III. Existing Conditions -- Truman Carriage House (HS-02)

Introduction and Description

This white, 1-1/2 story, heavy timber framed structure with a shallow limestone foundation, measures approximately 24 x 32 feet. Its date of construction is unknown, but probably dates to the late 1860s or 1870s. The barn was adapted as a garage before 1914 to house the Gates' automobile.[1] The gable roof is sheathed in dip stained wooden shingles and crowned with a louvered square cupola at the center of the ridge. A gablet is centered on each roof leaf at the eave line. The south gablet features two loft doors. Loft doors also exist at the main gable ends. Two siv-pane fixed windows and two shuttered openings mark the east and west facades respectively at the ground floor. The structure has a concrete slab floor. Overhead rolling garage doors enclose the two-car bays. Vertical board and batten siding is the predominant sheathing material. (See Figs. 3.1-3.4.)

Topography

Drainage around the structure is generally very poor. At the south elevation adjacent to the alley, soil and gravel has been built up to obtain positive drainage away from the Carriage house. Unfortunately, the exterior grade now rises above the interior grade of the concrete floor slab. This has led to severe deterioration of the siding, foundation sill and structural post bases. It appears that the exterior grade has been raised at least 20 inches along the south elevation with

layers of refuge waste, gravel and soil.

The west elevation shares some of the same problems as the south elevation. The soil has been built-up 2 inches above the top of the foundation wall. Tall, thick bushes along the west elevation have compounded moisture problems by reducing ventilation and sun exposure. The only downspout on the building drains rain water at the northwest corner. Negative slope causes water to pond in this area.

The sub-structure at the north elevation is completely encased in concrete slabs. There is good drainage from the structure here.

The grade along the east elevation is approximately 1 foot below the top of the foundation wall. Moisture problems are not apparent; there is a slight slope away from the building towards the driveway.[2]

Foundation Wall (See Appendix G.)

During a 1985 physical investigation of the foundation, several pits were excavated to determine the condition of the wall. The foundation wall was found to be of rough cut limestone laid up in a soft lime and sand mortar. The depth of the foundation wall is 24 inches in the eastern half and 30 inches in the western half. The thickness of the wall was not determined and no spread footings were found. It is unknown whether a foundation wall supports the interior partition and posts 3, 4, and 5 as a concrete slab was poured over the entire interior

floor surface in the mid 1950s.

The stone foundation is in good condition overall. However, there are a couple of deteriorated areas which must be addressed. At the northwest corner, there is practically no bearing beneath posts 1 and 2. The top 12 to 18 inches of the wall had been removed presumably in the repair of the posts, but was never rebuilt. Post 1 is supported by a fragment of concrete block and post 2 has no bearing at all.

A few top stones have been moved out of alignment at the east elevation. The stones appear to have been pushed out prior to the concrete slab installation.

The entire south and west foundation elevations are backfilled with soil. However, the foundation wall is in good condition at the sample pits.[3]

Foundation Sills

The foundation sills throughout the Carriage house are severely deteriorated. (See Fig. 3.5.) Two contributing factors for the deterioration are poor grading and the interior concrete slab. The slab had been poured over the sills using the interior surface of the siding as a form. This construction method entombed the sills allowing no escape route for moisture. Rotting is so extreme along the south elevation that little could be found of the original sill. All of the

sills have lost any of their structural bearing capabilities.[4]

Garage Floor

The concrete floor is a later addition to the facility and appears to be a 3 to 4 inch overlay covering the original floor. The ground floor of the eastern portion is constructed of hand hewn heavy timber posts set over a 4 x 6 inch foundation sill. The western addition is of dimensioned posts set over a 6 x 6 inch sill. The concrete floor was poured around the vertical columns and external siding such that it covers the original connections to the foundations.[5] Because the bases of all the posts are in poor condition, it is difficult to determine connective systems. Along the north elevation, it is possible that the steel garage door track channels are literally providing support for those posts at the south and north elevations. Also, it is assumed that the tongue and groove siding at the south elevation now plays a major structural role in supporting posts 11 through 14.[6]

Floor/Ceiling System Framing

As was evident in the Truman home, many of the joints were found to be of mortise and tenon construction which, although considerably high in craftsmanship, greatly restrict the ultimate strength of the connecting members. Beams are found to be high in bending moment capacity but weak in connection shear values. It will be important to limit the loading of the loft floors. These areas should not be utilized as temporary or permanent storage for anything other than what is now present.

It should be noted that the loft floor on the east side of the garage is approximately 1-1/2 feet lower than the loft floor of the west area. Probably due to the addition of the west bay to the original east structure, the additional vertical elevation required on the east side to construct the roof at a uniform level causes a discontinuity in the structural framework. This could be subjected to severe lateral pressures.[7]

The southeast corner of the western bay of the facility shows evidence of a fire which has charred the floor joists of the loft area and several of the vertical eastern and southern wall members of this area. This burned area affects the first seven joists as counted from the south end of this area. The charred areas effectively reduce the cross sectional dimensions of these members from 2 x to 1 x material and reduce the height of the joists by a minimum of 1 inch. This greatly reduces the cross-sectional areas and section modulus of these members. The lost decking in this area is also charred, thus reducing its strength.[8]

Roof System Framing

6 x 6 inch horizontal members cap columns and separate vertical 6 x 6 inch members and continue upward from the horizontal member to support the plates upon which the various roof rafters are set. Probably due to the addition of the west bay to the original east structure, the additional vertical elevation required on the east side to construct the

roof at a uniform level causes a discontinuity in the structural framework. This could be a serious concern should the structure be subjected to severe lateral pressures.[9]

Roofing Materials

The roof consists of a single layer of wood shingles, stained green. The roofing is approaching the end of its life expectancy as evidenced by lifted and curled shingles, missing shingles and water stains on the underside of the roof sheathing. The ridge is covered with a sheet metal hip roll. Where the gablets intersect the main roof the valleys are the open type, uniform in width, and flashed with sheet metal.

The cupola is capped with a cross gable roof covered with wood shingles, stained green with closed valleys. A bronze wind vane surmounted with a figure of a horse in stride is located at the ridge of the north gable. A continuous 5 inch K style galvanized metal gutter is located along the full length of the cove at the north side but stops approximately 18 inches short of the west end which allows rain water to drip onto the ground causing soil erosion and splashup. The gutter is fastened to the fascia with spikes and ferrules and where it spans the gablet it is supported on two simple metal brackets. The brackets exhibit some oxidation resulting in rust stains on the siding below each one.

A 4 inch diameter downspout is located at the west end of the north elevation and connects to a 6 inch long horizontal section which empties

directly onto the ground. The lack of a splash block, a loose connection between the downspout and the horizontal extension, and the gutter stopping short of the west edge of the roof are causing soil erosion and deterioration of the foundation wall at the northwest corner.

No gutter exists on the south elevation. Lack of proper roof drainage and site grading which is sloped towards the south wall instead of away from it has caused the lower ends of the siding to decay. A gutter and downspout should be installed on this elevation and the site regraded to facilitate drainage away from the building.

Wall System Framing (See Appendix G.)

Vertical structural members consist of 6 x 6 or 8 x 8 wood members.[10] The bases of all posts are generally in poor condition. (See Fig. 3.6; A, B, C, and D.) Deterioration causes are the same as with the foundation sills. In addition, there is evidence that termites have also contributed to decay.[11]

The vertical structural members of the eastern bay extend through the floor of the loft approximately 2-1/2 feet. The column adjacent to the west opening of the garage door within the western bay was found to be suspended. The column is basically supported at the base by the garage door track which is bearing on the concrete floor of the bay. The angle brackets which originally supported the track are now supporting the

column and are showing bending stresses due to this loading. The column adjacent to the west, although not having ideal foundation bearing, is supported and appears to be carrying the vertical loads of this corner of the building. The easterly wall of the Carriage house appears to have pulled outward to the east from the existing slab by approximately 1-1/2 inches as may be evidenced by the voids in the concrete slab previously filled by 2 x 4 vertical members. This movement may have been caused in part by the fact that the entire garage assembly leans to the east approximately 3 inches as measured from the upper plate of the garage to the base at ground level. The stress in the east wall caused by this movement has been partially relieved by the base of the wall kicking out.[12]

Exterior Envelope and Finishes

Some evidence of rot and/or termite damage within the lower areas of the western and southern elevations of the structure was noted. The exterior surfaces of these sides are relatively close or in direct contact with the surrounding soil causing severe problems with regard to drainage and subsequent moisture and insect infestation. This is an item that should be remedied as soon as possible as the ultimate damage done could be severe. The exterior sheathing of this structure is the main structural item resisting lateral stresses. As deterioration of the lower portions of these boards takes place, the lower connections lose effectiveness thus seriously eroding the structure's ability to resist wind loading.[13]

The Carriage house is sheathed in 3/4 x 11-3/4 to 12-3/4 inch board and batten siding or 3/4 x 3-1/4 or 5-1/4 inch tongue and groove[14] wood siding painted white. The east and west elevations are sheathed entirely with board and batten. The siding on the west elevation is in fair condition. The lower edge of the boards has decayed because it is in contact with the soil, a few battens are split, and a portion of the first board is missing at the southwest corner. Otherwise all boards and battens are intact.

The siding on the east elevation exhibits numerous open joints and missing or non-original battens. Relative to the west elevation, it is in poor condition. The edge is not in direct contact with the soil and is in sound condition.

North elevation wood siding either side of the overhead doors is 3/4 x 5-1/4 inch tongue and groove placed vertically, while the siding above each door is 3/4 x 3-1/4 inch also placed vertically. The tongue and groove siding extends approximately 9 feet above grade to a simple square molding or wood drip. Siding above the cove is board and batten.

The siding on the south elevation is 3/4 x 5-1/4 inch vertical tongue and groove extending to the same height as the north elevation capped by a metal drip or simple square molding. It is sound except for the lower 6 to 10 inches which is in contact with the ground. Above the tongue and groove is board and batten siding.

The cupola is clad on the east and west sides with 3/4 x 5-1/4 inch tongue and groove wood siding placed horizontally. A horizontal louver forms the north and south elevations.

All siding and louvers are painted white. The paint is peeling and extensively alligatored and crazed. Paint should be hand stripped from all exterior surfaces and new paint applied.

Windows

The west elevation has three shuttered windows, two placed symmetrically approximately 3 feet above grade level and one centered in the gable. The two-panel, louvered shutters are in the closed position. The shutters on the two lower windows are painted green, whereas the shutters on the upper window are painted white. Originally the louvers rotated but because of the build up of paint layers at the pivot point, the louvers are immobile. The condition of the shutters is poor. Round pegs have worked loose from the mortise and tenon resulting in loose joints where the lower stiles engage the bottom rails. Paint has peeled from 30 to 40 percent of the shutters and the bare wood has weathered grey and exhibits substantial checking. The hinges, two for each leaf, are heavily encrusted with paint.

Window casing at the jambs on the west elevation is plain wood 1-1/8 inches thick x 4-1/2 inches wide. The casing at the head is an unbroken pediment capped by a simple crown. The lower portion of the crown (cove

Truman Road
Delaware Street
*C-92

molding) is missing from the pediment of the north side of the north window.

The sash at the loft window is double hung, six-over-six light, painted white. The upper sash is boarded over on the interior with nominal 5 inch tongue and groove boards. Only the frame is extant on the lower windows, the sash having been removed previously (date unknown). The frames are boarded over on the inside with nominal 5 inch tongue and groove siding.

The casing and sash at the lot window in the gable of the east elevation is similar to the upper window on the west elevation except that the upper sash is boarded over from the exterior with nominal 5 inch tongue and groove boards. Although the east lot window is not presently fitted with shutters, they were installed at one time as evidenced by remains of a hinge that matches the hinges on the west elevation.

The two lower windows have no finish framing or casing. Openings were cut into the board and batten siding. A single three-over-three light sash, painted green, rests on a 3/4 inch wood sill and is held in place with wood stops top and bottom fastened to the structural frame. The sills of both windows are severely checked and slope inward. The bottom rail and lower portions of the stiles are in poor condition.

Doors

The door at grade level on the east elevation consists of 3/4 x 5 inch tongue and groove wood boards fastened to a wood "Z" frame, and has two strap hinges secured to the siding boards at the south side of the opening. Like the windows, the doorway is devoid of casing and a finished frame. The top of the opening lacks any drip cap or flashing to protect the top edge of the door. Three siding boards adjacent to the door on the north side are loose and require refastening.

On the south elevation, two doors provide access to the loft. Both doors are board and batten and appear to be cut from the wall siding. The openings are without sills, casing, finished frame and drip cap or flashing at the head. The doors are secured with strap hinges and open toward each other. The west door is missing half of one board and one batten. The lower ends of the boards on both doors are split, checked, and require repair.

The two 7 foot x 13 foot 8 inch rolling overhead doors on the north elevation are in good condition except for the lower roller guides and pulleys which exhibit surface rust. The garage doors are paneled with the top panel glazed and are painted white. The doors are binding due to the shifting of the structure.

Interior Finishes

The interior is of severely peeling whitewash. The wood siding, both

board and batten and tongue and groove exhibits minor water stains at the joints but is in sound condition.

The ceiling joists and boards are painted silver. This paint was sprayed on, evidenced by thin coverage on boards not damaged by fire and was done presumably to seal the wood charred by the fire.

The loft is unpainted except for the vertical siding at the change of floor levels.

Electrical Service and Systems

Service to the Carriage house was run underground in 1985 from the Truman home. The original aerial conductors from an alley pole have been disconnected and left in place. The Carriage house utilizes wall switched overhead porcelain incandescent fixtures.

The building appears to have had four electrical systems, the oldest evidenced by four evenly spaced holes, inside and out, of a size typically used for porcelain tubes and screw-in insulators. This is located on the south wall. Wiring was probably knob and tube. Still extant is a set of safety switches on the south wall with a cut-off ground wire and an armored cable to an inside junction box near the center of the west wall. This has been disconnected.

The third type of electrical service is the existing aerial line to the

porch corner. This service was disconnected in 1985 when the Carriage house was rewired. Also extant, but disconnected, is an Independence Power and Light temporary service line.

Security Systems

The Carriage house fire and security devices, installed in 1985, are tied to the main house panel. An intrusion alarm utilizes infrared motion detectors inside the Carriage house and at the southeast corner to monitor access from the alley.

Fire detection is accomplished with heat detectors and two types of smoke detectors: photo-electric and ionization.

Historic Security System

There is evidence of an historic electric-eye system across the driveway evidenced by holes in the siding at the southeast corner and interior shelf. There is also an exterior box at the northeast corner and aerial wire from the northeast corner to the tree next to the Wallace house.

Notes to Chapter III

1. Ron Cockrell, Historic Structures Report: History and Significance, Harry S Truman National Historic Site, Independence, Missouri (Omaha: National Park Service, Midwest Regional Office, 1984), 341.

2. National Park Service, "Physical Investigation Report and Treatment Proposal, Truman Carriage House (HS-02) Foundation, Harry S Truman National Historic Site, Independence, Missouri" (Omaha, Cultural Resources Management Division, 1985, photocopy), 1-2. Hereafter cited as "PIR (HS-02)."

3. Ibid., 2.

4. Ibid., 2-3.

5. Lawrence S. Graham, P.E., "Truman Garage, Independence, Missouri" (Kansas City, Harper and Kerr Consulting Structural Engineers, P.A., July 26, 1985, photocopy), 3. Hereafter cited as "Truman Garage."

6. PIR (HS-02), 3.

7. Truman Garage, 2.

8. Ibid., 3.

9. Ibid., 1-2.

10. Ibid., 1.

11. PIR (HS-02), 3.

12. Truman Garage, 1, 3.

13. Ibid., 2.

14. PIR (HS-02), 1.

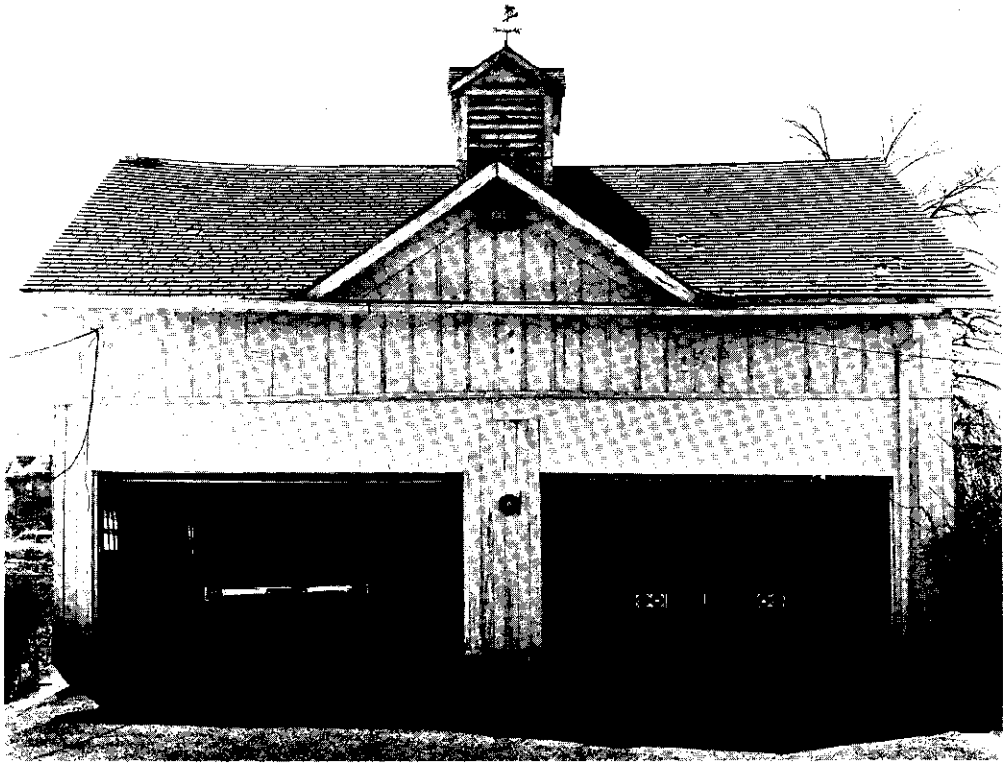


Fig. 3.1 Truman Carriage House, Fall 1985. North elevation (looking south). Credit: Zoom Studios

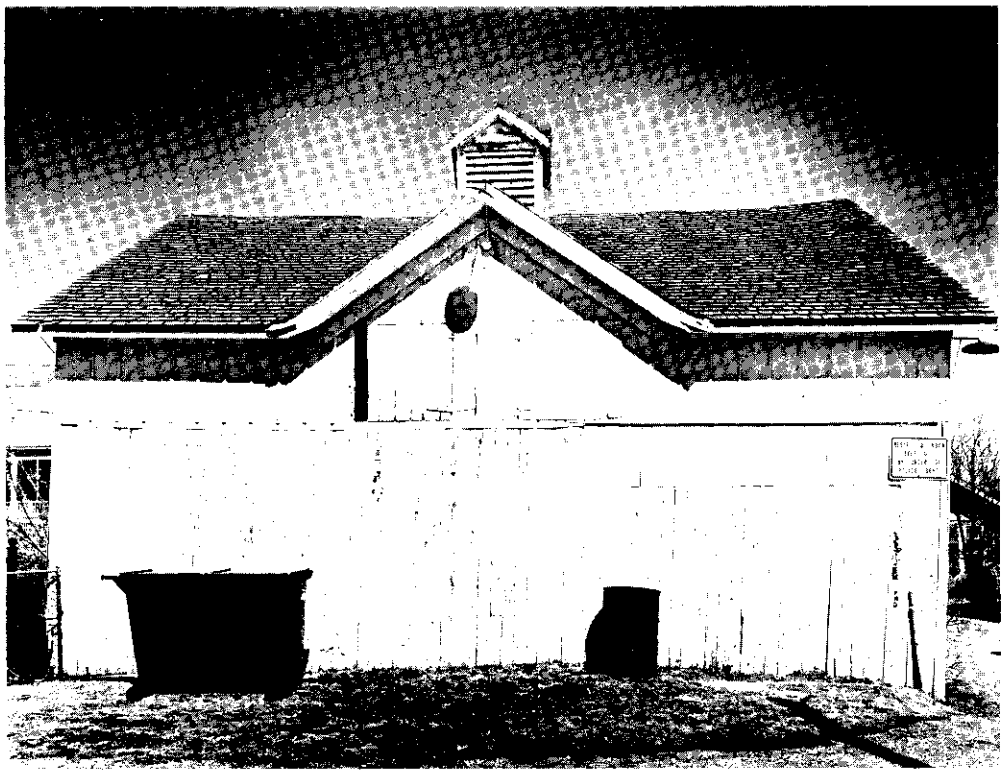


Fig. 3.2 Truman Carriage House, Fall 1985. South elevation (looking north). Credit: Zoom Studios

Fig. 3.5 Sill Beam at Post #17, Truman Carriage House. December 1985. West elevation. Credit: National Park Service, Midwest Region

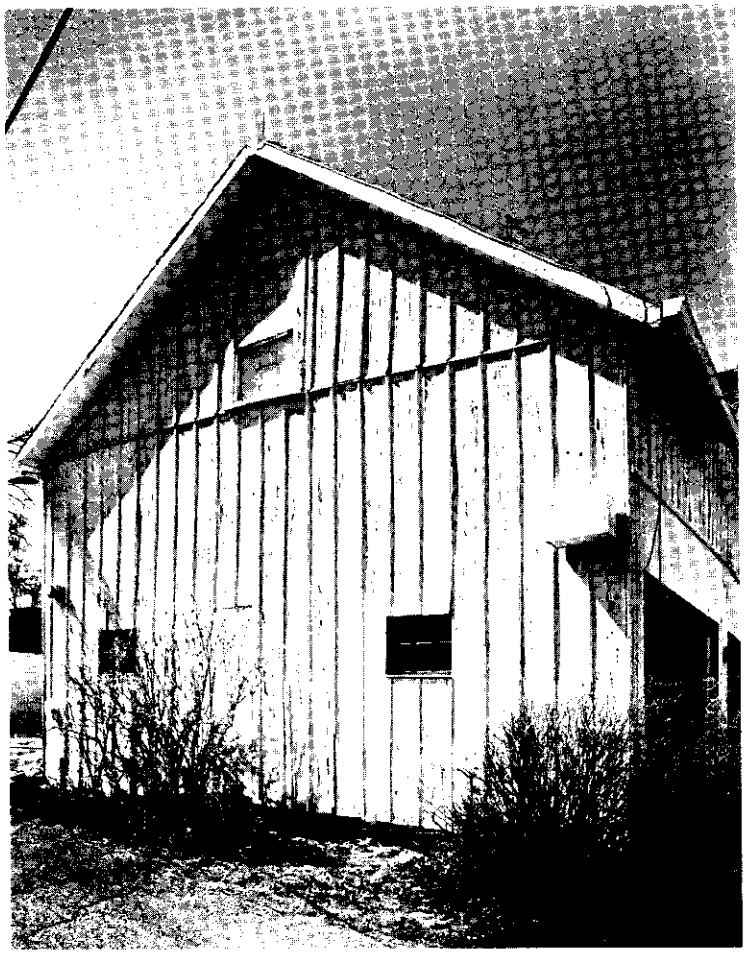
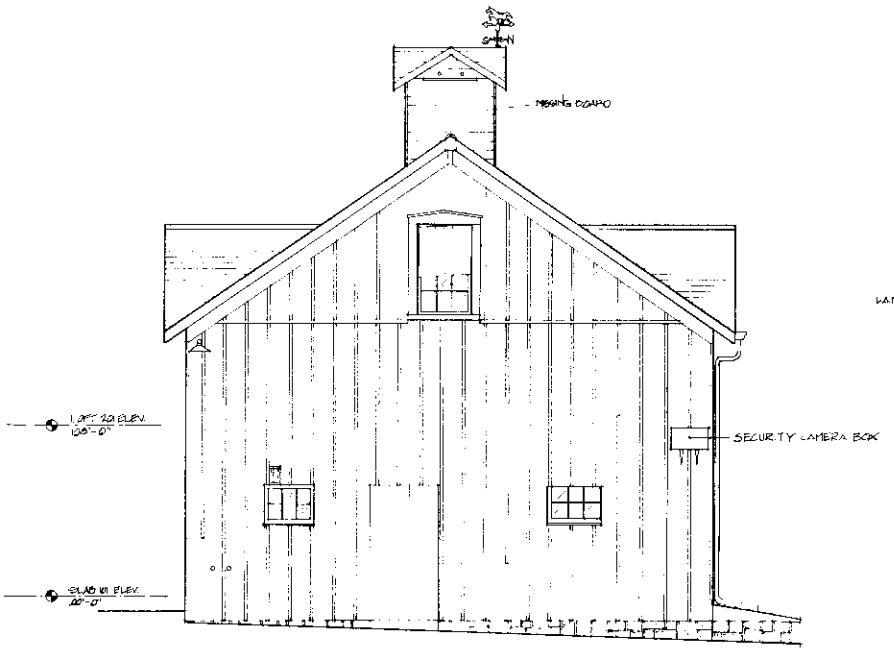


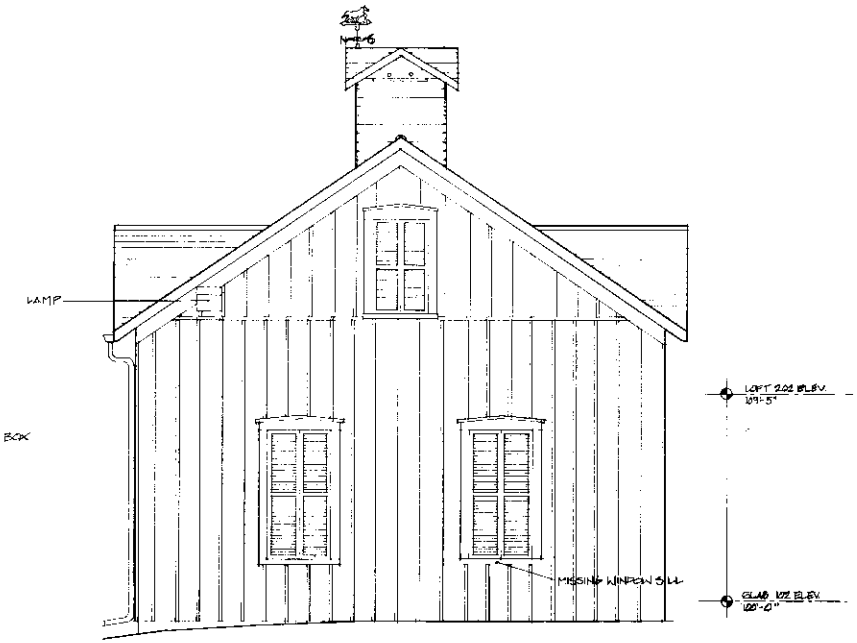
Fig. 3.3 Truman Carriage House, Fall 1985. East elevation (looking west). Credit: Zoom Studios

Fig. 3.4 Truman Carriage House, Fall 1985. West elevation (looking east). Credit: Zoom Studios



1 EXTERIOR ELEVATION EAST

SCALE: 3/8"=1'-0"



2 EXTERIOR ELEVATION WEST

SCALE: 3/8"=1'-0"

Restoration Associates

a division of
Solomon Claybaugh Young Architects Inc.

20 West 9th Street
Kansas City Missouri 64105
816 842 2292

SCALE : 3/8" = 1'-0"

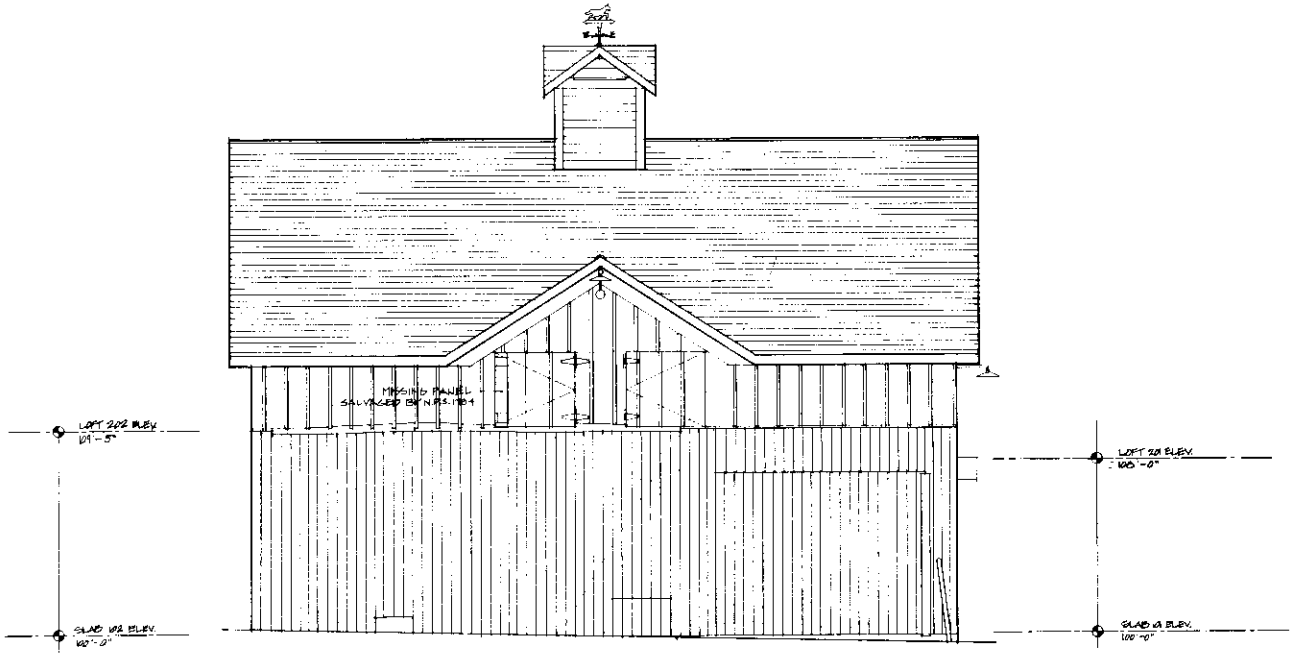
4 0 4
SCALE OF FEET

EXISTING CONDITION

HS - 2 TRUMAN GARAGE

HARRY S TRUMAN N. H. S.

REVISED	PREPARED	DRAWING NO.
	DESIGNED RAFFIZADEH	492 / 80006
	DRAWN	
	CHECKED	SHEET 4
	Sept. 23, 85 DATE	OF 11



EXTERIOR ELEVATION SOUTH

SCALE: 3/8"=1'-0"

Restoration Associates
a division of
Solomon Claybaugh Young Architects Inc.
20 West 9th Street
Kansas City, Missouri 64105
816 842 2292

SCALE: 3/8" = 1'-0"

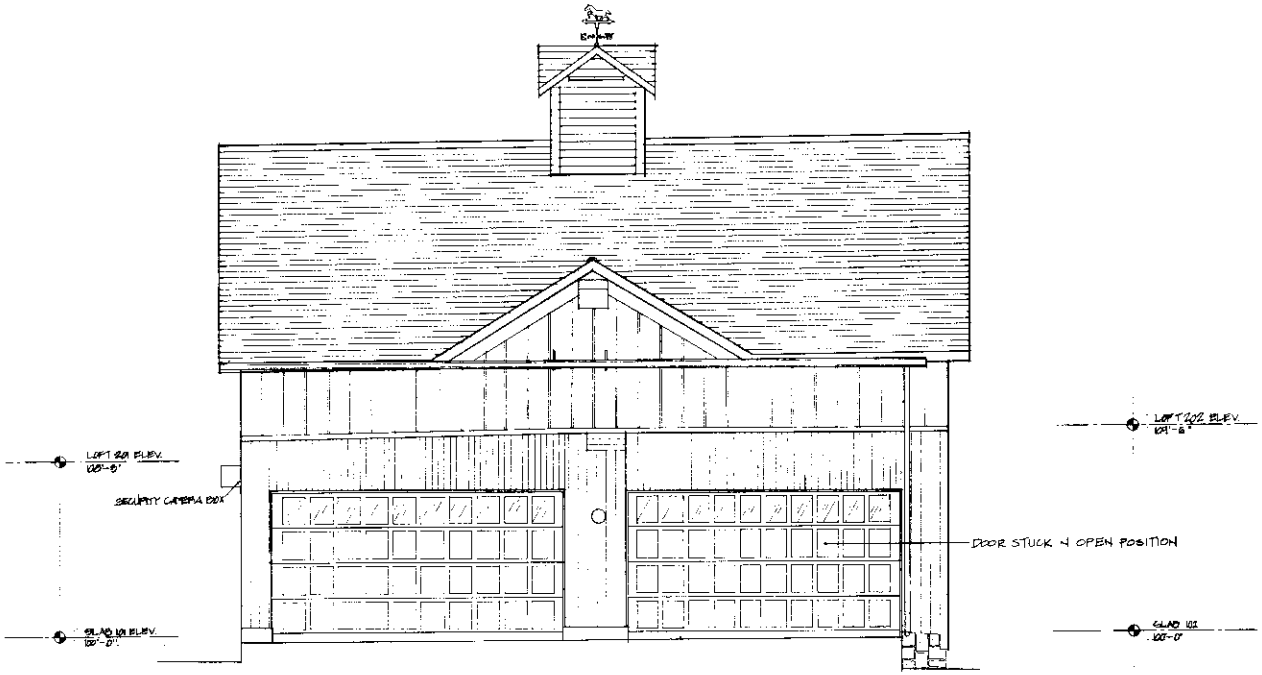
4 0 4
SCALE OF FEET

EXISTING CONDITION

HS - 2 TRUMAN GARAGE

HARRY S TRUMAN N. H. S.

REVISED	PREPARED	DRAWING NO.
	DESIGNED RAFIZADEH	492 / 80006
	DRAWN	
	CHECKED	SHEET 5
	Sept. 23, 85 DATE	OF 11



EXTERIOR ELEVATION NORTH

SCALE : 3/8" 1 0"

Restoration Associates
a division of
Solomon Claybaugh Young Architects Inc.
20 West 9th Street
Kansas City, Missouri 64105
816 842 2282

SCALE : 3/8" = 1'- 0"

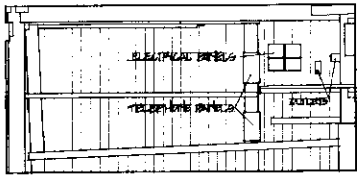
4 0 4
SCALE OF FEET

EXISTING CONDITION

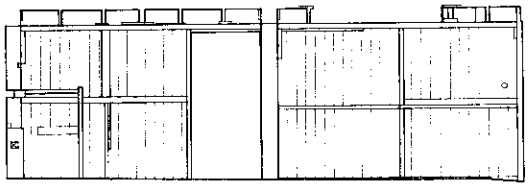
HS - 2 TRUMAN GARAGE

HARRY S TRUMAN N. H. S.

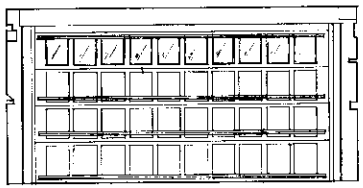
REVISED	PREPARED	DRAWING NO
	DESIGNED	492 / 80006
	RAFIZADEH DRAWN	
	CHECKED	SHEET 6
	Sept. 23, 85 DATE	OF 11



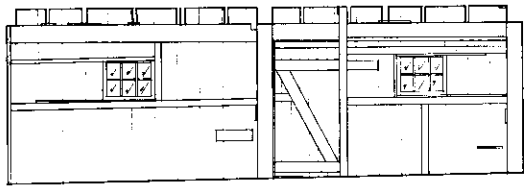
SOUTH



WEST



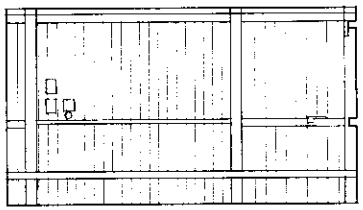
NORTH



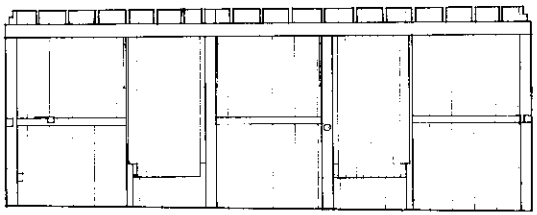
EAST

2 GARAGE BAY 101

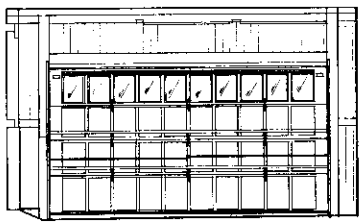
SCALE : 3/8" 1 0"



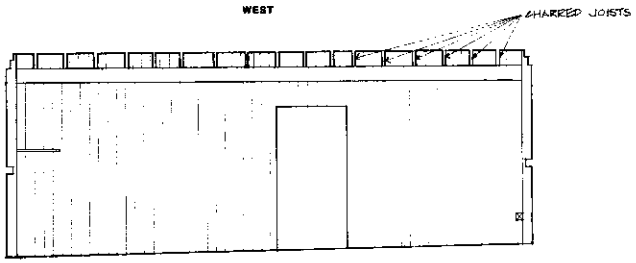
SOUTH



WEST



NORTH



EAST

3 GARAGE BAY 102

SCALE : 3/8" = 1'- 0"

1 EXISTING CONDITION LEGEND

WALLS

1w1 STONE - POWDERY SURFACE
1w2 BRICK - POWDERY SURFACE
1w3 LOOSE MASONRY
1w4 MINOR CRACK
1w5 MAJOR CRACK
1w6 BULGE IN PLASTER
1w7 MISSING PLASTER
1w8 CHIPPED PAINT
1w9 WATER STAINED
1w10 SOOT
1w11 SCORCHED PAINT
1w12 LOOSE JOINT
1w13 CHIPPED OR MISSING TRIM
1w14 WRINKLED WALL PAPER
1w15 LOOSE WALL PAPER
1w16 MISSING CEILING PANELS
1w17 WORN VARNISH

Restoration Associates
a division of
Solomon Claybaugh Young Architects Inc.
20 West 9th Street
Kansas City, Missouri 64105
816 842 2262

SCALE : 3/8" = 1'- 0"

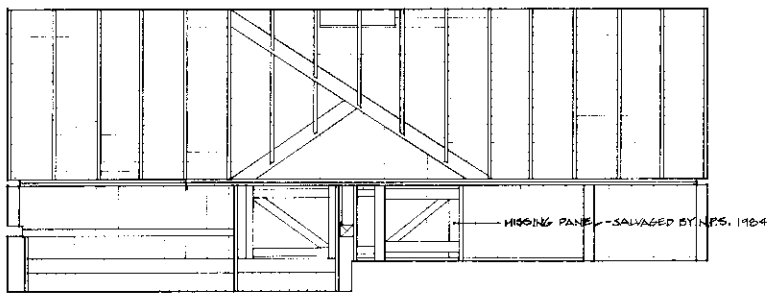
4 0 4
SCALE OF FEET

EXISTING CONDITION

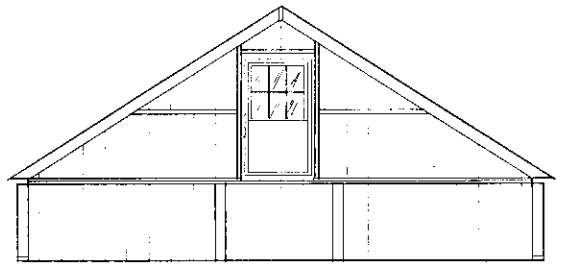
HS - 2 TRUMAN GARAGE

HARRY S TRUMAN N. H. S.

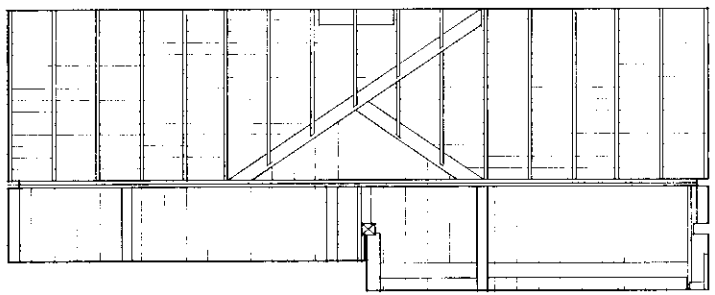
REVISED	PREPARED	DRAWING NO.
	DESIGNED RAFIZADEH	492 80006
	DRAWN	
	CHECKED	SHEET 9
	Sept. 23, 95 DATE	OF 11



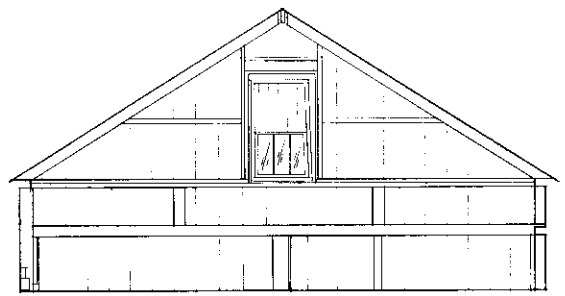
SOUTH



WEST



NORTH



EAST

2 INTERIOR ELEVATIONS – LOFT

SCALE : 3/8" = 1'-0"

1 EXISTING CONDITION LEGEND

WALLS

1W1 STONE - POWDERY SURFACE
1W2 BRICK - POWDERY SURFACE
1W3 LOOSE MASONRY
1W4 MINOR CRACK
1W5 MAJOR CRACK
1W6 BULGE IN PLASTER
1W7 MISSING PLASTER
1W8 CHIPPED PAINT
1W9 WATER STAINED
1W10 SOOT
1W11 SCORCHED PAINT
1W12 LOOSE JOINT
1W13 CHIPPED OR MISSING TRIM
1W14 WRINKLED WALL PAPER
1W15 LOOSE WALL PAPER
1W16 MISSING CEILING PANELS
1W17 WORN VARNISH

Restoration Associates
a division of
Solomon Claybaugh Young Architects Inc.
20 West 9th Street
Kansas City, Missouri 64105
816 842 2292

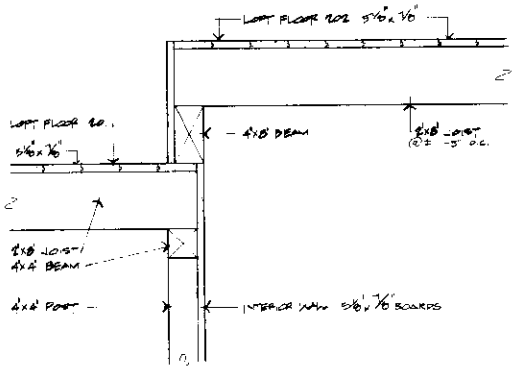
SCALE : 3/8" = 1'-0"

4 0 4
SCALE OF FEET

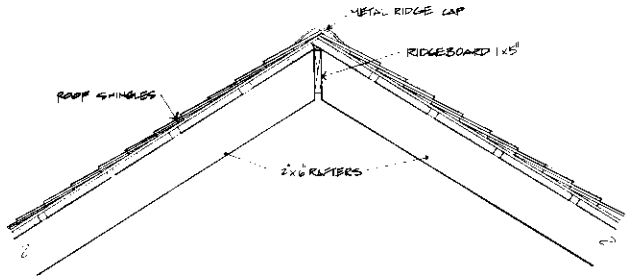
EXISTING CONDITION

HS - 2 TRUMAN GARAGE
HARRY S TRUMAN N. H. S.

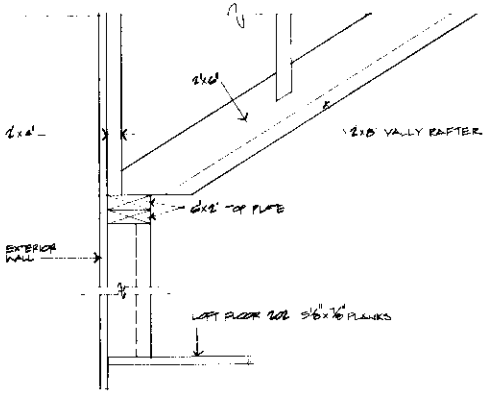
REVISED	PREPARED	DRAWING NO.
	DESIGNED BARIZADEH	492 / 80006
	DRAWN	
	CHECKED	SHEET 10
	Sept. 23, 85 DATE	OF 11



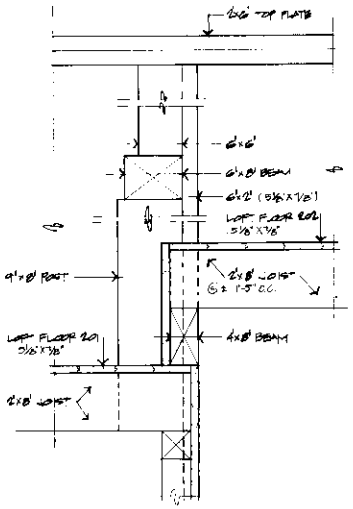
1 LOFT FLOOR SECTION
RE: 1 SHT 3



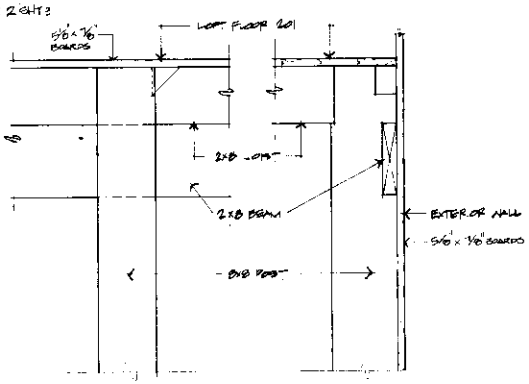
2 RIDGE SECTION
RE: 2 SHT 3



3 VALLEY RAFTER DETAIL
RE: 2 SHT 3



4 LOFT & BEAM SECTION
RE: 1 SHT 3



5 POST & BEAM DETAIL
RE: 1 SHT. 3

Restoration Associates
a division of
Solomon Claybaugh Young Architects Inc.
20 West 9th Street
Kansas City, Missouri 64105
816 842 2292

SCALE: 3" = 1'-0"

0 3" 6" 1'
SCALE OF INCHES

EXISTING CONDITION

HS - 2 TRUMAN GARAGE
HARRY S TRUMAN N. H. S.

REVISED	PREPARED	DRAWING NO
	DESIGNED RAFIZADEH	492 / 80006
	DRAWN	
	CHECKED Sept. 23, 85	SHEET 11 OF 11
	DATE	