

Department of Community Planning and Economic Development
Planning Division

Certificate of Appropriateness
BZH-26933

Date: July 26, 2011

Proposal: Request for COA to complete preservation and stabilization work

Applicant: Historic Sites and Museums, Minnesota Historical Society, Sarah Beimers, Senior Project Manager, 651-259-3474

Address of Property: 104 8th Avenue South

Project Name: Washburn Crosby Elevator No. 1 Exterior Preservation

Contact Person and Phone: Todd Grover, (612) 341-4051

Planning Staff and Phone: Aaron Hanauer, (612) 673-2494

Date Application Deemed Complete: July 11, 2011

Publication Date: July 19, 2011

Public Hearing: July 26, 2011

Appeal Period Expiration: August 5, 2011

Ward: 7

Neighborhood Organization: Downtown East

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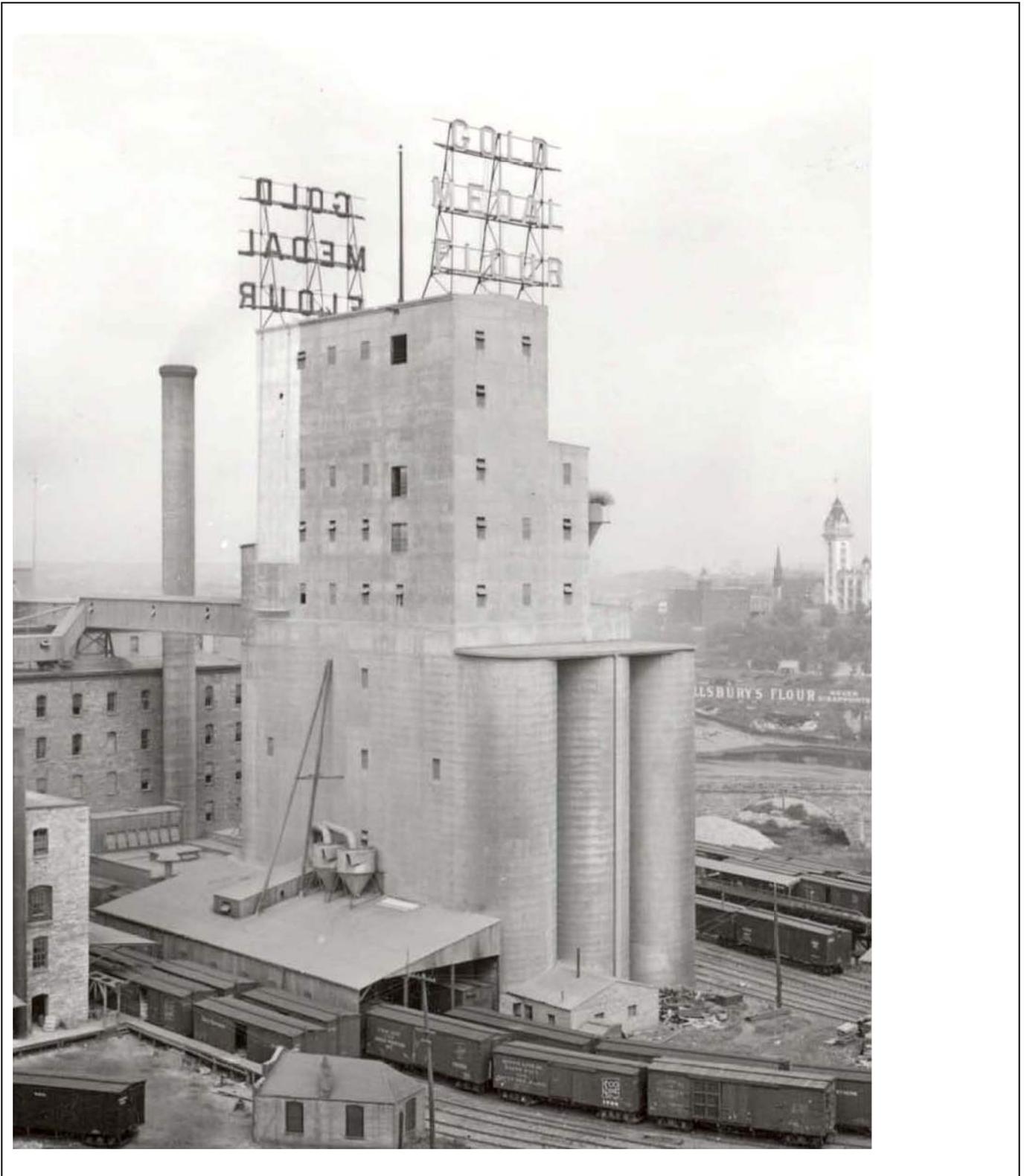
Attachments:

Attachment A: Materials submitted by CPED- (A1-A8)

- A1: Zoning Map
- A2: Saint Anthony Falls Historic District Map
- A3-A4: Historic Images
- A5-A8: Aerials

Attachment B: Materials submitted by Applicant– (B1-B27)

- B1: Council Member Communication
- B2: Neighborhood Association Communication
- B3-B5: Certificate of Appropriateness Application Form
- B6-B7: Project Description
- B8: Statement to Required Findings
- B9-B15.1: Images
- B15.2-B15.5: Elevations Showing Existing Conditions
- B15.6-B15.12: Proposed Roof Decking Material
- B16-B27: Plan Set



Washburn Crosby Elevator Number 1, 1911, Source: Minnesota Historical Society



Washburn Crosby Elevator Number 1, 2011, Source: MacDonald and Mack Architects

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CLASSIFICATION:	
Local Historic District	Saint Anthony Falls Historic District
Period of Significance	1858-1940
Criteria of significance	Architecture and Social Significance
Date of local designation	1971
Applicable Design Guidelines	Saint Anthony Falls Historic District Guidelines Secretary of Interior Standards for Treatment of Historic Properties

PROPERTY INFORMATION	
Current name	Washburn Crosby Elevator Number 1
Historic Name	Washburn Crosby Elevator Number 1
Current Address	104 8 th Avenue South
Historic Address	721-729 1 st Street South
Original Construction Date	1906-1908
Original Contractor	Haglin Stahr Company
Historic Use	Grain Storage
Current Use	Vacant
Proposed Use	Stabilization

BACKGROUND:

Historic Background

Washburn Crosby Elevator No.1 was constructed in 1906-08 by the Haglin Stahr Company and built east of the Washburn "A" Mill. It was one of the first large scale concrete grain storage facilities to be built in the country with exposed circular bin construction. It is also an early example of a continuous pour, slip form construction. Slip form construction is the use of a mold that is pulled or raised as concrete is placed. This type of construction, developed by Charles Haglin, spurred the massive construction efforts of these elevators across the country.

The Washburn "A" Mill Complex is one of three national historic landmarks in the City of Minneapolis (the Pillsbury A Mill and Christ Church Lutheran are the other two).

Elevator Number One is comprised of 15 cylindrical bins, arranged in three rows of five (Attachment B16). The plan is approximately 125 feet by 79 feet and the bins rise to 112 feet in height. The Headhouse extends another 95 feet above the bins. The reinforced concrete foundation extends 34 feet below grade. The walls of the bins are of reinforced concrete and vary from 9 to 10 inches thick. The roof of the bins is a reinforced concrete slab that appears to form part of the support for the Headhouse. Two Gold Medal Flour signs are attached to the headhouse.

Application Background

A structural assessment of the grain elevator roof was completed in 2010 after substantial pieces of concrete were falling from the underside of the roof. The scope of the 2010 structural assessment was expanded to the headhouse to analyze the connection between the bin roof and the headhouse. The structural assessment summary concluded the following:

- The exterior walls of the bins are in good condition. There are selective and isolated areas that are in need of repair, but there are no major or immediate issues regarding the bins.
- The roof of the bins is in extremely poor shape and has failed. The roof cannot be repaired as the accelerated deterioration of the concrete has mitigated its structural capacity. This roof can no longer be used in its current condition and must be replaced. Temporary protection methods may be utilized to prevent a safety hazard of the deteriorated elements.
- Primary and intermediate roofs on the headhouse are in good condition, with isolated areas of repair.
- Aside from the primary roof of the headhouse, all built-up roofing is in poor condition. The roofing should be removed and replaced. There are isolated areas on the bin walls and headhouse walls that need repair to the spalling concrete due to shale or shallow rebar deterioration.
- There are isolated areas of significant water infiltration of the concrete roof/walls where the concrete should be removed and replaced.

SUMMARY OF APPLICANT'S PROPOSAL

The Applicant states that their work falls into three types of work 1. repairing of historic materials and features, 2. limited replacement in kind of extensively deteriorated portions of historic features, 3. stabilization of deteriorated historic materials and features (Attachment B6). Specifically, there are six parts to their scope of work:

1. **concrete repair:** On the exterior of Elevator No. 1 and Headhouse there are numerous areas where concrete is deteriorating, cracking and spalling (Attachment B15.2-B15-5 and B19-B19.4 and B28-B31 drawings). The cracking is typically at cold joints that have had water infiltration. The spalling is typically due to shallow rebar placement and shale aggregate in the concrete mix.

The Minnesota Historical Society (MHS) proposes to repair the areas where it is deteriorated by removing corrosive and loose concrete and applying a concrete patch that will match the surface profile of surrounding concrete (Attachment B26, Drawing 3). Large cracks (greater than 1/16" of an inch), are proposed to be filled and then cleaned up to have the surface of the crack be flush with the outside of the surrounding area (Attachment B26, Drawing 4).

Included in the scope of concrete repair is the rebuilding of the west parapet that has a significant amount of concrete deterioration (Attachment B15, 15.1, B21, and B26). The Applicant is proposing to remove deteriorated concrete down to stable material. Then rebuild the parapet to match the height and profile of the original and east parapet.

2. **parging installation:** The exterior of Elevator Number 1 is covered by a cement parging. Parging is a thin, paintable mixture of cement, sand, and colorant that provides a protective and breathable surface to the concrete (see Attachment B10 for historic image showing the application of the parging and Attachment B14 showing parging deterioration). The areas where the parging has deteriorated, accelerated carbonation and water penetration into the concrete has been identified. The MHS is proposing to scrape off the old parging and replace with a new parging to match original in areas where concrete is repaired or where the parging is missing (Attachment B15.2-B15.5 for existing conditions and B19-19.4 for proposed work). The new parging will be noticeably different for approximately ten years, until it weatherizes and blends in with the original parging.

3. **bin roof replacement:** The Applicant states that the bin roof is failing, cannot be repaired, and needs to be replaced (Attachment B9, B10, B12, B13). The Applicant's structural analysis confirms this analysis:

"The cores [of the bin roof] were not in good condition; none of them had enough integrity to provide a strength test. Thus, the concrete strength in the roof is variable and low. Petrographic analysis of these cores showed bleedwater voids, indicative of a high water-to-cement ratio during construction as well as freeze-thaw damage. Both of these contribute to low initial and remaining strength. Finally, on the west side adjacent to the Feed Elevator, there is a visible sag in the roof that appears to be about two feet."

The bin roof slab was poured monolithically and is approximately 6 inches thick. The Applicant states that a replacement roof will require a new roof using pre-cast planks on new steel structure members (Attachment B17 for bin roof plan and B19-B19.4 for elevations).

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The goal of the roof replacement is to match, as closely as possible, the details and dimensions of the original construction. The Applicant states that “The pre-cast planks were chosen because of the difficulty with installing site-cast concrete where the forms for the roof will be inaccessible after the concrete pour because there is no access to the underside of the roof inside the bins. The Applicant also adds that, “Typically pre-cast planks are smooth with a chamfer at the plank joint and do not visually replicate site-cast concrete. The specified pre-cast planks for this project are going to be custom wet-cast planks that will have a board formed bottom and square edge sides. This will ensure that the view from the ground will replicate the site-cast concrete of the original and the joints will be imperceptible. The details at the edge of the roof, including the profiles of the steel channel and copper flashing profile, will match the original (Attachment B7).” After the installation of the new roof, the Applicant proposes to reinstall the metal bins that sit on top of the roof (Attachment B9 and B17).

4. **Additional Roofing:** The headhouse contains multiple roofs (Attachment B17-B18, B22). The roofs are concrete roofs that have had asphalt applied to them over the years. The roofs, except for the uppermost head house roof, are failing (Attachment B13). MHS is proposing to remove all asphalt roofing, except for the head house roof, make concrete repairs to these roof decks, and install a cold fluid applied waterproofing (Attachment B15.6-B15.12 for details). The Applicant states that this is a material that is typically used on the top of parking decks. The Applicant also states that advantage of this material is that it is durable, will not degrade in sunlight, as asphalt does, and it comes in colors that can replicate the original concrete roof appearance.
5. **Infill of doors:** There are three door openings on the southwest elevation of the building that allowed equipment and materials to be brought to the upper floors (Attachment B10, B14, B19.1 and page 4 of staff report). Two of these openings have missing doors. MHS proposed to install temporary frame walls with a painted plywood panel in the recessed opening to prevent water and vermin intrusion into the buildings (Attachment B21).
6. **Covering of windows:** The building has numerous steel sash windows on each elevation. Many of them are broken and deteriorating because they are exposed to the elements. The open windows also allow water to penetrate the enclosure where accelerated deterioration of the concrete around the open windows can be seen. MHS proposes to install a painted steel plate on the exterior of the window opening that will overlap the exterior wall by three inches to protect the windows from further deterioration and also prevent water from entering the building (Attachment B21, Drawing 8, Window enclosure plan and section detail). The Applicant states that many windows have the potential to be rehabilitated, but this work cannot be done at this time. This measure will provide the protection from the elements to reduce further deterioration of the window sashes and surrounding concrete so that future rehabilitation, to the greatest extent possible, can be accomplished. This detail does not require any mechanical fastening of the cover to concrete, thus preserving the integrity of the wall surrounding the window.
7. **Gold Metal Flour sign mounting points:** The Applicant is proposing to analyze the caulking of the Gold Metal Flour sign for security (Attachment B14.1-B14.2). If additional work is needed the Applicant will notify CPED Preservation and Design staff.

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PUBLIC COMMENT:

Public notices for the Certificate of Appropriateness were mailed on Tuesday, July 14, 2011. As of July 19, 2011 no letters have been received.

CETIFICATE OF APPROPRIATENESS: Certificate of Appropriateness to rehabilitate the steel fence as part of Phase I of the fence restoration project.

Findings as required by the Minneapolis Preservation Code:

The Planning Division of the Minneapolis Community Planning and Economic Development Department has analyzed the application based on the findings required by the Minneapolis Preservation Ordinance. Before approving a certificate of appropriateness, and based upon the evidence presented in each application submitted, the commission shall make findings based upon, but not limited to, the following:

(1) The alteration is compatible with and continues to support the criteria of significance and period of significance for which the landmark or historic district was designated.

CPED believes the proposed preservation, stabilization, and limited replacement in kind work is compatible with and continues to support the criteria of significance and period of significance for which the Washburn A Mill Complex is a National Historic Landmark and contributing building(s) to the Saint Anthony Falls Historic District.

The Washburn A Mill Complex is significant as a national historic landmark because it is an example of a radical transformation of the flour milling industry in the late 19th and early 20th centuries that made it a modern mass-production industry. The Washburn A Mill (1874) is the only structure that remains from the original Minneapolis milling complex established by Cadwallader C. Washburn. The Washburn Crosby Elevator No. 1 is part of the milling complex that represents an important part of the nation and Minneapolis' flour milling history as it is one of the first grain elevators in the United States to be built in an exposed circular bin construction style.

(2) The alteration is compatible with and supports the interior and/or exterior designation in which the property was designated.

CPED believes the proposed preservation, stabilization, and limited replacement in kind work is compatible with and continues to support the exterior designation in which the property was designated. The proposed work will help preserve the integrity of the landmark by making necessary repairs and stabilizing the condition of the elevators.

(3) The alteration is compatible with and will ensure continued integrity of the landmark or historic district for which the district was designated.

The Applicant has demonstrated that the items proposed to be replaced are beyond repair, and that their proposed preservation and stabilization work will preserve and strengthen the historic fabric of the grain elevators.

CPED believes the proposed preservation, stabilization, and limited replacement in kind work is compatible with and will ensure continued integrity of the Washburn Crosby

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Elevator No. 1. The goal of the proposed work is to preserve the integrity of the landmark by stabilizing/rehabilitating the historic fabric of the elevators, and only replacing material that is beyond repair.

(4) *The alteration will not materially impair the significance and integrity of the landmark, historic district or nominated property under interim protection as evidenced by the consistency of alterations with the applicable design guidelines adopted by the commission.*

The Saint Anthony Falls Historic District Guidelines were adopted in 1980. The subject property is located in Subdistrict E, Right (West) Bank Milling Subdistrict.

As the Saint Anthony Falls Historic District Guideline's general purpose states, *"these regulations apply to any and all new construction and rehabilitation of existing buildings and structures within the St. Anthony Falls Historic District."*

The guidelines do not have specific guidelines for the preservation and rehabilitation of a property. However, among the purposes of the guidelines is to, "preserve the memory of past events."

The Applicant's proposal to complete repair, limited replacement in kind of extensively deteriorated portions of historic features, and stabilizing deteriorated historic materials and features is consistent with the general purpose of the Saint Anthony Falls Historic District Guidelines.

(5) *The alteration will not materially impair the significance and integrity of the landmark, historic district or nominated property under interim protection as evidenced by the consistency of alterations with the recommendations contained in The Secretary of the Interior's Standards for the Treatment of Historic Properties.*

CPED agrees with the Applicant that the proposed preservation plan is compatible with the Secretary of the Interior's Standards for the Treatment of Historic Properties guidelines for Preserving Historic Buildings. Specifically, CPED believes that the proposed work is in compliance with the following Standards:

Standard 3. Work needed to stabilize, consolidate, and conserve existing historic materials and features will be physically and visually compatible.

Standard 6. The existing condition of historic features will be evaluated to determine the appropriate level of intervention needed. Where the severity of deterioration requires repair or limited replacement of a distinctive feature, the new material will match the old in composition, design, color, and texture.

The Applicant has provided evidence that they are only replacing material which is beyond repair (grain elevator bin roof). The Applicant has also demonstrated that their proposal to improve the condition of the historic material (concrete) will be physically and visually compatible, and that they are taking measures to protect historic materials from

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further damage until a later date when they can be rehabilitated (window and door openings).

- (6) *The certificate of appropriateness conforms to all applicable regulations of this preservation ordinance and is consistent with the applicable policies of the comprehensive plan and applicable preservation policies in small area plans adopted by the city council.***

CPED believes the Applicant's proposed preservation plan will help preserve the Washburn Crosby Elevator No. 1 and is in compliance with Policy 8.1 of the Minneapolis Comprehensive Plan.

Policy 8.1: Preserve, and maintain historic resources which serve as reminders of the city's architecture, history, and culture.

- (7) *Destruction of any property. Before approving a certificate of appropriateness that involves the destruction, in whole or in part, of any landmark, property in an historic district or nominated property under interim protection, the commission shall make findings that the destruction is necessary to correct an unsafe or dangerous condition on the property, or that there are no reasonable alternatives to the destruction. In determining whether reasonable alternatives exist, the commission shall consider, but not be limited to, the significance of the property, the integrity of the property and the economic value or usefulness of the existing structure, including its current use, costs of renovation and feasible alternative uses. The commission may delay a final decision for a reasonable period of time to allow parties interested in preserving the property a reasonable opportunity to act to protect it.***

The project does not constitute the destruction of the subject property.

Before approving a certificate of appropriateness, and based upon the evidence presented in each application submitted, the commission shall make findings that alterations are proposed in a manner that demonstrates that the applicant has made adequate consideration of the following documents and regulations:

- (8) *Adequate consideration of the description and statement of significance in the original nomination upon which designation of the landmark or historic district was based.***

CPED believes the Applicant gave adequate consideration of the description and statement of significance in the original nomination upon which the designation of the Saint Anthony Falls Historic District took place. To guide the work, the Applicant reviewed two previous studies to aid in the ongoing preservation and building maintenance: Elevator Assessment by BKBM Professional Engineers in 2000, and the Washburn Grain Elevator Complex Reuse Study by Thomas R. Zahn and Miller Dunwiddie Architects in 2007. In addition, the Applicant completed additional research looking for original drawings and information that would provide guidance for the preservation of this important Saint Anthony Falls Historic District landmark.

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(9) *Where applicable, Adequate consideration of Title 20 of the Minneapolis Code of Ordinances, Zoning Code, Chapter 530, Site Plan Review.*

The CPED-Development Services or CPED-Zoning Team will review the proposed plans to ensure compliance with the Minneapolis Zoning Code.

(10) *The typology of treatments delineated in the Secretary of the Interior's Standards for the Treatment of Historic Properties and the associated guidelines for preserving, rehabilitating, reconstructing, and restoring historic buildings.*

For the Washburn Crosby Elevator No. 1 project, the Applicant has proposed to follow the Secretary of the Interior's Standards for Preserving Historic Buildings.

STAFF RECOMMENDATION

CPED-Planning staff recommends that the Heritage Preservation Commission **adopt** staff findings and **approve** the Certificate of Appropriateness with the following condition(s):

- 1) For the Gold Medal Flour, any work beyond the condition analysis shall be reviewed by CPED-Planning Preservation Staff.
- 2) CPED-Planning Preservation Staff shall review and approve the final plans and elevations prior to building permit issuance.
- 3) The Certificate of Appropriateness approval shall expire if it is not acted upon within one year of approval, unless extended by the Planning Director in writing prior to one-year anniversary date of approvals.
- 4) By ordinance, all approvals granted in this Certificate of Appropriateness shall remain in effect as long as all of the conditions and guarantees of such approvals are observed. Failure to comply with such conditions and guarantees shall constitute a violation of this Certificate of Appropriateness and may result in termination of the approval.