

Adkins Residence

Adkins Steel Parcel

Building Condition Assessment Report



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Prepared for:

Pima County Cultural Resources Office

Adkins Steel Parcel
Adkins Residence Building Condition Assessment

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February 25, 2008

EXECUTIVE SUMMARY

The Adkins Steel Parcel comprises the western extent of historic Fort Lowell. It was acquired by the City of Tucson and is intended to become a part of Fort Lowell Park. Master planning for the park, including the Adkins Steel Parcel, and its future development, is proceeding under the management of the Pima County Cultural Resources Department.

Burns Wald-Hopkins Architects was contracted to provide architectural services at the site including Building Conditions Assessments for four structures on the property – the Adkins Residence and the three remaining Fort Lowell Officer’s Quarters.

The Adkins Residence was the primary residence of the Adkins family and was occupied until 2006. The structure is masonry, with a mission tile roof. The original structure is built of site fabricated mud adobes and there is a concrete masonry unit addition. The entire structure comprises approximately 1084 square feet.

Part of the work performed at the property consisted of development of Emergency Temporary Stabilization Plans for the four structures. Given the significant historic nature of the Officer’s Quarters, the majority of the stabilization work occurred at these structures. This Building Condition Assessment addresses the current condition of the various building systems at the Adkins Residence and also makes recommendations for stabilization work that should be undertaken.

The Master Planning effort will soon be initiated by the Pima County Cultural Resources Department and part of its outcome will be Restoration Plans for structures to remain on the Adkins Steel Parcel. This plan may make further recommendations for treatment at the residence, in addition to those in the Building Conditions Assessment.



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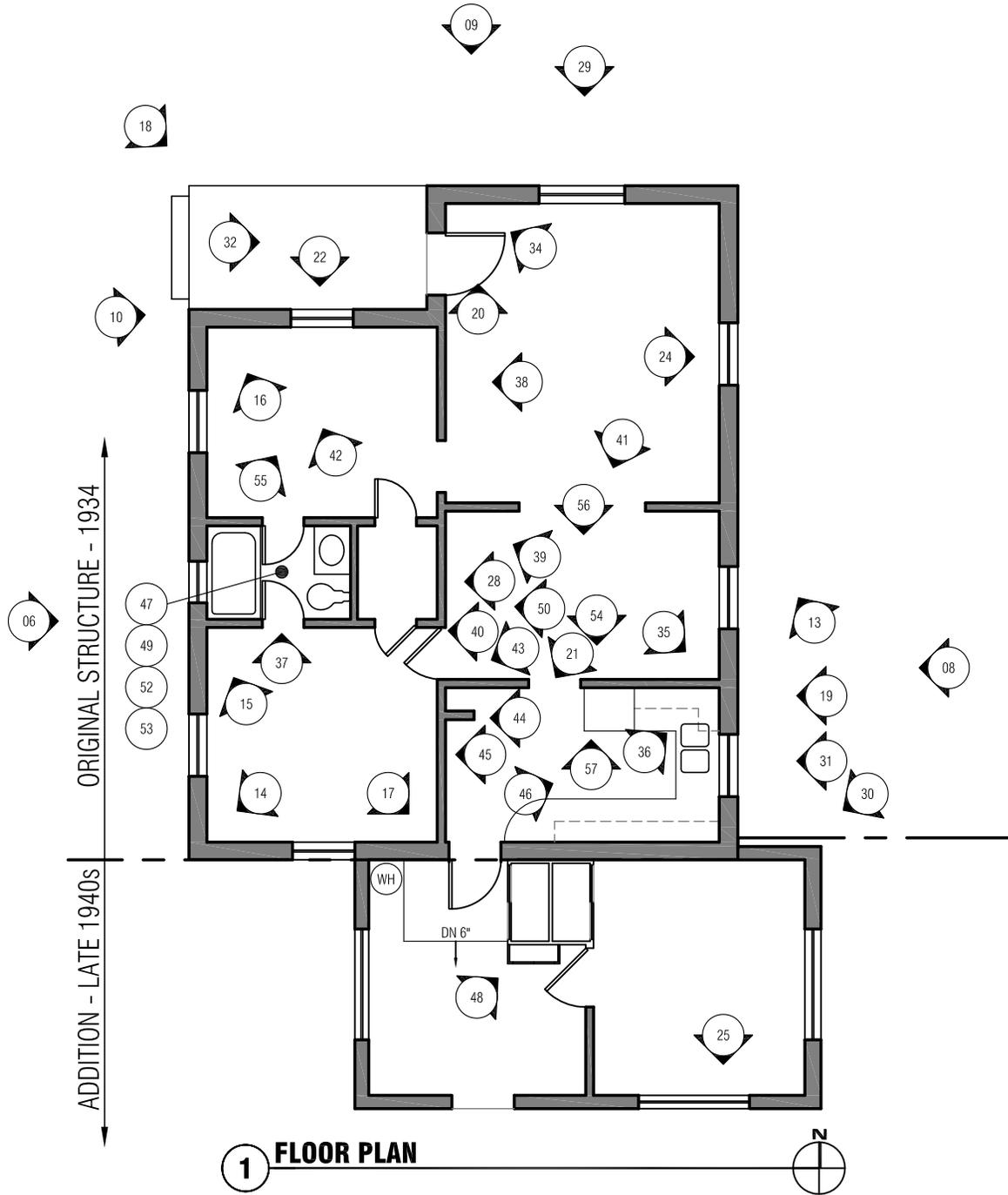
Photography Credits

BW - Burns Wald-Hopkins Architects

PCCR - Pima County Cultural Resources

AHS - Arizona Historical Society

Plan with Figure Tags



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INTRODUCTION

The purpose of this building assessment report is to evaluate existing conditions, make critical recommendations, and provide costs estimates for the recommendations for a residence located on the Adkins Steel Parcel at the intersection of Craycroft and Fort Lowell Roads in Tucson, Arizona. The assessment focuses on a description of existing conditions and any work required to maintain the structure in this condition until such time as the disposition of the structure is known. Also included are reports from structural, electrical, and mechanical/plumbing consultants.

Planning Process for Fort Lowell and the Adkins Steel Parcel

There is currently a planning process under the direction of the Pima County Cultural Resources Department that is determining the scope for a master planning study of Fort Lowell, the Adkins Parcel, as well as the City owned structures from Fort Lowell on the northwest corner of Craycroft and Fort Lowell Roads. A Request for Proposal has been issued to interested architects and planners. The selected team will then master plan the total Fort Lowell Park, and after the plan has been finalized, document restoration plans for structures to remain on the Adkins Parcel. Until such time as this Masterplan has been completed, the ultimate use of the buildings on the Adkins Steel Parcel is not known. This study of the Adkins Residence therefore seeks to address items that need immediate attention to keep the structure intact until such time as further treatment is determined.

Present Uses and Condition

The Adkins Residence was occupied until October of 2006, and had served as the Adkins family primary residence since they constructed the house in 1934.

The house is generally in habitable condition, but suffers from many years of benign neglect. There are some structural problems, but nothing of a critical nature that immediately threatens the envelope.

Hazardous Materials

Hazardous materials documentation and the impact of abatement at the site was not a part of the scope of this work. The City of Tucson is preparing a comprehensive report concerning hazardous materials and their treatment. Knowledge of type and extent of hazardous materials on the site is very important in relation to particular restoration and rehabilitation approaches, and will be considered in conjunction with recommendations of this report. The City has already removed subterranean steel tanks from the property.

ADA Compliance

The structure as it exists today is not accessible to the public and to make it so would require a number of significant modifications that would greatly change the character of the

original construction and incur a large expenditure.

The building is elevated above the finish grade 15" and is accessed through the front and rear doors by steps. The front door is 36" wide, which is accessible, but once inside the building interior doors are as narrow as 24". A ramp could be added to the front entry, but it would be unsightly (at 1:20 slope the ramp would be 25 feet long!). If the addition is removed a ramp could be provided at the rear entry as well.

There is one interior bathroom and it is very narrow - the entry door hits the toilet and there is barely room to stand between the lavatory and the tub; there are doors at opposite sides (entering from the two bedrooms) so the bathroom serves as a passageway. It is almost not usable by the general public, and certainly not able to be made accessible within the current building envelope.

If a potential use of the house, such as park administration offices, for instance, meant providing accessibility to the house, including an accessible toilet, it could be accomplished by removing the addition and constructing a new accessible toilet at the back of the house - there is plumbing there from its earlier use as a laundry room. The main interior spaces of the house (dining, living, kitchen) could be made accessible by widening the rear house entry and the door between the kitchen and the dining room. A ramp would still be needed at both the front and rear entries.

HISTORIC BACKGROUND

Historical Significance of the Fort Lowell Area

On September 7, 1976 the Pima County Board of Supervisors designated approximately 70 acres on the north side of Fort Lowell Road and immediately north of Fort Lowell Park, together with the 57-acre park, as a Historic District. On December 13, 1978 the area of Fort Lowell district in the City of Tucson, along with the Pima County Historic District, was included in the National Register of Historic Places under the designation of "Fort Lowell Multiple Resource Area."

This area has been inhabited continually from about 300 A.D. to the current day. Its earliest inhabitants, the prehistoric Hohokam people, who lived here from 300 A.D. to about 1450, lived in what is now Fort Lowell Park, and artifacts from their civilization may be found throughout the area (there are, for instance, numerous ancient pottery sherds evident in the adobes used to construct the original Fort buildings). Farmers settled the river plains along the Pantano and Tanque Verde washes to the east, and the Rillito River to the north. The military began its presence with the creation of the Fort Lowell Military District, which encompassed land as far north as Sabino Canyon. After the fort was abandoned, Mexican farmers who lived nearby began to settle in the area, some adapting and living in the old fort structures. They were joined by Mormon farmers who worked their way east down the Rillito River from old settlements at Binghamton (Dodge and Fort Lowell Roads). Finally, as Tucson continued its growth, the area developed in a typical southwestern suburban man-

ner – residential areas with commercial nodes at major intersections, as it exists today.

Therefore the area typifies the way the Southwest, and Tucson, has been settled and inhabited since prehistoric times. It is also important that these modes of settlement are all reflected in the physical record extant at the site. The Adkins Parcel has been unavailable for research and analysis until very recently and thus presents a new set of data that may yield important and heretofore unknown information about Fort Lowell, its inhabitants and its environs.

Location and Setting

The Adkins Steel Parcel is comprised of about 5.47 acres at the southwest corner of Craycroft and Fort Lowell Roads in Tucson, Arizona. The parcel represents the western boundary of Fort Lowell and contains three of the remaining Officer's Quarters of the seven built at the fort – one in ruins, one a partial ruin, and the remaining quarters intact with serious problems.

The Adkins Residence sits at the northeast corner of the property and is an adobe masonry house with a mission tile roof. The house was constructed in 1934 (Cultural Resources Assessment for The Fort Lowell-Adkins Steel Property, 1 October 2007) of site-fabricated mud adobes by the Adkins family. The original structure consists of a kitchen, dining room, two bedrooms, bathroom, closet, and living room comprising approximately 793 sf. A concrete masonry unit addition of 293 sf also exists, for a total gross square footage for the house of about 1086 sf.

It is not known for certain when the addition was built. An undated aerial photograph, presumably taken by Eugene Magee, an electrical engineer whose hobby was aerial photography, shows the original house without the addition. Nor does it show the Fabrication Shed, where steel tanks were made, which was constructed beginning in 1947 and completed in 1950 (interview with Harry Adkins, July 2007), so the photograph predates 1947. Adobe was the common local building material until extruded concrete masonry units (versus hand-cast ashlar block) began to be available in 1947 when San Xavier Block, operated by the O'Brian family, was put into operation (conversation with Joe Cuccio, Young Block). We may speculate that the addition was built soon thereafter to house Harry and his six siblings. The workmanship of the addition is not very good and the degree of finish is poor – there are no provisions for heating or cooling, except operable windows, there are no finish materials except plastered, painted walls and ceilings in the east room and only painted CMU in the west room. According to Harry Adkins, the addition was used as additional space for him and his siblings (noted above). The western room houses the water heater, and there is water piping and a drain to serve a washing machine and a through-wall vent for a dryer.

The family lived in the structure, and also operated the Adkins Steel Tank Company on the premises, until it was purchased from them by the City of Tucson in 2006. The tank fabrication shed is located adjacent the house and, as noted above, was built by the family to

house their tank fabrication operations. It was built of concrete panels, cast on the ground, and then supported in a steel framework, and is illustrative of the can-do attitude that informs the whole property – working with what is at hand. The family salvaged and saved all sorts of materials and stored them on site – when the City of Tucson and Pima County began the cleanup of the property they were confronted with seven decades of rusted cars, machine parts, surplus dirt, buried tanks, and other debris accumulated over time.



Figure No. 2 - Property at time of acquisition by COT showing accumulated material

The Fort Lowell Historic District conducted an inventory of all the major structures in the district as part of the application to be listed on the National Register of Historic Places. The Adkins Residence was recorded in the inventory as a “Class C” structure, architectural-ly and contextually acceptable, that is it “did not necessarily conform to the collective characteristics of the historic structures within the study area, but did not cause undue visual tension.” The remainder of the parcel, housing the fabrication shed, water towers, various structures, and accumulated debris, was deemed “Class D”, architecturally and contextually non-compatible”, that is “its form, massing and size conflicted with the collective characteristics of the historic structures within the study area.” (Fort Lowell, Class Project of the Committee on Urban Planning, University of Arizona, Tucson).



Figure No. 3 - Adkins steel tank fabrication shed after site clean up

The City of Tucson purchased the Adkins Steel Parcel in 2005 using funds from the 2004 bond election. An Intergovernmental Agreement with Pima County, including a restoration easement, allowed work to begin on the property in 2006. Burns Wald-Hopkins Architects was retained by Pima County Cultural Resources and Historic Preservation Office in 2007 to provide services, including a State Historic Property Inventory form and a Building Conditions Assessment Report for the Adkins Residence.

Historical Context of Fort Lowell and the Adkins Steel Parcel

The City of Tucson’s interest arises in the property as the last remaining portion of Fort Lowell that they needed to acquire to complete the assemblage of the original Fort Lowell boundaries. Currently Fort Lowell Park on the west side of Craycroft Road comprises the majority of the holding, augmented by the City’s holdings on the north side of Fort Lowell Road.

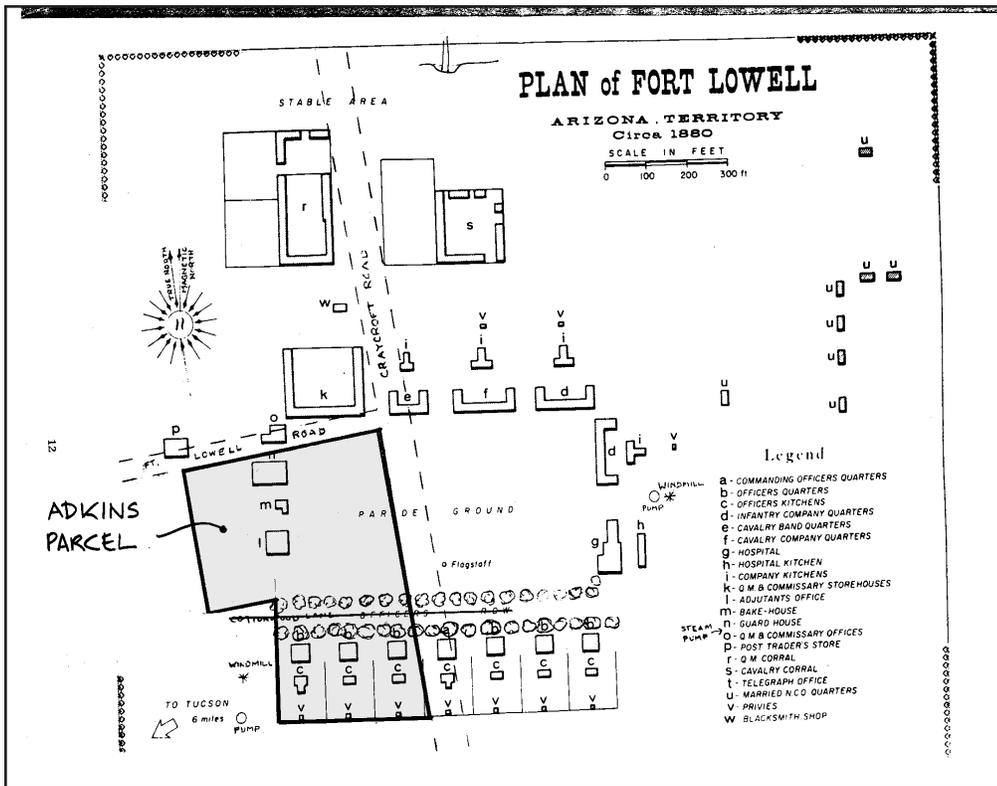


Figure No. 4 - Map drawn by Don Bufkin in 1963 showing the relationship between Fort Lowell and the Adkins Parcel

Originally consisting of rural river plain property, typically used for farming, and covered with mesquite and grasses, the site is now in a residential neighborhood with most vegetation except directly around the residence removed or dead. The site was filled with junked cars, machine parts, metal debris, etc., until purchased and cleared by City of Tucson/Pima County.

On the property exist the remains of three of the seven Officer's Quarters that were built during the original construction of the Fort, and one, Officer's Quarters No. 3, is of great historical integrity, representing the only extant remainder of Fort Lowell.

Fort Lowell, and by extension, the structures on the Adkins Steel Parcel, may be associated with the following historical contexts:

1. Architecture of southern Arizona, indigenous Sonoran adobe style, military adapted (Sonoran-Military – Fort Lowell Historic Preservation Zone – Design Review Guidelines}.
2. The military in the West, expansion of the United States government influence in western America

Fort Lowell is associated with events that made a significant contribution to the broad

patterns of our history. Upon its founding south of Tucson in 1863, it represented the first steps of the Federal Government to reassert itself in the west after the Civil War, and a spearhead for the government in the fight against the Apaches. Due to the deleterious influences of “town” living upon the military personnel, in 1873 the fort was relocated to its present site. At full operation in its location north of the Rillito River, it served as the most important supply center for southern Arizona forts in the Indian Wars, and in 1878 was designated regimental headquarters for the 6th Cavalry. In 1887, Geronimo surrendered in the Chiricahaus and the Indian Wars came to an end. With its mission completed, the fort was decommissioned and abandoned in 1891. All of the building components were auctioned off by the US Government in 1894.

The Adkins Steel property went through several property owners hands before being acquired by the Cate family in 1908, who owned it and other properties in Tucson (see complete chronology in Cultural Resources Assessment). Harvey and Fronia Adkins purchased the property from Dolly Cate in February 1928. Mrs. Cate’s Tuberculosis Sanatorium operated in the Officer’s Quarters at the south end of the property. The Adkins brought their daughter Dicey to a tuberculosis sanatorium in the city and were reported to be living at the Cate’s Sanatorium when Dicey died in June, 1927. The Adkins operated the Adkins Rest Ranch, also a tuberculosis sanatorium, on the property until at least 1950. The Adkins family and their descendants lived on the property until 2006, as well as operating Adkins Steel there, when possession of the parcel was taken by the City of Tucson.

Summary Recommendations for Structure

The following recommendations should be executed in a timely fashion to prevent further degradation to the structure of the house. In regards to electrical, the system may not be re-initiated until the new service is installed and code deficiencies are corrected.

1. Roofing: The existing roofing and roof framing is in poor condition and should be removed. Satisfactory mission tile should be salvaged, the roof sheathing repaired as needed (this appears to be 1x12 planks and plywood sheathing), roof framing repaired and supplemented as needed, and a new roof should be installed, consisting of a waterproof underlayment (such as Grace Ice and Water Shield), sheet metal eave flashing all around, and mission tile roofing nailed to the planking (reusing and matching existing tile as able).
2. Floor:
 - A. Cut open the floor where it is subsiding between the kitchen and the dining room to ascertain the cause. If the stub column is rotted or collapsed, reshore the floor. The work may be possible to execute from the dining room side; if not, some cabinetry in the kitchen may need to be removed to gain access.
 - B. Cut open the floor at the west side of the back bedroom – adobe is visibly undercut and the floor in the northwest corner of the room is sag

ging. It appears that the earlier water intrusion from the water leak may have damaged the adobe and the floor supports (similar to that above).

3. Shore the beam at the east side of the dining room back to level condition with the rest of the ceiling. This support will have to go through the floor and be supported solidly from the ground beneath the floor.
4. Electrical: Provide new service to house with main service entry, meter, panel and grounding; correct code deficiencies.

Condition of Assessed Elements

Building Feature	Recommendation	Alternative	Priority*
Site Grading	Grade at east to minimally slope	None	Minor
Site Construction	None	-	-
Foundations	Some undercutting of wall at west side	Repair	Minor
Exterior Walls and Porches	Replace plywood at openings into crawlspaces with louvers	None	Minor
	Resupport at west wall of south bedroom (undercut by leak)	None	Serious
Exterior Doors	Not original construction - replace	None	Minor
Exterior Windows	Not original construction - replace	Noone	Minor
Roof Framing	Reframe roof per structural recommendations	Resupport roof at dining room	Serious
Roofing	Replace underlayment, tile, and flashing	None	Serious
Chimneys	None	-	-
Interior Walls	Resupport between dining and kitchen	None	Serious
Interior Windows and Doors	None	-	-
Flooring	None	-	-
Ceilings	Shore at dining room (see roof framing)	None	Serious
Interior Wood Trim	None	-	-

Built-in and Fabricated Features	None	-	-
Insulation and Weatherstripping	None	-	-
Heating, Ventilation and Air Conditioning	None	-	-
Electric Power, Lighting, and Appliances	Provide new electrical service, correct code deficiencies	None	Serious
Plumbing and Plumbing Fixtures	None	-	-
Fire Detection and Alarm	None	-	-

*Reference appendix A for evaluation system

Opinion of Probable Cost for Recommended Repairs

Item of Work	Unit	Cost/Unit	Quantity	Subtotal
Roofing				
Demo existing, salvage tile	sf	\$1.75	1,117	\$1,955.00
Replace 50% roof panels	sf	\$4.00	560	\$2,240.00
Peel and Stick underlayment	sf	\$2.00	1,117	\$2,235.00
Eave flashing	lf	\$5.00	149	\$747.00
Mission tile (new/salvage)	sf	\$7.50	1,117	\$8,380.00
Supplement/repair roof framing	sf	\$7,500.00	1	\$7,500.00
Minor grading	ls	\$1,000.00	1	\$1,000.00
Reshore at undercut wall on west	ls	\$2,500.00	1	\$2,500.00
Reshore floor at dining/kitchen	ls	\$2,000.00	1	\$2,000.00
Reshore beam at dining	ls	\$1,500.00	1	\$1,500.00
New electric; code corrections	ls	\$7,500.00	1	\$7,500.00
subtotal				\$37,556.00
renovation contingency @ 10%				\$7,511.00
GC markups, taxes and bond @ 25%				\$11,267.00
Total				\$56,334.00

Aerial Photograph of Adkins Parcel



Figure No. 5 - Aerial photograph showing structure locations at the Adkins Parcel

Key

- 01. Officers Quarters No.1 (ruin, includes kitchen remains)
- 02. Officers Quarters No. 2 (partial ruin, includes kitchen building)
- 03. Officers Quarters No. 3 (intact)
- 04. Adobe Building (located west of the steel tank fabrication shed)
- 05. Guard House (located east of the steel fabrication shed)
- 06. Adkins Residence
- 07. Water Tower
- 08. Windmill Base
- 09. Steel Fabrication Shed (located south of Officers quarters No.1)
- 10. Circular Concrete Structure

Section 2: Exterior Photographs of Structure

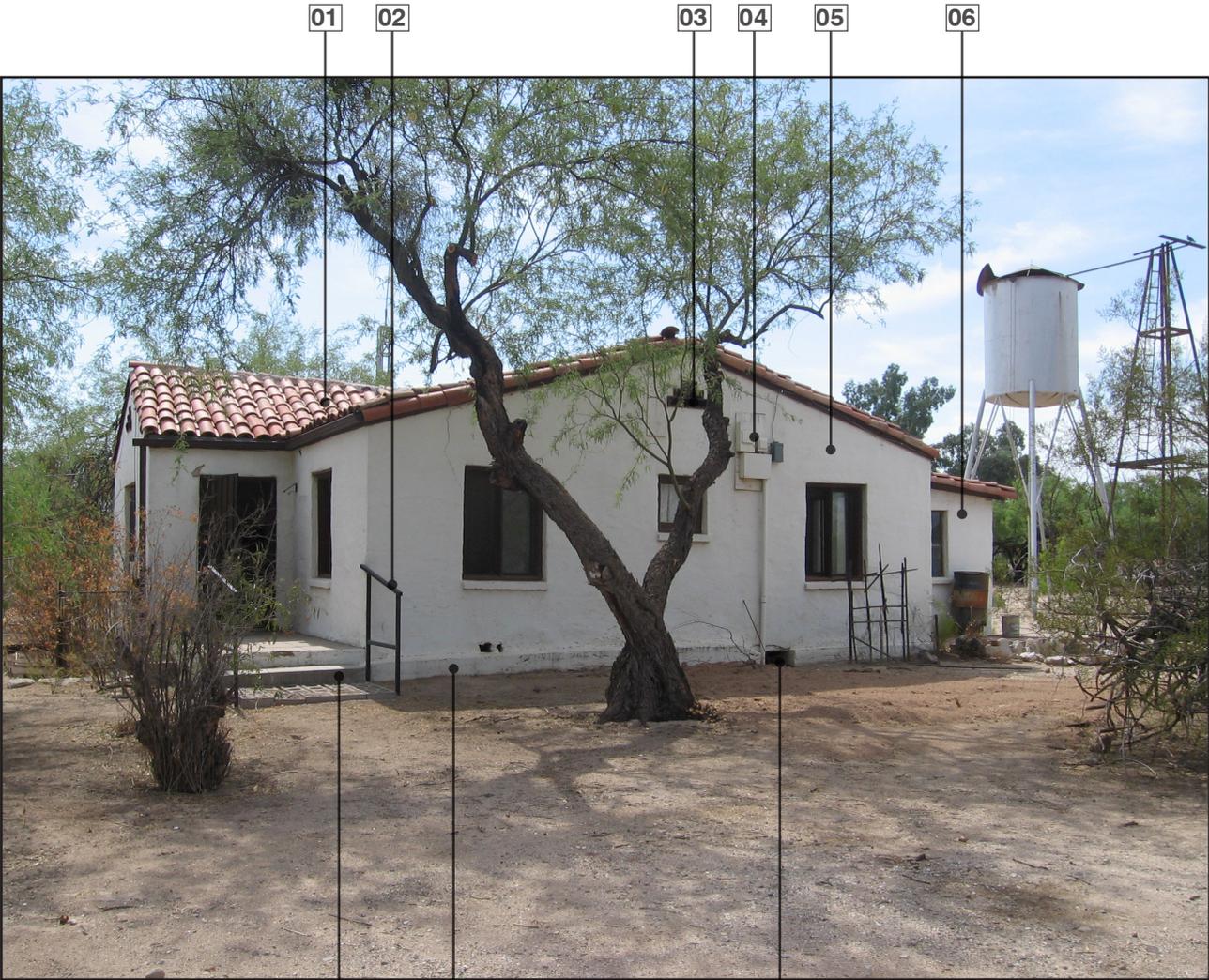


Figure No. 6 - West elevation

- Key**
- 01. Clay tile roof
 - 02. Metal handrail
 - 03. Clay pipe attic vent
 - 04. Electrical service
 - 05. Lime plaster on adobe block
 - 06. CMU addition
 - 07. Front porch
 - 08. Contra-pared
 - 09. Crawl space access



Figure No. 7 - Southwest elevation

Key

- 01. Clay tile roof
- 02. Plaster on adobe block
- 03. Brick chimney
- 04. CMU addition
- 05. Steel sash/window

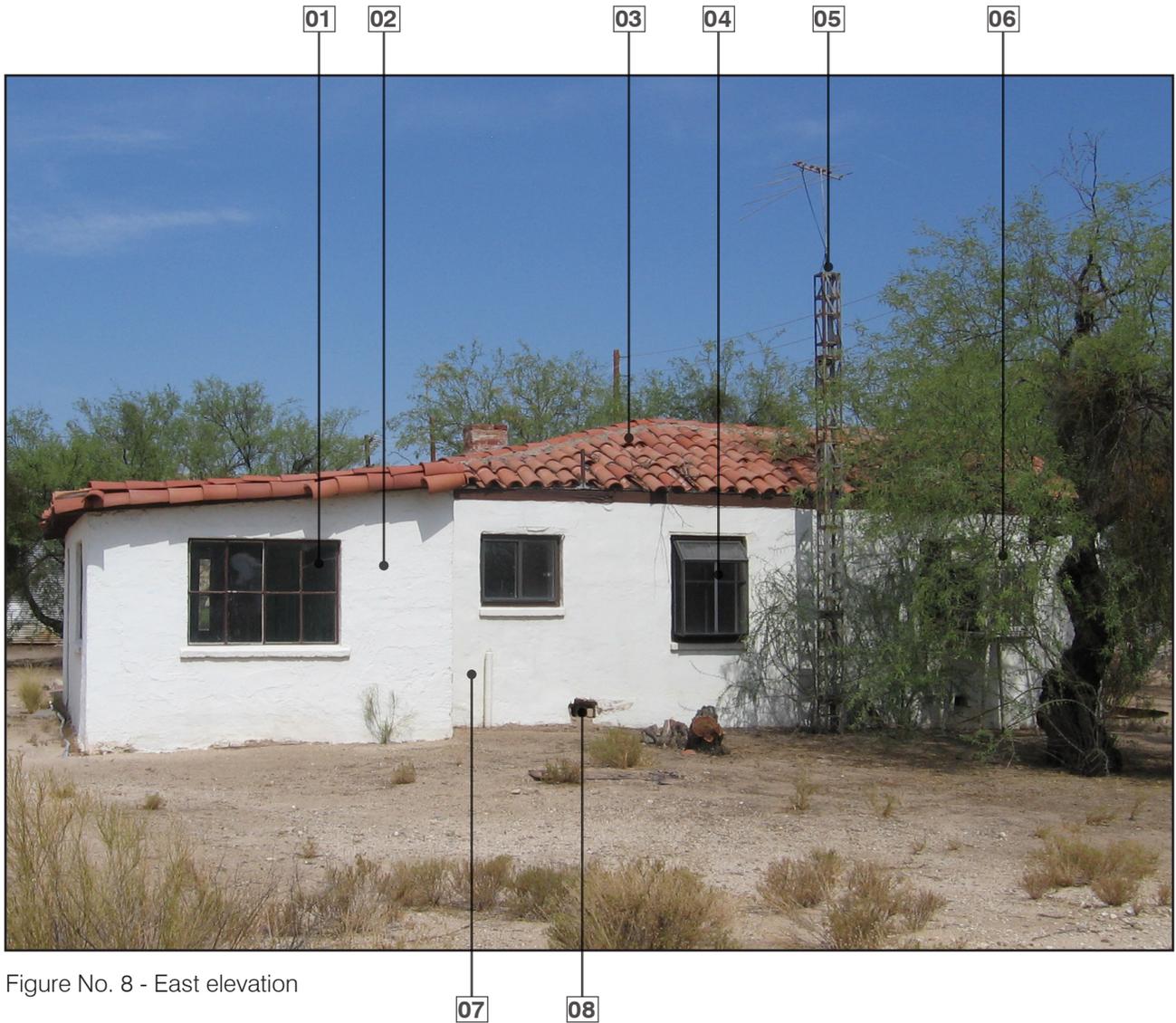


Figure No. 8 - East elevation

Key

- 01. Steel sash/window
- 02. CMU addition
- 03. Clay tile roof
- 04. Bay window
- 05. Antenna tower
- 06. Evaporative cooler
- 07. Plaster on adobe block
- 08. Crawl space access

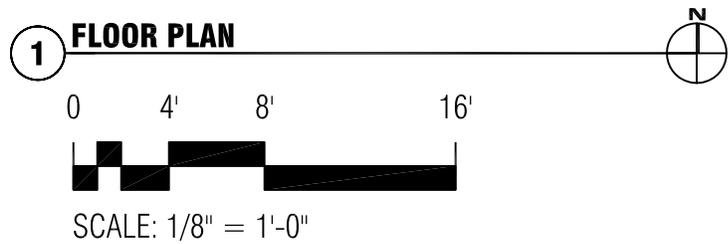
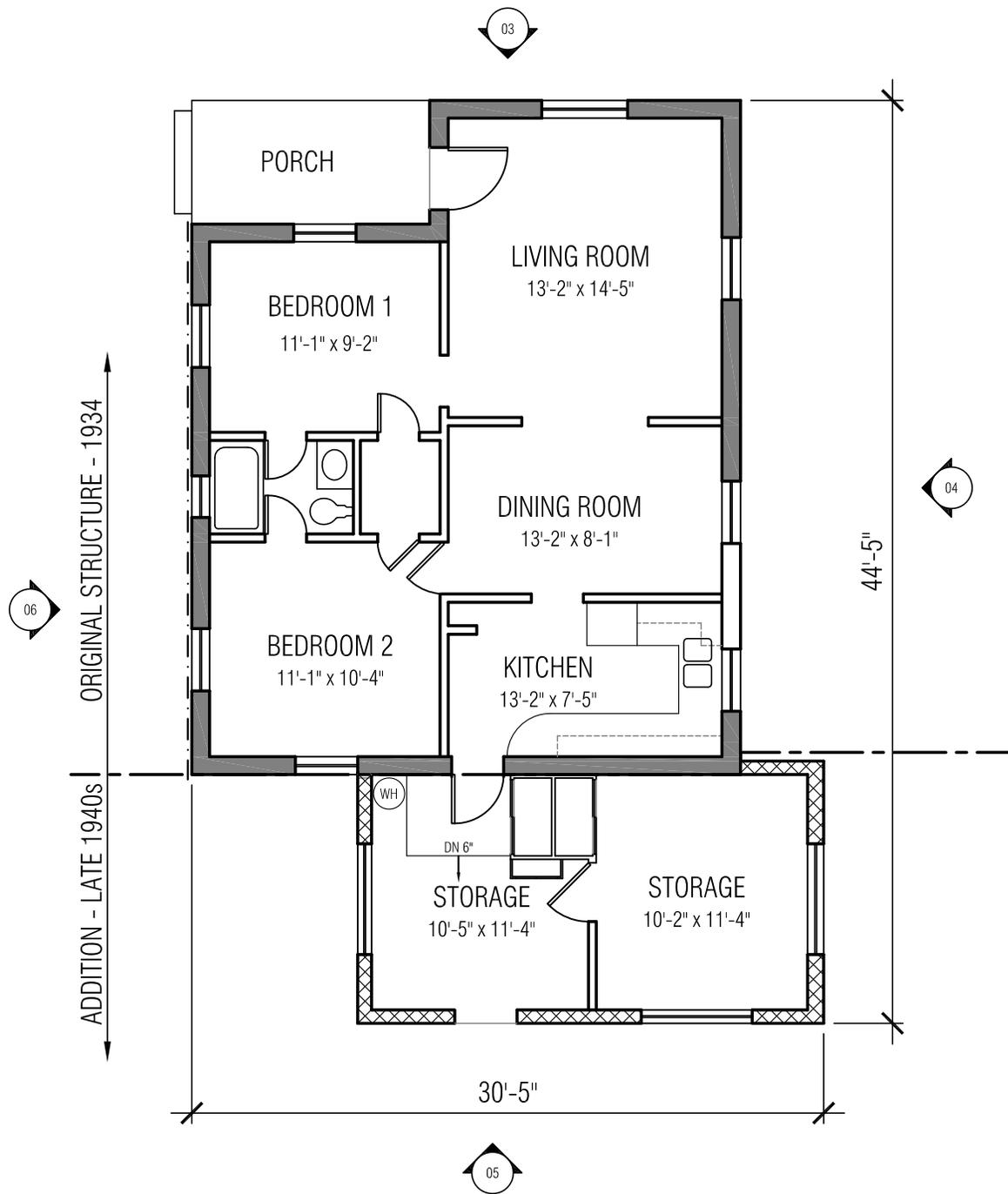


Figure No. 9 - North elevation

Key

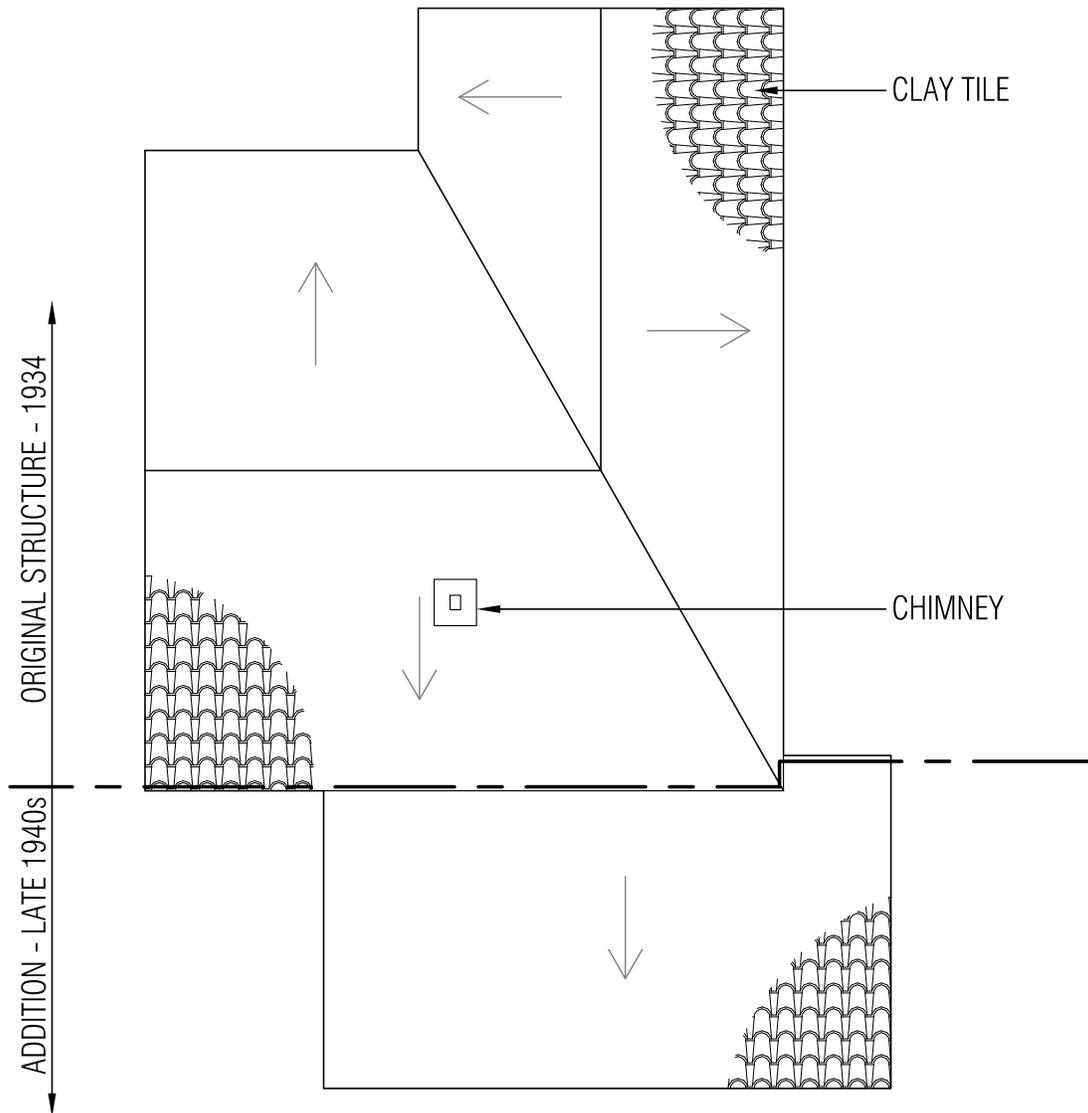
- 01. Clay pipe attic vent
- 02. Plaster on adobe block
- 03. Clay tile roof
- 04. Concrete porch

Drawings of Existing Structure



LEGEND

-  ADOBE BLOCK
-  CONCRETE MASONRY UNIT
-  WOOD FRAME



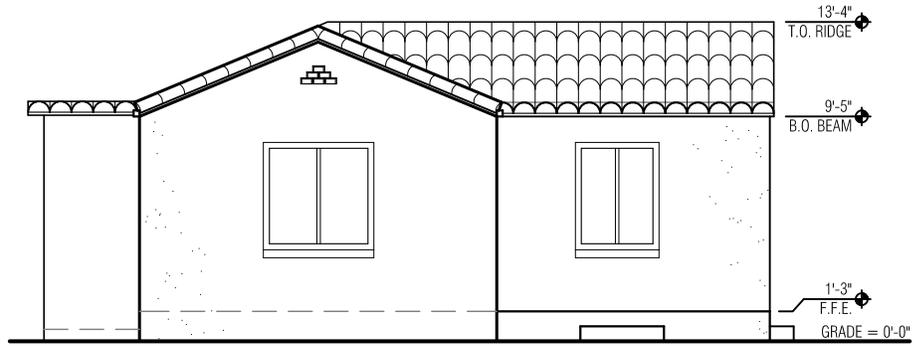
2 ROOF PLAN

0 4' 8' 16'



SCALE: 1/8" = 1'



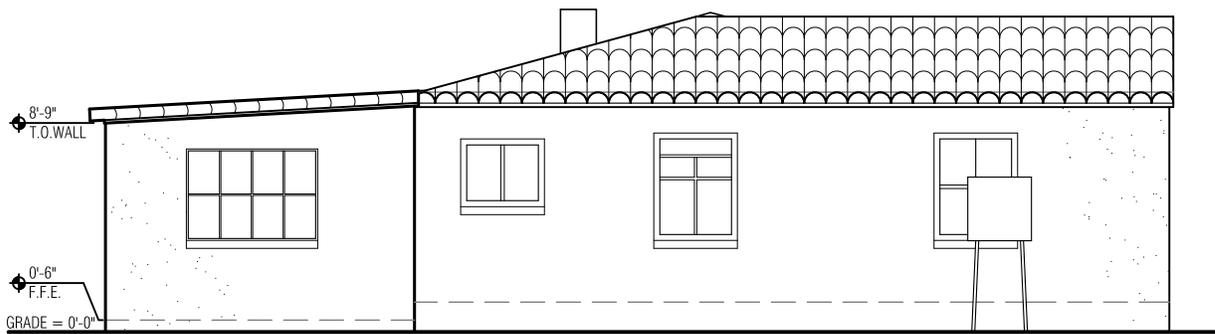


3 NORTH ELEVATION

0 4' 8' 16'



SCALE: 1/8" = 1'

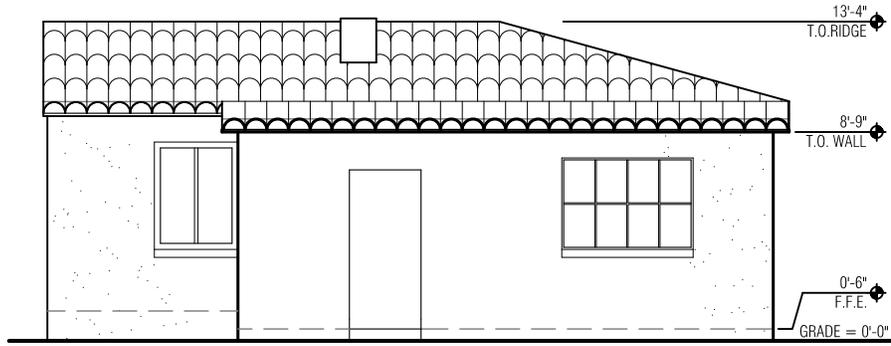


4 EAST ELEVATION

0 4' 8' 16'



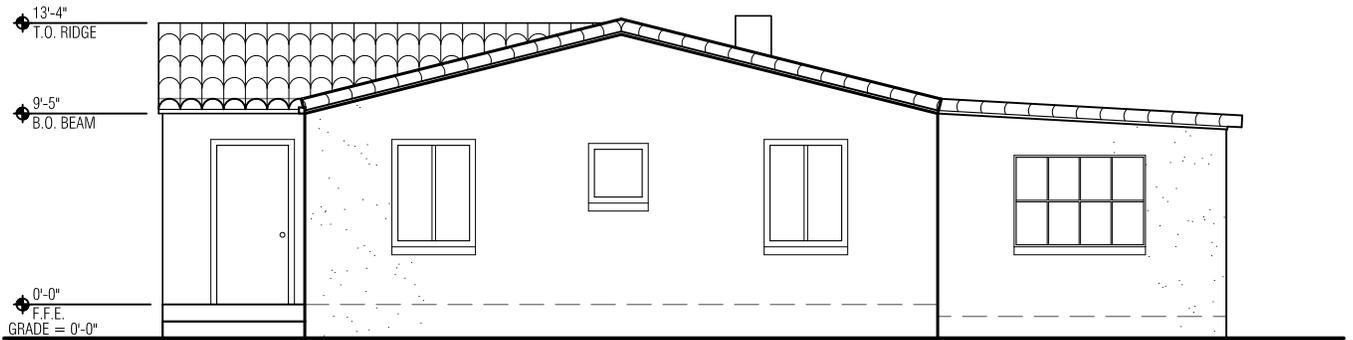
SCALE: 1/8" = 1'



5 SOUTH ELEVATION

0 4' 8' 16'

SCALE: 1/8" = 1'



6 WEST ELEVATION

0 4' 8' 16'

SCALE: 1/8" = 1'

Building Condition Assessment

The following items have been evaluated and its condition reported.

Site Grading

At the west elevation there appears to be a contra-pared that follows grade and is painted to match the wall(Figure 10). It can also be seen in figure 6 item 8. Originally thought to be a stem wall but at crawl space it appears at the surface of the wall only and space behind it is visible. Looking into the wall thru a hole at the northwest corner of the Living Room there is no evidence of concrete; the adobe wall rests on grade.



Figure No. 10 - Contra-pared at west side of building

There is a planting area on the north side of the house which currently houses a tombstone rose and some other vestigial plantings. The area to the east side of the house is very flat and does not appear to drain very well or drain away from the house foundations.

Significance: Low
Integrity: Low

Site Construction (walls, paths, etc.)

In the rear yard of the house there is the windmill and the water storage tower; beside these is a steel shed.



Figure No. 11 – Windmill base, water tank, and “tin” shed south of house

To the east there is a well casing or perhaps a monitor opening for a septic system (see Plumbing systems) that is covered with a steel plate.



Figure No. 12 – Monitor opening for septic with steel cover

At the east side of the house, there is an antenna support tower fabricated from what appear to be shell casing racks, probably obtained from Davis Monthan Air Force Base. This is another example of the can-do attitude at work – constructing something useful and unique out of the objects at hand.



Figure No. 13 – Antenna tower fabricated from shell casing storage racks

There is a brick patio at the southwest corner of the house – brick laid on the ground, approximately 12'-9" x 9'-10".

Significance: Low
Integrity: Low

Foundations

The foundations of the structure appear to be concrete spread footings with a stem wall on top of the footing (Figure 10). The adobe masonry walls are laid on top of the concrete stem walls. At the addition there are concrete footings with the concrete masonry walls laid directly on the footings at grade level.

Significance: Low

Integrity: High

Exterior Walls and Porches

The walls of the original structure are mud adobe manufactured on the site (personal conversation with Harry Adkins and Arthur Stables) by Mexican laborers. On the original structure, the exterior is surfaced with mud plaster that has received numerous coats of paint. On the addition, the CMU is coated with cement plaster. The interior side of adobe exterior walls have been coated with mud plaster that has been painted; and the east room of the addition has cement plaster on the interior.

There is a large portion of the mud adobe base of the interior side of the southwest wall missing, and the floor is sagging at the corner of the room on the same wall, it appears to have washed out with a plumbing leak. There was a major plumbing leak on this side of the house which caused a sinkhole and that may have also been the cause of the undercutting visible in the west wall in the bedroom. Though the cause of the leak appears to have been removed, this will have to be investigated and the wall repaired.



Figure No. 14 – Undercut adobe wall at southwest corner of bedroom 2

The northwest corner of the bedroom 2 is also sagging – it appears the floor is sagging and there is a settlement crack in that corner. There has also been water intrusion from the roof.



Figure No. 15 – Floor at northwest corner of same room with undercut wall (figure 14) – this is very spongy and the support beam or wood studs down to grade have probably rotted away – this should be reshored



Figure No. 16 – North-west corner of bedroom 1 with settlement crack and ceiling damage from roof leak

CMU Addition: The addition is constructed of 4x8x16 concrete masonry units which have been plastered on the exterior and are plastered and painted (east room) or exposed (west room) on the interior. There are settlement cracks above the corners of the lintels in the concrete block of the rear addition.

There are separation, settlement cracks at the intersection between the addition walls and the main house walls(Figure 17). These may have been caused by the introduction of the rigid CMU addition to the more flexible adobe building – the cracking occurs right where the CMU is attached to the adobe and the CMU has probably prevented the adobe’s expansion and contraction due to its moisture content fluctuation.



Figure No. 17 – South-west corner of bedroom 2 adjacent to where CMU addition attaches to adobe wall

There is an entry porch with an ornamental steel railing. The porch is cast-in-place concrete accessed by a step on the west side and one on the north (Figure 18).



Figure No. 18 – Entry porch with railing

There are openings in the base of the wall to access the crawl space; these have been covered over with plywood to prevent intrusion of wildlife. The covers should be replaced with louvers with insect screens.



Figure No. 19 – Plywood covering access to crawl space

Exterior Doors

The front door is a stained wood six panel door with a horseshoe knocker and contemporary residential finish hardware, protected by a painted steel security screen door (Figure 20). The door has evidence of moisture damage.



Figure No. 20 – Wood panel entry door

The rear door into the kitchen from the addition is a painted medium density fiberboard door with a vertical sliding aluminum window (Bel-Air Door Co.). It has been modified to accept door hardware and is of poor quality.



Figure No. 21 – Rear door out of kitchen with horizontal sliding aluminum window

Significance: High
Integrity: Low

Exterior Windows

There appear to be no original windows left on the house. Most existing windows are residential-grade dark-bronze aluminum horizontal sliding installed behind the original wood frame. There is evidence of hinging for the original windows (perhaps wood out swinging casement) on the frames(Figure 23).



Figure No. 22 – Original wood casing with aluminum window mounted behind



Figure No. 23 – Wood casing with painted-over indentation from removed hinges

There is an aluminum bay window in the dining room. The east window in the living room has been framed in to accept a window evaporative cooler (Figure 24)



Figure No. 24 – East living room window, filled in for side-vent cooler

At the addition there are steel sash windows that have been modified by the Adkins to be horizontal sliding – they are mounted in steel tracks and steel handles have been welded to them, creating operable windows out of otherwise fixed window frames.



Figure No. 25 – Sliding steel sash with handle welded to it

Significance: High
Integrity: Low

Roof Framing

Roof framing could be observed from an attic access hatch. Roof decking consisted of a mix of 1x12 decking and plywood sheathing, supported on roof rafters spaced at 24 inch on center. The roof form is a pair of 90 degree intersecting gables. The gable framing consists of 2x roof joists of several sizes, ceiling joists, and various vertical supports and collar ties. The roof structure is best described as field framed. There are no connections between the members other than face-nailing and toe-nailing. There are no metal connectors or bolted connections. Inside the attic, daylight could be observed at the eave all around the perimeter of the roof structure.



Figure No. 26 – Roof framing with daylight at perimeter

The ridge line of the gable is periodically supported on a vertical member. The connection to the vertical members and the support of the vertical members are insufficient. The rear

addition has a lower slope roof framed with 2x4's at 16 inches on center. Framing, which may go from roof ridge all the way through to the ground, has given way, which has allowed the roof framing to settle onto the ceiling framing at the dining room ceiling, which has given way.



Figure No. 27 –“T”-shaped ridge support member which appears to be compressing beam in dining room below



Figure No. 28 - Dining room ceiling being compressed by roof framing

Significance: Low
Integrity: Medium

Roofing

The existing roofing consists of asphalt-saturated building paper underlayment with straight barrel fired-clay mission tile roofing nailed to the plank substrate. The ridge of the roof is cement mortared; there are no bird stops or mortar at the eaves.

Roof/attic venting is accomplished by terra cotta pipe openings at the gable ends of the house that allow free air movement through the attic space.



Figure No. 29 - Rectangular terra cotta piping used to create vent opening, typical at gable ends of structure

The roof is in fair to poor condition, with cracked, broken, displaced (wind), or missing tiles. The underlayment is shredded and deteriorated or is missing altogether.



Figure No. 30 - Loose tiles with nail almost out

Significance: High
Integrity: Low

Eaves, Guttering and Downspouts

At the east elevation in particular, the roof tile does not cover the edge of the roof so water infiltration has been occurring at the top of the wall. This requires galvanized sheet metal flashing to protect the top of the wall (Figure 31).



Figure No. 31 - Damage to wood fascia and wall surface from lack of flashing

At the north elevation a brown aluminum gutter with downspout has been added to help keep the roof from draining onto the front porch. This downspout carries the water off the roof and dumps it into the flower bed at the north of the front door.



Figure No. 32 - Gutter above entry, flowing into flower bed against house

Significance: Low
Integrity: Low

Chimneys

There is a brick chimney existing in the attic space at the west side of the kitchen. There is evidence that there was a gas stove in the living room with a chimney pipe passing over the bedroom door to the south and then up into the chimney and out through the roof. The chimney rises in the northwest corner of the kitchen and then is offset as it rises toward the roof to miss a structural member (Figure 33). It appears at the center of the south roof elevation just on the south side of the roof ridge (see Building Elevations). The chimney is supported in the kitchen by a u-shaped wall (see description under Interior Wood Trim, Figure 44).



Figure No. 33 - Chimney shifted to avoid roof framing

Significance: Low

Integrity: Low

Interior Walls

Interior walls are 2x4 wood studs with horizontal wood slats with mud plaster that is painted. The interior walls and the floor appear to be supported on a perimeter beam over the crawl space. The beam is supported off small wood stub columns sitting on bricks placed on the ground (Figure 34).



Figure No. 34 - Bricks on ground holding 2x4 wood column, supporting beam at edge of floor inside of exterior wall

There is settling of the floor at the wall line between the dining room and the kitchen on the east side of the house; it would appear that the wood stub column has rotted or given way causing the floor to buckle. A similar condition has probably occurred at the west wall of the dining room – where the wall stud is no longer solidly supported and the roof beam is bearing down on it, allowing the deflection of the ceiling beam supporting the roof ridge. Also, earlier noted conditions in front and back bedrooms.



Figure No. 35 - Floor at corner collapsing



Figure No. 36 - Kitchen cabinet tilting toward left as corner sinks

Significance: Medium
Integrity: Low

Interior Doors

There are original doors between the bedrooms and the closet and bathroom (4 total) – 23-3/4" x 6'-3/12" single panel painted wood (Figure 37). Hinges are 5-kunckle plain bearing brass with rounded tips; lockset is a plain brass flat knob. The door to the back bedroom has been replaced with a single panel door 30" x 6'-2-1/2" that is short for the 6'-5-1/2" opening. There is no door to the front bedroom and the opening is cased with no evidence of hinges removed. There is a curtain rod on the bedroom side of the opening. The opening between the Dining Room and Kitchen is cased with no evidence of hinges removed.



Figure No. 37 - Original wood panel door to bathroom

Significance: High
Integrity: High

Flooring

The original flooring is 2-3/4" x 3/4" x 4' square-sided plank (perhaps cedar – it is uniform with little graining or heartwood, unlike pine). Over the years it has been covered with a variety of materials: the living room and front bedroom had carpet over pad with perimeter nailers (removed by Pima County); there is linoleum in the rear bedroom – almost worn through to the wood beneath; sheet vinyl in the kitchen, dining and closet; and 12" x 12" vinyl tile in the bathroom. The addition has slab on grade with no finish, except for sheet vinyl at the entry stoop to the house back door.



Figure No. 38 -
Wood flooring

Significance: High
Integrity: Medium

Ceilings

Interior ceilings appear to be framed with 2x6 lumber supporting cement plaster on wood lath. Ceilings are directly attached to the bottom of the ceiling framing, flat and painted, providing a ceiling height of approximately 8'-0" at the bedrooms, bath, closet, and kitchen (kitchen is almost 8'-1"). At the dining room and living room, the ceiling framing is expressed and the plaster ceiling is on top of the framing. An additional 4x4 has been fastened to the bottom of the exposed ceiling framing, beveled at the ends next to the walls, and all of it painted brown, as a decorative treatment. This provides a height of 8'-2" to the bottom of the perimeter beam and 8'-5-1/2" to the ceiling bottom surface.



Figure No. 39 - Decorative treatment at ceiling with perimeter beams and beveled decorative beams

Significance: High
Integrity: High

Interior Wood Trim

The living and dining rooms have a 4" wood base with a quarter-round at the bottom and a beaded (half-round) top; the whole piece turns up and becomes the door frame – the beading at the perimeter with 1-1/4" flat to the inside of the frame – this is typical of the openings out of these two rooms, including the exterior windows, and was part of the original construction.



Figure No. 40 - Quarter wood wall base; decorative half-round bead at top of base, turning up to become part of door casing trim

There is an arched opening between the dining room and living room with angled corners and the same casing detail both sides.



Figure No. 41 - Arched opening looking from living room to dining room

Significance: High
Integrity: High

The bedrooms have 1-1/2" flat trim around the doors serving as a plaster stop. Windows in the bedroom have painted 3" beveled wood trim that was applied to hide the projecting edges of the aluminum windows mounted to the interior side of the original wood window frames.



Figure No. 42 - Beveled wood trim at interior side of aluminum window in bedroom

The door to the back bedroom from the dining room has a wall running into the south side of the door frame (Figure 43).



Figure No. 43 – Wall intersecting frame of bedroom; flue opening above for chimney pipe

It may be that this section of wall was built later or widened to accommodate a solid U-shaped wall to support the chimney above the recess immediately adjacent in the kitchen. The wall is of solid/dense construction possibly CMU, or perhaps adobe, but this cannot be determined without removing the existing plaster.



Figure No. 44 -
U-shaped walls, producing a nook, supporting chimney above in attic

Significance: Low
Integrity: Low

Built-In and Fabricated Features

The kitchen has oak base and wall cabinets, a contemporary type probably manufactured within the last 10 years. They are veneer construction on medium density fiberboard, with melamine interiors, of the sort purchased at a home improvement center and installed by the home owner.



Figure no. 45 – contemporary wood cabinets

At the sink end the shelves and overhead cabinets are painted wood and were most likely built with the house.



Figure no. 46 – Painted wood cabinets at east end of kitchen, including overhead cabinet at sink

The painted medicine cabinet in the bathroom is original – its frame detail matches the base and door frame details – and is flanked with original porcelain wall sconces (Figure 47). There is also an overhead cabinet above the lavatory, of similar construction to the above kitchen, whose hinges appear quite old, and the cabinet is probably original.



Figure No. 47 - Medicine cabinet with original sconces (note marble-pattern mirror tiles)

The addition has low quality plywood built-in storage cabinets.



Figure No. 48 - Built-in cabinets at addition

The bathroom has a “Spanish style” base cabinet with a cultured marble top and a contemporary faucet.



Figure No. 49 - Cabinet with lavatory

Significance: Medium
Integrity: Low

Insulation and Weather-stripping

The perimeter walls are uninsulated adobe masonry. Directly under the roof (between roof joists) there is no insulation. There is sheathing on top of the ceiling – there could be insulation in the cavity between the ceiling and the sheathing, but this cannot be determined. The installation of insulation on top of the ceiling would improve the house's performance – blown-in cellulose would be light-weight to not compromise the existing structure and effective.

Significance: Low

Integrity: Low

Heating, Ventilation and Air Conditioning

Gas piping rises from underground outside the west side of the building. This piping then penetrates the exterior wall and serves the water heater. Gas piping also rises up the interior dining room wall where it appears to have served a heater. The gas piping is either galvanized steel or black iron with threaded joints



Figure No. 50 - Gas pipe coming through dining room

Cooling was provided by a window evaporative cooler serving the living room. Though rusted and in poor condition, the cooler was most likely in use up until the house was vacated.



Figure No. 51 - Cooler interior

Heating appears to have been provided by a heater located in the dining room, whose flue crossed over bedroom door and then went up through the chimney in the corner of kitchen. The kitchen range has a residential exhaust hood over it.

Significance: Low
Integrity: Low

Plumbing and Plumbing Fixtures

The facilities currently have domestic water supplied from a ¾" diameter meter and reduced pressure principle backflow preventer located on Ft. Lowell Road near the west portion of the site. Underground piping is routed throughout the site to various hose bibbs and buildings. The material for the underground piping appears to be non-coated galvanized steel or black iron pipe with threaded joints. (NOTE: Water has been reconnected by the City of Tucson to serve the site during ongoing work. There are active hose bibbs adjacent to the Adkins Residences as well as Officer's Quarters No. 3).

Natural gas is supplied from a single gas meter located on Ft. Lowell Road just north of the Adkins Residence. Underground gas piping is routed to the Adkins Residence and the Officers' Quarters No. 3. The material for the underground piping appears to be non-coated galvanized steel or black iron pipe with threaded joints.

There is no sewer connection to the Pima County Waste Water system on this site. The existing facilities appear to have had some type of septic system. Pima County Waste Water does have an 8" sewer line on the west side of Craycroft Road with a manhole just north of the Craycroft entrance to the site. There is also a 36" sewer line in the middle of Craycroft Road.

This building has a bathroom with a tank type floor mounted water closet, lavatory, and tub. A portable Frigidaire dishwasher is located under the countertop next to the kitchen sink. The kitchen sink also has a reverse osmosis unit in the cabinet with a small booster pump. It appears that a sink was removed from the southwest room adjacent to the water heater. The water heater is gas fired. There is a hose bibb at the northeast and northwest corner of the building.



Figure No. 52 - 1950's floor-mount flush toilet; pink porcelain



Figure No. 53 - Bathtub with full plastic liner

Water piping enters the building from the west exterior and penetrates into the building at the location of the water heater. Hot and cold water appears to be routed under the crawl space to all the plumbing fixtures. The water piping is galvanized steel and black iron pipe with threaded joints and some copper tubing at the fixture connections.

Soil piping is routed under the building with the exception of the kitchen sink. The soil piping from the kitchen sink penetrates the exterior wall and turns down to underground. The only other item that could be related to the septic system is a 40" diameter hole outside the east side of the building. The cover to this hole was removed and the hole was only 3' deep and filled with dirt.

Significance: Low

Integrity: Low

Electrical Power, Lighting and Appliances

The original electrical service to the residence appears to have been an overhead service - the metal brackets for wire support are still on the building adjacent to the electrical service devices. The building is presently served underground from an electrical distribution on the west side of the Steel Fabrication Shed, this distribution is free standing with an overhead service to a single meter and a total of 5 distribution disconnects. All of the disconnects are locked off by T.E.P.

The electrical service on the residence consists of 2 pull out fuse disconnects, one a main and one a distribution, both fused at 60 amps, there are 4 screw-in fuses for circuits after the main. There is a disconnect switch 2 pole disconnect that is abandoned. All of the above electrical appears to be part of the original building structure. A new 30 amp – 2 pole circuit breaker in a NEMA 3R enclosure, at the service, appears to feed the new electric cook top in the residence. The total amp service to the house is approximately 150 amps and further investigation is necessary to verify the exact amperage. A 200 amp service is recommended for the building depending on its intended use.

Most of the lights, switches and receptacles appear to be part of the original construction, except for the modernizing of the kitchen area.



Figure No. 54 - Original wall sconces in living and dining rooms



Figure No. 55 - Crystal on brass ring light fixture at front bedroom – from 1930's or 1940's



Figure No. 56 - Contemporary ceiling fan with light kit at dining room

The wiring throughout the residence is concealed in the walls and above the ceiling. Based on examples at several places where the lights are removed or cover plates are missing, the branch circuit wiring was non-metallic sheathed cable without a ground conductor. There is some metallic sheathed cable visible in the bathroom at the attic access which appears to serve the new cook top in the kitchen. There are some places where u-ground receptacles have been installed to replace the original receptacles, but there does not appear to be a ground for the electrical service to the building.

There is a section of television antenna cable extending down the west wall of the living room, that then crosses over in the attic and connects to the antenna on the home-made stand on the east side of the house.

The kitchen has been modernized, and some of the work is within the last 10 years. The lighting is an acrylic wrapped 4 foot fluorescent fixture and several receptacles have been added, including a Ground Fault Interrupter type where the refrigerator would probably have been.

The existing electric appliances in the kitchen include:

- a. A 1970's General Electric wall oven, lemon yellow, no nameplate.
- b. A 1990's General Electric electric counter-mount cook top with the notation "CRAIN 78.00 KNOBS ARE IN OFFICE" in black marker on bottom panel.
- c. A Broan Microtek System 1 exhaust hood with light over the cook top.
- d. A Frigidaire portable dishwasher with a cord and cap to plug into a wall receptacle above it.



Figure No. 57 - Wall oven and dishwasher

There is a newer fusible disconnect switch with a 30 amp fuse that service a surface mounted receptacle in the southerly room adjacent to the water heater. The surface wiring between the two has been cut and removed.

Significance: Low

Integrity: Low

Electrical Code Issues

The electrical service devices are above the 6'-6" maximum height for access and there is not a ground for the service. A new electrical service will have to be installed on the building with a meter, main and panel and a ground will have to be provided.

1. There are several lighting fixtures that have been removed, I recommend that the original fixtures be grouped in appropriate rooms and that replacement fixtures be installed on the existing outlets.
2. Wall covers are missing from several switches and receptacles throughout, replacement cover plates should be installed.
3. Replacement lighting fixtures and cover plates would be available from Rejuvenation Lamp & Fixture Company, Portland, OR.
4. Either remove the disconnect and receptacle adjacent to the water heater or repair the wiring between them with branch circuit in surface wireway.

Appendix A

Evaluation System

Integrity: The authenticity of physical characteristics from which building elements obtain their significance, and the actual amount of original historic fabric remaining from period of significance. Integrity is noted as Good, Fair, or Poor, relative to the amount of work to repair or replace the element and how much integrity the element exhibits.

Significance: The relative significance of a building feature is generally based on its age in relation to an association with an historic event or person, and/or its importance as a character defining element of the building. The period of significance is directly related to these associations and refers to the span of time in which significant events and activities occurred. NOTE: The period of significance for the Adkins Residence has not been established; significance of particular building elements is attributed due to its importance to the character of the building.

Physical Condition: This refers to the physical state of repair of building elements. Deficiencies and their severity, along with recommended repair options, have been set out. The physical condition of building elements are noted as Critical, Serious, or Minor, defined as follows:

A CRITICAL deficiency of an element exists where:

- a. there is advanced deterioration which has resulted in the failure of the building element or will result in the failure of the building element if not corrected within two years, and/or
- b. there is accelerated deterioration of adjacent or related buildings materials as a result of the element's deficiency, and/or
- c. there is a threat to the health and/or safety of the user
- d. there is a failure to meet a legislative requirement

CRITICAL deficiencies may include, but are not limited to: undersized floor joists which are inadequate for the load of the building, leaking roof, failed drainage system, or a furnace located in an unprotected crawl space

A SERIOUS deficiency of an element exists where:

- a. there is advanced deterioration, which if not corrected within 2-5 years, will result in the failure of the building element, and/or
- b. a threat to the health and/or safety of the user may occur within 2-5 years if the deterioration is not corrected, and/or
- c. there is a deterioration of adjacent or related building materials and/or systems as a result of the element's deficiency, and/or
- d. there is a failure to meet a legislative requirement

SERIOUS deficiencies may include, but are not limited to: an old electrical system that is inadequate for present use, inadequate ventilation of crawl space, a public building which is not accessible to the handicapped

A MINOR deficiency of an element exists where:

- a. standard preventative maintenance practices and building conservation methods have not been followed, and/or
- b. there is a reduced life expectancy of affected or related building materials and/or systems, and/or
- c. there is a condition with a long-term impact beyond 5 years

MINOR deficiencies may include, but are not limited to: cracked window glass, cracked plaster on interior walls surfaces

Appendix B

The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (1990)

Definition: Rehabilitation is defined as “the process of returning a property to a state of utility, through repair or alteration, which makes possible contemporary use while preserving those portions and features of the property which are significant to its historic, architectural, and cultural values.” The following standards are codified program requirements.

The Secretary of the Interior's Standards for Rehabilitation

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.
2. The historic character of a property shall be retained and preserved. The removal of basic materials or alterations of features and spaces that characterize a property shall be avoided.
3. Each property shall be recognized as a physical record of its time, place and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.
4. Most properties change over time; those changes that have acquired historical significance in their own right shall be retained and preserved.
5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a historic property shall be preserved.
6. Deteriorated historic features shall be repaired rather than replaced. Where the deterioration requires replacement of a distinctive features, the new feature shall match the old in design, color, texture and other visual qualities, and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.
8. Significant archaeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.

9. New additions, exterior alterations, or relocated new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.
10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be impaired.

Treatment Methods: The Secretary of the Interior's Standards outline four distinct, but inter-related, approaches to the treatment of historic properties as follows:

- Preservation focuses on the maintenance and repair of existing historic materials and retention of a property's form as it has evolved over time
- Rehabilitation acknowledges the need to alter or add to a historic property to meet continuing or changing uses while retaining the property's historic character.
- Restoration depicts a property at a particular period of time in its history, while removing evidence of other periods.
- Reconstruction recreates missing or non-surviving portions of a property for interpretative purposes.

The four approaches to treatment are more fully defined as follows, and are not necessarily mutually exclusive, as each method may overlap with the others in the implementation of some measures.

-Preservation means the act or process of applying measures necessary to sustain the existing form, integrity and materials of an historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction. New exterior additions are not within the scope of this treatment; however, the limited and sensitive upgrading of mechanical, electrical and plumbing systems and other code-required work to make properties functional is appropriate within a preservation project.

-Rehabilitation means the act or process of making possible an efficient compatible use for a property through repair, alterations and additions while preserving those portions or features that convey its historical, cultural or architectural values.

-Restoration means the act or process of accurately depicting the form, features and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period. The limited and sensitive upgrading of mechanical, electrical and plumbing systems and other code-required work to make properties functional is appropriate within a restoration project.

-Reconstruction means the act or process of depicting, by means of new construction, the form, features and detailing of a non-surviving site, landscape, building, structure or object for the purpose of replicating its appearance at a specific period of time and in its historic location.

All building elements have been individually reviewed to assess historic significance, integrity, and physical condition based on criteria identified in the Department of Interior Standards for Treatment.

Appendix C

Documents and Information Sources

In the preparation of these reports we have consulted various resources:

Historic American Buildings Survey (H.A.B.S. No. Ariz. – 17, 10-Tucson 2) Drawings:

Built In America. The Library Of Congress. September 2007.
(http://memory.loc.gov/cgi-bin/query/D?hh:1:./temp/~ammem_weOU::)

Reports:

Fort Lowell Historic District Portfolio II – 1979, revised 2004

Historic American Buildings Survey (H.A.B.S. No. Ariz – 17) – Written Historical and Descriptive Data

Archaeological Investigations at Fort Lowell, Alfred E. Johnson, 1960

Historic Inventories of Fort Lowell District, 1974, and updated 1980

Cultural Resources Assessment for the Fort Lowell-Adkins Steel Property within Historic Fort Lowell, Tucson, Pima County, Arizona Report No. 07-119, Desert Archaeology

Miscellaneous:

Adkins, Henry. Personal Interview. July 2007.

Hartman, Lannie. Personal Interview. August 2007.

Matesich, Ken. Personal Interview. September 2007.

Appendix D

Consultant Reports

Consultant Team

Structural: Turner Structural Engineering
3026 N. Country Club Road
Tucson, AZ 85716

Electrical: Hy-Lite Design
3109 N. Madera Mesa Place
Tucson, AZ 85749

Mechanical/Plumbing: SMU Mechanical
5447 East Fifth Street #112
Tucson, AZ 85711

TURNER STRUCTURAL

Adkins Steel Parcel – Ft. Lowell
Structural Condition Assessment

Adkins Residence

The former residence structure consists of a clay tiled roof on wood framing with adobe masonry bearing walls. The structure is in poor condition.

Roof Framing: Roof framing could be observed from an attic access hatch. Roof decking consisted of a mix of 1x12 decking and plywood sheathing. Supported on roof rafters spaced at 24 inch on center. The roof form is a pair of 90 degree intersecting gables. The gable framing consists of 2x roof joists, ceiling joists, and various vertical supports and collar ties. The roof structure is best described as field framed. There are no connections between the members other than face-nailing and toe-nailing. There are no metal connectors or bolted connections. Inside the attic, daylight could be observed at the eave all around the perimeter of the roof structure.

The ridge line of the gable is periodically supported on a vertical member. The connection to the vertical members and the support of the vertical members are insufficient.

The rear addition has a lower slope roof framed with 2x4's at 16 inches on center.

Exterior Walls:

The exterior walls are typically mud adobe with plaster on both the exterior and interior faces. The rear addition walls are plastered concrete block. There are separation, settlement cracks at the intersection between the addition walls and the main house walls.

Foundations - Site:

The house foundations could not be observed and are unknown. There is a concrete curb along the base of the wall on the west side. The area to the east side of the house is very flat and does not appear to drain very well or drain away from the house foundations. There is a buried structure on the east side of the house that has a rusting steel lid. The rusting steel lid is a potential hazard.

Interior Walls and Floors:

There are several cracks and separations on the interior faces of the adobe walls. There is a large portion of the mud adobe base of the west wall missing, it appears to have washed out with a plumbing leak. The east wall of what was the Dining Room appears to be settling at the intersection with the south interior wall of the room. The ceiling of the former dining room is sagging under the loads of the roof structure. A vertical support for the roof

structure is crushing and settling at the center of the west wall of the dining room.

The floors of the main house are wood framed over a crawl space. The floor joists are supported on stub posts bearing on wood plates. The plates have deteriorated and settled. The floor of the rear addition is concrete slab on grade.

There are settlement cracks above the corners of the lintels in the concrete block of the rear addition.

SMU MECHANICAL ENGINEERING

Introduction

SMU Mechanical Engineering performed an assessment of the Officers' Quarters No. 2 & 3 and the Adkins Residence on the Adkins Steel parcel at Fort Lowell. All of the remaining mechanical and plumbing systems are deteriorated and are required to be replaced. This includes all of the site plumbing and septic systems. The following is a description of the mechanical and plumbing systems that were observed during a review of the site.

Adkins Residence

The facilities currently have domestic water supplied from a $\frac{3}{4}$ " meter and reduced pressure principle backflow preventer located on Ft. Lowell Road near the west portion of the site. Underground piping is routed throughout the site to various hose bibbs and buildings. The material for the underground piping appears to be non-coated galvanized steel or black iron pipe with threaded joints.

Natural gas is supplied from a single gas meter located on Ft. Lowell Road just north of the Adkins Residence. Underground gas piping is routed to the Adkins Residence and the Officers' Quarters No. 3. The material for the underground piping appears to be non-coated galvanized steel or black iron pipe with threaded joints.

There is no sewer connection to the Pima County Waste Water system on this site. The existing facilities appear to have had some type of septic system. Pima County Waste Water does have an 8" sewer line on the west side of Craycroft Road with a manhole just north of the Craycroft entrance to the site. There is also a 36" sewer line in the middle of Craycroft Road.

This building has a bathroom with a tank type water closet, lavatory, and tub. A dishwasher is located under the countertop next to the kitchen sink. The kitchen sink also has a reverse osmosis unit in the cabinet with a small booster pump. It appears that a sink was removed from the southwest room adjacent to the water heater. The water heater is gas fired. There is a hose bibb at the northeast and northwest corner of the building.

Water piping enters the building from the west exterior and penetrates into the building at the water heater. Hot and cold water appears to be routed under the crawl space to all the plumbing fixtures. The water piping is galvanized steel and black iron pipe with threaded joints and some copper tubing at the fixture connections.

Soil piping is routed under the building with the exception of the kitchen sink. The soil piping from the kitchen sink penetrates the exterior wall and turns down to underground. The only other item that could be related to the septic system is a 40" diameter hole outside the east side of the building. The cover to this hole was removed and the hole was only 3'

deep and filled with dirt.

Gas piping rises from underground outside the west side of the building. This piping then penetrates the exterior wall and serves the water heater. Gas piping also rises up the interior dining room wall where it appears to have served a heater. The gas piping is either galvanized steel or black iron with threaded joints.

Cooling is provided by a window evaporative cooler serving the northwest room. Heating appears to have been provided by a heater located in the center dining room. The kitchen range has a residential exhaust hood over the range.

October 22, 2007 - DRAFT

ADKINS STEEL PARCEL AT FT. LOWELL

ADKINS RESIDENCE, Building # 6

ELECTRICAL ASSESSMENT

Observations

1. The original electrical service to the residence appears to be an overhead service, the metal brackets for wire support are still on building adjacent to electrical service devices. The building is presently service underground from an electrical distribution on the west side of the Steel Fabrication Shed, this distribution is free standing with an overhead service to a single meter and a total of 5 distribution disconnects. All of the disconnects are locked off by T.E.P.
2. The electrical service on the residence consist of 2 pull out fuse disconnects, one a main and one a distribution, both fused at 60 amps, there are 4 screw-in fuses for circuits after the main. There is a disconnect switch 2 pole disconnect that is abandoned. All of the above electrical appears to be part of the original building structure. A new 30 amp – 2 pole circuit breaker in a NEMA 3R enclosure, at the service, appears to feed the new electric cook top in the residence.
3. Most of the lights, switches and receptacles appear to be part of the original construction, except for the modernizing of the kitchen area. The wiring through out the residence is concealed in the walls and above the ceiling. Based on examples at several places where the lights are removed or cover plates are missing, the branch circuit wiring was non-metallic sheathed cable without a ground conductor. There is some metallic sheathed cable visible in the bathroom at the attic access and that appears to serve the new cook top in the kitchen. There are some places where u-ground receptacle have been installed to replace the original receptacles, but there does not appear to be a ground for the electrical service to the building.
4. The kitchen has been modernized, and some of the work is fairly recent. The lighting is an acrylic wrapped 4 foot fluorescent fixture and several receptacles have been added, including a Ground Fault Interrupter type where the refrigerator would probably have been. The electric appliances in the kitchen include:

- a. An older General Electric wall oven, no nameplate.
 - b. A new General Electric cook top with the notation "CRAIN 78.00 KNOBS ARE IN OFFICE" in black marker on bottom panel.
 - c. A Broan Microteksystem 1 hood with light over the cook top.
 - d. A Frigidaire Dishwasher with a cord and cap to plug into a wall receptacle above it.
5. There is a newer fusible disconnect switch with a 30 amps fuse that service a surface mounted receptacle in the southerly room adjacent to the water heater. The surface wiring between the two has been cut and removed.

Code Issues

1. The electrical service devices are above the 6'-6" maximum height for access and there is not a ground for the service. A new electrical service will have to be installed on the building with a meter, main and panel and a ground will have to be provided.
2. There are several lighting fixtures that have be removed, I recommend that the original fixtures be group in appropriate rooms and that replacement fixtures be installed on the existing outlets.
3. Wall covers are missing from several switches and receptacles throughout, replacement cover plates should be installed.
4. Replacement lighting fixtures and cover plates would be available from Rejuvenation Lamp & Fixture Company, Portland, OR.
5. Either remove the disconnect and receptacle adjacent to the water heater or repair the wiring between them with branch circuit in surface wireway.

End of Report