

# Archaeological Excavation of the “Old Warehouse” and Granary at La Purísima Mission State Historic Park

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## Abstract

Granaries and warehouses were of prime importance to the missions of California and yet little attention has been paid to these utilitarian buildings. The foundations of a massive structure known only as the “old warehouse” located at the second site of Mission La Purísima Concepción near Lompoc, California have been test excavated in 1964 and again in 1995-96 with the intention of trying to better understand this building (or buildings) that somehow escaped any more than cursory mention in the mission records.

## Abstracto

Trojes y almacenes fue lo mas importante para las misiones de California y aunque poca importancia se prestaron a edificios utilitarios. Las bases de una masiva estructura conocida solamente como “el almacén viejo” ubicado en la segunda parte derecho de la Mision La Purísima Concepción cerca de Lompoc, California, las excavaciones fueron examinadas en 1964 y luego en 1995-96 con la intension de tratar de comprender mejor este edificio o (edificios) que de una forma se escaparon algo mas que apresurada mension en los informes de la misión.

## Introduction

One of the first structures to be built at a mission, *asistencia*, or rancho was the granary building. It was necessary to provide subsistence to the Indian population which was expected to live at the facility once the program of *reducción* or gathering together of the surrounding Indians was under way. In many cases the granary may have initially doubled as the church until the actual church was built. Mention of the construction of these buildings was generally made in the annual reports of the mission under the term “*fabricas*,” which referred to building activities. However, in the case of Mission La Purísima, there appears no such reference.

Very little was known about the old warehouse (*almacén*) and, perhaps, granary (*troj*) apart from dimensions recorded during its period of deterioration (1854; 1874) and what little was visible following a partial excavation in 1964. However, this information suggested a very large building, 200 feet long by 58 feet wide with 4 feet 8 inch thick walls. In addition, the 1996 excavation project identified a foundation extending at least 43 feet south of the main building (Fig. 1).

Professor James Deetz and a crew from UC Santa Barbara (UCSB) did some test work on the northern part of the site in 1964 (Deetz 1964), but published only very preliminary reports

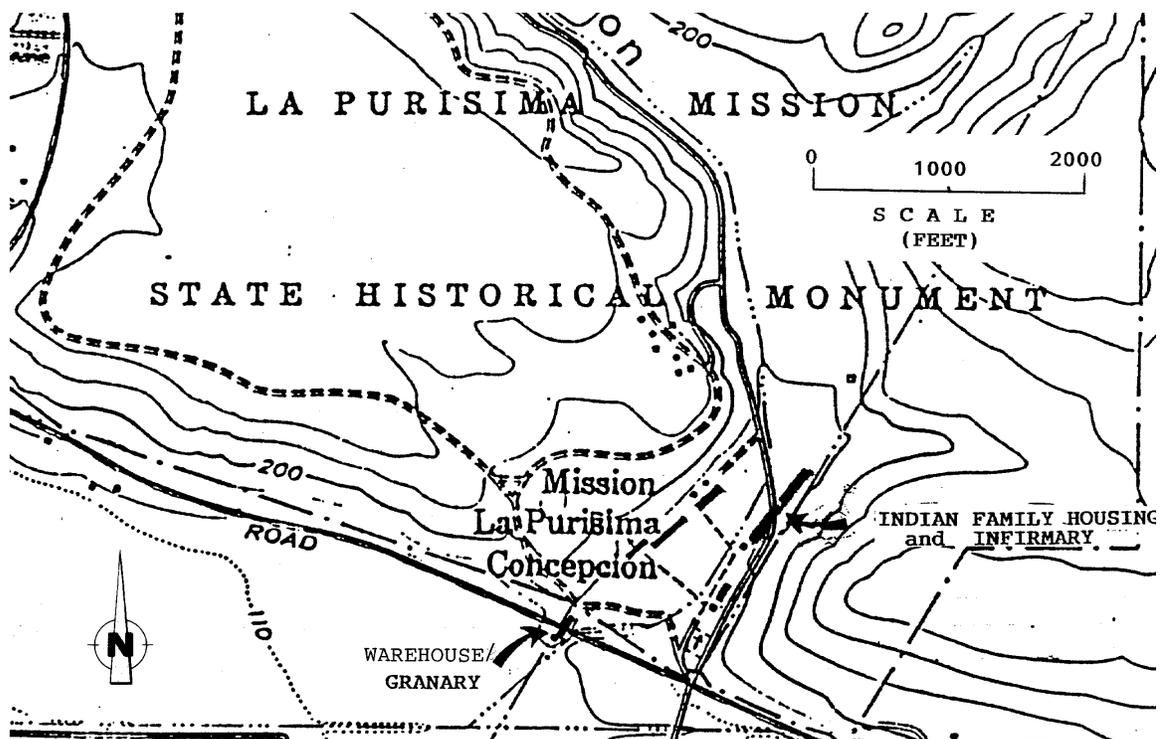


Fig. 1. La Purísima Mission State Historic Park, showing location of Granary/Warehouse.

(Deetz 1964:4; Humphrey 1965:183). The artifacts recovered from the excavation associated with Feature 11 (Deetz' appellation for the Granary site), along with catalogue references to a small number of artifacts said to be surface finds, are stored in the archives of La Purísima Mission State Historic Park (SHP). Student field notes and a photograph of the site were found in the files of the Collections Section of the California Department of Parks and Recreation (DPR).

Results of archeological work completed by UCSB (1964) and California State Parks (1995, 1996) on this site are found in this report. Portions of foundations of the four outer walls and the interior central wall were excavated and recorded. A covered water channel built into a lime plaster form was found along the east wall in the southern portion of the building, but not at the north end.

### Historical Background

Mission La Purísima Concepción de Maria Santísima was initially founded on December 8, 1787, south of the Santa Ynez River in what is now the City of Lompoc (Fig. 2). It was established to convert the large Chumash population in the vicinity (cf. Engelhardt 1932). Previously, Mission San Luis Obispo (1772) and Mission Santa Barbara (1786) had been



established in Chumash territory, with Mission La Purísima following a year later. The last mission established in this area was Santa Inés, founded in 1804. Although the high numbers of Chumash coming into the various missions in their territory has generally been attributed to intense proselytizing by the Spanish missionaries, an interesting alternative explanation has been recently put forward concerning the results of severe climatic disturbances during the latter part of the 18th century. These disturbances may have wreaked havoc with the supplies of native foods and caused many Indians to come to the missions for a source of reliable food (Larson et al. 1994). The fact that granaries provided valuable stores of food is key to evaluating the importance of the granaries as part of the mission complex. Simultaneously, the establishment of ranchos in the areas adjacent to La Purísima (first, the Ortegas at Rancho El Refugio and later, Francisco Reyes on his rancho near Casmalia [*ca.* 1802-1808]) (Spanish Archives n.d.) with the abundance of cattle, caused a major destruction of the grass-seed food resources of the Chumash Indians (Farris n.d.). With the depletion of native grain supplies by cattle, the Indians were increasingly forced to depend on the planted fields of the missions.

In late December, 1812, a major earthquake caused great destruction at Mission La Purísima. In the aftermath, it was decided to move the mission to another location, north of the Santa Ynez River. In a lengthy letter dated March 11, 1813 (Payeras 1995:66-69) to Governor José Joaquín de Arrillaga, the two missionaries stationed at La Purísima, Fr. Mariano Payeras and Fr. Antonio Ripoll, provided a number of arguments in support of reestablishing the mission north of the river in the canyon known as Los Berros. One of these arguments was the desirability of the proximity to the agricultural fields to which an aqueduct had been extended (Payeras 1995:67). Aside from the concerns over future earthquakes at the old mission site, they argued that the main Camino Real linking the missions ran north of the river. The location of the old mission necessitated an inconvenient and even dangerous (in the rainy season) crossing for travelers and the missionaries. At any rate, the suggested new location was approved, and the process of building a new mission was begun by September of 1813 (Payeras 1995:70). This new location, known to the Chumash by the place-name Amúu, is the site that later became La Purísima Mission SHP. Although not specifically stated in the mission records, I hypothesize that a granary had been built at the Los Berros Creek site before the 1812 earthquake. With the problems of transporting the grain across the broad, sandy riverbed using *carretas*, it would have been logical to build a structure on the north side of the river near the fields.

The mission gained prestige when Fr. Mariano Payeras was appointed Father-Presidente and later Comisionado of the missions of California. It also experienced the residual effects of the successful Mexican Revolution of 1822 and the immediate impacts of the Chumash Revolt of 1824. During this latter event the mission was temporarily taken over by the revolutionaries, and there was a certain amount of destruction. Between these two events, Fr. Payeras died and was buried at the mission in April, 1823. The 1830s brought the secularization of the missions. In a letter dated November 30, 1834, the place was referred to as the “Pueblo de la Purísima” (Archives of California n.d. 51:301) with Domingo Carrillo as *comisionado* and Fr. Marcos Antonio Vitoria as *ministro*. On August 18, 1835, Carrillo provided an inventory of the

property to the *Administrador*, Joaquin Carrillo (Archives of California n.d. 51:17) in which he referred to the “*efectos en almacén*.” By July 23, 1835, the term “*pueblo de los berros*” was used for the mission community (Archives of California n.d. 42:514). In 1838 and 1839 there were references to property and the value of movable goods in which the term “*almacén*” was used (Archives of California n.d. 51:125-126).

Subsequently, the lands were parcelled out to various rancheros although a small amount of land was given to some of the Indians. As of February 28, 1839, there were only 242 Indians reported living at Mission La Purísima (Archives of California n.d.:51:128). About 47 former neophytes from Mission La Purísima were living on the old mission rancho of Los Alamos in that year, but 1839 was also the year in which the rancho was given to José Antonio de la Guerra as a land grant. The new owner promised in writing that the Indians would be permitted to live there undisturbed (Johnson 1987:2-3). The Indian community, both at the ex-Mission La Purísima and at Los Alamos, was subsequently decimated in a smallpox epidemic in 1844 (Johnson 1987:3; 1993:144).

In 1845, under the last Mexican governor of California, Pió Pico, the mission property was for the most part granted to Ramon Malo and to Juan Temple (Engelhardt 1932:64). However, after the American takeover of California the following year, the rights to property were once again in dispute. The Catholic Bishop of California, Joseph Sadoc Alemany, made claims on the property of many of the former missions. In the case of La Purísima, he was eventually awarded several specific portions of the former mission including the old priests’ quarters and adjoining buildings, the former church and adjacent cemetery, the vineyard and the old warehouse, but not the land in between (Engelhardt 1932:70). It is interesting that when the formal land grant commission surveys were made the first three portions were included in the grant known as the Mission La Purísima while the warehouse was located separately on a peculiar tongue of land that was part of the grant known as the Mission Vieja de la Purísima. This piece of land was solicited by Joaquin and José Antonio Carrillo to enlarge their Lompoc Rancho holdings (Land Grant Case 61 S.D.). The portion of land north of the Santa Ynez River was not included in the Mission Vieja de la Purísima grant.

### **The *Almacén* (Warehouse) and *Troj* (Granary)**

#### **Background History and Interpretation**

Early archival information on the warehouse and granary is very scant. In a letter dated “ca. late April 1816” (Payeras 1995:91) from Payeras to Lieutenant José de la Guerra y Noriega is a comment suggesting that no warehouse (*almacén*) had yet been built. (Note that document 769 of the de la Guerra papers at the Santa Barbara Mission Archives shows the date as “ca. 1815.”)

Your *habilitado* [Maitorena] requests shoes and wants them right away. What do you want me to tell both of you? That I only have my old sandals. That there is no tanned leather right now and that rather than make those articles it would be better to make adobes instead with which to build a guardhouse, a

warehouse, and houses for the troops since all the old buildings are propped up and are falling down [*que mejor que esos ingredientes deverian hacerse adoves para edificar guardia, almacén y casa para la tropa, pues todo lo viejo esta apuntalado, y se esta caiendo*].

Mission annual reports provide data on how many *fanegas* were produced. One fanega equals 1.575 bushels, according to Barnes et al. 1981:69. Note that Engelhardt (1932:130) used a multiplier of 1.666 in his computations. Table 1 presents gross harvest figures for wheat, barley, corn, beans, and peas for the years 1813 to 1834 (Engelhardt 1932:130). This quantity of grain would have required at least one storage granary. Considering the very large harvest in 1813, the first year at the Los Berros Creek site, one would expect a storage granary to have been built quickly.

Table 1. Crop Harvests of Mission La Purísima 1813-1834 (in fanegas) (Engelhardt 1932:130).

Year	Wheat	Barley	Corn	Beans	Peas	Total (fs)	Total (bu)
1813	3600	2000	2000	26	380	8006	12609
1814	1000	—	2000	200	270	3470	5465.3
1815	2000	50	400	80	350	2880	4536
1816	2500	600	1000	120	1044	7264	11441
1817	2800	500	1000	200	586	5086	8010.5
1818	3000	200	200	60	1031	4491	7073.3
1819	2900	200	900	125	500	4625	7284.4
1820	2435	—	—	54	37	2526	3978.5
1821	4000	334	400	300	294	5328	8391.6
1822	1587	—	900	106	25	2618	4123.4
1823	1500	—	200	15	25	1740	2740.5
1824	—	—	—	—	—	1221	1923.1
1825	—	—	—	—	—	2316	3647.7
1826	2000	—	80	60	13	2153	3391
1827	2000	60	800	70	9	2839	4471.4
1828	1000	58	200	82	35	1375	2165.6
1829	300	80	400	89	33	902	1420.7
1830	700	56	100	20	17	893	1406.5
1831	—	—	—	—	—	967	1523
1832	—	—	—	—	—	669	1053.7
1833	—	—	—	—	—	—	0
1834	—	302	150	115	48	1228	1934.1

It was not until 1854 that reference to the structure was made in the map accompanying the Alemany Grant Claim (Fig. 3; cf. Hageman and Ewing 1991:12). The placement and dimensions of the ruin are reconfirmed as late as 1874 in a survey (Nidever 1874a; 1874b).

Although the Henry Miller (1985:3) drawing of 1856 does not include the area of the old warehouse, his comment that all the buildings were in ruins except for the priests' quarters indicates that by that time the warehouse was also in a state of collapse. The original Alemany

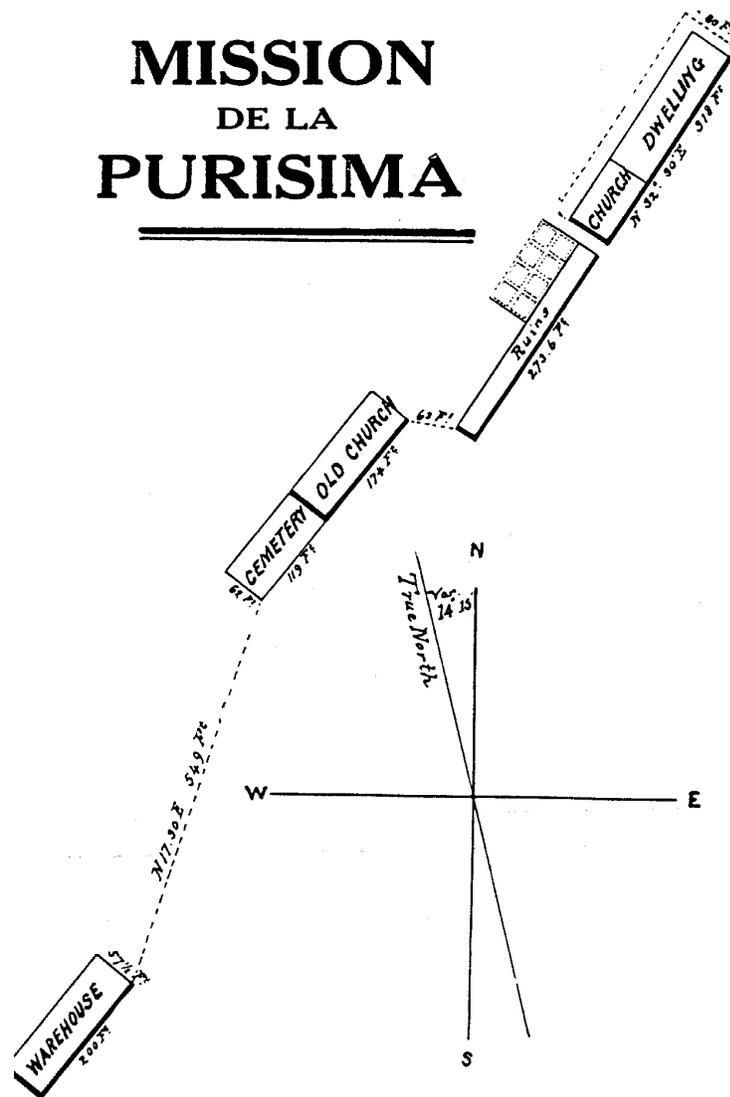


Fig. 3. Survey Plat of Church lands at La Purisima ca. 1854 (from Engelhardt 1932:70).

Plat map from a survey a few years before Miller's visit must have represented not a complete structure, but one already in partial ruin.

On January 22, 1883, Bishop Francis Mora sold the properties including the warehouse to Eduardo de la Cuesta of Santa Barbara, and so the Mission La Purísima once again left the hands of the Catholic Church (Engelhardt 1932:74-77). Unfortunately, the description of Parcel 4 is no more informative than earlier designations of the "old warehouse."

As of 1938, the site was owned by Basil Fox (Hageman 1938; Hageman and Ewing 1991:74-77). In 1943 a new road to the military camp where Vandenberg AFB is today was built across the middle of the site. This busy thoroughfare, known as Purísima Road or the Lompoc-Casmalia Road, is still in place. Although the northern portion of the granary site had long been the property of the California Department of Parks and Recreation, the southern portion was finally acquired in 1978 from the Rivaldi Brothers. However, it was not until 1995 that a serious effort was made to test the full dimensions shown on the 1854 and 1874 surveys (Farris 1995).

### **Evidence for the Granary (aka Old Warehouse)**

Large warehouses (*almacén, almacenes*) or granaries (*troj, trox, trojes*) are occasionally mentioned in the annual reports on structures (*Fabricas*) at the missions (*cf.* Egenhoff 1952:9, 12, 18, 21; SBMA 1802). One such granary was completed at San Juan Bautista in 1802 (Farris 1991:52) and measured 60 *varas* (165 feet) by 14 *varas* (38.5 feet). Another was reported for the Asistencia of Temecula (in San Diego County) that was 193 feet long by 27 feet wide (McCown 1955:10-12) which is approximately the length of the La Purísima granary, but less than half the width (Fig. 4). The only drawing I have seen of a California mission granary/warehouse is the one of the rancho of San Mateo, completed in 1850 by William H. Dougal (1949:18). This granary is shown with six doorways on one side with a series of five high windows near the eaves, presumably to provide ventilation for the loft (Fig. 5). A series of *vigas* appear at the approximate level of the *tapanco* (loft) or possibly a second story. This building was severely damaged in the 1868 earthquake and demolished at that time (Weber 1975:69).

Fr. Fermín Lasuén (1965:28) provides a valuable listing of the contents of a working granary at Mission San Borja in Baja California in 1773. For an example of the contents of a granary at the termination of the missions, there is the final inventory (1835) of Mission Santa Cruz (SBMA) which lists the following:

- 1600 fanegas of barley
- 600 fanegas of wheat
- 30 fanegas of corn
- 13 fanegas of lentils
- 7 fanegas of *frijoles* (beans )
- 3 fanegas of peas
- 50 strings of chiles
- 1 pot

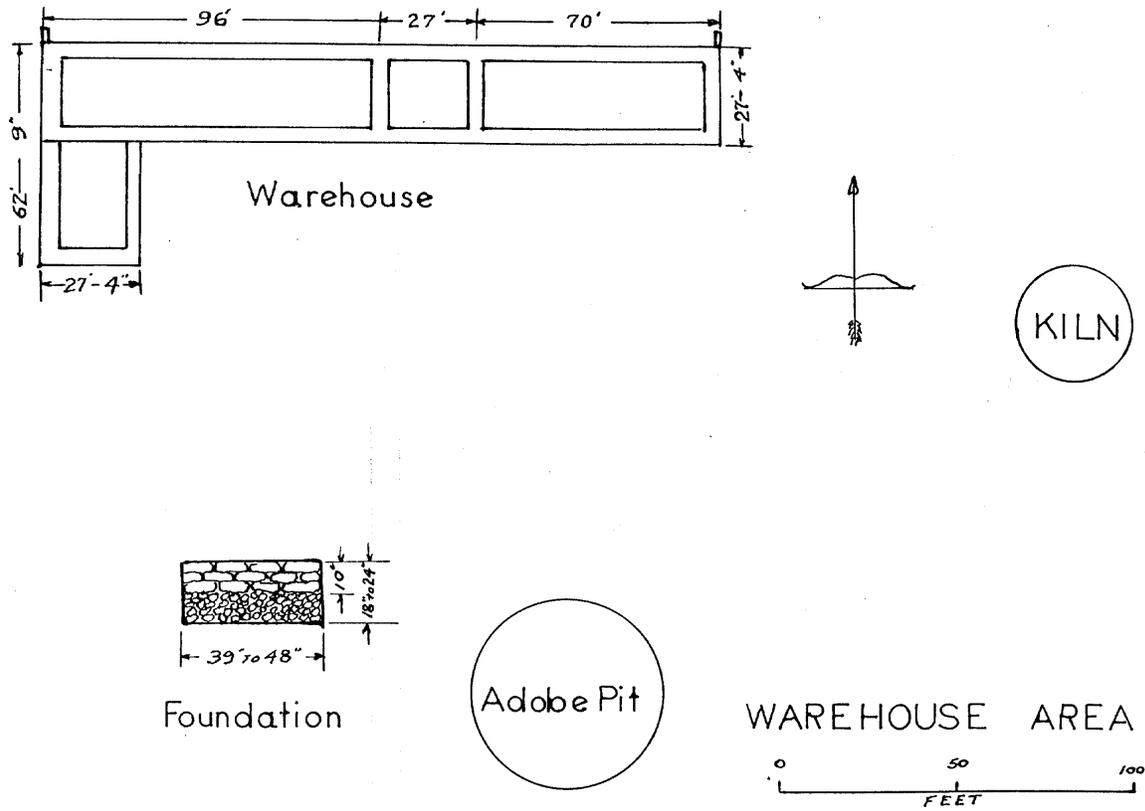


Fig. 4. Plan Drawing of Granary Site at Temecula Asistencia (McCown 1955).

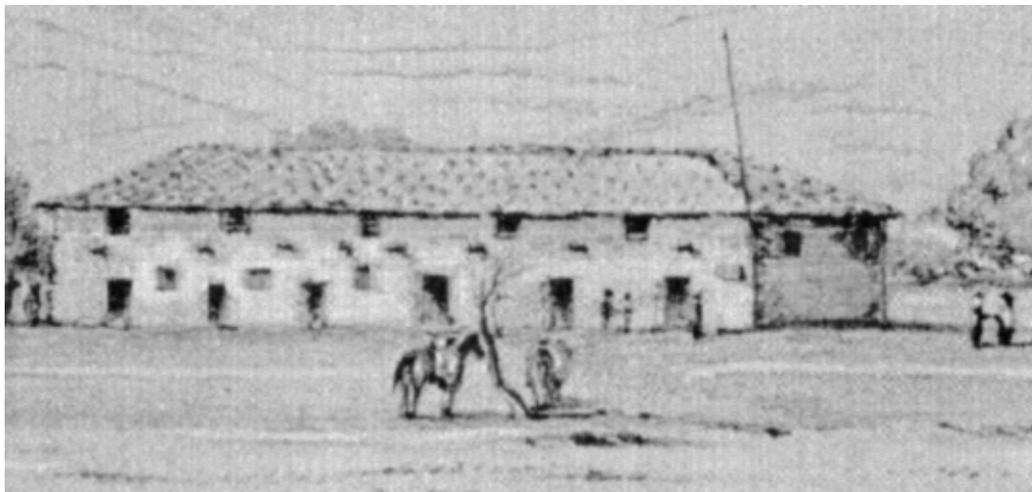


Fig. 5. Detail of Sketch of San Mateo Rancho granary in 1850 (Dougal 1949).

Apart from the mention of a need to construct a warehouse in the 1816 Payeras letter referred to earlier, the so-called “warehouse” for Mission La Purísima has not appeared in the priests’ letters (*cf.* Payeras 1995) or the annual reports for the mission. There is a note of “goods in the warehouse” being valued at \$6255.75 in the inventory of 1835 (Engelhardt 1932:57). This is a considerable sum and indicates a sizeable quantity of goods. However, it was not until 1854 that the map of the former mission property showed a rectangle marked “warehouse” (Cleal 1854; Hageman and Ewing 1991:12; Engelhardt 1932:70). Surveyor John G. Cleal produced a map dated August, 1854 for the Alemany Claim. The map shows the dimensions of the “warehouse” as 57.5 feet wide by 200 feet long (Fig. 3). Unfortunately, in his testimony before the land commission on December 29, 1854, he described all the pieces of claimed property except the warehouse. One can assume that the warehouse is one of the structures he described as being “in a dilapidated condition” (Land Grant Case 388 S.D.:178-180). In a deposition dated Dec. 29, 1854, (Land Grant Case 388 S.D. pp. 144ff), Fr. José Miguel Gomez stated:

The two churches, cemetery and priest’s dwelling and the house at a little distance marked “warehouse” are correct representations of the church property there. The ruins marked on the plan are of houses which belonged to the Indians. A short distance northeast of the church is an orchard which is correctly delineated on the upper left hand corner of the map. The house marked thereon “L. Martinez,” I don’t recognize. I think it must be modern.

On the official survey of the structure, the measurements are given as 3 chains, 3 links (199.98 feet) long by 88 links (58.08 feet) wide, and the building is referred to as the “Old Warehouse” (Nidever 1874a). Although in typescript notes of a separate survey in the area (Norway 1874:12), the length of the warehouse is given as 3.3 chains (3 chains and 30 links or 217.8 feet), I believe this was simply a clerical error in copying the original handwritten report. This view is corroborated by the survey of the lands of the Mission Vieja de la Purísima that extended to include the area of the warehouse (Norway 1873a). In the field notes for this survey, Norway (1873b:3) provided the boundaries of Tract No. 4, the old warehouse of the Alemany Claim. These boundaries, or building dimensions, are specifically stated to be 3.03 chains in length by 88 links in width. In this same document, reference is made to “the old adobe warehouse (Tract No. 4) of Mission de la Purissima [sic] finally confirmed to J.S. Alemany, Bishop...” (Norway 1873b:1). When I measured the dimensions during our 1996 excavations, I came up with a width measurement of 56 feet 9 inches. My explanation for the slight discrepancies is that the definition of the adobe walls became increasingly obscured from 1854 to 1874 as the adobe melted down. My figure should be the most accurate.

### **Results of 1964 Excavation**

The northern portion of the warehouse foundation is visible today (Fig. 5) because of the 1964 excavation by Dr. James F. Deetz with UC Santa Barbara students and our 1996 dig that exposed the northwest corner. In a brief, four-page progress report submitted to the Department of Parks and Recreation (Deetz 1964), there is the following description of his findings:

This massive structure, located from old survey map locations, had never been excavated in the past. Only half of it remains on State property; it passes beneath the highway, and probably extends beneath a farmhouse and yard opposite.

Excavation revealed massive stone footings, which had supported heavy adobe brick walls. These walls had been coated with a thick layer of plaster on the interior, large quantities of which were encountered on the floor. The warehouse had two rooms, separated by a longitudinal center partition, bearing on footings as large as those used for exterior walls. The floors of both rooms are unique to La Purísima. These floors are made of adobe block, set in mud mortar. Their limits were reasonably easy to follow by color change with careful troweling. Artifacts were extremely scarce in this structure; only a handful of glass and ceramic sherds, and a few iron fragments were recovered. Two masses of laminated charred material on the floor of the western room may be the remains of bales of hides. Analysis of this material is presently underway to determine, if possible, its exact makeup and identity. [No evidence has been found to show that such testing was done.] Little positive evidence was found to substantiate the identification of this structure as a warehouse, but no contradictory evidence was found either.

Deetz' comment on the adobe block floors as being unusual at Mission La Purísima is interesting in light of the fact that this was the common type of flooring in the Neophyte Housing at the Santa Cruz Mission Adobe (*cf.* Felton 1987:56-57).

Deetz' students excavated in a number of different locations throughout the park, including the granary site. Apart from a four-page report (Deetz 1964) on the overall activities, the only data on the excavation is found in a series of student field notes. There is also a photograph of the site after the excavation showing that a frontloader had been used to fully clear the overburden in the northern portion of the two northerly rooms of the building (Fig. 6). The transit in the photograph is poignant because it suggests that some form of more detailed mapping occurred than has been found to date.

The excavation exposed the northeast corner, much of the north wall (but not the northwest corner), and portions of the east wall and central wall. In addition, test pits and floor exposures showed the presence of an adobe block floor with some post holes. Another interesting feature was some "burned material" adjacent to the central wall footing. Deetz characterized this material as apparent layers of organic material, possibly hides. The few artifacts mentioned were several leg bones of cow or ox, an iron door latch, one Staffordshire sherd, "three pieces of pottery," one piece of sea mammal bone, abalone and mussel shell, some iron pieces, two stone manos, a piece of hide, and a metal strap with a nail in it.

At the end of the excavation project in 1964, the stone foundations at a height about two feet above the floor surface were left open and exposed. The foundations have deteriorated over the past 32 years, eroding at the top and edges. In late 1996 La Purísima Mission SHP



Fig. 6. Deetz excavation of north end of the warehouse site in 1964 (looking south).

Superintendent Mike Curry arranged to fill the areas adjacent to these foundation walls to provide them crucial lateral support.

Some fourteen years after Deetz' excavation, the area south of Purísima Road was acquired by the State Park. However, the portion of the site in the road right-of-way is owned by the County of Santa Barbara.

### **Test Excavations in 1995 and 1996**

#### **Methodology**

This project began with an intensive archival and archaeological review of the previous records. This review provided the crucial data necessary to search for the placement and discern the condition of the foundations.

The location of the still-exposed northern foundations excavated by Deetz was a good starting point (Fig. 7). However, the facts that the building was bisected by Purísima Road and that the ground at the south end was very hard and resistant to probing made the location of the southern foundation wall more difficult to determine. In addition, knowing that a house and garage had been superimposed over the site for several decades made me wonder how much the foundations had been disturbed. However, using the measurements of surveyors Cleal (1854) and Nidever (1874a), we used a transit to locate a point within 1 and a half feet of the southern wall foundation. At that point, a pattern of 12 inch wide test trenches was used

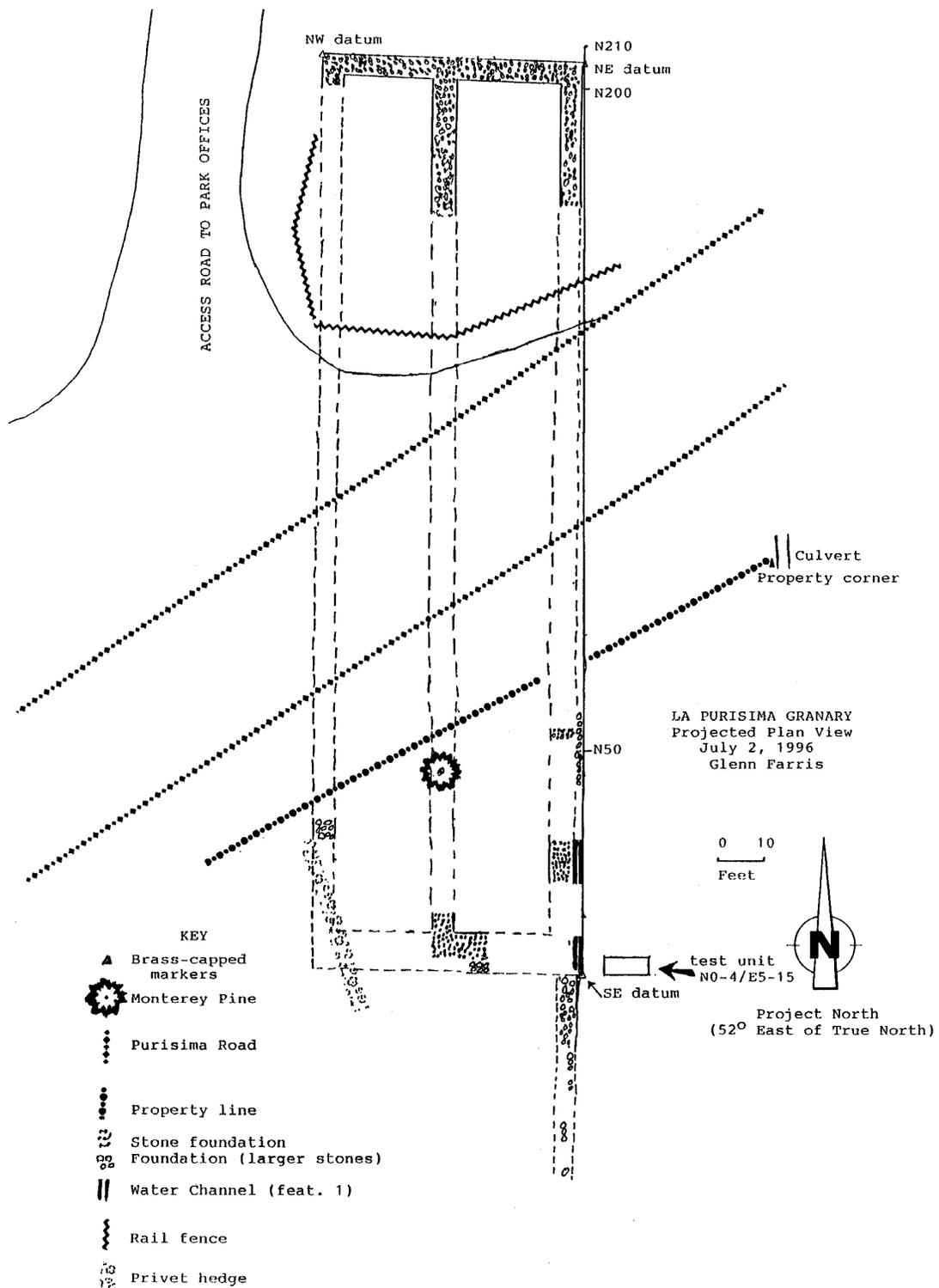


Fig. 7. Plan of La Purisima warehouse/granary site after excavations in 1996.

to find and expose portions of the walls. Once the crucial east and south wall placements were determined, we established a grid using the apparent southeast corner of the foundations as our main datum identified by a brass-capped marker (Fig. 7). Of course, when we later discovered the line of foundations running to the south, this point could only be seen as the southeast corner of the old warehouse building noted in 1854/1874. Two other brass-capped markers were installed at the northeast and northwest corners of the foundations. Elevations for these three brass-capped markers were provided by Bob Patterson of the State Parks Southern Service Center. The SE datum was 122.03 feet AMSL. The NE datum was at 129.06 feet AMSL and the NW marker was at 131.57 feet AMSL. All units were hand dug and mostly screened using 1/4 inch mesh, although certain more sensitive areas were put through 1/8 inch mesh. Artifacts were separated, given lot numbers based on their provenience, and bagged.

### **Exposures of Foundation Sections**

When one visits La Purísima Mission SHP today, the northern foundation walls are still exposed. Measurements of the outer and interior massive foundation walls at the north end of the structure showed them to be 4 feet 8 inches (1 3/4 *vara*) thick. Test excavations in June, 1995 showed the foundation walls at the southern end to be even wider, up to 8 feet. By contrast, the foundation walls at the Temecula granary ranged from 39-48 inches thick (McCown 1955:10). However, it is believed that only a portion of the southern foundations actually supported adobe walls. An outer feature (1), 3 inches wide by 8 inches deep channel set in a 2 foot wide by 2.6 foot deep layer of lime mortar covered by flagstones, may have been constructed to channel water past the building (Fig. 8).

In some portions (e.g., along the southern portion of the east wall [N20-30]), the flagstones have been removed; however, they are still in place from 42 to 60 feet north of the southeast corner (N42-60). Much of the foundation has been covered by Purísima Road (aka, the Lompoc-Casmalia road); however, the south end of the structure extends into a small piece of Park property on the south side of the road. Although archival and archaeological information on this structure is scant, it appears to have had two parallel rows of large rooms, the eastern room being 22 feet 4 inches in width and the western one being 21 feet 9 inches wide (approximately 8 *varas*). No cross walls have yet been identified. The thickness of the walls at a very conservative 4:1 ratio would have supported a two-story building (7 *varas* or 19+ feet tall). Such a building could have had as much as 12,000 square feet of clear space on the two floors.

The 1995-96 testing exposed portions of the southern end and additional area at the northern end of the site which permitted us to better understand the condition of the foundations, remnant portions of adobe floor, and other features associated with the building. We were able to measure more accurately the full foundation length at 206 feet (which translates to 75 *varas*). The width, measured at the north end and at a line 30 feet north of the southeast corner (N30), was 56 feet 9 inches (20.6 *varas*). These dimensions indicate a building considerably larger than other known granaries in California. Although the granary excavated at Temecula

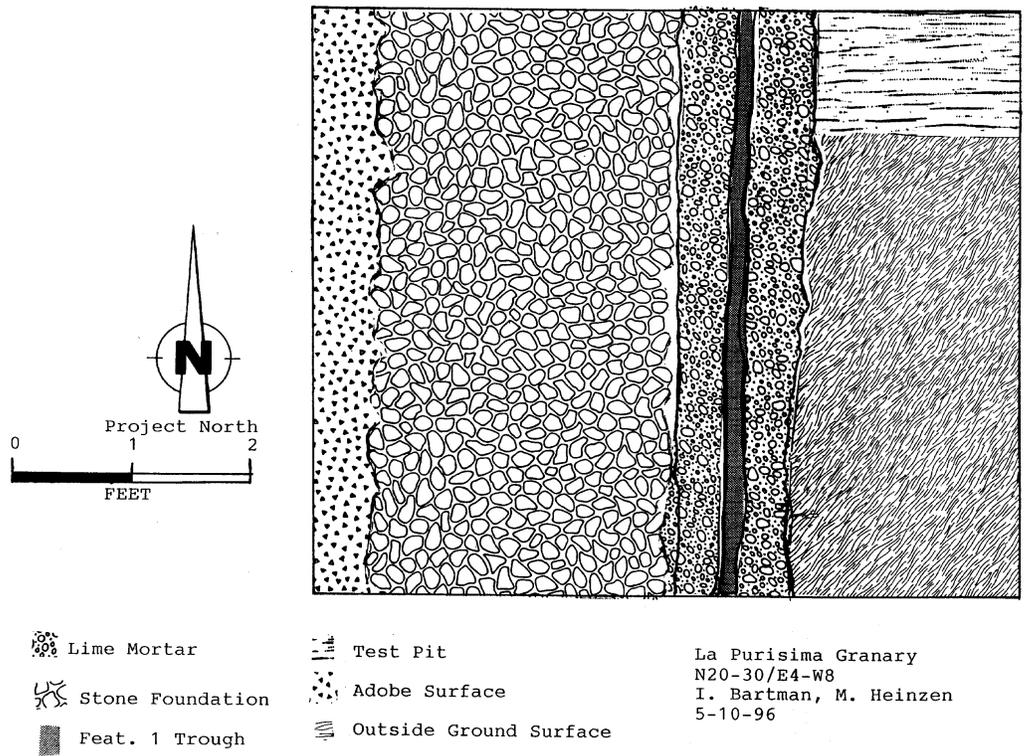


Fig. 8. East Wall Foundation and water channel.

(McCown 1955:10-12) was only 12 feet shorter in length, it was half the width of the Purísima granary.

Since it was deemed most important to identify the positions of the east, south, west, and north-south mid transverse wall foundations, units were dug to expose evidence of these loci. Initially, units were given arbitrary numbers and dug along lines believed to be perpendicular to the walls they were to intersect. In this report the units will be referred to by their grid numbers expressed in feet using the brass-capped marker at the “southeast” corner as the datum.

**West Wall Foundation**

This wall was identified in two locations. The northwest corner of the building was exposed and found to be in excellent condition except for an area where a set of postholes had been dug into it at some time in the past by Department of Parks and Recreation. This corner of the foundation was found to be dug into a sandstone substrate in the contour of the land coming down from an adjacent hillside. This placement would have required considerable effort, especially with the tools available at that time.

The second exposure was at the north 30-foot line where a five-foot long section of foundation was found (N30-35/W53-58). The stones making up this part of the foundation were notably large (some 18 inches to two feet in length), much larger than the stones forming the corresponding surface of the east side foundation.

South from this point the wall foundation line is intersected by a privet hedge planted several decades ago as a windbreak. Damage to the foundation was anticipated in this area.

### **Middle Wall Foundation**

As mentioned before, Deetz had exposed a lengthy section of the middle foundation on the north end. This proved to be as wide as the foundation found on the outer north and east wall sections.

In 1996 we dug several small test units against the foundation wall in the northwest corner of the NE room. These test units failed to expose the adobe block floor mentioned in 1964, but they did expose a juncture between faced foundation stone and a lower layer of unfaced foundation stones that must have been below the adobe floor level or it would have intruded into the room. In the absence of finding the adobe floor in this area, I have taken the evidence provided by the faced versus unfaced stone to suggest the old floor level.

This central foundation had been also uncovered in a one foot wide, east-west running trench dug about 13 feet north of the south line (N13.3-14.3/W25-37) during the 1995 testing. The actual width of the foundation was from W27 to 33. The foundation was discovered at approximately one-half foot below current surface. This chalkstone fill foundation had no discernible builder's trench extending beyond the fill. As indicated, it measured 5.25 feet in width, somewhat wider than the corresponding section at the north end of the structure which was only 4 feet 8 inches wide, but its surface may have been rendered less distinct by the effects of past plowing. Careful examination of the soil on the east and west sides of the foundation produced dramatically different results. On the west side, in what may be called the southwest room, there was clear evidence of an adobe block floor. In order to better define the size of these adobe blocks, a four by five foot exposure was made on the west side of the central wall from 10 to 15 feet north of the south end of the foundation (N10-15.5/W33-37). Unfortunately, an untimely rainstorm made it impossible to fully map all the observable lines in the exposed surface. The dimensions of individual adobe bricks were measured at 23 inches long by 12 inches wide, unusual but not unknown measurements. Pressed into the surface of these floor adobes were tiny fragments of redwood, no doubt from former woodworking in the building. These fragments were helpful in defining the brick surfaces. Unfortunately, no intact adobe bricks could be discerned over the foundation walls, and thus, their measurements remain uncertain. By contrast, the soil on the east side of this mid-wall showed no signs of adobe bricks.

During the 1996 excavations, attempts were made to expose a broader section of adobe block floor in the southwest corner of the SE room and in the southeast corner of the SW room. Although one intersection of grout lines previously noted in 1995 was located, most of the area had suffered extensive rodent disturbance destroying the definition of the bricks (Fig.

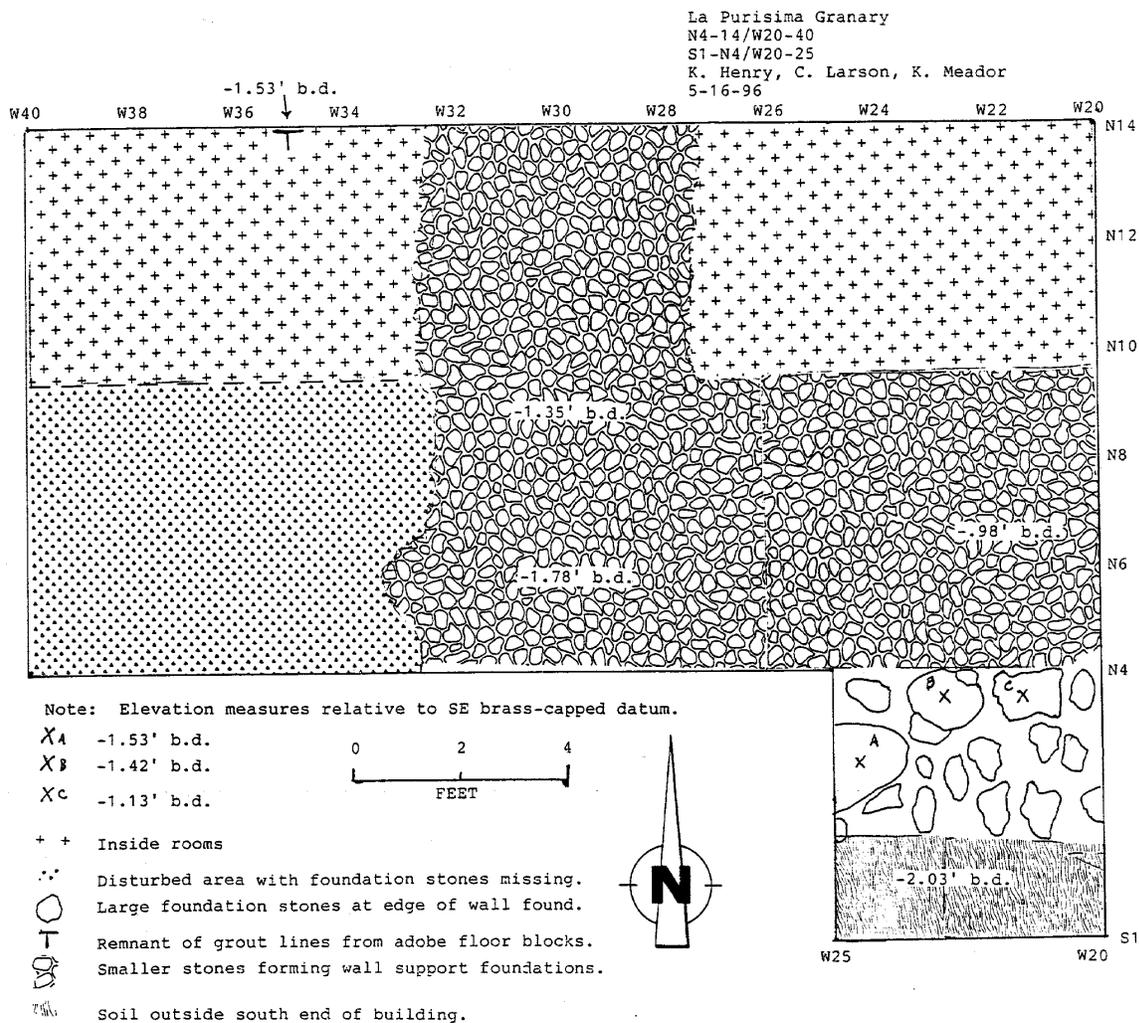


Fig. 9. Junction of south and central foundation walls at La Purisima warehouse site.

9). No clear evidence of the adobe block floor was seen in the southeast room; however, the profile of the north wall of the unit showed an even line at an appropriate level to have formed the base for a floor. Whether this was an adobe block floor, as had been distinguished in the NE, NW and SW rooms, was not confirmed.

An intrusive cat burial was found dug into the central wall near its juncture with the south wall. The presence of a .22 calibre shell in the vicinity suggested it was a modern burial. This location appeared to lie directly behind the former house.

### **East Wall Foundation**

In 1964 a sizeable section of the east wall at the north end was excavated. It showed a foundation raised considerably above the level of the adobe block floor. This foundation was of very regular construction when first uncovered although 32 years of exposure has left it looking rather ragged.

In order to determine the overall depth of the east wall foundation, a test pit was dug 5 feet wide starting 1 foot south of the northeast corner of the foundation (N200-205/E0-3). The stone footing was 4.2 feet from top to bottom. An interesting aspect of the footing was that there was a horizontal recess in the foundation below which the stone appeared to be derived from the bedrock sandstone which had been noted on the northwest corner. It appeared that the foundation had been initially laid to a certain depth and then added to at some later time. The fact that the foundation walls at the north end rose about 2 feet above the adobe block floor may be associated with this apparent addition to the foundation height. The portion above the adobe block floor was identified by the faced nature of the stonework while the portion below the floor level was rough, unfaced stones. The eastern (outside) portion of the eastern wall foundation was rough from top to bottom which suggests that the foundation exterior in this area was not exposed.

In the southeast corner of the building area, the eastern wall was exposed in a 10-foot long segment from 20 to 30 feet north of the south end of the foundation (N20-30). This foundation section was 5.3 feet wide with a 2 foot wide section of lime plaster on the eastern edge which held a channel to carry water. This channel was about 3 inches wide and 8 inches deep and was smoothed on the interior. The plaster had been set into a U-shaped channel dug into the soil to a depth of about 2.4 feet. In this area (N20-30), there was no covering remaining over the channel although the rough nature of the adjacent surface suggests something may have been there. Slightly to the north, between N42 and N60, we exposed the channel area and found it to be covered with flagstones. The flagstone cover suggests that rather than being a rainwater drain, the channel was a conduit to transport water past the building. The water source remains uncertain because no such channel was found at the north end of the building; however, the discovery of a *ca.* 1942 sketch map shows an aqueduct leading to the warehouse foundation from the west and intersecting it midway between the north and south ends of the known foundation.

### **Southern Foundation Wall**

A unit dug at the southeast corner of the building (S1-N15.5/W8-9) demonstrated the considerable width of the south wall foundation. The clearly defined rubble filled wall resembled the eastern foundation wall and was 5.5 feet wide. An additional 3.2 feet of larger stones (Fig. 9) formed an outer portion of foundation on the southern edge. Presumably, the adobe wall was constructed over the rubble-filled foundation, but the purpose of the outer 3.2 feet section is uncertain. Exposure of a longer section of the south wall would be necessary to define the relationship. With the discovery of the "extension" of the eastern wall composed of similarly

large stones, the possibility of an adjacent foundation exists. However, more testing would be necessary to define this association.

A cast iron sewer pipe was discovered crossing the south wall foundation in a diagonal (NE/SW) direction. This pipe led to the back of the former house that had stood there until *ca.* 1979.

Attempts to locate the southwest corner of the building were stymied by the thick hedgerow; however, a shovel test pit determined the south wall to be still intact at least in an area 46 to 48 feet west of the southeast corner (N3-5/W46-48).

### **Crosswalls**

An effort was made to find crosswalls by digging a 1 foot wide, north-south shovel test trench in the east bay of the site area from 23.5 to 70 feet north of the south wall (W19-20/N23.5-59 and N62-70), skipping around a three foot section of the barbed-wire fence. No clear indication of a cross wall appeared even though there were quantities of roof tile and other hard objects encountered through probing. There was no evidence for a consistent wall configuration. This area certainly needs further study. If there are no cross-walls in the area tested, any individual rooms would have been extremely large. Long, unsupported segments are found in other buildings at La Purísima (particularly the chapel and church portions which had rooms 80 feet long) which shows that the existence of such long open bays was possible. In the only known case of a granary site excavation (at Temecula), the 193 foot long building was divided into three rooms of uneven size: 96 feet long, 27 feet long, and 70 feet long (McCown 1955:Plate 4) (see Fig. 4). The placement of Purísima Road over the central portion of the site makes it impossible to determine whether there were any crosswalls in this middle area. Indeed, if the pattern had followed that of the granary at Temecula, both of the interior crosswalls would have been obscured.

### **Elevation Measurements**

In doing comparative elevation measurements, it was found that the north wall foundations were approximately 9 feet higher than those of the south wall (Fig. 7). The elevation difference is approximately half of the total height of building that I had projected based on the width of the foundations (19 feet). There are two obvious possibilities. One is that the building “stepped-down” from the north end to the south end at some unknown point, but possibly the midpoint with a broken roof line (Fig. 10). Another is that the north portion of the building may have been one story while the southern portion was a full two stories. This latter possibility could have utilized a common, level roof line. Unfortunately, any solution to this speculation may be contingent on being able to investigate under Purísima Road.

### **Artifacts**

Much as Deetz reported from his 1964 work, there were remarkably few artifacts found in the 1995-96 work. This lack of recovered artifacts would certainly be in keeping with either the use of the building as a granary/warehouse or an argument for an early date for the site.

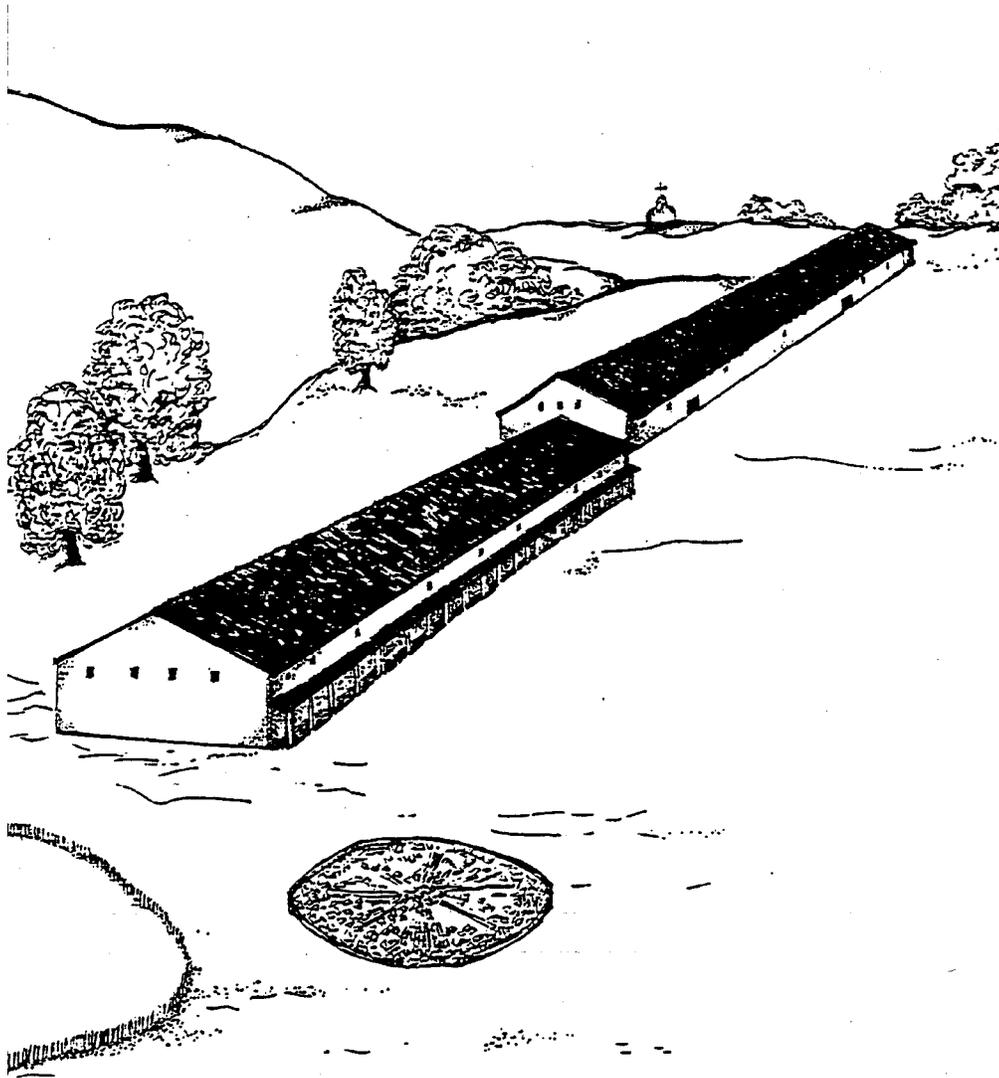


Fig. 10. Recreation drawing of La Purísima warehouse and granary (Elise Wheeler).

Artifacts recovered during these test digs were catalogued on site and are stored at La Purísima Mission SHP (Lots 1-12) and the Archeology Lab (Lots 13-34) in West Sacramento under Accession Number P-1123.

#### **Construction (Destruction) Debris**

Construction debris was composed primarily of roof tile (*teja*) and floor tile (*ladrillo*) fragments and pieces of lime wall plaster with a smooth coating. Of course, the rock foundations themselves may be considered the major construction artifacts since they were brought from

some distance for the purpose of building. Only two nearly complete *ladrillos* were found. They each showed evidence of having been formed in a mold, fired, and shaped by cutting off one side. The most complete one from which all dimensions could be determined was 10 inches by 10 inches by 2 3/8 inches. The second one was larger measuring 10 3/4 inches wide by 3 inches thick and broken off at a length of 9 inches.

In the east wall drain in the N20 to N30 section a piece of red tinted "Roman cement," sometimes referred to by the Italian term *pozolana*, was found. It appeared to be similar to the material that was found on some of the *monasterio corredor* pillars and on the *lavanderias* in the main part of the park. In his discussion of various construction materials used at Mission La Purísima, Hageman described pink plaster:

Use of this pink plaster was found in a great number of structures. It invariably occurs in water structures, such as reservoirs, aqueducts, fountains, lavatories, etc. It was also used to line the large vats of the tallow works and the drainage flume leading from it....

Samples tested from the Church indicate a high content of sand and mineral coloring in proportion to lime, resulting in a mortar of brilliant color, but one of very low strength. The lime content in colored plaster used on the Residence is greater, and while the color is less dense, the plaster is more satisfactory.

The pink plaster was produced with a red colored diatomite. This material occurs along the banks of the Santa Ynez River, a range of colors from light pink (almost a coral shade) to a deep, purplish red. It was ground with pestles, screened and mixed as a plaster.

The pink plaster was used in the base, cap, and flutes of the *corredor* columns. It was applied as a thin coat, approximately one-fourth inch thick, and rubbed to an extremely smooth, hard surface....

Another interesting use of plaster is that of a finish for floors, and walks. No such use was found in the Residence, but walks in the cemetery, and the floors of the two sacristies of the Church were finished with a pink plaster coat, applied over a base of rubble and lime mortar. In addition, it was used for decorative purposes as described above. These colored plasters are to be distinguished from painted surfaces (Hageman and Ewing 1991:94-95).

The sample recovered from the drain feature silt is exactly one quarter inch thick. It shows a burnished surface and evidence of a white lime mortar coloring on the side that adhered to the inner coat of plaster surface. At this point, it is uncertain where this colored plaster would have been used in the vicinity of the building. So far no other examples have been found.

### **Ceramics**

Eight pieces of ceramics were found. Two were Chinese export porcelain. Five others were of a shiny 1950s-70s ceramic. There was one piece of white earthenware and one piece of red burnished ceramic of unknown derivation.

**Glass**

One glass trade bead was found in the excavations. It came from the area of the northern wall foundation excavated in 1996. It is a blue, translucent, drawn bead, 3 mm in diameter by 2.2 mm thick. Such beads were probably available throughout the Mission Period.

**Metal**

Of the few pieces of metal recovered from the site, there was one that was thought to resemble a mason's hatchet/hammer. Following careful cleaning of the artifact, it now appears to be a tooth from a late nineteenth century threshing machine which does not date to the mission era.

**Other Artifacts**

One part of a shoe or boot sole was found just above and adjacent to the east wall line at N6. Another fragment of what appears to be a worn crescent section of leather boot heel was recovered from S1-N4/W20-25. Whether these date to the mission days or were deposited later is as yet uncertain.

Several pieces of chert were found, one of which was clearly a portion of a biface. It is a midsection of a probable knife made of Monterey chert. The artifact was analyzed for blood residue in an attempt to determine if it had been used for some type of animal processing. There were no positive results (Puseman 1996). Since antisera for plants, other than agave, were not available to the testing lab, it is possible that this knife may have been used for harvesting plant foods. Several other flakes of this same chert were found in various parts of the site. These flakes suggest that there may have been some tool working at the site and the biface may have been produced on site rather than manufactured elsewhere and brought to the site.

In his excavation of the tanning vats at La Purísima Mission, Deetz (1978:164) mentions finding four flakes of Monterey chert of which three were primary flakes and the fourth was a biface that looked like "half of a side notched projectile point, with a well-worked notch on one side, and a slightly worn, smooth, unmodified edge along the side opposite the notch." Deetz suggested that the tools likely were used in the removal of hair from the hides, although he acknowledged that there was no direct proof for this use. Even so, the presence of the small number of flakes in these historical sites does suggest use of flake technology by the Indian workers.

**Soil Samples**

A sample of silt was recovered from the drain channel in N0 to N10/W0. Silt from the channel in N20 to N30 of the east wall was screened through 1/8 inch mesh. The only artifact recovered was the piece of pink-tinted "Roman cement" describe under "Construction Debris" above.

### Conclusions

Though lacking in archival reference from the period of construction, this site, has the potential of producing much information to the archaeologist. The massive nature of the foundations gives us a sense of both the importance of the structure(s) and the labor involved in their erection. Granaries and warehouses were fundamental to the missions as a means of providing a major appeal to the neighboring Indians. Such immense storage capacity was not readily available to the Indians, who likely viewed these large reservoirs of food and supplies as treasuries to the native peoples. As pointed out in the annual reports, the year 1813 was an especially bountiful harvest year for La Purísima Mission and provided a good start following the relocation caused by the disastrous earthquake of 1812. Construction of a granary and/or a warehouse was a top priority. Lingering concerns over the earthquake would have prompted the laying of very thick foundations such as those found at this site. The two distinct floor levels between the north and south end of the building suggest the presence of two separate or abutting structures. The extant description of the ruins from as early as 1854 indicates what appears to be one structure referred to as “the old warehouse.” The possibility that the structure was a granary is suggested by (1) the need for such a structure, (2) its placement in a location near the fields and outside the wind-protected arroyo of Los Berros, near a likely spot for the threshing floor (*hera*), and (3) the dearth of associated artifacts. If this structure had been a residence, I would have expected a greater number and variety of artifacts.

Evidence of adobe block floors found in at least three of the main “rooms,” and two nearly complete ladrillo tiles with a number of fragments indicate some serious attempts at creating a solid floor. Deetz’ discovery of what may have been remnants of a hide stack in the northeast room further supports the use of that area as a warehouse while the southern part would likely have been the granary.

An unexpected southward extension of foundations in line with the east wall of the main building was discovered in the last days of the dig and appears to extend at least 43 feet southward. These foundations are a bit of a mystery. They must have been outside the structure noted by the surveyors in 1854 and 1874. Further study should be made to consider the relation of these foundations to those that apparently supported the known structure. The extremely wide (*ca.* 8 foot) southern wall of the main structure(s), on closer inspection, seemed to be made up of two abutting foundations, one of larger stones and the other of smaller ones.

A major question regarding the two very different floor levels from north to south will probably remain unanswered until it is possible to remove a section of Purísima Road covering the middle portion of the foundations. Further archival work is necessary to determine the actual date of construction of this (these) building(s).

Thus far, the buildings have only been subjected to limited examination. To really answer the questions raised will have to wait for the removal of Purísima Road and for a more extensive and intensive excavation of this site.

### Acknowledgments

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