Summary
History of Mitchell Adobe

The following summarizes information obtained on 27 July 1987 in telephone conversations with Albert Mitchell (A.M.) and Richard Mitchell, (R.M.), grandsons of Colonel Tom Mitchell, and with Jerry Reynolds (J.R.), curator, SCVHS.

The original adobe structure was built in 1860 (J.R.) by Colonel Tom Mitchell of adobe from a layer of clay found deep in a hand-dug well (R.M.). It was a rather larger building than what is left today (R.M.), approximately 45 x 60 ft (A.M.). Lumber for the roof came from a mill in Papermill Canyon (A.M.) and it was covered by split-shake (A.M.) made from redwood shingles approximately 6 x 24 in, but very thin (R.M.).

Shortly after the Lang Family arrived (1870) in the area, in 1870, the need for a school was recognized (J.R.). The first class was held in 1872 (J.R.), using only one room of the adobe (R.M.). Classes continued alternately in the Adobe until the 1880's (R.M.). Even after the ranch house was built,

only one room of the adobe was used for a school (R.M.). Land was donated and financing for a new school was provided by Tom Mitchell, John Lang and Sanford (?) Lyon (R.M.), the new school opening in 1885 (J.R.). After this date, the adobe ceased being used as a school (R.M.).

Early in the new century, probably in the period 1910-1920, the original adobe was disassembled (A.M., R.M.), and the present, one-room structure was built as a residence for Henry Thomas, an old employee of Colonel Mitchell (R.M.). He survived into his 90's (R.M.).

Somewhere in the 1930's (?), a Dr. Taylor, who was a family friend, was in the habit of visiting from Los Angeles on weekends. For his convenience, he built (or it was built for him) a wooden kitchen on the west side of the adobe (fireplace wall). There was no direct access between the two structures, although they were attached. One had to go out of the door of one and walk to the door of the other (R.M., preceding paragraph).

This attached kitchen is still visible in the 1960 photo (J.R.). Roofing on the one-room adobe structure was roofing paper with green gravel.

Albert and Betty Mitchell
Box 279
Topoch (?), AZ 86436

Richard Mitchell
Santa Barbara, CA
(805) 963-3289

} father - Frank Mitchell (1869-
mother - Florence Mitchell,
teacher at Sulphur Springs

Questions remaining:

Construction date of ranchhouse
footprints in adobe
location of original adobe (1860)
location of original Sulphur Springs School
details on interior of 1910 adobe; of 1860 adobe
reasons for structure of west (chimney) wall

Paul A Kreutzer 7/28/87

MITCHELL ADOBE

HISTORY: Thomas Finley Mitchell was born in 1827 in Tennessee. His family moved to Texas in the 1840's. Mitchell joined Company C of the Mounted Volunteers in 1845, at the age of 18. He served in the Mexican War and was appointed a Colonel by General Sam Houston. Between 1850 and 1852 , Mitchell worked in the "northern mines", on the American River in California. He acquired property in San Bernardino around 1853 and a farm in El Monte between 1853 and 1858. In San Bernardino, Mitchell met his future wife, Martha Catherine Taylor. This was in 1853 and Martha was then only six years old. He paid for her education while she was growing up and she attended the Mission San Gabriel.

Mitchell first came to "the Soledad" in 1858 or 1859. He moved into a shack in Paper Mill Canyon, near Acton where he prospected for gold. He established a 160 acre cattle ranch southwest of Soledad Canyon and Sand Canyon Roads in 1860. He was the first American resident of lower Soledad Canyon. He freighted a frame miners cabin from Paper Mill Canyon to Soledad Canyon and a shale fireplace was added. He stocked the ranch with cattle driving them from El Monte. Then Colonel Mitchell went to San Gabriel and married 17-year-old Martha.

The crowded miner's cabin prompted the construction of an adobe structure. The adobe measured approximately 45 X 60 ft and was constructed of clay dug from a layer deep in a hand-dug well. The roof was covered by either split redwood shake or very thin cedar shake. It had a wooden floor of tongue and groove construction, kept polished to a high sheen. The ceiling was wooden, constructed of light-colored wainscoating. The old miner's shack became a storage shed. The Mitchell ranch prospered and Mitchell increased his 160 acres to almost 1000 acres. He also raised wheat, corn and fruit trees -- and later added beekeeping.

In 1872, Martha Mitchell organized a school for local children. Classes were regularly held in the kitchen of the adobe but sometimes at the Lang Hotel and Spa. Original students were the Mitchell, Stewart and Lang children. In 1879, THE SULPHUR SPRINGS SCHOOL DISTRICT was formed. The District stretched from the Mitchell Ranch up canyon to Agua Dulce.

MITCHELL ADOBE

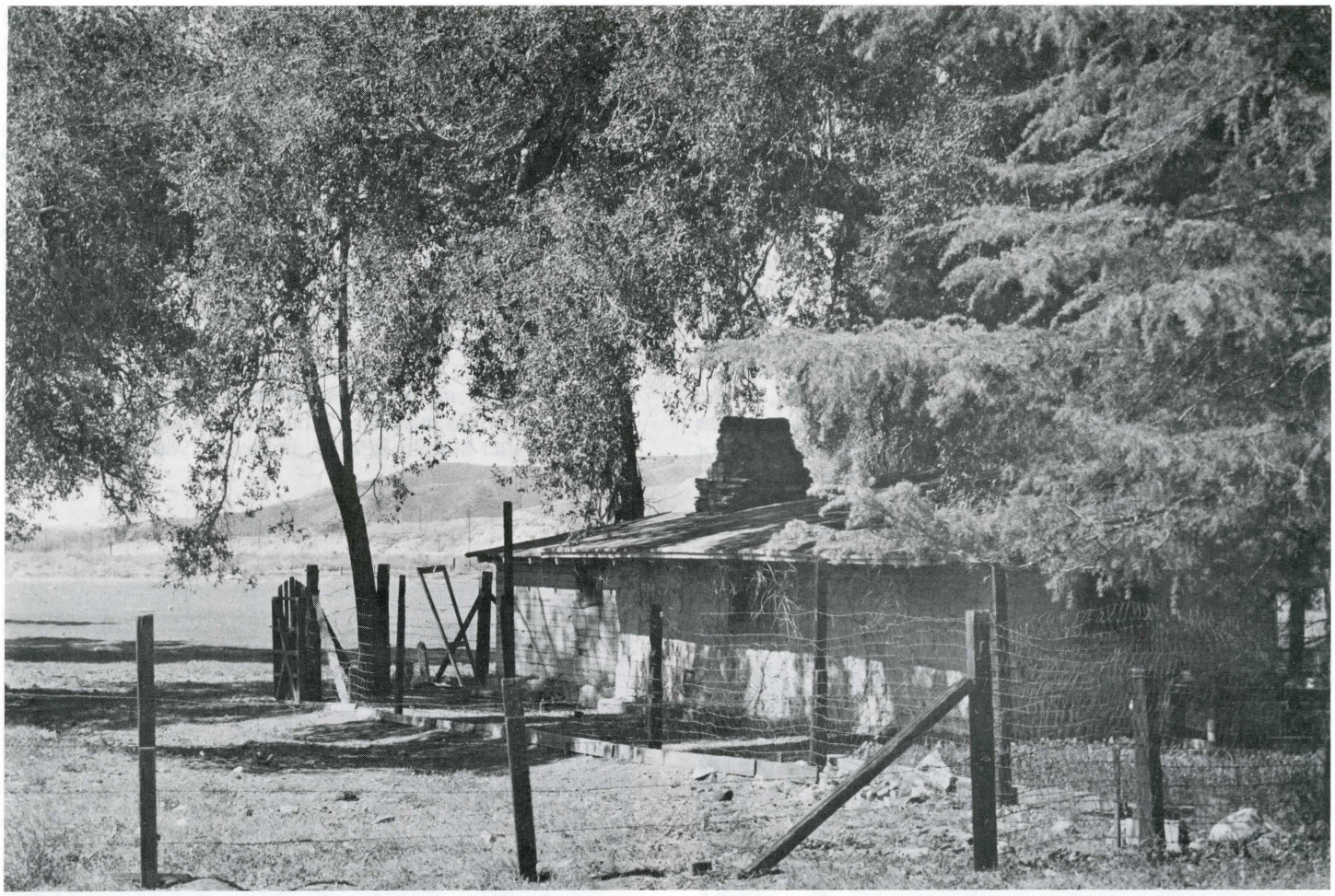
By 1885 the school was too crowded and a new one was built in 1886. It was a one room frame structure. By 1919 the adobe had fallen into ruin but was salvaged by the Colonel's son-in-law, Walter Murphy. He used the remaining adobe bricks to erect a home for the ranch foreman. It later served as a guest house, apiary and tack room until it was destroyed by developers on August 14, 1986. What remained was moved to Heritage Junction, dedicated on November 5, 1989, and is currently being restored.

HOW THE ADOBE WAS SAVED:

In 1986, the Santa Clarita Valley Historical Society took a stand (literally) around the Mitchell home, a Victorian farmhouse in Sulphur Springs. As the bulldozer approached, members formed a barricade with Sulphur Springs residents and tried to stop the impending destruction. They were unsuccessful, but as the machinery approached the adobe schoolhouse on the same property, Mother Nature intervened with a swarm of bees coming from within the schoolhouse. This schoolhouse was built by Colonel Thomas Mitchell for the children of the Sulphur Springs area and was the second oldest in the Los Angeles County. This delay allowed the Society to negotiate with the property owners and retrieve the surviving adobe bricks, removing them to a spot next to the Saugus Train Station. Today, those bricks are reassembled within Heritage Junction as the Mitchell Adobe Schoolhouse.

FIRST TEACHERS:

Martha Mitchell was the first teacher in 1872 when the school was first organized. This was the beginning of the Sulphur Springs School District, L.A. County 2nd oldest. "Miss Bowers" was the first teacher in 1879 when the Sulphur Springs School district was formally organized as a district. By 1885 the school was too crowded and a new frame structure was built. After this the adobe fell into disrepair.



The adobe about 1960

The Mitchell Adobe

By Jerry Reynolds

As it stands today, The Mitchell Schoolhouse Adobe is actually a combination of several different buildings that have been moved, torn down, built and rebuilt over the years, and bearing little resemblance to any of the original structures.

The story of the Adobe begins on December 24, 1827, with the birth of Thomas Finley Mitchell in Tennessee. His parents, John and Martha Carter Mitchell, came from Virginia along with an older brother, James. Shortly thereafter, the family moved to Texas, where Thomas grew up, joining Company C, Texas Mounted Volunteers. During the Mexican-American War he earned a battlefield commission of Colonel from General Sam Houston, himself.

Initially arriving in California during the gold rush of 1849, Colonel Mitchell finally settled near San Bernadino four years later. There he met the Taylor's, newly arrived from Arkansas, and took an interest in young Martha Catherine, then only 6 years old (born December 24, 1847), paying for her education.

While prospecting for gold near the Acton area, Colonel Mitchell took over an abandoned miner's shack up Paper Mill Canyon about 1858. Finding some "color" in the stream, he purchased 160 acres from the railroad at present day Sand and Lost Canyon Roads in 1860. The Colonel then moved the cabin down from Paper Mill Canyon and used it as his ranch headquarters until he married 17 year old Martha Catherine on January 19, 1865.

Obviously, he couldn't expect his bride to live in a shack, so Mitchell erected a large adobe hacienda from clay dug from a well on the ranch. It was some 60 feet long, 45 feet wide and roofed with long slender redwood shingles. Visitors included stage coach drivers on the Telegraph Line, Remi Nadeau and his freighters on their way to and from the Soledad mines, and marauding bands of Paiute Indians. Mitchell would slaughter a cow and hang a side of beef in a tree for the Native Americans, who showed their appreciation by not bothering his horses or cattle.

The original adobe about 1904

The feared outlaw, Tiburcio Vasquez, showed up from time to time, usually in time for dinner, leaving a "tip" under his plate which ranged from a silver dollar to a 5 dollar gold piece.

The 1870 Tax Assessment Rolls show that the Mitchell's owned 52 horses, 5 cows, 20 stock cattle, 4 hogs, 4 hives of bees, 1 jackass, 2 wagons, 160 acres and a house valued at $1,361.

The growing family eventually included six children: Mary Elizabeth, Thomas Jr., Frank, Frances Ann, John W. and Minnie Ivy, who each needed an education. Banding together with neighboring Lang's and Stewart's, the Mitchells formed the Sulphur Springs School District in 1872, Martha Mitchell teaching the first classes in the kitchen of her spacious home. Thus, this is the second oldest district in Los Angeles County.

By 1879, the student population stood at 10, so the makeshift school moved to John Lang's hotel-spa-depot, Miss Bowers being hired as teacher. Seventeen scholars showed up for the class of '86, so Colonel Mitchell donated a site for a school house, which was constructed by Lang and Sanford Lyon on the spot where the present Sulphur Springs Elementary School is located.

Sulphur Springs School (1915)

North of the Mitchell Ranch House, across the Santa Clara River, rose a knoll, which, according to an elderly Indian retainer, was the final resting place for several members of his tribe. When he passed away in 1870, the Colonel buried him there with his ancestors, then used it as a family graveyard. His eldest son was interred on the hill in 1875, then a teenage daughter and relatives such as the Manning's, Heitte's, Dyer's and Helvey's.

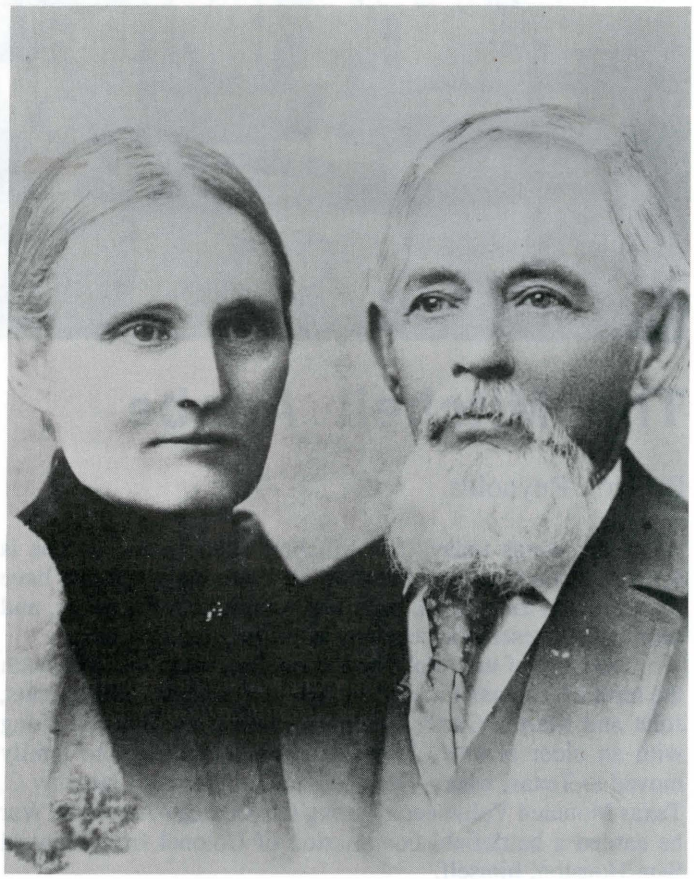
A two story, redwood, "Midwestern style" ranch house was built in 1888, the hacienda subsequently becoming a guest house, honey house, tack room and residence for married children, such as Frances Ann and Samuel Heitte, who moved in and did some remodeling in 1893. By this time the ranch totaled 1,000 acres.

Martha Mitchell died on August 10, 1905, followed by her husband, the Colonel, on December 24, 1907. They still lie side by side in the ancient Mitchell Cemetery on the hill. Active management of the ranch was taken over by Walter Murphy, who had married the Mitchell's youngest daughter, Minnie. In 1919, Murphy salvaged what was left of the miner's shack and the remaining adobe blocks from the hacienda, which had pretty much melted into the earth from which it was created. He built a residence for the ranch foreman, Henry Thomas. This was of the same size as the present adobe.

During the 1930's a family friend, Dr. Taylor, stayed in the small adobe house, adding a kitchen next to the present fireplace. Curiously, there was no direct access, the doctor having to go outside to get from the house to the kitchen area.

By the 1960's, the adobe was being used as a storage shed, then a honey house, and finally, a tack room at the time it was sold to the Shaffer family, about 1970. After the death of Mrs. Shaffer, her son, Kenneth, formed Shaffer Land Co. He finally ordered the demolition of the wooden ranch house and the "Murphy Adobe" on August 14, 1986. The Historical Society managed to save three walls of the adobe, moving them to Heritage Junction, where additional new bricks were hand-made to match the older parts.

The building today reflects the whole story of Canyon Country, with some wood dating back to the 1850's miner's cabin, some bricks made by Colonel Mitchell in the '60's, work done by Walter Murphy in 1919, and some 1980's adobe brick.



Martha Catherine Taylor Mitchell
and
Colonel Thomas Finley Mitchell

Santa Clarita Valley HISTORICAL Society

June 10, 1987

Santa Clarita Valley Historical Society
P. O. Box 875
Newhall, California 91322

Re: The Mitchell Adobe Schoolhouse

Dear Ms. Harris and members of the Society:

At your request, we made a site visit to the above adobe on June 5, 1987, to make recommendations for its reconstruction.
Present: Marilyn Neil-Harris, President, SCV Historical Soc.
Tom Mason, Builder
Members of the Historical Society
Gil Sanchez, A.I.A., Architect
Daryl Allen, Associate, Sanchez Architects

We viewed a small adobe structure, approximately 11'-9" wide by 21 feet long, which was in the process of being reconstructed. Walls were about three feet high on the day we viewed it. The structure was unfortunately damaged in a demolition attempt by a developer who planned to demolish it. Total demolition was prevented by the Historical Society. All roof framing was destroyed, although a large quantity of adobe blocks from the walls and door and window frames were saved. Adobe blocks were disassembled, marked as to which wall they came from, and were moved to their present site. New adobe block was manufactured to supplement the old block as needed.

The small building was built in 1860 by Thomas Mitchell and was used as a school building on his ranch beginning in 1872. A photograph of the building taken in 1960 reveals roof framing and window and door placement on the front facade. An earlier photograph also gives useful information regarding the historic appearance of the adobe plastered walls.

Tom Mason, volunteer in charge of construction, showed the construction drawings to Gil. The structural system was designed by an engineer according to recommendations of the County of Los Angeles building department. Steel reinforcing bars were installed in a concrete slab and project upward on the interior walls. The adobe walls will be covered at the interior with welded wire mesh and covered with 4" of gunite trowelled to a smooth finish. Exterior walls will be plaster with adobe (mud) plaster and whitewashed. An examination of existing historic adobe block revealed a very thin layer of mud plaster adhering to the block.

GILBERT ARNOLD SANCHEZ, INCORPORATED
ARCHITECTURE • HISTORIC CONSERVATION
3022 GLEN CANYON RD. SANTA CRUZ, CA 95060 (408) 438-0888

Recommendations

1. We recommend continuing the reconstruction in the most historically accurate manner possible. Granted, the authenticity of the interior will be compromised by the application of a thick cement plaster, but the exterior can strive to appear as it did in the historic photographs. The idea is recreate what the building looked like without being tempted to "pretty up" or improve on its actual appearance. The only improvements should be structural and should be concealed from public view.

An "interpretive period" is typically chosen, usually the period deemed most important or most interesting in a building's chronology. The building is then researched for photographs or drawings to document its appearance during that time frame. For this building, however, we recommend staying with its latest appearance in the available photographs, and not going back to an earlier time (for which there may be no documentation). It is better to do a good job with the information available than to try to guess at a building's actual appearance. Thus, the interpretive period for this building would be the latest years the school occupied it. It is recommended practice for the interior period of interpretation to match the exterior.

a. Match the roof framing system and fascia to that which shows in the 1960 photograph (appears to be joists at 2' on center. Use tar paper roofing as that is what shows in the photographs.

b. Reinstall existing windows. Do not sand and repaint, but clean lightly with a brush. A watered-down coat of whitewash may be applied, or leave windows as they are. Wood preservative is not necessary. Renail loose pieces. Reinstall existing door if it is available, or reconstruct a new one as per 1960 photograph.

c. Replaster exterior with a very thin (1/8' - 1/4") layer of mud plaster to a smooth finish. Whitewash.

2. Install a ceiling of 1 x planking on top of ceiling (roof) joists. On top of that install plywood sheathing (as per drawings, for structural purposes), so that 1 x board ceiling is what will be viewed by someone standing inside the room. The contemporary plywood ceiling will not be visible. Lightly whitewash new 1 x board ceiling and brush with a wirebrush to take away the new appearance.

3. Install an underground drainage system at south and west sides--sides nearest hill. A gutter could be installed on the south (back) side--not historically there, but would not be obvious on that side and is important to protect the walls.

4. The concrete footing and its vertical and horizontal reinforcement, and the vertical reinforcement in the chimney should be installed as per current Uniform Building Code requirements.

5. Document your reconstruction process with black-and-white photographs and notes. Describe historic fabric and what you did to it as you put it in place. These notes will become important documentation for anyone later studying the building. Save construction drawings. Date everything.

Your historical society and your builder Tom Mason are to be congratulated for salvaging this little adobe which is important to your area's history. Good luck on your reconstruction.

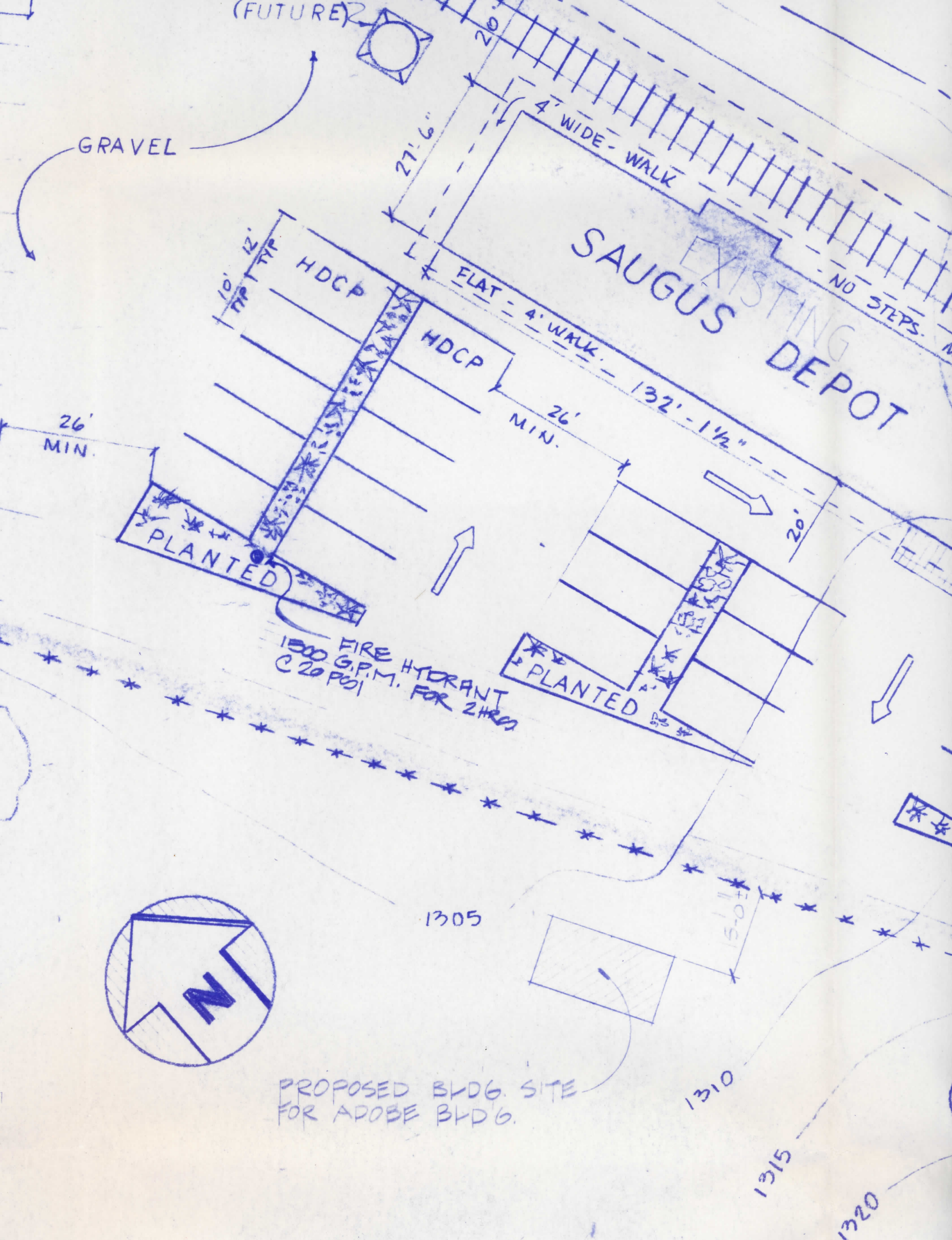
Sincerely,

GILBERT ARNOLD SANCHEZ
ARCHITECTS INC.

Gil Sanchez, A.I.A.

Daryl Allen, Associate

P.S. Regarding information on getting properties on the National Register, call the State Office of Historic Preservation, Department of Parks & Recreation, P. O. Box 2390, Sacramento, CA 95811. (916) 322-8596 (I was not able to get an answer to your question regarding registration without knowledge of the owner at the conference, but you could ask a Historic Preservation Officer, starting at the above number.)


(FUTURE)
GRAVEL
20'
4' WIDE - WALK
27'-6"
EXISTING
SAUGUS DEPOT
- NO STEPS -
FLAT - 4' WALK - 132'-1½"
10' TYP
12' TYP
HDCP
HDCP
26' MIN.
26' MIN.
20'
PLANTED
PLANTED
FIRE HYDRANT
1500 G.P.M. FOR 2 HRS
@ 20 PSI
1305
5'-0"±
N
PROPOSED BLDG. SITE
FOR ADOBE BLDG.
1310
1315
1320

GENERAL NOTES

GENERAL REQUIREMENTS

WORK PERFORMED SHALL CONFORM TO THE REQUIREMENTS OF THESE GENERAL NOTES, UNIFORM BUILDING CODE (1985 EDITION), AND ALL APPLICABLE LOCAL AND STATE CODES, ORDINANCES, RULES, AND REGULATIONS GOVERNING THE WORK TO BE PERFORMED.

ON SITE VERIFICATIONS OF ALL DIMENSIONS AND CONDITIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. NOTED DIMENSIONS TAKE PRECEDENCE OVER SCALE. REPORT ALL DISCREPANCIES IN WRITING TO THE ENGINEER FOR CLARIFICATION.

NO DEVIATIONS FROM STRUCTURAL DETAILS ON ENGINEERED PLANS WITHOUT WRITTEN APPROVAL OF THE ENGINEER.

THE CONTRACT DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. UNLESS OTHERWISE SHOWN, THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE BUILDER SHALL SUPERVISE AND DIRECT THE WORK AND HE SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES. ANY OBSERVATION VISITS TO THE SITE BY ANY REPRESENTATIVE OF HALE & ASSOCIATES, INC. SHALL NOT RELIEVE THE BUILDER FROM HIS RESPONSIBILITY AND DO NOT GUARANTEE BUILDERS PERFORMANCE, AND SHALL NOT BE CONSTRUED AS SUPERVISION OF CONSTRUCTION.

CONTRACTOR SHALL PROVIDE OPENINGS AND SUPORTS FOR MECHAMICAL EQUIPMENT, DUCTS, PIPING, VENTS, ETC.

SITE WORK

ALL FOOTINGS SHALL REST ON FIRM, NATURAL SOIL OR APPROVED COMPACTED FILL. SOIL BEARING CAPACITY ASSUMED TO BE 1000 psf.

PROVIDE GROUND POISONING PER FHA MPS 815-3.6.

PROVIDE TERMITE AND DECAY PROTECTION PER FHA MPS SECTION 815.

CONCRETE

CONCRETE SHALL BE PLACED IN ACCORDANCE WITH CHAPTER 26 OF THE BUILDING CODE. IT IS TO BE MACHINE MIXED WITH A MAXIMUM OF 7 1/2 GALLONS OF WATER PER SACK OF CEMENT. CONCRETE TO

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FOUNDATION AND FLOOR SLABS SHALL BE TREATED AS THOUGH THEY ARE TO BE CONSTRUCTED ON EXPANSIVE SOIL (UNLESS A SOILS REPORT IS SUBMITTED BY A QUALIFIED, LICENCED, CIVIL ENGINEER INDICATING A SOILS CONDITION OTHER THAN EXPANSIVE SOIL) AND SHALL CONFORM AS FOLLOWS:

(A) CONTINUOUS FOOTINGS SHALL BE PROVIDED UNDER EXTERIOR WALLS AND INTERIOR BEARING WALLS EXTENDING BELOW GRADE 24".

(B) REINFORCING STEEL SHALL CONSIST OF ONE CONTINUOUS NO. 4 BARS, ONE AT 3" FROM BOTTOM AND ONE AT 3" FROM TOP OF FOUNDATION.

(C) FLOOR SLAB SHALL BE A MINIMUM OF 4" THICK OVER 4" CLEAN AGGREGATE BASE AND REINFORCED WITH NO. 3 BARS AT 24" O/C BOTH WAYS OR 6 X 6 - 6/6 WELDED WIRE FABRIC.

(D) SATURATE THE SOIL 18" DEEP BEFORE PLACING THE CONCRETE SLAB.

MAINTAIN CONCRETE SLAB MINIMUM 6" ABOVE FINISH GRADE.

REINFORCING BARS SHALL BE DEFORMED BARS CONFORMING TO REQUIREMENTS OF U.B.C. STANDARD 26-7 ASTM 615-40. MINIMUM LAP FOR REINFORCING STEEL SHALL BE 40 BAR DIAMETERS OR 24-INCHES MINIMUM.

SILL BOLTS SHALL BE 1/2-INCH DIAMETER x 10" ANCHOR BOLTS AND SHALL BE EMBEDDED INTO FOOTING CONCRETE A MINIMUM OF 7". SPACING SHALL BE AS INDICATED ON DRAWINGS BUT NOT TO EXCEED 48".

APPROVED SHOT PINS MAY BE USED FOR INTERIOR, NONBEARING WALLS. SHOT PINS SHALL BE 3" LONG WITH CADMIUM WASHERS (RAMSET #3348 - ICBO #1639 OR EQUAL).

1/2
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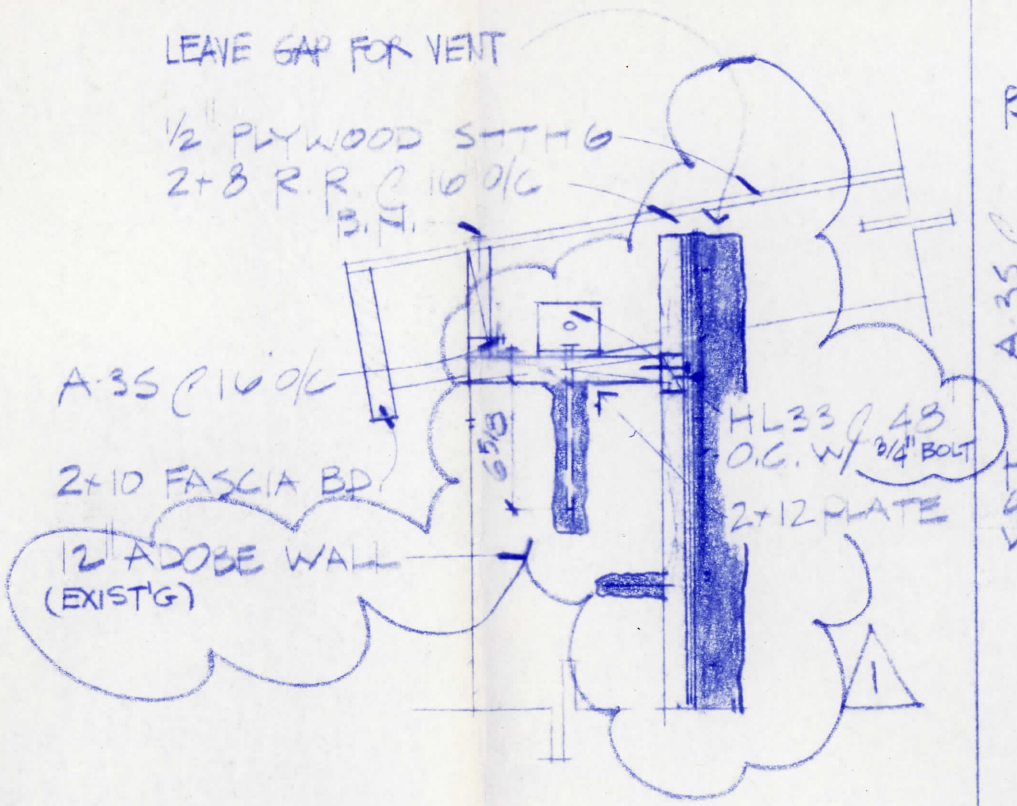
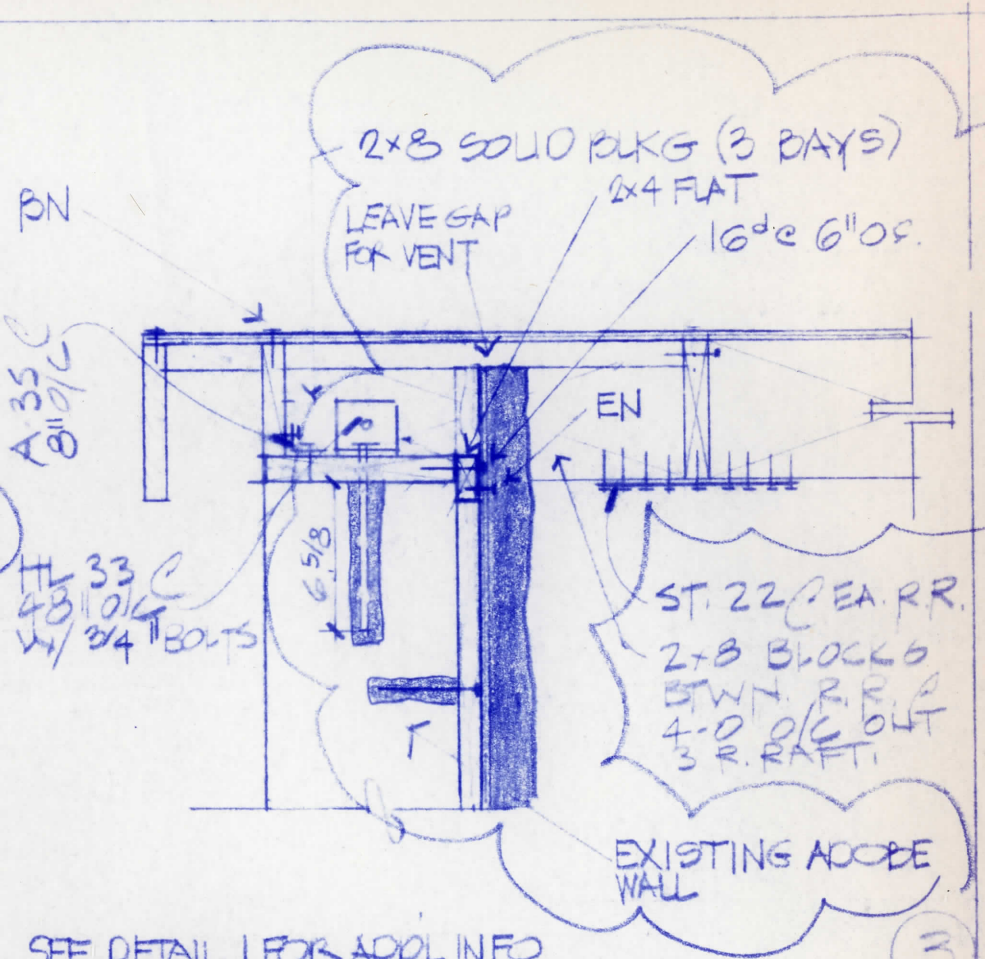
A-35 (
2x10 FA
12" ADD
(EXIST'G)
SEE DETA
ROOF
1/2" PLY
(EXT. GL
NOTE:



SEE DETAIL 2 FOR ADD'L INFO.

(2)



SEE DETAIL 1 FOR ADD'L INFO

(3)

ROOF SHTHG

½" PLYWOOD CDX SHTHG INDEX 32/16 (EXT. GLUE) NAILING: USE 8d @ 6", 6", 12"

NOTE: ROOF SPECS TO MATCH THAT OF ORIGINAL STRUCTURE, CONTRACTOR TO CONFIRM.

REVISED PLATE DETAILS

DETAIL 2 FOR ADD'L INFO.

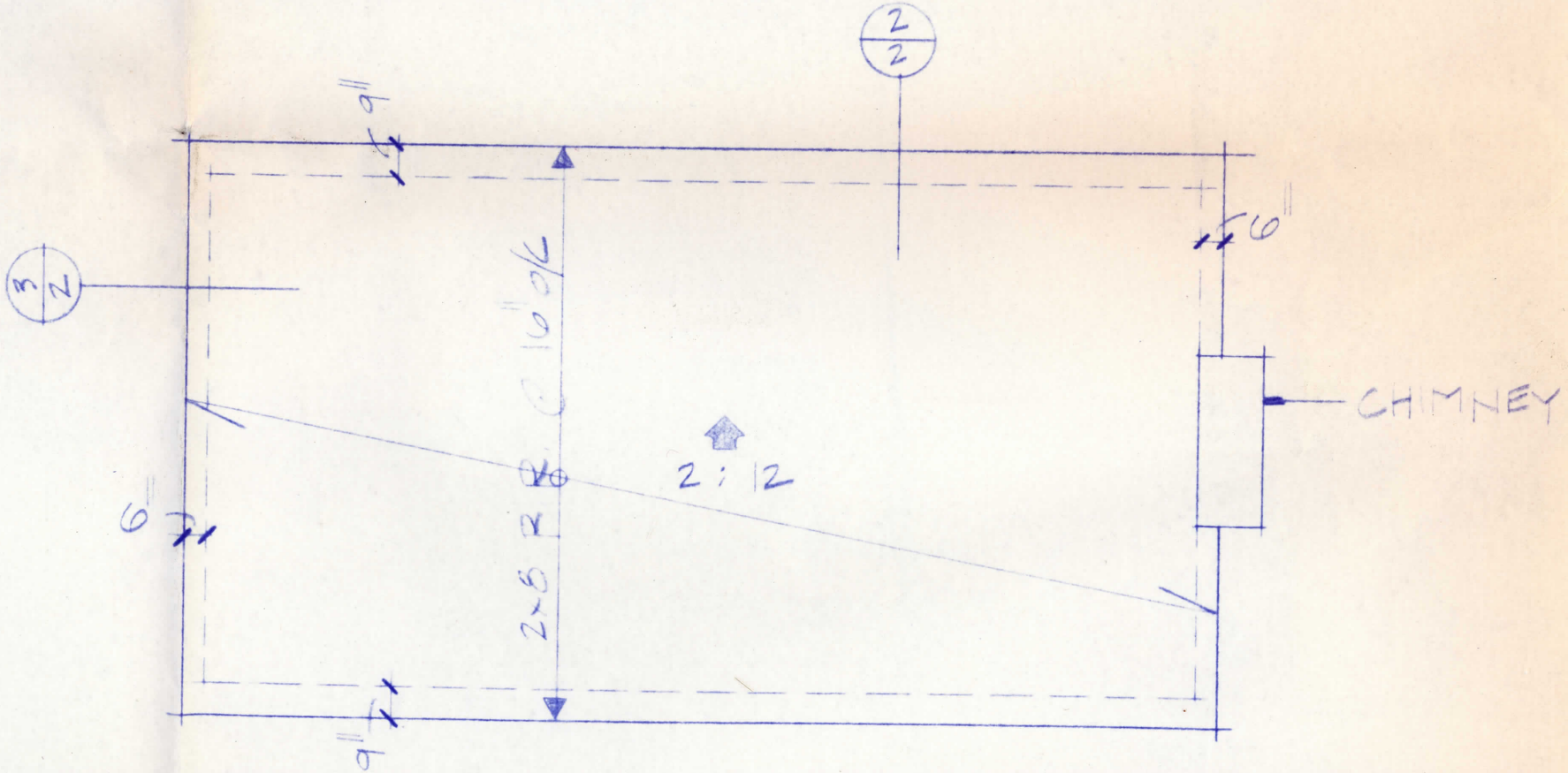
OF SHTHG

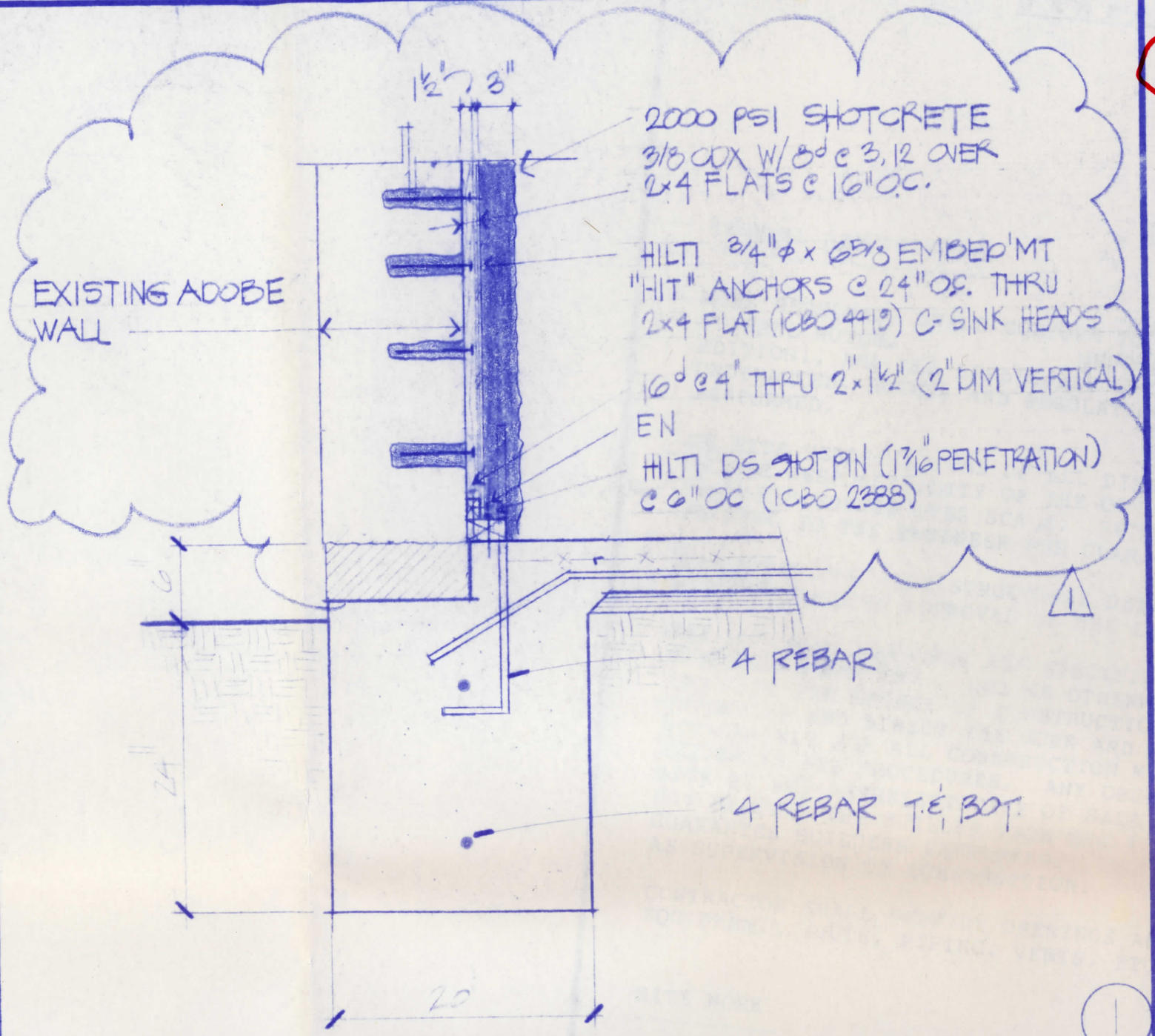
PLYWOOD CDX SHTHG INDEX 32/16
F. BLUE) NAILING: USE 8d (6", 6", 12"

TE: ROOF SPECS TO MATCH THAT OF ORIGINAL STRUCTURE, CONTRACTOR TO CONFIRM.

(2) SEE DETAIL 1 FOR ADDL INFO

(3) REVISED PLATE DETAILS





REVISED WALL DETAIL

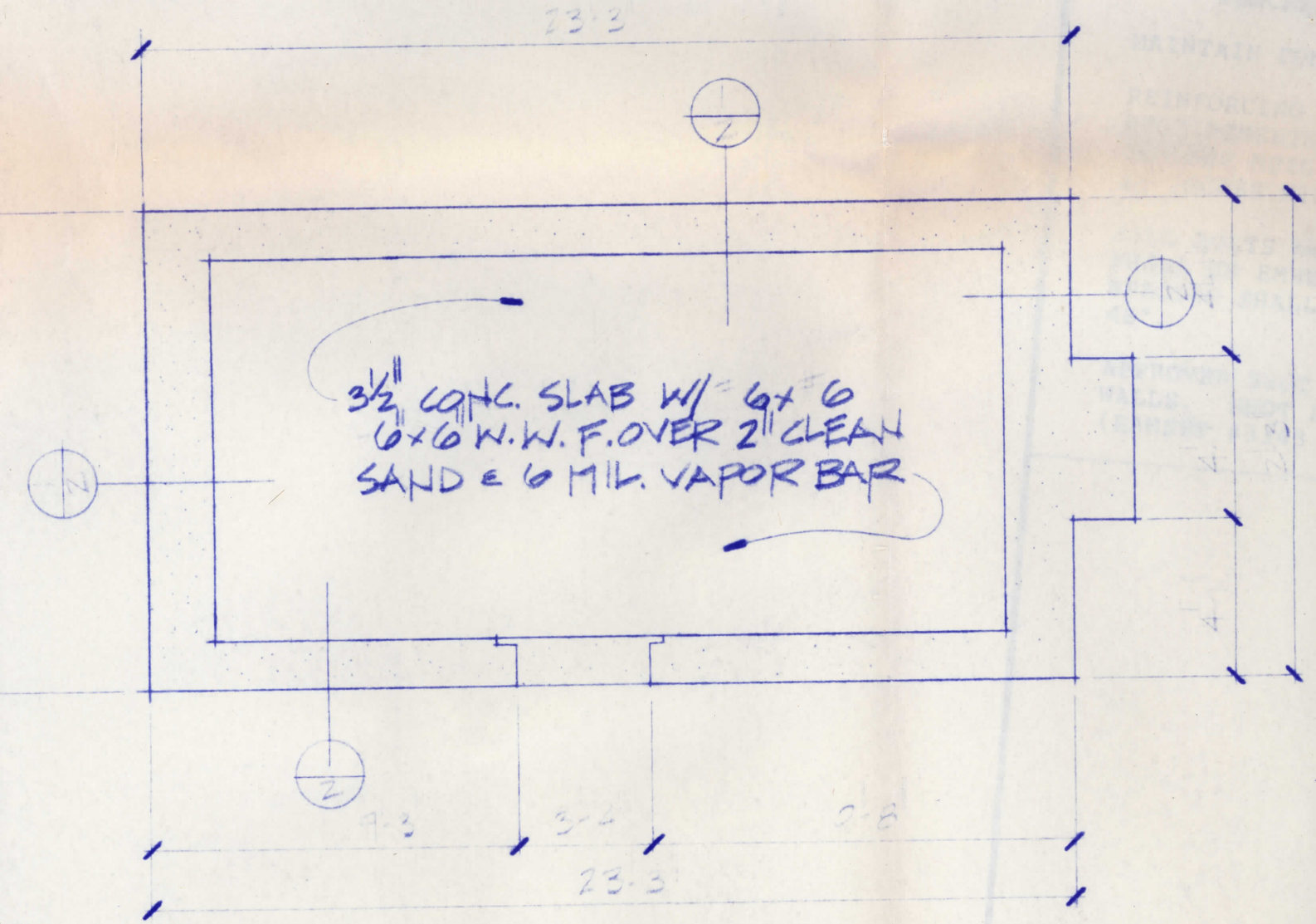
REVISIONS

1 11/88

SANTA CLARITA VALLEY HISTORICAL SOCIETY

ADOBE BLDG. RE-LOCATION

PROPOSED SITE

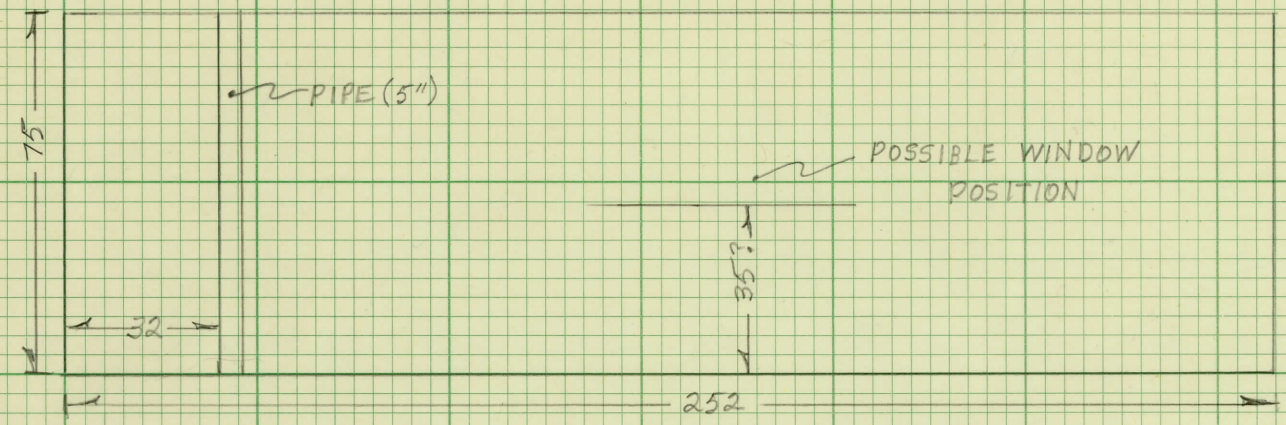


(EXISTING)

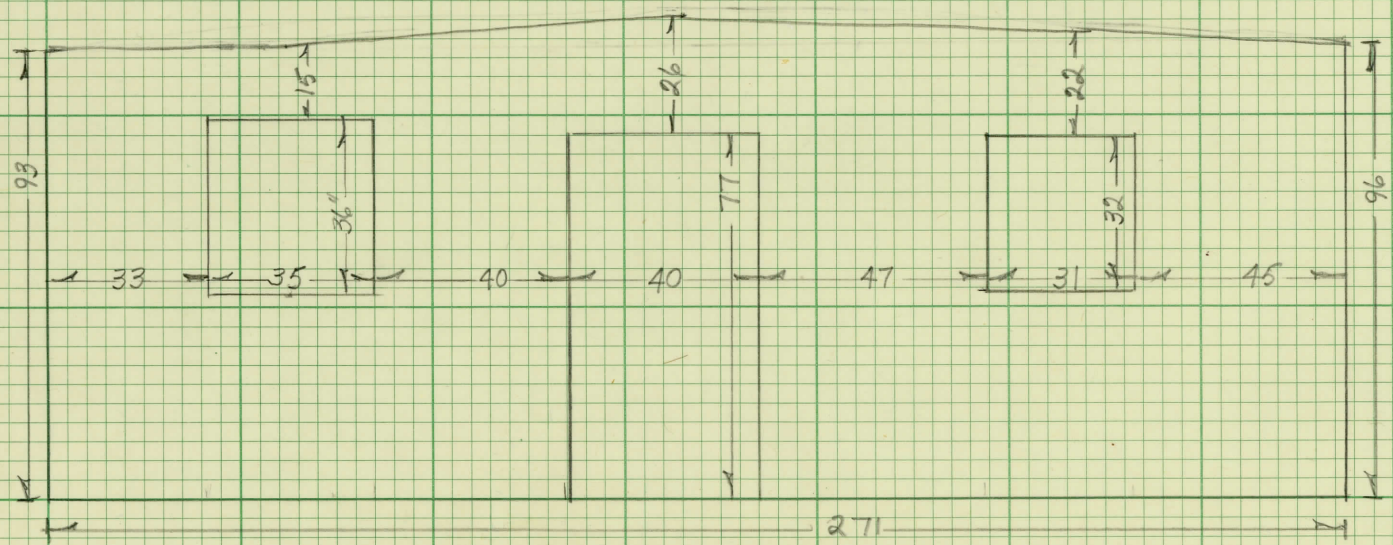
FOUNDATION PLAN

REVISE

MITCHELL ADOBE



SOUTH ELEVATION

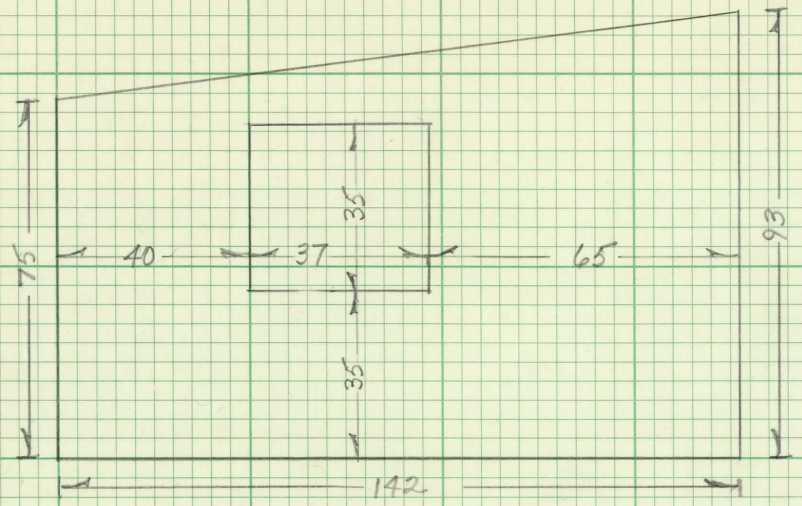


NORTH ELEVATION

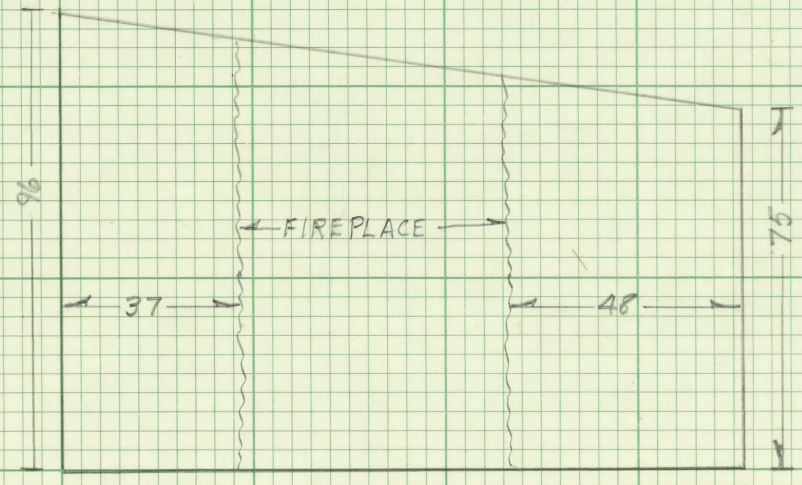
ALL MEASUREMENTS IN INCHES TO TOP OF FOUNDATION
1 INCH = 40 INCHES

PAK

MITCHELL ADOBE



EAST ELEVATION



WEST ELEVATION

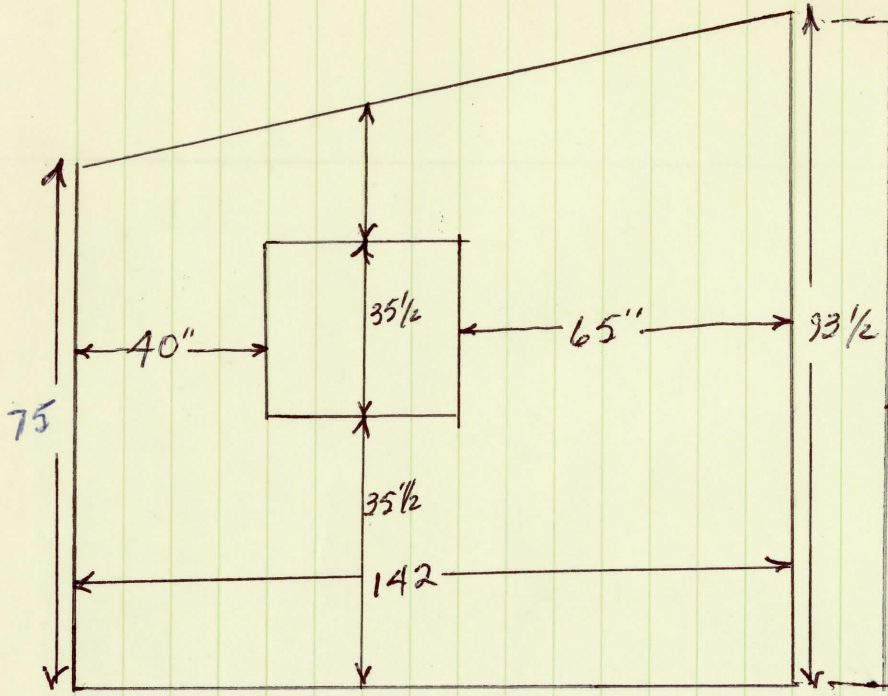
ALL MEASUREMENTS IN INCHES
1 INCH = 40 INCHES

PAK

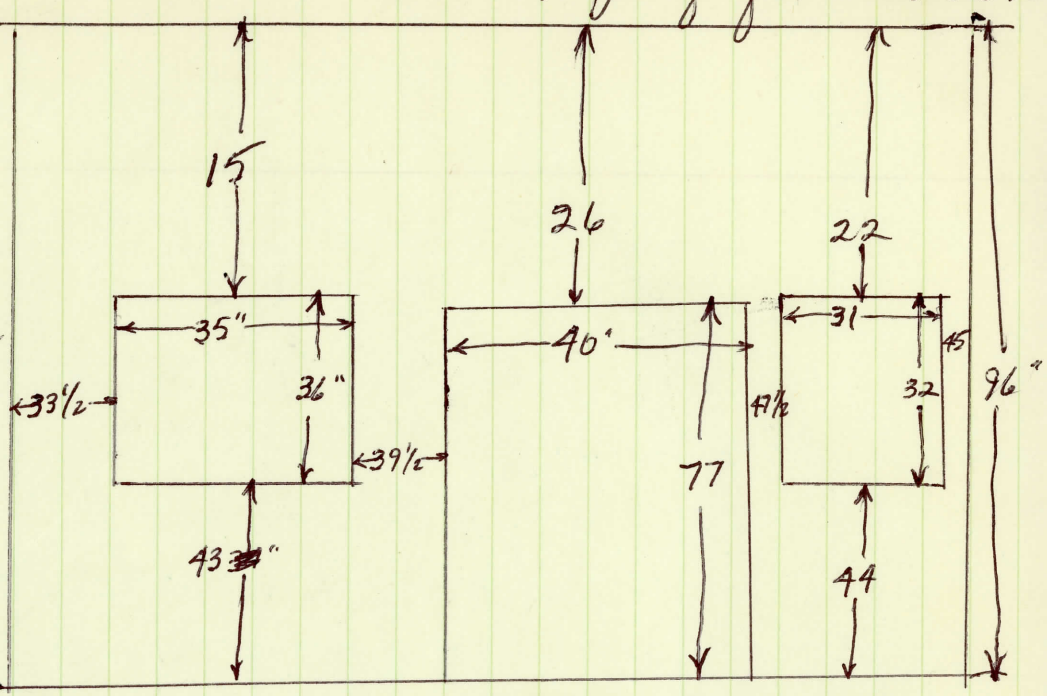
south	131	131
north	175	175
east	92 - 9 =	83
west		50
		439
		(473)
windows		- 36
		403
door		- 21
		382 ft²

roof $27 \times 16 = 432\ ft^2$

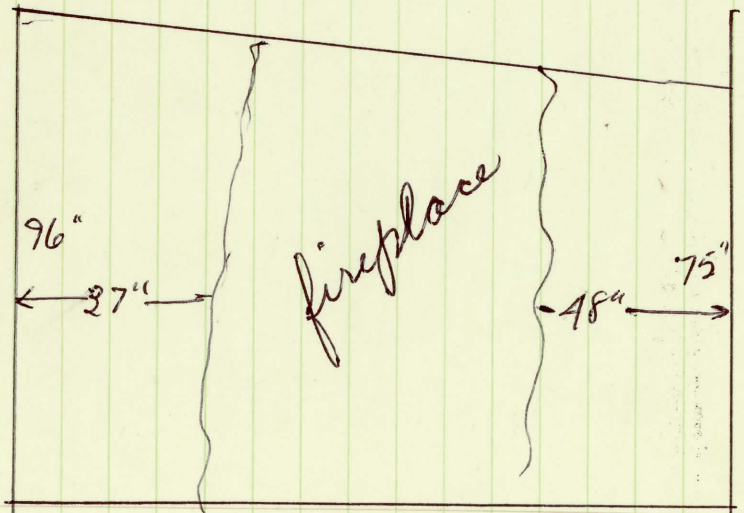
measurements to top of foundation



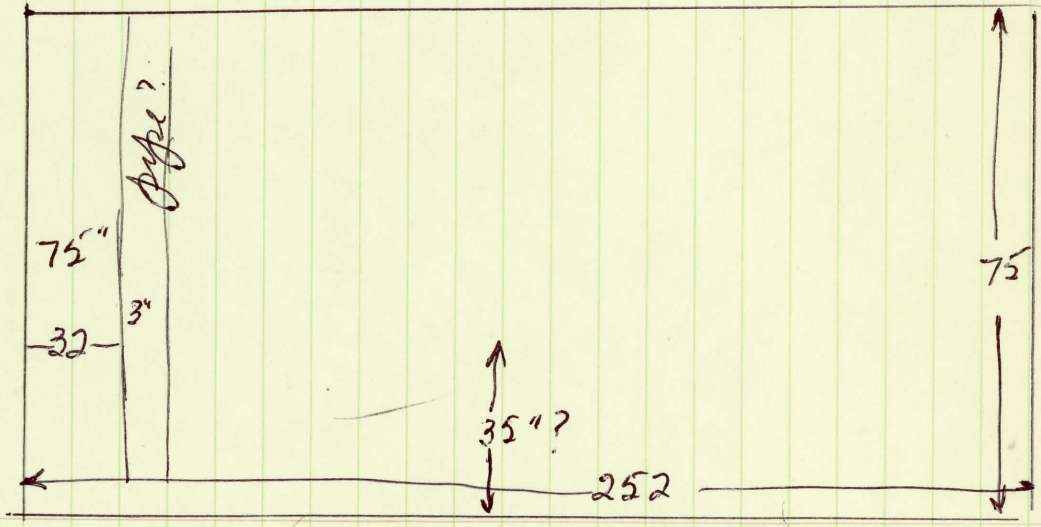
EAST WALL



NORTH ELEVATION

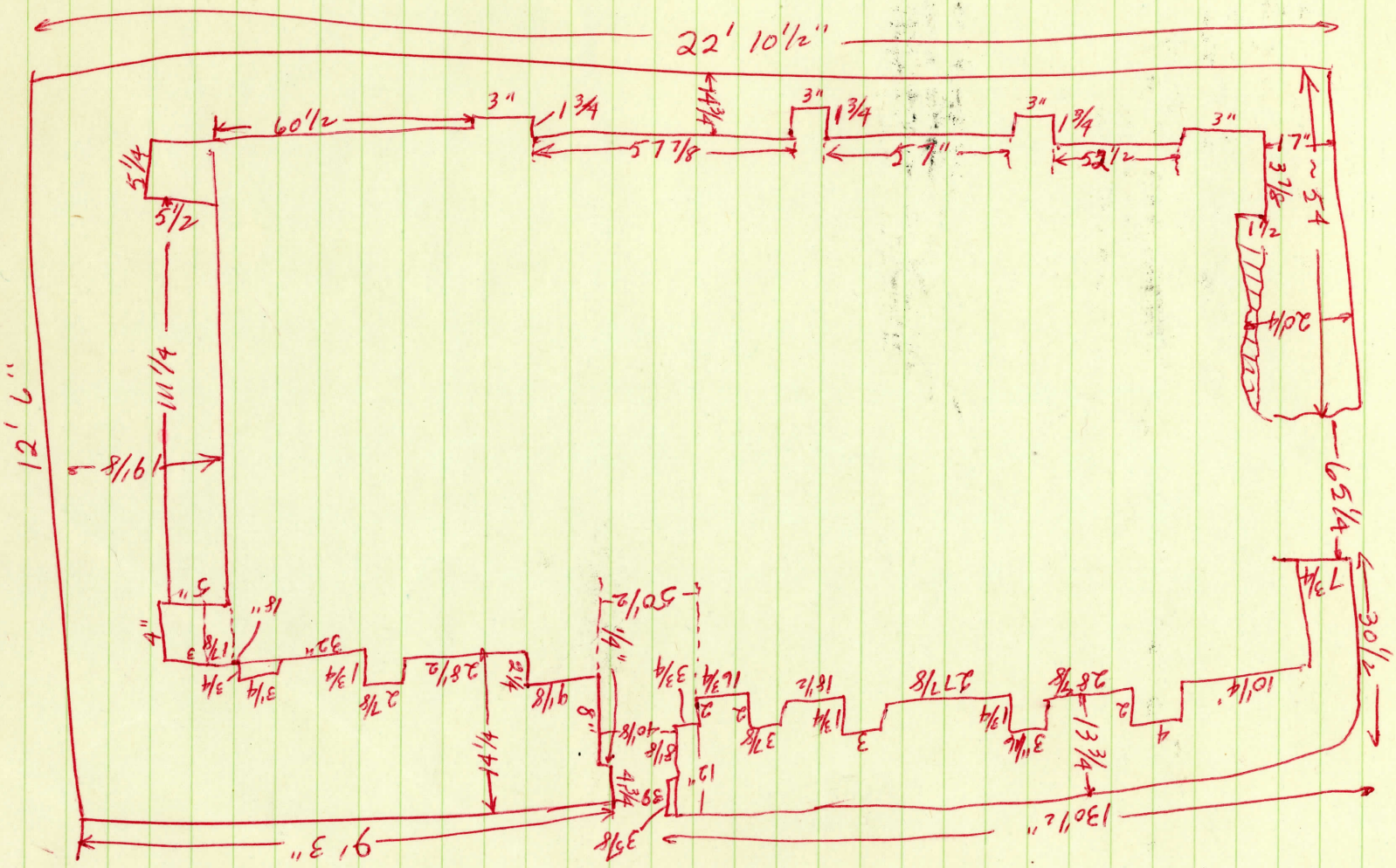


WEST ELEV.



SOUTH ELEVATION

24	130
24	39
264	108
10	3
274	280



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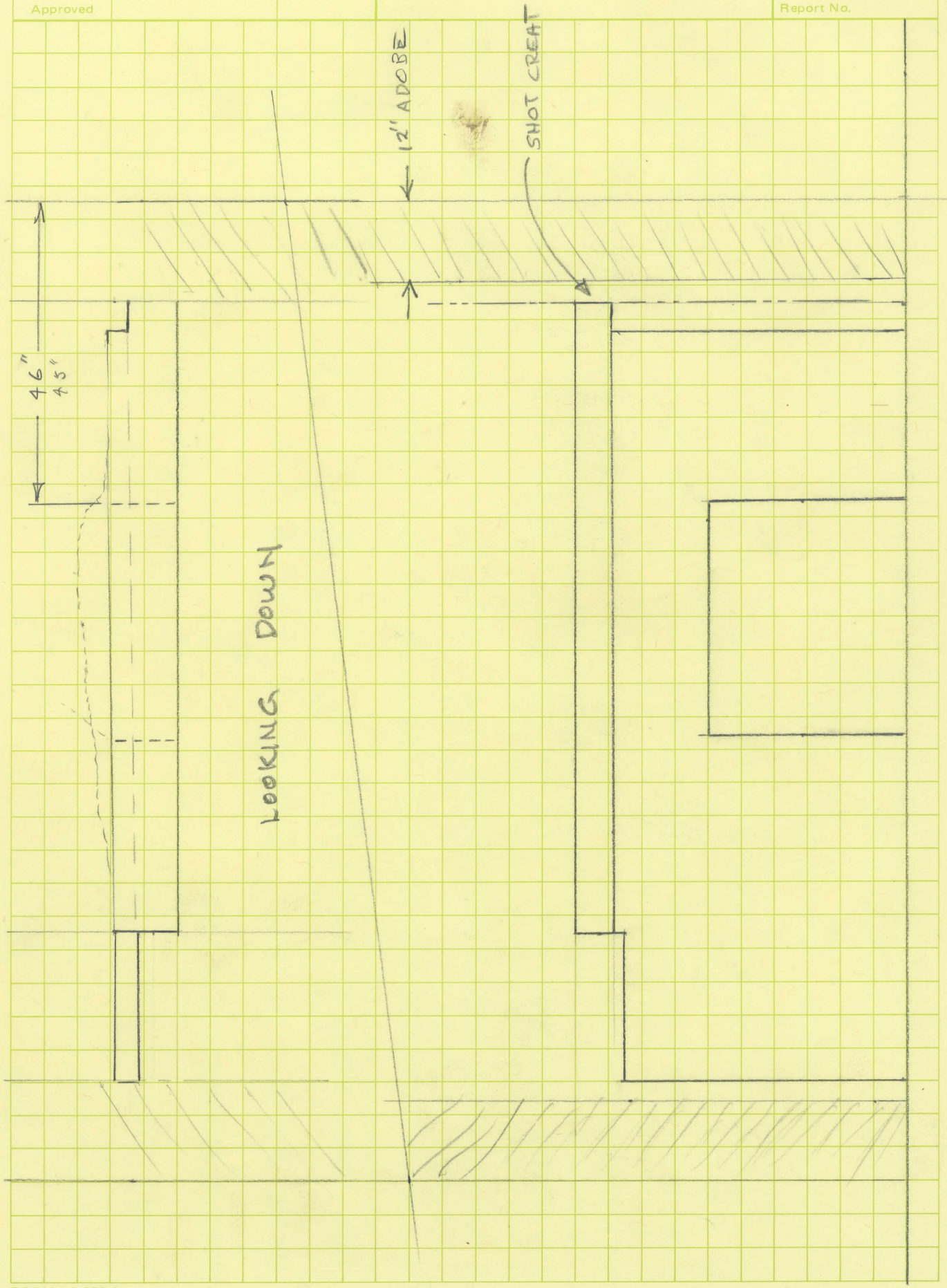
SCALE 1/10
EBJ



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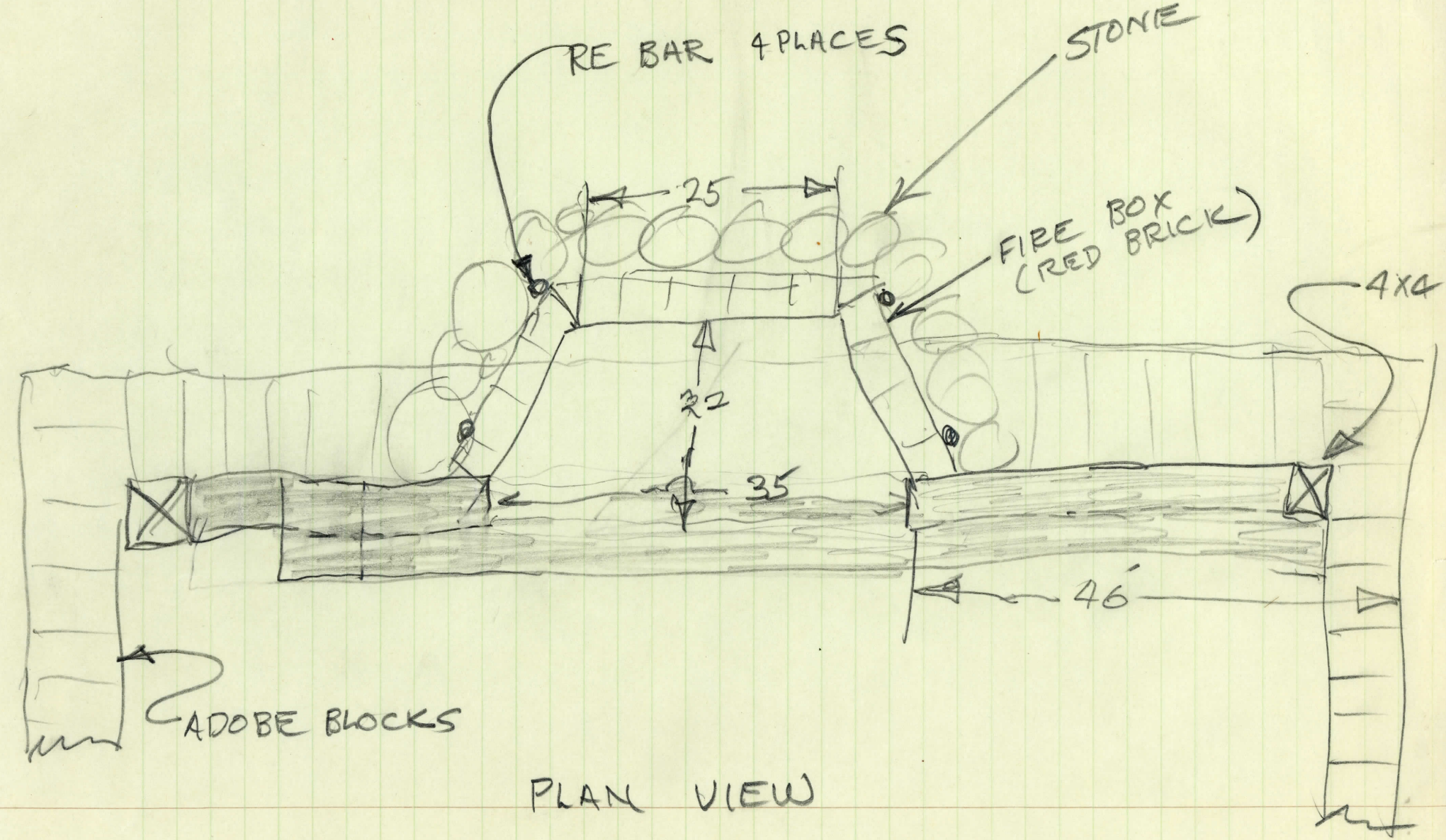
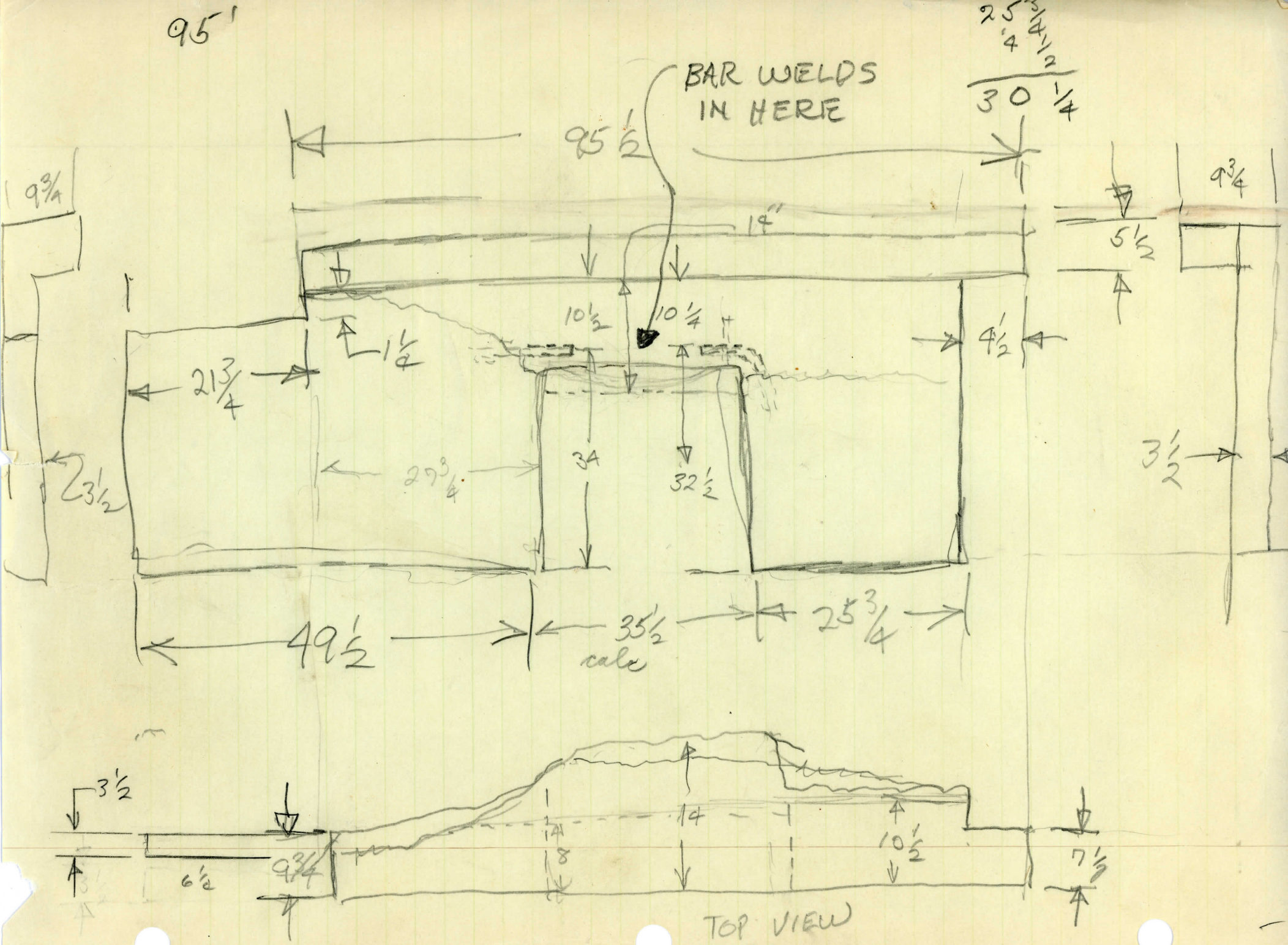

RE BAR 4 PLACES
STONE
25
FIRE BOX
(RED BRICK)
4X4
32
35
46'
ADOBE BLOCKS

PLAN VIEW

95'


BAR WELDS IN HERE
95 1/2
30 1/4
25 3/4
4 1/2
9 3/4
14"
5 1/2
10 1/2
10 1/4
1 1/2
21 3/4
4 1/2
3 1/2
27 3/4
34
32 1/2
49 1/2
35 1/2
calc
25 3/4
3 1/2
6 1/2
14
8
10 1/2
7 1/2
TOP VIEW
looking down

SANTA CLARITA VALLEY HISTORICAL SOCIETY
SUMMARY OF DISBURSEMENTS
MITCHELL ADOBE
August, 1986, through June, 1987

Date	Check	Payee	Purpose	Disbursements through T. Mason	Disbursements Direct
8/26/86	1576	Hale & Associates	found. plans		$135.00
9/1/86	1582	Tom Mason	labor/mat	$200.00	
9/10/86	1589	Tom Mason	labor/mat	$200.00	
9/20/86	1597	Hale & Associates	master plan		100.00
10/15/86	1607	Newhall Hardware	material		109.91
10/23/86	1610	Canyon Lumber	tools		83.18
12/1/86	1626	Tom Mason	labor/mat	500.00	
12/10/86	1632	Hale & Associates	repro prints		33.00
12/10/86	1633	Hale & Associates	plot plans		195.00
1/26/87	1661	Tom Mason	labor/mat	500.00	
1/31/87	1665	Tom Mason	labor/mat	500.00	
2/19/87	1670	Doral's Fence	fence install.		509.00
2/19/87	1671	Newhall Hardware	hardware		78.92
2/19/87	1673	Tom Mason	labor/mat	500.00	
3/7/87	1684	John O. Mitchell	cement		770.48
3/7/87	1685	Newhall Hardware	box, plastic		85.15
3/13/87	1694	Tom Mason	labor/mat	500.00	
3/23/87	1696	Tom Mason	labor/mat	500.00	
4/26/87	1721	Tom Mason	labor/mat	500.00	
5/10/87	1726	Tom Mason	labor/mat	500.00	
SUBTOTAL, DISBURSEMENTS THROUGH TOM MASON				$4,400.00*	
SUBTOTAL, DIRECT DISBURSEMENT					2,099.64
TOTAL DISBURSEMENTS					**$6,499.64**

Summary of Disbursements per Tom Mason, dated 5/25/87

Labor (9/7/86 - 5/19/87)	$3,368.00
Materials	290.31
Building Permit	82.19
Miscellaneous	132.60
Check #5033, dated 5/325/87	126.90
	$4,000.00

*not included: Check #1583, dated 9/5/86, for $16.29 to Tom Mason as a cash reimbursement for telephone calls related to Mitchell Adobe.

RECOMMENDATIONS FOR MITCHELL ABODE SCHOOL

BY: Pamela J. Helvey (213) 836-0948 May 26,1987

RESTORATION: WADDLE AND DUBB TECHNIQUE

CONSTRUCTION METHOD: LABOR & MATERIAL NEEDS

- Use of organic materials: straw, sand & mud
- Use of old, unstabilized (no cement added) adobe bricks
- Use of sand & mud morter
- Use of fine grained sand & mud plaster applied by hand
- Use of ceramic roof tiles
- No reinforcement of load bearing walls

PERIODIC MAINTENANCE: FREQUENT

- Re-application of exterior fine grained sand & mud plaster
- Re-application of roof tile cement
- Pest control extermination

RECONSTRUCTION: STABLIZED BRICK AND GUNITE PLASTER TECHNIQUE

CONSTRUCTION METHOD: LABOR & MATERIAL NEEDS

- Use of modern materials: concrete, steel & cement
- Use of concrete floor base
- Use of steel reinforcement of load bearing walls
- Use of new, stabilized (cement added) adobe bricks
- Use of gunite morter
- Use of gunite or cement plaster applied by cement plaster gun
- Use of ceramic roof tiles or tin roofing material

PERIODIC MAINTEMANCE: INFREQUENT

- Re-application of gunite or cement plaster
- Pest control extermination

PRESERVATION: USING SIMILAR MATERIALS (ALL ORGANIC OR ALL NON-ORGANIC)

STRUCTURE INSTABILITY DUE TO MIXTURE OF DISSIMILAR MATERIALS:

- Inconsistant reactions of organic & non-organic materials to environmental exposure to temperature & moisture
- Organic materials allow for natural evaporation of ground water & salts at base and in walls of structure
- Non-organic materials do not allow for natural evaporation of ground water & salts at base and in walls of structure
- Structures with of old organic adobe bricks mixed with new stabilized abode bricks and gunite plaster show signs of structure "melting"; adobe bricks turn to mud & leave a honeycomb shell of gunite plaster
- Old material deteriorate at different (faster) rate than new materials
- Different requirements of maintenance; frequent re-application of mud plaster after exposure to yearly wet season & pest control

VISUAL INCONSISTANCY DUE TO MIXTURE OF DISSIMLAR MATERIALS;
Modern techniques create modern look for exterior structure

CONSIDERATIONS; PRESERVATION BY RESTORATION OR RECONSTRUCTION?

HISTORIC PERIOD?; Which time period (c1872-1987); Which construction technique?; What community resources & funding available?

PRESERVATION BY RESTORATION ?;

- Adequate historical photographs & records?
- Architectural plans approved for historical dimensions & modern building stability requirements?
- Type of materials to be used?; Adequate amount of salvaged old adobe bricks
- Cost of construction techniques & maintenance?; Manufacture of new, stablized abode brick?
- High cost of re-application of plaster & pest maintenance?

PRESERVATION BY RECONSTRUCTION;

- Once original structure is disassembled = Reconstruction
- Materials to be used?;
  - Adequate Amount of salvaged material = Use all old materials
  - Inadequate amount of salvaged material = Use all new materials
- Cost of construction techniques & maintenance?; High cost of gunite or low cost of cement plaster?

RECOMMENDATIONS ADVISED FOR THE COMPLETION OF RECONSTRUCTION PROJECT;

omit

ALL NEW MATERIALS IN MITCHELL SCHOOL HOUSE RECONSTRUCTION;

- Use new, stablized adobe bricks
- Use exterior plaster with a varied, random appearance of adobe brick construction; Apply nails at random spacing on walls, apply varing amounts of plaster around each nail, & use wet burlap in the manner of a trowel, for realistic appearance of historic adobe structure.

use in school house

OLD ADOBE BRICKS IN VISUAL EXHIBIT AT OR NEAR MITCHELL SCHOOL HOUSE;

Use old, original abobe bricks in an visual exhibit of construction;

1) in an exposed interior wall (without exterior plaster to expose wall constructure);
2) in the construction of a water well adjacent to the school house;
3) in the construction of a low garden wall separating the school house from the road in front of the structure; or
4) in the construction of a bell tower or support adjacent to the school house.

CONSULTATION WITH ABODE PRESEVATION SPECIALIST;

[illegible] (408) 438-0888;
Jerone Moore, President Gunite Association, [illegible];

David Stuart, Conservation in Historic Adobe Museums,
City of San Buenaventura, PO BOX 99, Ventura, CA 93002; $7.0

Cindy

Members Present: Betty Evans, Cynthia Neal-Harris, Paul Kreutzer, Marie McNulty, Laura Mehterian, Betty Pember, Jerry Reynolds, Carol Rock, Shirley Scates and Mike Shuman

Cynthia Neal Harris opened meeting stating goals of the S.C.V.H.S. are to protect, preserve, restore and preserve the cultural value of the Santa Clarita Valley.
We are following through with the phaze 1 of the master plan.
Cynthia has the required relocation correction list.
State law says we don't need workman's comp. for volunteer workers.
Two weeks of the 45 days we had to get the Kingsberry foundation in have passed.
George will place the church and schoolhouse while waiting for the foundation man.
Cynthia will finish getting permits. Will get gravel for the road.
John Weber got permit to use park facilities in Area I of the master plan for 5 years.
Paul took old windows and wainscoating from the Kingsberry house addition.
Paul will be coordinator for Kingsberry house to plan what need doing. To research how house looked originally.
Paul has two people who will help in restoration.

Ways and Means: Carol said we need an assesment of what we need and the cost so we can ask for money. Make a list of needs for organizations that do community service.
Need status of buildings. Make a list of what buildings are left, our chances of getting them and what needs to be done to get them.
Judy Trein, a professional consultant for the state on historic buildings will come at 5:00 p.m. Thursday, July 30 to survey area.
Need to ally with the county and city to get an ordinance to save buildings from demolition.

Insurance: Cynthia to check on getting insurance for new buildings. Have been complaints about SMI. It was a good deal when we went with them but they have put on restrictions since. Some members feel we should check out other companies.

Fire: Need information about fire protection. Ask Norman Phillips what water lines are in the area. Cynthia will speak to Jack Frost about our needs.

Chapel: Jerry to coordinate. Chapel not historic. Can be used as reconstructed building.

Red school house: George would like to build a bell tower. Should it be in park? Some feel only inside furnishings are historic.

Jail House: Now vacant. Shirley is going to look into possibility of getting it.

Mitchell Adobe: Tom said he won't resume work. He gave Mike maps, plans, tools etc. Bert Scates will be coordinator.
Need to know cost of finishing so will know if we can afford to hire workers. Bulldozer man said he will volunteer 2 men to finish walls.
Have $3,000 to spend. Gunite will cost between $800 and $1,00.
We are told that gunite will make a moisture barrier between it and the adobe. Cynthia said we need to go to the county to see if we can change plans. Present it as a historical building. If static, see if the gunite is needed. Start with Don Hale, see if can be used as is or need some reinforcement.
Pug wants to have opening by November. She wants to use money left from construction for an oak tree and furniture.

Roof: According to Col. Richard Mitchell, the adobe had long redwood shingles around the turn of the century. In the '20s it had dark green roofing paper. Pam Helvey Caldwell said we could use any type of roof as the adobe had split shake, redwood 6'x2's then green roofing paper.
Albert Mitchell of Arizona said he will send us old photos.
Paul wrote summary of his telephone conversations with Col. Richard Mitchell and Albert Mitchell.

Gardens: Plan on having gardeners plant around houses. Some of the gardeners have expressed interest.
Wrought iron fence on Walnut in from of houses to be torn down were offered to the society.

Station: To get on the National Register of Historic Sights need a clear date the station was established and date that it was moved.
The station building could be historic but not the site.

Piano: Ask Jerry to contact Allan De Veritch about piano.

Calendar of Events: Need to get our activities on the chamber calendar to try and avoid conflicts.

1 (WORK REQD TO FINISH ADOBE) 2-19-88 CBB

LOCKHEED CORP. | Prepared | Checked | Approved | NAME | DATE | TITLE | Page | Model | Report No.

ADOBE -

① FIRE PLACE -

(1) DRILL CEMENT & INSTAL STUDS (BACKSIDE)
(2) FIND CHANNELS, CUT & DRILL TO FIT STUDS
(3) SQ BOTTOM OF FIRE PLACE
(4) MAKE BRACKETS TO SUPPORT WHEN ATTACHED TO FLOOR
(5) DRILL FLOOR FOR LAGGING DOWN
(6) MOVE & INSTALL - (BAR IN TIN ROOM) *
(a) WELDING BAR (ROUND) INPLACE (7a) INCREASE (SIZE OF CEMENT FOOTING)
(7) BUILD FIRE BOX (RED BRICK)
(8) PUT RE BAR UP FOR CHIMNEY - PUT UP FLUE
(9) LAY UP ROCKS - GET MORE ROCK, LAY UP MORE ROCK (MAKE IT LOOK LIKE OLD PHOTO) 8x10

② - WALL -

(10) LAY UP WALL "ADOBE" AROUND CORNERS & TIE INTO CHIMNEY
CODE? REQMT?
(11) BUILD BOND BEAM AROUND TOP & SLOPE ADOBE WALL (TOP) ON ENDS -
(12) STUD UP WALL (INSIDE) TO CARRY ROOF LOAD
(13) INSTALL & TIE TO WALL ~~GUNITE~~ STEEL REINFORCING -
(14) GUNITE - CALL MAN!
(15) CLEAN UP MESS

*BAR WILL SPACE ENDS SO OPENING IS CORRECT SIZE

③ ROOF -

(ROUGH) LUMBER) {ANAWALT HAS IT)
(16) PUT UP RAFTERS & SHEATHING & ROOFING
(17) BLOCK IN WITH ADOBE BETWEEN RAFTERS -
(18) CAULK WINDOW & DOOR FRAMES
(19) WATER PROOF OUT SIDE OF ADOBE
(20) OBTAIN & REBUILD WINDOWS TO FIT IN EXISTING WINDOW FRAMES (MAKE LOOK OLD)
(21) ADD EVE TROUGH AND DOWN SPOUT TO BACK SIDE OF BUILDING - (COVER WITH OLD WOOD)

④ (22) WHITE WASH - OR EQUAL
(23) YARD - WALK - ETC - FENCE

FORM LC 862-1

SANTA CLARITA VALLEY HISTORICAL SOCIETY—
LA Co. BUILDING & SAFETY - INSPECTION, OF
SHEETING - NAILING & TAR-PAPER—.

10/10/89

Roof Nailing ok - Nail Front
Block

[signature]

USED 16-P NAIL—

SCV Historical Society Mitchell Adobe Fri 19 April
P. Helvey

WORK TASKS PENDING : Construction : Ro

I ROOF : IF ROOF construction SIZE STAYS SAME:

ADD: A) 4 Post @ EACH CORNER - to support weight of exterior FASCIA (2x10)

Why: to support WEIGHT OF EXTERIOR FASCIA (2x10)

B) Post to Rest on Concrete Piers (4)

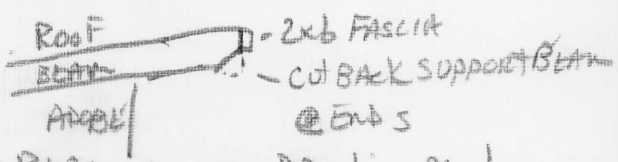
B) REMOVE Front FASCIA - RECUT Support BEAMS to ⊥ with GROUND - RECUT Front FASCIA Angle w/ ROOF

Why: DRIP LINE IMPROVEMENT.

II ROOF : IF ROOF construction SIZE IS TO BE REDUCED:

A) REMOVE ALL FASCIA BOARDS (2x10) - REPLACE W 2x6"?

B) RECUT ALL Support BEAMS to Fit 2x6 FASCIA - CUT AT Angle



C) RECUT Front Support BEAMS to NEW DRIP line Angle

D) ADD 4 POST AT CORNERS (?)

Lime White Wash

Materials: "S" Lime in a bag by Dowman Products or approved equal.

Liquid: 1 part Elmer's Carpenter's wood glue to 20 parts water. Mix this in 5 gallon buckets and have ready to mix with white wash material.

Apply coats with a soft paint brush (Marshalltown No. 829 is good).

First Coat: 1 part S lime to 8 parts liquid
Second Coat: 1 part S lime to 6 parts liquid
Third Coat: 1 part S lime to 5 parts liquid
Fourth Coat: 1 part S lime to 4 parts liquid
Fifth Coat: 1 part S lime to 4 parts liquid
Sixth Coat: 1 part S lime to 3 parts liquid
Seventh Coat: 1 part S lime to 3 parts liquid
Eighth Coat: 1 part S lime to 3 parts liquid

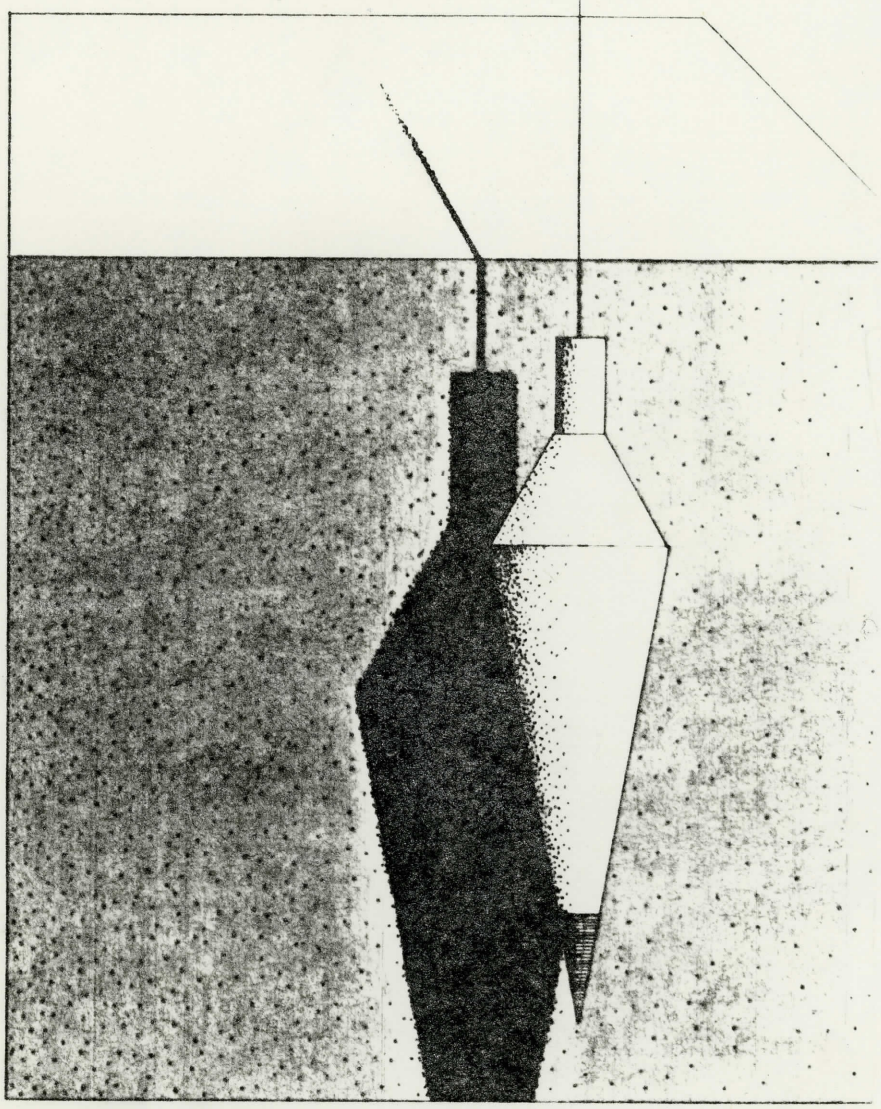
It will take about 8 coats to do the job correctly. The first few coats are thin and do not appear to be covering anything, but they are important to laying down a base. If the whitewash begins to get small surface cracks, that means the white wash is being applied too thick. It's tempting for the applier to thicken up the white wash to speed the process up, but a thicker white wash will crack on the wall.

Allow each coat to dry before applying next coat. This could be 3 or 4 hrs. on a warm day or longer on a cool day.

Note: Lime is a toxic material and burns when it comes into contact with ones skin. Appliers must wear rubber gloves and long sleeves and be very careful not to splash in eyes when stirring or pouring. When pouring dry lime stand upwind and do not breathe it in.

G I L S A N C H E Z , F A I A
ARCHITECTURE • HISTORIC PRESERVATION
3022 GLEN CANYON RD. SANTA CRUZ, CA 95066 (831) 438-0888

Building with Adobe and Stabilized-Earth Blocks



UNITED STATES DEPARTMENT OF AGRICULTURE

LEAFLET NUMBER 535

PREPARED BY SCIENCE AND EDUCATION ADMINISTRATION

BUILDING WITH ADOBE AND STABILIZED-EARTH BLOCKS

Adobe and stabilized-earth blocks are inexpensive building materials for arid and semiarid climates. They have also proven satisfactory in humid areas when protected from free water. The map in figure 1 shows the areas where they are generally used.

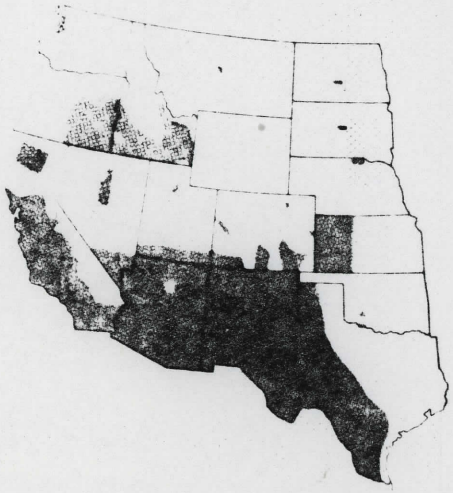


Figure 1.—The shaded areas are those in which earth has been used extensively in building construction.

Adobe blocks are generally made of wet clay loam and straw, but with some soils the straw is omitted. Stabilized-earth blocks are made of sandy clay loam, portland cement, and water, or of sandy clay loam, a bituminous emulsion, and water.

Earth-block buildings—that is, buildings built of either adobe blocks or stabilized-earth blocks—have these advantages:

- Most of the building material is available at little cost.
- The buildings are strong, durable, and fire resistant.
- The massive walls maintain a comfortable temperature.

The disadvantages of earth-block buildings are:

- They deteriorate with long exposure to water.
- Because the walls are massive, larger foundations are necessary.

A factor that may be an advantage or a disadvantage is the cost of labor. Unskilled labor can be employed, but a lot of man-hours are required to make and lay the blocks.

MAKING THE BLOCKS

Selecting the Soil

Select the soil for your earth blocks by the trial method. Start with a sandy clay loam, a soil that is neither high in clay content nor high in sand content. It should also be reasonably free of weeds, roots, and other organic matter.

Make a sample block from the soil you have selected, and let it dry. If it warps or cracks when it dries, there is too much clay in the soil and you will have to mix sand with it to make a satisfactory building block.

If the sample block crumbles, there is too much sand in the soil.

Don't make earth blocks during freezing or rainy weather.

Protect uncured blocks from frost—they will disintegrate if they are frozen before they are cured.

You will have to add clay, or a stabilizer, to make a satisfactory block.

The secret is to keep making sample blocks until you hit upon the mixture that is right for your soil.

Mixing the Soil

Prepare only as much soil at one time as you will need for one day's work. If the soil is cloddy, wet it the day before to soften the lumps.

You can mix the mud by hand with a hoe, or with a machine—a hoe-type plaster mixer, a pug mill, a dough mixer.

Adobe Blocks.—Pile the soil in a 3- to 4-inch layer. Puddle it into a mucky mud, and mix it thoroughly with a hoe. When it is uniformly wet, throw a layer of chopped straw on top and mix the straw into the mud. The layer of straw should be ¾ to 1 inch thick and the individual straws should be 2 to 6 inches long. If you mix the adobe in a machine, add 1 part straw to every 5 parts mud.

Be careful not to add too much straw. It will weaken the blocks.

Add water to the mud-straw mixture until the mixture is plastic enough to mold yet stiff enough to pick up with a six-tined fork. It should be stiff enough to hold the shape of a block when the form is removed.

Stabilized Blocks.—Portland cement and emulsified asphalt are the most common stabilizing additives. If you use asphalt, follow the directions of the asphalt-emulsion manufacturer. You can make blocks stabilized with portland cement as follows:

- Mix soil and cement at a ratio of 1 part cement to 12 parts soil. More cement will make a stronger block; less cement, a weaker one.
- Add water so that the mixture will form a block that can be handled, but will be at the same time as dry as possible. Too much water will reduce the strength of the cement.
- Sixty-five to 70 blocks, 4 by 6 by 12 inches each, can be made from one bag of portland cement mixed with soil at a ratio of 1 part cement to 12 parts soil. When curing stabilized block, keep it damp for a week or two before drying.

Molding the Blocks

There are two ways to mold earth blocks—with a machine press or by casting the mud in forms by hand.

Several earth-block presses are on the market. The blocks made with them have two advantages over cast blocks. First, the press-made blocks are more uniform in size and shape; second, the press-made blocks are usually stronger—as much as twice as strong. But the presses make only one block at a time, and pro-

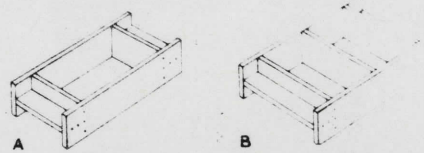


Figure 2.—Forms used for molding earth blocks. A, Single form; B, double form.

Follow the press manufacturer's instructions; they will vary slightly with the press you buy.

Forms for molding cast blocks are shown in figure 2. Build them of lightweight, surfaced wood or of metal. Make the inside dimensions the same as the block size you want. If you line the inside of the wooden forms with metal, the mud will not stick to them.

The size of poured blocks most commonly made, and their approximate weights, are:

4 by 8 by 16 inches, 28 pounds
4 by 10 by 16 inches, 35 pounds
4 by 9 by 18 inches, 36 pounds
4 by 12 by 18 inches, 48 pounds
5 by 12 by 16 inches, 53 pounds
5 by 10 by 20 inches, 55 pounds
5 by 12 by 18 inches, 59 pounds

Select a smooth, level area of ground for a molding site. If the ground does not have a good sod, scatter straw over it, or lay down heavy butcher paper or tar paper. This prevents the blocks from sticking to the ground.

Mold the blocks in the following steps:

- Fork or shovel the prepared mud into the forms.
- Press it into the forms with a tamper or with your hands. Take care to fill the corners of the forms.
- Smooth the top of the mud with a stick or trowel.

The number of blocks required to build 100 square feet of wall depends on the size of the exposed side of the block. For instance, when 4- by 10- by 16-inch blocks are laid in ½-inch mortar joints, 305 are needed for 100 square feet of wall 16 inches thick, but only 195 blocks are needed for 100 square feet of wall 10 inches thick.

A crew of 3 men should be able to lay between 300 and 350 blocks in a wall in 8 hours.

- Lift the forms up and away and clean off the mud that sticks to them.
- Repeat the process.

Two men working together can mix and mold twenty to twenty-four 4- by 12- by 18-inch blocks per hour.

Curing the Blocks

After the blocks have dried for a few days, stand them on edge so that both sides will have fairly equal exposure to the sun and wind. Let them dry this way for a week.

When they are dry enough to handle, rub the loose dirt and straw from them. Stack them in a place where they will be protected from rain. When they have dried for 2 or 3 weeks in these stacks, they should be ready to build with.

LAYING THE BLOCKS

Building Walls

Earth block are laid in a wall in much the same manner as ordinary burnt brick. Generally, mud without straw is used for mortar and the blocks are laid in ½- to 1-inch mortar joints. Lime mortar (1 part lime and 3 parts sand) or cement mortar (1 part portland cement and 2½ parts sand) is frequently used in permanent buildings. Lime or cement mortar costs more than mud, but it sets up faster and adds to the strength of the wall.

When the blocks are made of stabilized earth, stabilized earth is often used for mortar.

About 1 cubic foot of mud or mortar is required to lay 15 to 17 blocks, 4 by 10 by 16 inches each, in ½-inch mortar joints.

The bearing walls of one-story adobe buildings and the second-story walls of two-story adobe buildings must be at least 12 inches thick. They should not be taller than 10 times their thickness. For example, a wall 12 inches thick should be no higher than 10 feet.

The lower wall of a two-story adobe building should be not less than 18 inches thick.

Stabilized-earth walls should not be taller than 12 times their thickness. And permanent buildings—such as houses—should not have walls taller than 8 times their thickness, whether built of adobe or stabilized earth, and they should not have unbuttressed walls longer than 20 times their thickness.

Do not build adobe structures higher than two stories.

Brace high or long walls until they have been permanently secured by plates and ceiling or floor joists.

Lintels are needed over door and window openings to support the wall above the opening, the roof rafters, and the second-floor joists. Make the lintels the same size and of the same material as you would for a burnt brick wall. Let them extend 9 to 12 inches beyond the jamb on each side of the opening. Set them ½ to 1 inch higher than the window or door frame to allow for wall shrinking and settling.

For a permanent earth-block building, provide a continuous concrete beam (4 to 6 inches thick and as wide as the wall) under the floor and roof plates as shown in figure 3.

If you build your fireplace out of earth block, be sure you line it with fire-clay brick.

It is best to build the chimney out of burnt brick. Send a postal card to the Office of Governmental and Public Affairs, U.S. Department of Agriculture, Washington, D.C. 20250, and ask for Farmers' Bulletin 1889, "Fireplaces and Chimneys."

An earth-block building, like any other building, needs a good foundation. The foundation should be watertight concrete and should be at least 12 inches above the outside grade and 6 to 8 inches above a concrete floor. The top of the foundation should be dampproofed to prevent moisture from rising by capillary action from the ground into the wall. For details of foundation construction and dampproofing, see Farmers' Bulletin 1869, "Foundations for Farm Buildings." For a free copy, send a post card to the Office of Governmental and Public Affairs, U.S. Department of Agriculture, Washington, D.C. 20250. Include your ZIP Code in your return address.

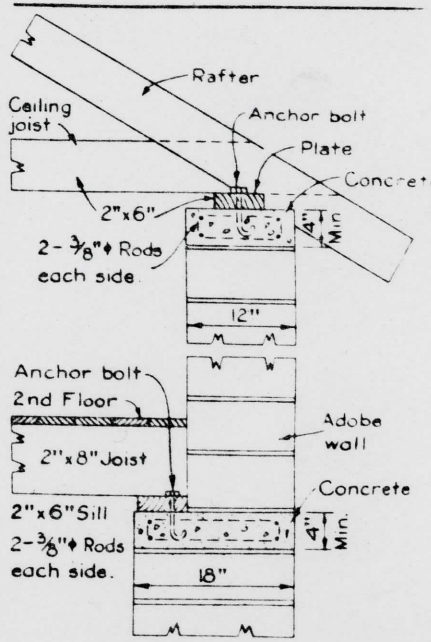


Figure 3.—Cross section of wall showing continuous concrete beams with ⅜-inch reinforcing rods.

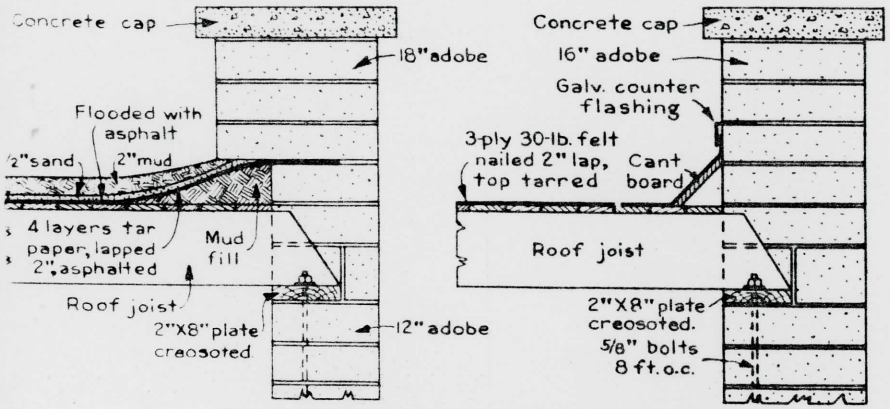


Figure 4.—Two methods of building flat roofs on earth-block buildings.

There are two ways to set door and window frames into an earth-block wall:

- Build creosoted wooden blocks into each side of the opening and nail the door or window frames to them. The creosoted blocks should be 2 by 4's at least 12 inches long; there should be three of them built into each side of the opening.
- Set bolts in the wall and bolt a rough frame in the opening. Nail the finished frame to the rough frame when the wall has dried and settled.

Reinforce these beams with two ⅜-inch steel rods on each side. The beams will distribute the floor and roof loads uniformly as well as stiffen and tie together the whole building.

Roofing Earth-Block Buildings

An earth-block building can have almost any kind of roof, as long as the roof will keep rain water away from the earth-block walls.

In arid regions, flat roofs with parapets are popular. Two methods of building flat roofs are illustrated in figure 4. Note that the top of the parapet is protected against deterioration with a concrete cap. Water is diverted from the roof-parapet joint in one case with a sloped mud fill, and in the other with a cant board and flashing.

Outlet troughs (or scuppers) are necessary to drain water from flat roofs with parapets. Build them at least 3 feet long so that they will dump the water away from the base of the wall.

You can make a good roof with felt and hot tar. Lay four or five layers of waterproof felt alternately with hot tar or asphalt. Cover the top with gravel, slag, or—in dry climates—earth.

In humid regions, the roof should be sloped and should have wide eaves. Farmers' Bulletin 2170, "Roofing Farm Buildings," describes roofs that can be adapted to earth-block buildings. Figure 5 shows how to anchor a sloped roof to an earth-block building.

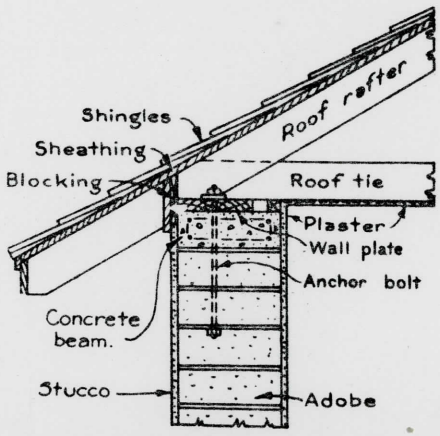


Figure 5.—Anchoring a sloped roof to an earth-block wall.

Coating Outside Walls

Uncoated earth-block walls will last from 25 to 40 years in an arid climate if the top and the base are protected from moisture. An outside coating, however, will increase its lifespan. An outside coating is essential in a humid climate unless the blocks are well stabilized with cement or asphalt.

There are three types of outside-wall coatings:

- Bituminous coatings.
- Paint and whitewash coatings.
- Plaster coatings.

Bituminous Coatings.—Hot tar, cold-pitch asphalt, and Cunningham coal-tar paint are bituminous coatings.

Cunningham coal-tar paint is a mixture of 1 part portland cement, 1 part kerosene, and 4 parts coal tar by volume. The coal tar, also known as water-gas tar, can be obtained from local gas works or naval supply stores. It does not require heating or thinning with a solvent.

Mix the cement and the kerosene first, and then stir them into the tar. If the paint is too thick, thin it with kerosene.

Prime the wall with a thin coat of water-gas tar. Then apply the paint with a brush or a swab.

Ordinary paints will not cover Cunningham coal-tar paint successfully. If you want to paint over a Cunningham coal-tar coating you will have to use asphalt-base aluminum paint as a primer coat.

Paint and Whitewash Coatings.—Earth-block walls that do not have a bituminous coating can be painted. Linseed oil-lead paint is a durable and satisfactory coating.

Prime the earth blocks before you paint with a coat of linseed oil, or size them with a glue sizing. Make the sizing by mixing 1 pound of cheap glue sizing in 1 gallon of hot water.

Thin the paint for the first coat, but apply it as it comes from the can for the second.

Whitewash is cheap and easily applied, but it is neither durable nor waterproof. You can make your own whitewash as follows:

- Screen 50 pounds of hydrated lime into 6 gallons of water.
- Let it stand overnight.
- Strain out the lumps and foreign matter.
- Thin to paint consistency with clean water.

You can make a longer-lasting, but more expensive, whitewash as follows:

- Soak 5 pounds of casein in 2 gallons of hot water until the casein is thoroughly softened (about 2 hours).
- Dissolve 3 pounds of TSP (trisodium phosphate) in 1 gallon of water. Add this solution to the casein and allow the mixture to dissolve.
- When the casein-TSP mixture is thoroughly cool, stir it into 8 gallons of cool lime paste. Make the lime paste by slaking 50 pounds of hydrated lime in 6 gallons of water overnight.
- Just before using, dissolve 3 pints of formaldehyde in 3 gallons of clear water. Slowly add the formaldehyde solution to the casein-lime solution; stir constantly and vigorously. (If you add the formaldehyde too rapidly, the casein will jell and ruin the whitewash.)

Mix enough for only 1 day's painting at a time; it doesn't keep.

Plaster Coatings.—You can plaster outside walls with mud or with stucco.

Mud plaster will improve the appearance of the building with little

cost, but it must be painted to withstand the weather.

Mud plaster should be fairly stiff and fairly sandy. Mix 2 parts sand to 1 part mud. Apply it in two coats.

Lime-stucco and cement-stucco plasters are more durable than mud plaster. Cement stucco is more durable than lime stucco.

Allow the earth-block walls to dry and settle for 2 months before stuccoing them. Apply the stucco in two coats.

The first coat of stucco must be bonded to the wall. Figure 6 illustrates one method of bonding stucco with nails. Another method is to nail the first coat to the wall with tenpenny or twelvepenny nails. The nailing has to be done within 15 minutes after applying the first coat. Drive them flush with the mortar surface; space them about 12 inches apart at random (not in a straight line). A third method is to apply the stucco over metal lath.

The second coat of stucco has to be bonded to the first. The easiest way to make this bond is to scratch the first coat before it hardens. A board with nails driven through it, like a sharp rake, makes an excellent scratcher.

To make lime-stucco plaster, mix 1 part lime putty with 3 parts sand. Make the lime putty by slaking 44 pounds of hydrated lime or 27 pounds of quicklime in 6 gallons of water. Let the hydrated lime slake for at least 24 hours; let the quicklime slake for at least a week before mixing the plaster.

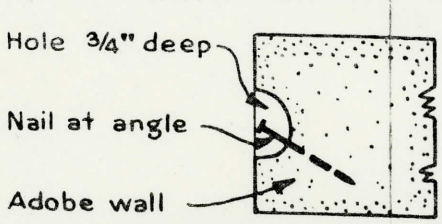


Figure 6.—**Holes about three-fourths of an inch deep are made in each block by striking the block with a sharp tool. Eightpenny or tenpenny nails are driven in at an angle until the heads are flush with the wall.**

To make cement-stucco plaster, mix 1 part portland cement with about 3 parts sand. If you add 10 pounds of hydrated lime for each bag of cement the stucco will be easier to work.

Coating Inside Walls

Inside walls can be coated with paint or plaster like outside walls. They can be plastered first with mud and then with lime plaster. They can be plastered with mud and then painted, calcimined, or papered. They can be plastered with lime mortar over metal lath.

Animals like to lick and rub against earth walls. Protect the corners with corner boards and the doorjambs with casings. Coat the interior walls that are within the reach of tied or penned animals with a bituminous coating or portland-cement plaster.

Reviewed by

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Beltsville, Md. 20705

Washington, D.C.

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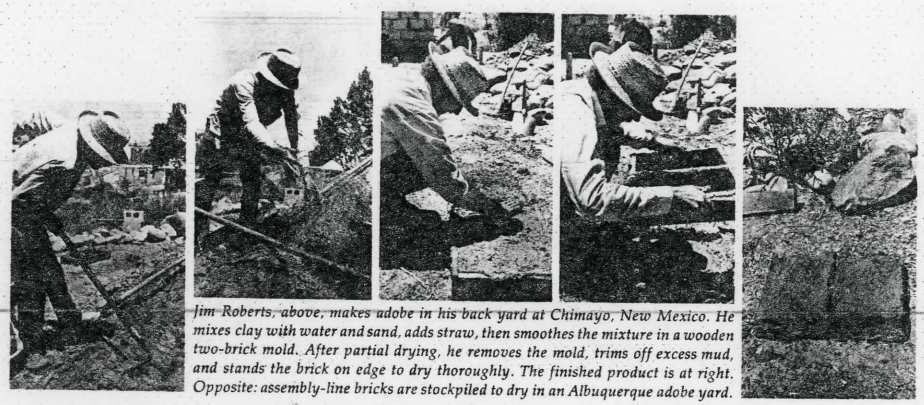


Jim Roberts, above, makes adobe in his back yard at Chimayo, New Mexico. He mixes clay with water and sand, adds straw, then smoothes the mixture in a wooden two-brick mold. After partial drying, he removes the mold, trims off excess mud, and stands the brick on edge to dry thoroughly. The finished product is at right. Opposite: assembly-line bricks are stockpiled to dry in an Albuquerque adobe yard.

Building with Adobe

Adobe is cheap and easy to work with—no one will notice if you make a mistake. It has also sparked a thriving new overground architectural movement

by John Neary

PHOTOGRAPHS BY JOAN NEARY

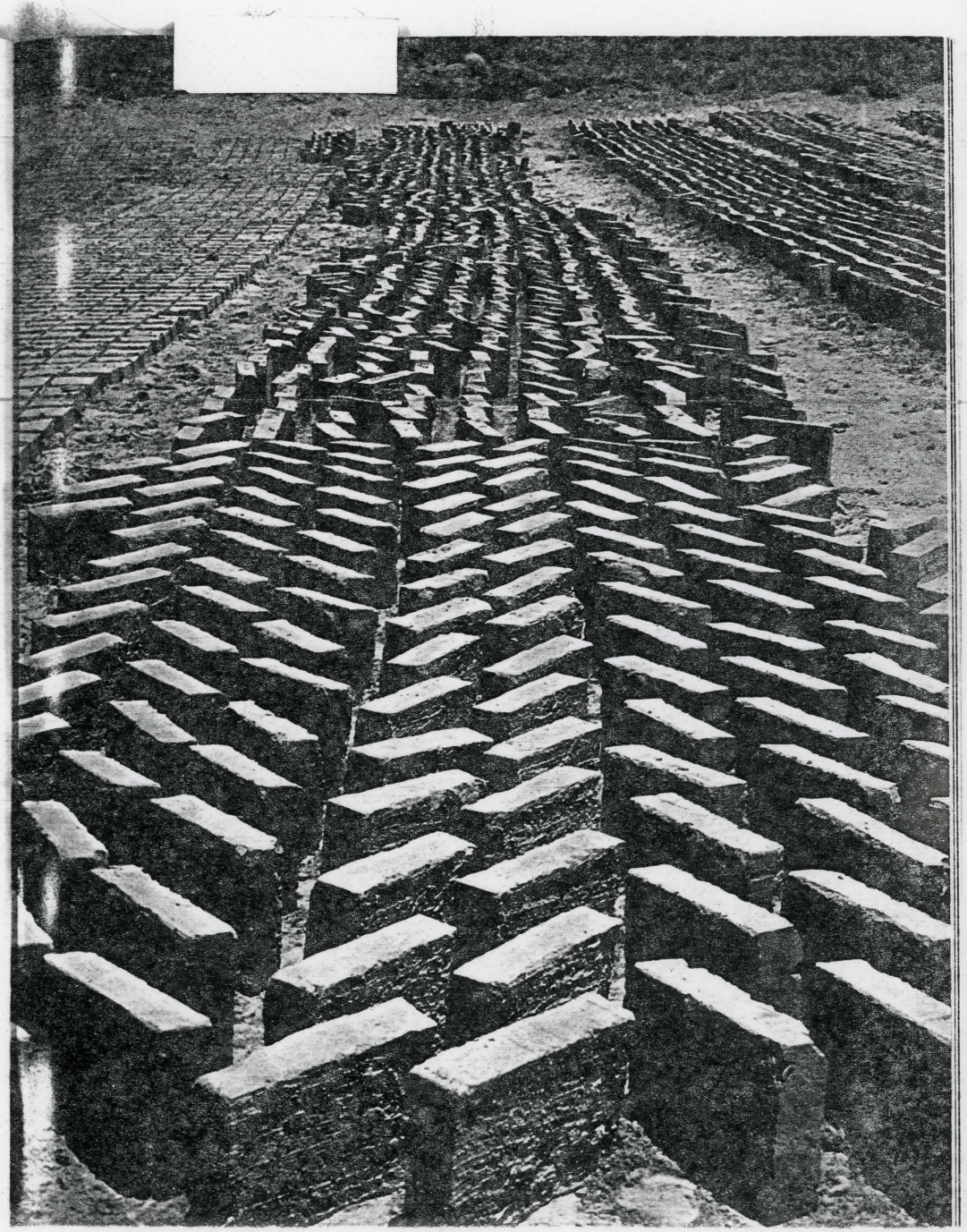
"I WONDER," my oldest son asked me as we worked on what was going to be his bedroom, "what my friends back East would say if they knew I was going to live in a house made of mud—and with a roof made of trees!"

We had a pretty good idea of what they would say: forget it. Having arrived on our own at the notion of putting up an adobe, or mud, house, however, we had an almost comfortable feeling about it. We ourselves had moved from typical flabbergasted eastern bafflement at the idea of adobe to staunch southwestern love of the stuff.

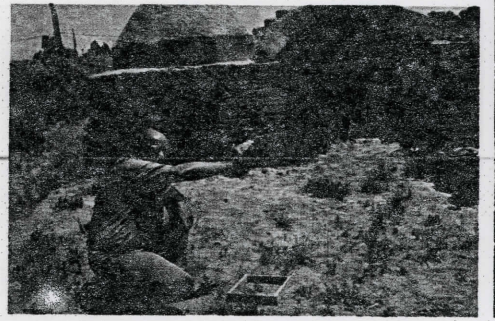
First came the problem: we had bought a tiny house in spite of its size because we loved the land around it, stark and rough and empty. Adding on to the various outbuildings—stable, greenhouse-utility building, a sixteen-by-thirty-seven-foot kennel, the workshop—would, we assured ourselves, pose no great challenge; we had, after all, rebuilt three previous houses.

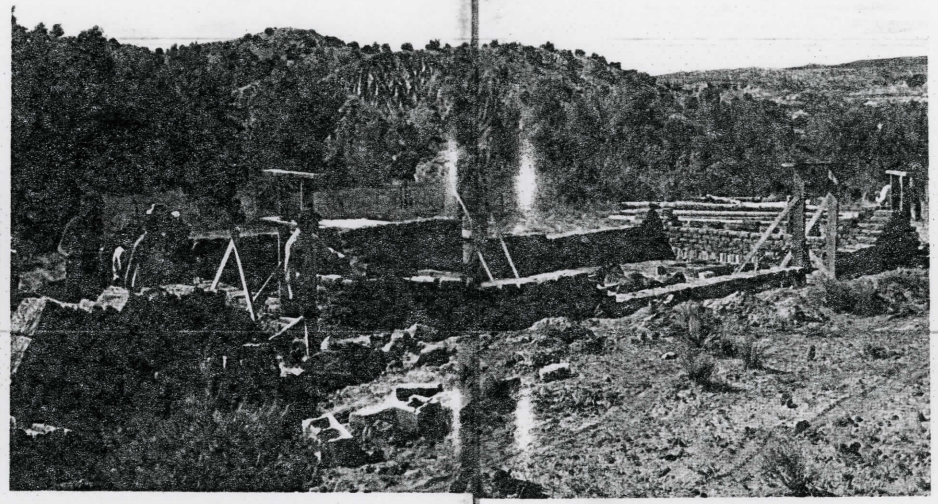
Any New Mexican would have immediately begun making adobe, but all our earlier remodeling had been done in the East, where buildings are made of steel, concrete, brick, and kiln-dried lumber—never with mud and hardly ever with unmilled lumber. Naturally enough, then, as my wife Joan and I sketched out possible solutions to our space problem, we kept right on thinking in eastern terms. Frame, stone (we certainly have an abundance of rocks on our fourteen acres), heavy timbers, silo caps, and even fiberglass prefab domes—we considered them all, but somehow they didn't seem right.

All the while we were ignoring the insistent advice of many of our new friends, who maintained, in the words of one of them, that "adobe is the *only* way to go out here." The scorching sun dries wood to parchment fragility in no time, they argued; cinder blocks and concrete crumble quickly if water seeps in to freeze and expand in the bitter winters; stone is too much work and brick is too costly. Whereas,

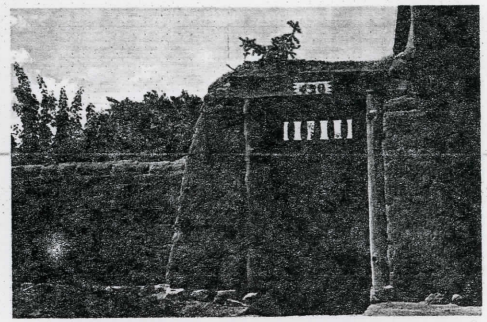


Paul McHenry, below, experiments with new ways of using adobe, based on his travels in the Middle East. In his own back yard, he has tested thinner bricks and built vaults like those in the rear.





More traditional uses of adobe appear in the Santa Fe gateway below and in the partially constructed house at left, which the Neary family helped build for David and Melody McCormick of Chimayo.



they pointed out knowingly, adobe is all around us.

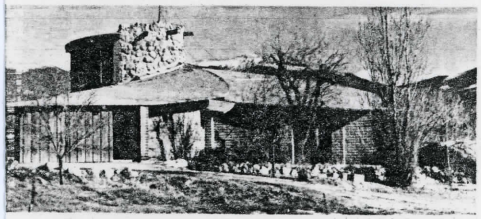
Indeed it was, and adobe was beginning to make a lot of sense. Not only could I behold our friends' handsome houses, ranging from multiroom palaces to snug one-room homesteads, but they were even willing to let me work on them until I learned to tame the wild adobe. There was, too, the preponderance of evidence from the past. People in the Southwest have used adobe for centuries to construct everything from hovels to forts to cathedrals. I had seen adobe plaster in Indian ruins, a thousand years old yet still crisply intact; adobe mortar holding in place chunks of rock set to block drafts that blew centuries ago; houses built on the Maxwell Land Grant more than a hundred years ago, their roofs taken for firewood but their walls still standing.

Then, one afternoon, Joan and I went out into the hills for a walk. A couple of canyons over from ours we passed the burnt-out ruin of what had once been an imposing adobe mansion, its walls in good shape after nearly twenty winters and summers. Farther up that canyon we came upon another building site, this one much newer: a foundation, a capped well, a pile of more than a thousand adobe blocks, the ones on the outside starting to erode. Someone had started to build and apparently changed his mind.

We decided on the spot that if the price was right, we would buy these blocks and build our addition of adobe. We located the owner and struck a deal: ten cents a brick (half the going price) and the bricks were ours—all fifteen tons of them. Adobe blocks are astonishingly dense. A brick of the standard ten by fourteen by four inches weighs about thirty pounds; more if it is damp. All told, it took us twenty trips up and down the canyon to move the bricks.

Once we started building, the work went surprisingly fast; in about three weeks we had our adobe shell up on the sixteen-by-twenty-foot concrete slab where the four dog runs had been. Everybody in the family pitched in. In fact, everyone who happened by was pressed into service as we raced the oncoming winter: school chums of our boys, neighbors, even a college roommate who was vacationing from his job in a New York bank.

We need not have rushed so. Adobe, we learned, is tough stuff. Our little annex has since been snowed and rained on many times, and although it is not yet entirely plastered, it is still in fine shape. Joan chinked the cracks between the blocks with more mud to cut drafts; a tin roof and a big wood stove got the boys cozily through the winter.



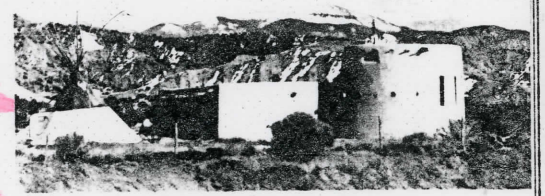
This spiral-roofed adobe, stone, and wood house in Nambe, New Mexico, was designed by Allen McNown for his brother-in-law.

I am glad now that we decided on adobe. We got the room we needed quickly, relatively cheaply, and, we think, attractively and also joined what amounts to one of the most vigorous architectural movements under way today. Several college courses are offered in how to build with adobe; new titles are regularly being added to the syllabus of books, articles, and technical papers about adobe. The movement even has its own newspaper, the *Adobe News*, to bring our growing fraternity the latest on how to be old-fashioned in as up-to-date a way as possible.

Adobe comes in three forms: loose dirt, an admixture consisting mostly of clay with some sand in it; wet dirt, the aforementioned with just enough water added to make it goopy, so it can be used as mortar; and solid dirt, bricks made of adobe mud that has been shaped in wooden forms and then allowed to dry in the sun. Adobe bricks often contain straw for added strength, as well as various alloy elements like empty cigarette packs, old bottle caps, or squashed beer cans. Manure is not uncommon as an ingredient, although authorities differ on its virtues in more than trace amounts. In fact, authorities differ on just about every conceivable aspect of adobe except one: its plasticity.

Adobe, everyone likes to say, is "plastic," adobe is "forgiving." In other words, you don't have to be an authority to work with it, and if you make a mistake, chances are nobody will ever know. Things can be a little wrong, a little out of level or off plumb, a little crooked, and still work. On the other hand, adobe can be carried to lovely extremes of complexity. An architect friend of mine, Allen L. McNown, likes to build with adobe blocks laid so perfectly as to need no plaster, and one of his houses, a chambered nautilus of a place with a spiraling roof, has become a local landmark. Adobe is attracting attention precisely because of that sort of versatility, and also for another reason: its appeal in these energy-stingy days as a self-insulating material (though authorities differ on this, too).

The one unfortunate aspect of adobe is that you have to be a resident southwesterner to work with it. A government map of adobe use published by *Adobe News* shows the material employed mostly in New



Chez Robert, a new and expensive restaurant in Pojoaque, near Santa Fe, New Mexico, has walls constructed entirely of adobe.

Mexico, western Texas, a smidgeon of Colorado and Utah, a bit of Oklahoma, western Kansas, southern California, and central Nevada. As Marcia Southwick says in her book, *Build with Adobe*, "The only way you can join the club is to live in an arid or semi-arid region. Unless they contain a somewhat expensive asphalt stabilizer, adobe bricks will wash away in a hard, direct rain; and they melt like an ice cube in a summer julep if they stand in a puddle."

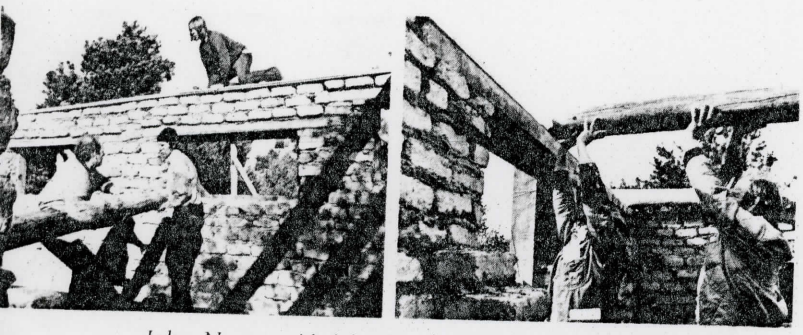
If you meet the residence requirements and if you are lucky, you can get adobe merely by liberating it with a shovel. If you do not live above the right kind of clayey soil, you can order adobe dirt delivered by the cubic yard. We bought ours to make mud for mortaring the blocks from a nearby Indian construction firm that also supplied us with more blocks when we needed them. Such companies make adobe bricks on an assembly-line scale, but even there the principles are the same—and the same feelings often motivate the workers.

I found some kindred spirits at New Mexico Earth Industries, a medium-size adobe-making outfit in Albuquerque, where Albert Reed, a University of New Mexico English major and an aspiring writer, spends his days at the controls of a giant front-end loader. He scoops up a few cubic yards of soggy mud and then dumps it atop a gang form for Mike Gourdin, a young man from Boulder, Colorado, and Joe Almers, a South Carolinian studying architecture at UNM, to rake into the interstices of the form and smooth into blocks. Mike and Joe split two and a half cents per block and get an extra cent each for standing up the cured blocks and scraping them off with a trowel. The three can make about twenty-four hundred blocks a day, and they genuinely seem to enjoy doing so. "It makes me feel good," Mike told me, "that I'm working with nothing but earth and not destroying anything."

Each summer such virtues attract a sizable number of young—and not so young—people to the Southwest. Some of them have wound up in my driveway, seeming rather unhappy when I tell them that a plain-looking pile of dirt is what they came so far to see. Many of them first heard about adobe in a large book called *Adobe: Build It Yourself*. The volume, bound in mudproof covers and costing $7.95, has surprised its publisher, the University of Arizona Press, by selling out two editions, a total of nine thousand copies in less than two years and in parts of the country where adobe is seen only in the movies. The popularity of the book has utterly astonished its author, builder Paul Graham McHenry, Jr. "I'm besieged," he says, "by architecture students who think it'd be great to learn how to make bricks and build with adobe. They don't seem to have much staying power. By the end of the second day, most of the romance is gone."

Adobe's disciples disagree as much about McHenry as they do about everything else. His book and the courses he teaches at UNM and the College of Santa Fe are criticized as loudly as they are praised. It doesn't seem to bother McHenry; in fact, even he now disagrees with McHenry. After seeing ancient earth buildings in Iran, he recanted on some of his more controversial pronouncements, such as the essentialness of bond beams atop the walls to tie them together against tilting. Now he feels that bond beams are unnecessary and so are foundations—as long as the walls are at least twenty inches thick. In a state where undisturbed soil averages a compression strength of three thousand pounds per square inch, why waste time and concrete? Authorities will probably dispute that change of mind, just as they seem hesitant to endorse his latest enthusiasm. In his yard McHenry is experimenting with miniature domes and arches and vaults, telling visitors of the sixty-foot arches he saw in Iran. "The dome has tremendous possibilities," he believes, "because the material for this whole roof structure is under foot. All we do is wind up with a big hole in the ground from the dirt we use."

I listen to McHenry, fascinated. Just as soon as I finish plastering my little annex, I think I will begin work on a dome. I will start small, however, perhaps just an *horno*, an Indian-style beehive-shaped oven, for openers. Then we need more bedrooms and a place for the pool table. You see, I am a convert now, agreeing wholeheartedly with my son's friends from back East who, to his considerable anxiety, did show up out here and who appraised his mud house and exclaimed, "Wow!"



John Neary, aided by his family and friends, lifts a viga, *or roofing beam, into place atop the adobe addition to his house.*

ADOBE NEWS has been published bimonthly since 1974; a year's subscription costs $8. The editor, Joe Tibbetts, also founded the Adobe Association of America, a clearing-house of information for adobe and solar-energy enthusiasts. Address all inquiries to *Adobe News* at P.O. Box 702, Los Lunas, New Mexico 87031, or call (505) 865-4761.

Historic Project

3/11/97

Photo by Tony Mas...

Barbara Johnson and Maybelle Fischer, members of the Oak of the Golden Dream Questers received a lesson in adobe construction from Mike Shuman Friday, March 6 at the Newhall restoration site. The Questers donated money to the reconstruction project.

Mitchell Restoration Committee Begins Fundraising Drive

The Mitchell Adobe Schoolhouse, built in 1872 by Colonel Thomas Mitchell, was the first school in the Sulphur Springs School Park in Newhall.

The reconstruction cost is estimated at $10,000. Barbara Johnson and Maybelle Fischer of the Oak

tion to the newly initiated fundraising drive.

For information about the restoration project, one may call

members of the Oak of the Golden Dream Questers received a lesson in adobe construc-

donated money to the reconstruction project.

Mitchell Restoration Committee Begins Fundraising Drive

The Mitchell Adobe Schoolhouse, built in 1872 by Colonel Thomas Mitchell, was the first school in the Sulphur Springs School District (the second oldest school district in Los Angeles County).

The structure was bulldozed in August 1986 to make way for a housing development. The Santa Clarita Valley Historical Society is now seeking funds to rebuild and restore the schoolhouse. The restoration will take place next to the relocated Saugus Train Station, itself a victim of progress.

The Mitchell Adobe Restoration Committee is now seeking donations for making adobe blocks which will be used to rebuild the structure at the site near Hart Park in Newhall.

The reconstruction cost is estimated at $10,000. Barbara Johnson and Maybelle Fischer of the Oak of the Golden Dream Questers recently contributed the first donation to the newly initiated fundraising drive.

For information about the restoration project, one may call Pug Riggins, 252-8293.

Fellowship Meeting

The Santa Clarita Valley Daytime Women's Aglow Fellowship will meet at 9 a.m. Thursday, March 12 at the Canyon Country Buffet, 26453 Friendly Valley Parkway in Newhall. A continental breakfast will be served at the cost of $3 at the door.

Reservations are preferred. One may call Joyce, 259-8909, or Karen, 259-0060.

"Encouragement: The Door To Hope," is the title of the message.

Guest Speaker Dee Cosola was raised in Southern California and has lived in the Antelope Valley for the past 20 years. She has been married for 30 years and has raised three children. She is a Bible teacher and counselor.

CITY OF SANTA CLARITA

23920 Valencia Blvd.
Community Development Department
Building & Safety Division, Suite 304
Santa Clarita, CA 91355-2196
PHONE 805 255-4935 FAX 805 254-3538

Building PERMIT

Permit No: 29703954 B

Map Book 4641-A2 Tract No:
Parcel No: Fire Zone: No
Use Zone: Flood Zone

Bldg Addr: 24101 SAN FERNANDO RD Unit:

Owner: SANTA CLARITA HISTORICAL SOCIETY
Address: PO BOX 221925
NEWHALL CA 91321
Phone:

Business/SP#:
Tenant:
Architect:
Designer:
Engineer:
Soils Eng:

LICENSED CONTRACTOR'S DECLARATION

I hereby affirm under penalty of perjury that I am licensed under the provisions of Chapter 9 [commencing with Section 7000] of Division 3 of the Business and Professions Code, and my license is in full force and effect.

OWNER

Contractor State Lic. No. Class

Address

City Zip Code Tel. No.

Signature Date

OWNER-BUILDER DECLARATION

I hereby affirm under penalty of perjury that I am exempt from the Contractor's License Law for the following reason [Sec. 7031.5, Business and Professions Code]:

☑ I, as owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale [Sec. 7044, B. & P.C.].

☐ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project [Sec. 7044, B. & P.C.].

☐ I am exempt under Sec. _____, B. & P. C. for this reason:

D A Kreutzer

DATE OWNER'S SIGNATURE

WORKERS' COMPENSATION DECLARATION

I hereby affirm under penalty of perjury one of the following declarations:

☐ I have and will maintain a certificate of consent to self-insure for workers' compensation, as provided for by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued.

☐ I have and will maintain workers' compensation insurance, as required by Section 3700 of the Labor Code for the performance of the work for which this permit is issued. My workers' compensation insurance carrier and polity number are:

CARRIER POLICY NO.

(This section need not be completed if the permit is for a project with a valuation of one hundred dollars ($100) or less)

☐ I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the worker's compensation laws of California, and agree that if I should become subject to the worker's compensation provisions of Section 3700 of the Labor Code, I shall forthwith comply with those provisions.

D A Kreutzer

DATE APPLICANT

WARNING: FAILURE TO SECURE WORKERS' COMPENSATION COVERAGE IS UNLAWFUL, AND SHALL SUBJECT AN EMPLOYER TO CRIMINAL PENALTIES AND CIVIL FINES UP TO ONE HUNDRED THOUSAND DOLLARS ($100,000), IN ADDITION TO THE COST OF COMPENSATION, DAMAGES AS PROVIDED FOR IN SECTION 3706 OF THE LABOR CODE, INTEREST, AND ATTORNEY'S FEES.

CONSTRUCTION LENDING AGENCY

I hereby affirm under penalty of perjury that there is a construction lending agency for the performance of the work for which this permit is issued [Sec. 3097, Civ. C].

LENDER'S NAME LENDER'S ADDRESS

This permit will expire if work is not started within 6 months of issuance or if the work is abandoned or suspended for 6 months.

I certify that I have read this application and state that the above information is correct. I agree to comply with all City and County ordinances and state laws relating to building construction, and hereby authorize representatives of this City to enter upon the above-mentioned property for inspection purposes.

D A Kreutzer

SIGNATURE OF APPLICANT OR AGENT DATE

WILL THE APPLICANT OR FUTURE BUILDING OCCUPANT HANDLE A HAZARDOUS OR ACUTELY HAZARDOUS MATERIAL OR MIXTURE IN AN AMOUNT EQUAL TO OR GREATER THAN THE AMOUNTS SPECIFIED ON THE HAZARDOUS MATERIALS INFORMATION GUIDE? YES ☐ NO ☑

IF YES, IS THE PROJECT SITE WITHIN 1,000 FEET OF A SCHOOL? YES ☐ NO ☑

WILL THE INTENDED USE OF THE BUILDING BY THE APPLICANT OR FUTURE BUILDING OCCUPANT REQUIRE A PERMIT FOR CONSTRUCTION OR MODIFICATION FROM THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD) SEC. PERMITTING CHECKLIST FOR GUIDELINES. YES ☐ NO ☑

I HAVE READ THE HAZARDOUS MATERIALS INFORMATION GUIDE AND THE SCAQMD PERMITTING CHECKLIST. I UNDERSTAND MY REQUIREMENTS UNDER CHAPTER 6.95 OF CALIFORNIA HEALTH & SAFETY CODE CONCERNING HAZARDOUS MATERIALS REPORTING AND FOR OBTAINING A PERMIT FROM THE SCAQMD. YES ☐ NO ☑

Asbestos Notification: ☐ Notification letter sent to AQMD or EPA

☑ I declare that notification of asbestos removal is not applicable to addressed project.

D A Kreutzer

SIGNATURE OF AGENT

Description of Work
CONSTRUCT NEW COVERED TRELLIS FOR HISTORICAL SOCIETY.

Job Type & Occupancy Grou TRELLIS\MX
Type of Constructio VN
Use of Existing Building TRELLIS
Square Feet:
Number of Stories:

Parking spaces required Provided:
SprinklersReq No YardsReq
Soil/GeoReq No House Map#

Plan Check By JB Plan Check Date 8/6/97
Issued By MPB Issued Date 8/6/97

Special Conditions:
DO NOT EXPIRE PERMIT, NO FEES FOR HISTORICAL SOCIETY

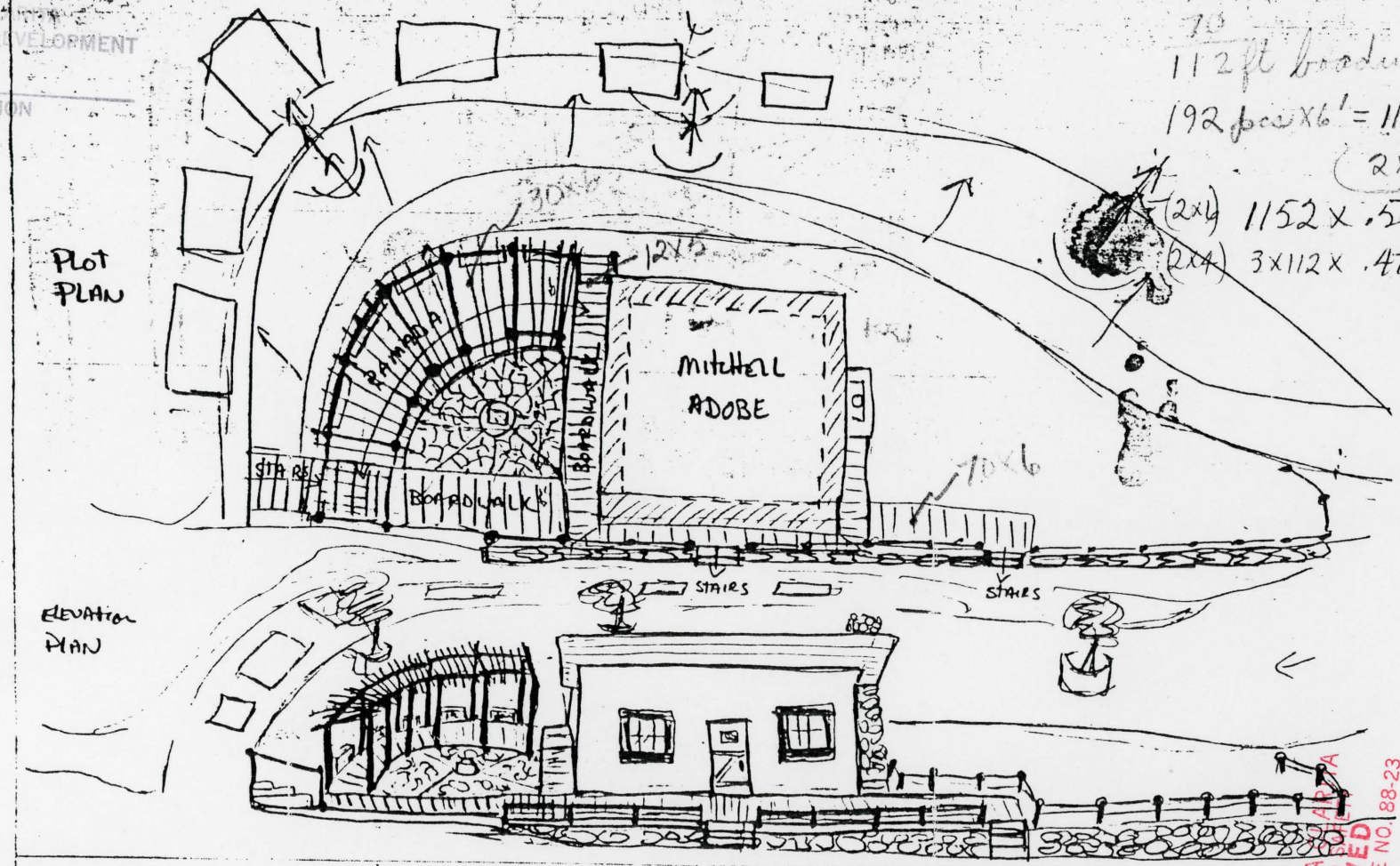
Final By:	Final Date:
Valuation	$0.00
Total Fees	$0.00
Total Payment	$0.00
Balance Due	$0.00

Notes:

SCVHS - Heritage Junction

MITCHELL ADOBE AREA

SITE DEVELOPMENT DESIGN - INITIAL PLANNING STAGE (3/14/93)



30
12
10
112 ft boardwalk =
192 pcs x 6' = 1152 l.f.

(2x6)
(2x4) 1152 x .56/ft = 645
(2x4) 3 x 112 x .47/ft 158
803

AUG 6 1997

APPROVED
DEPT. OF COMMUNITY DEVELOPMENT
PLANNING DIVISION

App. for trellis no where near streets
height ok

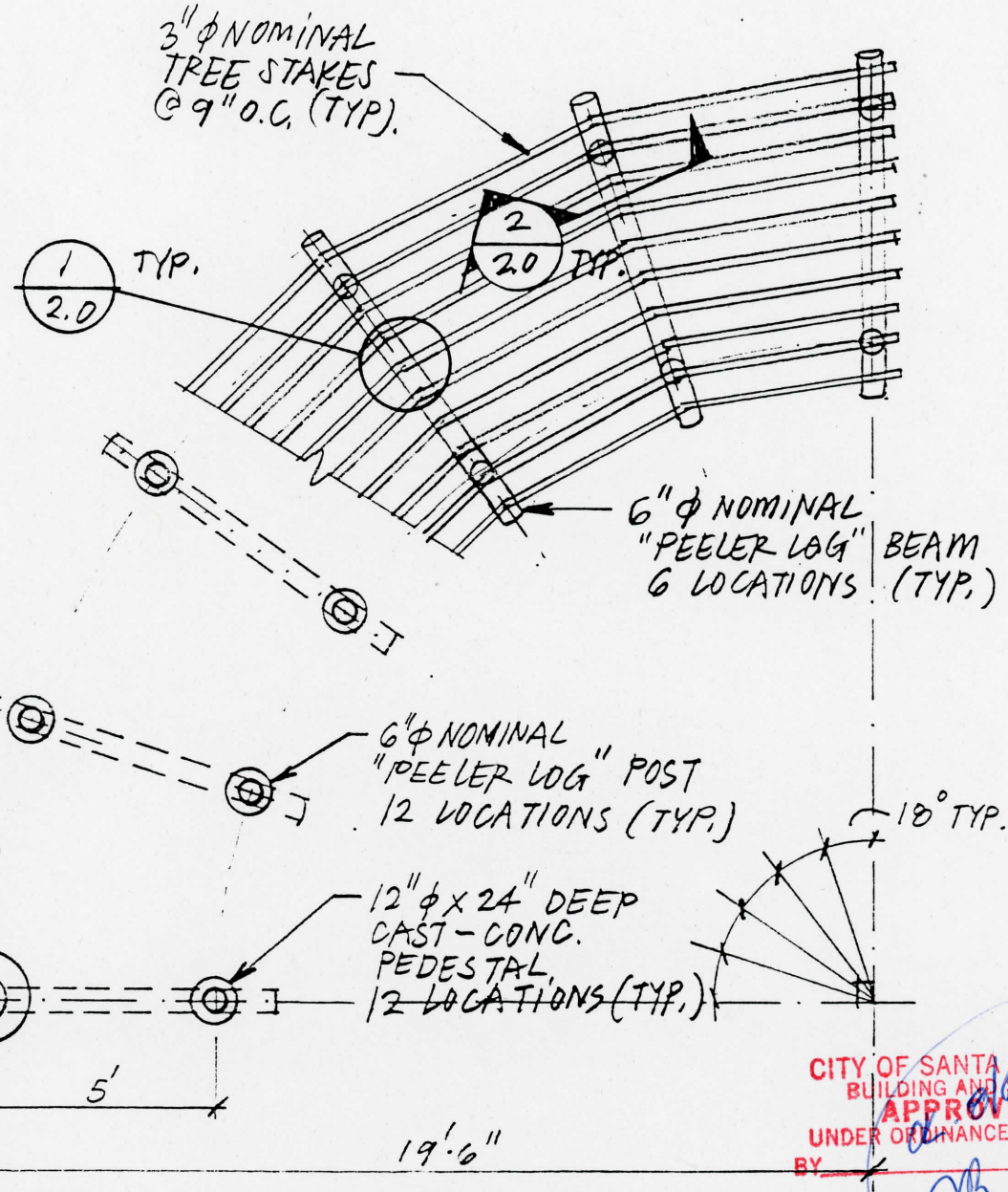
Paul
251-3145

2101 SFR

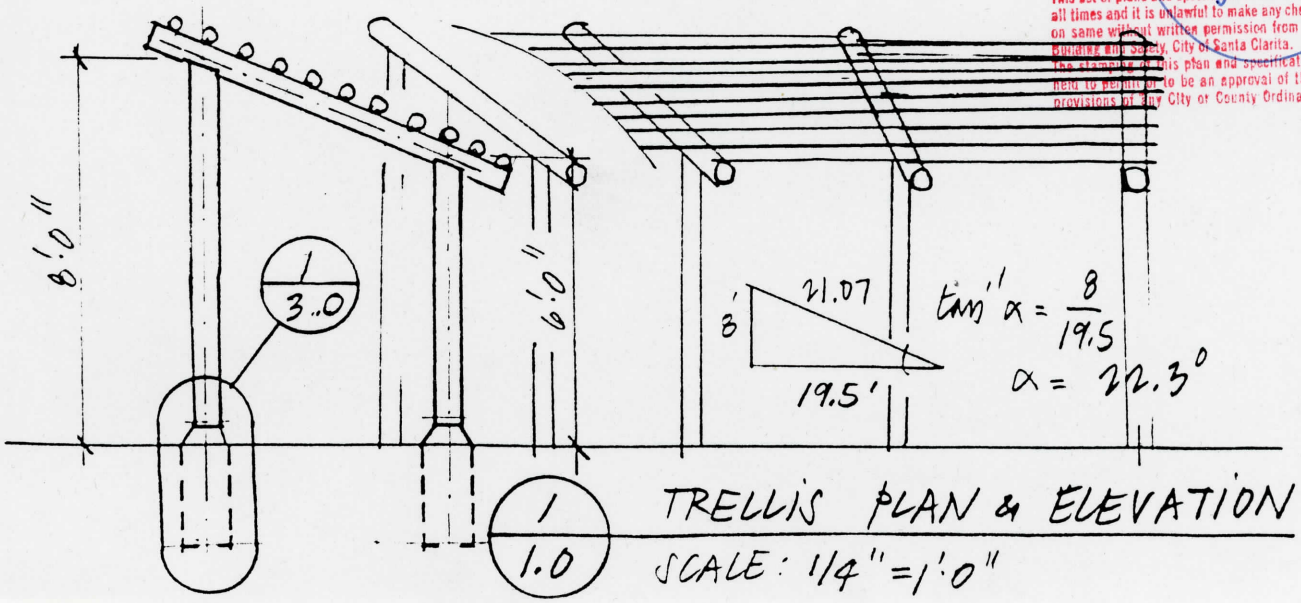
CITY OF SANTA BARBARA
BUILDING AND SAFETY
APPROVED
UNDER ORDINANCE NO. 88-23
BY
AUG - 6 1997

This set of plans and specifications MUST be kept on the job at all times and it is unlawful to make any changes or alterations on same without written permission from the Department of Building and Safety, City of Santa Clara. The stamping of this

SANTA CLARITA HISTORICAL SOCIETY | JULY 1997 | PAUL K 1/5

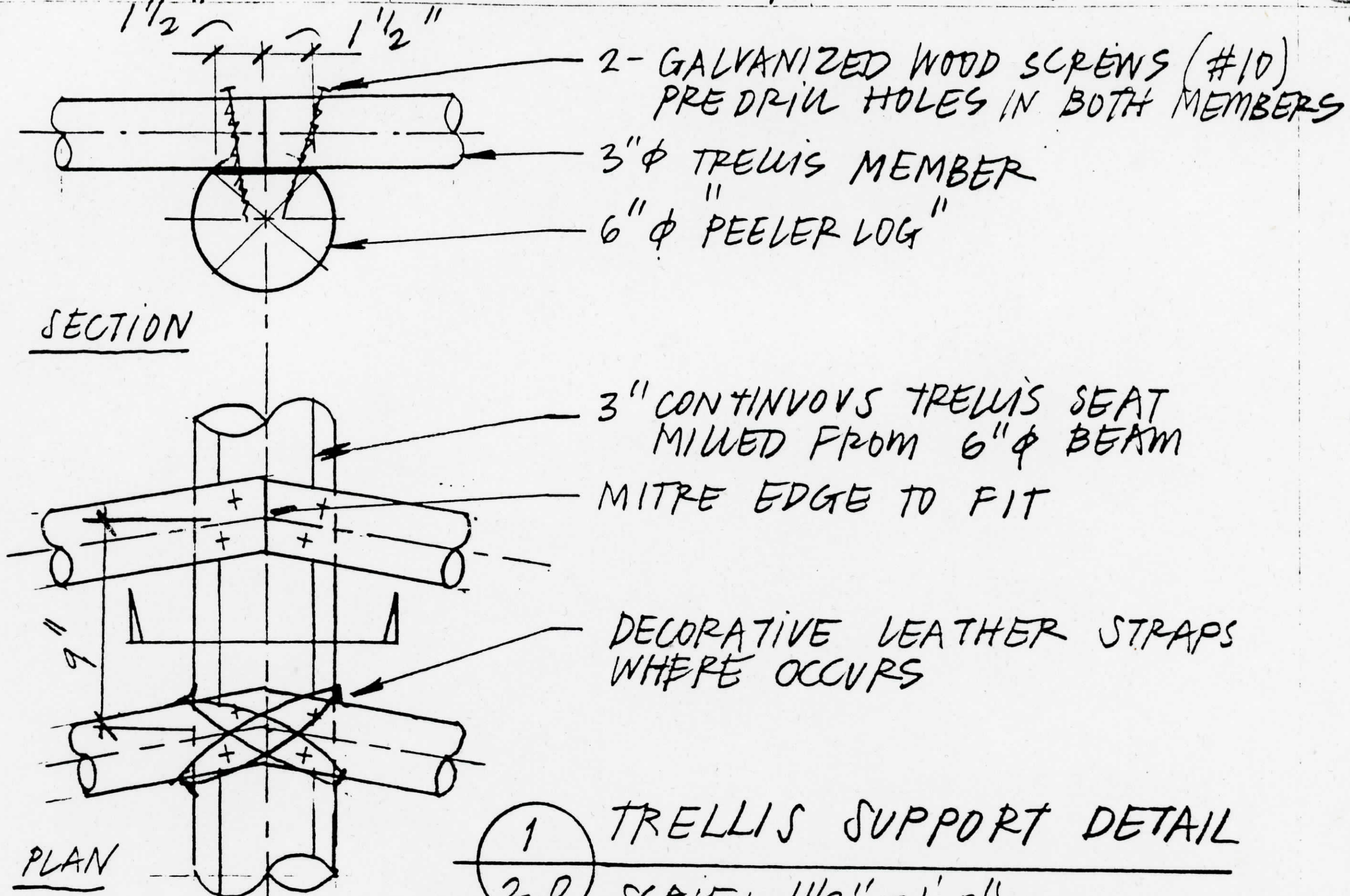


PLAN



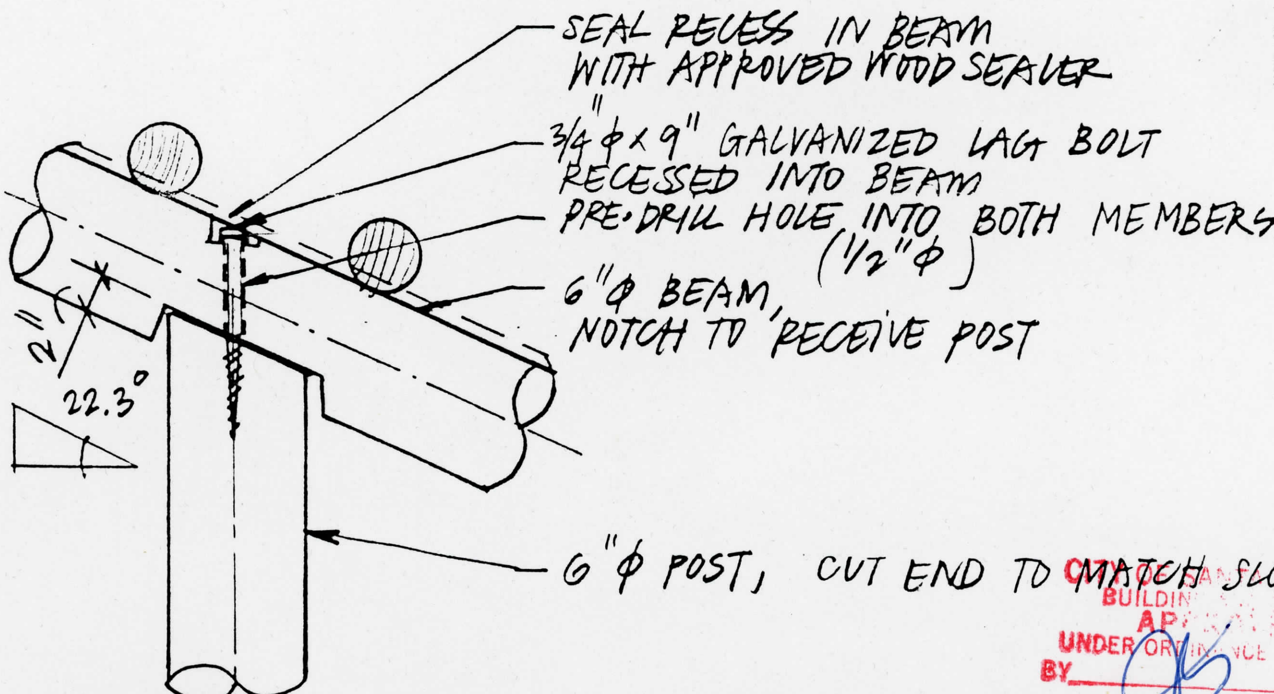
1 / 1.0 TRELLIS PLAN & ELEVATION

SCALE: 1/4" = 1'-0"



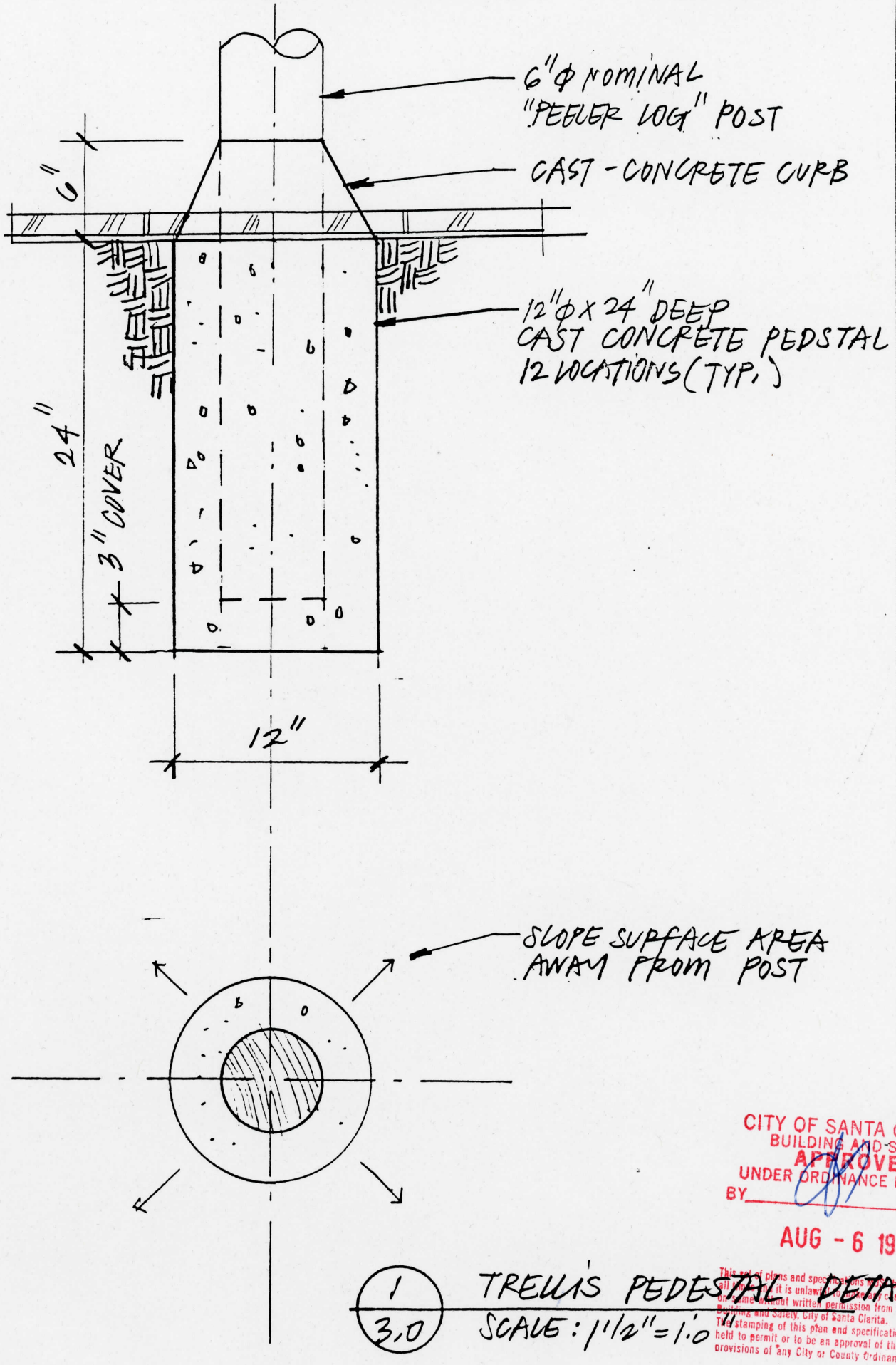
1/2.0 TRELLIS SUPPORT DETAIL

SCALE: 1½" = 1'-0"



2/2.0 TRELLIS BEAM DETAIL

SCALE: 1½" = 1'-0"



1/3.0 TRELLIS PEDESTAL DETAIL

SCALE: 1"1/2" = 1'0

CITY OF SANTA CLARITA
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BY
AUG - 6 1997

LATERAL DESIGN REF: 1994 UBC

NON-BUILDING STRUCTURE $F = ZICW = (0.4)(1.0)(2.0) = 0.8W$

W:

12 6"ϕ × 7' AVG POSTS $(12)\ 40\text{pcf} \times \pi(0.25)^2 \times 7 = 660\text{ lb}$

6 6"ϕ × 8' BEAMS $(6)\ 40\text{pcf} \times \pi(0.25)^2 \times 8 = 376\text{ lb}$

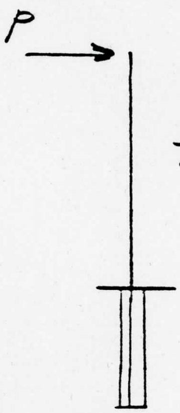
50 3"ϕ × 7' AVG TRELLIS $(50)\ 40\text{pcf} \times \pi(0.0625)^2 \times 7 = 172\text{ lb}$

TOTAL WEIGHT = 1208 lb

$F_T = 0.8W = 966\text{ lb}$

$F_1 = \dfrac{966}{12} = 80\text{ lb}$ → 5 SECTION WT = 241.6 lb

USE 250 lb FORCE ON 6"ϕ POST



$P = 250\text{ lb}$

$S_1 = 1500\text{psf}$

NON CONSTRAINED POST (1806.7.2.1)

$$d = \frac{A}{2}\left(1 + \sqrt{1 + \left(\frac{4.36h}{A}\right)}\right)$$

$$A = \frac{2.34P}{S_1 b}$$

TRY 12"ϕ PEDESTAL

$S_1 = 1500\text{psf}$

$$A = \frac{2.34(250\text{ lb})}{1500\text{psf}(1.0)} = 0.39$$

$$d = \frac{0.39}{2}\left(1 + \sqrt{1 + \left(\frac{4.36(7)}{0.39}\right)}\right) = 1.93\text{ FT}$$

USE d = 24"ϕ CONC. PEDESTAL

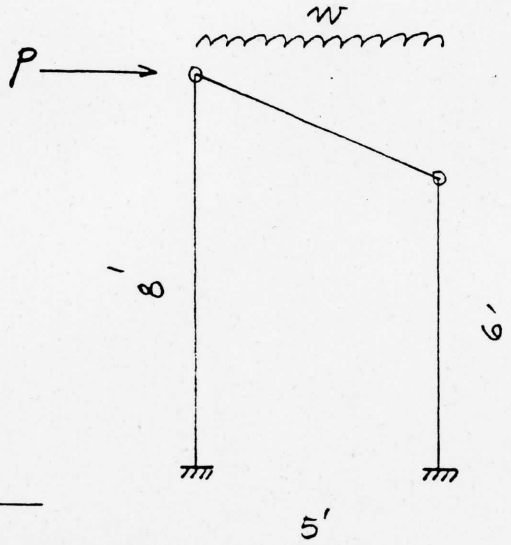
POST DESIGN

$M@BASE = 250\text{ lb}(7')(12) = 2100\text{ lb}\cdot\text{in}$

$$S_{REQ'D} = \frac{2100\text{ lb}\cdot\text{in}}{1115(1.33)} = 14.16\text{ in}^3 < 16.33\text{ in}^3\ (6"\phi)$$

↖ EQ

OKAY



DEAD LOAD:

TRELLIS MEMBERS (TREE STAKES) :	5 psf
LIVE LOAD :	5 psf
	10 psf

VERTICAL DESIGN:

$w = 10\,psf \times 10' = 100\,plf$

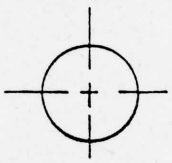
$M = 100\,plf\,\frac{(5)^2}{8}(12) = 3750\,lb\cdot in$

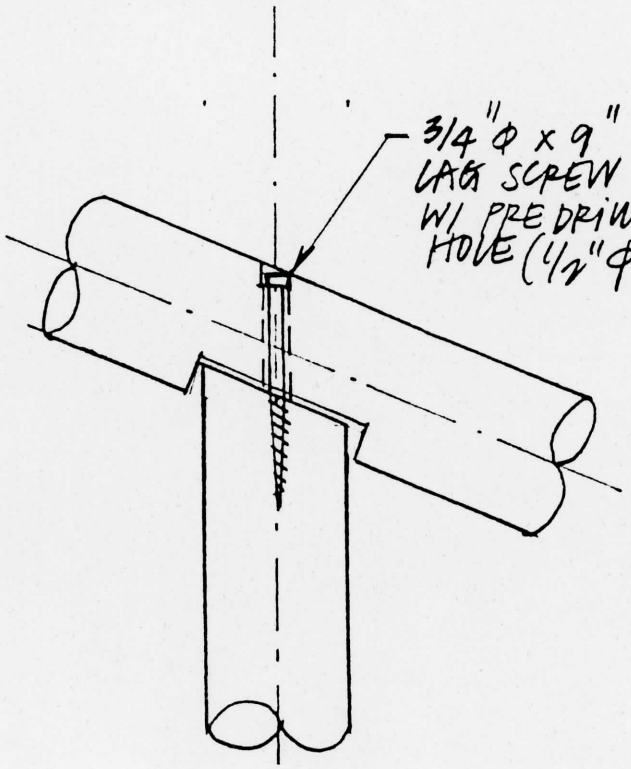
6"φ NOMINAL P.T. PEELER CORE

$F_b' = (875\,psi)(1.180)(1.08) = 1115\,psi$

TABLE 23-1-A-4 DOUGLAS FIR Nº 2

$S_{REQ'D} = \frac{3750\,lb\cdot in}{1115\,psi} = 3.36\,in^3\,(OK)$





$S = \frac{1}{32}\pi d^3 = 16.33\,in^3$