

HISTORIC AND DESIGN REVIEW COMMISSION

August 16, 2017

HDRC CASE NO: 2017-365
ADDRESS: 1126 N ST MARYS
LEGAL DESCRIPTION: NCB 819 BLK 30 LOT N IRR 200 FT OF A2 NCB 834 BLK 19 LOT S
ZONING: TRI 156.35 OF N 205 OF A1
CITY COUNCIL DIST.: FBZ T6-2 RIO-2
APPLICANT: 1
OWNER: Benito Polendo
TYPE OF WORK: Luis Kernion
REQUEST: Exterior modifications, landscaping and hardscaping modifications

The applicant is requesting conceptual approval to rehabilitate the structure located at 1126 N St Marys. The scope of work will include:

1. Modifications to the fenestration on the primary facades facing N St Marys and Brooklyn, including window opening widening, door relocation, and the installation of new insulated steel windows.
2. Construction of an exterior entryway element on the façade facing Brooklyn Ave.
3. Extension of the parapet height.
4. Hardscaping and landscaping modifications.
5. Installation of new signage, to be developed and submitted at a later time.

APPLICABLE CITATIONS:

UDC Section 35-672. Neighborhood Wide Design Standards

(b) Automobile Access and Parking. Automobile circulation should be efficient, and conflicts with pedestrians minimized. Entry points for automobiles should be clearly defined and connections to auto circulation on adjoining properties are encouraged to facilitate access and reduce traffic on abutting public streets.

(3) Screen or Buffer Parking Areas From View of Public Streets, the River or Adjacent Residential Uses. (see Figure 672-2). Parking lots shall be screened with a landscape buffer as per the illustrations of bufferyards and Table 510-2 if the parking area meets one (1) of the following conditions:

- A. Within a fifty-foot setback from the edge of the river ROW use, at a minimum, type E; or
- B. Within a twenty-foot setback from a property line adjacent to a street use, at a minimum, type B; or
- C. Within a twenty-foot setback of commercial or industrial property that abuts a residential property use, at a minimum, type C.

UDC Section 35-674. Building Design Principles

This section provides policies and standards for the design of commercial, multi-family developments in excess of eight (8) units, and single-family developments in excess of five (5) units or five (5) acres, institutional developments, and industrial buildings within the river improvement overlay districts. In general, principles focus on promoting buildings that will be compatible in scale and appear to "fit" in the community by using materials and forms that are part of the San Antonio design traditions. The policies and standards also promote designs that enhance the streets in the area, as well as the Riverwalk, as places for pedestrians. As such, the policies and guidelines address only broad-scale topics and do not dictate specific design solutions, architectural styles, or details with the exception that the standards for "RIO-3" contain more specific requirements.

(g) Awnings, Canopies and Arcades. (See Figure 674-2) The tradition of sheltering sidewalks with awnings, canopies and arcades on commercial and multi-family buildings is well established in San Antonio and is a practice that should be continued. They offer shade from the hot summer sun and shelter from rainstorms, thereby facilitating pedestrian activity. They also establish a sense of scale for a building, especially at the ground level. Awnings and canopies are appropriate locations for signage. Awnings with signage shall comply with any master signage plan on file with the historic preservation officer for the property. Awnings and canopies installed at street level within the public right-of-way require licensing with the city's capital improvements management services (CIMS) department. Canopies, balconies and awnings

installed at river level within the public right-of-way require licensing with the city's downtown operations department.

(1) If awnings, arcades and canopies are to be used they should accentuate the character-defining features of a building.

- A. The awning, arcade or canopy shall be located in relationship to the openings of a building. That is, if there are a series of awnings or canopies, they shall be located at the window or door openings. However awnings, canopies and arcades may extend the length of building to provide shade at the first floor for the pedestrian.
- B. Awnings, arcades and canopies shall be mounted to highlight architectural features such as moldings that may be found above the storefront.
- C. They should match the shape of the opening.
- D. Simple shed shapes are appropriate for rectangular openings.
- E. Odd shapes and bubble awnings are prohibited except where the shape of an opening requires a bubble awning, or historic precedent shows they have been previously used on the building.
- F. Canopies, awnings and arcades shall not conflict with the building's proportions or with the shape of the openings that the awning or canopy covers.
- G. Historic canopies shall be repaired or replaced with in-kind materials.

(2) Materials and Color.

- A. Awnings and canopies may be constructed of metal, wood or fabric. Certain vinyl is allowed if it has the appearance of natural fiber as approved by the HDRC.
- B. Awning color shall coordinate with the building. Natural and earth tone colors are encouraged. Fluorescent colors are not allowed. When used for signage it is appropriate to choose a dark color for the canopy and use light lettering for signage.

(3) Incorporating lighting into the design of a canopy is appropriate.

- A. Lights that illuminate the pedestrian way beneath the awning are appropriate.
- B. Lights that illuminate the storefront are appropriate.
- C. Internally illuminated awnings that glow are prohibited.

UDC Section 35-676. Alteration, Restoration and Rehabilitation

In considering whether to recommend approval or disapproval of an application for a certificate to alter, restore, rehabilitate, or add to a building, object, site or structure, the historic and design review commission shall be guided by the National Park Service Guidelines in addition to any specific design guidelines included in this subdivision.

- (a) Every reasonable effort shall be made to adapt the property in a manner which requires minimal alteration of the building, structure, object, or site and its environment.
- (b) The distinguishing original qualities or character of a building, structure, object, or site and its environment, shall not be destroyed. The removal or alteration of any historic material or distinctive architectural features shall be avoided when possible.
- (c) All buildings, structures, objects, and sites shall be recognized as products of their own time. Alterations that have no historical basis and which seek to create an earlier appearance are prohibited.
- (d) Changes that may have taken place in the course of time are evidence of the history and development of a building, structure, object, or site and its environment. These changes may have acquired significance in their own right, and this significance shall be recognized and respected.
- (e) Distinctive stylistic features or examples of skilled craftsmanship, which characterize a building, structure, object, or site, shall be kept where possible.
- (f) Deteriorated architectural features shall be repaired rather than replaced, wherever possible. In the event replacement is necessary, the new material should reflect the material being replaced in composition, design, color, texture, and other visual qualities. Repair or replacement of missing architectural features should be based on accurate duplications of features, substantiated by historical, physical, or pictorial evidence rather than on conjectural designs or the availability of different architectural elements from other buildings or structures.
- (g) The surface cleaning of structures shall be undertaken with the gentlest means possible. Sandblasting and other cleaning methods that will damage the historic building's materials shall not be permitted.
- (h) Every reasonable effort shall be made to protect and preserve archaeological resources affected by, or adjacent to, any project.
- (i) Contemporary design for alterations and additions to existing properties shall not be discouraged when such alterations and additions do not destroy significant historical, architectural or cultural material, and such design is compatible with

the size, scale, color, material, and character of the property, neighborhood or environment.

(j) Wherever possible, new additions or alterations to buildings, structures, objects, or sites shall be done in such a manner that if such additions or alterations were to be removed in the future, the essential form and integrity of the building, structure, object, or site would be unimpaired.

UDC Section 35-678. – Signs and Billboards in the RIO.

(a) General Provisions.

(1) This section governs all exterior signs and all interior signs hung within ten (10) feet of an exterior fenestration, or those signs intended to be read by exterior patrons.

- A. All signage within an RIO district shall conform to all city codes and must have approval of the historic preservation officer prior to installation.
- B. Permits must be obtained following approval of a certificate of appropriateness.
- C. No sign shall be painted, constructed, erected, remodeled, refaced, relocated, expanded or otherwise altered until it has been approved and a permit has been obtained from the development services department in accordance with the provisions of this section and applicable city code.
- D. Signs, visual displays or graphics shall advertise only the business on the premises unless otherwise allowed in this section.

(2) When reviewing applications for signage the historic preservation officer and the historic and design review commission shall consider the visual impact on nearby historic resources.

- A. Signs should respect and respond to the environment and landmark or district character in which constructed.
- B. Signs should respect and respond to the river improvement overlay districts character and the historic Riverwalk.
- C. The content or advertising message carried by permitted signs shall pertain to the business located on the same premises as the sign or to any otherwise lawful noncommercial message that does not direct attention to a business operated for profit, or to a commodity or service for sale, provided that signs erected on buildings with multiple businesses within shall pertain to any such business within.

(3) For signs with changeable message panels, the changeable message area of the sign shall not exceed twenty-five (25) percent of the total sign area, except for gasoline price signs which shall not exceed seventy-five (75) percent of the total sign area. Electronic changeable message boards shall be prohibited.

(6) Special consideration should be given to the character of the sign itself proposed in the application, and whether the proposed sign has inherently historic characteristics which may fall outside of the guidelines presented below but which would contribute to the historic district, landmark or area for which it is being proposed. Additionally, when reviewing applications for signage the historic preservation officer and the historic and design review commission shall consider the visual impact on nearby historic resources.

(c) Standards for Sign Design and Placement. In considering whether to recommend approval or disapproval of an application to construct or alter signage on a building, object, site, or structure in a river improvement overlay district, review shall be guided by the following standards in addition to any specific design guidelines approved by city council.

(1) Primary sign design considerations shall be identification and legibility. Size, scale, height, color and location of signs shall be harmonious with, and properly related to, the overall character of the district and structure. Sign materials shall be compatible with that of the building facade. Highly reflective materials that will be difficult to read are not permitted.

(3) All graphic elements shall reinforce the architectural integrity of any building. Signs shall not disfigure, damage, mar, alter, or conceal architectural features or details and shall be limited to sizes that are in scale with the architecture and the streetscape. Emblems and symbols of identification used as principal structural or architectural design elements on a facade shall not be included in the total allowable signage per facade per structure when approved. Review shall be guided by the building's proportion and scale when such elements are incorporated.

(4) Graphics and signage may be illuminated by indirect, internal, or bare-bulb sources, providing that glare is not produced; by indirect light sources concealed by a hood or diffuser; by internal illumination with standard opal glass or other translucent material or with an equal or smaller light transmission factor. All illumination shall be steady and stationary. Neon lighting shall be permitted when used as an integral architectural element or artwork appropriate to the site. For purposes of this subsection, "Glare" shall mean an illumination level of six (6) Lux or greater at the property boundary. If internal illumination is used, it shall be designed to be subordinate to the overall building composition. Light fixtures should reflect the design period of the building on which they are

placed. The use of ambient light from storefront or streetlights is encouraged.

(d) Proportion of Signs. For all signage, signage width and height must be in proportion to the facade, respecting the size, scale and mass of the facade, building height, and rhythms and sizes of window and door openings. The building facade shall be considered as part of an overall sign program but the sign shall be subordinate to the overall building composition. Additionally, signs shall respect and respond to the character and/or period of the area in which they are being placed.

(e) Number and Size of Signs.

(1) Number and Size. The historic and design review commission shall be guided in its decisions by the total number of businesses or services per building and the percentage of visible storefront occupied by each business or service. Applicants may apply for up to three (3) signs total. Total signage for all applicants shall not exceed fifty (50) square feet unless additional signs and/or additional total footage is approved. Additional square footage may be approved provided that the additional signage is in conformity with, and does not interfere with, the pedestrian experience on the Riverwalk. The additional square footage shall be based upon the size and scope of the site. Signs should reflect the type and speed of traffic they are meant to attract. Signs designed for pedestrians and drivers of slow moving cars should not be the same size as signs designed for highway traffic.

(2) Sign Area. The sign area shall be determined in the following manner:

1. A. Sign Areas. The area of a sign shall be computed on the actual area of the sign. Sign area shall be calculated as the area within a parallelogram, triangle, circle, semicircle or other regular geometric figure including all letters, figures, graphics or other elements of the sign, together with the framework or background of the sign. The supporting framework of the sign shall not be included in determining sign area unless such supporting framework forms an integral part of the sign display, as determined by the historic preservation officer. If the sign is located on a decorative fence or wall, when such fence or wall otherwise meets these or other ordinances or regulations and is clearly incidental to the display itself, the fence or wall shall not be included in the sign area. In the cases of signs with more than one (1) sign face, including but not restricted to double-faced signs, back-to-back signs, overhanging signs, and projecting signs, each side of the sign shall be included in total allowable signage area.

FINDINGS:

- a. The property located at 1126 N St Marys is a 1-story commercial structure. The building is constructed of cast in place concrete frames with clay tile infill and concrete pan-joint roof construction. The building is the former location of an Arrow Upholstery & Drapery store and is within the RIO-2 boundary at the intersection of N St Marys and Brooklyn Ave. The applicant is requesting conceptual approval to perform window modifications, install new entryway elements, modify an existing parking lot slope to include a pedestrian walkway, and perform hardscaping modifications.
- b. The applicant met with the Design Review Committee (DRC) on August 8, 2017. At this meeting, the applicant stated their intent to incorporate high quality insulated storefront steel windows into the modified openings. The DRC was supportive of all proposed window modifications based on the RIO guidelines and the fact that the existing building footprint and general configuration will be retained. The DRC was also in favor
- c. **WINDOW MODIFICATIONS** – The applicant has proposed to remove the existing windows and replace with a new insulated glass and divided lite steel frames on the two primary elevations facing N St Marys and Brooklyn Ave. The existing windows are a mix of aluminum storefront windows on the N St Marys elevation and steel frame divided lites on the Brooklyn Ave elevation. The applicant received administrative approval to begin replacing windows in-kind to match the existing in dimensions, materials, and design. The current proposal will alter the materiality of the windows on the N St Marys elevation and alter the openings on both N St Marys and Brooklyn Ave. While the installation of this new storefront system will alter the existing opening, staff finds that the main design intent of the existing original structure will largely remain intact. This is consistent with the UDC Section 35-676(i).
- d. **PARAPET** – The applicant has proposed to add height to the existing parapet to conceal new mechanical equipment from the public right-of-way. The proposal will add approximately 3 feet to the existing height. This will be achieved with a lightweight structure and will be covered in a stucco finish to match the existing facade texture. A detail at the top of the parapet, either painted or tiled, is proposed. Staff finds the approach consistent with the UDC.
- e. **INSTALLATION OF NEW ELEMENTS** – The applicant has proposed to construct a new architectural

element on the exterior of the existing structure, located in the center of the elevation facing Brooklyn Ave. The elements appear to measure approximately 5 feet taller than the existing flat roofline, though no dimensioned drawings have yet been provided. The applicant's proposals are generally consistent with the UDC Section 35-674(d)(1) and (2) in terms of massing and location, though final material specifications have not yet been provided.

- f. **WALKWAY** – The applicant has proposed to install a pedestrian walkway along the Brooklyn Ave elevation. This walkway will partially require cutting into the sloped elevation of an existing parking lot. This modification will include stairways to account for the slope grade change. The walkway will extend to the intersection of Brooklyn Ave and N St Marys and will join with an existing public sidewalk. Staff finds the proposal generally consistent with the UDC, but has not yet seen a site plan with definitive dimensions, materials, or how the walkway will be treated when it joins with the existing sidewalk. Staff has also not seen a site section or elevation of the proposed staircases. This information is required for final approval.
- g. **HARDSCAPING** – The applicant has proposed to install a new outdoor seating area adjacent to the N St Marys right-of-way. The area currently contains faux grass, some small shrubbery, and a temporary walkway. The outdoor seating area will introduce new hardscaping to accommodate tables and chairs. Based on the commercial context of the corridor, staff finds the proposal appropriate. A final material specification and harscaping plan is required for final approval.
- h. **LANDSCAPING** – The applicant has not yet submitted a site plan that indicates any new proposed landscaping. The applicant is required to provide this for final approval.
- i. **PARKING LOT MODIFICATIONS** – On the east façade, the applicant has proposed to install a new door to be identical to the easternmost door of the south façade and a new storefront system to provide access from the proposed parking area into the structure. This is consistent with the UDC Section 35-676(i).
- j. **MATERIALITY** – The applicant has stated that the new architectural elements will be clad in stucco. This is generally compatible with the existing structure, but staff has not received information on the proposed finish, final color, or final texture. This information is required for final approval.
- k. **SIGNAGE** – The applicant has verbally indicated that the new architectural elements will potentially feature signage. The floor plan also indicates that the building will be multitenant in the future, which has been confirmed by the applicant. The applicant is required to provide a comprehensive signage plan for final approval.

RECOMMENDATION:

Staff recommends conceptual approval based on findings a through j. The applicant should consider the following when working towards final approval:

1. That the applicant confirms all design decisions, including architectural details, materials, and other specifications as noted in the findings.
2. That the applicant indicates all hardscaping and landscaping modifications or additions as noted in findings e and f. The documentation should include a full site section that indicates how the proposed walkway will affect the existing parking lot's slope, along with information on the proposed staircases and any ADA requirements.
3. That the applicant submits a comprehensive, multi-tenant signage plan as noted in finding j.

CASE MANAGER:

Stephanie Phillips

CASE COMMENTS:

The applicant met with the Design Review Committee (DRC) on August 8, 2017. The discussion is outlined in finding b.



Flex Viewer

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Printed: Jul 23, 2017

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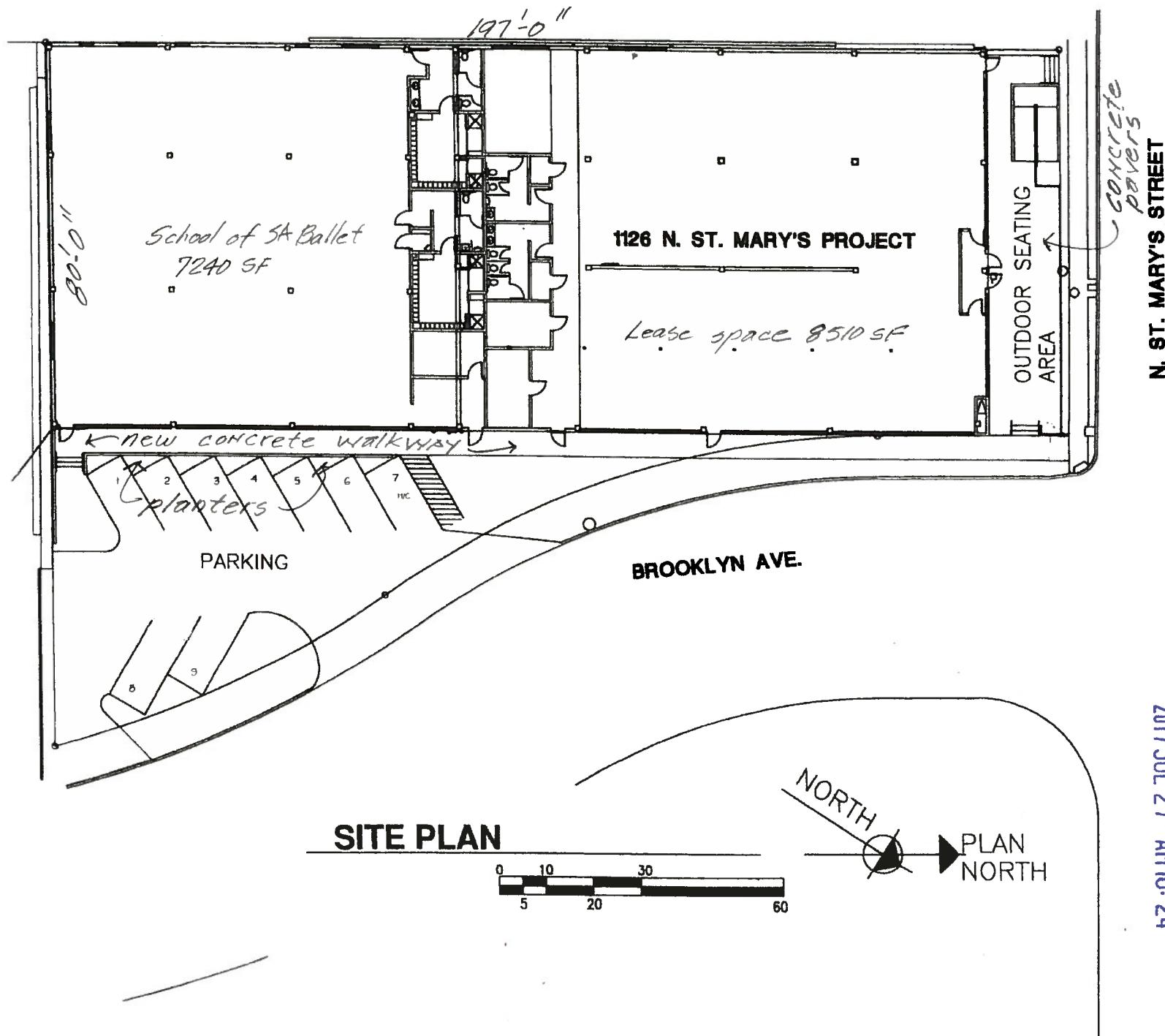


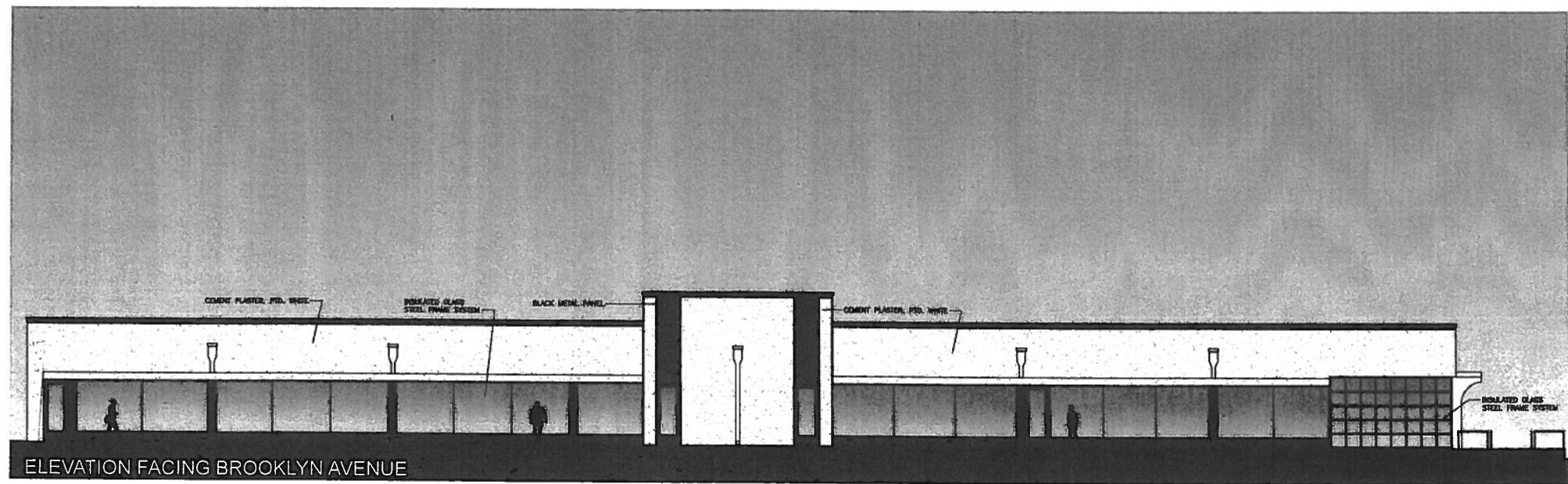
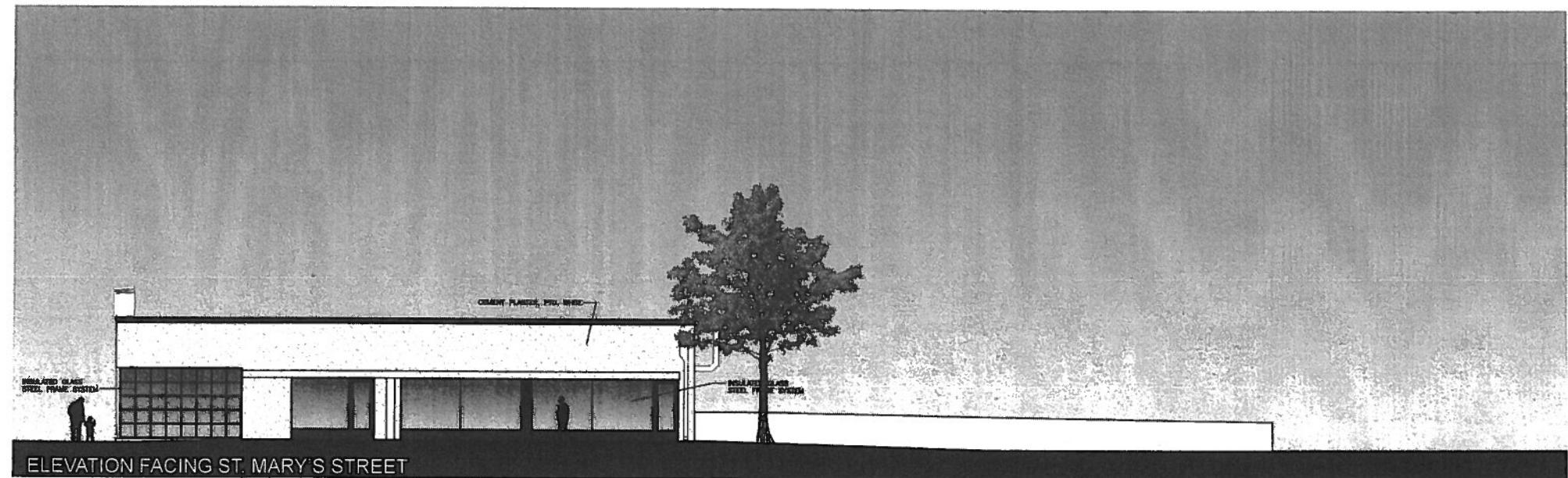


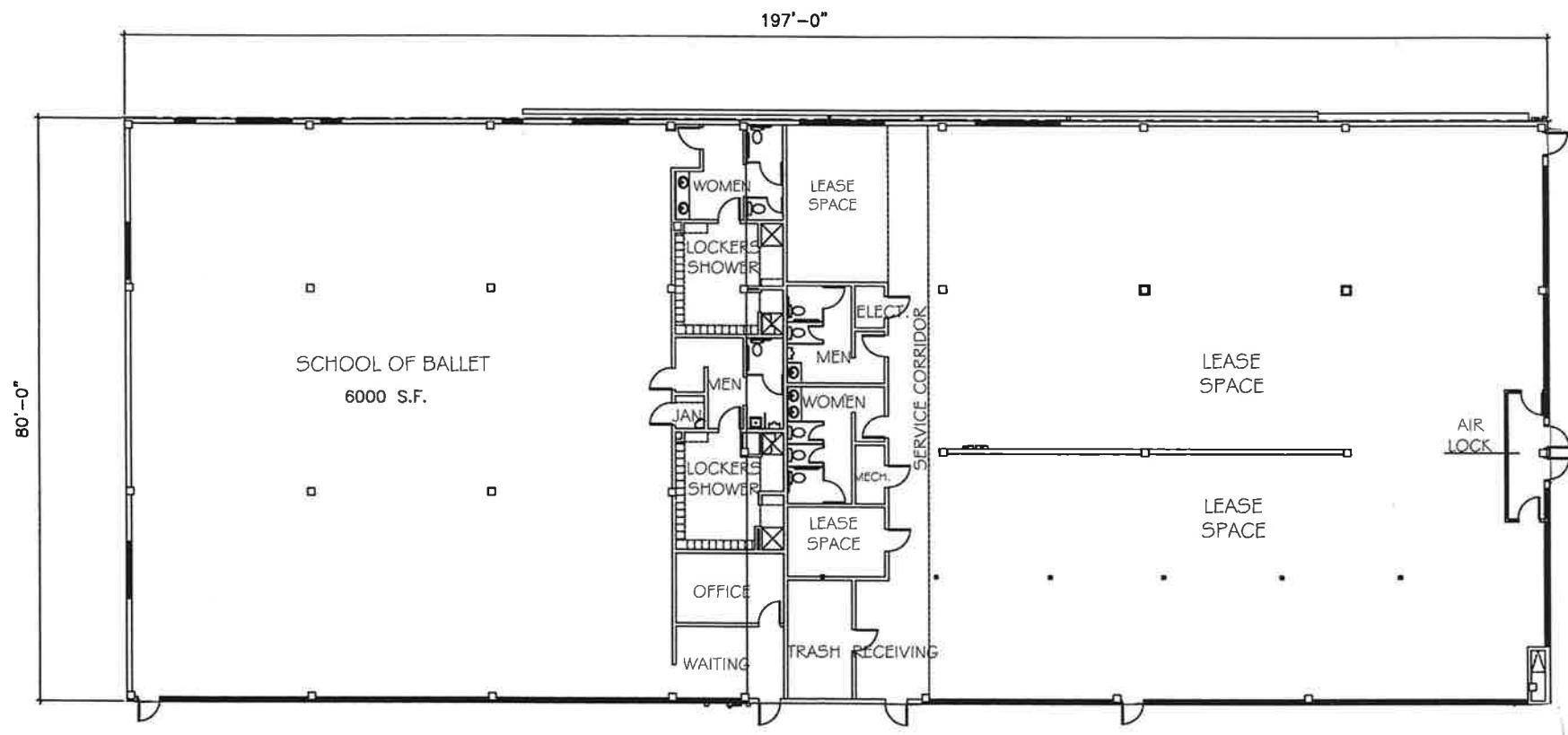




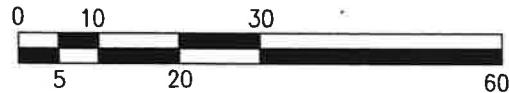








1126 N. ST. MARY'S PROJECT - FLOOR PLAN



Site Work

1.4 OBSERVATIONS AND COMMENTS

A visual observation of the parking lot and exterior improvements including: concrete sidewalks, parking spaces, drainage, and grading at the immediate perimeter of the building was conducted.

The following are our observations and comments:

The asphalt/concrete at the left side is poor, with surface failure, poor drainage and the lack of proper markings/signs. .



Noted no fire lane markings or handicap parking. The buildings are not ADA compliance. (Not Included with this PCA)

Surface drainage drains towards the building at both sides, with an

unknown drain in the left parking area. The roof drains to a system of scuppers located at the edge of the roof and downspouts do not divert water away from the foundation properly.



The right side retaining wall is leaning and has some cracking. Drainage from within the void between the building and adjacent lot is unknown.





Noted cracking in the front concrete curbs.



It is recommended that further investigation with appropriate service and/or repair contractors is made to determine the full costs involved in correcting the drainage and repairs to the walks/parking areas.

Building Exterior

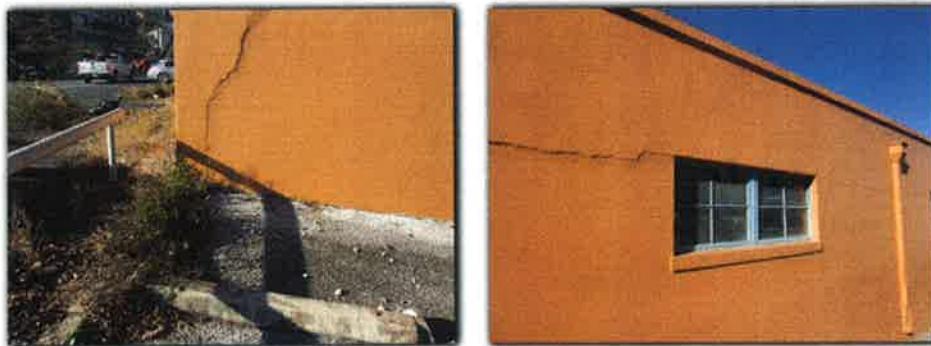
1.5 OBSERVATIONS AND COMMENTS

A visual observation of the condition of the exterior walls, doors, windows, and other accessible components.

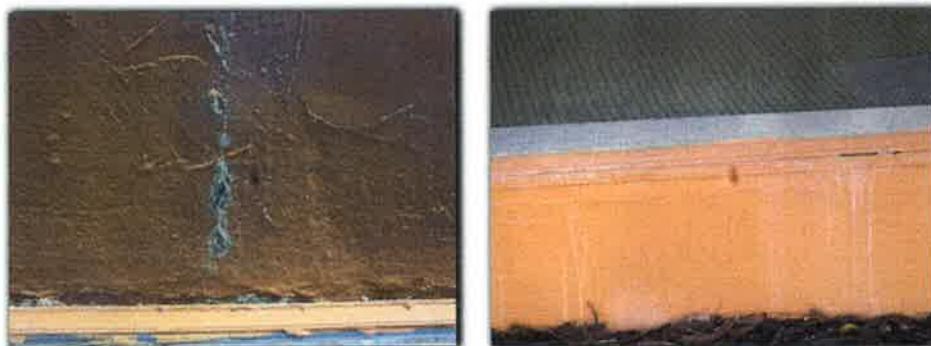
The following are our observations and comments:

The over all condition of exterior walls are poor with physical damage, open voids, broken windows, wood rot, visible cracking of block walls and areas where the finish grade is at or above the interior slab height.

The exterior inspection of the walls revealed some cracking associated with the structural movement. Cracks were seen in the CMU walls at the rear and sides.



Noted water stains at the exterior windows and other wall breaks that indicate moisture build up within the walls.





It is recommended that further investigation with appropriate service and/or repair contractors is made to determine the costs involved to correct the exterior conditions.

Roofing

1.6 OBSERVATIONS AND COMMENTS

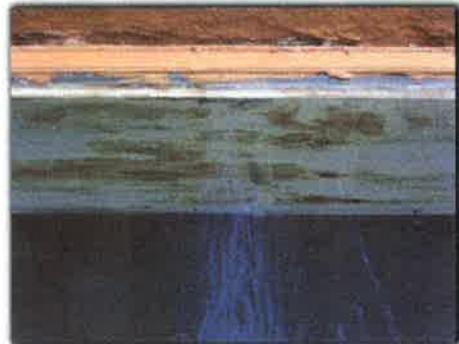
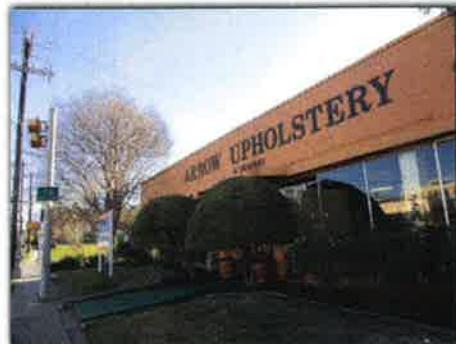
A visual observation of the condition of the roofing systems was conducted. No test samples were taken. The meal roofs at the covered parking and auxiliary building were not walked on.

The following are our observations and comments:

The roof on the structure is a combination of built up gravel and rolled roofing with numerous areas of failure and indications of ongoing leakage.



The front facade appears to be leaking.



Noted indications of active links across the front window areas.

Noted numerous areas throughout the warehouse where the roof appears to be leaking as indicated by water stains and placement of buckets throughout where some water in buckets.





There are areas on the roof where the gravel has been brushed back to repair leaks.

The upper parapet wall across the front and sides of damage in the state of deterioration and will need repair.

The over all condition of the roofing systems is poor, and any immediate repairs should be considered as preventative in nature. It is recommended that the client include in budget expenditures for replacement of the roof.

Foundation & Structure

1.7 OBSERVATIONS AND COMMENTS

A visual observation of the condition of the foundation including the interior and visible supporting superstructure was conducted.

The following are our observations and comments:

The building is constructed of masonry blocks (CMU) and supported by slab on grade and floating type foundations. The foundations consist of both monolithic and floating slabs.

The exterior inspection revealed some cracking associated with the structural movement.



The floors inside the front show room are out of level.

The floating slab at the left warehouse is out of level.

Noted some off sets and signs of movement between joints in the warehouse exposed slabs.

The visual inspection revealed signs of structural movement/distress which indicates repairs may be needed. The client should seek additional opinions from a structural engineer to determine scope of any needed corrective actions and improvements needed for planned renovations.

Building Interior

1.8 OBSERVATIONS AND COMMENTS

A visual observation of the condition of the interior was conducted and the following are our observations and comments:

The following are our observations and comments:

Noted lower wall damage in the warehouse office wall behind the HVAC unit.

Noted some lower wall damage across the right side with visible mold growth indicating water penetration from the open void between the building and the adjacent parking lot at this area.

Interior floors, ceilings and finish out are dated, damaged, missing and or soiled.

It is recommended that further investigation with appropriate service and/or repair contractors is made to determine the costs involved to correct/update the interior conditions.

Electrical

1.9 OBSERVATIONS AND COMMENTS

A visual observation of the condition of the electrical system was conducted.

The following are our observations and comments:

Observation of the electrical equipment and systems revealed deferred maintenance. Categories including loose wiring, open and missing junction boxes, loose conduit/boxes, and miscellaneous minor to moderate conditions requiring general servicing by a licensed electrician.



There are two electrical meters located in the property one at the front right of the building which is at three phase 100 amp service 1 meter located at the left center providing power 200 amp panel which appears to be newer than the original panel located at the front right.

The electrical panels are poorly or not labeled.



Noted many of the interior lights are out.

Noted the use of a Federal Pacific Electric "Stab-Lock" panel. These

panels are known to have a high rate of failure, and are considered a safety hazard.



The wooden framed part of the warehouse has several electrical panels located at the front left including some dated glass-based fuses with plastic covering some equipment to protect it from water leaks from the roof. This equipment will need to be carefully examined to determine extent of needed repairs or replacement.



Noted some of the electrical outlets or the original two wire system which may not all be grounded



Noted no working emergency or exit lights.

It is recommended that further investigation with appropriate service and/or repair contractors is made to determine the full costs involved with repairs and updating of the electrical system.

HVAC

1.10 OBSERVATIONS AND COMMENTS

A visual observation of the condition of the HVAC system was conducted.

The following are our observations and comments:

The over all condition of the HVAC system is fair.

The HVAC system for the front office is operating, however is not cooling properly. Two roof top mounted units.



The gas heater for the front office was not tested.



Warehouse heaters were functioning at the time of this inspection.

The thermostat one or more of the warehouse heaters do not appear to be operating.



The overall condition of the HVAC systems is fair with limited systems in place.

Plumbing

1.11 OBSERVATIONS AND COMMENTS

A visual observation of the condition of the plumbing system was conducted.

The following are our observations and comments:

The over all condition of the plumbing system is poor and extensive repairs and updating is needed.

Noted missing fixtures, some leaks under sinks, no hot water and general lack of any maintenance.

The bathrooms will require updating with new fixtures and finishes.

There's a sewer clean out located the front and appears to have been recently installed or repaired. Additional information from the sellers recommended.



Based on visual observation of the conditions of the plumbing systems, this building plumbing has deferred maintenance conditions. Further investigations are recommended to determine the full extent of costs involved in bringing the property up to acceptable standards. Plumbing repairs/replacement should be considered in regards to any planned improvements. It is recommended that the water and sewer lines are tested.

Additional Information and Limitations

1.12 LIMITATIONS

IMPORTANT LIMITATIONS, AGREEMENTS, and DISCLOSURES

The scope of our survey is limited to visual observations of specific components. Items and conditions not outlined in our report are not covered, and should not be considered to be in any condition; good or bad, by such lack of notation. Major components of the building and systems have been included and will be discussed in the report, including: site work, building exterior, roofing, foundation and structure, interior conditions, visual plumbing, electrical, and HVAC units.

The PCA specifically exclude finish work; kitchens and equipment, surface materials, and artistic conditions in general; termite/termite damage; fire fighting equipment and sprinkler systems; load carrying capacity of structural elements; landscaping and vegetation, current or previous; geological faults, area flood conditions; noise or air pollution, and any other general or area conditions, hazardous waste, asbestos materials and radon gas; legal description of the property such as boundaries, egress/ingress, etc.; conformance with governing codes, manufacturer's specifications, or other legal requirements of all kinds.

Opinions and comments stated in this report or in other discussions are based solely upon visual observations of apparent performance. Performance standards are based exclusively on the professional knowledge and personal experience(s) of the inspector. This inspection and/or inspection report does not constitute any guarantee or warranty; expressed or implied, as to future life, performance, and/or need for repairs of any item inspected and/or included in the inspection report.

The fire protection/alarm systems was not inspected.

This inspection service does not include factors in regards to the (ADA) American Disabilities Act.

The service provided is not a code inspection, and cannot predict possible affects of current codes on future remodeling.

The inspection and report provided, does not include engineering studies or other types of analyses, and is not technically exhaustive.



Arrow Upholstery Building

Structural Evaluation

Prepared for: **Clayton & Little Architects**

1001 E. 8th Street
Austin, TX 78702

Bldg. Location:

429 N. St. Mary's Street
San Antonio, TX 78205



September 6, 2016
Patrick Sparks, PE
Principal Engineer

Zach Webb, PE
Project Engineer

Sparks Engineering, Inc. (SEI) has completed an initial structural evaluation of the Arrow Upholstery Building in San Antonio, Texas. These services were requested by Paul Clayton, AIA and were performed in accordance with our signed contract for consulting services, authorized on May 17, 2016. The purpose of these consulting services was to evaluate the overall condition of the structure and recommend design concepts for new framing and strengthening, as appropriate.

Project Overview

Arrow Upholstery is a one-story building totaling approximately 15000-sf and was apparently constructed in three building campaigns, probably dating from the mid-20th century. The building is a cast-in-place concrete frame with clay tile infill and concrete pan-joists roof construction at the main portion and wood roof framing at the northeast quadrant.

We understand the Owner wishes to rehabilitate the building and expand the structure vertically with two additional floors, as well as changing the occupancy from warehouse to mixed use, and that Clayton & Little is currently developing the master plan for rehabilitation.

Report Organization

The report is organized with two primary sections:

1. Existing Structural Evaluation - This section summarizes our observations, findings, and recommendations regarding the overall condition of the existing structure. A conceptual plan drawing with keyed notes documenting the various observed structural conditions in the building and test locations and findings is attached, as well as our relative elevation survey.
2. Design Considerations for Proposed Expansion - This section includes our initial recommended design concepts for the new structure, placed in context with our assessment of the existing building.

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Existing Structure Evaluation

Our office visited the site on May 25, 2016 to assess the condition of the structure and on June 6, 2016 to observe the test pits which were excavated by others.

Site, Soils and Foundation

Our assessment of the existing foundation included observations of existing structural damage and potential sources of water that could induce movement, observations of the type and condition of the foundation at three test pits, and review of the geotechnical engineering study performed by Raba Kistner Consultants, dated August 29, 2016. The primary observations and findings from the foundation investigation are as follows.

1. The soil under the building consists of clay with a gravel seam at approximately 25-feet, with clayshale beneath at approximately 35-feet. The clay soil is expansive in nature and can shrink and swell drastically with changes in soil moisture content. The soil has the ability to cause differential foundation movement over prolonged periods at locations where the soil is charged with excess water (e.g. downspouts, plumbing leaks, major root zones) or where moisture is depleted.
2. The building is founded on drilled concrete piers with perimeter grade beams. Our preliminary analysis indicates the existing piers would have been belled for end bearing; however, one exploratory boring was drilled adjacent to the southwest corner of the building to a depth of 25-feet and a belled portion of the pier was not found. This suggests that either the bell is deeper than 25-feet, or the piers are constructed without a bell (i.e. straight shaft).
3. The native clay soil was found to be in contact with the bottom of the grade beam at one of the test pits (Keynote A1). The tops of the piers were found to be undamaged. Swelling of the clay under the building can cause significant uplift forces on the grade beams and piers which can lift the building if it is founded on straight shaft piers or, in the case of belled piers, can induce a net tension force as the belled portion resists the lifting.
4. Storm water control at the site is poor overall. The roof drainage is inadequate and downspouts discharge at the base of the walls. (Figure 1)
5. Foliage from trees adjacent to the building has clogged downspouts and contributed to the drainage issues and deterioration of the roof. (Figure 2)
6. There is extensive movement (up to 6-inches) and distress in the interior slab-on-ground and exterior flatwork. The interior slab is 'floating' (i.e. not part of the foundation) and is lightly reinforced with wire mesh. There is no vapor barrier under the slab. We noted the zone of the most pronounced slab movement appears to correlate with the location of existing plumbing, a roof downspout, and large trees adjacent to the building (east elevation).



Figure 1: Drainage basin between the building and adjacent parking lot retaining wall.



Figure 2: Drainage inadequacy from tree foliage above roof.

We performed an elevation survey around the perimeter of the building as part of our assessment of the existing foundation (refer attached drawing). The survey data indicates differential foundation movement up to approximately 3-inches¹ and is consistent with part of the observed distress in the concrete frame and facade. The movement appears to correlate with sites of storm water accumulation, trees adjacent to the building, and potential below-grade water utilities.

Overall, it is clear the foundation is not performing as designed; however, the reinforced concrete building has tolerated the movement well (see Concrete Frame below). The behavior is uncharacteristic of belled pier foundations. Our estimate of the potential uplift forces caused by swelling of the clay soil indicates approximately 1-percent reinforcement is required to resist tension in the pier, which is typical for reinforced concrete design and is consistent with the amount of reinforcement found in the columns. Combined with the lack of a bell encountered at the exploratory boring strongly suggests the building is founded on straight shaft piers

In our opinion, the observed foundation movement is due to poor control of storm water, adjacent trees and vegetation, and/or leaking water utilities which has led to swelling of the clay soil against the foundation. Although full underpinning would eliminate most of the risk of future movement, it is difficult and costly for the existing drilled concrete piers. Our primary recommendations are focused on water management to minimize the amount of future movement and include the following:

1. *Re-route roof downspouts (new and/or existing) into new below-grade drains that discharge into the city storm drains. Add supplemental roof drains as required to achieve the capacity, pending future plans for the roof structure.*
2. *Correct the deficiencies in the existing water and sewer utilities that are planned to remain. Remove all deteriorated, abandoned, and non-functioning utilities.*
3. *Remove trees and vegetation next to the building.*
4. *Create a permanent void between the clay soil and the underside of the grade beams. This can be done by excavating under the grade beams and installing soil retainers to prevent the soil from filling the voids.*

We anticipate that implementation of the above recommendations will minimize future movement to a non-structural level. We recommend our office continue to monitor the movement in the building for a minimum period of one year after the rehabilitation is complete. Other recommendations related to the interaction of the new and existing structures are included below.

Concrete Frame

The main portion of the building consists of a frame of cast-in-place concrete beams and columns with clay-tile infill wall panels and pan-joist roof construction. Our assessment of the concrete frame included observation of existing structural damage, as well as a combination of non-destructive testing and selective probing to locate the reinforcing steel in a typical column, interior beam, and roof joist. We also

¹The movement has to be considered relative, since there has been no monitoring against a fixed datum.

performed some in-place qualitative tests for depths of carbonation² to characterize the rebar corrosion risk and remaining expected life. The attached *Condition Survey* shows the location of our in-situ testing.

The primary findings of our investigation of the concrete frame are as follows:

1. There is some minor distress (e.g. cracking) in the roof slab and frame which is apparently due to the foundation movement. Thus far the reinforced concrete frame appears to have tolerated the movement.
2. There is corrosion induced cracking in the beam soffit at several steel windows which is most likely due to long-term water infiltration. There is some lateral displacement on the exterior in the facade which suggests the frame may also have some corrosion under the clay tile (refer Facade below).
3. As previously mentioned, the drainage on the roof is poor and appears to be inadequate. There is evidence of ponding on the roof and leaks on the interior with some corrosion of the roof slab mesh. The lack of drainage is likely exacerbated by the foundation movement.
4. Our analysis indicates that the existing concrete frame and pan-joist construction is efficiently designed for roof loading only. Strengthening will be required for other uses/types of loading.
5. We found that the concrete is fully carbonated to a depth of less than 0.5 inches below the surface, and beyond that the concrete appears to be partially carbonated.

Overall, the reinforced concrete structure is well-constructed and appears to be in good condition, with some limited signs of distress, corrosion-damage, or excessive carbonation. Our recommendations are as follows:

1. Repair corrosion related concrete deterioration by chipping back to sound concrete, clean and treat the reinforcing steel, and patching. We recommend removing the clay tile veneer on the exterior for repairing the exterior side of the frame. Veneer removal will also allow the exterior to be waterproofed after repairs are made.
2. Weatherproof the building frame. This includes fixing drainage on the roof, exterior waterproofing, and enclosing the frame within the building envelope.
3. Panelize the new interior finishes which will isolate them from future movement and limit the distress.

Wood Framing

The northeast quadrant has wood roof framing (i.e. dimensioned lumber joists and lumber decking) and a central row of timber interior columns. We found the following with regard to the wood framing:

² Carbonation is the concrete's natural absorption of CO₂ from the atmosphere, a process that reduces the alkalinity and thereby allows corrosion of the reinforcement.



Figure 3: Deterioration of the roof deck and framing below poor roof drainage.

1. There are some locations with decay in the joists and decking which appear to correlate with a scupper on the roof and a location of apparent ponding (Figure 3). We anticipate the wood framed portion of the building will be removed and replaced for the new structure. At a minimum, removal and replacement of the decayed framing is required when the roofing is replaced.
2. Our analysis indicates that the wood framing is efficiently designed for roof loading only. Strengthening will be required for other uses/types of loading.

Facade

The main features of the facade include clay tile veneer with stucco, steel windows, and a cantilever awning on the front. We observed the following:

1. The veneer consists of a single layer of clay tile on the exterior of the frame (the south elevation is an exception where there is no veneer simply infill). The clay tile is unreinforced and we did not identify any ties connecting the veneer to the infill wall or frame.
2. The veneer exhibits distress (e.g. cracking, jacking, lateral displacement) which is primarily caused by corrosion of the steel lintels and windows. As previously mentioned, there is also some lateral displacement which appears to be caused by corrosion behind the veneer (e.g. the concrete

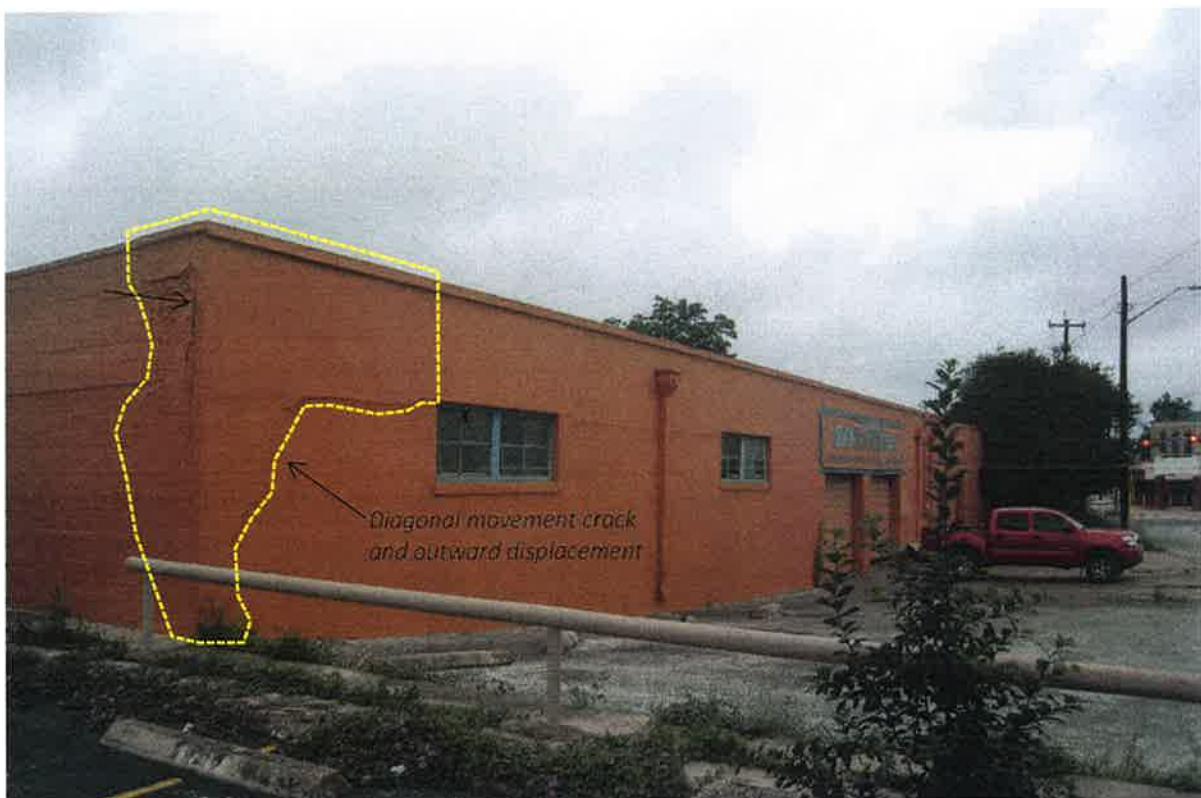


Figure 4: Cracking at the southeast corner along horizontal datum of the lintels and concrete frame.



Figure 5: Loose parapet masonry at the vent roof tie-back.

3. frame, vertical leg of lintels). In addition, there is some cracking which is characteristic of and correlates with the observed building movement. (Figure 4)
4. On the west side, a piece of the brick parapet is loose where the vent pipe is anchored to the building. (Figure 5)
5. The mortar on the parapet is in poor condition (i.e. cracked, loose, or missing). The condition is especially notable on the south side where it is not protected with veneer/stucco finish.
6. The cantilever awning on the main facade appears to be reinforced concrete construction. Overall, it appears to be in good condition with no visible distress. The presence and condition of waterproofing on top of the awning and flashing at the building, which is critical for this type of cantilever feature, is unclear and requires further study.

Although isolated repairs and maintenance of the facade are possible, we recommend removal of the veneer and re-skinning as a more robust rehabilitation solution. Re-skinning would allow for inspection and repair of the concrete frame below and installation of a complete waterproofing membrane which would practically eliminate future water infiltration issues and provide better protection of the structure.

Roofing

The gravel surfaced built-up roof and perimeter roof flashing has reached the end of its useful life and requires replacement (Figure 6). Correcting deficiencies in the roof drainage and waterproofing to protect the structure below are required as part of a plan for rehabilitation.



Figure 6: Drainage inadequacy is causing water to pond on the roof.

Design Considerations for Proposed Expansion

We understand the building owner wishes to expand the structure vertically with two additional floors, as well as change the occupancy from warehouse to mixed use, with some assembly use on the upper floors. Our initial recommended design concepts for the new structure, placed in context with our assessment of the existing building are as follows:

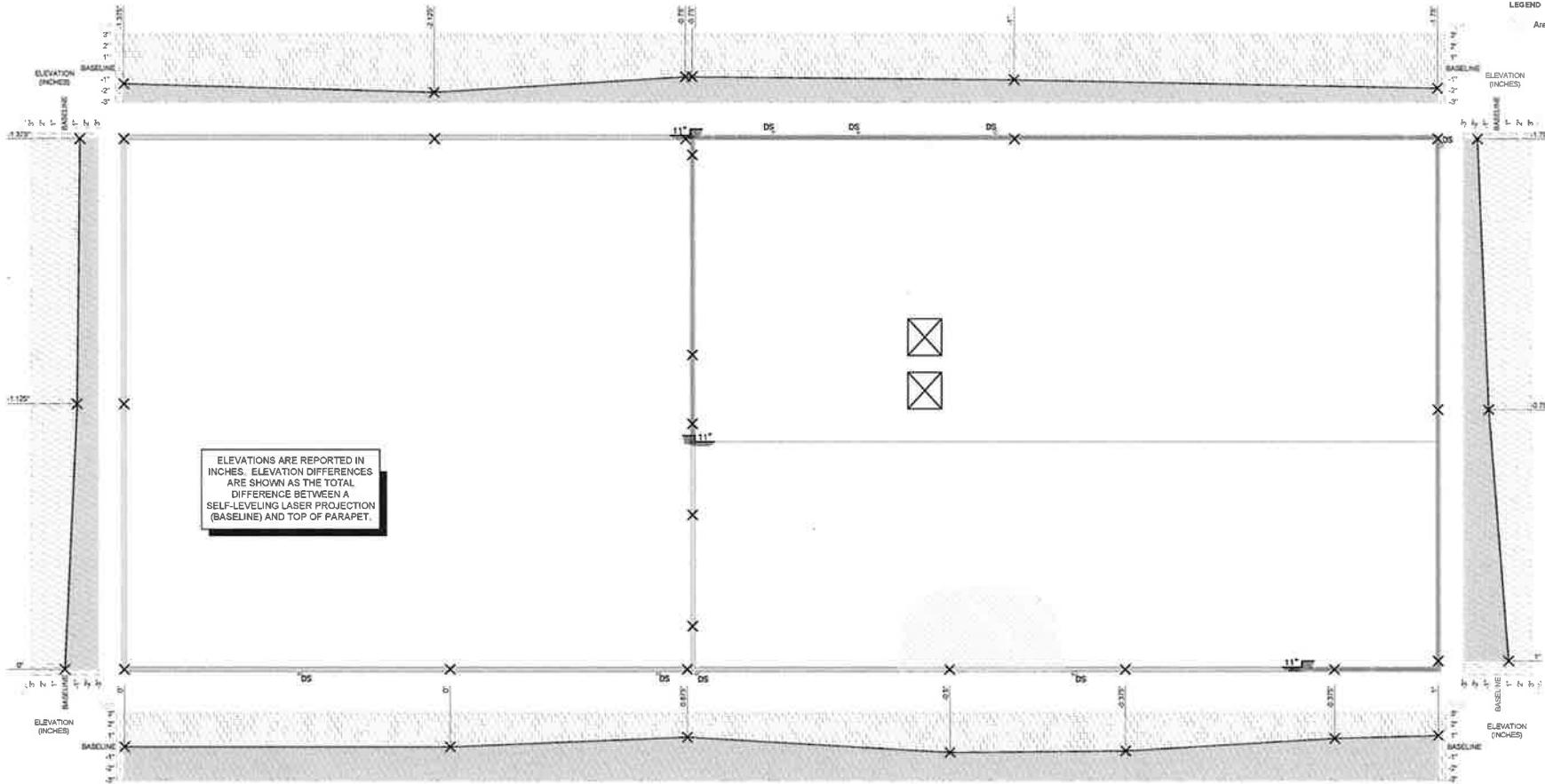
1. Overall, the existing building frame is generally in good condition. We anticipate a remaining service life of 70 years or more given proper maintenance and repairs, site storm water control, and moisture control.
2. Our recommended approach for the existing foundation is focused on water management to minimize future movement. Therefore, the design for new interior finishes should accommodate some future movement. We recommend panelizing new interior finishes so they can tolerate the movement and limit future distress.
3. The existing structure is designed for roof loads only. Adding load to the roof is limited by the capacity of the existing foundation and also the existing roof framing (i.e. joists, beams). Therefore, we recommend the following preliminary options³:
 - a. Retrofit the existing roof framing by adding new framing under the roof to supplement and support the new loads. This will likely consist of adding mid-bay columns along one direction (e.g. east-west) and spanning new beams between (e.g. north-south); thereby reducing the span of the existing roof joists. Some isolated strengthening may be required where the new framing causes a moment reversal in the joists and beams; or
 - b. Construct new second floor framing which is suspended over and isolated from the existing roof.
4. Foundations for new framing will consist of drilled concrete piers with belled ends.
5. The new framing will most likely be steel to accommodate unobstructed assembly spaces in the upper floors. The framing will most likely consist of tubular columns with truss girders and truss joists supporting concrete over metal deck floors. Lateral stability will be provided by braced frames or shear walls. We prefer large open rooms to be on the top floor for continuity of load paths and to eliminate complicated and expensive transfer girders.

³ The design concepts are preliminary and its purpose is to provide a summary of our design intent prior to beginning design work. Additional analysis will be required as part of a comprehensive design.

Limitations

This structural evaluation was based on visual field observations of readily accessible areas, limited nondestructive testing, and limited destructive testing. Our recommendations are based on the observed conditions at the subject property at the time of the assessment. Other conditions may exist, or develop over time, which were not found during the assessment. These recommendations do not represent a final design or specification. Additional investigation will be required as part of a comprehensive program or design.

End of Report



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INITIAL STRUCTURAL EVALUATION

RELATIVE ELEVATION SURVEY

Project #: 16-675

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