage for an extended or indefinite period of time.

Placement of the building segments on the permanent site is also very similar to that described above for an intact structure. The main difference is that the placement can be phased and equipment removal may be easier for first few sections to be put on their foundations. Once all the segments have been secured to their foundations and reattached to each other, surface repairs will be necessary to hide the cuts and to prevent water, plants and animals from infiltrating the building envelope. New finishes on the interior should easily cover up any visible cuts.

Pros

- More flexibility in transportation routes and storage facilities
- Easier transportation methodology
- High retention of original fabric
- High degree of material and historical integrity
- May be less expensive than Option 1
- Easier maneuverability onto final foundation at new site

Cons
- Higher chance of damage during cutting process
- Greater exposure of interior elements to weathering and damage during interim period
- May still be limited by size during transportation phases
- Greater repair costs once building is relocated
- Greater storage costs to properly protect the building during the interim period

Structural issues
Smaller segments are much less susceptible to deformation. However, cutting the building into segments may require limited and localized structural reinforcement when the building is pieced back together on its final site. Proper bracing of the building for transportation and storage is critical to prevent unnecessary, and potentially extensive, damage.

Qualifiers
- Grade differentials – While there is a greater range of transportation routes available under this option, grade differentials may still be a determining factor for storage sites and overall feasibility if a storage site other than those already discussed is chosen.
- Projected length of storage –In general, security of the storage site and protection of the building from weather and impact damage are top concerns for a segmented building. Ensuring that the structures can sufficiently shed water and prevent water intrusion along the cuts is paramount. During the anticipated storage period of 3-5 years, significant moisture damage could occur if measures are not taken immediately after the initial removal from the present site. The longer the building remains on the storage site, the more robust and less "temporary" these protection measures must be.
- Construction Sequencing - Depending on the location of the interim storage site and anticipated uses and changes effecting this location during the construction of Doyle Drive, more than one storage site may have to be used to adequate protect the building from construction-related damage. Once work is complete on the projected final location site, preparations can take place to enable the site to receive Building 201. This can occur before the completion of the entire Doyle Drive project as long as no further impact on the relocation site is anticipated.

6. Option 3: Cut into pieces and reuse only select segments

This option proceeds along exactly the same lines as Option 2, except that only select segments are stored and installed at a new site. The unused segments could be salvaged for materials for repairs to the final structure.

Pros
- More flexibility in transportation routes and storage facilities
- Easier transportation methodology
- Easier maneuverability onto final foundation at new site
- Lower overall relocation costs
- Greater flexibility for final placement site selection

Cons
- Higher chance of damage during cutting process
- Greater exposure of interior elements to weathering and damage during interim period
- May still be limited by size during transportation phases
- Greater repair costs once building is relocated
- Greater storage costs to properly protect the building during the interim period
- High degree of impact on historic materials
- Complete loss of historical integrity

Structural issues
Connecting two, previously non-adjacent, building sections may present limited and localized structural repair issues. Specially designed supplementary support may be required.

Qualifiers
- Grade differentials – While there is a greater range of transportation routes available under this option, grade differentials may still be a determining factor for storage sites and overall feasibility.
- Projected length of storage –In general, security of the storage site and protection of the building from weather and impact damage are top concerns for a segmented building. Ensuring that the structures can sufficiently shed water and prevent water intrusion along the cuts is paramount. During the anticipated storage period of 3-5 years, significant moisture damage could occur if measures are not taken immediately after the initial removal from the present site. The longer the building remains on the storage site, the more robust and less "temporary" these protection measures must be.
- Construction Sequencing - Depending on the location of the interim storage site and anticipated uses and changes effecting this location during the construction of Doyle Drive, more than one storage site may have to be used to adequately protect the building from construction-related damage. Once work is complete on the projected final location site, preparations can take place to enable the site to receive Building 201. This can occur before the completion of the entire Doyle Drive project as long as no further impact on the relocation site is anticipated.

B. Building 204

1. Construction

Building 204 is a two-story, rectangular gable-roofed, wood-frame building, measuring approximately 34' by 184'. The entire building is clad in wood lap siding and rests on a concrete foundation. Two longitudinal rows of 6" square posts break up the interior into approximately 11' bays. The first floor is dominated by a large, open room that encompasses the eastern three-quarters of the building. The western quarter is finished for offices but was unoccupied at the time of surveying. The second floor is divided into

multiple offices flanking a central hallway. One larger open room is at the western end of the second floor.

The building rests on continuous concrete footings with a partial interior concrete slab. The exterior walls are 2"x4" framing with continuous diagonal redwood sheathing. The upper level floor framing consists of 2"x10" joists that rest on 8" square beams spanning the grid of posts, parallel to the length of the building. The roof is supported by cross-braced queen post trusses.

While no original finishes remain on the second floor or in the finished office space on the first floor, there are several interesting finish features found in the large open room on the first floor. A non-level, poured-in-place concrete slab with shallow depressions along its edges exists on grade in the center bay, running the length of the room. It is only as wide as the central bay between the columns. The two outer bays in this section have piles of heavily rotted 2"x4" boards placed on-edge and immediately adjacent to each other. It appears that this flooring was meant to hold a great deal of weight. The on-edge boards in turn, rest on wood sleepers set directly on grade. At one point, the finish floor placed over the 2"x4" would have been at the same level as the central concrete slab. To the west of this central section, additional floor joists are placed on top of both the lower concrete slab and the on edge 2"x4" boards. Another, 2" thick tongue-and-groove wood floor has been installed over these joists and vinyl tiles complete the finish floor. This section corresponds to the "carpenter's shop" area given on the 1940's plans. To the east of the central section, a second concrete slab has been poured over the first slab and presumably over the early wood floor.

Under the gypsum board wall finish that covers most of the large room, bead board is still extent. It is nailed directly to the wood framing opposite the diagonal sheathed exterior walls. It appears to be original to the building. The 6" square posts have all been covered with a box of 1" boards and floor trim was added. Several of the posts have been removed and replaced by supplementary support framing. Many of the remaining post show signs of extreme deterioration at floor level.

A large hand elevator is still present on the second floor. It was once used to move goods between the two levels. All of the framing and mechanical equipment is in place for the elevator. All other finishes and partitions on the second floor are of recent construction.

2. Relocation Preparation – General procedure for Building 204

The preferred alternative, Alternative 5: Presidio Parkway, calls for the Building 204 to be completed removed from its current site and relocated to a site just south of the present Crissy Center, partially within the footprint of Building 605. Demolition of Building 605 and of Doyle Drive is required before 204 can be placed on this site.

Building 204 retains very little of its original interior layout or finishes on the second floor. However, the majority of the first floor retains a fair amount of original finishes. The

building, as a whole, also retains many windows from its period of use as a Carpenters' and Cabinet Shop as well as prior periods of use. Protection of these elements should be installed prior to moving the building from its current site. These interior protections and stabilization strategies are discussed at the end of this section.

Like Building 201, a structural assessment of Building 204 should first be conducted to determine the most appropriate bearing points for the hydraulic jacks and temporary support members. Generally, these points will be equally spaced around the perimeter as well as underneath the second floor framing of the building. Even though the entire building is being relocated, the concrete slab foundation cannot be transported. Therefore multiple bearing points at multiple heights are necessary. The first floor support posts are currently attached to the second floor girders with mortise-and-tenon connections. These connections may loosen once the load has been lifted off the posts. To account for this, all first floor posts should be labeled and mapped prior to lifting Building 204 so that then can be reinstalled in their original locations when necessary.

Once the bearing points have been determined, temporary beams are installed at the base of the exterior walls both along the walls and across the building to provide a stable and continuous bearing plane for lifting. Small steel beams are then used to build a platform near all the exterior walls. This platform will rise from about 3' off the floor up to the height of the 2nd level floor joists. This platform then becomes the primary bearing element for lifting the building. These beams, platforms, and hydraulic jacks, support the full weight of the building once the first floor exterior walls and interior posts have been disconnected from the concrete foundation. Prior to commencing any lifting of the building, the large open rooms are be braced with temporary cross-bracing or walls to prevent the building from twisting or otherwise deforming during the lifting and transportation phases. This is particularly required in the large first level open area and the large room at the western end of the second level.

When the upper level is freed of all existing connections to the foundation, and all interior preparation activities are complete, the building is slowly lowered onto dollies or a wheeled platform for transportation to the interim storage site. To lower (or to raise) the building, the hydraulic jacks are carefully set up to a common control box that enables them to be simultaneously activated for even and controlled building movement. The building is then raised from the foundation and then lowered onto wheeled dollies. Once on the dollies, it is ready to be pulled to the interim storage site where a temporary foundation has already been constructed. As an alternative, the building could remain on the dollies indefinitely provided occupancy is not desired. However, this option is much more expensive than placing the building on a temporary foundation. It may be more economical to purchase the dollies rather than renting (the most typical arrangement) them for the purpose of building storage.

To move the building to its final placement, the building is either lifted a second time onto dollies for transportation, or if the dollies remain in place for the duration of storage, they are simply pulled to the new site. A permanent foundation should be partially constructed

prior to bringing the building to the site. After the building is lowered on to the foundation, the jacks and temporary shoring are removed and the foundation is finished and attached to the building. Some repair to the first floor posts may be required prior to removal of the temporary bracing and support framing. Additionally, flooring on the lower level will have to be installed. What this flooring is will be determined by the type of foundation installed as well as the level of preservation selected for the project. Reconstructing the earliest existing floor is the most desired preservation approach. The type of flooring installed may affect the level and types of repairs required for any damaged posts.

3. Transportation Routes and Storage

   The current project sequencing calls for Building 204 to remain on its current location until Doyle Drive has been demolished and an at-grade detour is constructed. While this is occurring, the building will be prepped for relocation. Once a clear path has been created, the building will be moved across the at-grade detour and place on a new, permanent foundation just south of the Crissy Center, within the footprint of Building 605. 605 is a non-contributing building and is slated for demolition prior to relocation of Building 204. Once 204 is on its new site, excavation of the tunnel portion of the new Doyle Drive can occur.

4. Relocation Option 1: Move Whole

   The description above primarily describes the process for moving Building 204 as a whole unit.

   Pros
   - Retains the most original fabric
   - Retains the highest degree of material and historical integrity
   - Lowest repair costs after final placement
   - Lowest chance of damage during the relocation preparation stage

   Cons
   - The length of the building makes this the most difficult, physically of the options
   - The length of the building severely limits the possible relocation routes as well as temporary storage site options
   - May be more time consuming than other options
   - May be more expensive than other options

   Structural issues
   Building 204 will require extensive bracing prior to relocation. The large open floor plan and lack of solid cross-walls may necessitate construction of new, bearing walls in addition to cross-bracing and floor support. After relocation, the extent of repairs need to restore the existing first floor posts to structural stability may require leaving supplemental support in place after the building is placed on its final proposed site. In some instances, the entire

post may need to be replaced or the supplemental support structures may have to be left in place as a permanent or semi-permanent solution.

Qualifiers

- Projected length of storage – The current proposed plan calls for Building 204 to be prepared for relocation while construction of a temporary at-grade detour of Doyle Drive is occurring. Demolition and construction activities in this area may impact building preparation activities. Coordination of construction/demolition activities with building preparation work is recommended. This may allow for a shorter "storage" period which could lessen the impact on the building overall.
- Construction Sequencing - Once work is complete on the projected final location site, preparations can take place to enable the site to receive Building 204. This can occur before the completion of the entire Doyle Drive project as long as no further impact on the relocation site is anticipated.
- Future wetland restoration – While no definitive site has been chosen as the ultimate relocation site for Building 204, several potential sites near the existing Crissy Center have been proposed. According to information in the DEIS/R (page 2-6, for example) much of the area east of the Crissy Center is slated for potential wetlands expansion. Currently, this is the only location north of the existing Doyle Drive and near the Crissy Center that is large enough to accept a building the size of Building 204. While other locations have since been proposed (south of the Crissy Center, near the existing Building 605) any impact on other proposed wetlands restoration projects should be considered in the selection of a final site.
- Site drainage issues – In its current location, a drainage ditch runs along the south side of the building. Improper site drainage has accelerated damage to wooden elements near grade, such as the first floor posts. The proposed area of relocation near the Crissy Center is currently subject to temporary periodic flooding. If it is not restored to wetlands, this site drainage issue must be addressed prior to establishing a foundation for the permanent relocation of Building 204.

5. Relocation Option 2: Cut into pieces (3 maximum) and reassemble

This process is similar to that described for Building 201, Option 2 but with the additional internal shoring discussed for Building 204, Option1.

Pros

- More flexibility in transportation routes and storage facilities
- Easier transportation methodology
- High retention of original fabric
- High degree of material and historical integrity
- May be less expensive than Option 1
- Easier maneuverability onto final foundation at new site

Cons

- Higher chance of damage during cutting process

- Greater exposure of interior elements to weathering and damage during interim period
- May still be limited by size during transportation phases
- Greater repair costs once building is relocated
- Greater storage costs to properly protect the building during the interim period

Structural issues

Building 204 will require extensive bracing prior to relocation. The large open floor plan and lack of solid cross-walls may necessitate construction of new, bearing walls in addition to cross-bracing and floor support. After relocation, the extent of repairs need to restore the existing first floor posts to structural stability may require leaving supplemental support in place after the building is placed on its final proposed site. In some instances, the entire post may need to be replaced or the supplemental support structures may have to be left in place as a permanent or semi-permanent solution.

Qualifiers

- Projected length of storage – The current proposed plan calls for Building 204 to be prepared for relocation while construction of a temporary at-grade detour of Doyle Drive is occurring. Demolition and construction activities in this area may impact building preparation activities. Coordination of construction/demolition activities with building preparation work is recommended. This may allow for a shorter "storage" period which could lessen the impact on the building overall. This is particularly true under Option 2 as a building in segments is much more susceptible to moisture damage and deformation than a single, intact building. The time that the building remains segmented and exposed to the elements should be minimized under all proposed plans.
- Construction Sequencing - Once work is complete on the projected final location site, preparations can take place to enable the site to receive Building 204. This can occur before the completion of the entire Doyle Drive project as long as no further impact on the relocation site is anticipated.
- Future wetland restoration – While no definitive site has been chosen as the ultimate relocation site for Building 204, several potential sites near the existing Crissy Center have been proposed. According to information in the DEIS/R (page 2-6, for example) much of the area east of the Crissy Center is slated for potential wetlands expansion. Currently, this is the only location north of the existing Doyle Drive and near the Crissy Center that is large enough to accept a building the size of Building 204. While other locations have since been proposed (south of the Crissy Center, near the existing Building 605) any impact on other proposed wetlands restoration projects should be considered in the selection of a final site.
- Site drainage issues – In its current location, a drainage ditch runs along the south side of the building. Improper site drainage has accelerated damage to wooden elements near grade, such as the first floor posts. The proposed area of relocation near the Crissy Center is currently subject to temporary periodic flooding. If it is not restored to wetlands, this site drainage issue must be addressed prior to establishing a foundation for the permanent relocation of Building 204..

6. Relocation Option 3: Cut into pieces and reuse only select segments

   This option proceeds along exactly the same lines as Option 2, except that only select segments are stored and installed at a new site. The unused segments could be salvaged for materials for repairs to the final structure.

   Pros
   - More flexibility in transportation routes and storage facilities
   - Easier transportation methodology
   - Easier maneuverability onto final foundation at new site
   - Lower overall relocation costs
   - Greater flexibility for final placement site selection

   Cons
   - Higher chance of damage during cutting process
   - Greater exposure of interior elements to weathering and damage during interim period
   - May still be limited by size during transportation phases
   - Greater repair costs once building is relocated
   - Greater storage costs to properly protect the building during the interim period
   - High degree of impact on historic materials
   - Complete loss of historical integrity

   Structural issues
   Connecting two, previously non-adjacent, building sections may present limited and localized structural repair issues. Specially designed supplementary support may be required.

   Qualifiers
   - The qualifiers for this option remain the same as those discussed for Option 2 above.

C. Building 228

1. Construction
   Building 228 is a square, masonry building with a pyramidal roof topped by a box of monitor windows. The building rests on a rock-faced sandstone foundation that varies in height to accommodate the sloped site. The exterior walls are red common bond brick and the window sills and door thresholds are painted sandstone. Decorative rafter tails are exposed under eaves that extend approximately 2' along the entire building perimeter. The building has a concrete floor that appears to vary in date of installation.

   Many of the interior partitions are also masonry and date to the initial construction of the building. Most of the tongue-and-groove ceiling finishes also date to this time. A concrete masonry unit room was constructed sometime after 1940 to enclose the central section of the north wall. More recently a wood-framed storage room was built immediately adjacent

to the only operable entrance on the south side of the building. It roughly corresponds to an office space indicated on the 1946 plan.

2. Option 1: Raise building to maintain existing relationship with Halleck Street

   Reaction to the preferred alternative, Alternative 5: Presidio Parkway, has brought about a study of the feasibility of raising Building 228 to maintain the historical relationship between the building and Halleck Street. As of October 2006, Halleck Street is proposed for an increase of approximately 3' at the northwest corner of the building. This would essentially bring Halleck Street into alignment with the current floor level of Building 228. Almost no change in elevation is proposed at the southwest corner of the building.

   Because Building 228 is a masonry building, the procedures for raising it are different than those used for wood-framed buildings like 201 and 204. Also, its location directly adjacent to Halleck Street, and several utility lines, requires that work around Building 228 be carefully sequenced to avoid unnecessary complications or inconveniences for tenets of the nearby buildings not affected by the Doyle Drive project.

   The first step is to carefully excavate all around the building perimeter down to a level just below the existing stone and concrete foundation. While temporary cribbing is installed below the foundation to support it, a series of steel straps is inserted underneath the building, approximately every 12". These straps extend all the way beneath the building so that the two ends extend out on opposite sides of the structure. These ends are then attached to a steel beam framework that has been erected around the building. This steel frame becomes the bearing member for the hydraulic jacks needed to raise the building.

   Preparing the interior of Building 228 for raising requires much less bracing and selective demolition than either Building 201 or 204. Very few interior additions have been made since the building was used as a bakery. Therefore, only the CMU and wood-framed partitions need be removed. Even these do not necessarily need to be removed to enable the raising of the building. One necessary preparatory step is the removal of the concrete floor. A new floor will have to be poured or built after the building has been raised and the foundation backfilled at its new elevation.

   Once the steel webbing has been installed and firmly attached to the steel framework, hydraulic jacks are secured around the frame. The building is then slowly and evenly raised by applying pressure to the steel framing. It is literally lifted up to the desired elevation. When that elevation is reached, a new foundation, or additions to the existing foundation must be installed to support the exterior walls. To reinstall a slab on grade interior cement floor, the resulting void at the foundation level must be filled and compacted. Drainage may also be installed at this time to prevent settlement issues due to excessive moisture. Other flooring options include a spanning concrete floor, or a newly framed wood floor. Neither of these options requires the level of filling that the current configuration needs.

Pros
- The historic relationship with Halleck Street is retained.
- There is minimal impact on historical integrity as a result of raising a building.
- Raising a building is relatively inexpensive compared to moving the building to a new location.

Cons
- Raising Building 228 will disrupt the soil beneath the building. This soil has caused settling issues from the date of construction and disturbing it may further compromise its ability to support the building.
- The existing retaining wall north of the building may require repairs or replacement.
- Raising the building will alter its relationship to adjacent buildings.
- The raising process may exasperate current settlement and structural cracking along the west elevation.
- The change in elevation of Halleck Street is relatively minimal. The costs and efforts associated with raising the building may not have much of a visual impact.

Structural issues
Historic problems related to site settlement, soil retention and inadequate drainage may be amplified by the raising process. They will have to be addressed prior to placing the building on its new foundation. The extent of this possible work is unknown at this time.

Plans from 1946 indicate additional foundation features beneath the current concrete slab just south of center on the interior. These features may require partial demolition after the floor has been removed but prior to lifting the building.

3. Option 2: Leave building in place at current elevation
Under this option, no changes to the building are necessary. However, other alterations may be required for adjacent features such as retaining walls and Halleck Street.

Pros
- Cost effective
- Highest retention of historic fabric and contextual relationships
- Least potential for damage to the building

Cons
- May require slight alterations to the proposed location of the new Halleck Street
- Will require the construction of a new retaining wall along Halleck Street
- May require the installation of security / safety barriers (railings, fencing) along the Halleck Street

Structural issues
Raising Halleck Street will create a grade differential between the existing foundation of Building 228 and the new roadbed. A new retaining wall will be required to hold back the new fill from the existing grade up to the new grade. This wall would have to be at least 3'

away from the building to accommodate the width of the existing eaves and character-defining decorative rafter ends. Additionally, security barriers may be required along the top of the new retaining wall to both prevent pedestrians from falling into the gap between the road and the building. As an alternative, Halleck Street could be built at a greater distance from the building. This is plausible because there will be no obstruction on the western side of the street once Building 201 is moved off-site.

Some minor site settlement correction may be required to address continued local settlement on the west side of the building. This settlement may worsen as soil is disturbed and redistributed for the reconstruction of Halleck Street.

D. General Stabilization Strategies

1. Retention and Demolition

To lighten the load that must be moved, it is advisable to remove as many interior finishes and/or redundant partitions as possible. Stripping the building down to its framing also allows for a more precise assessment of the building's structural integrity and construction methodology. This is helpful for determining how to best brace, lift and transport the building.

For Buildings 201 and 204, it is not desirable to remove all the interior finishes or partitions as many are character-defining features and date to periods of use that are historically significant. In general, these finishes and features include the following:

- Tongue-and-groove flooring, wall and ceiling finishes
- Wood v-groove wall finishes
- Wood picture and chair rails
- Beadboard wall finishes
- Wood crown molding (around the former meat locker in Building 201)
- Celotex and wood batten wall partitions and ceiling finishes
- Wood and glass wall partitions
- Wood double-hung windows, various configurations
- Wooden paneled doors
- Dutch door
- True-dimension wood framing members
- Meat locker (201)
- Overhead tracks (associated with the meat locker in 201)
- Hand elevator (204)

A comprehensive list of historic and non-historic finishes by building and by room is included as an appendix to this report.

Items that should be removed prior to relocation include:

- All gypsum board wall finishes

- All acoustical and t-bar ceilings
- All carpet and vinyl tile floor finishes
- All non-paneled internal doors
- Select interior wood-framed partitions as determined by the on-site structural assessment prior to relocation

No roof removal or alterations are required for the relocation of either Building 201 or 204.

2. Interior preparations
   In addition to non-historic finish and partition removal and the installation of supplemental bracing as needed, other steps are required to prepare the interior of the buildings for relocation. The first is to remove all loose objects such as furniture, lighting fixtures, HVAC equipment, shelving and unnecessary plumbing fixtures. In the case of Building 201, the western exterior stairway should also be removed as it will not be needed when the one-story building is placed on its final site.

   Just prior to the transportation phase, all doors and windows should be opened and secured in an open position. This allows the building to flex slightly without destroying door jambs, breaking window glass or deforming window sashes. All exterior doors and windows should be closed and secured once the storage site has been reached to prevent unwanted access.

   If the building is to be cut into segments, those areas immediately adjacent, on both sides, of the intended cuts should be cleared of all finishes. Historic finishes should be carefully marked, cataloged, mapped and removed for reinstallation. Whole segments or units should be removed rather than facilitating their removal using cuts. When possible carefully pull nails and unscrew threaded connections to limit damage to historic material. Supplemental framing in these locations (and throughout the buildings) should avoid historic finishes and built-in features to the greatest extent possible. Protect all windows and elements to remain in place during demolition and construction activities. Those materials that cannot be reused or will not be reinstalled can be salvaged for use elsewhere on the building if necessary.

3. Protection strategies for all phases of the project
   Once the buildings have been vacated, it is important to protect them from damage due to the relocation process, construction hazards and security issues that may arise during the storage phase. In general, the following steps are recommended:

   - Protect all windows with 3/4” plywood prior to any demolition work. While this sheathing may be removed for transportation to allow the building increased flexibility, it should be reinstalled while in storage. This will serve to act both as a material protective measure but also to increase security by restricting access to the building through non-intentional locations.
   - Remove all historic fixtures prior to relocation. These fixtures should be clearly labeled to indicate their historic locations as well as to narrate any particular installation

instructions that may be necessary. They can be stored onsite if the site is properly secured. If stored offsite, their storage locations should be well documented and included in the project paperwork for future reference.

- When installing temporary bracing, do not attach it to historic finishes, trim or character-defining features. All connections should be either to non-historic element or in locations that will be concealed after the building has been relocated to its final site.
- All items removed during preparation for relocation should be cataloged. This includes all items not slated for reinstallation but salvaged for future use.
- Copies of all recordation activities should be placed with the building files in the Presidio archives.

IV. RECOMMENDATIONS

For each building, a preferred option is presented and discussed in detail. Following the preferred option is one or more alternatives. These alternatives are also viable options that may be considered depending on the circumstances for each building. A brief discussion of the remaining options presented above is then given. In most cases, these remaining options have been dismissed for various reasons but have been presented to fuel discussion and to demonstrate the range of possibilities.

A. Building 201

The current plan, based on information provided on the electronic project staging website, is for the upper level of 201 to be ultimately relocated on its existing site once that site has been regraded to accommodate an underground portion of the new Doyle Drive. This will require movement of the building to a temporary storage location while the area is excavated, construction of the roadway is completed and the site filled and regraded. This regrading of the site and reconstruction of Halleck Street is part of the final stage of proposed construction.

At this time, a temporary storage site approximately 150' south of the current building location has been proposed. This site is the most attractive and probable option for storage, however it is not the only option. The range of storage sites includes the following:

1. Preferred Option – Relocation Option 2 and Storage Option 1
   Given our current understanding of the project and sites available to accept a building as substantial as Building 201 segmenting the building into up to three transverse sections for transportation to the lot just south of the project site presents the most feasible option (costs excepted). Cutting the building allows for greater transportation flexibility and a storage site almost immediately adjacent to the project site, yet largely unaffected by construction activities, provides both a high level of convenience and practicality as well as minimizing the potential for harm from the limited transportation options. A second benefit to this course of action is the relatively simple transportation route to the final location, which should be nearly level with the storage site.

   During storage, the building segments should be protected by a shed roofed structure and/or placed on a temporary foundation with full repairs made to the roof and locations of exterior seams to prevent moisture infiltration. Additionally, gutters and downspouts should be installed and maintained for the duration of the storage period.

2. Alternative Option – Relocation Option 2 and Storage Option 2
   Complications with construction so near to this site make it less desirable than the preferred option.

3. Remaining Options

Relocation Option 1 presents significant difficulty regarding transportation to any interim storage or final placement site. While technically viable, it is may not be physically viable given the limitations and conditions of this project.

Relocation Option 3 is presented for the sake of discussion and is not recommended as a proper treatment for any historic resource.

Transportation Option 3 is not recommended in combination with any of the relocation options because of its impact on the historic resource.

B. Building 204

The current project documentation suggests that Building 204 is to be moved approximately 100 yards north to a site just behind the current Crissy Center. This is dependant on the demolition of Building 605 as the proposed final location is within the existing footprint of this structure. Transportation for Building 204 is proposed during a 5-hour road closure of an at-grade detour of Doyle Drive. This necessitates the demolition of Building 605 and the current viaduct as well as the construction of the at grade detour prior to building relocation.

Under this plan, no temporary storage site is necessary provided that project sequencing takes place as presented in documents from October 2006. Building 204 would be prepped for relocation during construction of the at-grade detour. When road conditions are ready for transportation of the building, it can be relocated without unnecessary delays.

1. Preferred Option – Relocation Option 1
   Under this option, the building is moved as a single unit. Because the distance is minimal and the time constraints of the closure are a factor, moving the building all at once may limit delays caused by duplication of efforts required to move multiple building segments. In this way only one building would be moved, all at once, and then set on its foundation all at once. Very little repair work would be required and the building may settle on its new foundation faster, which could help protect it from nearby construction activities once relocation is complete.

2. Alternative Option – Relocation Option 2
   Moving the building in pieces may require a longer period of road closure. This is dependent on whether or not multiple pieces can be moved simultaneously or whether restrictions on road width and clearance limit movement to one section at a time. Additionally, this option may require a longer period to place the pieces on the new foundation since each would have to be addressed separately. However, it still retains a high level of historic integrity and may be a more viable option once costs are considered.

3. Remaining Options
   Relocation Option 3 is presented for the sake of discussion and is not recommended as a proper treatment for any historic resource.

C. Building 228

No discussion concerning Building 228 is contained in the project documentation. All information regarding the raising of this building is from personal communications discussed at the initial project walk-through.

Under the current project documentation, Halleck Street is called out for regrading at a level that would be approximately 2.8 feet higher at the northwest corner of Building 228 than currently exists. No noticeable change in elevation along the southwest corner is proposed. At such a height, no windows would be blocked.

1. Preferred Option – Option 2
   Given the relatively minimal elevation change, coupled with the lower existing grade at this corner currently, the end result is expected to be a roadbed that is approximately level with the floor level of Building 228. Such a result does not alter the historic relationship between the building and the road to a level requiring any mitigation measures. Additionally, the costs and efforts associated with raising a masonry building do not balance the potential for damage to the historic resource as a result of the raising. Consequently, Garavaglia Architecture, Inc. recommends that Building 228 remain at its current site, on its existing foundation at its existing grade.

2. Alternative Option – Option 1
   While certainly feasible and plausible, there is little benefit to justify the associated expense of raising the building.

D. Other Factors for Consideration

Several important items regarding Buildings 201, 204 and 228 remain undetermined at this time. Depending on the final outcome of these items, some of the recommendations above may be altered. Once these items have been determined, more specific recommendations for building preparation and protections can be made. Such recommendations should be included in any subsequent project documentation regarding these three buildings.

The following remain undecided:

- Proposed uses for the buildings have not yet been determined. The retention of some historic and non-historic features may benefit particular future uses. Without an intended use, some of these features may be unnecessarily removed. Future uses may also impact the types of flooring finishes, building circulation and access modifications that may take place once the buildings are in their final locations.
- The desired level of preservation activity should be determined prior to a final determination of feasibility. The level of desired preservation efforts will inform economic feasibility as well as any assessments of impact on historic materials. The outcome of such historical assessments may affect which options are considered.

- Additional historical documentation has been requested but not yet provided for review. The recommendations in this report may be influenced by this missing information and are subject to change at that time.

V. CONCERNS

There are many aspects of the project that have not been necessarily addressed in the DEIS/R or in the scope of work for the particular portion of project being undertaken by Garavaglia Architecture, Inc. Presented here are a list of questions and concerns that should be addressed prior to commencing any relocation activities.

A. Physical and historical Impacts

- How will alteration of building relationships affect historical interpretation?
- How will loss of fabric be mitigated?
- What new uses are proposed?
- How will these uses impact the historic layout of the buildings?
- How will these impacts affect the buildings' status within the National Register Historic Landmark District?

B. Interim storage

- How long with the buildings be stored?
  Building 201 may need to be stored for the duration of the project because of the centrality of its current location. Building 204 will require some limited storage time on site between when it is prepped and when the route is clear for relocation. Depending on the length of this period, additional protection of the resource may be required.

- How will they be stored?
  This question concerns mainly Building 201. It is assumed that Building 204 will be stored on dollies for quickest transporting once the route is clear.

- Is transportation to the storage site viable?
  If any routes are selected other than those discussed in this report, this question will be of primary importance

- Will they have to be moved again before reinstallation?
  If the storage site is subject to further construction related work, the building may have to be moved a second time. This could affect Building 201 if parameters of the project change.

C. Timing and Sequencing

- Depending on the limitations imposed by available transportation route, interim storage site locations, construction sequencing and anticipated timing of various construction related

activities, other options may or may not become viable for consideration. Some of these questions have already been presented but other may surface as the project moves forward. Additional consideration of the selected relocation strategy may be required at that time.

D. Lack of documentation

- The current historical documentation lacks a clearly defined period of significance for Buildings 201, 204 and 228 beyond their National Register contextual period of 1891-1914. Currently, no documentation from this period has been made available, if it exists at all. Therefore, determining which features date to the period of significance, and should be retained, is somewhat problematic. What has been presented here is based on professional judgment and the substantiated historical documentation that was available at the time of this draft.

E. Future documentation

- The DEIS/R recommends that a Historic Structure Report (HSR) and HABS quality documentation be performed prior to any relocation efforts. Many of the questions presented in this documents may be answered through the preparation of these recordation documents. If this is the case, the recommendations presented in the HSR should be used in concert with the feasibility information presented in this document to determine a final course of actions.
- No professional qualifications were given for the completion of these assessments in the DEIS/R. The professional qualifications of firms and individuals selected to perform these evaluations should meet industry standards and be made publicly available.
- An archival location or locations for the above assessments should be clearly identified in the FEIS/R.

F. Full environmental assessments

- Full environmental assessments for the relocation of buildings 201 and 204 and the raising of Building 228 should include an analysis of the various affects of moving and/or raising the building on their National Register status. The overall affect on the National Register Historic District at a whole should also be considered.
- Wetlands impact studies should include analyses of placing relocated buildings in the immediate vicinity.

VI. NEXT STEPS

This document represents a draft building relocation analysis. It does not currently include any economic feasibility information. It does not include further information from historical documents that have not yet been made available to Garavaglia Architecture, Inc. The formulation of a final Building Relocation Feasibility Analysis should occur along the following sequence of events.

1. Review of this draft report by the project team. Any questions or comments can be incorporated after this review process.
2. Review of the additional historical documentation from the Presidio archives. Such documentation has been located but has not been made available to Garavaglia Architecture, Inc. at this time.
3. Completion of the cost estimates for the Preferred and Alternative options presented above.
4. Incorporation of the results of items 1-3 into a final report. Delivery of the final report is dependent on the completion of items 1-3. Timely completion of these items by the project team is necessary. Any delays to these interim steps will delay the delivery of a final draft.

APPENDIX A HISTORIC AND NON-HISTORIC FINISHES BY BUILDING AND BY ROOM

All finishes and features are listed here by Building and then by room. For the building exteriors, the finishes and features are listed by elevation. Those items that are shaded in blue are items that were identified as "highly sensitive to alteration" in the 1993 National Register update. Those items that are shaded in grey were identified in the same survey as "less sensitive to alteration." All finishes and features should be revisited and analyzed for their historic value during future documentation projects.

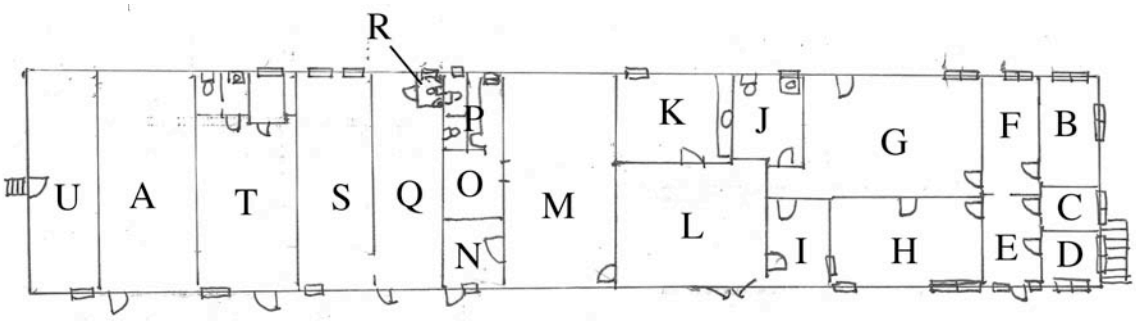
The rooms for each building were labeled during surveying. A keyed floor plan is included for the main level of each building surveyed. The accessible first floor areas of Building 204 were surveyed as a single space because 75% of this level consists of a single large open space. Therefore, only the second floor is keyed and presented in plan.

= "highly sensitive to alteration," as determined in the 1993 National Register Update

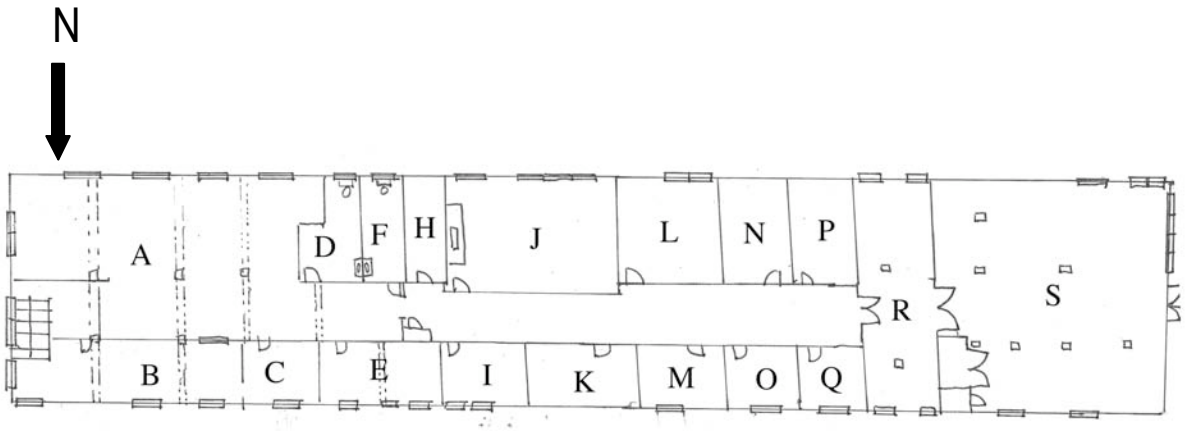
= "less sensitive to alteration," as determined in the 1993 National Register Update

Building 201, 2nd floor

N →

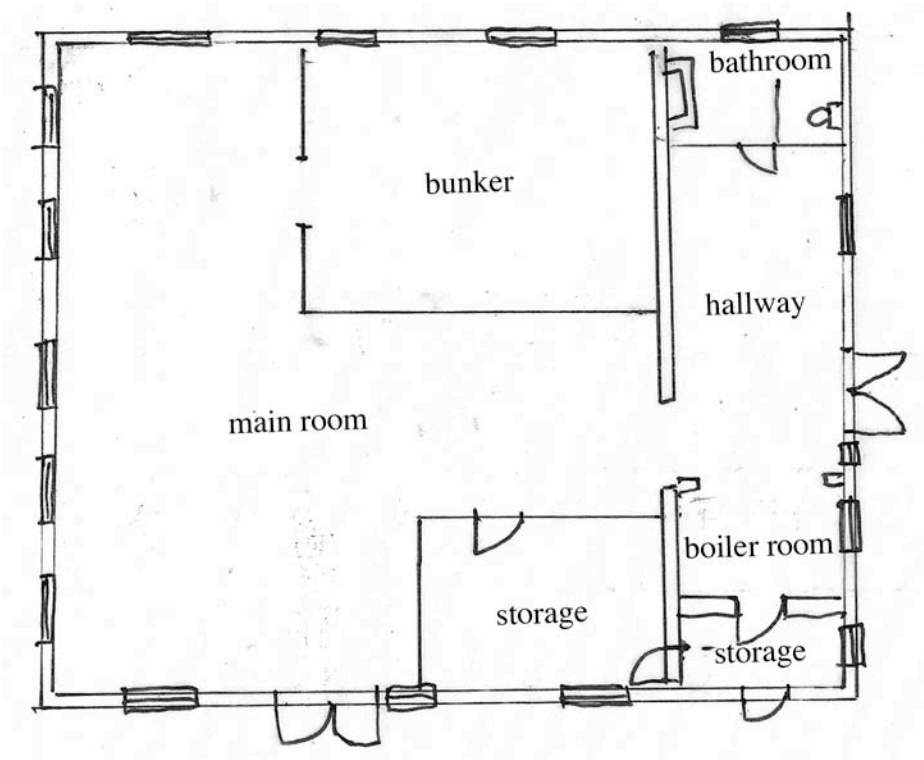


Building 204, 2nd Floor



Building 228

N



Interior Finish Checklist

Surveyed By: Garavaglia Architecture, Inc.

Project / Address: Presidio of San Francisco Building # 201

Date Surveyed: 10/19/06

Material	Rooms (See sketch plan for room locations)																				
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	1st level
Floor																						
Wood																						√
Tile											√											√
Linoleum										√					√	√						√
Concrete															√							√
Carpet	√	√	√	√	√	√	√	√	√			√	√	√	√					√		√
Walls																						
T&G															√							
v-Groove T&G	√																			√		√
Wood trim							√	√	√													
celotex w/battens		√	√	√	√	√	√	√	√	√												√
gyp board	√					√	√	√	√	√		√	√	√	√	√				√		√
modern partitions	√						√	√	√	√	√											√
Ceiling																						
T&G	√																			√		√
Cornice moulding	√											√								√		
celotex w/battens		√	√	√	√	√	√	√	√													
Acoustical																						√
Plywood										√												
Gypsum board											√	√	√	√	√	√						
Windows																						
1/1 DH		√	√	√		√	√	√		√										√		
2/2 DH											√											
3/3 DH																√						√
6/6 DH								√								√						
9/9 DH																						√
Slider																						√
Fixed		√	√		√			√	√					√								
6-lite hopper																√						
None	√														√							
Doors																						
Dutch Door								√														
Paneled		√	√	√			√	√	√	√	√									√		
Non-Paneled		√			√	√	√		√	√						√						
Modern	√	√											√	√						√		√
2x4 and panelling															√							
Interior vertical sliding door				√																√		
Upper wall door															√							
Ceiling Hatch													√							√		
Misc.																						
Meat locker																				√		
overhead tracks											√											
Bathroom fixtures										√						√						

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Interior Finish Checklist

Surveyed By: Garavaglia Architecture, Inc.

Project / Address: Presidio of San Francisco Building # 204

Date Surveyed: 10/19/06

Material	Rooms (See sketch plan for room locations)																			
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	1st level
Floor																				
Concrete																				√
Wood -T&G								√												√
Wood - 2x4 on edge																				√
Linoleum				√		√												√		√
Brick																				
Carpet	√	√	√		√				√	√		√	√	√	√	√	√		√	
Walls																				
Diagonal sheathing																				√
T&G																				√
Gypsum board	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√	√	√	√	√
Modern partitions	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√	√	√	√	√
Ceiling																				
Exposed joists								√												√
T&G										√										
Gypsum board	√	√	√	√	√	√			√	√	√	√				√	√	√	√	√
Windows																				
6/6 DH		√		√	√	√			√	√			√	√	√			√	√	
2/2 DH	√	√	√													√	√	√		√
1/1 DH					√															
6-lite hopper																				√
2-lite casement	√																			
Slider												√								
Fixed	√	√			√					√		√								
None								√			√									
Doors																				
Paneled									√											√
Non-Paneled	√	√	√	√	√	√		√	√	√		√						√	√	√
Modern	√	√	√	√	√	√		√	√	√		√				√	√	√	√	√
Slider																				√
None											√									
Misc.																				
Beams	√	√	√	√				√		√										√
Hand-operated elevator								√												
Internal staircase	√																			
True 6x6 posts (exposed)	√	√							√			√						√	√	√
Bathroom fixtures				√		√														√
Kitchen sink										√										

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Interior Finish Checklist

Surveyed By: Garavaglia Architecture, Inc.

Project / Address: Presidio of San Francisco Building # 228

Date Surveyed: 10/11/06

Material	Rooms					
	Bath	Hallway	Boiler	Storage	Banker	Main Rm
Floor						
scored concrete		√				√
Concrete	√		√		√	
Wood				√		
Walls						
painted brick	√	√	√	√	√	√
CMU					√	√
Ceiling						
exposed wood trusses						√
Cornice moulding		√				√
Wood T&G	√	√		√		√
Wood board			√			
Monitor roof						√
Cement plaster					√	
Windows						
3-lite monitor						√
8/8 DH			√	√	√	√
4/4 DH	√	√				
Slider						
Fixed		√				
Doors						
Paneled - paired		√				
Paneled - single	√		√	√		
Non-Paneled				√		√
Modern						√
None					√	
Misc.						
Kewanee Boiler			√			
laundry equipt.					√	
Bathroom partiitons	√					
Bathroom fixtures	√					

G A

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Exterior Finish Checklist

Project / Address: Presidio of SF

Surveyed By: Garavaglia Architecture, Inc.

Date Surveyed: 10/19/06

Building 201

Overall Building Features		
Foundation		**Roof**
Concrete Slab		Red Composition
Piers		Hip
Bedrock		Roof vents

Wall-Specific Features				
Material	Elevation			
	North	East	South	West
Walls				
Board & batten				√
Wood lap siding		√	√	
Vinyl				
Cornerboards	√			
Board & batten				√
Windows				
1/1 DH	√	√	√	√
2/2 DH				√
6/6 DH		√		√
9/9 DH		√		√
Slider window				√
Fixed	√	√		√
Other				
Decorative Rafter tails	√	√	√	√
Exterior stairs		√		√
Loading Dock	√			√

Building 204

Overall Building Features		
Foundation		**Roof**
Concrete Slab		Red Composition
Concrete footings		Gable
		Hip over hoist beams

Wall-Specific Features				
Material	Elevation			
	North	East	South	West
Walls				
Wood lap siding	√	√	√	√
Cornerboards	√	√	√	√
Windows				
1/1 DH	√			
2/2 DH	√	√	√	
6/6 DH	√	√	√	
4-lite hopper	√			
6-lite hopper	√		√	√
Fixed	√	√		
Other				
Decorative Rafter tails	√		√	
Exterior stairs				√
Decorative bargeboard	√			
Slider doors	√	√		√
Brick planter	√			
Hoist beams	√			√

Building 228

Overall Building Features		
Foundation		**Roof**
Concrete		Red Composition
Sandstone		Pyramidal
		Monitor
		Roof vents

Wall-Specific Features				
Material	Elevation			
	North	East	South	West
Walls				
Brick	√	√	√	√
Tinted Mortar	√	√	√	√
Segmented arches	√	√	√	√
Windows				
8/8 DH	√	√	√	√
3-lite monitor	√	√	√	√
Fixed		√		
Iron bars	√	√	√	√
granite sills/thresholds	√	√	√	√
Other				
Decorative Rafter tails	√	√	√	√

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