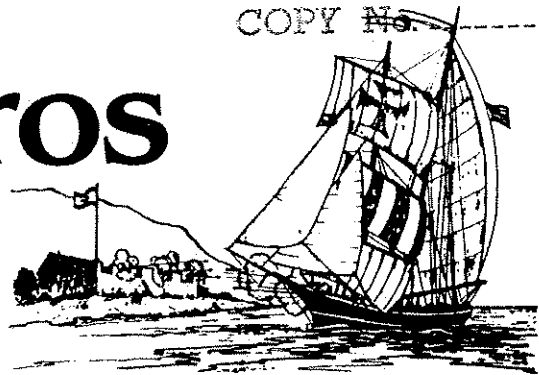
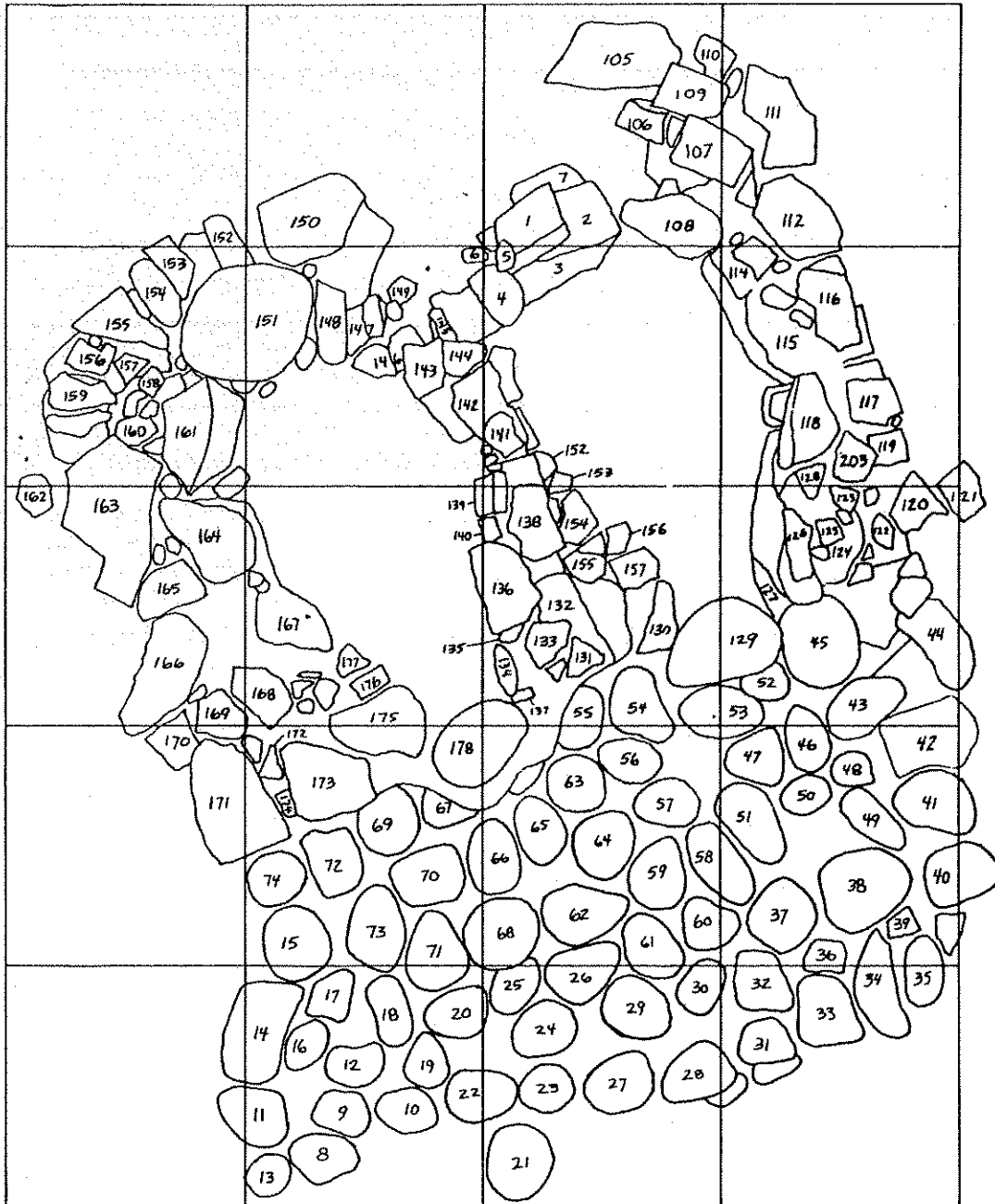


Fort Guijarros Quarterly



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FORT GUIJARROS QUARTERLY

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Fort Guijarros Museum Foundation
P.O. Box 231500
San Diego, CA 92123
(619)229-0648

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COVER: Field illustration of the Ballast Point whaling station tryworks oven foundation and porch, showing upper rock level and number sequence.

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CHAIRMAN'S REPORT

Ronald V. May

During the Spring of 1989, officers of the Fort Guijarros Museum Foundation delivered presentations to the City of San Diego, County of San Diego, and the Port District to request funds to support cultural activities relating to the history of Ballast Point. Only the County Community Enhancement Program supported these programs, although the City Cultural Arts Commission invited an appeal of their grant rejection. This effort to explain the role of this organization to the city administrators produced interesting information that many members probably have not been aware of in their tenure with the organization.

The original Board of Directors set the tone for the ensuing decade for a public outreach and education program. The role Spain played in our present place in American history has not been clear from elementary to graduate school institutions in the community. The use of materials recovered in the archival and archaeological work at Ballast Point in community education programs is every bit as important as ballet, park sculptures, and the big permanent museums in Balboa Park.

The difference between the Fort Guijarros Museum Foundation and the Museum of San Diego History, for one example, is the traveling nature of our exhibits and speaking programs. Back in 1981 when television news crews asked what value we saw in the ruins of an old cannon fort, we proclaimed that the "value" lies in the symbolic nature of Fort Guijarros in the greater context of world events of the 18th century. We inherit this heritage of Spain's past as our own heritage through citizenship in the United States of America. The Fort Guijarros Museum Foundation is committed to educating

our fellow citizens by bringing examples out to community banks and places of business. We deliver slide lectures, publish the Fort Guijarros Quarterly, donate copies of our 5-minute video and reprinted volumes of the Quarterly to schools and libraries around the County of San Diego.

This public education crusade is really the core of what the Fort Guijarros Museum Foundation has become in San Diego. Research can be presented both as fun and essential for young and old to renew ties to a shared American heritage. Close-up and hands-on, presentation of relics of the past can cement America's youth to this land as no textbook ever could.

The respect other organizations hold for our work can be measured in the accolades received over the years. In 1986, the California Committee for the Promotion of History presented the Foundation with an Award of Merit. Copies of that document were given to all the membership at that time. In March of 1989, during the Sequel Dig at the Ballast Point Whaling Station, the Congress of History granted an Award of Merit for our research and promotion of military history. In June, 1989 Congressman Bill Lowrey recognized the Foundation's work on the Ballast Point Whaling Station in the Congressional Record. A copy of that entry into the Congressional Record is printed on the inside back cover of this issue.

The dream for a community museum to carry out these ideals will someday become a reality for such an organization as the Foundation. It is for this reason that we must continue to apply for grant money and expand our programs. The information presented in this report should be used by future boards in this effort.

BRIEF DESCRIPTION OF THE FORT GUIJARROS MUSEUM FOUNDATION

The Fort Guijarros Museum Foundation is a non-profit all-volunteer archaeological/historical organization that incorporated in 1981 to commemorate and preserve the heritage of Ballast Point and Point Loma in San Diego, California. The relevant periods of interest to the Foundation are 1796-1835 Spanish/Mexican artillery fort; 1858-1886 Yankee whaling station; and 1898-1957 U.S. Army Fort Rosecrans, Coast Artillery.

The Foundation is run by a board of directors that meets on the second Wednesday of every month to conduct its regular business. The Foundation offers memberships at various levels, including student, seniors, and life members, and the total membership is 162 dues-paying members. Of those members, 20 are Founding Life Members.

The Foundation's Board of Directors is composed of representatives from several affiliated groups that are represented by a member of their group to represent their interests on the Fort Guijarros Museum Foundation Board. These affiliated Board Organizations are the Casa de Espana, the Peninsula Chamber of Commerce, the U.S. Navy (Commanding Officer), and the San Diego County Archaeological Society. Other officers and directors are

affiliated with the San Diego Historical Society, San Diego State University, California Parks and Recreation, as well as directors with a personal interest in the goals of the organization. The Board officers include a chairman, vice chairman, treasurer, recording secretary, and corresponding secretary.

The Fort Guijarros Museum Foundation has a number of activities and events which it sponsors on a regular basis. The first is the publication of the Fort Guijarros Quarterly, which is mailed to all the members. The publication provides the latest information on the Foundation's research.

The second activity is the Battle of San Diego Bay Fiesta, which is held on the U.S. Navy Base on Point Loma every year in March. The event is co-sponsored by the Casa de Espana and commemorates a battle which occurred between the Spanish soldiers of Fort Guijarros and an American vessel in 1803.

The third is the Fort Guijarros Excavation which occurs regularly each summer and is staffed by professional archaeologists and volunteer avocationalists. The final regular event is the Fort Guijarros Fiesta which is held in September, at the end of the summer excavation season.

FORT GUIJARROS MUSEUM FOUNDATION PUBLIC OUTREACH ACTIVITIES

A. JOINT ACTIVITIES WITH ORGANIZATIONS HOLDING A BOARD SEAT:

1. Casa de Espana - Research and Events
 - Annual Battle of San Diego Bay Fiesta
 - Spanish Archives Research Project: Prof. Donald Cutter, Ph.D.
 - Descendants Research - Los Californianos Group
2. Peninsula Chamber of Commerce - Exhibits and Lectures
 - Bank, Office, and School Exhibits
 - Point Loma Area Slide Lectures to Community Organizations
 - Cabrillo National Monument Exhibit
3. United States Navy - Exhibits and Events
 - Bachelor Officers' Quarters Exhibits
 - Archaeological Excavations on Ballast Point
 - Joint Spanish Consulate-U.S. Navy Events
 - Artifact Analysis and Curation
 - Assisted in Restoration of Napoleon Cannon
4. San Diego County Archaeological Society - Training and Research
 - Training Avocational Archaeologists
 - Community Exhibit Preparation
 - Joint Promotion of Artifact Conservation
 - Promotion of the Publication of Research

B. COMMUNITY OUTREACH WITH FGMF BOARD AFFILIATE ORGANIZATIONS:

1. Spanish Consulate - Research and Ceremonies
 - Annual Battle of San Diego Bay Fiesta Keynote Address
 - Fort Guijarros Fiesta Special Speaker
 - Archival Search for Spanish Documents in Spain
2. Cabrillo Historical Association - Research and Exhibits
 - Fort Rosecrans Research
 - Fort Guijarros Publication 1982
 - Exhibits
3. San Diego Historical Society - Awards and Research
 - Annual Sponsorship of General G.W. Gatchell Award for Military History, Institute of History
 - Articles Published in Journal of San Diego History
4. San Diego State University - Awards and Education
 - International History Fair - Annual Sponsorship of Award for Best Projects on History of Ballast Point
 - Masters Thesis Projects
 - Undergraduate Special Studies Credit Projects

5. E Clampus Vitus - Monuments and Ceremonies
 - Fort Guijarros Monument
 - Whaling Station Monument
 - Juan Sebastian de Elcano Monument & Ceremony
6. Society for Historical Archaeology - Conference and Papers
 - Symposium on Military History
 - International Symposium on Shore Whaling
7. Society for California Archaeology - Papers and Archaeology Promotion
 - Awarded Certification for Recognized Public Education Project
 - Symposium on Spanish Fortifications

C. COMMUNITY OUTREACH BEYOND FGMF BOARD ORGANIZATIONS

1. Fort Guijarros Quarterly (9 issues since 1987)
 - Spring, Summer, Fall, and Winter Publication Issues
 - 100 Copies of Vol. 1 and 2 Donated to Public and School Libraries
2. 5 1/2 Minute "Search for Fort Guijarros" Video
 - Used as Introduction to Community Lectures
 - Free Copies Donated to 35 Schools and Libraries in 1987-88
3. Slide Lectures (Since 1981)
 - Average of 2 Lectures a Month (25-200 people)
(Examples: Loma Portal Republican Women's Club, Mission Valley Villagers, Saratoga Seniors Center, Peninsula Shepard's Association, Navy League, Rotary Club, Kiwanis Club, Lions Club, The Westerners, Los Californianos, The Boy Scouts, and Navy League)
4. Public Symposia (Since 1984)
 - Archaeology of Battle of Little Big Horn (SDG&E Auditorium)
 - Shore Whaling Symposium - Society for Historic Archaeology (Sacramento)
 - General George Washington Gatchell Memorial Luncheon (Navy Submarine Base)
5. Award Sponsorships (Since 1982)
 - General George Washington Gatchell Award for Best Paper Written on the Military History of Ballast Point, San Diego Historical Society's Annual Institute of History Competition (\$100)
 - Award for Best Junior and High School Student Projects on Ballast Point History, International History Fair
6. Archaeological Research on Ballast Point (Since 1981)
 - 1796-1835 Spanish/Mexican Artillery Fort
 - 1858-1886 Yankee Whaling Station
 - 1898-1957 U.S. Army Fort Rosecrans, Coast Artillery

FORT GUIJARROS MUSEUM FOUNDATION EXHIBITS

1. Fort Guijarros Fiesta (250 people)	1989
2. Battle of San Diego Bay Fiesta (400 people)	1989
3. U.S. Navy Submarine Base, Bachelor Officers' Quarters (200 people/day)	1988-1989
4. American Security Bank (300 people/day)	1988-1989
5. Fort Guijarros Fiesta (250 people)	1988
6. Battle of San Diego Bay Fiesta (300 people)	1988
7. Cabrillo National Monument (500 people/day)	1987-1989
8. Fort Guijarros Fiesta (200 people)	1987
9. Battle of San Diego Bay Fiesta (200 people)	1987
10. San Diego State University Library (2000 people/day)	1986
11. Point Loma High School (1000 people/day)	1986-1987
12. Fort Guijarros Fiesta (200 people)	1986
13. Battle of San Diego Bay Fiesta (200 people)	1986
14. Peninsula Bank (300 people/day)	1985
15. Kobey's Swap Meet (1000 people)	1985
16. Fort Guijarros Fiesta (200 people)	1985
17. Battle of San Diego Bay Fiesta (200 people)	1985
18. Bank of America, Ocean Beach (300 people/day)	1984
19. County Administration Center (200 people/day)	1984
20. Fort Guijarros Fiesta (200 people)	1984
21. Battle of San Diego Bay Fiesta (200 people)	1984
22. City of San Diego Public Library (200 people/day)	1983
23. City of San Diego Administration Bldg. (500 people/day)	1983
24. Fort Guijarros Fiesta (200 people)	1983
25. Battle of San Diego Bay Fiesta (200 people)	1983
26. Del Mar Fair (400,000 people)	1982

FORT GUIJARROS EXCAVATIONS

For nine years, the Fort Guijarros Museum Foundation has funded scientific research on the excavations at Ballast Point. Each year the team received a permit from the U.S. Navy and commenced work from June to October or November. Some years the dig spanned Saturdays and Sundays, others only Saturdays. Student research and two master's thesis projects have developed from this work. A number of dig crew members have gone on to earn degrees in archaeology and adopt archaeology as their career.

In 1988 and early 1989, the Fort Guijarros Museum Foundation expended 704 person hours or 88 person days in the excavations of the Ballast Point Whaling Station. Following the March termination of fieldwork, the U.S. Navy mailed invitations to the field crew and Board of Directors to visit the site on a weekday. At that time, Congressman Bill Lowrey, Captain Phil Klintworth, and the command of nearby naval facilities presented to the Foundation a Congressional citation from the House of Representatives in appreciation of the work that enabled construction of the Search and Rescue facility at Ballast Point. The ceremony was held at the new location of the tryworks oven foundation. The membership of the Fort Guijarros Museum Foundation has every reason to be proud of the accomplishments of this organization.

Archaeology at the Ballast Point Whaling Station
The 1988 Wrap-up and 1989 Sequel

Ronald V. May
Field Director

In 1988 and 1989, the Board of Directors of the Fort Guijarros Museum Foundation authorized the donation of archaeological assistance to the U.S. Navy at the U.S. Coast Guard Search and Rescue (SAR) Facility on Ballast Point in San Diego, California. The Foundation's Board of Directors is committed to long-term research on the history of Ballast Point, particularly to historical themes associated with Fort Guijarros. The work diverted the Foundation's field crew and resources from an seven year dig at Fort Guijarros to salvage an 19th Century whaling station.

Past archival research had demonstrated that Yankee whalers lived on Ballast Point between 1858 to 1873. Archaeological evidence from the excavation of Fort Guijarros proved that the whalers left the remains of their activities scattered over what was left of the walls of the old Spanish cannon fort. The Foundation's directors hoped that archaeological study of the whaler's artifacts from additional locations on Ballast Point would resolve a variety of historical questions about 19th Century maritime activities in San Diego.

With that in mind, the Board of Directors looked forward to the chance to obtain a comparative whaler's collection from around and underneath the SAR facility.

The U.S. Navy welcomed the Fort Guijarros Museum Foundation after a private archaeological contractor had uncovered thick organic matted material on Ballast Point in test pits excavated in 1987. The Navy was concerned that federal agencies were unable to determine the value of the contractor's finds in relation to the

National Historic Preservation Act of 1966. Construction of the new SAR facility could not destroy a National Register level site without compliance with the 106 Procedures of the Advisory Council on Historic Preservation.

At the Navy's request, the Fort Guijarros Museum Foundation planned initially to probe more of the area already sampled by the contractor in an attempt to provide additional data to resolve the question of importance. However, as the project unfolded, it became clear that a very large sample would be excavated.

The results of the June to September portion of the 1988 dig are published in the Fall 1989 issue of the Fort Guijarros Quarterly. About 50% of the area delineated by the contractor had been exposed.

The Foundation's subsequent work, through November 27, 1988, revealed the full extent of a tryworks oven foundation, a crude tiled floor, and a pit full of broken bricks. It was clear that the area had been the site of an intense industrial activity where workers organized a variety of tasks and boiled whale blubber into oil.

In February and March, 1989, a loyal crew of sixteen Fort Guijarros Museum Foundation volunteers returned to Ballast Point to excavate under the site of the just-demolished SAR facility. This effort produced the archaeological recovery of 75-80% of the Ballast Point Whaling Station, as defined by the 1987 contract test. Ironically, the sample was so large that the unresolved issue of eligibility to the National Register under Criteria "D" of the 106 Procedures became moot. The State Historic Preservation Office (SHPO)

concluded that little new information could be gained from the remaining 20% of the site. Unfortunately, this decision removed protection of the tryworks oven foundation by declaring it ineligible for inclusion in the National Register.

The record of volunteer attendance from the entire project demonstrated that 704 person hours or 88 person days had been donated to the U.S. Navy during this excavation. The foundation spared the federal government \$45,000 that had been set aside for private contractors to test the site and more than doubled the archaeological sample that could have been recovered with that money.

The 1988 Wrap Up

After the Foundation's Fiesta in September, 1988, the archaeological teams exposed the foundations of the tryworks oven. The archaeological dig continued through November to fully define the feature.

The cobble and brick features measured approximately four meters across, had two furnace pits, and a cobblestone porch. The oven had been constructed on top of a relatively level platform of fist sized cobbles that had been raked into position. On the west and north of the oven, the cobble platform dropped at a 45% angle toward the beach. Burned "whale fritters" (flesh and blubber residue), charred food bone, and artifacts were mixed in layers of charred soot.

The organic mats exposed in the 1987 test units proved to be soot from the chimney(s) of the tryworks oven. Close examination revealed thin layers of clean white sand between the soot, representing activity hiatus when oil rendering did not occur. Changing wind directions during the boiling episodes caused the surface of Ballast Point to be carpeted in the soot. Artifacts such as clay pipes, bronze nails, glass, and food bone found in the soot layers dated the

whaling episodes.

The "Shield". On the east side of the oven foundation the soot layer contained a flat wooden "shield" or lid that had been bonded to a metal sheet. Oval in shape with edges that were rotted, the original shape can only be speculated upon. The wood was so delicate that jet-spray from a Krylon fixative tended to blow the wood into dust.

Because of this artifact's poor condition, only a few samples of the shield could be recovered, although it was photographed in situ. The shield may have insulated the side walls of the tryworks oven to enable workers to stand around the edge of the pots and dip tools into the oil. It is also possible that the shield served as lid to one of the trypots.

The Brick Pit. A shallow pit full of broken bricks was found south and a bit east of the tryworks oven. Inspection of the fragments revealed that that they were "English standard" common bricks (8-9" x 2-3" x 4-5"). These Anglo-American made bricks were also found inside the tryworks oven. Both samples were composed of low-fired, sandy red clay. The brick pit may have been a dump for useless remains during the salvage and dismantling of the trywork oven. Broken glass on top of the oven suggests that the salvage may have occurred around 1900.

Red Tile Floor. A floor composed of broken Spanish red clay tiles was found east of the tryworks oven and partially under the floor of the SAR Building. The mosaic of disarticulated tiles, discussed in more detail in the Fall 1988 issue of the Fort Guijarros Quarterly, clearly had been made from materials salvaged from the ruins of Fort Guijarros. Evidence of a disintegrated wooden building was found north of the tile floor. Hardware and structural remains were found associated with a few personal and kitchen items within

one meter of the tile floor. Window glass, square iron nails, and wood fragments also suggest that the tile floor had been sheltered by a wooden shanty. Clay pipe fragments, buttons, munitions, and an 1840 Mocha Yellowware bowl sherd date the occupation as contemporary with the tryworks oven.

The 1989 Sequel

In the February and March 1989 "sequel" to the 1988 Ballast Point Whaling Station excavation, the archaeologists opened a forty square meter area in twelve days. The field plan continued excavation of the area laid out in a grid in 1988. That grid area extended over the area previously covered by the SAR Building.

The red tile floor extended just barely under the west wall of the SAR building. Off the northeastern corner of the red tile floor, a dark charcoal-ash matrix rich in artifacts extended four meters east in a fan-shape. This feature may have been refuse from an oven in the northeast corner of the floor.

The Whaler's Shanty. Excavation around the red tile floor and burned features revealed evidence of a wooden shanty with glazed windows and a fireplace or oven. This probably

was where the whalers ate their meals and rested during the twenty-four hour periods when whales were tried out. The low quantities of debris do not suggest permanent residence.

A preliminary analysis of the recoveries in and around the shanty revealed five groups of artifact classes. Table 1 illustrates the distribution of artifacts and food materials in each of these groups by excavation units. An arbitrary system of "*" and "x" quantifies high and low counts of these categories. The purpose of this exercise is to hypothesize behavioral activities that may have taken place within or around the shanty. These indicators are only preliminary impressions that need more sophisticated testing.

The groupings selected for this exercise include "personal," "structural," "hardware," "food," and "medicine" items. Structural items are proposed to have been components of the shanty. Square nails, window glass, paint, and wood fragments are evidence the tile floor was covered with a wooden structure. All or portions of it had been painted white. Square nails date the structure to before 1890, when mass produced wire nails replaced hand-cut or machine-cut square nails.

Data from the hardware category suggests that furnishings and equipment may have been stored in and



Figure 1.
Overall view of the Ballast Point Whaling Station site. Tryworks oven foundation is in foreground. Crew is digging at the former site of the SAR building.

around the shanty. An oar lock is a maritime artifact that suggests storage of boat gear. The rivets and grommets are similar to hardware attached to canvas sails. The metal objects are generally too rusted for preliminary identification. Rubber fragments probably were from weather-proofing gear. Lantern glass supports the hypothesis for around the clock use of the area. Flaked stone was either present from prehistoric Indian use of Ballast Point or indicates Indian labor at the whaling station.

Examination of the relative quantities in the grid of test units under the SAR building gives insight into the activities and behavior of whalers. The charcoal-ash fan may have been dumped out a window of the shanty. All the personal items, the lantern glass and rubber, as well as quantities of square nails and window glass were in the fan. Shell, fish bone, and beverage container glass were concentrated nearest the window. Also in this area was a broken ceramic bowl or jar of Tizon Brownware, the local Indian pottery. While it is tempting to speculate that Indians joined the whaling company, the vessel could easily have been purchased elsewhere by anyone for use at the site.

The personal, food, and medicine items provide direct evidence for

overnight use of the shanty. Personal items are things that individuals would have carried on their bodies. Leather and fabric suggest clothing, while pins, munitions, and clay pipes would have been carried in pockets, bags, or other small carriers. The food and medicine categories would probably have been pantry items. Nonetheless, no trash pits were found on the site and the relatively light scatter suggests that the shanty occupants did not live there for long periods.

More diffusely scattered up to four meters east of the east wall of the shanty were increased numbers of mammal bone, fish bone, and shell. Where the midden deposit thinned to the east, the quantities of food remains increased. This suggests that area east of the shanty may have been a food preparation area. A fire pit outside the southeast corner of the shanty contained beverage glass and marine shell, suggesting food preparation.

The north side of the shanty contained personal items and a few kitchen related hardware items. When first exposed in 1988, the north area was proposed to have been a lounging area for whalers. Evidence in the form of clay pipes, glass buttons, munitions, and beverage glass in a diffused dispersal supports that interpretation.

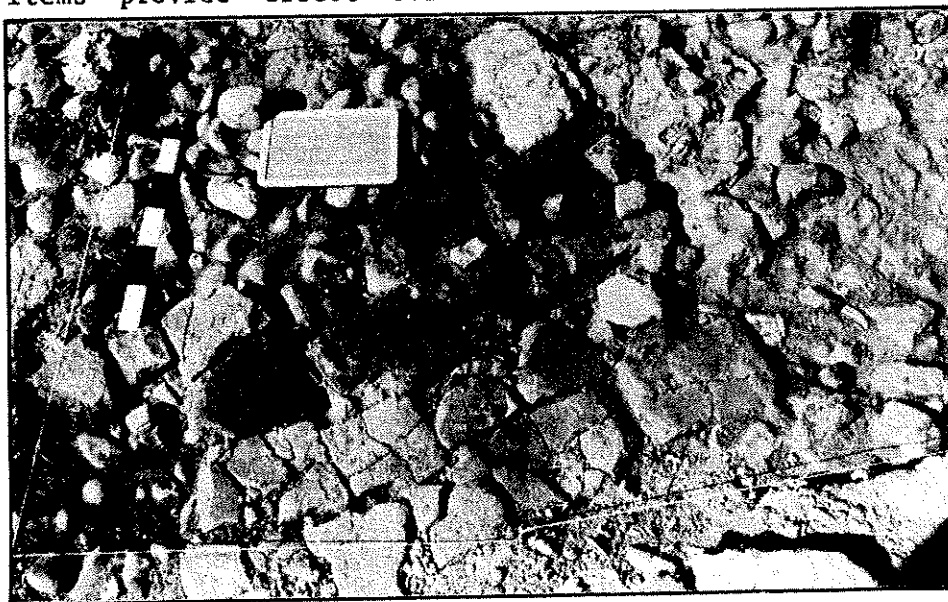


Figure 2.
Close up view of
tile platform in
Unit 58.

The artifacts associated with the shanty date from the 1840 to 1890 period. Given that employees of the U.S. Lighthouse Service occupied the area after that time, the shanty activity should date the age of the tryworks oven. The use-range of the types of muntions, clay pipes, and beverage glass suggest a more conservative date of 1860 to 1870, which would make this site contemporary with the Packard and Johnson Companies.

Conclusion

The February-March 1989 sequel to the summer-Fall 1988 season at the Ballast Point Whaling Station enabled recovery of sufficient information to interpret the mystery of the red tile floor. The operation on Ballast

Point appears to have been a small wooden shanty about six meters east of the large cobble and brick masonry tryworks oven. Storage of boating equipment, and a work area on the north side of the shanty paralleled the porch where the tryworks furnaces were fueled. At least one area of the beach about six meters north of the ovens was intensely burned and probably served a dual purpose for food preparation and a minor oil-rendering operation.

These preliminary interpretations need rigorous testing by the technicians who will analyze the artifact and food recoveries. The ultimate report will prove the baseline for all future whaling archaeology on the Pacific Coast since this is the first whaling station to be so studied.

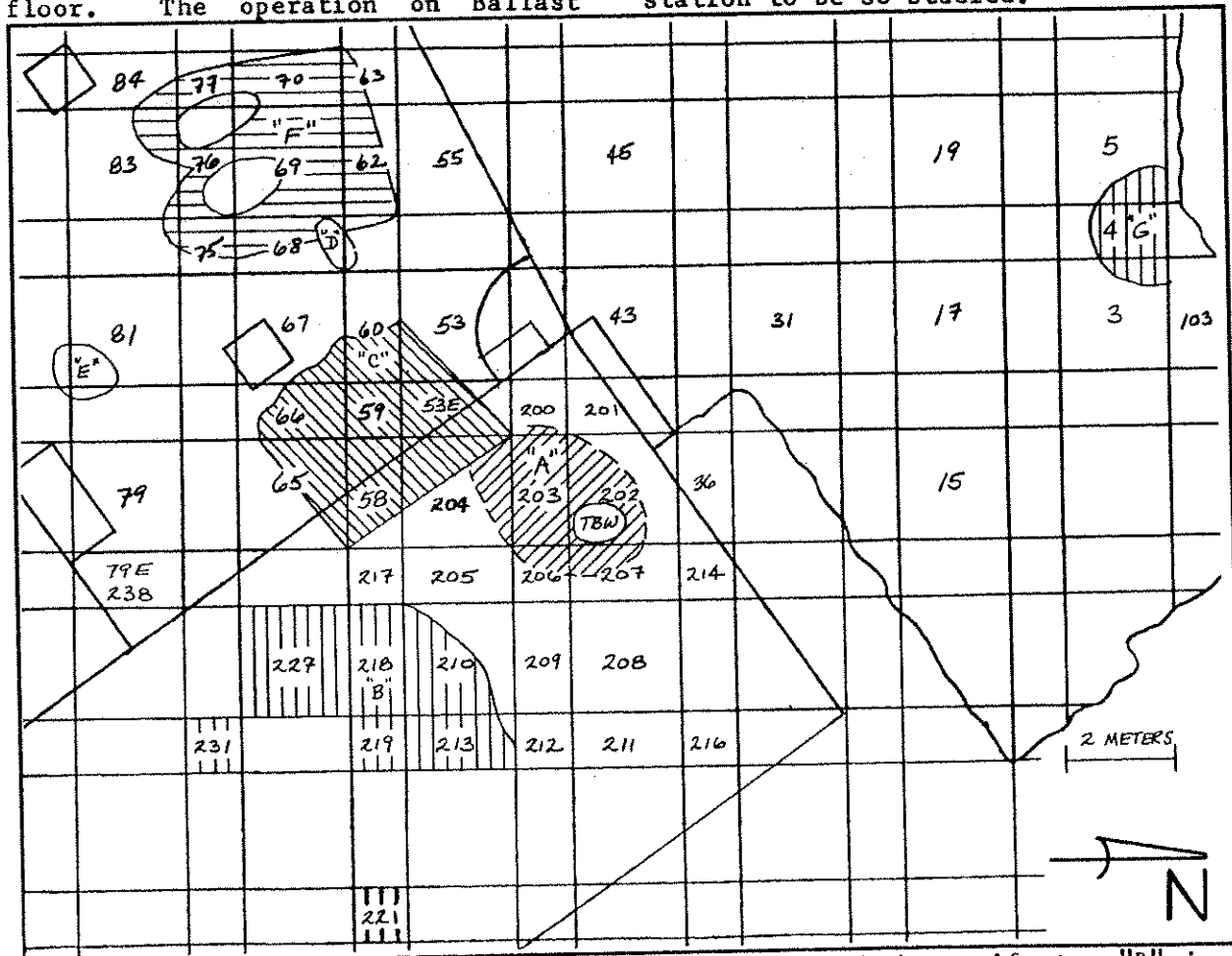


Figure 3. Layout of units. "A" is an ash lens rich in artifacts; "B" is a charcoal-stained soil rich in plant remains and shell; "C" is the red tile floor; "D" is the "shield"; "E" is the brick pit, and "F" is the tryworks oven.

Table 1

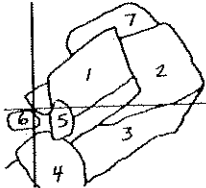
Distribution of Artifact Types by Excavation Unit

CATEGORIES	UNITS																
	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Personal Items	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2	3
	0	1	2	3	4	5	6	7	9	0	2	4	6	7	1	7	1
<u>pipe</u>	*			*				x									x
<u>munitions</u>			*		x												
<u>leather</u>			x	x													
<u>fabric</u>							x										
<u>pins</u>					x												
<u>Structural</u>																	
<u>window</u>	*	x	*	*	x	x							x				
<u>square nails</u>	x		x		*								*		*		
<u>paint</u>																	
<u>tile</u>					x	x		x		x			x				
<u>wood</u>				x	x	*									*	*	
<u>pigment</u>						x									x		
<u>Hardware</u>																	
<u>oar lock/</u>																	
<u>rivet/grommet</u>	x	x															
<u>metal</u>			*	*	*	*			x	*		*		*	x	*	
<u>rubber</u>				x													
<u>flakes</u>						*						x					
<u>lantern glass</u>				x	x												
<u>Food</u>																	
<u>beverage</u>	*	x	*		*				*	*		x		x	x	x	
<u>tizon</u>	x		*		x	x						x					
<u>glazed ceramic</u>																	
<u>fish</u>			x		x			*	*	*	x	*				x	
<u>shell</u>		x	*	*	*	*	*	*	*	*	x	x		x	*		
<u>animal</u>			x	x	x			*	*	*		*	x	x	x		
<u>Medicine</u>																	
<u>glass</u>			*		x												

Legend: * = High Count
 x = Low Count

Relocation of the Ballast Point Tryworks Oven Foundation

by Adella Schroth and Dennis Gallegos
May 1989



The archaeological reconstruction of the Ballast Point tryworks porch and oven foundation is located at the U.S. Coast Guard Station, Ballast Point, San Diego, California within 100 meters of the original location. The tryworks is part of the 1800s whaling station that was located near the Coast Guard facility at the tip of Ballast Point (Figure 1). The oven foundation and porch were found by the volunteer Fort Guijarros Museum Foundation archaeological crew during on-going research, under the supervision of the museum director of archaeology, Ronald May (See May 1988a, 1988b, 1988c, for background and discussion of research.)

The tryworks was an integral part of the on-shore whaling station and whaling industry at Ballast Point, from about 1857 to 1873 and 1883-1886 (May 1988a). The remains of the tryworks is believed to be the only on-shore facility from the late 1800s whaling industry to be found in North America, and provides one of the few features that can be securely dated to that period. Unfortunately, only the oven foundation and platform (porch) remained (Figure 2a); the upper walls, caldrons, and superstructure had been destroyed.

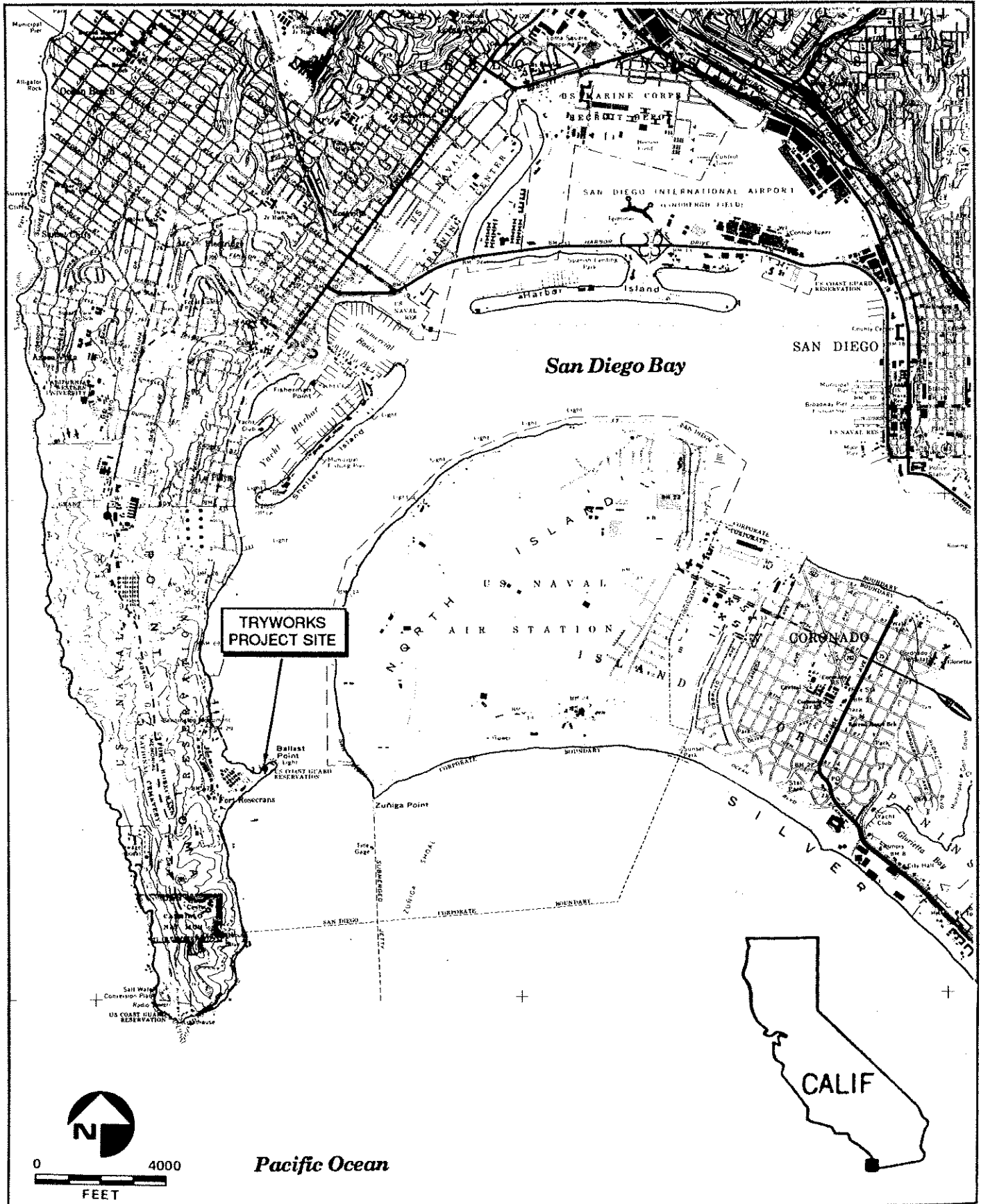
In March and April, 1989, the Ballast Point tryworks oven foundation and porch were moved from their original location to an area approximately 100 meters to the southwest, where they were reassembled for exhibition as a historic monument (Figure 2b). Construction of a Coast Guard Rescue Headquarters at the original location would have destroyed the tryworks. The moving

and reconstruction of the tryworks offered a unique opportunity to study the methods used in construction, while still preserving this feature for appreciation by the general public.

The tryworks originally were built directly on the cobble beach, at a point where the beach slopes to the west. In construction, it was composed of two parts: the platform or "porch" area where men working the ovens would have stood; and two ovens (fire pits) over which the caldrons for processing the blubber would have been placed. A description of the ovens is provided below:

A large tryworks oven foundation was uncovered in the center of the lawn area. The foundation has been laid with large irregular consolidated sandstone blocks. Shaped in a slightly oval outline, the dual oven entrances were in a flat wall on the north. The foundation measured four (4) meters deep from that front to a convex back wall exterior. The slightly convex sides measured roughly four (4) meters wide.

The tryworks oven was designed for two tear-drop shaped fire holes, located side by side and separated by a wall of small sandstone blocks that were used for the exterior foundation. The openings were at the narrower ends of the fire holes. Flat sandstone cobbles, slightly tilted toward the fireholes, gated these openings. A charred and vitrified black substance



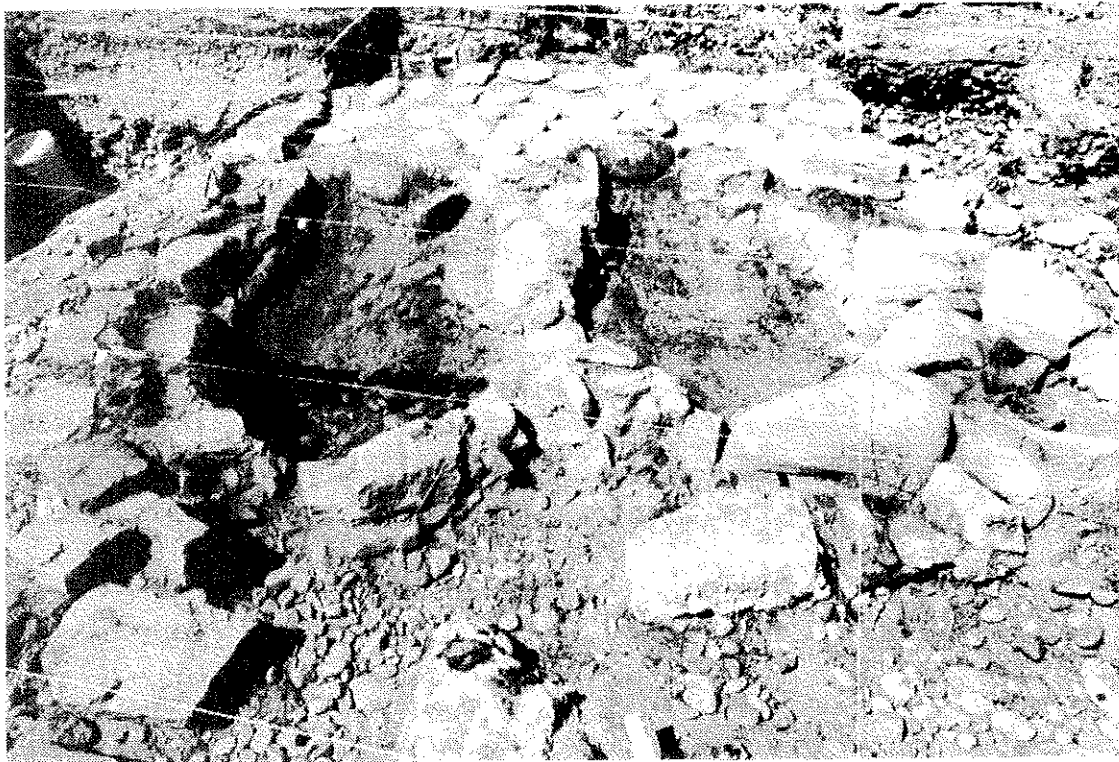


Figure 2a. Tryworks porch and fire pit foundations at original location.



Figure 2b. Reconstructed tryworks porch and fire pit foundations.



stained these cobbles. Outside the entrance, vitrified sand and charred organic material measuring two (2) to five (5) centimeters thick flowed out in an alluvial fan over a bed of white sand.

. . .The porch was created from a mosaic-pavement of large flat sandstone cobbles that had been set side by side in a rectangle which extended the two (2) meter length of the front of the tryworks oven. This "porch" measured one and a half (1.5) meters out the front of the oven entrances. The layer of white beach sand covered the cobbles. Black organic stains penetrated half way to the cobbles where the sand contacted the oven entrances. [May 1988b:17]

METHODS

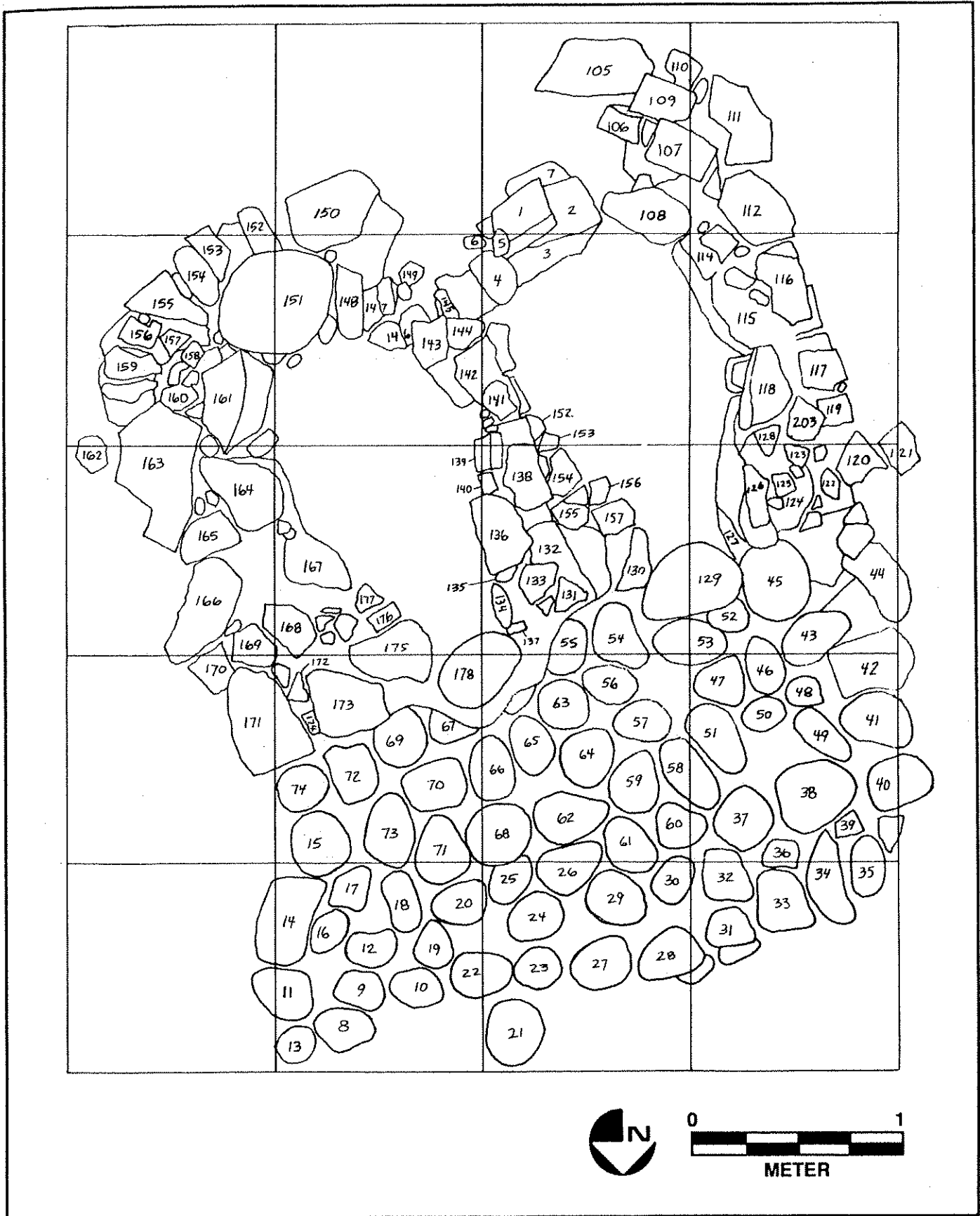
To move the tryworks, the area first was gridded with string into 1 meter square units, using the grid set up by the Fort Guijarros Museum Foundation. The grid was lettered, north to south as A, B, C, D, and E, and numbered, east to west as 1, 2, 3, and 4. The first layer of boulders and cobbles was drawn to scale on graph paper (Figure 3). Each boulder, cobble or adobe tile, was numbered in white chalk, a north arrow drawn on it, and two dots placed on the rock for measurement points (Figure 4). The depth of the rock from ground surface was recorded for both measurement points on one map and the rock number on a second map. Negative numbers were used to denote depths above ground surface. For Area A (original feature location) the ground surface was calculated to be approximately 60 cm below the datum plane. The ground surface in the reconstruction area (Area B) ranged from 26 to 33 centimeters below the datum plane.

Datum points for both Area A and B were set in cement blocks and used throughout the reconstruction project. Each square was then photographed in black and white prints and color slides for documentation and also with Polaroid photos for immediate reference.

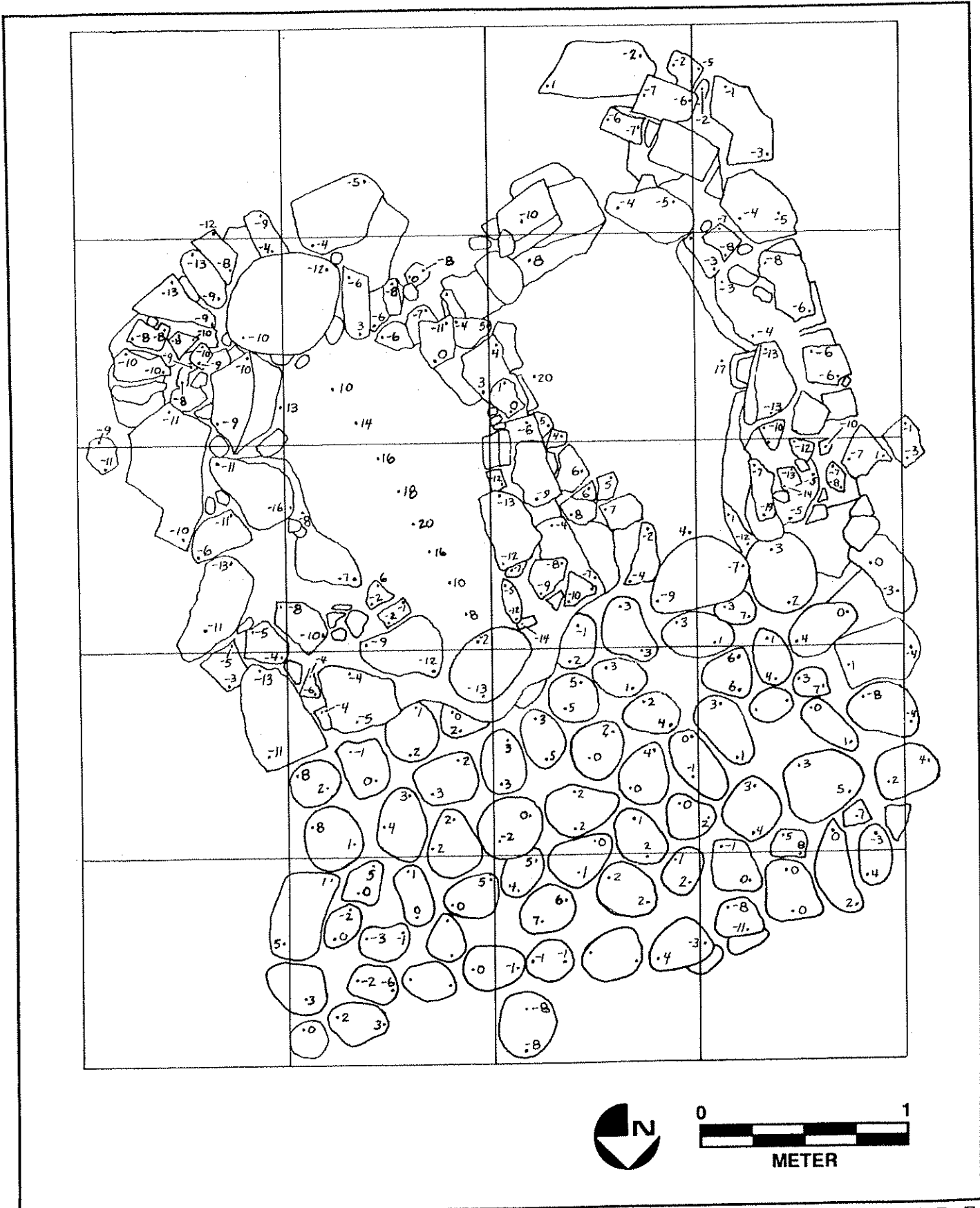
Using this method of documentation, the tryworks feature was separated into sections, and each section removed by layers and reassembled. The sequence started with the platform area on the north, followed by the west wall, then the middle wall, and finally the east wall. As each section layer was disassembled, it was mapped, numbered, measured, photographed, and moved (Figures 5 and 6).

At the new location (Area B), a 5.5 x 6 m area was excavated to a depth of 15 cm with a backhoe, and a 1 m grid was superimposed over the area using metal stakes and string. The grid was oriented true north in order to maintain the original orientation of the feature. A level cement pad, approximately 5 cm thick, was poured for the foundation of the porch and oven (Figure 7). Metal reinforcing bars were used with the cement in the porch area for added support. Although the cement pad helped in reconstructing the platform, portions of it had to be removed in order to keep the oven feature true to the original basal rock elevation with respect to the assembled porch. The bottom levels of the oven walls rested on old Spanish tiles, of varying thickness, such that their tops were level.

For Area B, the rocks and adobe tiles were repositioned using drawings, measurements, and polaroid pictures. After ascertaining that a section was correctly positioned, it was mortared into place (Figure 8). Because of the intense heat generated during blubber processing, most of the rocks were fire-altered and cracked. Roots were another problem, as they tended to follow the cracks and further divide the rocks into



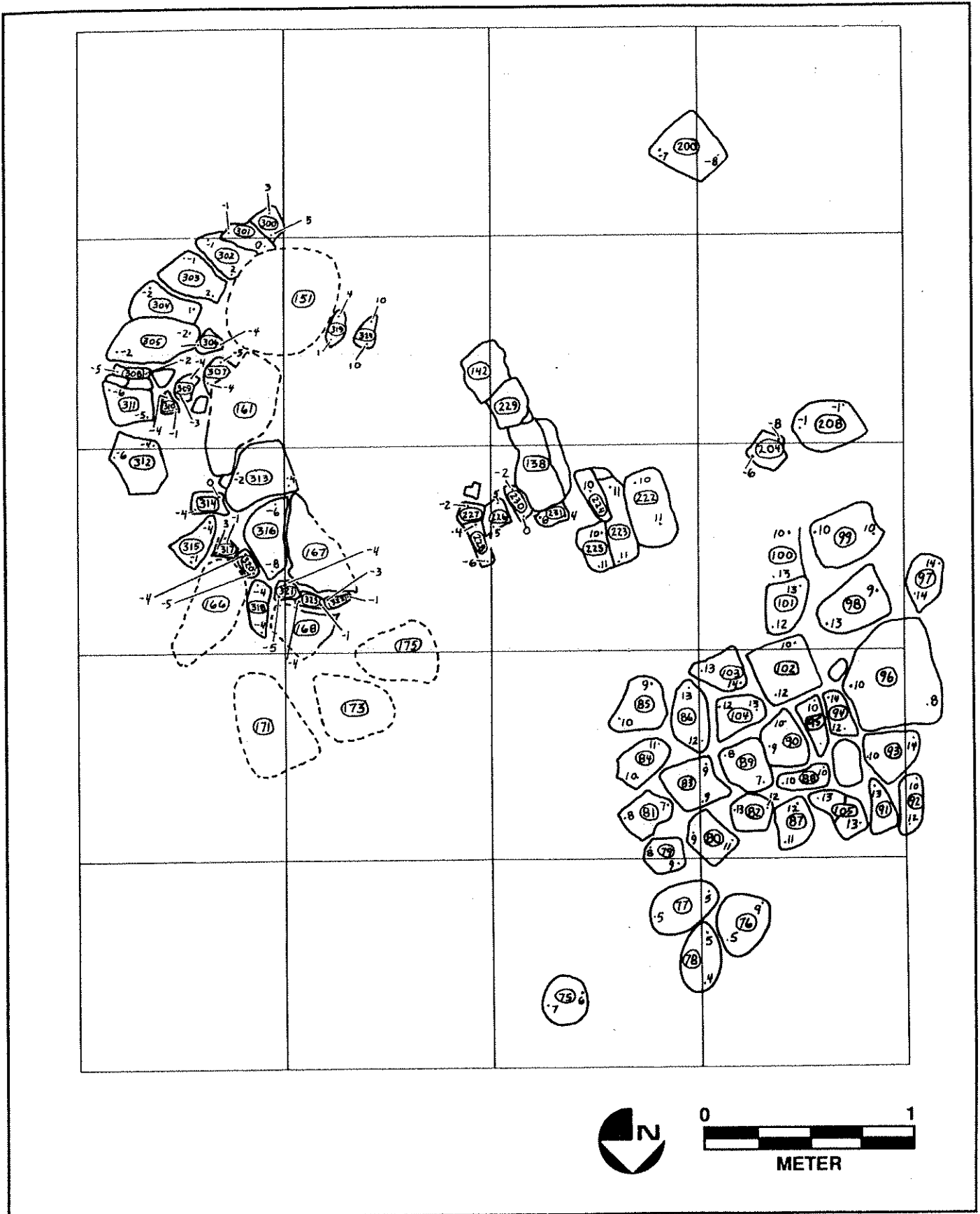
Field illustration of tryworks oven foundation, and porch showing upper rock level and number sequence.



Field illustration of tryworks oven foundation, and porch showing upper rock level and elevation from datum

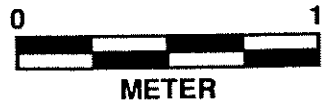
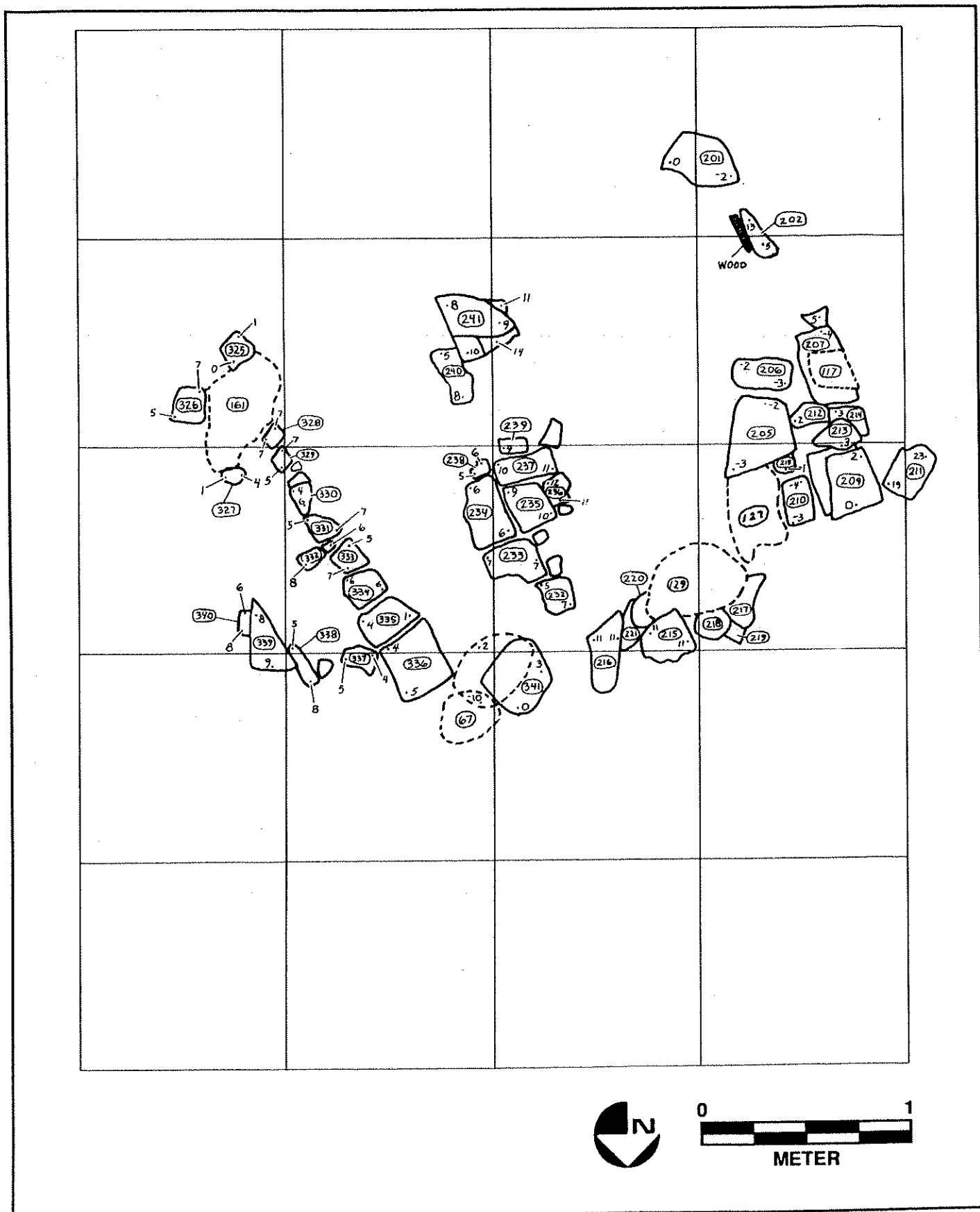
FIGURE

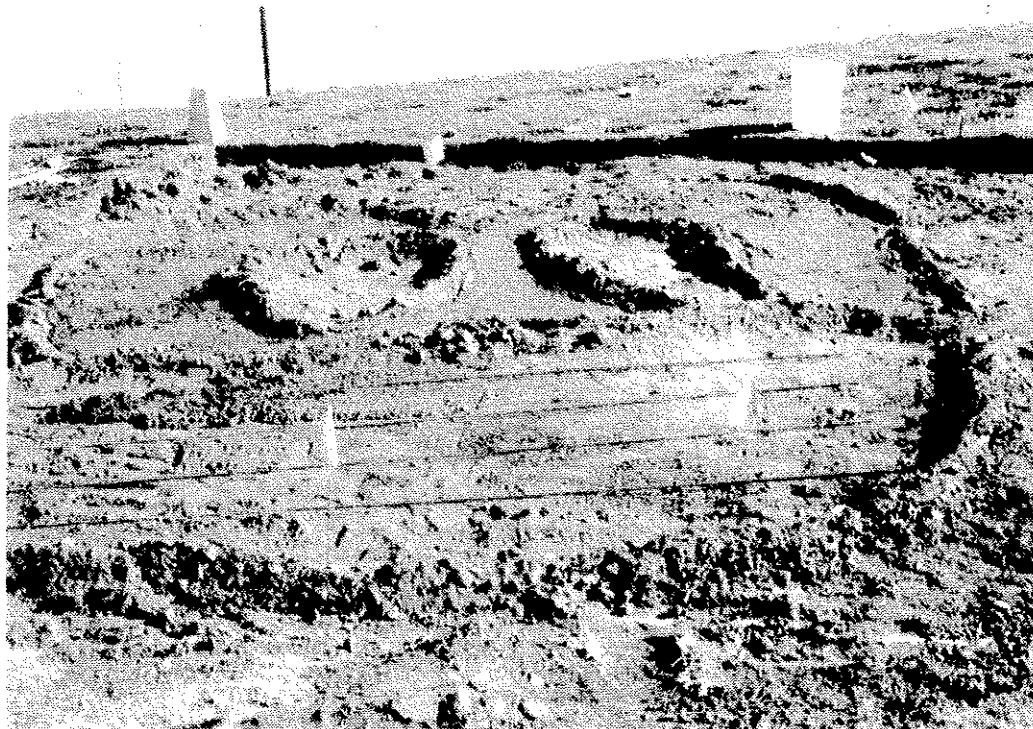
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Field illustration of tryworks oven foundation, and porch showing lower rock level (2a) numbering sequence.

FIGURE
5







smaller fragments. Wherever possible, rocks were glued together with a water-insoluble glue (household cement, rubber cement, and spray glue). Many of the rocks were so friable that they would crumble during removal or repair and spray glue was used on these friable rocks. Some rocks completely disintegrated and were replaced with similar rocks from the general area of the original tryworks. Mudstone, siltstone, and the less compact sandstones were extremely friable and tended to disintegrate when moved from their position or when surrounding soil and rocks were removed.

An attempt was made to move the mixture of ash, burnt organic material, and sand that composed the fire pits. This attempt resulted in failure because as soon as the cobbles from underneath the blackened pit area were removed, the blackened material crumbled.

In order to reconstruct this black material so that the pits looked like the original material and could still survive inclement weather, pebble tar was shaped to the original configuration of the tryworks oven.

ORIGINAL TRYWORKS CONSTRUCTION

In the course of disassembling the tryworks, much was learned of the original construction. The original tryworks was constructed primarily through the use of materials readily at hand. No special reinforcement material, such as mortar or metal or wood beams was used. The platform area consisted of flat cobbles, laid in a bed of sand directly over the cobble beach. To the west where the beach sloped, the slope was built up to be level with the rest of the platform using layers of flat Spanish tiles and flat rocks (Figure 9).

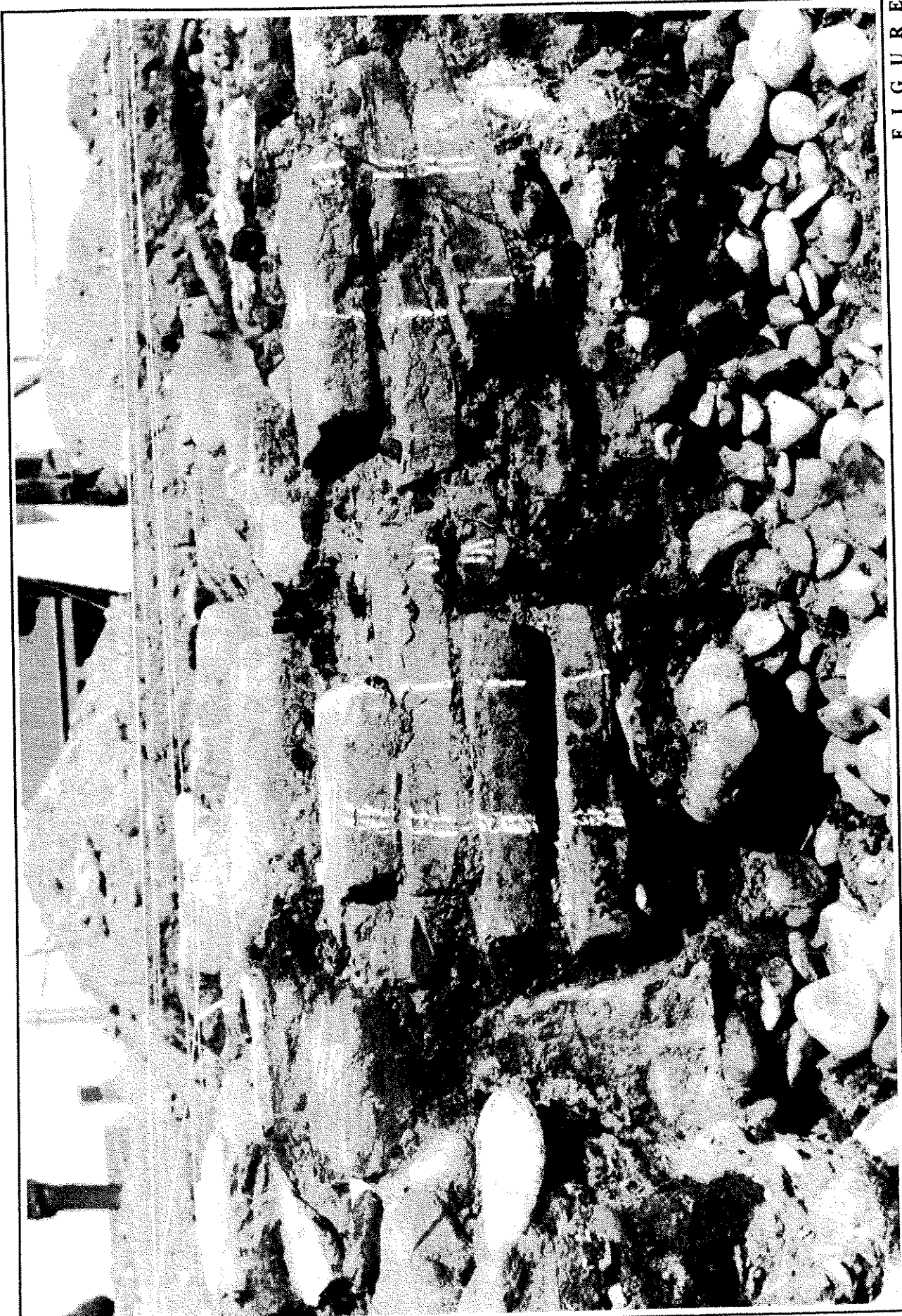
The west wall of the west oven pit was composed of two sections (inner and outer wall) separated by about 10 centimeters. The area between the two sections was chinked

with cobbles and small pieces of tiles (Figure 10). The western portion of this oven pit also was built up with Spanish tiles to compensate for the slope. The outer oven pit wall was composed primarily of layers of Spanish tiles and flat rocks. The inner section was composed of large boulders.

The area separating the west and east oven pits first was leveled with a layer of Spanish tiles. The rocks for the middle wall were then placed on the tiles. The east wall was similar to the west wall in that two sections were again present; however, it had more open areas filled with cobbles and tile pieces set sideways, between the large boulders. The eastern wall of the east oven pit may have extended farther to the east for a working platform, as it measured approximately one meter at its greatest width.

At the north opening of each oven pit, a flat triangular-shaped boulder was set at an angle so that when stoking, the firing material would slide into the oven (fire) pits. No direct evidence for chimneys was found, although the almost circular arrangement of stones at the south end of the east oven pit suggests that one may have been placed there. The west oven pit was disturbed at the southern end by the recent placement of a PVC water pipe through the fire pit and by a mortared wooden post.

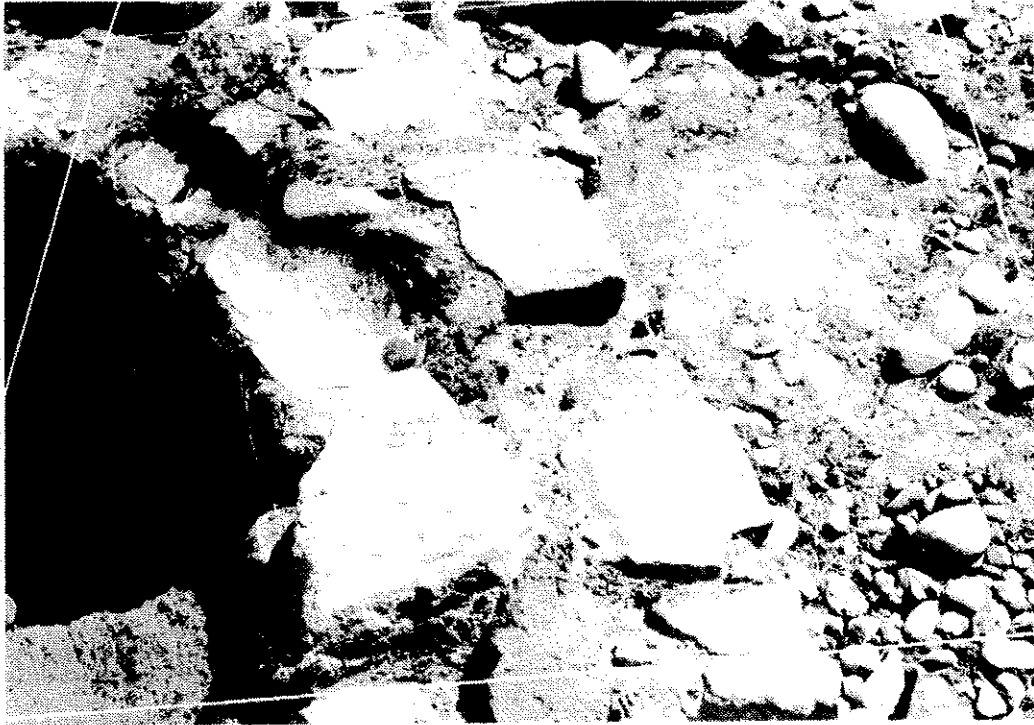
During the removal of the tryworks oven foundation, two pieces of wood, several bone fragments, and some pieces of metal (nails and unidentifiable fragments) were recovered. One piece of wood was found under a flat cobble in the platform. The other came from between the two sections of the west oven pit wall. Since wood for burning or construction was scarce, the species of trees represented will be valuable information and will contribute to the ongoing research on the economics of the industry (May 1988b). The bone also came from the



FIGURE

9

Leveling the tryworks. Note rocks and adobe tiles used to level and construct the west wall of the west oven.



chinked area between the two sections of the west wall, as did two of the nails. The other metal fragments were found in the sand of the platform where the metal doors were recovered by May (1988). This material will be curated by the Fort Guijarros Museum Foundation along with a sample of the black organic fire-pit material.

SUMMARY

In general, construction of the tryworks consisted of building up the west slope, so that the oven walls and porch rested on a level surface, digging shallow pits in the natural cobble layer for the fire pits proper, laying tiles to maintain the same overall level, and, then building the walls of various size boulders and adobe tiles and using cobbles and pieces of tiles to chink between the large boulders. Although some of the boulders had a thin layer of mortar on them, the mortar does not appear to be associated with the construction of the tryworks. That is, it did not appear to have been used to attach rocks, as no two rocks with mortar on them were found juxtaposed together along the mortar. This suggests that much of the material, like the Spanish tiles, was probably scavenged from previous structures near the site.

ACKNOWLEDGEMENTS

This reconstruction project was undertaken by personnel of ERC Environmental and Energy Services Co. under terms of a contract with the Department of the Navy, Engineering Field Activity, Southwest. Project personnel included Dennis Gallegos, Adella Schroth, Andrew Pignuolo, Edward Baker, and Mike Caldwell (Illustrator).

The authors thank Ronald May and the Fort Guijarros Museum Foundation for their helpful suggestions and information; the Commanding Officer,

U.S. Naval Submarine Base, Captain Phil Klintworth for his support and funding; Bob Schard for his assistance in facilitating this project; and Brian Eckleston and Roy Perez for their contracting assistance, and Phil Wilke, Ph.D for his critical review of this article.

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- 1988b A Preliminary Report on the Summer-Fall 1988 Archaeological Field Season at Ballast Point, San Diego, California. Fort Guijarros Quarterly 2(3):4-21.
- 1988c The Tryworks Oven at Ballast Point. Fort Guijarros Quarterly 2(3): 22-27.

FOUNDATION NOTES

Ninth Annual Fiesta a Success

The ninth annual Fort Guijarros Fiesta was a resounding success! Over half of the attendees were previous supporters. The 135 Fiesta-goers were treated to new entertainment this year with short performances of Spanish operettas by the San Diego Lyric Association. Members of that association are on the Casa de Espana Board of Directors and graciously volunteered to join in our annual event. The new Consul-general of Spain, Sr. Eduardo Garriguez and the new Submarine Base Commanding Officer, Captain Bob Mitchell were special guests at the event.

The usual format of bussed tours to the Fort Guijarros archaeology dig site expanded this year. Small groups were taken to the new glass-cased exhibits at Slattery Hall on Ballast Point. Outside and to the east on the lawn, the guests were then led to the relocated Tryworks Ovens. Once back in Argonaut Hall, guests were greeted by Foundation members and were left to enjoy a pleasant social time until the paella pans were brought-in by Chef Juan Pomares and his crew.

In addition to the operetta, introductory speeches were delivered by Consul-general Garriguez and Captain Mitchell. Crew photographs and certificates of merit were given to all thirty people who volunteered throughout the year to work for the Foundation. Art and architectural historian Edna Kimbro delivered an enlightening slide presentation that illustrated the clothing of Spanish people in the 18th and early 19th Centuries in California. Kimbro received an Award of Merit for her outstanding efforts over the past decade to save and restore Mission Santa Cruz.

Submarine Base Change of Command

In July of 1989, Captain Phil Klintworth, Commanding Officer, U.S. Naval Submarine Base, and Captain Bob Mitchell, U.S.N. changed command. The traditional ceremony was conducted at the Parade Ground between the waterfront and Rosecrans Street. Just behind the podium, a very large American flag snapped in the breeze and called attention to the "submarine sail" of U.S.S. 301, a vintage submarine superstructure on exhibit. The ceremony commenced with dual cannon firings from the historic Napoleons that once fired sunset salutes at Fort Rosecrans, U.S. Army Artillery Corps (Ballast Point). Captain Klintworth has gone on to become a Professor of Naval Science and the Commanding Officer of the Navy R.O.T.C. at the University of Michigan.

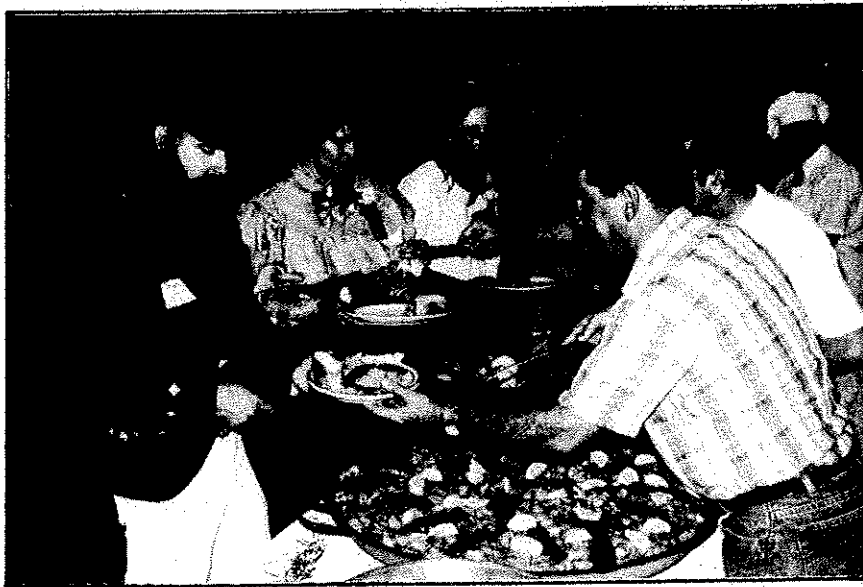
Just a week or so before the change of command, Foundation Board Director R. Curtis McKee hosted a goodbye party for Phil Klintworth. In addition to the usual merriment of the traditional white elephant and potluck experiences, Phil Klintworth received gifts from his friends. Of special note were a replica of a scrimshaw box and a miniature 18th century naval officer intricately painted by Andie McKee, a faithful dig crew member. Curtis McKee presented the miniature as a token of his friendship and camaraderie with Klintworth. The Foundation presented the scrimshaw box for Phil and Kathy Klintworth to remember their time with us when we researched the Ballast Point Whaling Station in 1988/89. Inside the box, an engraved brass Life Membership card sealed our relationship over these past two years.

**FORT GUIJARROS
FIESTA**

SEPTEMBER 23, 1989



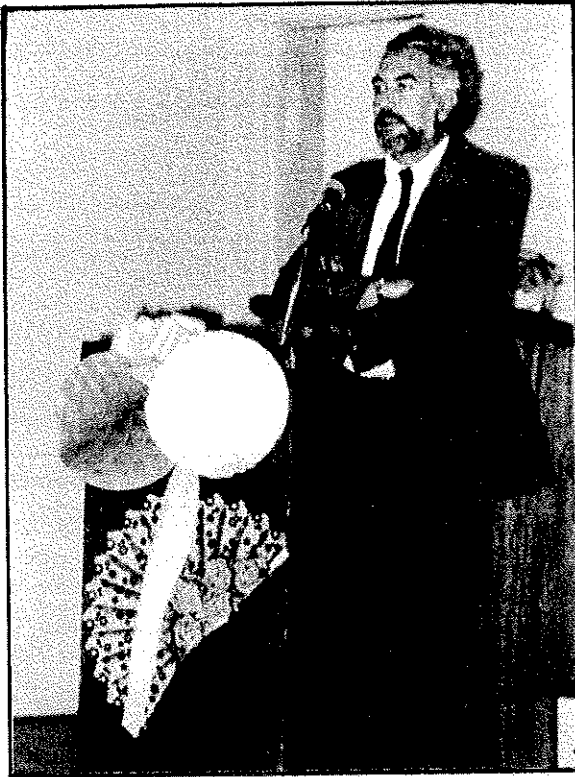
Right: Fred Buchanan conducts a tour of the 1989 excavation at the Fort Guijarros site.



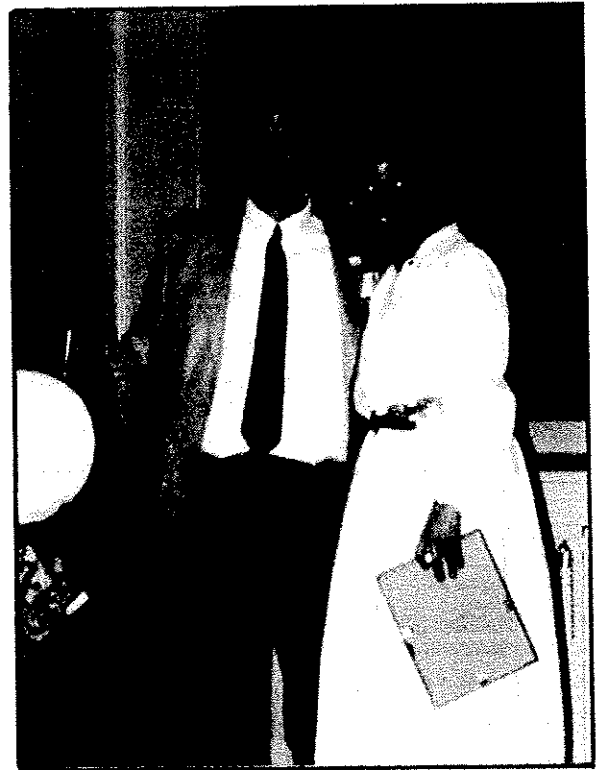
Left: Senor Juan Pomares and his staff serve the traditional Paella Valenciana.



Right: Federico Moreno-Torroba, Jr. directs a selection of Zarzuela, a combination of grand opera, operetta, and musical comedy inspired by Spanish folklore.



Left: The Honorable Eduardo Garrigues, the new Consul-general of Spain, addresses the guests.



Right: Foundation Chairman Ron May presents an Award of Merit to keynote speaker Edna Kimbro after her presentation on 18th century California costumes and lifestyles.



The excavation crew members stand and are recognized for their volunteer work for the Foundation.

MEMBERSHIP REPORT

Michael Nabholz
Membership Chair

Thank you again to the following who joined the Foundation or renewed their memberships as of November 10 (new members are indicated by *). The 1989 membership drive has been the most successful ever!

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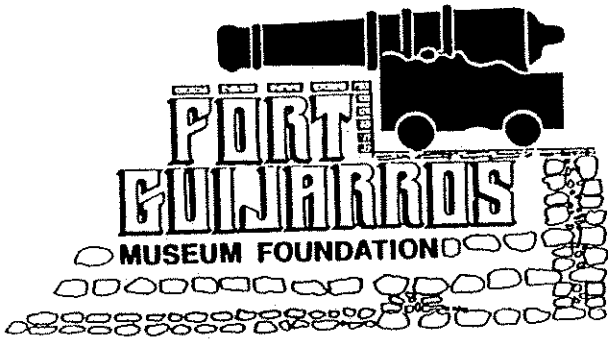
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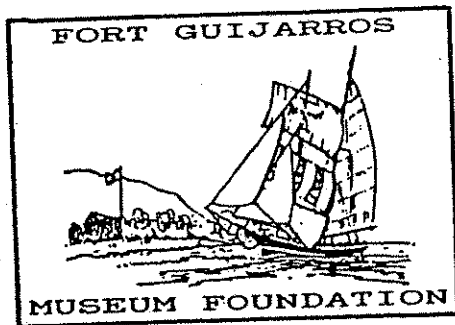


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Vol. 135

WASHINGTON, THURSDAY, JUNE 15, 1989

No. 80

House of Representatives

IN RECOGNITION OF THE FORT
GUIJARROS MUSEUM FOUNDATION

HON. BILL LOWERY

OF CALIFORNIA

IN THE HOUSE OF REPRESENTATIVES

Thursday, June 15, 1989

Mr. LOWERY of California. Mr. Speaker, today I would like to applaud the tireless volunteer efforts of the Fort Guijarros Museum Foundation of San Diego, CA.

Over the past few years, extremely limited land resources have forced the Naval Submarine Base of San Diego to build on sites of suspected or known archeological significance. To mitigate the adverse effects caused by the construction projects, the foundation, headed by Ronald V. May, has provided advice and counseling to the naval base commander and coordinated with the State historic preservation officer, naval engineering command, and local agencies and archeologists.

In addition, the Fort Guijarros Museum Foundation has volunteered vast amounts of equipment and labor to locate and document such sites as Fort Guijarros, the first coastal

fortification in California, and the Ballast Point whaling station. Of particularly significant merit was the whaling station project, located on the proposed site of a Coast Guard search and rescue facility. On short notice, over 400 man-days were contributed to the recovery of the whaling station. Among the discoveries was a Tryworks Oven Foundation, the brick furnace in which metallic pots were used to render whale oil.

The Tryworks, which was relocated and preserved for future study, is the only known intact example of its kind in the United States. The efforts of the foundation allowed the Coast Guard's project to be completed on time and as planned, saving the Government more than \$50,000.

The foundation's efforts have not only assisted in the preservation of irreplaceable archeological artifacts, but also facilitated the successful and efficient development of the submarine base, increased overall awareness of the unique history of San Diego, and greatly improved public relations for the Navy in the area. Mr. Speaker, I ask you to join me in saluting the inspiring dedication and initiative of the Fort Guijarros Museum Foundation.

Thank you & Best Wishes,

Bill Lowery