
**WINDWARD RESIDENTIAL PROJECT
ARCHAEOLOGICAL MITIGATION AND MONITORING PLAN (AMMP)
AND
PALEONTOLOGICAL RESOURCE MITIGATION AND MONITORING PLAN (PRMMP)**

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Revised March 2021

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CHAPTER 1: MITIGATION AND MONITORING PROGRAM

WINDWARD RESIDENTIAL DEVELOPMENT

Signal Landmark proposes to construct a 36-unit development on a 2.5 acre vacant site in the California coastal zone at 17202 Bolsa Chica Street (east side of Bolsa Chica St., south of Los Patos Ave as shown on Figure 1). The project is described by the City of Huntington Beach (2019) as including: 1) a General Plan Amendment to change the existing use designation from Open Space to Residential Medium Density; 2) a Zoning Map Amendment to change existing zoning designation from Residential Agriculture to Specific Plan; 3) a Zoning Text Amendment to establish the Windward Specific Plan for the development of the site and 4) a Local Coastal Program Amendment to amend maps and text to reflect the proposed land use and zoning designations. In April 2016 Signal Landmark entered into an option agreement with the Trust for Public Land (TPL) to acquire the Windward and neighboring Goodell Family Trust property for open space/conservation purposes. TPL's option on the property expired in April 2019 without the property being acquired.

The Planning Commission approved the project in June 2017, the legislative amendments were approved by City Council in May 2018, the Local Coastal Program Amendment and Zoning Text Amendment were re-adopted by City Council in July 2018 with amended exhibits, and in December 2018 the California Coastal Commission certified the Land Use Plan and Specific Plan for the project. The Specific Plan requires that a Coastal Development Permit be obtained for the proposed development project.

WINDWARD MITIGATED NEGATIVE DECLARATION NO. 2016-003

Mitigation measures adopted for the proposed project are identified in the Windward Mitigated Negative Declaration No. 2016-003, *Cultural Resources Mitigation Measures*, and summarized in Chapter 3: Table 1. The requirements of Section 3.7A of the Windward Specific Plan are also intended to be implemented through this AMMP. The first six mitigation measures of the MND outline five archaeological requirements (CR-1 thru CR-5) including: preparation of an Archaeological Mitigation and Monitoring Plan (AMMP) (CR-1), Controlled Site Grading with Monitors (CR-2), Stop Work Plans in the event of a potential find (CR-3), a Research Design and Recovery/Preservation Plan for Exposed Cultural Resources (CR-4), and Treatment of Human Remains (CR-5). The last mitigation measure of the MND lists one Paleontological requirement addressed here as a Paleontological Resource Mitigation and Monitoring Plan (PRMMP). These measures are also reflected in the requirements of Section 3.7A and B of the Windward Specific Plan.

APPROPRIATE LAWS AND GUIDELINES

Historic resources fall within the jurisdiction of several levels of government. Federal laws provide the framework for the identification, and in certain instances, protection of historic resources where there is federal permitting and federal funding. Additionally, states and local jurisdictions play active roles in the identification, documentation, and protection of such resources within their communities. The California Public Resources Code (PRC), Section 5024.1, is the primary state law and regulation governing the evaluation and significance of cultural resources of State, regional, and local importance. The California Environmental Quality Act (CEQA), Cal. Public Resources Code Section 21000 et seq., requires that state and local agencies take into consideration a proposed project's impact on the environment, including cultural resources, prior to rendering discretionary approvals, such as development entitlements.



Figure 1. Location of the Windward Development Area at the Southeast Corner of Los Patos and Bolsa Chica Street as the Western Portion of the Windward Property and in relation to the Goodell Parcel to the South and City-Owned strip of land to the North.

Definitions

Cultural Resources- A collective term used differently in legal documents but intended to include historic and prehistoric sites or objects that were constructed or modified by man. The term "historic" includes a district, site, building, structure, object or other resource belonging to a time period when written records were available; "prehistoric" is generally accepted as a term referring to older cultures lacking written records. The distinction implies that different materials were used by the cultures to manufacture artifacts (such as glass versus stone) and different methods of investigation and documentation may also be required (such as recording buildings versus subsurface cultural deposits).

Archaeological Cultural Resources- An encompassing term which includes historic or prehistoric resources which require subsurface excavations to fully expose. Archaeological Resources are usually only partially intact with portions of the resource disturbed or destroyed through man-made or natural causes due to their fully or partially buried condition.

Paleontological (Cultural) Resources- Paleontological materials are frequently included with Cultural Resources and specifically Archaeological Resources in legal documents and mitigation measures. Although Paleontological Resource is a term narrowly defined as ancient remains of plants and animals, the methods of investigation and documentation of these resources can be similar to Archaeological Resources and usually also require subsurface excavations to investigate and document the resource; sometimes referred to as "prehistoric" remains due to the age of the deposit.

Tribal Cultural Resources- A Native site, feature, cultural landscape, and sacred object or place of cultural value to a tribe. A term which is more expansive than Cultural Resources since it includes natural objects and places which hold significance to a tribe as well as man-made sites, features, and objects.

Significant Cultural Resources- The term "significance" regarding a Cultural Resource must be defined for a specific place since a rare resource in one place might be considered significant due to its rarity but the same resource found in quantity in another area could be considered as common and not necessarily significant. In addition, resources need to be examined for their value by both the Archaeologist and Native American working on a project since a sacred place, for example, may not have any evidence of an archaeological site or cultural artifacts and yet it may have enormous significance to a local tribal group.

Significant resources are resources which command a level of importance above mundane or daily objects used by a culture. Resources of this type will be left in place and not removed from the site during this investigation to allow for preservation of the resource where it was found. A level of significance determination may change, however, when an area has been heavily disturbed resulting in a resource transported out of its original context due to continual discing, plowing, planting, harvesting and fertilization as was the case on the Windward Residential Project Area. Therefore, for this project, Native Americans and Archaeologists will together examine the context of a significant object to determine if the object has been found in place (in situ) or if the soils and other factors indicate that the original deposition no longer exists and the item has been displaced. A significant artifact in this context can be removed and reburied after investigations if that is the agreement between the Native monitors and the Archaeologist. All significance decisions will be made jointly by both parties.

Archaeological and Paleontological Cultural Resources

Section 21081.6 of the Public Resources Code and Section 15097 of the California Environmental Quality Act (CEQA) Guidelines require adoption of a Mitigation Monitoring and Reporting Program (MMRP) for all projects for which an Environmental Impact Report (EIR) or Mitigated Negative Declaration (MND) has been prepared. This requirement was mandated by Assembly Bill (AB) 3180 enacted on January 1, 1989 to ensure the implementation of all mitigation measures adopted through the CEQA process. AB3180 provided general guidelines for implementing MMRPs as detailed in Section 15097. The City of Huntington Beach adopted a MMRP in connection with its approval of the Windward Residential Project. The City's MMRP includes protection for Cultural Resources through a mandated Archaeological Mitigation and Monitoring Plan (AMMP) and Paleontological Resource Mitigation and Monitoring Plan (PRMMP). **Tribal**

Cultural Resources

With the implementation of Assembly Bill 52 (AB 52) in July 2015 the State of California began a new era of relationships between public agencies and Native American Tribes (OPR 2017). This new law officially recognizes Tribal expertise regarding cultural resources and provides for Tribal knowledge to be included in the CEQA environmental review and decision making processes through mandatory Agency-Tribal consultation. Respectful and effective consultation consists of in-person meetings between appropriate Tribal and Agency representatives. A new term was introduced through this legislation describing a Native site, feature, cultural landscape, and sacred object or place of cultural value to a tribe as a Tribal Cultural Resource (TCR). These must also be considered as part of a state or local agency's consideration of potential environmental impacts, and if significant impacts are identified, mitigation measures must be adopted to reduce the significance of potentially significant impacts.

The State of California had previously established a policy encouraging communication and consultation with Native Tribes in 2011 through Executive Order B-10-11. In compliance with this order in 2012, the California Natural Resources Agency adopted a *CNRA Tribal Consultation Policy* to ensure effective government consultations between Tribes and the Resources Agency. In 2017 the California Coastal Commission adopted its own *CCC Tribal Consultation Policy* to "improve government-to-government dialogues with the Tribes, improve public participation, and provide a more specific process than currently exists for the Commission to work cooperatively, communicate effectively, and consult with Tribes for the mutual benefit of protecting coastal resources" (CCC 2017:2). The policy provides guiding principles, calls for a Tribal Liaison, and Commission staff training. For Coastal Development Permits, as required for the Windward Residential project, the Commission will review locally-issued CEQA compliance documents to determine whether they include Tribal Consultation and consideration of Cultural Resource impacts.

Consultation Efforts and Documentation

The City's certified Land Use Plan/Coastal Element contains policies protective of cultural resources which serve to promote the preservation of significant archaeological and paleontological resources within the Coastal Zone (C5). Specifically the Plan requires coordination with the State Historic Preservation Office (OHP) to ensure that any significant resources are identified (C5.1.1). In addition, the City's certified Implementation Plan/ Zoning Code provides standards for the protection of Archaeological/Cultural Resources (Section 230.82.E) and as recently emphasized by the Coastal Commission (see Appendix A) which among other measures calls for preparation of mitigation in consultation with:

- State Historic Preservation Office (OHP) (Appendix B),
- Native American Heritage Commission (NAHC) (Appendix C)
- Native American tribal groups with ancestral ties to the area according to NAHC (Appendix D),
- Peer Review (Appendix E).

PURPOSE OF AMMPS AND PRMMPs

The Windward Residential Development Mitigation Monitoring Program describes the procedures for both archaeological/tribal and paleontological mitigation and monitoring. The purpose of these plans is to clearly outline protocols for the implementation of mitigation measures adopted for the proposed project as identified in the Windward Mitigated Negative Declaration No. 2016-003 prepared by the City of Huntington Beach and the Windward Specific Plan Section 3.7A.

Specifically, the mitigation and monitoring plans require Controlled Archaeological Grading on the Windward Residential Development parcel prior to project grading. The purpose of the Controlled Archaeological Grading is to ensure that any cultural resources that may exist within the footprint of development are discovered and preserved if they are determined to be significant. The City of Huntington Beach is the CEQA Lead Agency for the project and has the jurisdiction to issue the Coastal Development Permit (CDP) for the Controlled Archaeological Grading Program outlined in this AMMP. A CDP issued for the subject site is appealable to the Coastal Commission.

CHAPTER 2: CA-ORA-86 ARCHAEOLOGICAL SITE PARAMETERS AND ASSOCIATIONS

PART OF A NATIONAL REGISTER SITE COMPLEX (PCAS, Pat Hammon 1981)

In the early 1960s the original investigator of Bolsa Chica Mesa was amateur archaeologist Alika Herring who located five archaeological areas (labelled A-E) and officially recorded them with Dr. Hal Eberhart at California State University at Los Angeles (CSULA) as ORA-78, 83, 84, 85, 86 (Figure 2). The northernmost area was Herring's Site "E", ORA-86. An elongated area, this site is shown as crossing Los Patos Street and extending northeast an unknown distance into an existing apartment complex. Herring separated ORA-86 from ORA-83 based on geographic considerations as well as noting entirely different artifact assemblages at the two sites. ORA-86 contained projectile points and other materials related to the Late Prehistoric period and lacked cogged stones, discoidals, charmstones, and other evidence of Early Prehistoric ceremonial activities which characterized ORA-83 earning it the title of "The Cogged Stone Site".

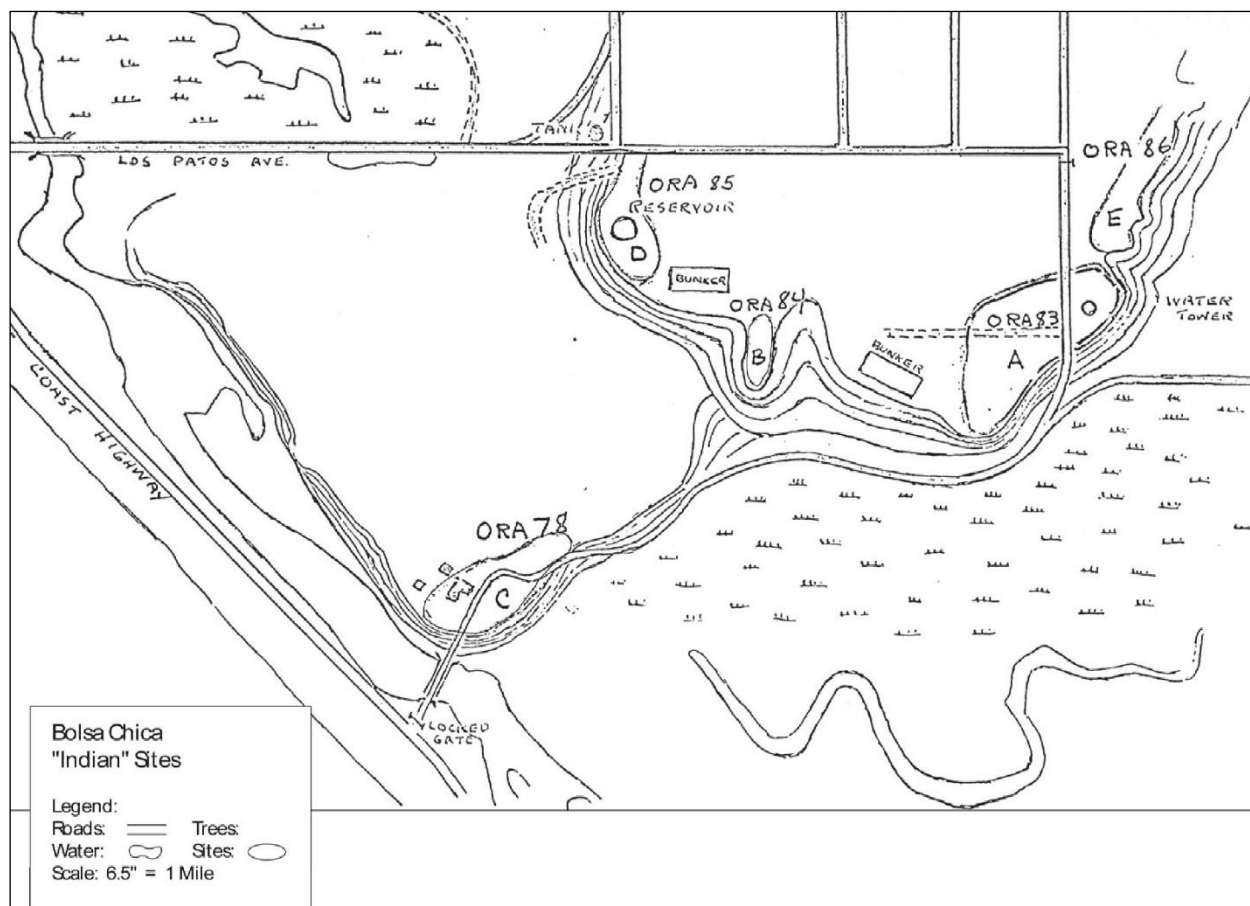


Figure 2. 1961 Map of Bolsa Chica Mesa Showing Location and Boundaries of Archaeological Sites by Alika Herring and Dr. Hal Eberhart.

Historically, a series of subsurface excavations were conducted on CA-ORA-86 by three archaeological groups from 1966 to 2001. Each investigation was carried out in an attempt to find soil deposits with integrity so that site boundaries could be established. The early investigations of the 1960s and 1970s revealed that the western half of the site was non-midden bearing; the eastern half contained shell deposits, but these were secondary in nature and had been redeposited from some other portion of the site or some other site now destroyed. In addition, this secondary shell deposit was overlain by imported peat from the adjacent lowlands used to enhance the soil chemistry for agricultural endeavors. Dr. Hal Eberhart, CSULA with the Pacific Coast Archaeological Society (PCAS), abandoned his 1966 excavations on CA-ORA-86, stating that few artifacts were found and described the site as disturbed by both World War II activities and farming procedures (Eberhart 1966a, 1966b). After an additional series of excavations, ARI and Peer Reviewer Dr. William J. Wallace concurred that primary deposits were not present in this area and recommended against saving the site from destruction by development (ARI 1973:21, Wallace 1973).

Nonetheless, on July 23, 1980, Pat Hammon for the PCAS submitted a nomination for listing of CA-ORA-83 (hereafter ORA-83), the Cogged Stone Site, on the National Register of Historic Places where she defined the site as including CA-ORA-86 (hereafter ORA-86), embracing the then controversial concept that CA-ORA-83 extended from the southern bluff of Bolsa Chica Mesa to and beyond Los Patos Avenue as shown on Figure 3 and described below:

“The Cogstone Site, CA-Ora-83, is a highly unique and significant archaeological resource. The site is unique for its tremendous yield of cogstones, over three hundred (300) have been recovered from ORA-83 totals more than the sum of all other cogstones found in Southern California, the primary (and assumed to be only) area in the United States where they are found in great quantities. These objects, long considered to have ceremonial significance (Eberhart 1971), indicate by their sheer volume, that CA-Ora-83 could have been the ceremonial center where, in all probability, most if not all, of the cogstones in southern California were produced....The boundaries of CA-Ora-83, as shown on the attached maps, were determined to be the limits of the most concentrated and least disturbed area of the site as well as the most significant by the research of Butzbach (1975) and Carter and Howard (1975). The designated area appears to be the primary locus of the Cogstone Complex with periphery areas (outside of the nominated area) containing only scattered artifacts and very little undisturbed subsurface material.” (PCAS 1980).

In the 1980s and 1990s, SRS conducted surface and subsurface investigations on several sites on Bolsa Chica Mesa including ORA-83. This work was carried out pursuant to several Coastal Development permits. Specifically, under CDP 5-89-772, as amended, and the associated Peer Review Memorandum of Agreement, excavations on ORA-83 were conducted from the southern bluff north to Los Patos Avenue in order to address PCAS concerns and National Register boundaries.

The program was oriented towards establishing accurate site boundaries. SRS' 1999 excavations at the intersection of Los Patos and Bolsa Chica Road, and west of Bolsa Chica Road, determined that no primary deposit existed in that area. However, discovery of a human reburial within Bolsa Chica Road during grading monitoring resulted in extending investigations for boundary definition east of the road. Only these 2001 excavations by SRS located relatively undisturbed deposits after an extensive year-long program. A single, nearly intact feature, a depression, was found in the southeast corner of the site. The feature had been preserved and was not affected by moldboard and deep disc plowing, as well as leveling for agricultural activities due to its deep subsurface penetration below the successive plowzones. The depression was archaeologically excavated in order to determine if it was a natural swale or cultural in origin; this work revealed that the feature was a prehistoric residential housepit and the only remaining intact remnant of ORA-86.

The current Controlled Archaeological Grading is limited to areas along the western edge of ORA-86 in what ARI described as “periphery areas (outside the nominated area) containing only scattered artifacts and very little undisturbed surface material” (PCAS 1980).

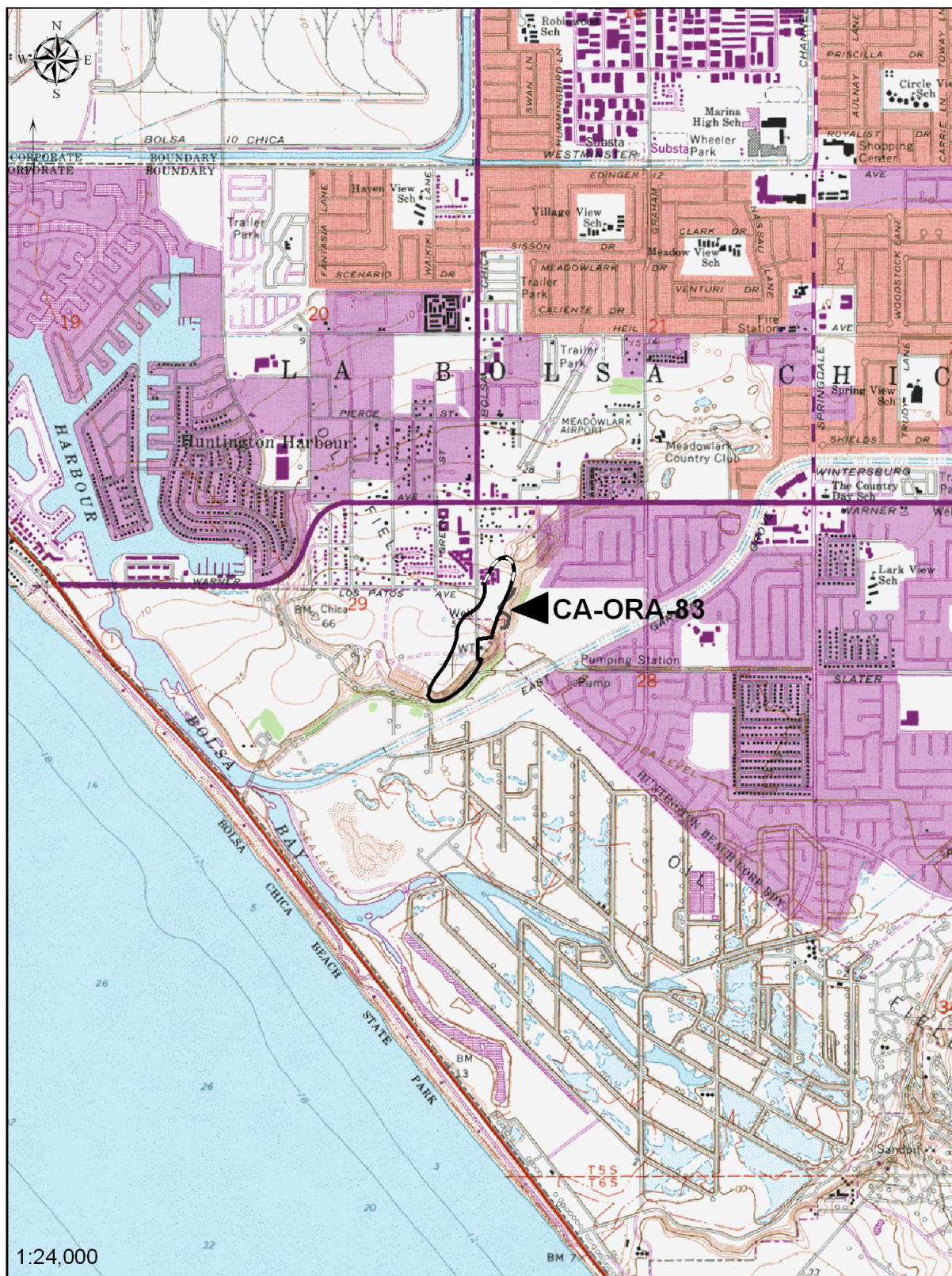


Figure 3. PCAS 1980 National Register Boundaries of CA-ORA-83.
 Source: USGS 7.5' series Seal Beach, CA Quadrangle. Photo Revised 1981.

PART OF A SACRED LANDS SITE COMPLEX (NAHC, David Belardes 1994)

The Juaneño Band of Mission Indians were involved in all SRS investigations on Bolsa Chica Mesa from the 1980s and 1990s (and into the 2000s) through consultation and monitoring of the various excavations. Through this participation, the tribe became aware of the numerous finds and their interrelationships at several sites. This information was also shared with representatives of the Gabrieleno Band of Mission Indians. In 1994, under the direction of Chief David Belardes, the Juaneño Band completed a Sacred Lands Study Inventory Form for ORA-83 and submitted the form to the Native American Heritage Commission (NAHC). The NAHC Commission accepted the nomination and placed the site on the Sacred Lands Inventory as their site N-Ora-24. N-Ora-24 is described as a Sacred/ Power Area, Worship/Ritual Site, Burial Site, and Reburial Site since human remains removed from the site had been reburied in secure on-site locations. The Sacred Lands Inventory also described the site as follows:

“Ora-83 thru -87 be continuous along the bluff. 1964 excavation by A.M. Herring removed 140 cogstones (40 discoidal), charmstones, etc. Also (Eberhart) Collection at Cal. State Univ. LA. Juaneños express serious concern over potential loss of this highly significant site to development. Site descendants Matias and Domingo Belardes. 175 burials were discovered at ORA-83 and another 17 discovered at ORA-85 on the Signal Landmark Property being developed by Hearthside Homes, Inc. in 2006.” (NAHC 1994)

The Juaneño submittal recognized several additional sites as being related to The Cogged Stone Site implying that the series of sites ringing Bolsa Chica Mesa were part of a Sacred Lands Site Complex. Eleven prehistoric sites have been recorded on Bolsa Chica Mesa as shown on Figure 4 and given their proximity were clearly interrelated. The Sacred Lands listing recognized this fact and extended the significance of the region way beyond the ORA-83/144/86 complex which PCAS had recorded four years earlier as the Cogstone Complex.

All but two of the eleven sites were situated along the eastern perimeter of the landform, best delineated at the 25' contour, suggesting that environmental and/or social concerns favored facing Bolsa Bay. On the western perimeter facing Anaheim Bay, ORA-85, the Eberhart Site, was the only site remaining that was recorded during early Mesa surveys; others may have existed in the past but were destroyed by construction early in the historic period. CA-ORA-288, the Knoll Site, a site on a knoll in the lower third of the Mesa, was the only site not located overlooking an embayment and the only site that did not have a shell midden deposit.

Studies on the Mesa began in the 1920s with a Mesa survey by Herman F. Strandt but were not seriously undertaken until the 1960s (Herring 1967, 1968). Alike Herring and Robert Gochicoa were local residents with an enthusiasm for the cogged stone artifact. As described, they surveyed the full Mesa and recorded the archaeological sites as they found them, labeling them sites A-E and later ORA-78, 83, 84, 85, 86. Other organizations, such as PCAS were involved in surveys and excavations with Dr. Hal Eberhart CSULA. Joint excavations were conducted on ORA-85, ORA-86, and ORA-83 in an effort to locate the ideal site for research efforts but also to find the source area of the cogged stone artifact. Their excavations found considerable disturbance at all three sites and a very low yield of artifacts, as stated by PCAS in their National Register nomination, which discouraged further investigations. With the onset of the 1970s, the southern portion of the Mesa was purchased by the Signal Bolsa Corporation for development. A multitude of surveys and excavations have ensued on seven specific sites since that time (ORA-78, ORA-83 and its extension ORA-144, ORA-84, ORA-85, ORA-86, ORA-288, ORA-289).

The northern portion of the Mesa contains three archaeological sites (ORA-368, ORA-555, ORA-87/1078) in ownership by private parties or the City of Huntington Beach. The site record forms indicate that burials exist at ORA-87 (and its extension ORA-1078), but only cursory excavations have occurred here since the site is wholly contained within the Meadowlark Golf Course. (Wood 1975; Nissely et al. 1975: burial salvage; Kice 1977: auger program for building expansion). Both ORA-368 (McKenna et al. 1986) and

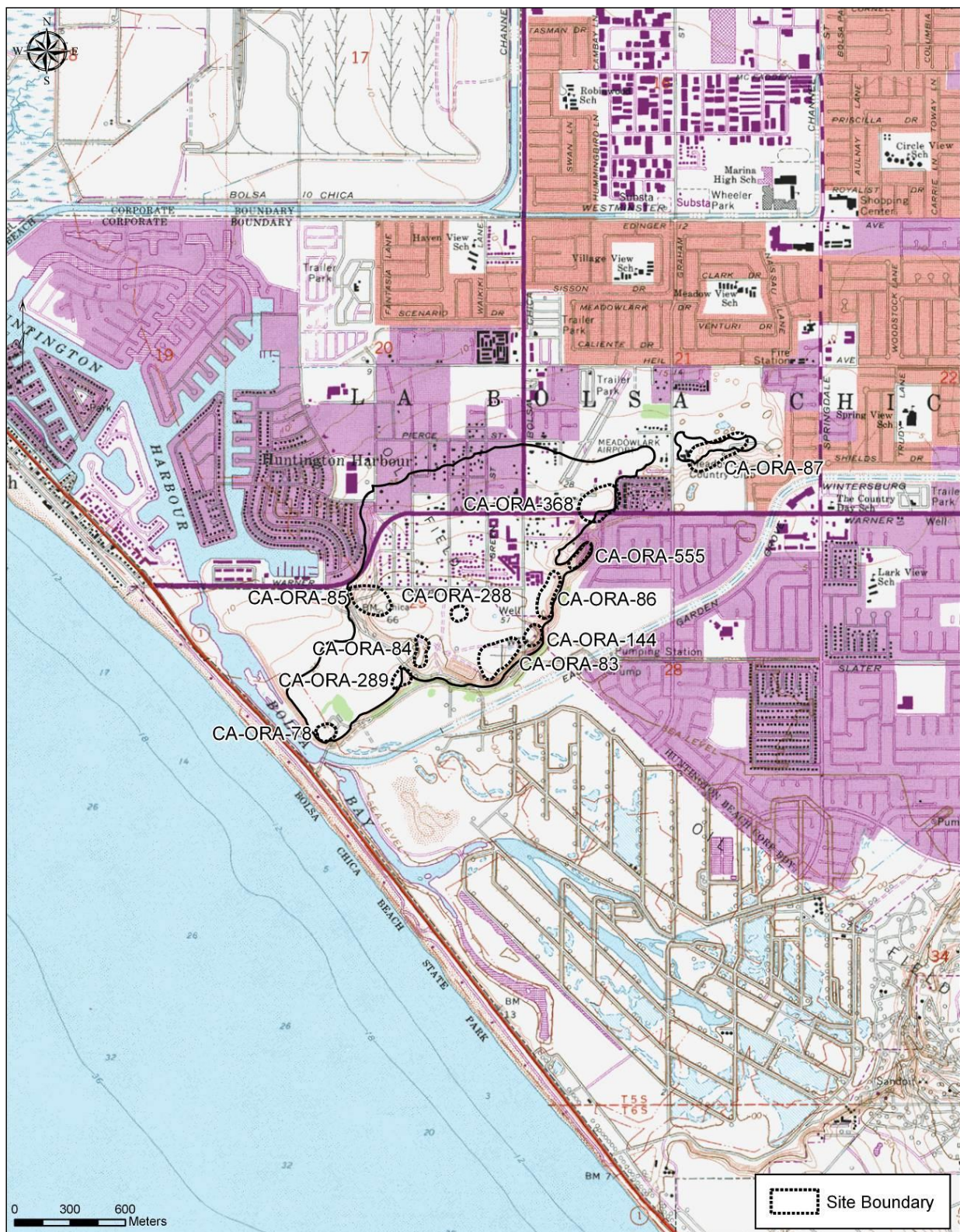


Figure 4. General Location of Areas Within the Bolsa Chica Mesa Site Complex.
 Source: USGS 7.5' series Seal Beach, CA Quadrangle. Photo Revised 1981.

ORA-555 (ARI 1976) have been investigated several times over the last 30 years and can be used for comparative analysis.

The fourth site in this northeastern area is ORA-86, which is owned by Signal Landmark and has also had several investigations over the years. Information for these sites was presented in Volume 1, *Research Design* and Volume 4, *The Sites*, in the *Bolsa Chica Technical Series* produced by SRS (SRS 2012). Only a summary will be repeated here.

The eleven Bolsa Chica Mesa sites present a full range of activity areas including short and long-term residential bases and limited use areas from the Millingstone through the very early Late Prehistoric Horizons (Wallace 1955) as seen below (Table 1). They are not single period, single use sites associated with the Cogged Stone Site but rather provide a richer, more complex view of life on Bolsa Chica Mesa from about 9,500 to 1,200 years ago. Collectively, these sites provide a picture of environmental, economic, and social change on Bolsa Chica Mesa over at least an 8,000-year period.

Table 1. Activity Sites through Time on Bolsa Chica Mesa
(Arranged by Time Period from most recent to oldest Occupation).

Site	Time Period	Site Type
ORA-144	---	unknown
ORA-86	Early Late Prehistoric	Limited use area: 1 structure, shell midden
ORA-555	Intermediate/Late	Limited use area: 1 burial; shell midden
ORA-85	Intermediate	Long-term residential base with burials; short duration
ORA-368	Intermediate	Seasonal processing area, shell midden
ORA-83	Early Intermediate	Short-term residential base, structure reuse, shell midden
ORA-84	Late Millingstone	Seasonal processing area, shell midden
ORA-288	Millingstone	Seasonal processing area, seed grinding only
ORA-289	Millingstone	Seasonal processing area, shell midden
ORA-83	Early-late Millingstone	Long-term ceremonial base, reburials/burials, structures
ORA-83	Post Pleistocene	Special Processing area: Bivalve Bead manufacturing

No residential base is known on Bolsa Chica Mesa during the earliest post-Pleistocene period. This may be attributed to the fact that the shoreline was miles away from its current position at 9500 YBP when the first peoples took advantage of the views from the bluff edge for safety and other reasons.

During the next period, the Early Millingstone, and for several thousand years, ORA-83 was the only substantial site on the Mesa apparently used as a long term ceremonial area with ceremonial structures, special artifacts such as cogged stones and charmstones, and at least five burial/reburial areas. Evidence for residential or non-ceremonial uses of the site are rare early on. However, by the Intermediate Horizon, the use of the Cogged Stone Site, ORA-83, changed to a short-term residential base with light structure reuse and shellfish processing. Burying the dead ceased on this site; this activity now became associated with ORA-85 on the other side of the Mesa which also had some structural use as shown by the presence of daub fragments. ORA-85 now becomes the Mesa's new and last residential base.

Evidence for the Late Prehistoric is scanty on Bolsa Chica Mesa with the best example of late period activity being expressed in the single structure located at ORA-86 and surrounded by a light shell midden. The site dates support a distinctly different artifact assemblage compared to other Mesa sites. ORA-86, Herring's Site 'E', lacks features, cogged stones, charmstones and other ceremonial items present on ORA-83, the Cogged Stone Site. It also lacks the features and items present at ORA-85, the Eberhart Site, on the western edge of the Mesa, which essentially replaced the Cogged Stone Site from about 5000 to 4000 YBP. ORA-86 also lacks *Olivella* barrels, oblique spire removed, end ground, and even small spire removed beads commonly found during these earlier eras. The single structure at ORA-86 was

occupied about 2,000 years after the ORA-85 was abandoned, and its characteristics suggest an entirely different use from structures on the Cogged Stone Site.

The distinct use areas in different parts of the depression suggest a habitation structure (as opposed to ceremonial structures on ORA-83) which also appears to have been used by one family (or more likely a single individual) given the few artifacts that were recovered from the cultural depression. All of the stone tools exhibit evidence that their final form resulted from re-using previously existing artifacts. Given the proximity of this site to several others on Bolsa Chica Mesa, it is likely and certainly must be considered, that the stone tools at ORA-86 were 'mined' or salvaged from other locales and brought to the ORA-86 housepit and then re-fashioned to meet the current needs. Since Bolsa Chica Mesa was receiving little use by this time, ORA-86 has been interpreted as a personal retreat by an individual or individuals wishing to be alone (Wiley 2011).

UNDERLAIN BY FOSSIL-BEARING GEOLOGIC FORMATIONS

A 2018 records search conducted by the Vertebrate Paleontology Section of the Natural History Museum of Los Angeles County revealed that although no vertebrate fossil localities have been previously reported within the proposed project area boundaries, nearby localities are known from the same or similar geologic formations as those on the Windward Residential Project area:

"The entire proposed project area has surficial older Quaternary Terrace deposits, nominally mapped as marine but our localities from these deposits in Orange County typically contain just with terrestrial taxa. Our closest fossil vertebrate locality from older Quaternary deposits is LACM 65113, just outside the boundaries of the proposed project area along Warner Avenue between Leslie Drive and Greentree Lane, that produced fossil specimens of mammoth, Mammuthus, between six to eight feet below the soil and specimens of fossil bison, Bison, between fourteen and twenty feet below the soil. At Sunset Beach and Bolas Chica Beach west of the proposed project area; LACM 1121 produced mammoth, Mammuthus, sea otter, Enhydra, and horse, Equus; LACM 3291 produced camel, Camelops hesternus, and LACM 6912 produced Mammoth, Mammuthus, ground sloth, Paramylodon, horse, Equus, and bison, Bison." (LACM 2018)

These results suggest that excavations into the older Quaternary deposits if exposed throughout the project may encounter significant fossil remains as those described above. Project subsurface excavations must be carefully monitored to recover any exposed fossil remains quickly and professionally during the excavations. Sediment samples also need to be collected from the older deposits and processed for microfossils. Recovered fossil materials shall be deposited in an accredited and permanent scientific institution for future study and educational uses.

CHAPTER 3: GENERALIZED MITIGATION AND MONITORING PROTOCOLS

Chapter 3 provides *Generalized Mitigation and Monitoring Protocols* including personnel qualifications and general coordination efforts, controlled archaeological grading practices, archaeological monitoring procedures, and reporting protocols. Chapter 4 then details a Research Design and Preservation-In-Place Plan or more simply and clearly called an *Unanticipated Discoveries Plan* which includes coordination of unanticipated discoveries, an intensive pre-grade training program, and procedures for archaeological discoveries, human remains, and paleontological discoveries. Collectively they address all Cultural Resources Mitigation Measures outlined in Mitigated Negative Declaration No. 2016-003 and summarized on Table 2, following.

PERSONNEL QUALIFICATIONS AND GENERAL COORDINATION

Dr. Nancy Anastasia Wiley will be the Principal Investigator for this project and the primary on-site monitor. Dr. Wiley exceeds the *Secretary of Interior's Professional Qualifications Standards for Archaeologists* (48CFR 44738-44739), 36CFR§61 as outlined in CR-1. Dr. Wiley is on the Register of Professional Archaeologists (#10461) and has worked in the fields of prehistoric and historic archaeology, and ethnography for over 40 years in Greece, Italy, the Caribbean, California, Canada and Alaska. Dr. Wiley has completed hundreds of projects in Southern California since 1977 on historic and prehistoric archaeological sites and is also one of few living archaeologists to have worked extensively on Bolsa Chica Mesa.

Dr. Joe Stewart is the SRSINC Chief Paleontologist who will oversee paleontological monitoring, sample collection, identification and evaluation of fossils. Dr. Stewart exceeds the *Society of Vertebrate Paleontology (SVP) Standards for Paleontologists*. He also has over 40 years' experience in paleontology and 30 years in the geology and paleontology of California. In addition, Dr. Stewart has worked extensively on Newport Bay Mesa with both marine and terrestrial Pleistocene fossils and is certified as an Orange County Paleontologist.

Dr. Nancy Anastasia Wiley is also the Site Coordinator who will direct all on-site activities, including overseeing Native input by Gabrieleno- including Kizh Nation and Juaneño-Acjachemen Nation Cultural Monitors, and coordinating on-site archaeological investigations of cultural resource finds in consultation with the Signal Landmark representatives, the City of Huntington Beach Community Development Director, and project Peer Reviewers and Native American Most Likely Descendants when appropriate. The Gabrieleno and Juaneño Cultural Monitors will routinely report to their respective Tribal groups and the Native American Heritage Commission, when appropriate. Any disputes between the project archaeologist and the Native American monitors shall be reported to the lead agencies.

CONTROLLED ARCHAEOLOGICAL GRADING PRACTICES

The goal of controlled archaeological grading is to assure that all earth movement associated with development of a site that has the potential to uncover cultural resources is appropriately monitored and protected, and that, when monitoring and/or controlled archaeological grading is required, that it be explicitly described as part of the project proposal as provided here. All site grading/over excavation should be by controlled archaeological grading, at least until sterile soil is reached. Controlled grading will not just be conducted in the plow zone but until a culturally sterile layer is reached.

Controlled archaeological grading shall occur on the Windward Residential Project area prior to the issuance of a grading permit for any future project development, and subject to an approved coastal development permit. The controlled archaeological grading will consist of using mechanized equipment where the subsurface soils are removed in approximate 2-centimeter depth increments by a mechanical scraper under the supervision of the Archaeological Principal Investigator/site supervisor in coordination with Native American Monitors. The grading process shall be limited to slow excavation in small horizontal

Table 2: Mitigated Negative Declaration No.2016-003: Cultural Resources Mitigation Measures

CR-1: Archaeological Mitigation and Monitoring Plan (AMMP) For Controlled Archaeological Grading Methods

- Prepared by City-Approved Archaeologist who meets the Secretary of the Interior Standards for both Archaeology and History.
- Includes Protocol for Mitigation of Cultural Resources through a Research Design and Recovery/Preservation Plan to include:
 - Significance Testing of Unexpected Discoveries
 - Laboratory Analyses
 - Curatorial Requirements and Acceptable Repository
 - Reporting Requirements

CR-2: Controlled Grading Across the Windward Project's Residential Parcel Prior to the Issuance of a Grading Permit

- Removal of layers of soil by Archaeologist-supervised mechanized equipment (mechanical scraper) in approximate 2-centimeter depth increments
- Archaeologists and Gabrieleno and Juaneño Monitors shall examine the soils as exposed:
 - Beige-Yellow Basal Midden Remnants
 - until Red Pleistocene Terrace Deposits, reached at a maximum depth of 150cm

CR-3: Stop Work Orders are in Effect in the Event of a Potential Find for all Construction Personnel

- The Archaeologist and the Native Monitor will stop work within a minimum 100feet of the find
- Unauthorized Collection of Cultural Resources is prohibited by law
- Find must be assessed by both Archaeologists and Native Monitors and measures implemented in to protect or scientifically remove the find and evaluated for significance
- All Archaeological Resources shall be considered significant in the absence of a determination and the Archaeologists shall prepare a research design and recovery/preservation plan for the resources as outlined within the AMMP.

CR-4: Research Design and /Preservation-In-Place Plan for Unanticipated Discoveries as Outlined in AMMP

- Specific protocol for uncovering resource and analyzing its significance shall be outlined
- The Archaeologist and the Native Monitor will establish procedures for types of archaeological resources which may be discovered including known significant items which shall be preserved in place:
 - in situ human remains; house pits, hearths, artifact caches, and midden deposits
 - ceremonial or religious artifacts if associated with human remains such as:
 - cogged stones, pipes, crystals, pigments, incised stone, beads, bone/shell ornaments
- Upon discovery of resources considered significant by the Archaeologists/Native Monitors all work will stop until preservation methods have been determined by the monitors.

CR-5: If Human Remains are Discovered No Further Disturbance Shall Occur Until:

- The County Coroner, who is notified immediately, has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98
- If remains are determined to be prehistoric, the Coroner must notify the Native American Heritage Commission (NAHC) which will determine and notify a Most Likely Descendant (MLD).
- The MLD shall complete an inspection of the site and may recommend or deny scientific removal and non-destructive analysis of human remains.
- If the remains are found in situ and have not been relocated to the site of discovery, the preservation methods in CR-4 shall apply.

CR-6: A City-approved Paleontologist shall be retained to observe grading activities, prior to issuance of permits

- The Paleontologist shall be present at the pre-grade conference, shall establish procedures for paleontological resource surveillance, procedures for temporarily halting and redirecting work to permit sampling, identification and evaluation of fossils. If the resources are determined to be significant, the paleontologist shall determine appropriate actions, in cooperation with the applicant, which ensure proper exploration and/or salvage.

areas of individual swaths the width of the mechanical scraper blade in order to maximize the opportunity for the discovery of cultural artifacts present on site, providing ultimate control. The archaeologist(s) and Native American Monitor(s) shall examine the soils as they are exposed. The number of monitors will depend upon the areal extent of excavation and number of equipment used at any one time. Controlled Archaeological Grading efforts will continue until sterile soils are encountered.

Previous investigations have shown that site sediments consist of: 1) homogenized soils mixed by mechanical equipment, 2) basal midden remnants (brown and beige-yellow in color) and/or 3) Pleistocene terrace deposits (red in color). The basal midden remnants are cultural deposits whereas the Pleistocene terrace deposits represent episodes of natural deposition thousands of years before the onset of human occupation. These natural soils are sterile or void of cultural resources unless incidentally penetrated by animal activities or historic mechanical excavations. Culturally-sterile Pleistocene terrace deposits are shallow at this location, expected to be reached at a maximum depth of 150cm below the surface. If cultural resources are exposed in any soils, including overlying basal midden remnants, the Native American Monitor and the Archaeologist shall, determine if the cultural material is significant. If the cultural material is determined to be significant, the Archaeologists shall prepare a Research Design and Recovery/Preservation-In-Place or Unexpected Discoveries plan for the resources as outlined within this Archaeological Mitigation and Monitoring Plan. Depending upon the plan, an amendment to the approved coastal development permit for the controlled archaeological grading may be required before work may re-commence.

Fossil-bearing Quaternary Terrace deposits have produced vertebrate taxa at nearby Warner Avenue-Leslie Drive/Greentree Lane between 6' to 8' below surface soils. Any excavations reaching these depths will require an on-site Paleontological monitor to recover visible vertebrate remains and soils samples for micro-fossil processing.

ARCHAEOLOGICAL MONITORING PROCEDURES

Monitoring shall be consistent with the *Secretary of Interior's Standards and Guidelines for Archaeological Documentation* (48 FR 44734-44737) and with any applicable requirements of the Native American Heritage Commission and the State Office of Historic Preservation. CEQA does not explicitly address controlled archaeological grading and/or construction monitoring. It does however address protection of '*historical resources*' which are listed or eligible for listing on the California Register (or National Register of Historic Places). If an archaeological site is not an historical resource but meets the definition of a "*unique archaeological resource*" as defined in Public Resources Code Section 21083.2 then it should also be treated in accordance with the protective provisions of an historical resource. Archaeological site CA-ORA-86 is a younger northeastern extension of National Register eligible site CA-ORA-83, *The Cogged Stone Site*. The site was used approximately 2,000 years ago, while the Cogged Stone Site was settled nearly 10,000 years ago and was essentially abandoned by the time Herring's Site 'E' was occupied. Due to this association, any remnants of the younger site are significant and unique archaeological resources. In addition, the Cogged Stone Site and associated Bolsa Chica Mesa sites are listed as '*Sacred Lands*' by the Native American Heritage Commission (NAHC) and are considered '*Tribal Cultural Resources*' (TCRs). Exemplary efforts are therefore being taken to insure that if portions remain of the original site which were previously undetected, then these will be located through Controlled Archaeological Grading prior to issuance of a project grading permit (CR-2).

Archaeological Monitoring will consist of the presence of two Archaeological specialists and two Native American monitors on-site to supervise, observe and document excavation activities associated with the controlled archaeological grading in compliance with requirements outlined in Mitigated Negative Declaration No. 2016-003 and Section 3.7A of the Windward Specific Plan. The Native American monitors shall meet the California Office of Historic Preservation standards and shall have documented ancestral ties to the area, consistent with the standards of the Native American Heritage Commission and as outlined in the 2017 CCC *Tribal Consultation Policy* which recognizes the validity of Tribal Cultural Resources

within their jurisdiction and the need for their protection... A Tribal representative from both the Gabrieleno—including Kizh Nation and Juaneño-Acjachemen Nation will be present on-site to monitoring all ground-disturbing activities. Archaeological and Native American monitoring will continue for the entire duration of all controlled archaeological grading activities. Paleontological monitoring will occur when appropriate during excavations exceeding 5' below surface soils on the Windward Residential Project.

How Monitoring Will Be Conducted

The monitoring plans and scope of work have been developed to meet the project's adopted mitigation measures and Conditions of Approval (CoA) regarding Cultural Resources. This document satisfies CR1 and has been developed to comply with CR-2, CR-3, CR-4, and CR-5 (Table 2). This document is also intended to meet the requirements of Section 3.7A of the Windward Specific Plan. The subsequent section will accomplish the following tasks:

- Explicate the responsibilities and empowerment of on-site cultural resource monitors (i.e., Native American and archaeological monitors)
- Propose intermittent testing or screening methods as deemed necessary by the primary project archaeologist if appropriate (shaker screens with 1/8, 1/4 and 1/2 inch hardware cloth at a minimum and smaller graduated screens for Paleontological sampling.)
- Expand on the proper treatment of cultural resources found during controlled archaeological grading and establish guidelines to record and evaluate any resources encountered.
- Designate a scientific institution and/or tribal entity to which archaeological materials will be remitted upon the project completion, if necessary. Reburial of all collected materials has been required by the designated Tribal groups on Bolsa Chica sites and is requested for this project.
- Avoidance and preservation of significant cultural resources in situ is the preferred option to be determined in consultation with the Native American monitors, and the Native American most likely descendent (MLD) when State Law mandates identification of a MLD.
- The development footprint contemplated in the Windward Specific Plan shall not constrain on-site preservation options.
- Monitoring will occur with at least one archaeologist and one Native American monitor per equipment array that is operating.
- Site security will be provided after working hours, if appropriate.

Monitoring Methods

The Principal Investigator (PI) will prepare and participate in a preconstruction meeting to provide sensitivity training for all on-site construction crew. The intent of this training is to provide the daily on-site crew with the necessary tools to identify potential cultural resources quickly and effectively which are specific to Bolsa Chica during the project (see Chapter 4: Training Program). Construction personnel shall be instructed to stop work in the event of discovery of cultural resource(s), until the archaeologist and Native American monitors have assessed the significance of the find and have implemented appropriate measures as outlined herein. Construction personnel shall also be made aware that unauthorized collection of cultural resources is prohibited by law (see Chapter 4).

All ground-disturbance activities must comply with measures mandated by the AMMP and shall be monitored by Native American monitors and the PI/ Site Coordinator. The PI, in coordination with the Native American monitor(s), shall be empowered to halt construction activities within a minimum of 100 feet if potentially significant resources are identified (CR-3). The monitoring efforts will continue for the duration of all controlled archaeological grading activities. Deep grading will require the presence of an on-site paleontologist. Monitoring efforts shall include, but is not necessarily limited to the following:

- Archaeological monitors will keep daily logs and visually assess for the presence of cultural resources throughout the duration of any ground-breaking activities.

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- During controlled archaeological grading, monitoring must continue until 100 percent of virgin earth within the study area has been disturbed and inspected by the Project Archaeologist or her designated representative.
 - If cultural resources are detected during controlled archaeological grading, all construction activities shall cease in the area of the find that has the potential to uncover or otherwise disturb cultural deposits in the area of the discovery and/or that may foreclose mitigation options (a minimum of 100feet) of a cultural artifact or potential cultural artifact as delineated by the Project Archaeologist or her designated representative. Controlled archaeological grading may continue in other areas of the site that do not have the potential to disturb cultural resources or foreclose mitigation options while finds are investigated.
 - If discovered resources are determined by a qualified Archaeologist and Native monitor to be a historical resource as defined under Section 15064.5 of the CEQA Guidelines, an unique archaeological resource as defined by Public Resources Code Section 21083.2 or Tribal Cultural Resources as defined by AB 52 and Public Resources Code Section 21074, the qualified archaeologist shall ensure that the Native American tribes with concerns about the property, landowner and appropriate Lead Agencies shall be notified within 48 hours of any find.
 - Should the resource be determined to be significant, avoidance and preservation in place shall be the preferred treatment. *In situ* preservation procedures for types of archaeological resources which may be discovered include known significant items such as:
 - in situ human remains; house pits, hearths, artifact caches, and midden deposits
 - ceremonial or religious artifacts if associated with human remains such as:
 - cogged stones, pipes, crystals, pigments, incised stone, beads, bone/shell ornaments
 - All artifacts that are permitted to be left in situ should be subjected to an agreement that shall include measures and provisions to protect the area from any future impacts (vis a vis project plans, conservation /preservation easements, deed restrictions, etc.).
 - If other cultural materials, for example- waste flakes or debitage, are recovered during grading, they shall be examined by the Project Archaeologist and if considered to be a non-significant resource they will be documented and then be reburied in an area adjacent to the residential development designated as permanent open space as required by the designated tribal groups.
 - The PI will prepare a final report to document the archaeological monitoring and any cultural resources discovered .

REPORTING PROTOCOLS

Weekly Memo

The Archaeological Monitor shall submit a weekly memo to the project representative including the following minimum information:

- Date and time of observation
- Date and time of contractor activity
- Location of contractor activity
- Type of contractor activity
- Notable Archaeological findings and observations

In addition, the Monitors shall follow written Monitoring Protocols regarding Preparedness, Safety, Daily Sign-in, Initial Photographs and follow-up series with photologs, Monitoring Collections Records and GIS

documentation, Archaeological Resource Notification Forms, and Subsurface Soils Documentation Sheets. These data will provide the necessary information for the Summary Monitoring Memo.

Monitoring Report

When archaeological monitoring of the controlled archaeological grading is complete, the PI shall submit to the City's Community Development Department under confidential cover a final report detailing the controlled grading monitoring activities. The report shall meet contemporary standards, the *Secretary of Interior's Standards and Guidelines for Archaeological Documentation* (48 FR 44734-44737), and the California Office of Historic Preservation, *Archaeological Resource Management Reports (ARMR): Recommended Contents and Format*. At a minimum the final summary report shall include:

- A color copy of the monitoring report must be submitted to the City and forwarded to other appropriate agencies to include at a minimum:
- Narrative description of monitoring.
- Description of any cultural remains encountered.
- Completed or updated State of California Inventory forms.
- Evaluation of sites/areas for eligibility for listing in the California Register.
- Assessment of effect of the project on eligible sites.
- Map(s) of the project area indicating which areas were monitored and locations of site materials and cultural features.
- Photographs (dated and labelled).

If cultural resources were discovered, the ultimate disposition of the resources shall be described. For resources not preserved in situ, written concurrence from the appropriate Native American representative(s) shall be included. If cultural resources were preserved on site, information regarding the location relative to contemplated potential future development shall be included.

If excavations into the older Quaternary deposits encounter significant fossil remains procedures shall be put in place to recover any exposed fossil remains quickly and professionally during the excavations. Sediment samples also need to be collected from the older deposits and processed for microfossils. Recovered fossil materials shall be deposited in an accredited and permanent scientific institution for future study and educational uses.

CHAPTER 4: UNANTICIPATED DISCOVERIES PLAN

INTRODUCTION

The Unanticipated Discoveries Plan outlines procedures to follow if unique Archaeological Resources/ Tribal Cultural Resources, Human Remains or Paleontological Finds are uncovered during controlled archaeological grading. The Unanticipated Discoveries Plan calls for Stop Work Orders (CR-3), Research Design and Preservation-In-Place Plans (CR-4), Prohibition of Unauthorized Collection of Cultural Resources, Special Treatment of Human Remains (CR-5), and procedures with the discovery of Paleontological Resources (CR-6).

COORDINATION OF UNANTICIPATED DISCOVERIES

The Archaeological Principal Investigator will serve as Coordinator and Point-of-Contact for Unanticipated Discoveries during the Controlled Archaeological Grading Program. The Archaeologist will notify the landowner, Lead Agencies, NAHC where appropriate as outlined under Monitoring. The Coordinator, as principal Archaeological Monitor, will follow the provisions of the Monitoring Plan and is authorized to halt construction in a specific location, or to redirect work to other locations while evaluating discovered cultural resources. The Coordinator and Tribal representatives will make all calls and notifications. The Coordinator is responsible to protect the resources by redirecting vehicles, equipment, and unauthorized personnel away from the discovery site. The Tribal representatives must consult with their Tribal authorities in the event of a significant find. The Archaeological Principal Investigator will also coordinate pre-grade training programs and maintain applicable records.

Notifications by the Archaeologist includes Signal Landmark representatives, the City of Huntington Beach Community Development Director, and Peer Reviewers and Native American designated Most Likely Descendants. Gabrieleno and Juaneño Cultural Monitors will report unanticipated discoveries to their respective Tribal groups and the Native American Heritage Commission, when appropriate.

TRAINING PROGRAMS

Training programs are designed to outline aspects of Archaeological, Tribal and Paleontological Resources to educate participants in the Controlled Archaeological Grading Program about potential Unanticipated Discoveries. Prior to the start of grading activities construction personnel will be briefed on identifying typical Cultural Resources for Bolsa Chica Mesa and mandatory methods for the protection and preservation of Unanticipated Discoveries outlined in the Monitoring Plan. An outline of the goals and content are listed below; training will be conducted by a qualified archaeologist and a knowledgeable paleontologist.

- Summarize sensitive archaeological and historic resources and how to identify a resource
- Summarize sensitive paleontological resources and how to identify fossil finds
- Describe methods and procedures to protect sensitive resources
- Provide a written Exhibit of the methods and procedures including photos of artifacts/fossils

Archaeological staff and Tribal representatives receive a more detailed review of information about the geography and land use of various portions of the Mesa during time through a thorough examination of:

- The AMMP & PRMMP to establish project context emphasizing Burial-In-Place Treatment for uncovered cultural resources
- Mesa Paleontology, Geology & Soils Sequences to be familiar with site disturbance versus in situ deposits and changes through time
- Local Archaeological Site Cultural Sequence emphasizing key artifacts as time markers and the place of ORA-86 in the 8,000 year sequence of occupation at Bolsa Chica Mesa
- The Relevancy of Applicable Native Belief Systems, how they changed through time, and how they were manifested at the site

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- On-site Laboratory Set-up and Procedures to be incorporated where appropriate
 - Monitoring Logistics and Safety Protocols from both construction and academic perspectives.

Additional training will be conducted as new personnel join the project. The Coordinator will document:

- Qualifications of personnel conducting the training
- Names of participants in the Training Program
- Dates of training sessions

PROCEDURES FOR UNANTICIPATED ARCHAEOLOGICAL DISCOVERIES

If a potential archaeological resource is encountered the Coordinator will take the following actions:

- Direct all work next to any discovery to be halted in the vicinity of the discovery and the discovery site secured by the Project Archaeologist (CR-3)
- The Archaeologist and/or Native American/Tribal monitor(s) shall stop all grading activity on site and establish a minimum 100' buffer within which no grading or other construction activities may occur. A greater distance shall be imposed as necessary to assure protection of the discovery.
- Vehicles, equipment and unauthorized personnel will not be permitted access to the discovery site.
- Archaeological/cultural resources will be examined in place by the Archaeologist and Native monitors and mapped using survey grade GPS equipment.

In the event cultural resources determined to be significant are exposed, the Archaeologist shall prepare a Research Design and Preservation-In-Place Plan for the resources as outlined within this AMMP. If through consultation with and the NAHC-designated Most Likely Descendent it is determined that exposed material should be left *in situ*, then, the Archaeologist will follow the outline for Preservation-in-Place, not constrained by contemplated future project development.

Determination

The Principal Investigator and Native American monitors will determine if the discovery is a cultural resource through a series of investigations. The investigation shall include hand excavation to expose an area around the discovery so that an appropriate determination can be made. If the discovery is not a cultural resource, work may proceed with no further delay. If it is determined to be a cultural resource and/or includes human remains, the PI continues with consulting party notifications. If human remains are discovered, protocols are outlined in CR-5 and shall be followed by all parties. All Cultural/Archaeological Resources shall be considered significant in the absence of a determination and the Archaeologist in consultation with Native American representatives shall prepare a Research Design and Preservation-In-Place Plan for the resources as outlined below.

Research Design and Preservation-In-Place

The Preservation-In-Place Plan shall contain a Research Design to evaluate the resource for significance under CEQA criteria and consistent with the requirements of Section 3.7A of the Windward Specific Plan. This Research Design shall acknowledge the necessity for additional, internal Tribal deliberations and culturally-appropriate treatments for all Tribal Cultural Resources and for archaeological resources that include fieldwork and sampling procedures appropriate to ascertain the areal extent, depth, nature, and content of the resource in accordance with current, professional archaeological best practices. Should the resource be determined to be significant under state-level criteria, avoidance and preservation-in-place shall be the preferred treatment. *In situ* preservation procedures for types of archaeological resources which may be discovered include known significant items such as

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- In situ human remains, house pits, hearths, artifact caches, and intact midden deposits
 - ceremonial or religious artifacts if associated with human remains such as:
 - clogged stones, pipes, crystals, pigments, incised stone, beads, bone/shell ornaments

The contemplated future development footprint shall not constrain on-site preservation options. All artifacts that are permitted to be left *in situ* should include (Nickens 1991; Bilsbarrow 2004) :

- a protective barrier or shield over the resource that does not introduce new impacts to the site
- a barrier or shield which uses clearly distinguishable materials that do not increase the vertical load on the discovery or change the chemical and microenvironmental conditions of the resource measures and provisions to protect the area from any future impacts (vis a vis project plans, conservation /preservation easements, deed restrictions, etc.).

Recovered Materials

Any mitigation plan that results in the removal of cultural materials from their original provenience shall also include a comprehensive discussion of resource processing, analysis, curation, and reporting protocols and obligations. At a minimum, *Guidelines for the Curation of Archaeological Collections* prepared by the State Historical Resources Commission, Department of Parks and Recreation in 1993, shall be followed which includes assembling the collection, selection of repositories or reburial, and guidelines for curating the collection including:

- inventorying, accessioning, labeling and cataloguing the collection
- identifying, evaluating, and documenting the collection
- handling, cleaning, stabilizing, and conserving the collection

All mitigation, treatment, and data recovery plans shall be developed in consultation with Tribal representatives. All fieldwork and laboratory work related to treatment, mitigation, and data recovery plans shall require monitoring by Tribal Monitors representing the Gabrieleno-including Kizh Nation and Juaneño-Acjachemen Bands. All draft reports containing the significance and treatment findings and data recovery results shall be prepared by the Archaeological Principal Investigator and submitted to the Tribal Groups, landowner, Lead Agencies, and CCC-approved Peer Reviewers for their review and comment. All final reports will be submitted to the local CHRIS Information Center at California State University at Fullerton, and the Lead Agencies. All final paleontological reports shall be submitted to the John C. Cooper Center for Paleontology and Archaeology operated by the County of Orange.

Reburial of Recovered Materials

If cultural materials are to be removed (based upon consultation with the Native American(s)), laboratory analysis and curation will occur on-site. Subsequently, if it is the desire of the Native Americans, the materials will be reburied in the permanent open space area adjacent to the Windward Residential Project. . Protection and preservation measures will be introduced as outlined in Research Design and Preservation-In-Place. Upon completion of controlled archaeological grading a report will be prepared describing all archaeological activities, monitors and their efforts, and monitoring results in accordance with the *Secretary of the Interior's Guidelines for Archeological Documentation*.

Unauthorized Collection of Cultural Resources

Unauthorized removal of cultural resources is prohibited by law as set forth in the California Public Resources Code section 5097.99. *Obtaining or possessing Native American artifacts or human remains taken from grave or cairn on or after January 1, 1984; prohibition:*

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- No person shall obtain or possess any Native American artifacts or human remains which are taken from a Native American grave or cairn on or after January 1, 1984, except as otherwise provided by law or in accordance with an agreement reached pursuant to subdivision (I) of Section 5097.94 or pursuant to Section 5097.98.
 - Any person who knowingly or willfully obtains or possesses any Native American artifacts or human remains which are taken from a Native American grave or cairn after January 1, 1988, except as otherwise provided by law or in accordance with an agreement reached pursuant to subdivision (I) of Section 5097.94 or pursuant to Section 5097.98, is guilty of a felony which is punishable by imprisonment in the state prison.
 - Any person who removes, without authority of law, any Native American artifacts or human remains from a Native American grave or cairn with an intent to sell or dissect or with malice or wantonness is guilty of a felony which is punishable by imprisonment in the state prison.
 - Illegal possession of Native American human remains can apply to archaeologists who are temporarily in possession of human remains prior to reburial. However, such possession is not illegal if it is allowed by an agreement reached pursuant to subdivision (I) of PRC Section 5097.94 or pursuant to Section 5097.98 (as outlined in the following special procedures for unanticipated human remains).

PROCEDURES FOR UNANTICIPATED HUMAN REMAINS

Protocol for the Discovery of Human Remains in California

All discovered human remains shall be treated with respect and dignity. California state law (California Health & Safety Code Section 7050.5) requires a defined protocol if human remains are discovered in the state of California regardless if the remains are modern or archaeological. These are outlined in California Public Resources Code Section 5097.98 – *Notification of discovery of Native American human remains, descendants; disposition of human remains and associated grave goods.*

A definition of “*human remains and associated grave goods*” includes:

- Human remains of a Native American may be an inhumation or cremation, and in any state of decomposition or skeletal completeness.
- Any items associated with human remains that are placed or buried with Native American human remains are to be treated in the same manner as the remains, but do not by themselves constitute human remains.

Upon discovery of human remains in California, all work in the area must cease immediately, nothing disturbed, and the area is to be secured according to the procedures described for Procedures for Unanticipated Archaeological Discoveries. The Orange County Coroner’s Office must be called for finds on Bolsa Chica. The Coroner has two working days to examine the remains after notification. The landowner shall also be called and informed of the discovery. Additional notifications are calls by the Archaeologist to Signal Landmark representatives, the City of Huntington Beach Community Development Director, Peer Reviewers and Native American designated Most Likely Descendants. Gabrieleno and Juaneño Cultural Monitors will report unanticipated discoveries to their respective Tribal groups and the Native American Heritage Commission, when appropriate

It is very important that the suspected remains and the area around them remain undisturbed and the proper authorities called to the scene as soon as possible as it could be a crime scene. Disturbing human remains is against federal and state laws and there are criminal/civil penalties including fines and/or time in jail up to several years. In addition, all vehicles and equipment used in the commission of the crime may be forfeited. The Coroner will determine if the bones are historic/archaeological or a modern legal case.

Modern Remains

If the Coroner's Office determines the remains are of modern origin, the appropriate law enforcement officials will be called by the Coroner and conduct the required procedures. Work will not resume until law enforcement has released the area.

Historic/Archaeological Remains

If the remains are determined to be historic/archaeological in origin and there is no legal question, the protocol changes depending on whether the discovery site is located on federally or non-federally owned/managed lands. The subject property is not federally-owned nor does the project have federal funding and therefore falls under the criteria for non-federally owned/managed resources.

Remains discovered on non-Federally owned/managed lands

After the Coroner has determined the remains are archaeological and there is no legal question, the Coroner will make recommendations concerning the treatment and disposition of the remains to the person responsible for the excavation, or to his or her authorized representative. If the Coroner believes the remains to be those of a Native American, he/she shall contact by telephone within 24 hours, the California Native American Heritage Commission (NAHC). The NAHC will immediately notify the person it believes to be the Most Likely Descendent (MLD) of the remains. Two MLD's have been designated for work on Bolsa Chica which includes the Windward Site: Matias Belardes (Juaneño) and Anthony Morales (Gabrielino). The Most Likely Descendent(s) has 48 hours to make recommendations to the landowner for treatment or disposition of the human remains.

The 2018 *Windward Specific Plan, SP 16* clearly addresses the next procedures that shall be followed:

"The MLD shall complete the inspection of the site and may recommend or deny scientific removal and non-destructive analysis of the human remains. If the human remains are determined to be in situ, i.e. they have not been removed or relocated to the site of discovery, the preservation methods in No. 4 below shall apply.

4. Require that all construction personnel shall be instructed to stop work on the project site in the event of a potential find until the archaeologist and Native Monitors have been able to assess the significance of the find and implement appropriate measures outlined in the AMMP Research Design Plan. Construction personnel shall also be instructed that unauthorized collection of cultural resources is prohibited by law. If archaeological resources are discovered during ground-disturbing activities, the archaeologist [and Native monitor] has the authority to cease all earthwork in the immediate area of the finds (within 100 feet) until the find can be evaluated for significance.

In the absence of a determination, all archaeological resources shall be considered significant. If the resource is determined to be significant, the archaeologist shall prepare a research design and recovery/preservation plan for the resources outlined within the AMMP." (Section 7.A.3-4)

PROCEDURES FOR UNANTICIPATED PALEONTOLOGICAL REMAINS

Preconstruction Education Program

The Qualified Paleontologist shall attend a pre-grading excavation meeting to discuss the paleontological monitoring program. The presentation will be made to all personnel involved in earth-moving activities, as well as supervisors. The Qualified Paleontologist shall explain the importance of fossils, the laws

protecting fossils, the need for mitigation, the types of fossils that might be discovered during excavation work, and the procedures that should be followed if fossils are discovered.

Monitoring and Other Mitigation Procedures

Both the Qualified Paleontologist and the Paleontological Resource Monitor shall have authority to temporarily halt or redirect the excavation equipment away from fossils to be salvaged. Direct impacts on paleontological resources might result from clearing, grubbing and grading of the Project site; excavations, trenching for water supply and natural gas pipelines, and the fire-water system; augering for foundation and electrical transmission structure pylons; and any other earth-moving activity that disturbs or buries previously undisturbed, potentially fossiliferous deposits. Full-time paleontological construction monitoring is mandated in areas where earth-moving activities disturb sediments below 3 feet. However, the duration of monitoring can be reduced if the PRS determines that it is warranted.

Monitoring is recommended to ensure timely removal of any fossil discovery, thereby avoiding lengthy construction delays. Monitoring is not recommended in parts of the site where earth-moving activities will not encounter any previously undisturbed strata or where exposed strata will be buried, but not otherwise disturbed. The Qualified Paleontologist or PRM will be authorized to temporarily divert any earth-moving activity around a newly discovered fossil locality or, if warranted, to stop the activity. In the absence of both the Qualified Paleontologist and PRM, the construction superintendent will be authorized to divert or halt any such earth-moving activity and will inform the Qualified Paleontologist of the discovery of the fossil locality. The Qualified Paleontologist and/or monitor will provide for the protection of the fossil locality by informing equipment operators and delineating an exclusionary zone around the locality with caution tape and/or flagging. After the locality has been marked, the Qualified Paleontologist or monitor will inform the Project Owner of the fossil discovery.

Sampling And Recovery Procedures

The following procedures are to be used in the event fossil remains are discovered during Project construction:

- The name and a brief description of each geologic unit encountered by earth-moving activities and the geographic location and type of activity performed (grading, augering, trenching, etc.);
- The name of the Qualified Paleontologist and/or PRM monitoring earth-moving activities, and the level of monitoring (full or part time, spot checking);
- A preliminary list of recovered fossil specimens and their corresponding locality numbers; and
- Any other pertinent information.
- Field notes will be maintained by the PRM throughout the duration of monitoring and will be consistent with professional practices.
- Appropriate supplies and equipment for monitoring include steel-toed boots, a hardhat, safety vests, safety glasses, shovels, picks, awls, sediment screens, preservatives and glue, a camera, a GPS, a compass, 5-gallon buckets with lids, ziploc bags, vials with lids, forceps, a hand lens, aluminum labels for sediment samples, an indelible pen, a monitoring notebook, and heavy paper labels.

Preparation and Curation of Recovered Fossil Remains

The guidelines issued by SVP (2010) require the proper collection, preparation, analysis, identification, inventory and curation of recovered fossils. Recovered specimens will be stabilized and prepared to a point allowing identification. Each specimen will be identified to the lowest taxonomic level possible by a knowledgeable paleontologist. Data concerning the taphonomic condition or degree of fossilization, and geographic and stratigraphic occurrence will be kept with each specimen. The specimens then will be transferred to the Natural History Museum of Los Angeles County or appropriate local museum where they will be permanently stored and maintained. The collection and supporting documentation will conform

to the recommendations published by SVP (1996). Supporting documentation, including a topographic map indicating the location of each locality, stratigraphic columnar sections, locality descriptions, and a copy of the PRM's daily field notes will accompany the fossil collection to the designated repository, where the documentation will be archived. The Project owner shall pay the museum a one-time fee for curation and storage of the collection.

Reporting

A Paleontological Resources Report will be prepared by the Project Paleontologist and submitted to the City of Huntington Beach under confidential cover for approval. The report will include a description of the project site geology and stratigraphy, a summary of the mitigation measures implemented, a list of the taxa represented by the recovered fossil remains, as well as a discussion of the scientific importance of the remains and their respective taxa. Appended to the report will be any applicable supporting documentation, including daily field notes, a locality map, stratigraphic columnar sections, an itemized inventory of fossil specimens, and a statement that project-related impacts on paleontological resources have been mitigated to an insignificant level. Acceptance of the final report by the will constitute completion of the paleontological mitigation program. With completion of the paleontological mitigation program, the potential adverse impacts on the paleontological resources of the Project site will have been reduced to a less-than-significant level. A copy of the Final Report will be provided to the designated repository.

SUMMARY STATEMENT

This document is submitted in compliance with Mitigated Negative Declaration No. 2016-003, Cultural Resources Mitigation Measures CR-1, preparation of an Archaeological Monitoring and Mitigation Plan (AMMP) and addresses methodology for implementation of CR-2 thru CR-5. The document also provides for completion of CR-6 through the preparation of a parallel Paleontological Resource Monitoring and Mitigation Plan (PRMMP). The document is further intended to conform with requirements of the 2017 *CCC Tribal Consultation Policy* and Section 3.7A & B of the 2018 Windward Specific Plan. The AMMP adheres to the appropriate laws and guidelines described in Chapter 1.

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**CONSULTATION DOCUMENTATION APPENDIX
WINDWARD RESIDENTIAL PROJECT AMMP & PRMMP
March 17, 2021**

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APPENDIX A

CALIFORNIA COASTAL COMMISSION REQUEST FOR CONSULTATION DOCUMENTATION

December 10, 2020 Letter Request for Consultation Documentation

[See Appendices B,C,D,E for requested Consultation Documentation,
Cover Pages for each Appendix indicate How and Where Comments have been Incorporated in AMMP]

[Definitions of Cultural Resources, Archaeological Cultural Resources, Paleontological Cultural
Resources, Tribal Cultural Resources and Significant Cultural Resources have been added
and contexts checked for consistency of use]

Pages 4

["Stop Work" inconsistencies addressed with changes when incorporating
Gabrielino Band of Mission Indians, Kish request for a minimum 100 feet Stop Work zone around a Find
Changes to AMMP:

Construction Activities Shall Cease Within 100' of a Find

Pages 14, 16, 17, 20, 23

[Southern Tarplant & Burrowing Owl recent surveys indicate that these are not present on the site area.

No buffer to protect these Natural Resources is necessary.

These surveys will be part of the City's CDP review]

The Acquisition Alternative's status is addressed on Page 2

CALIFORNIA COASTAL COMMISSION

South Coast Area Office
301 E. Ocean Blvd., Suite 301
Long Beach, CA 90802
(562) 590-5071



December 10, 2020

Jennifer Villaseñor
Deputy Director of Community Development
2000 Main Street
Huntington Beach, CA 92648

Re: Windward Residential Project Archaeological Mitigation and Monitoring Plan (AMMP) and
Paleontological Resources Mitigation and Monitoring Plan (PRMMP)
September 25, 2020

Dear Ms. Villaseñor:

Thank you for the opportunity to review and comment on the Archaeological Mitigation and Monitoring Plan and Paleontological Resources Mitigation and Monitoring Plan, dated September 25, 2020 (AMMP). The AMMP is intended to establish the procedures to conduct controlled archaeological grading across the western half (2.5 acres) of the site known as the Windward property. The Windward property owner has submitted a coastal development permit (CDP) application to the City to implement the controlled archaeological grading project reflected in the AMMP. The City anticipates a public hearing on the CDP application about mid-December.

The Windward property is a five acre property located at the southeast corner of the intersection of Los Patos Avenue and Bolsa Chica Street, in the City of Huntington Beach. On 12/12/2018 the Coastal Commission approved a Local Coastal Program amendment that included, among other things, the Windward Specific Plan. The western half of the Windward property that, under the Windward Specific Plan, in the event the specific plan becomes operative (as that term is defined in the specific plan), could potentially allow residential development. The Windward Specific Plan has not yet become operative. The standard of review for the subject site is the City's certified Local Coastal Program (LCP), not including the Windward Specific Plan. However, the Commission approved the Windward Specific Plan in December 2018, and that recent action may be used as guidance in this area.

The City's certified Land Use Plan/Coastal Element contains policies regarding protection of cultural resources. Among others, those policies include:

C 5 Promote the preservation of significant archaeological and paleontological resources in the Coastal Zone.

C 5.1.1 Coordinate with the State of California Historic Preservation Office to ensure that archaeological, paleontologic and historically significant resources within the Coastal Zone are identified.

The City's certified Implementation Plan/Zoning Code also provides standards for the protection of Archaeological/Cultural Resources (Section 230.82.E Archaeological/Cultural Resources). Section 230.82.E.7 states: "The subsequent mitigation shall be *prepared in consultation with Native American Heritage Commission (NAHC), Native American tribal group(s)* that have ancestral ties to the area as determined by the NAHC, and the State Historic Preservation Officer, subject to peer review." (Emphasis added).

Consultation on AMMP

The AMMP states: *"In September 2020 both tribal groups [Juaneño and Gabrielino] reviewed the current AMMP and provided comments which have been incorporated into this document by SRS Inc."* All comments received from Native Americans and/or Native American groups on the AMMP should be attached to the AMMP. In the event the comments were not provided in writing, then at a minimum, the comments should be summarized as an attachment to the AMMP. The AMMP should also include the project archaeologist's response to all comments received from Native Americans and an indication of where and how the comments have been incorporated into the AMMP.

Evidence that the AMMP was made available for review by both the State Office of Historic Preservation (SHPO) and the Native American Heritage Commission (NAHC) should be required as part of the coastal development permit process for this project. In addition, any comments received from SHPO and/or NAHC should be included in the CDP review. If any comments are received from these agencies, they must be included as attachments in the AMMP. The AMMP should also include project archaeologist's response to all comments received from SHPO and NAHC and an indication of where and how the comments have been incorporated into the AMMP.

The AMMP should be subject to peer review and all peer reviewer comments should be attached to the AMMP. The AMMP should also include the project archaeologist's response to all comments received from the peer reviewers and an indication of where and how the comments have been incorporated into the AMMP.

As part of the City's processing of the CDP, the City will be conducting Native American consultation. The results of the Native American consultation should also be included in the AMMP, with the project archaeologist's response and an indication of where and how the consultation comments have been incorporated into the AMMP. Lastly, any comments on the AMMP received from professional archaeologists should be attached to the AMMP, with a response from the project archaeologist.

Significance

The AMMP relies on the significance of a discovery to determine next steps. However, it is not clear in the AMMP how significance will be determined. On page 18 and 19 of the AMMP there is a list of resources that are termed "known significant items." However, the AMMP also refers to resources that are "significant under state-level criteria," but does not describe what that means. Further, a determination of what constitutes a "significant" resource should be made in consultation with affected Native Americans.

Stop Work

The AMMP recognizes that when a resource is discovered during controlled archaeological grading, work must stop. However, the language in the AMMP is inconsistent regarding the area within which work must stop is. Page 12, CR-3 states that work shall stop within 50 feet of the find. Page 14 of the AMMP states that work shall stop within a *minimum* of 50 feet of the discovery. Page 18 of the AMMP states work must stop within 50 feet. The stop work area of a *minimum* of 50 feet of the discovery should be carried out throughout the AMMP. All references to the ability to stop work should make clear that the area within which work must stop is a minimum distance of 50 feet from the discovery. The distance may be increased if conditions warrant.

"Resource"

The AMMP uses the terms "cultural resource," "cultural/archaeological resource," and "significant resource." How are these terms related? Are they interchangeable or do they have distinct separate meanings? This should be clarified in the AMMP.

Acquisition Alternative

In addition to the Development Alternative, the Windward Specific Plan provides for an Acquisition Alternative. The Acquisition Alternative recognizes the option of preserving both the entire 5 acre Windward site and the entire 6.2 acre neighboring Goodell Property via acquisition by a public lands trust or similar entity. The CDP review process should include an assessment of the status of this alternative option.

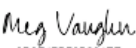
Southern Tarplant & Burrowing Owls

In addition, the Windward Specific Plan and the certified LCP habitat protection policies require that a recent Southern tarplant survey, conducted during the appropriate blooming season (May through November), be submitted with a coastal development permit application for the site. Likewise, the Windward Specific Plan requires that focused burrowing owl surveys be conducted in accordance with the California Burrowing Owl Consortium (CBOC) and California Department of Fish and Wildlife (CDFW) established protocols. The surveys must be submitted with the coastal development permit application. The required surveys must be no more than one year old. Depending upon the results of the surveys, the AMMP plan may need to be modified to avoid disturbance of any Southern tarplant and/or burrowing owls present on the site (including on the adjacent properties) and provide adequate buffer area. These surveys must be part of the City's CDP review.

Conclusion

Again, thank you for the opportunity to comment on the AMMP. We appreciate the opportunity to provide comment prior to the CDP application being scheduled for public hearing. Please understand these are preliminary comments and additional and/or different concerns/issues may arise as the CDP review progresses. Please do not hesitate to contact me if you have any questions regarding this matter.

Sincerely,

DocuSigned by:

3D9E47D79B334EE
Meg Vaughn
Staff Analyst

APPENDIX B

STATE OF CALIFORNIA OFFICE OF HISTORIC PRESERVATION [OHP, SHPO]2020 CONSULTATION DOCUMENTATION

*[EVIDENCE THAT THE AMMP WAS MADE AVAILABLE FOR REVIEW
BY THE STATE OF CALIFORNIA OFFICE OF HISTORIC PRESERVATION (OHP):*

- 1- December 22, 2020 email from City of Huntington Beach to OHP
- 2- December 28, 2020 response email from HOP to City of Huntington Beach
[No Archaeologist's Response Necessary]

From: Saunders, Jenan@Parks

To: Villasenor, Jennifer

Subject: RE: Archeological Mitigation and Monitoring Plan - City of Huntington Beach

Date: Monday, December 28, 2020 9:13:55 AM

Thank you for checking with us. No, the City has no responsibility to consult with our office if there is no federal funding or permitting involved in the project. State funding and permitting also don't trigger any consultation requirements with us. I hope this answers your question but please feel free to get back to me with any follow up questions.

Jenan

Jenan Saunders

Deputy State Historic Preservation Officer and Tribal Liaison

California Office of Historic Preservation

1725 23rd St, Suite 100, Sacramento CA 95816-7100

(916) 445-7019

Jenan.Saunders@parks.ca.gov

www.ohp.parks.ca.gov

From: Villasenor, Jennifer <JVillasenor@surfcity-hb.org>

Sent: Tuesday, December 22, 2020 12:51 PM

To: Saunders, Jenan@Parks <Jenan.Saunders@parks.ca.gov>

Subject: Archeological Mitigation and Monitoring Plan - City of Huntington Beach

Good afternoon Ms. Saunders,

The City of Huntington Beach is processing a coastal development permit for archeological grading on an 11.2-acre site located on the Bolsa Chica Mesa in the City of Huntington Beach, County of Orange for which a portion of the site is contemplated for residential development. In 2018, both the City and the Coastal Commission approved a land use plan that would allow residential development on 2.5 acres of the site, subject to mitigation. The coastal development permit that the City is processing is part of that mitigation and requires archeological grading on the planned residential area. As the City is considering the coastal development permit, the applicant has prepared an archeological mitigation and monitoring plan (AMMP). We are consulting with tribal representatives and have been discussing the project with the NAHC as part of this process. However, the City wanted to reach out to your office to see if there is any oversight necessary, particularly with respect to review of the AMMP. This is a private project and no federal or state funding is involved. Please let me know if your office needs to review the AMMP and I can send a copy via email. The City anticipates the hearing on the CDP to be in February 2021.

Thank you and have a safe and peaceful holiday.

Jennifer Villasenor

[City of Huntington Beach](http://CityofHuntingtonBeach.org) (714) 374-1661 jvillasenor@surfcity-hb.org

APPENDIX C

NATIVE AMERICAN HERITAGE COMMISSION [NAHC]

2020 CONSULTATION DOCUMENTATION

*[EVIDENCE THAT THE AMMP WAS MADE AVAILABLE FOR REVIEW
BY THE NATIVE AMERICAN HERITAGE COMMISSION [NAHC]:*

- 1- December 17, 2020 email from City of Huntington Beach to NAHC
With AMMP attached

[No Archaeologist's Response Necessary]

From: [Villasenor, Jennifer](#)
To: Debbie.Treadway@nahc.ca.gov
Subject: Windward - Bolsa Chica Mesa
Date: Thursday, December 17, 2020 5:41:00 PM
Attachments: [AMMP PRMMP 2020 \(Revised 09252020\).pdf](#)

Hi Debbie,

First, I wanted to thank you again for your time in meeting with us to get caught up on the history and status of the Windward (former Ridge and Goodell properties). I wanted to let you know that we have reached out to the tribal representatives and will be having consultations over the next month. I also attached a copy of the Archeological Mitigation and Monitoring Plan (AMMP) for the archeological grading permit (coastal development permit) that the applicant has submitted as a condition/mitigation required prior to any residential development on the site. Please let me know if you have any questions or comments on anything. The City anticipates scheduling the coastal development permit for a public hearing the first week of February 2021.

Thank you and Happy Holidays!

Jennifer

APPENDIX D

NATIVE AMERICAN TRIBAL CONSULTATION

[re: CCC 2017 TRIBAL CONSULTATION POLICY, AB 52]

[EVIDENCE THAT THE AMMP WAS MADE AVAILABLE FOR REVIEW
BY NATIVE AMERICAN TRIBAL GROUPS RESPONDING TO CONSULTATION REQUESTS]:

JUANEÑO BAND OF MISSION INDIANS [ACJACHEMEN NATION]

2018 DOCUMENT REVIEW: November 28, 2018 email from Joyce Perry

2020 DOCUMENT REVIEW: August 25, 2020 email from Joyce Perry & October 8, 2020

Changes to AMMP:

‘Archaeologist and Native Americans Jointly Determine
if a Discovery is a Cultural Resource and its Significance’

Pages 4, 13, 14, 15, 17, 19, 20, 22

GABRIELENO BAND OF MISSION INDIANS [TONGVA NATION, SAN GABRIEL]

2018 DOCUMENT REVIEW: November 30, 2018 response to Adrian Morales phone con

2020 DOCUMENT REVIEW: October 28, 2020 response to Adrian Morales phone con

February 22, 2021 email from Adrian Morales

March 2021 response provides:

- 1- requested legal references,
- 2- copy of 2020 OHP response to City of Huntington Beach,
- 3- 2017 version of 2013 Technical Analyses (“2013 Archaeological Abstract, Assessment of Excavations on CA-ORA-86, Bolsa Chica Mesa, Huntington Beach, CA”)
- 4- 2016 Independent Archaeological Review
 (“An Assessment of Prehistoric Archaeological Sites Associated with the Goodell and Signal Landmark Properties, Bolsa Chica, California” By William R. Hildebrandt, Ph.D.)

Changes to AMMP:

2013 Technical Analysis report added- Appendix F

GABRIELENO BAND OF MISSION INDIANS [KIZH NATION]

2020 DOCUMENT REVIEW: February 19, 2021

Changes to AMMP:

‘Tribal Monitors shall represent Gabrieleno-including Kizh Nation and Juaneno-Acjachemen Nation

Pages 13, 16, 21

‘Construction Activities Shall Cease Within 100’ of a Find’

Pages 14, 16, 17, 20, 23

Windward Residential Development 2018 AMMP & PRMMP-
JUANEÑO BAND OF MISSION INDIANS [ACJACHEMEN NATION]

Subject: Monitoring and Recovery/Presentation Plan, Windward Project
From: "Joyce Perry" <kaamalam@gmail.com>
Date: Wed, November 28, 2018 6:56 pm
To: wileycoyote@srscorp.net
Priority: Normal
Options: [View Full Header](#) | [Print](#) | [Download this as a file](#) | [View as plain text](#)

Good Evening Nancy,
I have reviewed the Mitigated Negative Declaration No.2016-003: CR2-5, plans, methods, definitions, goals, phases, discovery, documentation and data recovery plans and concur with it as written. Thank You

Húu'uni 'óomaqati yáamaqati.
Teach peace
Joyce Stanfield Perry
Payomkawichum Kaamalam - President
Juaneño Band of Mission Indians, Acjachemen Nation
Tribal Manager, Cultural Resource Director

Windward Residential Development 2020 AMMP & PRMMP-
JUANEÑO BAND OF MISSION INDIANS [ACJACHEMEN NATION]

Date: August 25, 2020

**To: *Gabrieleno Band of Mission Indians, Anthony Morales*
*Juaneño Band of Mission Indians, Acjachemen Nation, Joyce Perry***

Hi Anthony (Adrian) and Joyce (Mattias)-

I have attached a new and improved Archaeological Mitigation and Monitoring Plan for Archaeological Controlled Grading on the Windward Residential Project on Bolsa Chica. This version is much easier to read and the background information is more comprehensive.

I am asking you to review the document and get back to me within the next two weeks with your comments. Your comments will be submitted with the document to all agencies.

If you need more information just contact me. I will be more than happy to discuss your interests.

Thanks Anthony and Joyce!

Nancy 'Anastasia' Wiley, PhD
Research Director/Principal Investigator

SRSINC CA
35109 Hwy 79 #22

Date: August 25, 2020

**To: *Gabrieleno Band of Mission Indians, Anthony Morales*
*Juaneño Band of Mission Indians, Acjachemen Nation, Joyce Perry***

Good afternoon Joyce and Anthony-
Just checking in.

I would like to know where you are in reviewing my 2020 document for archaeological grading on Bolsa Chica and if you have any questions. I need a written response from you (email is fine) for the record for agencies to see your thoughts.

I will be available this afternoon for calls. Otherwise I will call you both tomorrow morning. If a different time is better for you let me know.

Look forward to working on this project with you.
Thanks

Nancy 'Anastasia' Wiley, PhD
Research Director/Principal Investigator

Date: September 24, 2020

From: Juaneño Band of Mission Indians, Acjachemen Nation, Joyce Perry

Good Afternoon Nancy,

On behalf of the Juaneno Band of Mission Indians, Acjachemen Nation- Belardes, I have reviewed the Windward Residential Project AMMP & PRMMP dated August 25, 2020. My comments are noted next to the highlighted sections, starting on p.12 in the attached document. Thank you and let me know if you have any questions.

Húu'uni 'óomaqati yáamaqati.

Teach peace

Joyce Stanfield Perry

Payomkawichum Kaamalam - President

Juaneño Band of Mission Indians, Acjachemen Nation

Tribal Manager, Cultural Resource Director

Re: Request for Consultation – City of Huntington Beach –
Coastal Development Permit No. 20-016
(Windward Archaeological Grading and Monitoring)

From Joyce Perry
To Beckman, Hayden
Date 2020-10-08 15:35

Good Afternoon Mr. Beckman,

I am writing on behalf of the Juaneno Band of Mission Indians, Acjachemen Nation- Belardes in response to the October 7th Notice of Opportunity to Comment on the Windward Archeological Grading and Monitoring Project. We wish to consult on this project as it moves forward. We have worked to provide comments and recommendations regarding the archeological monitoring procedures included in the Windward AMMP and PRMMP, and to make sure that all protections provided will be adhered to. On p.13 (*Archaeological Monitoring Procedures*) and p.14 (*How Monitoring Will Be Conducted and Methods for Monitoring*) the plan clearly outlines that:

- Monitoring guidelines will be consistent with applicable requirements of the Native American Heritage Commission and the State Office of Historic Preservation.
- CEQA guidelines address properties which are eligible for listing in the California or National Register of Historic Places and those defined in Public Resources Code 21083.2 as "unique archaeological resources". These properties should be treated in accordance with the protective provisions of an historic resource.
- CA-ORA-86 is part of an ancestral site complex and as such, any Tribal cultural resources located on the site are considered significant.
- Monitoring will occur with at least one archaeologist and one Native monitor per equipment array.
- Any tribal monitors shall meet the California Office of Historic Preservation's standards, and shall have documented ancestral ties to the land consistent with the standards of the NAHC.
- Avoidance and preservation in situ of any cultural resources is the preferred option.

We will continue to work towards the protection of this sacred site. I will look forward to a continued dialogue with all leading agencies.

Húu'uni 'óomaqati yáamaqati.
Teach peace
Joyce Stanfield Perry
Payomkawichum Kaamalam - President
Juaneño Band of Mission Indians, Acjachemen Nation
Tribal Manager, Cultural Resource Director

On Thu, Oct 8, 2020 at 12:09 PM Beckman, Hayden <hayden.beckman@surfcity-hb.org> wrote:

Good Afternoon Tribal Leaders,

Please find attached a letter requesting consultation for a proposed Coastal Development Permit (No. 20-016) in the City of Huntington Beach.

For any consultation inquiries, questions, or concerns please find my contact information below and in the attached letter.

Thank you for your time,

Hayden Beckman

Senior Planner
Community Development Department
City of Huntington Beach
714-536-5561

Windward Residential Development 2018 AMMP & PRMMP-
GABRIELENO BAND OF MISSION INDIANS [TONGVA NATION]

WINDWARD AMMP- GABRIELENO/TONGVA

November 30, 2018

Adrian- Thanks for your response to my phone calls to you and your father. You wanted to know if enough archaeological work had been done on this site. Here is my response.

Both Archaeological Research Inc (ARI) and Cal State Los Angeles conducted separate excavations on ORA-86 located on the Windward Property years before SRS was involved (60s and 70s). Both stated that the property had been so badly disturbed by agricultural efforts that no intact portion of the site remained. Nonetheless SRS proceeded with extensive investigations in order to insure that any remaining resources would be found.

I know you and your Dad were not involved in these earlier SRS investigations, Robert Dorame was the Tongva representative at the time. For this reason, you are not aware of all the archaeological work that was accomplished on this site. As the summary report indicates nearly a year of work occurred which provided a lot of time for thorough site coverage including:

1] several surface collections for artifacts- these produced very few artifacts.

2] the surface collections were then followed by shell sample collections- mapping surface shell indicated which portions of the site had crushed and broken shell from disturbance and which ones had basically unbroken shell, a technique not used by other investigators. Only the southeastern portion of the property had unbroken shell.

3] A full site systematic auger program followed- this program showed that the eastern bluff edge had artifacts and some intact soils below the surface of the site and the entire western portion next to the road was nearly void of materials and lacked midden soils.

4] Additional auger holes were drilled to further refine the subsurface site boundaries resulting in a line being drawn between the western and eastern portions of the property based on presence and absence of artifacts and intact shell.

5] A series of backhoe trenches were then excavated to verify the results of the two auger programs. These long linear trenches allowed for detailed profiling and examination of disturbed and intact soil sequences. Column samples were also taken and processed from these.

6] The intact soils were located in the southeastern portion of the property not only verifying the auger results but also helped to explain the concentration of unbroken shells in this same area. A pit was found by the augers and exposed by the backhoe in the area of concentrated unbroken shell. Shell was unbroken here because it was on the edge of the bluff and little affected by the decades of agricultural plowing on the site and also was protected by the deep pit which extended below the plow zone.

7] Large 2x2 meter hand excavated units were excavated all along the eastern bluff edge and concentrated at the subsurface pit. The entire pit was exposed and shown to be a subsurface house pit. The complete house pit was removed by hand excavation screened through 1/8th and 1/16th screen mesh

I have attached three maps which show the sequence of excavations as I have explained here. The purple and pink dots indicate that the western half of the property was completely disturbed previously. The blue and brown dots indicate relatively intact and intact soils sequences were all situated on the eastern portion of the property.

Windward development will only occur on the disturbed western portion of the property. SRS with the two Native tribal groups will conduct controlled grading of the western portion of the property before a development permit is issued to the land owner. If intact features, etc are located they will remain in place and development will not be permitted in those areas. The Controlled Grading Program is being conducted to once again insure that any remaining resources, if such exist, will be protected from development grading.

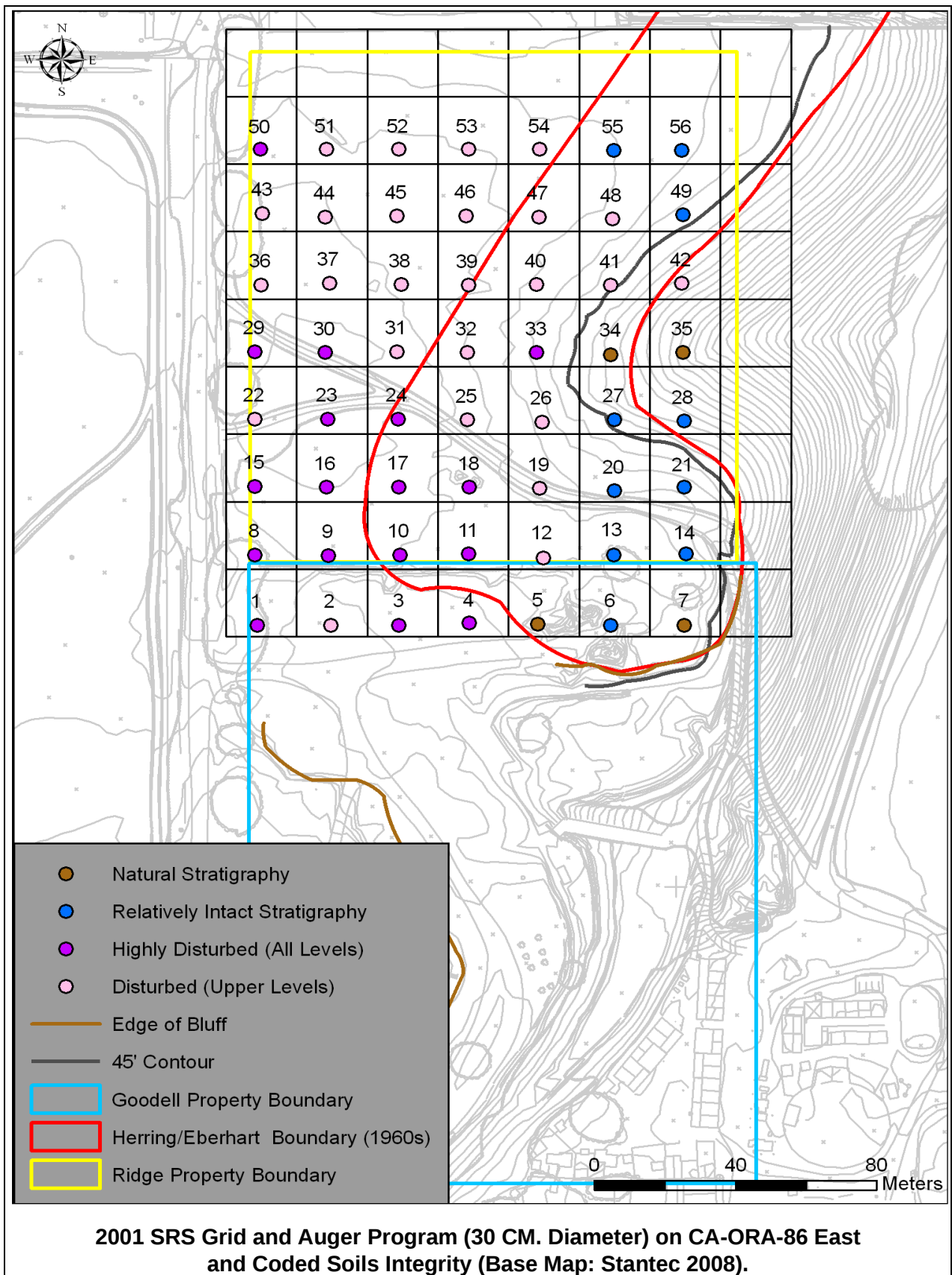
I believe that this explanation answers your questions. I will include this response in the final Archaeological Monitoring and Mitigation Plan (AMMP). A copy will be sent to you and your tribal group in the next few days.

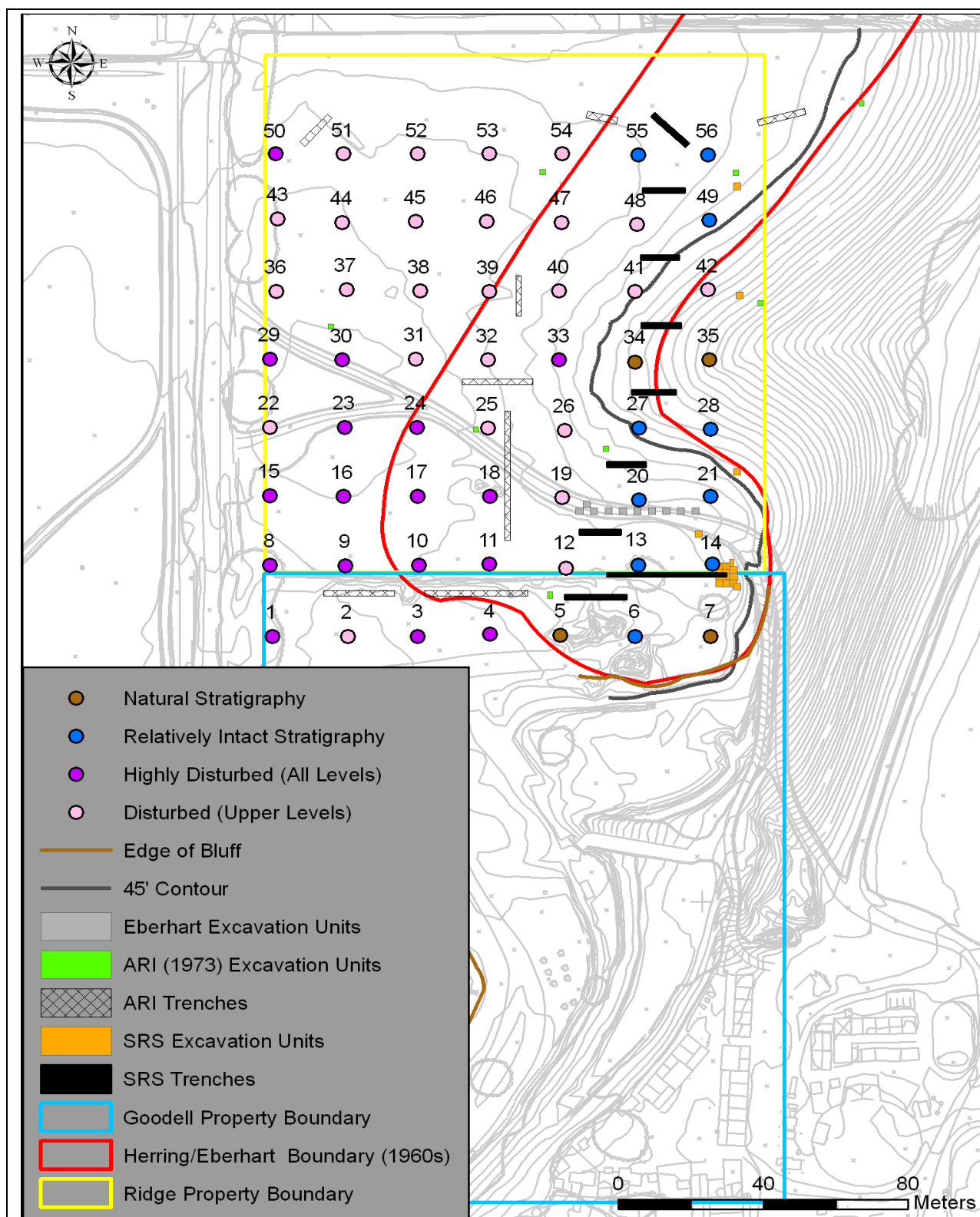
Thanks for your input. I look forward to working with you on the Archaeological Controlled Grading Program.

Nancy Anastasia Wiley, PhD

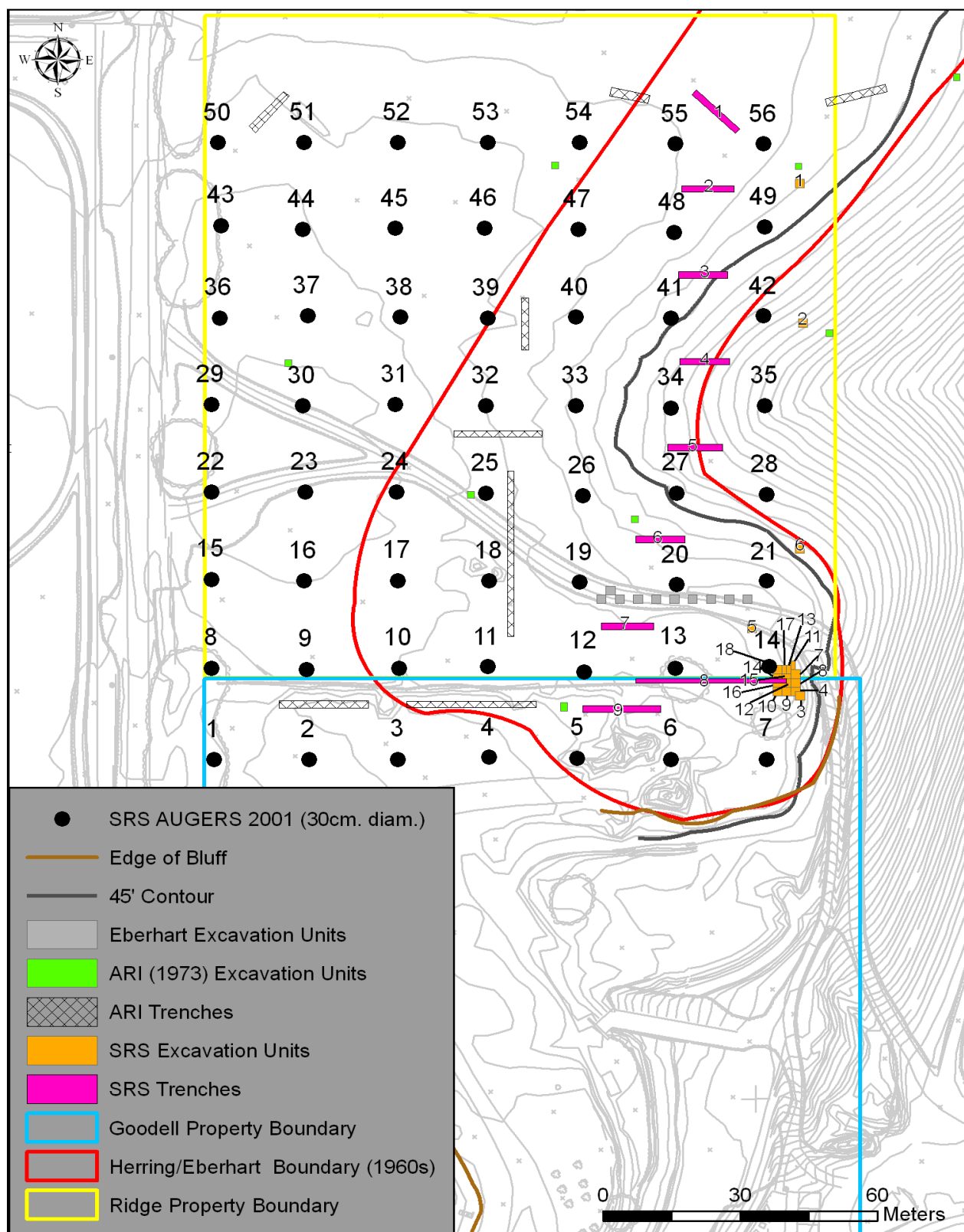
Principal Investigator, Project Manager

SRS Inc





**2001 SRS Backhoe Trench and Hand Unit Locations Verifying Auger Soil Analyses.
(Base Map: Stantec 2008).**



2001 SRS Hand Unit Expansion Showing Unit Block in the Southeast Corner of the Ridge Property. (Base Map: Stantec 2008).

Windward Residential Development 2020 AMMP & PRMMP:
GABRIELENO BAND OF MISSION INDIANS [TONGVA NATION]

Date: August 25, 2020

To: *Gabrieleno Band of Mission Indians, Anthony Morales*
Juaneño Band of Mission Indians, Acjachemen Nation, Joyce Perry

Hi Anthony (Adrian) and Joyce (Mattias)-

I have attached a new and improved Archaeological Mitigation and Monitoring Plan for Archaeological Controlled Grading on the Windward Residential Project on Bolsa Chica. This version is much easier to read and the background information is more comprehensive.

I am asking you to review the document and get back to me within the next two weeks with your comments. Your comments will be submitted with the document to all agencies.

If you need more information just contact me. I will be more than happy to discuss your interests.

Thanks Anthony and Joyce!

Nancy 'Anastasia' Wiley, PhD
Research Director/Principal Investigator

SRSINC CA
35109 Hwy 79 #22

Date: August 25, 2020

To: *Gabrieleno Band of Mission Indians, Anthony Morales*
Juaneño Band of Mission Indians, Acjachemen Nation, Joyce Perry

Good afternoon Joyce and Anthony-
Just checking in.

I would like to know where you are in reviewing my 2020 document for archaeological grading on Bolsa Chica and if you have any questions. I need a written response from you (email is fine) for the record for agencies to see your thoughts.

I will be available this afternoon for calls. Otherwise I will call you both tomorrow morning. If a different time is better for you let me know.

Look forward to working on this project with you.
Thanks

Nancy 'Anastasia' Wiley, PhD
Research Director/Principal Investigator

Date: October 28, 2020

To: *Gabrieleno Band of Mission Indians, Adrian Morales*

Adrian,

Sorry it has taken a while to get back with you, we are all very busy. I believe that I have answered your concerns in the latest version of the AMMP and ask that you look at the document again.

Please note that under "Archaeological Monitoring Procedures" and "How Monitoring Will Be Conducted and Methods for Monitoring" the plan clearly outlines that monitoring guidelines will be consistent with applicable requirements of the Native American Heritage Commission (NAHC) and the State Office of Historic Preservation (SHPO); these properties will be treated in accordance with the protective provisions of an "historic resource" as outlined by the California Environmental Quality Act (CEQA) for National Register Sites and Tribal Cultural Resources; Tribal monitors together with archaeologists will determine the significance of any finds; and avoidance and preservation is the preferred option for any significant Cultural Resources as required by the City of Huntington Beach and the California Coastal Commission for Bolsa Chica in general and specifically for this site area. I think that the methods and procedures are strongly oriented towards preservation of Cultural Resources if any exist on the Windward Residential project property.

After you review the document again, if you still have questions or need additional information please contact me.

Thanks for your concerns Adrian.

Nancy 'Anastasia' Wiley, PhD
Research Director/Principal Investigator

Date: November 11, 2020

To: *Gabrieleno Band of Mission Indians, Adrian Morales*

Adrian-

Just a short note to ask if you have had a chance to re-review the AMMP for Bolsa Chica as I suggested? Do you have any questions or are you good that the available State (SHPO and NAHC) preservation laws have been consulted, referred to, and will be enforced during the Archaeological Grading on the Windward Residential Project in Bolsa Chica?

Native participation from two tribal groups for the grading through monitoring and making significance calls on any exposed cultural resources is emphasized again and again in the report and reinforced using State guidelines suggested by SHPO and embraced by NAHC.

We can talk if you have any more questions, otherwise a short note confirming your approval of the report would be good.

Thanks Adrian

--

Nancy 'Anastasia' Wiley, PhD
Research Director/Principal Investigator

From: Beckman, Hayden <hayden.beckman@surfcity-hb.org>
Sent: Friday, February 19, 2021 10:29 AM
To: GTTribalcouncil@aol.com; Adrian Morales <moralesadrian66@yahoo.com>
Subject: RE: Consultation for Coastal Development Permit No. 20-016 (Windward Archaeological Grading and Monitoring)

Good Morning Anthony and Adrian,

I wanted to contact you and advise that the opportunity to consult on this project will end on Monday, February 22nd at 5 PM due to processing requirements.

After the December 22, 2020 phone call, I did not receive a written or phone call response from you in reference to multiple email and voicemail messages requesting to establish a day and time for consultation.

The City will consider your written comments submitted to Dr. Nancy Wiley dated September 25, 2020 for purposes of consultation on the proposed grading and monitoring project.

Should you have any questions or concerns, please contact me.

Regards,

Hayden Beckman
Senior Planner
Community Development Department
City of Huntington Beach
714-536-5561

From: Beckman, Hayden
Sent: Tuesday, February 9, 2021 5:26 PM
To: GTTribalcouncil@aol.com; 'Adrian Morales' <moralesadrian66@yahoo.com>
Subject: Consultation for Coastal Development Permit No. 20-016 (Windward Archaeological Grading and Monitoring)

Good Afternoon Anthony,

Thank you for your time on the phone this afternoon.

Please let me know when you and Adrian have time available for a consultation discussion (30-45 minutes) regarding Coastal Development Permit No. 20-016, for the Windward Archaeological Grading and Monitoring project.

For reference, I am including the Archeological Mitigation and Monitoring Plan (AMMP) and site plans. If you have any questions regarding the proposed scope of work, I'd be happy to provide more details as necessary.

The City is in receipt of Adrian's comments that were submitted to Dr. Nancy Wiley and Jennifer Villaseñor in September 2020.

Once a date and time are identified, I will send out a conference call and/or Zoom invitation for confirmation – either format is fine.

Please let me know if you have any questions or concerns.

Regards,

Hayden Beckman
Senior Planner
Community Development Department
City of Huntington Beach
714-536-5561

From: Adrian Morales <moralesadrian66@yahoo.com>
>> **Date: February 22, 2021 at 6:07:31 PM PST**
>> **To: GTTribalcouncil@aol.com, "Beckman, Hayden"**
>> <hayden.beckman@surfcity-hb.org>
>> **Subject: Re: Consultation for Coastal Development Permit No. 20-016**
>> **(Windward Archaeological Grading and Monitoring)**
>>
>> Hi Hayden
>>
>> Thank you for the notice. Please consider these comments in addition
>> to any prior comments submitted in regards to the Windward
>> Residential Project Archaeological Mitigation and Monitoring Plan
>> (AMMP) and Paleontological Resource Mitigation and Monitoring Plan
>> (PRMMP) prepared for Signal Landmark, dated August 25,2020.
>>
>> 1.) in reference to page 5 of the AMMP/ PRMMP, on July 23, 1980 PCAS
>> representative submitted the nomination for listing of CA-ORA.83/86,
>> the Cogged Stone Site, on the National Register of Historic Places.
>> On page 6 of the document displays Figure 2 of the National Register
>> boundaries, which encompasses the proposed Windward project's Area of
>> Potential Effect As relayed in the prior comments, the proposed
>> grading excavations will cause a severe adverse effect on a NRHP
>> site, and because of its status, therefore should be in compliance of
>> CA PRC 5024 (f), and CA PRC 5024.5 (b) and (c) prior to project
>> planning. At this time, the tribe would request that the City provide
>> supporting documents that the consultation process has occurred with
>> the State Historic Preservation Officer pertaining to the approval of
>> the proposed Windward project AMMP/ PRMMP dated August 25,2020.
>>

>> 2.) in reference to page 7 of the document- Sacred Lands is
>> established through CA PRC 5097.96 and should be maintained in
>> Compliance to CA PRC 5097.94 (b) and (c).
>>
>> 3.) the tribe is in opposition to the methods, protocols, and
>> consultation process as outlined in the AMMP/PRMMP document and
>> request additional consultation to establish more extensive binding
>> terminology and appropriate procedures that entail an archaeological
>> technical study prior to mechanical excavations through this
>> AMMP/PRMMP.
>>
>> At your convenience your response is requested. Also please provide
>> CA PRC 5024 (c) and 5024.5 (b) and (c) documentation.
>>
>> Respectfully
>> Adrian Morales
>> Gabrieleno Tongva San Gabriel Band of Mission Indians

**RESPONSES TO COMMENTS RECEIVED
FROM ADRIAN MORALES, GABRIELENO TONGVA
SAN GABRIEL BAND OF MISSION INDIANS**

INTRODUCTION AND BACKGROUND

This document provides a response to two sets of comments submitted by Adrian Morales of the Gabrieleno Band of Mission Indians dated September 25, 2020 and February 22, 2021 to the City of Huntington Beach (“City”). The comments were submitted as part of the consultation initiated by the City regarding the archaeological grading permit under consideration by the City for the Windward Residential Project located on the Bolsa Chica Mesa. The Windward Residential Project proposes the development of a 2.5 acre parcel for residential uses. As required by the Windward Specific Plan which was approved by the City and the California Coastal Commission, prior to any site development, an Archaeology Mitigation and Monitoring Plan, prepared by a qualified archaeologist, must be submitted with an application for a coastal development permit and controlled archaeological grading must be completed for the entire 2.5 acre site.

The City has received an Archaeological Mitigation and Monitoring Plan (AMMP) and Paleontological Resource Mitigation and Monitoring Plan (PRMMP) dated September 25, 2020 (collectively “AMMP”) prepared by the project archaeologist. The City has conducted tribal consultation with Native Americans from the Gabrieleno Tongva San Gabriel Band of Mission Indians, the Gabrielino Band of Mission Indians (Kizh Nation) and the Juaneno Band of Mission Indians.

We appreciate receipt of comments from Mr. Morales as his tribe, the Gabrieleno Tongva San Gabriel Band of Mission Indians, has had a long history of involvement in the archaeological work conducted at Bolsa Chica. His father and grandfather have both been identified as “most likely descendants” by the Native American Heritage Commission and have made recommendations to the landowner regarding the past discovery and reburial of human remains on Bolsa Chica in that capacity. The tribe, including Mr. Adrian Morales, has monitored prior archaeological work on the site since the 1990s. The current proposal to conduct archaeological grading on the 2.5 acre site follows site excavations on the property that was conducted in the early 2000s. As a result of the findings of those excavations (some of which Mr. Morales notes in his comments), the area adjacent to the 2.5 acre Windward Project site is being proposed for preservation as open space (Windward Open Space Parcel). Because of the prior archaeological investigation that was performed in 2000, the 2.5-acre Windward Project site was identified as the portion of the property that is expected to have the lowest potential for subsurface artifacts. The proposed archaeological grading work is part of an overall cultural resources mitigation program in the Windward Specific Plan to assure protection of any significant cultural resources through requiring the preservation in place of any significant cultural resources which may be discovered during the archaeological grading.

Comments from Adrian Morales of the Gabrieleno Band of Mission Indians (September 25, 2020)

- 1. The Tribal council would like to request additional information in regards to the proposed Windward mechanical grading procedures. The Tribe's concern is that the grading impacts will severely cause an adverse effect to the site, an area that has already been nominated to be included on the National Register status.***

Controlled archaeological grading is a requirement of the Windward Specific Plan that was approved by the City and Coastal Commission, and mitigation measure CR-2 from the City's approved Mitigated Negative Declaration ("MND"). It is part of an overall mitigation program for cultural resources which also includes preparation of the AMMP, and preservation in place for significant cultural resources identified during the archaeological grading as determined by Native American consultation with the project archaeologist. The archaeological grading will occur prior to the issuance by the City of a grading permit and coastal development permit for residential development.

Archaeological grading is a cultural resource recovery technique that was employed extensively at the adjacent Brightwater development which was the location of a portion of ORA-83 and ORA-85. This cultural resources mitigation technique, which is described below, resulted in the recovery of cultural resources within the development footprint. The effectiveness of this recovery technique in carefully locating cultural resources at Brightwater is the reason why it was approved as a mitigation measure for the Windward project.

The AMMP describes the controlled archaeological grading procedures at pages 11 and 13, as follows:

The controlled archaeological grading will consist of using mechanized equipment where the subsurface soils are removed in approximate 2-centimeter depth increments by a mechanical scraper under the supervision of the Archaeological Principal Investigator/site supervisor in coordination with Native American Monitors. The grading process shall be limited to slow excavation in small horizontal areas of individual swaths the width of the mechanical scraper blade in order to maximize the opportunity for the discovery of cultural artifacts present on site, providing ultimate control. The archaeologist(s) and Native American Monitor(s) shall examine the soils as they are exposed. The number of monitors will depend upon the areal extent of excavation and number of equipment used at any one time. Controlled Archaeological Grading efforts will continue until sterile soils are encountered.

It should be noted that if archaeological grading uncovers a cultural resource, the Native American monitor and the project archaeologist shall jointly determine if the discovery is a significant cultural resource and what measures should be implemented, such as preservation in place, in order to avoid an adverse impact on the site and giving equal authority to each party. (See AMMP at pages 13, 15, 18 and 21).

The City appreciates the tribe's concern that the archaeological work will cause adverse effects to the site, however, the archaeological mitigation measures adopted by the City and Coastal Commission as part of the Windward Specific Plan and the City's MND, are designed to avoid and minimize significant impacts to cultural resources. It should be noted that ORA-83 was also nominated and deemed eligible for listing on the National Register of Historic Places at the time the archaeological grading occurred. The nomination does not preclude implementation of this mitigation program on the site.

Lastly, the controlled archaeological grading is limited to the 2.5 acre area along the western edge of ORA-86 in what Archaeological Research, Inc. described as "periphery areas (outside the nominated area) containing only scattered artifacts and very little undisturbed surface material" (Pacific Coast Archaeological Society 1980). This area is proposed for development as it is the portion of ORA-86 that has been scientifically investigated since 1999 and shown to be nearly void of cultural resources. (Please refer to the technical reports cited in response to comment #7 below.). In addition, an independent archaeologist from Northern California, Dr. William Hildebrandt, who had not previously worked on Bolsa Chica, concurred with the project archaeologist's conclusions that significant archaeological deposits were situated along the eastern edge of the Windward Property and that relatively little remained elsewhere concluding that "if development were to occur, it should focus on the western half of the parcel and stay clear of areas to the east". [See 2016 Hildebrandt Review] Consequently, the eastern 2.5 acres of the Windward site are being proposed for permanent protection and are designated as the Windward Open Space Parcel in the Windward Specific Plan, and the western 2.5 acres is being proposed for development.

2. ***Like Pat Hammon of the PCAS, the Tribe has always interpreted ORA 86 as being an association to ORA 83, therefore should be viewed as one site complex as referenced in the Sacred Lands File and considered to be a Traditional Cultural Property (TCP) under federal preservation guidelines.***

The AMMP recognizes the significance of the overall site complex to Native American tribes, and has identified ORA-86 as "Part of a Sacred Lands Site Complex" (AMMP at page 7) that includes ORA-83 based on identified traditional uses of the area. The AMMP also recognizes the fact that this complex has been submitted to the Native American Heritage Commission for listing in the Sacred Lands File and has been deemed eligible for listing in the federal National Register of Historic Places. Because of this, the City and Coastal Commission has required the implementation of a comprehensive mitigation program for the protection of significant cultural resources.

3. ***Prior investigations revealed factual evidence that an intact House Pit Structure deposit with ceremonial artifacts were discovered on the Windward property, therefore implying that intact deposits, and intact sediments do exist within the Windward property. These Tribal Resource deposits on the Windward property evidently holds high significance, and supports a ongoing unbroken timeline of prehistoric human occupation, including a continuing unbroken representation of ritualistic hierarchy practices on a Traditional Cultural Property.***

As stated previously, archaeological investigations on this area, including the 2.5 acres Windward Project area, were conducted beginning in 1999. At that time, a single, prehistoric house pit structure, surrounded by shell midden, was excavated in the southeasternmost corner of ORA-86. Because of this discovery, the area where the house pit structure was excavated will be protected in open space, and not subject to disturbance from development of the Windward Residential Project.

The Windward Specific Plan covers two parcels each of which is 2.5 acres in size. The western 2.5 acres of the site is proposed for residential development, while the eastern 2.5 acres is designated the Windward Open Space Parcel and is proposed for open space preservation. The house pit structure is located in the Windward Open Space Parcel, not the residential development parcel. Moreover, based upon the archaeological investigations it was determined that the western 2.5 acre proposed for residential development lacks the features, cogged stones, charmstones and other ceremonial items present on other prehistoric sites on Bolsa Chica Mesa, such as ORA-83 and ORA-85. This determination was reviewed by an independent, third party reviewer, Dr. William Hildebrandt, who is an experienced archaeologist but was not familiar with the Bolsa Chica sites. Dr. Hildebrandt reviewed the reports that had been prepared for the various archaeological investigations concurred with the project archaeologist that significant archaeological deposits were situated along the eastern edge of the property which was designated as the Windward Open Space Parcel, and that relatively little remained elsewhere concluding that “if development were to occur, it should focus on the western half of the parcel and stay clear of areas to the east”. [See 2016 Hildebrandt Review]

As to the comment recognizing ORA-86 as a component of an “ongoing unbroken timeline of prehistoric human occupation,” the AMMP at page 9 describes the eleven prehistoric sites on Bolsa Chica Mesa as presenting “a full range of activity areas including short and long-term residential bases and limited use areas from the Millingstone through the very early Late Prehistoric Horizons (Wallace 1955) They are not single period, single use sites associated with the Cogged Stone Site [ORA-83] but rather provide a richer, more complex view of life on Bolsa Chica Mesa from about 9,500 to 1,200 years ago. Collectively, these sites provide a picture of environmental, economic, and social change on Bolsa Chica Mesa over at least an 8000-year period.”

4. ***[T]he Tribal representatives would like to seek additional consultation with yourself, the CA NAHC, & the OHP for clarification of the state & federal guidelines regarding the methodology approach that would apply to the development of a National Registered, & Sacred Lands sites, including clarification as to which lead agencies appropriately have the jurisdiction to issue a grading permit for such sites of this status.***

Responding to Mr. Morales’ request, the City has contacted him to continue the consultation process that was initiated last summer. In addition, as part of its consultation process as the lead agency, the City contacted both the Native American Heritage Commission (NAHC) and the State Office of Historic Preservation (SHPO) to solicit their feedback on the AMMP. In accordance with Public Resource Code Sections concerning Sacred Lands and requirements of the California Coastal Commission set forth in the 2017 Tribal Consultation

Policy, on December 22, 2020 Jennifer Villasenor of the City of Huntington Beach contacted Jenan Saunders, Deputy State Historic Preservation Officer and Tribal Liaison at SHPO. SHPO indicated that it did not have an interest in reviewing and commenting on the AMMP since no federal funding was involved. NAHC advised that the local tribal entities were the appropriate groups to review and comment on the AMMP. [See SHPO Email, dated December 28, 2020]

Consistent with the comment from NAHC, the City contacted tribal representatives from the Juaneno Band of Mission Indians, the Gabrielino Band of Mission Indians – Kizh Nation, and the Gabrieleno Tongva San Gabriel Band of Mission Indians.

The AMMP under "Archaeological Monitoring Procedures" and "How Monitoring Will Be Conducted and Methods for Monitoring" outlines that monitoring guidelines will be consistent with the applicable requirements of the NAHC and SHPO. (AMMP at pages 13-15) These properties will be treated in accordance with the protective provisions of an "historic resource" as outlined by the California Environmental Quality Act (CEQA) for National Register Sites and Tribal Cultural Resources. Tribal monitors, together with archaeologists, will determine the significance of any finds. Avoidance and preservation will be the preferred option for any significant cultural resources located during the archaeological grading, which is consistent with the requirements of the City of Huntington Beach and the California Coastal Commission for Bolsa Chica in general, and for this site area specifically. Methods and procedures detailed in the AMMP are strongly oriented towards preservation of cultural resources, if any exist on the Windward Residential Project site.

Lastly, regarding the request for clarification as to which agencies have the jurisdiction to issue a grading permit for this site, the City of Huntington Beach has the authority to issue a Coastal Development Permit (CDP) for the archaeological grading and is the lead agency for issuance of the permit and for initiating tribal consultation. The City-issued coastal development permit can be appealed to the Coastal Commission. The Coastal Commission has the authority to determine if the appeal presents a substantial issue in terms of its consistency with the City's LCP. As the archaeological grading permit incorporates all of the cultural resource mitigation measures set out in the City's LCP, it is the City's position that a CDP issued by the City would be consistent with its LCP.

Comments from Adrian Morales of the Gabrielino Band of Mission Indians (February 22, 2021)

5. *[I]n reference to page 5 of the AMMP/ PRMMP, on July 23, 1980 PCAS representative submitted the nomination for listing of CA-ORA.83/86, the Cogged Stone Site, on the National Register of Historic Places. On page 6 of the document displays Figure 2 of the National Register boundaries, which encompasses the proposed Windward project's Area of Potential Effect As relayed in the prior comments, the proposed grading excavations will cause a severe adverse effect on a NRHP site, and because of its status, therefore should be in compliance of CA PRC 5024 (f), and CA PRC 5024.5 (b) and (c) prior to project planning. At this time, the tribe would request that the City provide*

supporting documents that the consultation process has occurred with the State Historic Preservation Officer pertaining to the approval of the proposed Windward project AMMP/ PRMMP dated August 25,2020.

Public Resources Code Section 5024(f) requires each state agency to “submit to the State Historic Preservation Officer for comment documentation for any project having the potential to affect historical resources listed in or potentially eligible for inclusion in the National Register of Historic Places or registered as or eligible for registration as a state historical landmark.”

Public Resources Code Section 5024.5 sets forth the obligations of a state agency prior to undertaking work that may affect a historic resource. The pertinent sections are as follows:

5024.5. (a) No state agency shall alter the original or significant historical features or fabric, or transfer, relocate, or demolish historical resources on the master list maintained pursuant to subdivision (d) of Section 5024 without, early in the planning processes, first giving notice and a summary of the proposed action to the officer who shall have 30 days after receipt of the notice and summary for review and comment.

(b) If the officer determines that a proposed action will have an adverse effect on a listed historical resource, the head of the state agency having jurisdiction over the historical resource and the officer shall adopt prudent and feasible measures that will eliminate or mitigate the adverse effects. The officer shall consult the State Historical Building Safety Board for advice when appropriate.

(c) Each state agency shall maintain written documentation of the officer's concurrence with proposed actions which would have an effect on an historical resource on the master list.

Although both Section 5024 and 5024.5 impose consultation obligations on State agencies to consult with SHPO, the City of Huntington Beach as part of its consultation process contacted both the Native American Heritage Commission (NAHC) and the State Office of Historic Preservation (SHPO) to solicit their feedback on the AMMP in light of the significance of the archaeological resources and being deemed eligible for listing on the National Register of Historic Places.

In accordance with Public Resource Code Sections concerning Sacred Lands and requirements of the California Coastal Commission set forth in the 2017 Tribal Consultation Policy, on December 22, 2020 Jennifer Villasenor of the City of Huntington Beach contacted Jenan Saunders, Deputy State Historic Preservation Officer and Tribal Liaison at SHPO. SHPO indicated that it did not have an interest in reviewing and commenting on the AMMP since no federal funding was involved. NAHC advised that the local tribal entities were the appropriate groups to review and comment on the AMMP. **[See SHPO Email, dated December 28, 2020]**

Consistent with the comment from NAHC, the City contacted tribal representatives from the Juaneno Band of Mission Indians, the Gabrielino Band of Mission Indians – Kizh Nation, and the Gabrieleno Tongva San Gabriel Band of Mission Indians.

6. *[I]n reference to page 7 of the document- Sacred Lands is established through CA PRC 5097.96 and should be maintained in Compliance to CA PRC 5097.94 (b) and (c).*

The referenced Public Resource Code sections list actions that the NAHC should take in regard to sacred sites on public property and private property. Public Resources Code Section 5097.96 sets forth the obligations of the NAHC regarding sacred sites on public lands as follows:

The commission may prepare an inventory of Native American sacred places that are located on public lands and shall review the current administrative and statutory protections accorded to such places. The commission shall submit a report to the Legislature no later than January 1, 1979, in which the commission shall report its findings as a result of these efforts and shall recommend such actions as the commission deems necessary to preserve these sacred places and to protect the free exercise of the Native American religions.

Section 5097.94(b) and (c) lists the responsibilities of the NAHC with respect to sacred places on private lands as follows:

(b) To make recommendations relative to Native American sacred places that are located on private lands, are inaccessible to Native Americans, and have cultural significance to Native Americans for acquisition by the state or other public agencies for the purpose of facilitating or assuring access thereto by Native Americans.

(c) To make recommendations to the Legislature relative to procedures that will voluntarily encourage private property owners to preserve and protect sacred places in a natural state and to allow appropriate access to Native American religionists for ceremonial or spiritual activities.

The Windward Residential Project is consistent with the provisions of Section 5097.94 as it pertains to private property owners. The Windward Specific Plan provides for the permanent protection in open space of the 2.5 acre Windward Open Space Parcel. As discussed previously, this is the area where the house pit was excavated and where undisturbed cultural resources are anticipated to be found. For these reasons, the Windward project proposes its permanent protection. In addition to the Windward Open Space Parcel, the Windward project also proposes the permanent protection as open space of all of the adjacent 6.2 acre Goodell Property. The open space designation will provide for uninhibited access for Native gatherings, ceremonial and spiritual activities.

7. *[T]he tribe is in opposition to the methods, protocols, and consultation process as outlined in the AMMP/PRMMP document and request additional consultation to establish more extensive binding terminology and appropriate procedures that entail an archaeological technical study prior to mechanical excavations through this AMMP/PRMMP.*

Responding to Mr. Morales' request, the City has contacted him to continue the consultation process that was initiated last summer. The comment requests an archaeological

technical study prior to the archaeological grading. Beginning in 1999, archaeological investigations were conducted on the 5-acre Windward site – which encompasses the 2.5 acre Windward Residential Project site and the 2.5 acre Windward Open Space Parcel. These investigations were documented in an archaeological technical study issued in 2017 that is discussed below and attached to this response. As described below, in addition to the 2013 report, technical reports on archaeological investigations that have been conducted on the Bolsa Chica Mesa area have been prepared. All of the prior archaeological investigations were monitored by Native American monitors from the Gabrieleno Tongva San Gabriel Band of Mission Indians. Because of the extensive documentation of the archaeological investigations for the Bolsa Chica Mesa, including this portion of ORA-86, the City and Coastal Commission have required that before any grading for residential construction occurs that archaeological grading be conducted as mitigation.

The AMMP that was provided to all of the Native Americans consulted by the City is a revised version of a prior AMMP completed in 2019. Both the prior AMMP draft and the current document took into consideration conversations that Mr. Morales had with the project archaeological investigator. The comments concerned whether sufficient archaeological work had been completed on this site in order to establish that the western 2.5 acres of the Windward property (where the residential development project is proposed) was extensively disturbed and essentially lacking in intact cultural resources. At that time, a 5-page description of previous archaeological activities on the Windward Property was provided. **[See 2018 Morales Response doc.]** In 2020, the updated AMMP was provided to the Gabrieleno Tongva tribe and Mr. Morales for review and comment. **[See 2020 Morales Consultation Requests and Responses].**

A thorough description and analysis of all previous work on this site had been compiled in a 2017 technical study: *“2013 Archaeological Abstract, Assessment of Excavations on CA-ORA-86, Bolsa Chica Mesa, Huntington Beach, CA”*, SRS INC 2017. **[See 2017 version of the 2013 Technical Analyses]**. This document summarized detailed information provided in seven earlier research efforts on archaeological site, CA-ORA-86 and the Windward Project area:

- 1999a Archaeological Site ORA-86: Herring’s Site E and The Sandover Project.
- 1999b Research Design for Test Excavations: ORA-86 Herring’s Site E.
- 1999c Summary of Findings: Test Excavations on ORA-86: Herring’s Site E.
- 1999d Archaeological Grading Monitoring for the Sandover Project.
- 2001 Draft Report: Archaeological Data Recovery Program on Herring’s Site E, CA-ORA-86.
- 2008 History of Bolsa Chica Archaeological Research and Salvage Work.
- 2009 Archaeological Abstract: Archaeological Site Ca-Ora-86: Herring’s Site E.

The research in 2013 also provided a detailed technical analysis of all artifacts and ecofacts recovered from all previous work on the site, as well as a thorough assessment of the location of these artifacts, nature of the soil deposits, and determination of relatively intact site deposits. **[See 2017 version of the 2013 Technical Analyses]**. In 2016, at the request of the Bolsa Chica Land Trust, the 2013 document, along with the seven previous documents about the archaeological deposits on the ORA-86 site, were reviewed by an independent archaeologist from Northern California, Dr. William Hildebrandt, who was not familiar with the Bolsa Chica

sites. Dr. Hildebrandt concurred with the SRS INC conclusions that significant archaeological deposits were situated along the eastern edge of the (Ridge) Windward Property overlooking the wetlands and that relatively little remained elsewhere concluding that “if development were to occur, it should focus on the western half of the parcel and stay clear of areas to the east”. [See **2016 Hildebrandt Review**].

8. *Also please provide CA PRC 5024 (c) and 5024.5 (b) and (c) documentation.*

Public Resources Code Section 5024(c) reads as follows:

The State Historic Preservation Officer, with the advice of the State Historical Resources Commission, shall establish standards, after consultation with agencies to be affected, for the submittal of inventories and development of policies for the review of historical resources identified pursuant to this section. These review procedures shall permit the State Historic Preservation Officer to determine which historical resources identified in inventories meet National Register of Historic Places and state historical landmark criteria and shall be placed in the master list of historical resources.

Public Resources Code Section 5024.5 (b) and (c) read as follows:

(b) If the officer determines that a proposed action will have an adverse effect on a listed historical resource, the head of the state agency having jurisdiction over the historical resource and the officer shall adopt prudent and feasible measures that will eliminate or mitigate the adverse effects. The officer shall consult the State Historical Building Safety Board for advice when appropriate.

(c) Each state agency shall maintain written documentation of the officer's concurrence with proposed actions which would have an effect on an historical resource on the master list.

Although Sections 5024 and 5024.5 set forth the obligations and procedures for State agencies, not local agencies, as discussed in Response to Comment 5, the City consulted with the State Office of Historic Preservation regarding the proposed archaeological grading project. The results of that consultation are described above. Although In addition to the measures adopted by the City in the mitigated negative declaration prepared in compliance with CEQA, the City will also incorporate the measures adopted by the Coastal Commission when it approved the Windward Specific Plan.

Documents Referenced in the Comments and Attached:

- The Revised AMMP
- OHP Email, December 28, 2020
- 2018 Morales Response Document
- 2020 Morales Consultation Requests and Responses
- 2017 version of the 2013 Technical Analyses (this document is the “2013 Archaeological Abstract, Assessment of Excavations on CA-ORA-86, Bolsa Chica Mesa, Huntington Beach, CA”)
- 2016 Hildebrandt Review

Windward Residential Development 2020 AMMP & PRMMP:
GABRIELENO BAND OF MISSION INDIANS [KISH NATION]

From: Gabrieleno Administration <admin@gabrielenoindians.org>
Sent: Friday, February 19, 2021 4:24 AM
To: Beckman, Hayden <hayden.beckman@surfcity-hb.org>
Cc: Matthew.Teutimez@gabrielenoindians.org; indigenous.crm@gmail.com
Subject: Re: Archaeological Mitigation and Monitoring Plan (AMMP) for the Windward Project Site (CDP 20-016)

Please see attached mitigation measures our tribal government has requested . If you have any questions please feel free to contact me. Thank you .

Please note that CEQA has been revised to add Tribal Cultural Resources as their own element. The State has defined Tribes as the experts of the resources within this element. No longer are Archaeologist or Anthropologist or Historians or academic institution or any non-tribal entity the authority over our resources. We are the experts of our own resources. Therefore please keep our Tribal cultural Resources (TCR) separate from Archaeological resources . Also please utilize the attached mitigation measures in order to protect our tribal cultural resources .

MM TCR-1 Prior to the commencement of any ground disturbing activity at the project site, the project applicant shall retain a Native American Monitor approved by the Gabrieleno Band of Mission Indians-Kizh Nation – the tribe that consulted on this project pursuant to Assembly Bill A52 - SB18 (the "Tribe" or the "Consulting Tribe"). A copy of the executed contract shall be submitted to the **City of Huntington Beach Planning and Building Department** prior to the issuance of any permit necessary to commence a ground-disturbing activity. The Tribal monitor will only be present on-site during the construction phases that involve ground-disturbing activities. Ground disturbing activities are defined by the Tribe as activities that may include, but are not limited to, pavement removal, potholing or

auguring, grubbing, tree removals, boring, grading, excavation, drilling, and trenching, within the project area. The Tribal Monitor will complete daily monitoring logs that will provide descriptions of the day's activities, including construction activities, locations, soil, and any cultural materials identified. The on-site monitoring shall end when all ground-disturbing activities on the Project Site are completed, or when the Tribal Representatives and Tribal Monitor have indicated that all upcoming ground-disturbing activities at the Project Site have little to no potential for impacting Tribal Cultural Resources. Upon discovery of any Tribal Cultural Resources, construction activities shall cease in the immediate vicinity of the find (not less than the surrounding 100 feet) until the find can be assessed. All Tribal Cultural Resources unearthed by project activities shall be evaluated by the qualified archaeologist and Tribal monitor approved by the Consulting Tribe. If the resources are Native American in origin, the Consulting Tribe will retain it/them in the form and/or manner the Tribe deems appropriate, for educational, cultural and/or historic purposes. If human remains and/or grave goods are discovered or recognized at the Project Site, all ground disturbance shall immediately cease, and the county coroner shall be notified per Public Resources Code Section 5097.98, and Health & Safety Code Section 7050.5. Human remains and grave/burial goods shall be treated alike per California Public Resources Code section 5097.98(d)(1) and (2). Work may continue on other parts of the Project Site while evaluation and, if necessary, mitigation takes place (CEQA Guidelines Section 15064.5[f]). If a non-Native American resource is determined by the qualified archaeologist to constitute a "historical resource" or "unique archaeological resource," time allotment and funding sufficient to allow for implementation of avoidance measures, or appropriate mitigation, must be available. The treatment plan established for the resources shall be in accordance with CEQA Guidelines Section 15064.5(f) for historical resources and PRC Sections 21083.2(b) for unique archaeological resources. Preservation in place (i.e., avoidance) is the preferred manner of treatment. If preservation in place is not feasible, treatment may include implementation of archaeological data

recovery excavations to remove the resource along with subsequent laboratory processing and analysis. Any historic archaeological material that is not Native American in origin shall be curated at a public, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County or the Fowler Museum, if such an institution agrees to accept the material. If no institution accepts the archaeological material, it shall be offered to a local school or historical society in the area for educational purposes.

Confidentiality Statement:

This email and any files transmitted with it may contain confidential information and trade secrets of Kizh Nation Gabrieleño Band Of Mission Indians and / or its subsidiaries and affiliates. It is intended solely for the use of the individual or entity to whom it is addressed. If you are not the intended recipient, or a person responsible for delivering it to the intended recipient, you are hereby notified that any disclosure, copying, dissemination, distribution, or use of any of the information contained in or attached to this transmission is STRICTLY PROHIBITED. If you are not the intended recipient, please notify the sender by replying to this message and then delete it from your system.

APPENDIX E

PEER REVIEW DOCUMENTS, ARCHAEOLOGISTS COMMENTS

*[EVIDENCE THAT THE AMMP WAS MADE AVAILABLE FOR REVIEW
BY PEER REVIEWERS AND INTERESTED ARCHAEOLOGICAL PROFESSIONALS:]*

PEER REVIEWERS

[DR. PAUL G. CHACE, DR. ROGER MASON, DR. HANK KOERPER]
2018 DOCUMENT REVIEW- October 22, 2018 emails from Chace and Mason
2020 DOCUMENT REVIEW- December 2020 email letter from Chace,
January 3, 2021 email from Mason

Changes to AMMP:

References to OHP, Federal laws and guidelines have been omitted
Pages 2, 22
Project Location Map added- Page 3
Clarified References to 'sterile soil' and 'Red Pleistocene soil'- Page 14
Added detail to 'screening process'-Page 16
Added references to 'security after work hours'- Page 16
Typos corrected on Pages 19, 21, 25
Added 'Research Design shall be made by Archaeologist in consultation with Native American
Representatives'- Page 20
Notifications for Unanticipated Finds and Uncovering Human Remains added
Pages 13, 21, 22

INTERESTED ARCHAEOLOGICAL PROFESSIONALS

DR. PATRICIA MARTZ
2020 DOCUMENT REVIEW

DR. WILLIAM R. HILDEBRANDT
INDEPENDENT PROJECT REVIEWER

Changes to AMMP:
None Requested

Windward Residential Development 2018 AMMP & PRMMP-
PEER REVIEWERS [Drs. CHACE, MASON]

October 22, 2018

Dr. Nancy Anastasia Wiley
Scientific Resource Surveys, Inc.
2324 N. Batavia Street, Suite 109
Orange, CA 92865

Re: Peer Review of AMMP for the Windward Residential Project, Bolsa Chica Mesa, Orange County

Dear Dr. Wiley:

I have reviewed "Archaeological Monitoring and Mitigation Plan (AMMP), Windward Residential Project - Bolsa Chica Mesa" (Plan) prepared by Scientific Resource Surveys, Inc. (SRS). The Plan consists of a monitoring plan, a discovery plan, and a research design to guide data recovery of any finds.

I have the following comments.

On Page 5 the Plan says: "appropriate Lead Agencies shall be notified within 48 hours of any find in compliance with 36 CFR 800.13(b)(3)." 36 CFR 800.13(b)(3) is part of the federal regulations implementing Section 106 of the National Historic Preservation Act, the federal cultural resources law. However, this project has no federal nexus (a federal permit or federal funding). 36 CFR 800 does not apply to this project.

In several places in the Plan, it says that the State Historic Preservation Officer (SHPO) will be consulted or that reports will be sent to SHPO. However, SHPO consultation only applies to federal Section 106 projects or to state-owned resources. Neither is the case for this project.

On page 12 of the Plan, it is stated that: "(a) No person shall obtain or possess any Native American artifacts or human remains which are taken from a Native American grave or cairn on or after January 1, 1984, except as otherwise provided by law or in accordance with an agreement reached pursuant to subdivision (l) of Section 5097.94 or pursuant to Section 5097.98." Illegal possession of Native American human remains can apply to archaeologists who are temporarily in possession of human remains prior to reburial. However, such possession is not illegal if it is allowed by an agreement reached pursuant to subdivision (l) of PRC Section 5097.94 or pursuant to Section 5097.98. The agreement is a treatment and reburial plan that is signed by the Most Likely Descendant, the archaeologist, and the landowner. The Plan should state that if human remains are found, a treatment and reburial plan will be negotiated and implemented.

The Plan represents archaeological best practices for monitoring and discovery procedures and conforms to the requirements of CEQA and state law regarding discovery of Native American human remains. After some minor revisions as indicated above, I recommend the Plan be approved and implemented.

Sincerely,



Roger D. Mason, Ph.D., RPA
Archaeologist

Subject:	RE: Bolsa Chica Mesa: Windward Grading Monitoring Plan
From:	pgc@pgchace.com
Date:	Mon, October 22, 2018 5:09 pm
To:	wileycoyote@srsrscorp.net
Priority:	Normal
Status:	answered
Options:	View Full Header Print Download this as a file View as plain text

Dr. Wiley,

The SRS Monitoring Plan for the Windward project has been read and carefully reviewed. Overall, it is an impressively thorough document. That the Windward Plan includes a large area of designated Open Space is a grand positive to be emphasized.

Below are some brief reflections on issues with the project plan document.

- 1) In CR-2 arch monitoring shall examine the Red Pleistocene soil. For what? Why? Unnecessary.
- 2) In CR-2 Controlled Grading, arch monitoring just upper surface of red for arch.
- 3) Page 3, rather, states, "until sterile soil is reached."
- 4) Page 5, General Goals, 'designated institution for remitting materials' - an issues. (County P&R has just taken over the County curation facility [from CSUF] and may not be knowledgeable for accepting anew.)
- 5) Page 6, Daily, No Finds, "soils screened systematically..."
This screening procedure seems nowhere described and stipulated.
'Screening' also appears in Daily Monitoring.
- 6) Page 11, Reburial, storage until reburial is not specified.
- 7) Page 11, Site/Property security after working hours is not specified.
- 8) Page 13, hopefully, MLD can be determined in advance of field and processing.
- 9) Appendix C Paleontological Plan. (This is new and bold stuff!)
- 10) Page 18, For paleontology, no recorded statues or case law cited, if they exist; only 'Society....'
- 11) Page 18, 'Screening of sediments...' What are procedures? Screen size?
Are small invertebrate specimens sought, even microscopic sampling?
(Dr. Ed Marks undertook microscopic sampling of Ballona Creek Wetlands sediments for me at TKC and discovered a tiny fossil specie never previous reported in California that represented a particular environmental wetlands niche.)
- 12) Page 27, all paleo specimens to go to LA County, Nat History Museum or locally? Contentious.

Respectfully,

Paul G. Chace, Ph.D.

Windward Residential Development 2020 AMMP & PRMMP-
PEER REVIEWERS [Drs. CHACE, MASON]

Paul G. Chace & Associates

Antiquities & Cultural Environment Specialists
Archaeology Historic Sites Museums

2665 Kauana Loa Drive
Escondido, CA 92029
pgc@pgchace.com
760-715-8891

Dr. Nancy Anastasia Wiley
Scientific Resources Surveys, Inc.
35109 Highway 79 #22
Warner Springs, CA 92086

31 December 2020

Colleagues:

This letter is intended to serve as a professional Peer Review evaluation for the WINDWARD RESIDENTIAL PROJECT...MONITORING PLAN prepared by SRS, Inc. and dated September 25, 2020.

Overall this 26-page planning document appears well organized and quite thorough. It is sufficient and ample to carry forth “Controlled Grading” as the next phase in the development planning for this Signal Landmark parcel.

The presentation of all the applicable regulatory guidelines is strong and up to date. It clearly includes recognition for Tribal Consultation and Native American knowledge and concerns, plus addressing environmental consideration for Paleontological resources, as the potential remains of vertebrate fossils. This planning report situation is focused upon the remaining 2.5 acres of undeveloped area of the recorded Ora-86 archaeological site. This last undeveloped area is within the broader landscape of the Bolsa Chica Mesa, with its prior complex of multiple archaeological heritage resources sites dating back over 9,500 years.

Importantly, this last Ora-86 site area seemingly represent the unique archaeological remnants of the C-14 dated use (or very brief occupation) of the mesa only about 2,000-1,200 years ago. It is the only area of the mesa recognized with any archaeology heritage remnants of the “Late Prehistoric” culture era. (Indeed, this may represent an uniquely early moment represented with the “Shoshonean Intrusion Theory,” when proto-Tongva/Juaneno/Luiseno speakers of the Shoshonean language family first came west to occupy the region and split apart the [prior occupying] proto-Chumash/Kumeyaay speakers of an Hokan language family.)

The Protocols of this careful visual monitoring of a “Controlled Grading” approach represents the most reasonable techniques to identify any archaeological (and paleontological) resources present on this parcel. Assessment of significant discoveries (if any) and specific mitigations then can be determined.

This approach should provide that this 2.5 acre parcel then might be re-graded as Signal Landmarks' proposed multi-unit housing development.

Utilizing a bladed road-graded with an experienced operator smoothly removing just two-centimeter of soil on each bladed pass -- provides that informed monitors can visually inspect and identify items of potential importance. To be applauded in this planning document, it explicitly calls for a "TRAINING PROGRAM" such that grading monitors, including Native American monitors, might better appreciate the broad array and complexities of archaeological occurrences that have been recognized on the mesa. This includes the extremely ancient "Post-Pleistocene" resource processing, at nearby Ora-83 on the front edge of the mesa. The scope of 'hand-outs' could be very broad in this training.

Also, this monitor document recognizes that important vertebrate fossils might be encountered. (However, soil sample screenings for micro-fossils also might reveal specimens of key non-vertebrate of early environmental significance, an emergent field of scientific concern.)

In conclusion, this WINDWARD RESIDENTIAL PROJECT...MONITORING PLAN is a well considered planning document.

Respectfully submitted,

A handwritten signature in blue ink that reads "Paul G. Chace". The signature is fluid and cursive, with the first name "Paul" and last name "Chace" clearly legible.

Paul G. Chace, Ph.D., Anthropology
R.P.A. #10373, Register of Professional Archaeologists

PGC:hs

January 3, 2021
Dr. Nancy Anastasia Wiley
Scientific Resource Surveys, Inc.
35109 Highway 79 #22
Warner Springs, CA 92086

Re: Peer Review of AMMP and PRMMP for the Windward Residential Project, Bolsa Chica Mesa, Orange County

Dear Dr. Wiley:

I have reviewed “Archaeological Monitoring and Mitigation Plan (AMMP), Windward Residential Project - Bolsa Chica Mesa” prepared by Scientific Resource Surveys, Inc. (SRS) and dated September 25, 2020. The document consists of a monitoring plan and an unanticipated discovery plan for archaeological material, human remains, and paleontological material.

I agree that controlled grading, as described in the AMMP, is the best method to find all potentially significant subsurface cultural material without causing significant impacts. Preservation in place with legal preservation measures (deed restrictions, easements) is the preferred mitigation measure for culturally significant material found during the controlled grading.

The AMMP satisfies all legal and ethical requirements and meets cultural resources best management practices. The AMMP is satisfactory as written, but responses to the following comments would improve the document.

Page 2

There should be a map showing the location of the 2.5 acre vacant site at 17202 Bolsa Chica Street.

Page 2

The NHPA, a federal law, does not apply to this project because the project has no federal nexus (a federal permit or a federal funding).

Page 17

There is a typo in the fourth bullet under Training Programs.

Page 19

There is a discussion of procedures for preservation in place of significant cultural material and procedures for removal and recovery of significant cultural material. In the Research Design section it should be explicitly stated that the decision about preservation in place versus removal and recovery will be made by the Principal Investigator in consultation with Native American representatives.

Page 19, 4th line under Reburial of Recovered Materials
Delete “. Me! .”

Page 20, Protocol for the Discovery of Human Remains in California

NAGPRA and other federal laws and regulations cited here do not apply because there is no federal nexus

(no federal permit or funding).

Page 22, end of second to last paragraph

The heading “**Reporting**” should be moved down.

General:

The document mentions notifications as part of the various procedures discussed. There should be a list of persons to be notified and under what circumstances. Do Planning staff at the City need to be notified if there are significant finds?

Sincerely,

A handwritten signature in black ink that reads "Roger D. Mason". The signature is written in a cursive, slightly slanted style.

Roger D. Mason, Ph.D., RPA
Archaeologist

Windward Residential Development 2020 AMMP & PRMMP-
DR. PATRICIA MARTZ COMMENTS

From **Patricia Martz**
To **'Nancy Anastasia Wiley, PhD'**
Cc **'Joyce Perry'**
Date **2020-10-06 22:01**

Hi Nancy,

I have no further comments. Thank you for the opportunity to comment.

Pat

-----Original Message-----

From: Nancy Anastasia Wiley, PhD <wileycoyote@srsCorp.net>
Sent: Tuesday, October 6, 2020 1:59 PM
To: Patricia Martz <p.martz@cox.net>
Cc: 'Joyce Perry' <kaamalam@gmail.com>; 'Ed Mountford' <ed@cornerstonereconsulting.com>
Subject: Re: Windward Residential Project AMMP & PRMMP

Hello again Pat,

I have incorporated Joyce's comments into an updated version of the AMMP.

I wanted to ask if you have any other comments on the document.

I am trying to be thorough and not overlook contacting interested professionals so

I am reaching out to you directly.

Thanks for your time Pat.

Nancy

On 2020-09-28 18:04, Patricia Martz wrote:

You are welcome

-----Original Message-----

From: wileycoyote@srsCorp.net <wileycoyote@srsCorp.net>
Sent: Monday, September 28, 2020 2:58 PM
To: Patricia Martz <p.martz@cox.net>
Cc: 'Joyce Perry' <kaamalam@gmail.com>; 'Ed Mountford' <ed@cornerstonereconsulting.com>
Subject: Re: Windward Residential Project AMMP & PRMMP

Thank you for your review Pat!

On 2020-09-24 22:13, Patricia Martz wrote:

Good comments

From: Joyce Perry <kaamalam@gmail.com>
Sent: Thursday, September 24, 2020 2:47 PM
To: Nancy Wiley Ph.D <wileycoyote@srsCorp.net>
Cc: Ed Mountford <ed@cornerstonereconsulting.com>
Subject: Windward Residential Project AMMP & PRMMP

Good Afternoon Nancy,

On behalf of the Juaneno Band of Mission Indians, Acjachemen Nation-Belardes, I have reviewed the Windward Residential Project AMMP & PRMMP dated August 25, 2020. My comments are noted next to the highlighted sections, starting on p.12 in the attached document. Thank you and let me know if you have any questions.

Húu'uni 'óomaqati yáamaqati.
Teach peace

Joyce Stanfield Perry

Payomkawichum Kaamalam - President

Juaneño Band of Mission Indians, Acjachemen Nation

Tribal Manager, Cultural Resource Director

--

Nancy 'Anastasia' Wiley, Ph.D
Research Director/Principal Investigator

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P.O. Box 1718
Haines, AK 99827
phone: 907-766-3513
cell : 714-602-0718

Windward Residential Project Independent Review

An Assessment of Prehistoric Archaeological Sites Associated with the Goodell and Signal Landmark Properties, Bolsa Chica, California

William R. Hildebrandt, Ph.D.

Far Western Anthropological Research Group, Inc.

(March 14, 2016)

Introduction

The northern edge of Bolsa Chica Bay was a favored location of prehistoric peoples for over 10,000 years. Their occupations created multiple archaeological sites that reveal the oldest evidence of formalized cemeteries, shell bead manufacturing, and portable stone sculpture known in California, and possibly North America. This location is also a great place to live today, and has been the focus of intense residential development for many years. To offset the impacts of modern development to these important archaeological sites, several large scale excavations have been conducted to remove prehistoric materials prior to construction. We have now reached the point, however, where very little of this archaeological record remains, raising the question as to whether it should be left in place, foregoing additional development in archaeologically-rich locations.

To help answer this question, I have been asked to evaluate the significance of the Bolsa Chica archaeological record based on the results of previous excavations, and determine the likelihood of encountering important archaeological deposits within the remaining open lands on the Goodell and Signal Landmark properties, giving special consideration to variability in the distribution of archaeological deposits across these properties (Exhibit 1).

Methods and Materials

The information I used to answer these questions came from five primary sources: (1) a review of several archaeological reports produced by Scientific Resource Surveys, Inc. (SRS); (2) a search of the Native American Heritage Commission Sacred Lands Files, which showed that there are no Traditional Cultural Properties recorded in the area; (3) a visit to the project area in March of 2015, including an inspection of the ground surface and all available cut banks within and adjacent to the Goodell and Signal Landmark properties; (4) interviews with knowledgeable people, including Nancy Anastasia Wiley (Principal Investigator for the SRS work), Henry Koerper (local archaeological consultant; Bolsa Chica Peer Review Committee), Patricia Martz (Emeritus Professor, CSU Los Angeles; Advisory Board Bolsa Chica Land Trust), John Foster (Emeritus Senior State Archaeologist, California Department of Parks and Recreation), and Shannon Tushingham (Director, Museum of Anthropology, Washington State, University); and (5) a review of over 50 letters written by various government agencies and interested individuals, including the California State Historic Preservation Officer, members local Native American tribes, and citizens concerned with local land-use planning strategies

Results

While all of the above sources of information were valuable, the archaeological reports and field visit were the most important for understanding the distribution and significance of archaeological deposits in the local area. The three most important archaeological sites within and around the Goodell and Signal Landmark properties are ORA-83, ORA-85, and ORA-86. Site ORA-83 (also known as the "Cogged Stone Site") has been determined eligible for the National Register of Historic Places. It is located mostly west of the Goodell Property, but extends well into the parcel. Excavations within the now developed portions of the site found: (1) a clam shell bead making industry dating between 10,100 and 8320 cal BP¹, making it the oldest in California and, perhaps, North America; (2) a cemetery area dating between 8500 and 6850 cal BP, which is also the oldest in California and maybe North America as well; (3) house depressions dating between 8850 and 7600 cal BP, which are among the oldest in the state; (4) cogged stone manufacturing and caching areas dating between 8300 and 6300 cal BP; and (5) only sporadic use of the site thereafter. The cogged stones, which number in the hundreds at the site, represent a beautiful form of portable stone sculpture. I am unaware of this level of artistic expression, this deep in antiquity, elsewhere in North America.

The focus of settlement seems to have shifted to ORA-85 between 6300 and 3800 cal BP. It is located in an area that is now covered by residential development about a half a mile west of the Signal Landmark property. Settlement intensity later moved to ORA-86, with the site covering much of the Signal Landmark property and adjacent lands to the north and west. Several auger borings and excavation units by SRS discovered the presence of a large prehistoric house pit with numerous artifacts dating to 2250-2080 cal BP at the southeastern end of the site, and additional intact deposits located along eastern margins of the site. Although we have only one radiocarbon assay from areas north of the house, it returned a date of 1430 cal BP, indicating a more recent occupation within this portion of the site.

Discussion

All three archaeological sites are significant, especially ORA-83 which has world-class value. Residential development has removed all of ORA-85, most of ORA-83, and substantial portions of ORA-86. Although major excavations have taken place at all of these sites, the analysis and reporting of the findings does not fully mitigate impacts to these resources because 85% to 90% of the artifacts and food remains, and all of the human burials have been reburied, making it impossible to study them in the future. These non-renewable resources were reburied due to the desires of Native American Most Likely Descendants associated with the project. More research could have been done with these materials (e.g., stable isotopes, ancient DNA) but, because they are not curated, additional studies cannot be conducted now or in the future when even better analytical methods are developed.

So, what is the importance of the archaeological deposits remaining on the Goodell and Signal Landmark properties? First, it should be emphasized that because we have lost so much already, it enhances the value of what is left. This is certainly the case for ORA-83. Test excavations by SRS

within the Goodell property show that relatively intact portions of the ORA-83 deposit extend into southwestern third of parcel. The ORA-83 National Register of Historic Places listing shows its boundary further east, but the archaeological materials existing there are relative sparse and highly disturbed. Given the exceptional research value of this site, coupled with the prior removal of most of its deposit and the curation problems raised above, it makes good sense to preserve the deposit.

The Signal Landmark property contains highly significant materials in and around the house pit structure, but the density and significance of material from the remaining parts of the site are much more variable. The highest density of shellfish food remains and associated artifacts occurs in the southeastern (associated with the prehistoric house pit) and eastern portions of the parcel, with the latter area containing shell beads and other important artifact forms. Most of the remainder of the property is disturbed and has a much lower density of material. As a result, if development were to occur, it should focus on the western half of the parcel and stay clear of areas to the east.

If a development option is chosen, a formal archaeological mitigation plan should be developed that includes creation of a precise grading program, and methods for treating significant findings that are consistent with the *Agreement Between the Bolsa Chica Land Trust and Signal Landmark Regarding Real Property on Bolsa Chica Mesa*. This agreement states that upon the discovery of human burials, house pits, hearths, caches, and intact midden deposits, or grave associated artifacts such as cogged stones, pipes, crystals, pigments, incised stone, and bone or shell ornaments, all construction will stop and the materials will be preserved in place. Any surface use in these locations that is invasive and/or requires any subsurface facilities shall be prohibited.

Note:¹ cal BP means calibrated (or calendar) years before pres



Exhibit 1 — Development Area/Donation Area City of Huntington Beach.

APPENDIX F

2017 version of SRS INC 2013 Technical Analysis
"2013 Abstract, Assessment of Excavations on CA-ORA-86, Bolsa Chica Mesa, Huntington Beach, CA"
[Separate Attachment]

**2013 Archaeological Abstract
Assessment of Excavations on CA-ORA-86
Bolsa Chica Mesa
Huntington Beach, CA**

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April, 2013

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ARCHAEOLOGICAL ASSESSMENT

In response to Coastal Commission staff's request for an "Archaeological Assessment" on the CA-ORA-86 investigations, this analysis has been prepared and is accompanied by a series of maps and appendices containing stratigraphic profiles and a list of artifacts that were found on the site. The profiles depict information in textual comments and graphically present data showing the presence and absence of cultural resources on The Ridge parcel. The profiles presented here are representative of all data recovered from the SRS investigations; additional profiles are repetitive and are available in the archives. Archaeological work by Scientific Resource Surveys, Inc. (SRS) on CA-ORA-86 occurred in three phases from 1999-2001 as described in "*Archaeological Abstract: Archaeological Site CA-ORA-86, Herring's Site E*" (SRS 2009) submitted previously in 2010.

Historically, a series of subsurface excavations were conducted on CA-ORA-86 by three archaeological groups from 1966 to 2001. Each investigation was carried out in an attempt to find soil deposits with integrity so that site boundaries could be established. The results of each program are presented below. The early investigations of the 1960s and 1970s revealed that the western half of the site was non-midden bearing; the eastern half contained shell deposits, but these were secondary in nature and had been redeposited from some other portion of the site or some other site now destroyed. In addition, this secondary shell deposit was overlain by imported peat from the adjacent lowlands used to enhance the soil chemistry for agricultural endeavors. Dr. Hal Eberhart, California State University at Los Angeles with the Pacific Coast Archaeological Society, abandoned his 1966 excavations on CA-ORA-86, stating that few artifacts were found and described the site as disturbed by both World War II activities and farming procedures (Eberhart 1966a, 1966b). After an additional series of excavations, ARI and Peer Reviewer Dr. William J. Wallace concurred that primary deposits were not present in this area and recommended against saving the site from destruction by development (ARI 1973:21, Wallace 1973).

Nonetheless, on July 23, 1980, Pat Hammon for the Pacific Coast Archaeological Society submitted a nomination for listing of CA-ORA-83 (hereafter ORA-83), the Cogged Stone Site, on the National Register of Historic Places where she defined the site as including CA-ORA-86 (hereafter ORA-86), embracing the then controversial concept that CA-ORA-83 extended from the southern bluff of Bolsa Chica Mesa to and beyond Los Patos Avenue. In the 1980s and 1990s, SRS conducted surface and subsurface investigations on several sites on Bolsa Chica Mesa including ORA-83. This work was carried out pursuant to several Coastal Development permits. Specifically, under CDP-89-772, as amended, and the associated Peer Review Memorandum of Agreement, excavations on ORA-83 were conducted from the southern bluff north to Los Patos Avenue in order to address PCAS concerns and National Register boundaries. The program was oriented towards establishing accurate site boundaries. SRS' 1999 excavations at the intersection of Los Patos and Bolsa Chica Road, and west of Bolsa Chica Road, determined that no primary deposit existed in that area. However, discovery of a human reburial within Bolsa Chica Road during grading monitoring resulted in extending investigations for boundary definition east of the road. Only these 2001 excavations by SRS located relatively undisturbed deposits. A single, nearly intact feature, a depression, was found in the southeast corner of the site. The feature had been preserved and was not affected by moldboard and deep disc plowing, as well as leveling for agricultural activities due to its deep subsurface penetration below the successive plowzones. The depression was archaeologically excavated in order to determine if it was a natural swale or cultural in origin; this work revealed that the feature was a prehistoric residential housepit and the only remaining remnant of ORA-86.

The program was directed and reviewed by three Coastal Commission-appointed peer reviewers. Peer Reviewers Dr. Hank Koerper and Prof. Paul Langenwaller were on site during the investigations, and Drs. Roger Mason and Paul Chace were frequent visitors and advisors. In addition, Native tribal groups were represented daily by monitors Joyce Perry (Juaneño) and Robert Dorame (Gabrielino) who reported site activities to their councils and the Native American Heritage Commission. All parties approved the scope and duration of the work, and agreed with conclusions reached by the 2001 SRS investigators.

In accordance with CCC requirements, data from these investigations and all archival information, artifacts and ecofacts collected from the site are in the process of transfer to a certified institution. In this case, the Cooper Center and California State University Fullerton have agreed to accept all SRS archives from Bolsa Chica investigations including those from ORA-86.

SUMMARY OF SUCCESSIVE INVESTIGATIONS CONDUCTED AT ORA-86

ORA-86 has been the subject of numerous archaeological investigations beginning as early as the 1920s. The area in which ORA-86 is located had been subject to agricultural activities since the early 1900s; as part of plowing and disking of the agricultural fields, artifacts were uncovered, leading to both scavenging by local amateur archaeologists, as well as more sophisticated investigations by academics and professional archaeologists. The following is a summary of the history of the successive investigations that have been conducted at ORA-86.

HERMAN STRANDT, 1920s

As early as 1921, Bolsa Chica Mesa had attracted the attention of local amateur archaeologists because of the presence of unusual artifacts termed “cogged stones” that were displaced and uncovered by the agricultural operations (e.g., plowing) on the site. Herman F. Strandt surveyed and presumably collected from over 100 archaeological sites in Southern California (Strandt 1965a, b, c), 25 of which were located in Orange County (Strandt 1921: map). In 1921, Strandt prepared a large sketch map indicating the location of his Orange County sites; the map was revised in the 1930s while Strandt was working under John Winterbourne for the Work Progress Administration (WPA) Anthropological Project. Copies of the map still exist (Strandt 1921, revised 1930s; see also 1965); however, all notes concerning the nature of these sites have disappeared. Strandt also wrote a summary of his impression of the Southern California Indian in general (Strandt 1965a, b, c). Dr. Hal Eberhart, California State College at Los Angeles (now California State University, Los Angeles [CSULA]), prepared an assessment of a number of the earlier archaeological investigations that had occurred on Southern California sites in an effort to tie the work of earlier archaeologists to specific recorded sites. His assessment included an effort to apply the sites that Strandt mapped against recorded sites. Dr. Eberhart concluded that Strandt Site #6 was the site known as CA-ORA-85, and Strandt Site #7 was ORA-86, also known as Herring's Site E (Eberhart 1964, 1966a, 1966b). Subsequent assessments by PCAS (Hafner and McKinney 1965) and ARI (1970a, 1970b) also agreed with the designation of Strandt Site #7 as being ORA-86. Strandt's map (Figure 1) shows a circular code for each site indicating that these sites contained artifacts associated with his Canalino or Paiute time period. Strandt's Canalino or Paiute attributions are equivalent to a current Late Prehistoric designation, locally extending from approximately 1500 years ago to the historic present (SRS 1995). The location of artifacts collected from ORA-86 by Herman Strandt is not known.

ALIKA HERRING, 1961

The earliest substantial investigation on the Bolsa Chica Mesa in Huntington Beach, CA, was conducted by Alika Herring. In the late 1950s/early 1960s, Herring continually salvaged artifactual materials from Bolsa Chica Mesa archaeological sites. During this period he met both Dr. Keith Dixon, CSULB, and Dr. Hal Eberhart, CSULA, who encouraged him to record his finds and impressions of the sites he had surveyed. One of Herring's first acts was to produce a sketch map of Bolsa Chica Mesa where he labeled the sites A through E (Figure 2); 'A' represented ORA-83, the Cogged Stone Site; 'B' was CA-ORA-84, the Bolsa Borrow Site; 'C' was CA-ORA-78, the Bolsa Chica Gun Club Site; 'D' marked CA-ORA-85, the Eberhart Site; and 'E' was placed on what is now referred to as ORA-86 (also known as Herring's Site 'E'). Herring's Site 'E' was the northernmost archaeological site which (based upon the contemporaneous mapping) originally extended beyond Los Patos Avenue into what is now an adjacent housing tract. According to his map, Site 'E' roughly covered 17,280 square meters. Herring did not excavate ORA-86; however, the site was identified by Herring to be a different

site from the immediately adjacent ORA-83 because of a break in the material distribution between the sites. Herring (and Herman Strandt before him) indicated that, based on his observations, ORA-83 was decidedly older than ORA-86; ORA-86 had a distinct assemblage and appeared to contain the youngest artifact collection on the Mesa (Herring 1961, 1967, 1968, Strandt 1921):

Site E [Ora-86], is another extensive shell midden situated on the bluff east of Bolsa Chica Avenue and northeast of Site A. While possibly an extension of A [ORA-83], it more probably is an independent site. Site E disappears under the housing development south of Wintersburg and its northern limits could not be defined with certainty. No artifacts were found on this site, although the shell concentration is fairly heavy (Herring 1967:xxvi).

Both Herring's site map (Figure 2) and his description indicate that Site E was located decidedly east of Bolsa Chica Road and did not extend west of the road. Site E does not have cogged stones and is not multi-component like Site A, but instead appears to have received limited use during a limited time period. It was thought that the site may be a special-use shell processing area since artifactual materials, which might indicate procurement or processing activities other than shellfish preparation, were rare-to-absent based on Herring's survey efforts in the 1960s. Materials collected by Alika Herring are in the Bowers Museum, Santa Ana, and in private collections.

DR. HAL EBERHART, 1966

Dr. Hal Eberhart pursued investigations on three of these sites in the mid-to-late 1960s, including ORA-85 (the Eberhart Site), ORA-83 (the Cogged Stone Site), and ORA-86 (Herring's Site 'E') (Eberhart 1966a, 1966b). On ORA-86, Eberhart surveyed the site and then placed ten (10) 5-meter hand units laid out in a linear pattern from east to west on a small rise at the lower, southern end of ORA-86, where the site was the widest and the shell concentration was the greatest (Figure 3). Figure 3 is the site map produced by Eberhart for his excavations on ORA-86 and ORA-83, and depicts the 45 foot contour line (darkened for ease of comparison with subsequent SRS maps presented in this assessment [note also that the darkened 45 foot contour line also separates Eberhart's contours above this 'altitude,' which are in 1 foot intervals, and below this 'altitude,' which are drawn in 5 foot intervals]). His purpose was evidently to more clearly define a low knoll on the property. As depicted on Figure 3, Eberhart considered ORA-86 an extension of ORA-83 as he has labeled the ten units excavated as "Pit Plan ORA-83 (NE)", and refers to this area as "ORA-83 North." Additionally, what has now become delineated and defined as ORA-83 is referred to as "ORA-83 South," assuming a connection between the two based on the close proximity of the sites.

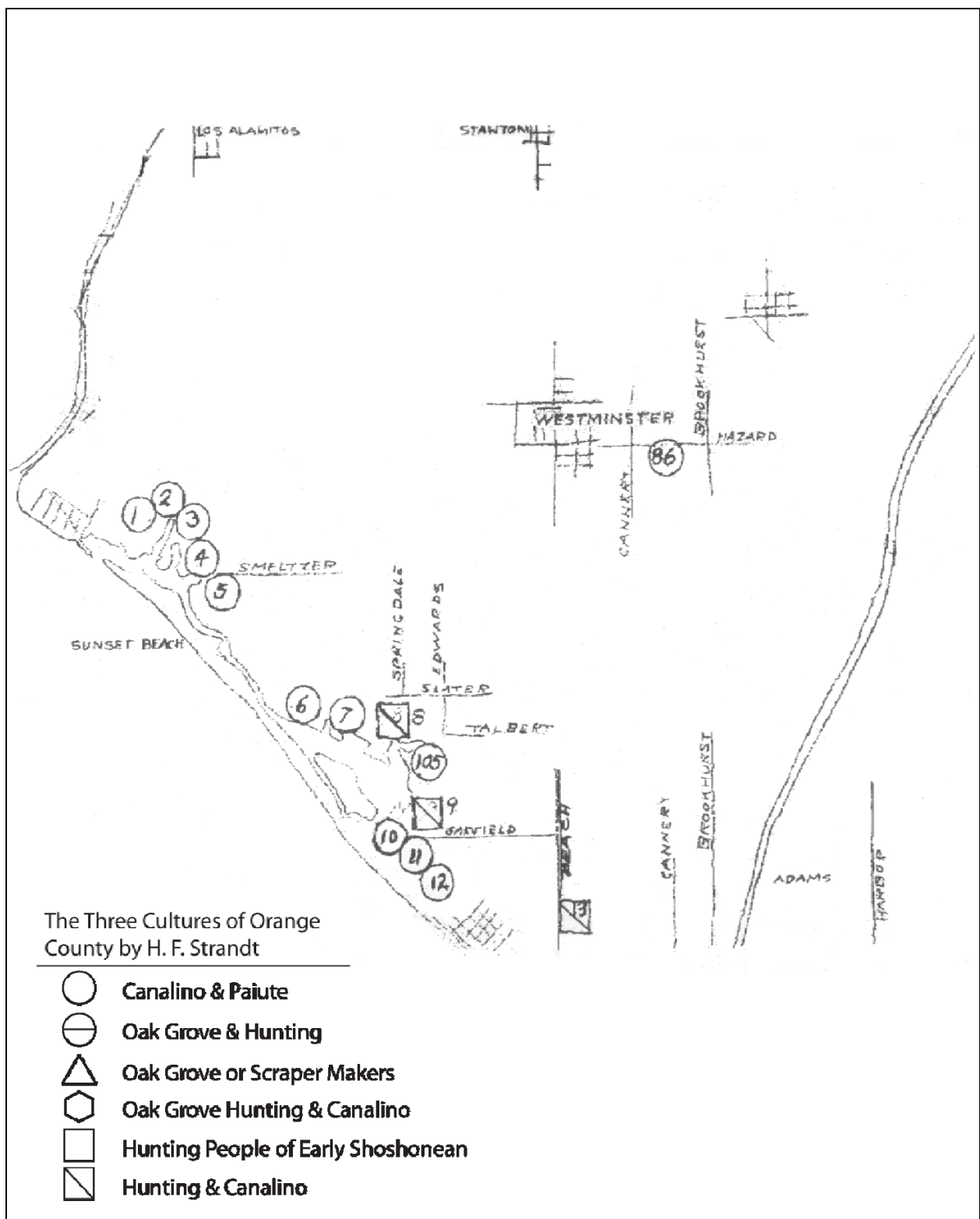


Figure 1. 1921 Archaeological Site Map of a Portion of Orange County [Herman Strandt]. CA-ORA-86 is Commonly Referred to as "Strandt 7".

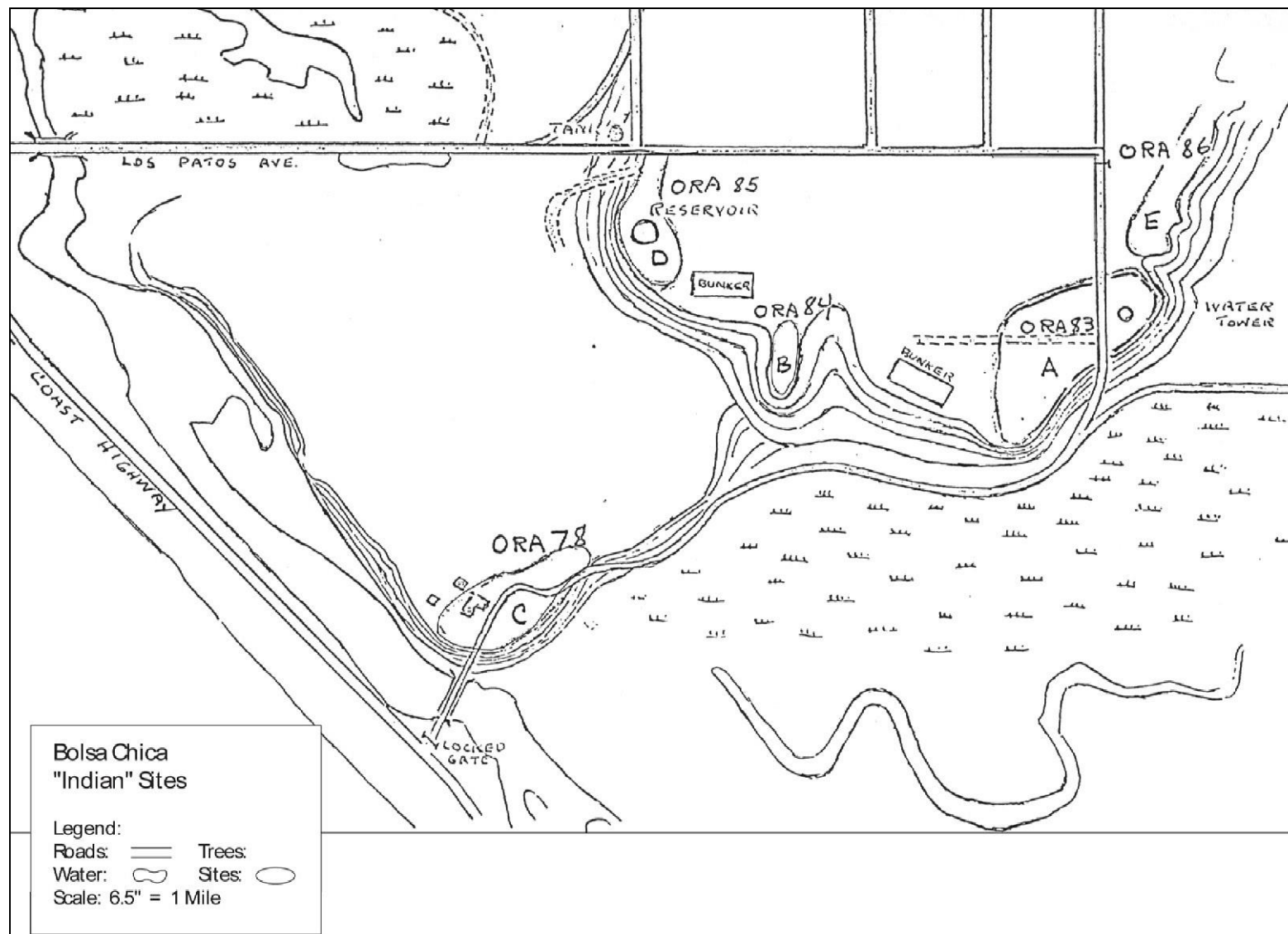


Figure 2. 1961 Map of Bolsa Chica Mesa Showing Location and Boundaries of Archaeological Sites by Alika Herring.

The Eberhart field investigations were actually undertaken by a Bolsa Chica field school from the CSULA Anthropology Department that was initiated with PCAS volunteers. From 1964 to 1968, the school excavated three archaeological sites: ORA-83, ORA-85, and ORA-86. The second site investigated by the school was ORA-86 in 1966. The investigations included a surface collection of the site and hand-unit excavations. An excerpt of Eberhart's description of his work for ORA-83 North and South (Strand 7) is set out below. He comments that ORA-86 (500' north of the former water tower on Goodell property) "appears to date to the Intermediate or early Late Horizon," corroborating Strandt and Herring's assessment that that area of the mesa contained younger deposits than found on ORA-83:

BOLSA CHICA FIELD WORK

On Saturdays between March 5 and April 23, the class in archaeological field methods from California State College at Los Angeles carried on excavations at Strand 7 [ORA-86] on the Bolsa Chica near Huntington Beach. Ten five foot square pits were dug through the shell midden into the reddish, sandy base. An eleventh pit of the same dimensions was taken down only six inches. Midden deposit varied in depth from nine to 27 inches. Artifact yield was slightly better than the return from nearby Strand 6 [ORA-85], which was excavated two years ago by a crew composed of CSCLA students and members of the Pacific Coast Archaeological Society. From Strand 7 were obtained leaf-shaped and side notched projectile points, manos, and bowl and mortar fragments. Represented by single specimens were an olivella shell bead, an abalone shell pendant, a pestle, and a metate fragment. All chipping waste was saved and a column sample taken. The portion of the site excavated-- some 500 feet north of the water tower-- appears to date from the Intermediate or early Late Horizon (Eberhart 1966a, 1966b).

The final report on the CSULA field work at Bolsa Chica was written by John Marshall, a student of Eberhart's, and published by PCAS in 1989. The report states, "In the spring of 1966 ten 5 foot square pits were dug in the northwest part of the site [Ora-86] and the spring of 1968 twelve 5 foot square pits were dug in the southwest sector [Ora-83]" ([Marshall] and Eberhart 1989:64).

A total of 242 artifacts were recovered from these investigations. The majority (225 or 93 percent) were recovered from the surface of both areas. Eberhart reports that the southern sector (ORA-83) only produced "a dozen" artifacts from the 12 five foot square units, an average of one artifact per unit (Eberhart 1968a, 1968b). Conversely, only 5 artifacts were recovered from the 10 five foot square units at ORA-86, or an average of one artifact per two five foot square unit, producing just half of the rate of yield for ORA-83. The paucity of materials discouraged further work by these investigators at either site. Materials from Dr. Eberhart's work are housed at California State University at Los Angeles.

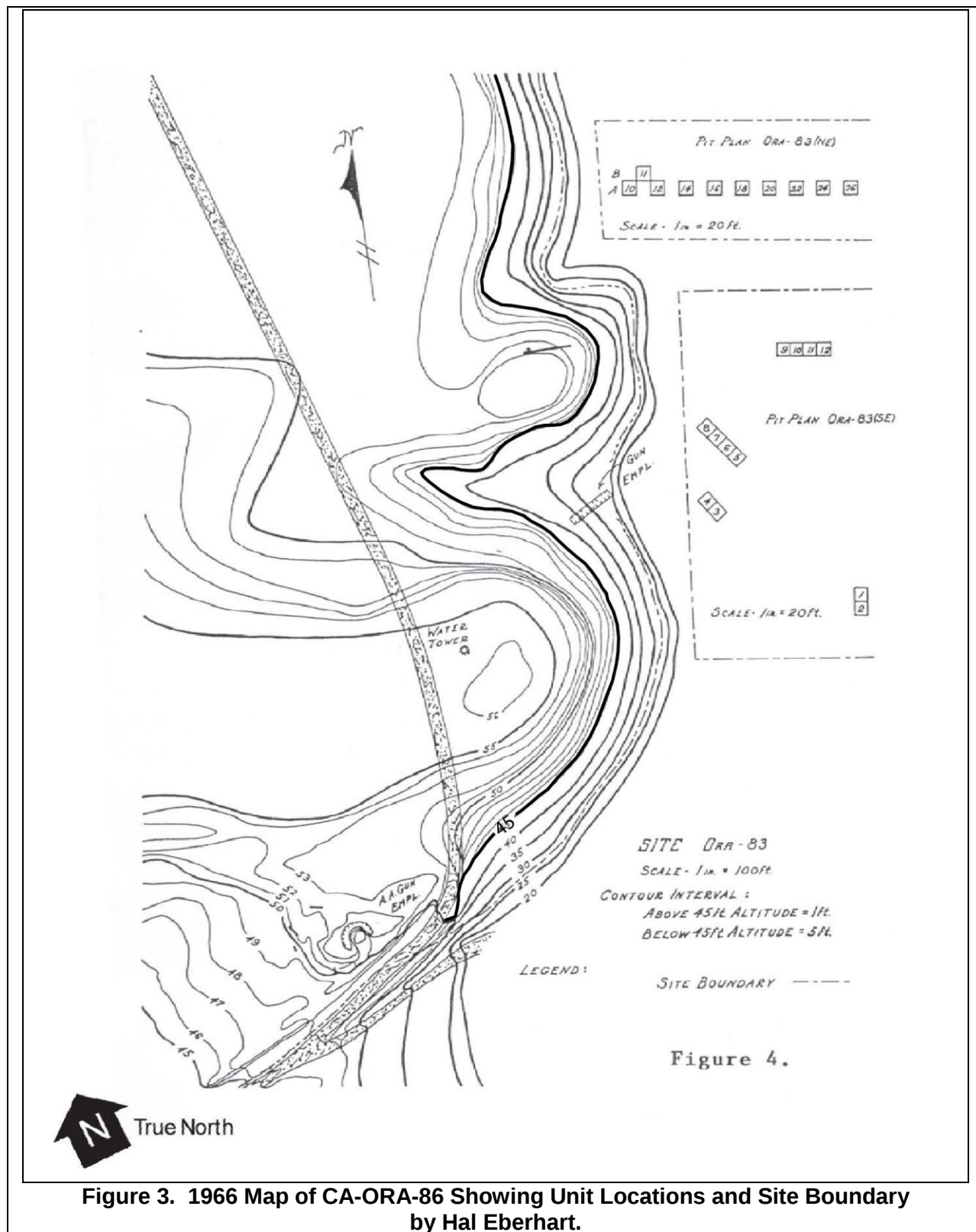


Figure 3. 1966 Map of CA-ORA-86 Showing Unit Locations and Site Boundary by Hal Eberhart.

ARI, 1970-1975

In 1970, a much more comprehensive investigation of the archaeological sites on Bolsa Chica was initiated under the direction of ARI. The 1973 ARI effort on ORA-86 was part of an overall program of historic research, surface surveys, and subsurface excavations that formed the Bolsa Chica Archaeological Research Project. This project was conducted by ARI under the direction of Roger Desautels and spanned a five-year period in the early 1970s (ARI 1970a, 1970b, 1971a, 1971b, 1973a, 1973b, 1975a, 1975b).

ARI worked within the Eberhart/Herring site boundary for ORA-86 and excavated a series of backhoe trenches and hand units in order to test the validity of the site boundary and further characterize the site deposits, specifically looking in situ deposits (Figure 4). The backhoe trenches were generally excavated west of Eberhart's ten 5-meter hand unit line, and extended both north and south of Eberhart's units since it was assumed from Eberhart's comments that the area he dug was too disturbed to produce meaningful data. As part of ARI's boundary delineation work for this site, two boundaries were tested with one trench in the northwest corner of the property and a larger trench along the southern boundary line. (The larger trench appears to have been excavated off of The Ridge property and on the adjacent Goodell parcel. The same problem is seen later with SRS' work because a wire fence line marking the boundary between the two parcels was situated south of the actual boundary line at that time.) In addition, ARI also excavated two trenches west of Bolsa Chica Road in order to verify the assumption by Herring and Eberhart that the site did not extend into that area (ARI 1973).

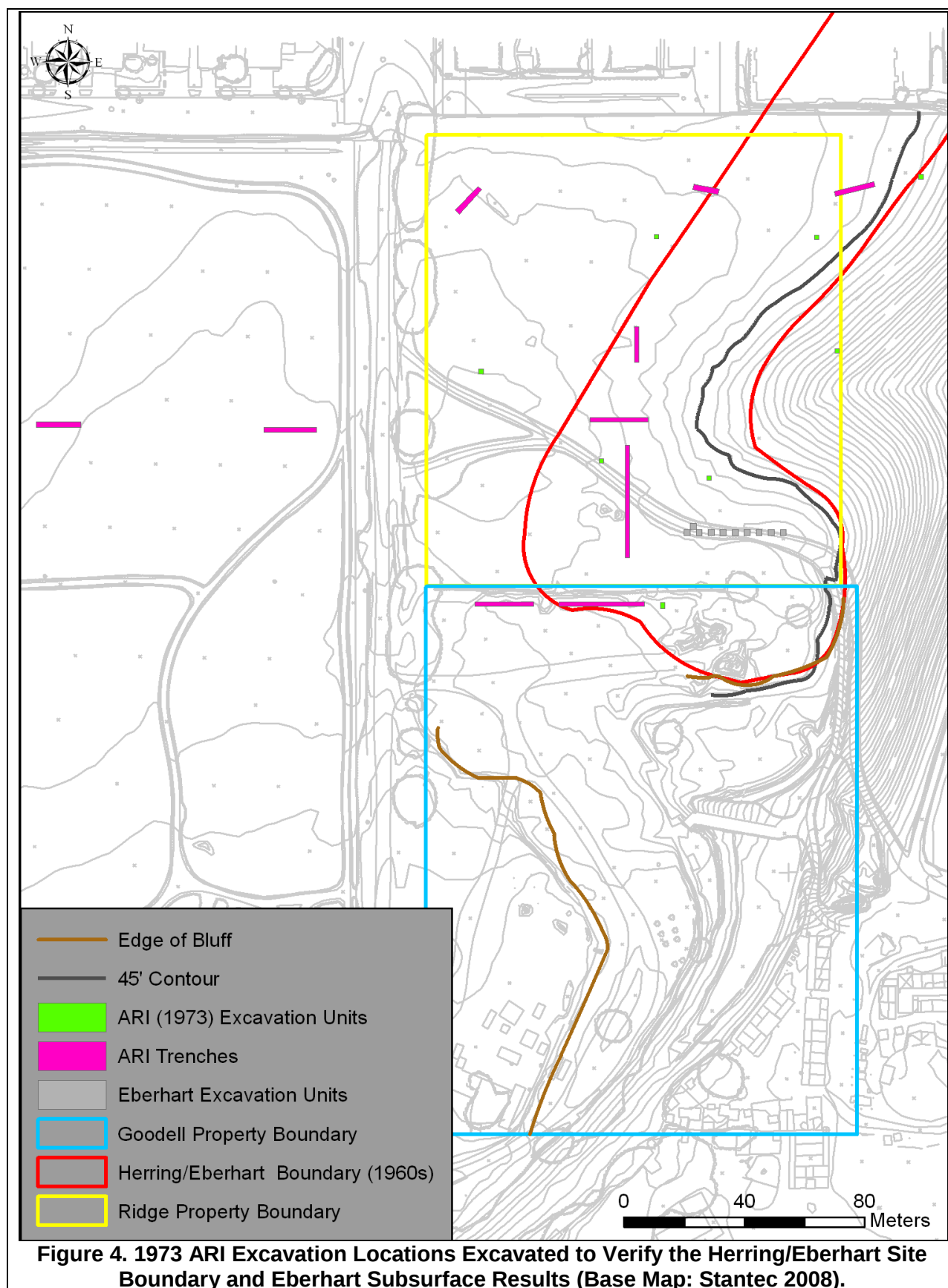
Although ORA-83, ORA-144, and ORA-86 were all lumped together during this research effort, ORA-86 was continually discussed separately as the 'northern' portion of the site, or as ORA-83 NE. Early reports resulting from this research program repeatedly reference the introduction of foreign materials to the site as recorded on ARI's 1970 site recording, and referenced elsewhere:

In addition, the northern portion of the site, between the logging area [a reference to the "pole yard" that formerly occupied the area now referred to as The Ridge Project area] and the property boundary line, has been covered with approximately three feet of peat. This was done in the mid-1960's to improve the soil for farming purposes. (ARI 1970b:8).

This statement indicates that Herring, Dixon, and Eberhart (1964) had prepared their site recordations prior to the placement of these materials, which explains why the previous descriptions indicated that the site soils were brown, and not dark or black. Other disturbances to the site included residential building construction. The entire northern half of the site was removed in 1973 (Figure 4) which prompted the investigators to state that by 1973 the site no longer existed (ARI 1973b:23).

This statement was not only based on the fact that apartment houses had been built, essentially destroying the northern portion of the site area, but also that the subsurface excavations conducted by ARI over the remainder of site (see Figure 4), produced few artifactual remains:

ARI conducted a surface survey prior to excavations of Ora 83 [NE]. Excavations consisted of eight manually dug, 1.5 meter square control units, and ten thirty-six inch wide backhoe trenches of various lengths and depths. The manually excavated units were excavated in twenty centimeter levels with all soil defined as midden being screened through a quarter inch mesh screen. Excavation units were located according to surface indications, such as soil coloration and shell concentrations, which were observed in the preliminary surface survey.



Over half of the test area of Ora 83 was covered with from one to sixty centimeters of peat fill dirt. This sterile overburden was clearly distinguishable from the midden deposit below. The overburden was removed, without screening, in those control units.

Two distinct midden layers were evident. This portion of Ora 83 is covered with an orange clay-like midden with sparse shell content (predominately Pismo clam). Along the bluff edge, the orange, clay-like midden is overlain by a dark, friable midden with a heavier shell content (predominately scallop, cockle, oyster) (ARI 1973a:8-9).

Artifact descriptions within the report included measurements for two millingstone fragments, five handstone fragments, one hammerstone, one scraper, two utilized flakes, a fish vertebra fragment, and eight pieces of chipping waste. The provenience of each artifact is not listed in the ARI report; however, assuming that the backhoe trenches had an equal chance of yielding artifacts and that they were conservatively three times the volume of the hand units, then a rough estimate of artifact density can be made for comparative purposes with data previously collected by Eberhart (1966a, 1966b, 1968a, 1968b). The ARI inventory totals 20 items from 8 1.5-meter hand units and 10 backhoe trenches, or allegedly 90 square meters of surface area, the rough equivalent of 54 five-foot square units. With 20 items distributed over 54 square meters, an average of slightly under one artifact was, therefore, recovered per fifty square foot area by the ARI excavations; this is nearly the same yield as that of the Eberhart and PCAS investigations in 1966. Regarding this sparse yield, ARI commented:

The artifact yield from this northernmost portion of Ora 83 is so low, and so fragmented, that it is not possible to make any definitive statements concerning the age of the site or the lifeways of the people based on artifact typology. The area has been so radically disturbed that no evidence of dwelling remains, campsites, or work areas are discernible (ARI 1973b:11).

The study concluded that the western half of the site was non-midden bearing; the eastern half contained shell deposits but these were secondary in nature and had been redeposited from some other portion of the site or some other site now destroyed. In addition, this secondary shell deposit was overlain by imported peat from the adjacent lowlands used to enhance the soil chemistry for agricultural endeavors. ARI and Peer Reviewer Dr. William J. Wallace concurred that primary deposits were not present in this area and recommended against saving the site from destruction (ARI 1973:21, Christopher Drover, personal communication 1973).

PCAS, 1980

Nonetheless, on July 23, 1980, Pat Hammon for the Pacific Coast Archaeological Society submitted a nomination for listing of ORA-83, the Cogged Stone Site, on the National Register of Historic Places and defined the site as including ORA-86, embracing the then-controversial concept of ORA-83 extending from the southern bluff of Bolsa Chica Mesa to (and beyond) Los Patos Avenue (see Figure 5). In the 1980s and 1990s, SRS conducted surface and subsurface investigations on several sites on Bolsa Chica Mesa including ORA-83. This work was carried out under a series of Coastal Commission permits. Specifically, under CDP-89-772, as amended, and an associated Peer Review Memorandum of Agreement, excavations on ORA-83 were conducted from the southern bluff north to Los Patos Avenue in order to address PCAS concerns and National Register recordation. The program was oriented towards establishing accurate site boundaries.

SRS, 1999-2001

In 1999, SRS initiated archaeological work on the portion of ORA-86 that is located on what is known as the "Sandover parcel." The work was undertaken as a result of two parallel efforts: implementation of PCAS' recommendations for ORA-83 pursuant to Coastal Development Permit 5-89-772, as amended, and archaeological monitoring required as mitigation by the City of Huntington Beach in connection with its approval of development entitlements for the Sandover residential subdivision.

When CDP 5-89-772 was approved, it required a peer review group to direct the scope of work such that the comments and concerns of PCAS would be incorporated into SRS' field work. In response to PCAS' recommendation for work in what is commonly referred to as the "plowed field" portion (that portion of ORA-83 that is located between the southernmost area of ORA-83 adjacent to the Eucalyptus trees and the jurisdictional boundary between the City and the County), the peer review group directed SRS to excavate a series of backhoe trenches in the plowed field that would extend to the City/County jurisdictional boundary. The results of the backhoe trenches indicated that artifacts were present at least in the plowed upper surface at the southwest intersection of Los Patos Avenue and Bolsa Chica Road (where ORA-86 had been previously mapped). These discoveries, in accordance with the terms of the peer review MOA, required that additional hand units be excavated in order to expose the subsurface soils and search for cultural materials (MOA Tasks #4 and 6 required excavation of hand units if intact subsurface field deposits were identified by the trench work and/or purposeful grading work). This work constituted the first set of SRS excavations on ORA-86 and involved excavation on the Sandover parcel (the results of this work were summarized in the SRS 2009 Archaeological Abstract).

As required by the conditions of approval imposed by the City of Huntington Beach, in connection with the Sandover project, grading monitoring for the Sandover development was subsequently implemented. During grading, the contractor removed a small portion of Bolsa Chica Road for final fill material and uncovered a large millstone, which when over-turned, concealed a shell concentration and four small pieces of human bone. In response to this discovery, the Peer Review Team in accordance with the MOA suggested excavations on that section of ORA-86, on the east side of Bolsa Chica Road, in order to locate other intact deposits if such existed; and this was to again attempt to determine the site boundaries. These investigations were conducted in 2001.

The program was directed and reviewed by three Coastal Commission-appointed peer reviewers. Peer Reviewers Dr. Hank Koerper and Prof. Paul Langenwaller were on site during the investigations and Drs. Roger Mason and Paul Chace were frequent visitors and advisors. In addition, Native tribal groups were represented daily by monitors Joyce Perry (Juaneño) and Robert Dorame (Gabrielino), who reported site activities to their councils and the Native American Heritage Commission. All parties approved the scope and duration of the work, and agreed with conclusions reached by the 2001 SRS investigators.

In accordance with CCC requirements, data from these investigations and all archival information, artifacts and ecofacts collected from the site are in the process of transfer to a certified institution. In this case, the Cooper Center and California State University Fullerton have agreed to accept all SRS archives from Bolsa Chica investigations, including those from ORA-86.

1999 Auger Program: Soils Analyses

As a result of the backhoe trenches excavated on the ORA-83 plowzone, SRS excavated a series of auger holes on that portion of ORA-86 located west of Bolsa Chica Road on the Sandover parcel (Figure 6). The auger lines were placed where a sparse surface shell scatter existed and a single hole was drilled west of the two lines where a 'pile,' or small area of shell, existed. Later mapping showed that this single western auger hole sampled the same area examined by ARI in 1973 (SRS 2009).

This program utilized a truck-mounted 24-inch diameter power auger to drill holes 1-14 on the grid pattern. Holes were systematically located in the southwest corner of each grid square within the 20-meter swath of material concentration. Each auger hole was drilled in 20 cm intervals to a depth of approximately 1 meter. As the holes were drilled, soils from each level were piled on large plastic sheets in a counter-clockwise pattern around the hole. All earth was passed through tripod shaker screens with 1/8-inch hardware cloth. All shell and artifactual material was catalogued and the data recorded. A geologist made a detailed examination of the soil relationships within each hole. The observed soil facies were compared with the Reference Section Profile soil sequence on the south edge of ORA-83 and mapped as a series of vertical columns.

The auger program showed that a full soils sequence did not exist on the Sandover parcel since a well-developed midden (Soils Facies II) is not contained within the sediments. The soil sequence was restricted to: I= disc plowzone; III=chisel plowzone; IV=natural brown soil; and VII=natural red clays.

Two plowzone strata are visible in the majority of the auger holes. The uppermost zone occurs to a depth of approximately 30 to 40 cm (actual range: 29 to 42 cm) below surface and was produced by moldboard, disc, and chisel tillage implements. Disc plows have been used more frequently on the mesa in recent years; for example, plowing observed in the spring of 1984 was done by a disc plow. The upper plowzone is composed of a series of mixed historic soil deposits that form fairly even horizontal beds at about 35 cm. As described by SRS (1986:67), the base of the upper plowzone often has remnant cut marks made by the bottom of a disc plow. The lower plowzone, which occurs at depths of 30 to 52 cm, is less well sorted than the upper plowzone and was created by a chisel or subsoiler type of implement (SRS 1986:67).

The complex, mixed stratigraphic character of the lower plowzone results from the operating characteristics of deep tillage implements and the fact that they are not used annually. Chisel plows are designed to break soil in a V-shaped wedge and move blocks and clods of dirt upward to the surface of the plowzone. Chisel implements are narrow. Both factors results in less horizontal bedding or segregation of soil constituents than in the upper plowzone. SRS concluded:

A detailed analysis of the effects of plowing support the conceptual model presented in the research design. The plowed field consists of Case B in the two-celled model, where the upper plow zone (created by moldboard and disc plowing) has homogenized all elements of the upper 30 to 40 cm of the area, and the lower plow zone (created by the chisel plow) moved these displaced materials into the natural underlying soils. The majority of the auger holes contained evidence of the introduction of peat, which was imported onto the site area in the later 1960's. Coincidentally, this is the same time that the chisel plow was introduced to Bolsa Chica Mesa agriculture [SRS 1986]. The peat appears on the Sandover Property as dark smears at the base of the disc plow zone and as streaks in the chisel tine molds in the lower plow zone [SRS 1986:40] (SRS 1999c:14).

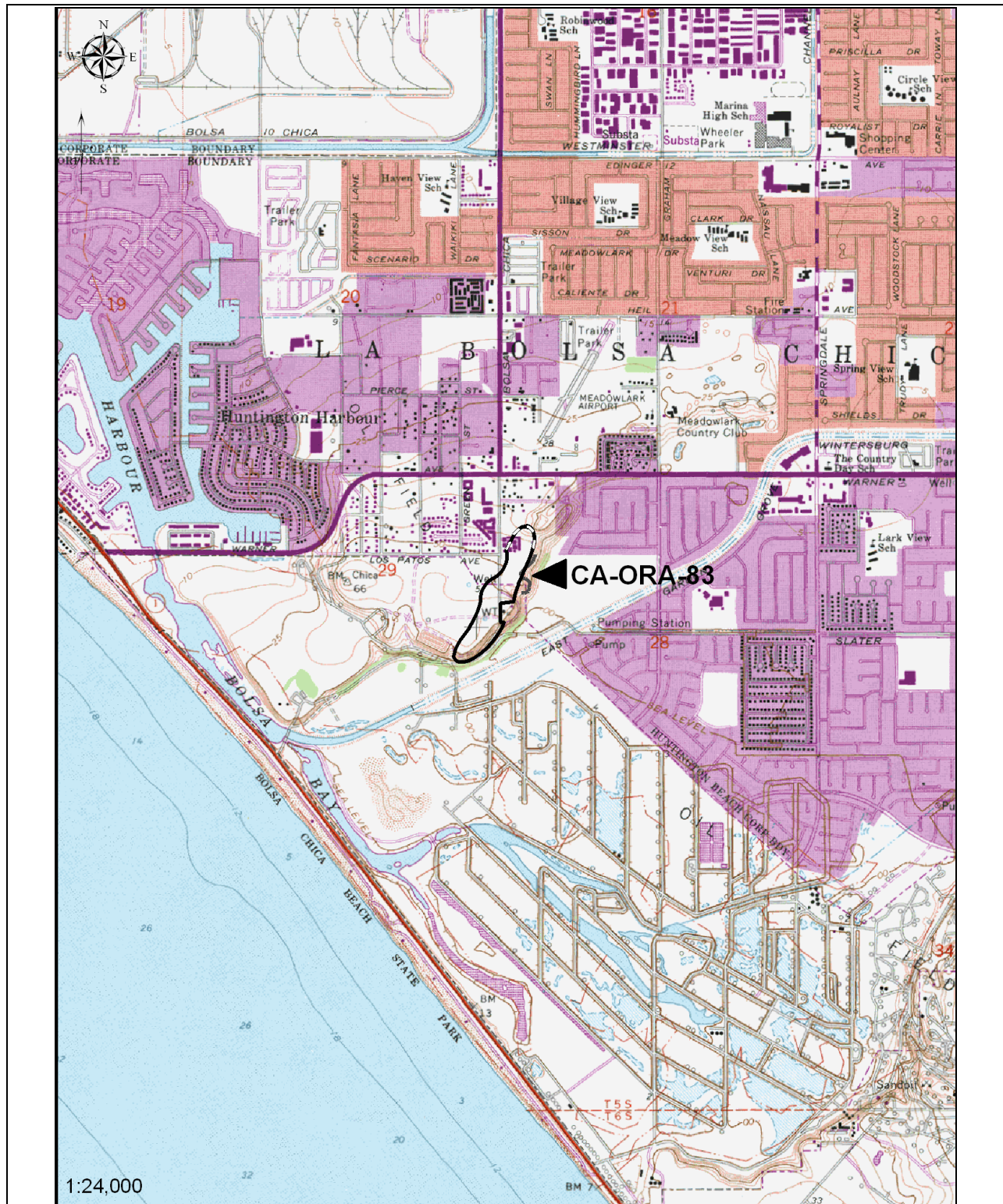
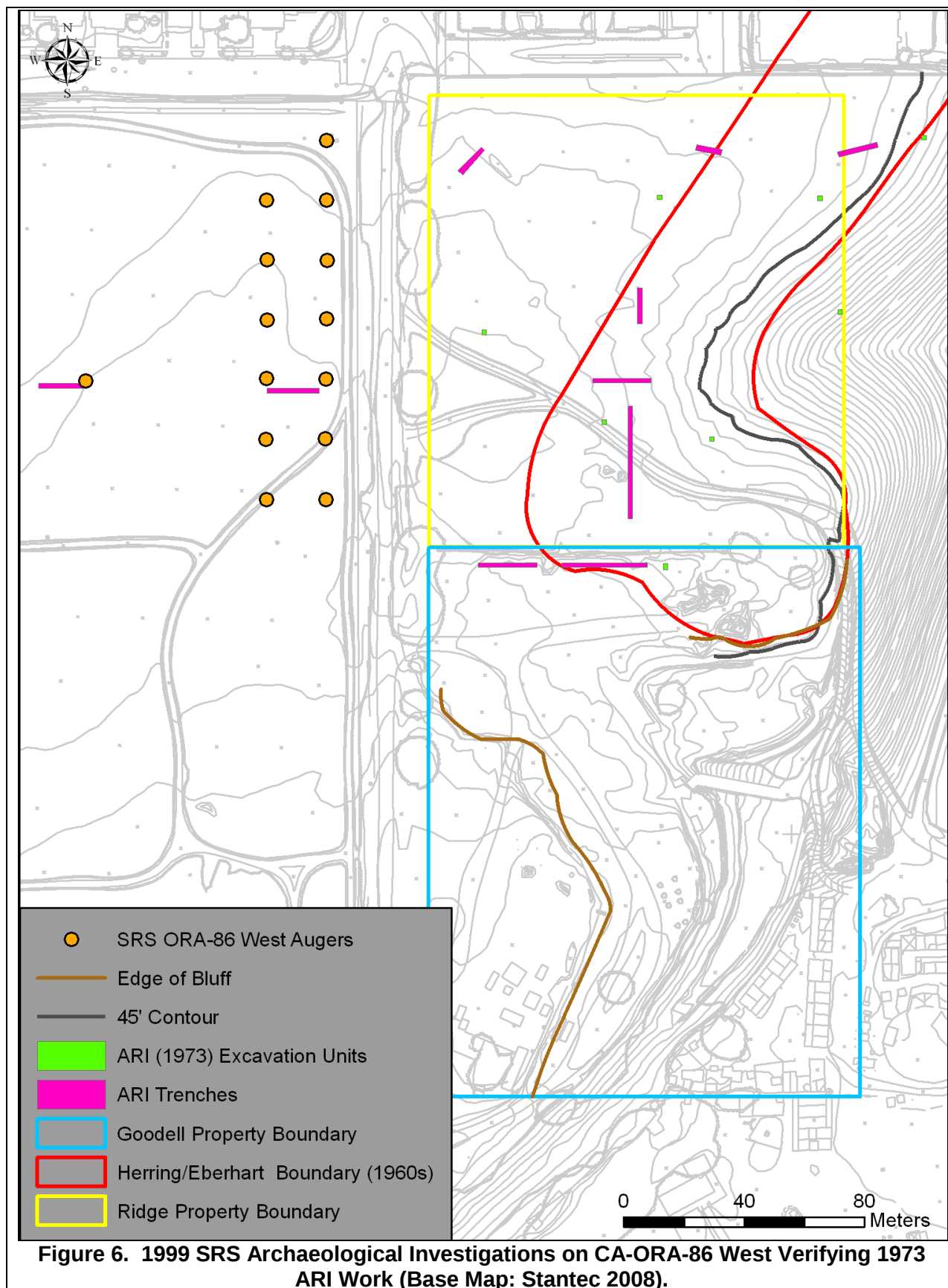


Figure 5. Boundaries of CA-ORA-83. Dashed Lines Indicate Part of Site Which is Out of The National Register Boundary.

(Source: USGS 7.5' Quadrangle, Seal Beach, California 1965, Photorevised 1981).



1999 Auger Program: Cultural Materials

A total of 33 cultural artifacts were collected from the subsurface investigations on ORA-86. Sixteen historic materials (glass, nails, slag, shot gun shell, and rodent bones) were recovered, all from within both the disc and chisel plowzones. Similarly, 17 recovered subsurface prehistoric materials (flakes and a bone tool fragment) were also contained within both the disc and chisel plowzones. Both sets of materials were fairly evenly spread throughout the upper disc plowzone and occur only sporadically in the less well-sorted, lower chisel plowzone. All 16 flakes were manufactured from a translucent red-brown chert; the bone tool fragment consists of a small, pointed, one-sided (split) fragment, possibly from a deer bone awl. No obsidian or other stone materials were found during the investigation, nor were any stone tools recovered. No other prehistoric animal bone tools or economic food discard were located.

The shellfish remains contained a minimum number of individuals (MNI) totaling 111. This number included in decreasing quantities: cockles-*Chione* spp., scallops-*Argopecten* sp., oysters-*Ostrea lurida*, and Pismo clams-*Tivela stultorum*. In addition, one whole *Mitrella* was collected. The first three species inhabit bay/estuary environments. *Ostrea* may also occur in a lagoonal environment attaching itself to solid objects. Pismo clam, however, is found in intertidal and subtidal sandy beaches. As SRS stated, unfortunately the quantities of shell material present on the Sandover Project occurred in such minimal amounts that research questions regarding subsistence patterns and environmental factors affecting the population could not be addressed:

The majority of the shell is concentrated in the southeast corner of the property. The homogenization described for the upper disc plow zone is shown by the consistency of small amounts per level per auger hole. Occasional small pieces penetrate the lower chisel plow zone. The shell materials were also compared by weight, a common California practice [Mason, Peterson, and Tiffany 1998]. The total amount of shell collected from a volume of over 4 cubic meters of earth was approximately 10 ounces, or slightly over one cup. The lack of abundance of shell material is shown by the fact that not a single level produced enough shell for radiocarbon dating [ca. 150 grams required; preferably whole single shells]. Only one small [Mitrella] whole shell was collected, also not enough for radiocarbon dating. Overall, a large enough shellfish sample was not gathered for studying subsistence activities (SRS 1999c:16).

Other specialized materials were lacking. No economic animal bone existed for examining subsistence pursuits, no fish otoliths or bird bone were found for seasonality studies, and no features or floor surfaces were located for determining site activities. As stated by SRS:

Archaeological site Ora-86, Herring's Site E, is not located on the Sandover Project. The materials on this property are confined to the two plow zones and have been displaced from elsewhere. If the site still exists, it is probably as Herring [1961, 1967, 1968] and Eberhart [1966a, 1966b] originally stated, '200 feet east of Bolsa Chica Road' (SRS 1999c:16).

Upon completion of the auger program, grading on the Sandover parcel commenced. All grading activity was subject to archaeological monitoring. As noted above, during grading, the contractor removed a small portion of Bolsa Chica Road for final fill material and uncovered a large millstone, shell concentrations, and human bone. In response to this discovery, the Peer Review Team in accordance with the MOA adopted pursuant to CDP 5-89-772, directed that excavations be undertaken on that section of ORA-86, on the east side of Bolsa Chica Road, in order to locate other intact deposits if such existed. These investigations were conducted in 2001.

SRS established a grid that covered the entire property (Figure 7). The research design included methodology which would provide a thorough coverage of the property in order to verify or negate the earlier findings from the Herring, Eberhart, ARI investigations, and the site boundaries established by PCAS in the 1980 National Register nomination. This was particularly important because none of the previous investigators included the portion of Bolsa Chica Road where the reburial was located within their site boundaries. It was therefore possible another burial area existed besides those on ORA-83 to the south. In addition, Dr. William J. Wallace, who consulted with ARI in 1973 and was also a CCC Peer Reviewer for SRS work, had stated that all evidence showed that ORA-86 lacked *in situ* deposits.

A 20-meter grid was laid over the property and 56 auger holes were drilled in the southeast corner of each square resulting in eight lines. The auger holes were excavated from west to east, or from Bolsa Chica Road to the bluff edge and eastern property boundary. The northern grid line could not be excavated because of a City pedestrian path which encompassed that area. The southernmost (first) auger line was drilled at the wire fence which delineated the southern boundary but was actually off The Ridge property on the Goodell parcel, which as mentioned, also encompasses the southernmost backhoe trench ARI excavated in 1973. Detailed soil profiles and artifact and ecofact recovery lists are provided in Appendices A and B and summarized below.

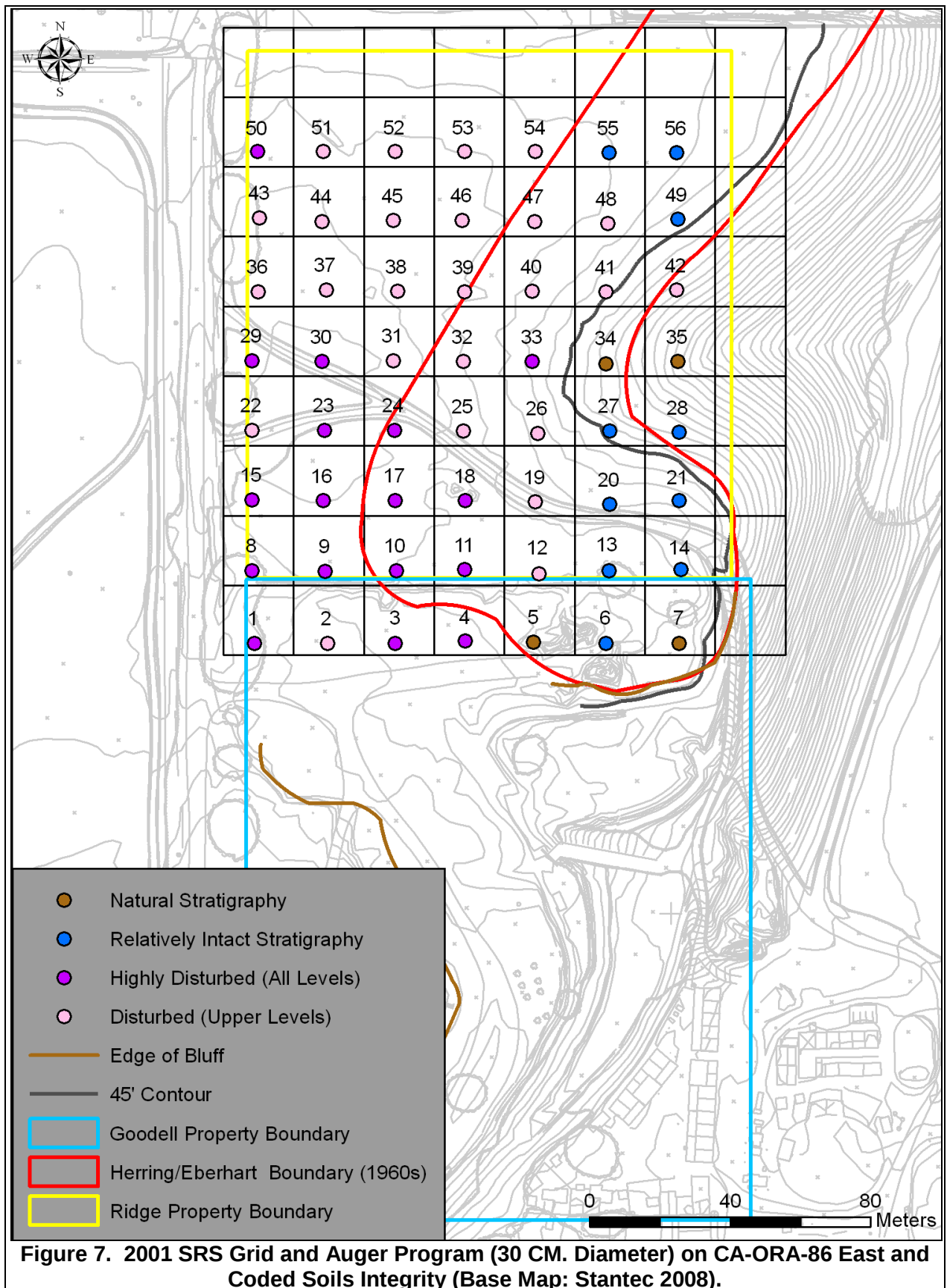


Figure 7. 2001 SRS Grid and Auger Program (30 CM. Diameter) on CA-ORA-86 East and Coded Soils Integrity (Base Map: Stantec 2008).

2001 Auger Program: Soils Analyses

Detailed analyses of the sediments exposed in the auger holes were conducted with the aid of geologists from David Smith and Associates. A special device was constructed which consisted of a long 2x4 wooden stick with a mirror attached to the bottom end for viewing soils in deep excavation holes. A similar device included a metal box attached to the bottom end in order to penetrate the sides of the auger holes at specific spots for sample collection.

The sediment analyses resulted in the identification of four discrete descriptive categories based on the integrity of the deposits (Figure 7):

1] Natural Stratigraphy- contains an intact natural soil sequence with or without cultural materials consisting of:

- I- plowzone
- III- light beige/gray/gray silty clay
- IV- upper red-brown clay
- VII- lower red-brown clay

Modifications;

- II- midden, organic soil with the addition of cultural materials
- V- swale, organic soils filling a low trough

2] Relatively Intact Stratigraphy- contains a natural soil sequence but with mixing of one or more sediments

3] Disturbed- Upper Levels are totally mixed resulting in one layer overlying lower Pleistocene deposits

4] Highly Disturbed- All sediments are mixed, only one soils layer distinguished in exposures

Approximately 75% (42/56) auger holes contained disturbed or highly disturbed sediments with no discernible natural deposits. These covered about two-thirds of the parcel (Figure 7) as also indicated in 1973 by ARI. A total of 10 auger holes contained relatively intact stratigraphy and 4 consisted of natural stratigraphy; nearly all were located within the eastern two vertical rows of auger holes with one additional hole (#5) next to the rows. Figure 8 provides a full sequence of soil profiles for the western two vertical rows with the profiles proceeding from north to south; the upper row of profiles is the most westerly of the two and was situated on the bluff edge. The lower profile row represents augers drilled 20 meters east of the previous row. The colored profiles are keyed to soils units including natural and mixed sediments:

- I- plowzone
 - III- light beige/gray silty clay
 - IV- upper red-brown clay
 - VII- lower red-brown clay
- Modifications:
- I/III- plowzone/beige silty clay mixed
 - I/IV- plowzoneupper red-brown mixed

*note: soil unit II, cultural midden, was not present in the auger holes

In the eastern row of augers shown on Figure 7-top Augers #35 and #7 both have natural stratigraphy with light beige/gray silty clay (III) developing out of the upper red-brown clay (IV). The rest of the augers in this vertical row on the bluff edge have mixed deposits, indicated by I/III or I/IV, which designate two different sediments that have been churned together, usually mechanically by agricultural equipment such as the moldboard plow. In addition, several

profiles are missing both the light beige/gray silty clay (III) and/or the upper red-brown (IV) soil units, presumably removed by scraping activities.

The bottom profile shows one auger with a natural sequence, Auger #34 in the center of the row, as with adjacent Auger #35 in the top row. To the north of Auger #34, Augers #55, 48, and 41 are all missing soils unit IV; to the south of Auger #35 soils unit III is missing from Augers #27, 20, 13, and 6. Nonetheless these two rows of auger holes have the most intact soil sequences on the property. The mixed modifications differ from the 'disturbed' and 'highly disturbed' categories in that partial sequences are visible in these holes, whereas the remainder of augers on ORA-86 displayed only one soil unit, or a single unit on the underlying Pleistocene deposits, the natural soils sequence having been destroyed.

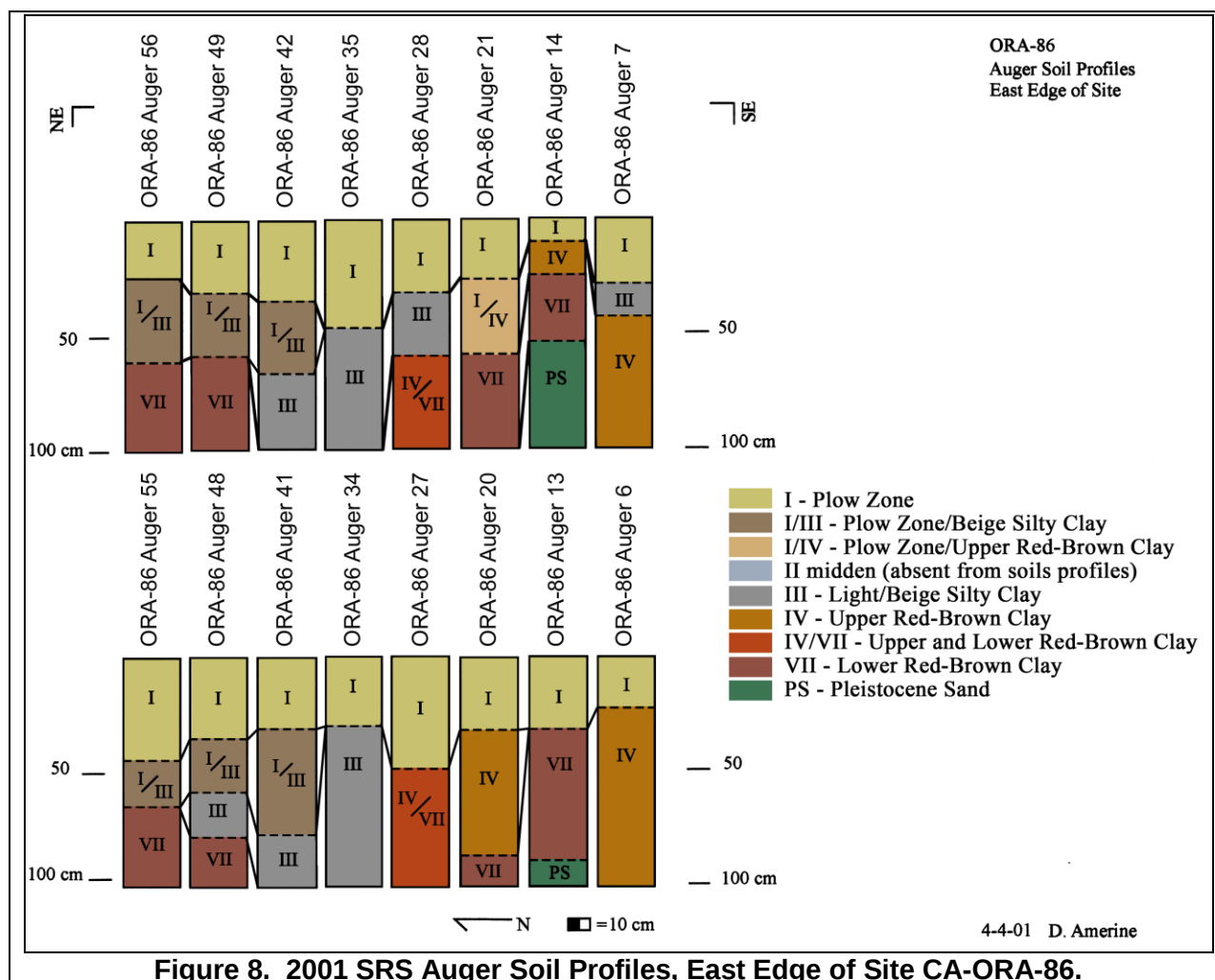


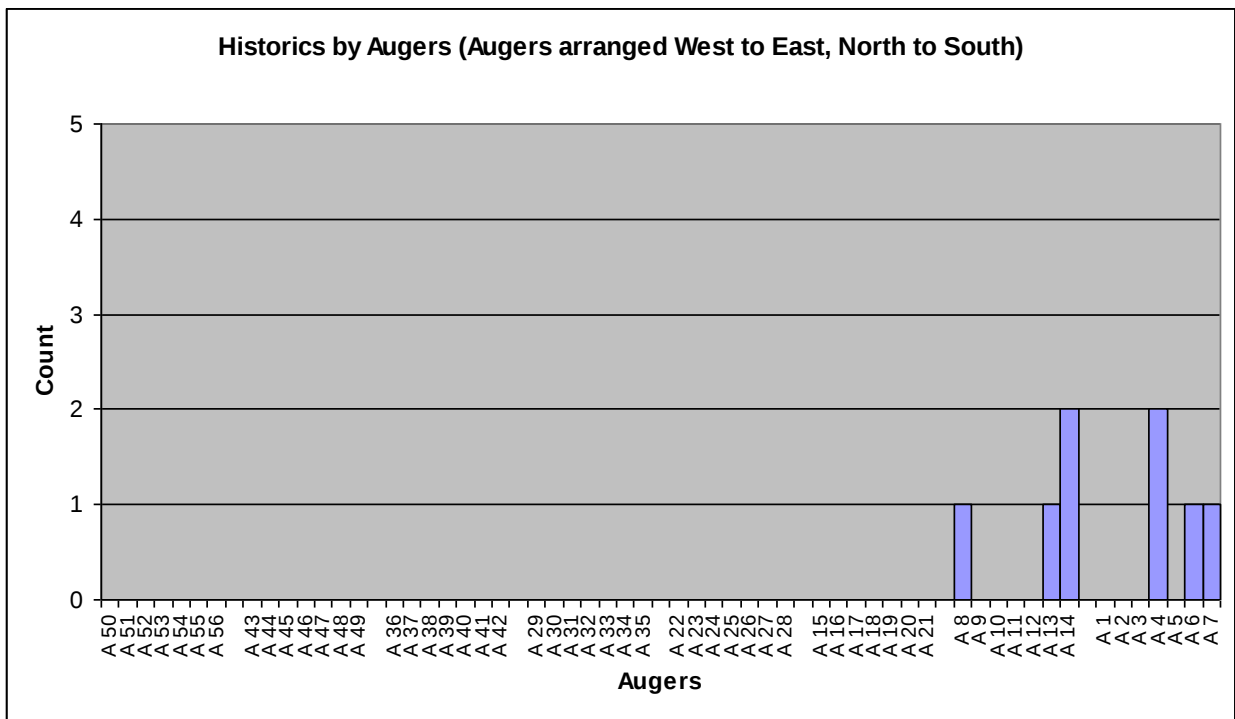
Figure 8. 2001 SRS Auger Soil Profiles, East Edge of Site CA-ORA-86.

2001 Auger Program: Cultural Materials

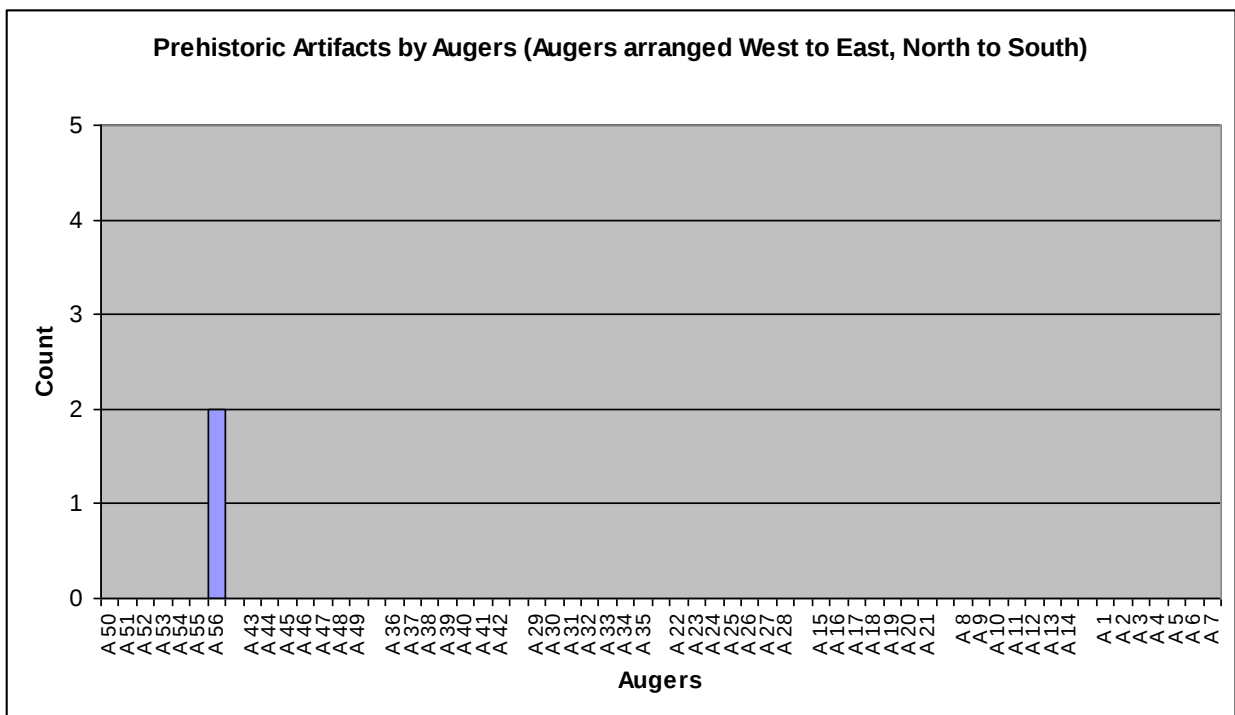
Cultural materials from the augers are itemized in Appendix B but summarized on a series of graphics labeled Graphs 1-5. Depicted by bar graphs, the augers are grouped horizontally across the site representing west to east lines, from Bolsa Chica Road to the bluff edge (i.e. 1-7, 8-14, etc). The graphs are arranged in this manner in order to depict all eight lines side by side. The further to the right bars extend in each grouping, the closer to the bluff edge the materials are located. Graph 1 shows the distribution of historic material (concrete, brick, glass, metal, and plastic) from augers based on count and does not include historic material catalogued by weight (asphalt 1081g/Unit 5) (slag 40.1g/Unit 2; 8.81g/Unit 7; 70.89g/Unit 8). Graph 1 indicates that historic material recovered from the augers concentrated in the southernmost portion of the site in rows 1 thru 7 and 8 thru 14 with the majority within the two rows closest to the bluff edge. These materials are not related to the integrity of stratigraphy per se, but are related to 'drop zones' by historic people. Auger #8 is situated next to Bolsa Chica Road, #12, 13 and 14 are situated next to an old historic road crossing the property, and #4, 6, and 7 were all next to an historic wire fence.

Graph 2 shows that prehistoric artifacts were rarely found in the soils from the auger holes; only two artifacts were recovered, both in Auger #56, both fragmented *Olivella* shell beads. Prehistoric debitage (Graph 3) was more commonly recovered, specifically in Augers #56, 24, 16, #8-14 and #6 and 7. Similarly Graph 4 which shows shell by weight distributed throughout the auger holes. Shell below 100 g is considered minimal since at least 100 g is required for radiocarbon dating. Shell concentrations occurred in Augers #55-56, 49, 42, 35, all in auger holes drilled along the bluff edge. Augers #15-21, #8-14, and #1, 6, and 7 all contained shell with the greatest quantities again along the bluff edge. Finally, faunal remains were insignificant and unidentifiable in the auger materials as shown on Graph 5 being represented mainly by Rodentia.

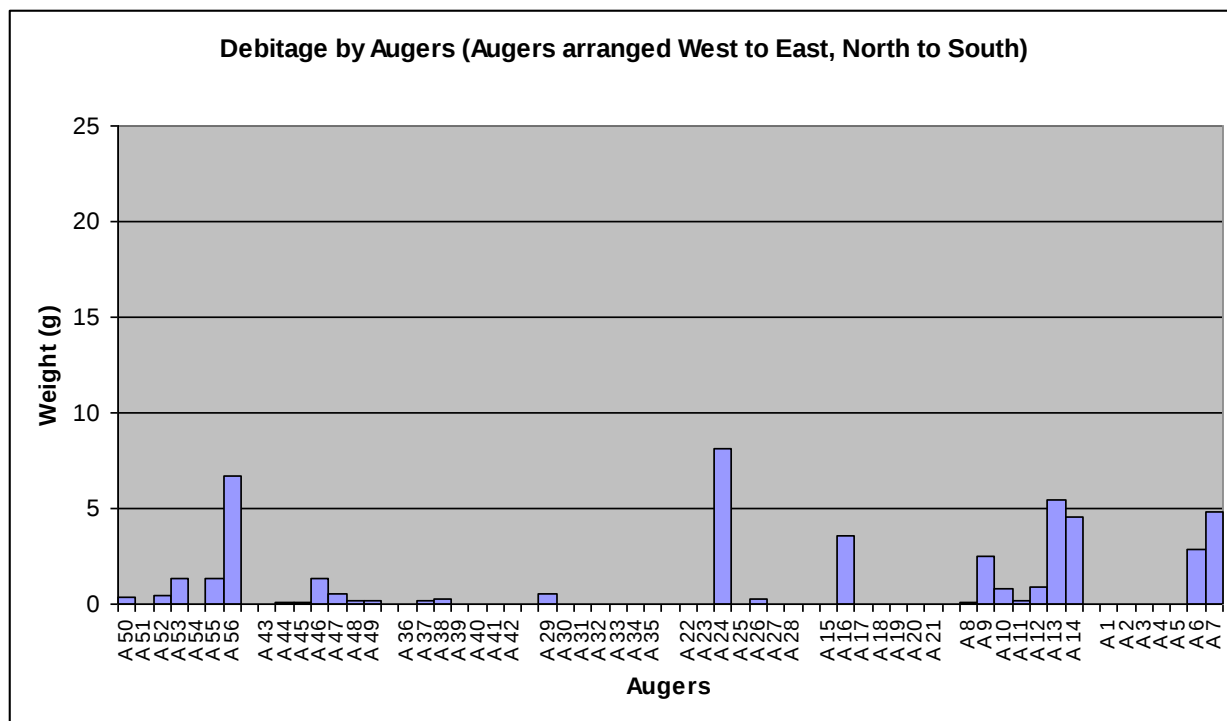
The shell materials were highly fragmented from decades of plowing. All excavators placed their trenches and units in areas which appeared to have shell concentrations under the assumption that the majority of cultural material would be in those areas and that those areas had the best possibility of containing intact (or relatively intact) stratigraphic sequences. The stratigraphic profiles of all auger holes showed that the uppermost soil consisted of a plowzone which has so pulverized the materials and thoroughly mixed the soils that the soils layer was homogenous; all contained highly fragmented shell, introduced pebbles and cobbles from historic activities and presumably, as reported by ARI, peat from the lowlands added as fertilizer. Within the southeast corner of the site, larger shell fragments and whole shell pieces were evident, suggesting less disturbance in these areas accounting for the placement of Eberhart's units.



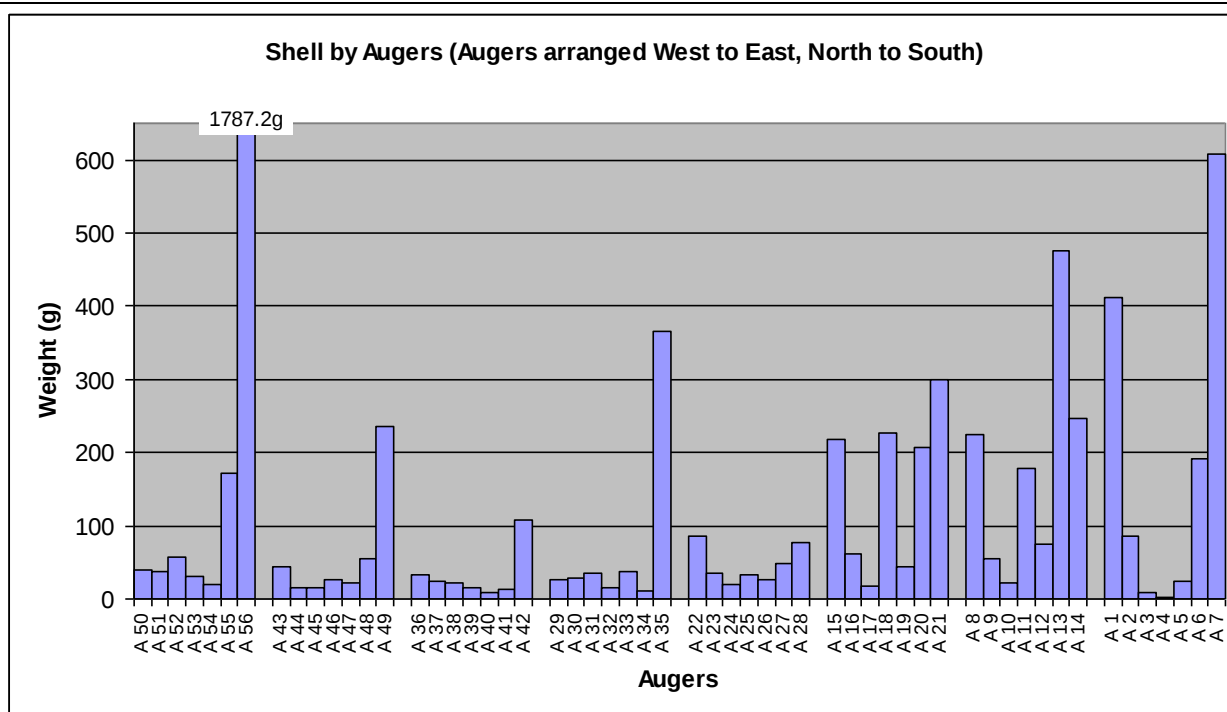
Graph 1. Historic Artifact Distribution in SRS 2001 Auger Excavations.



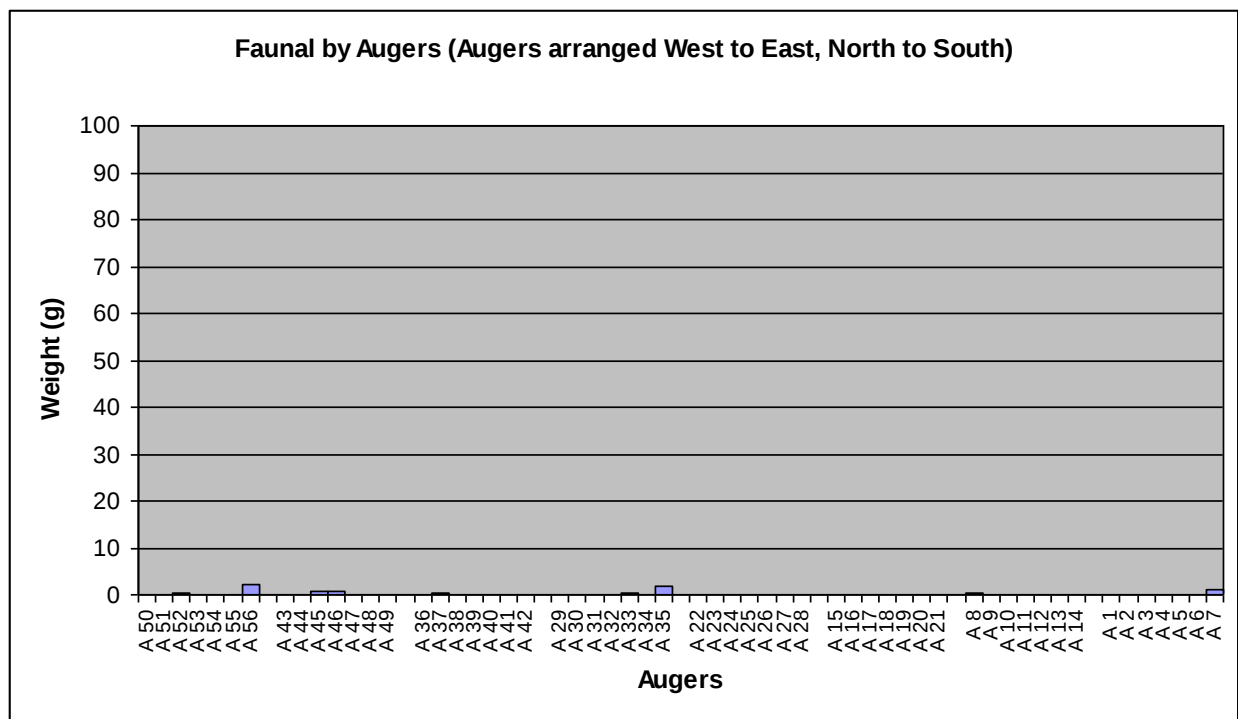
Graph 2. Prehistoric Artifact Distribution in SRS 2001 Auger Excavations.



Graph 3. Prehistoric Debitage Distribution in SRS 2001 Auger Excavations.



Graph 4. Unmodified Shell Distribution in SRS 2001 Auger Excavations.



Graph 5. Unmodified Faunal Distribution in SRS 2001 Auger Excavations.

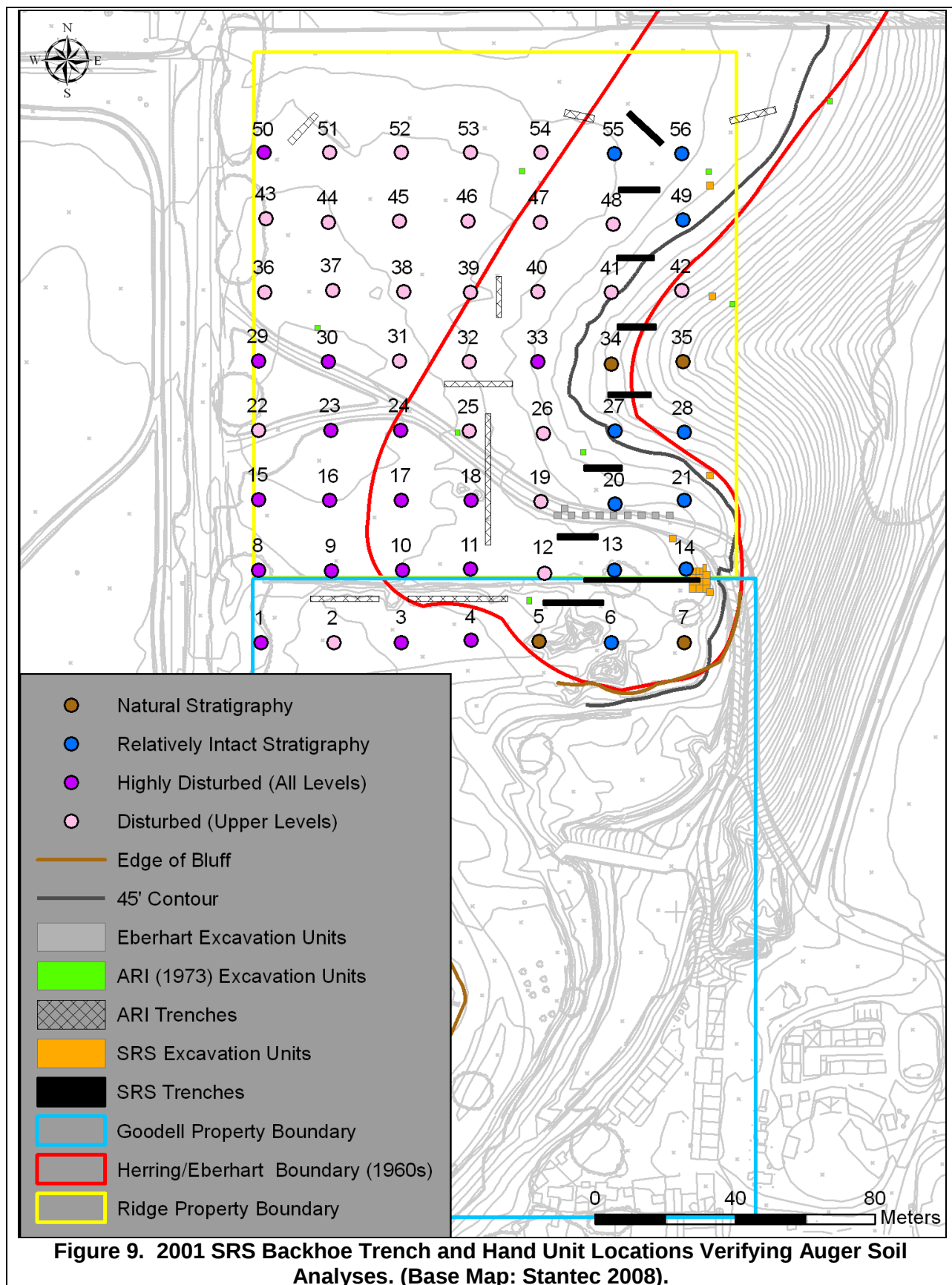
2001 Trench and Test Unit Excavations

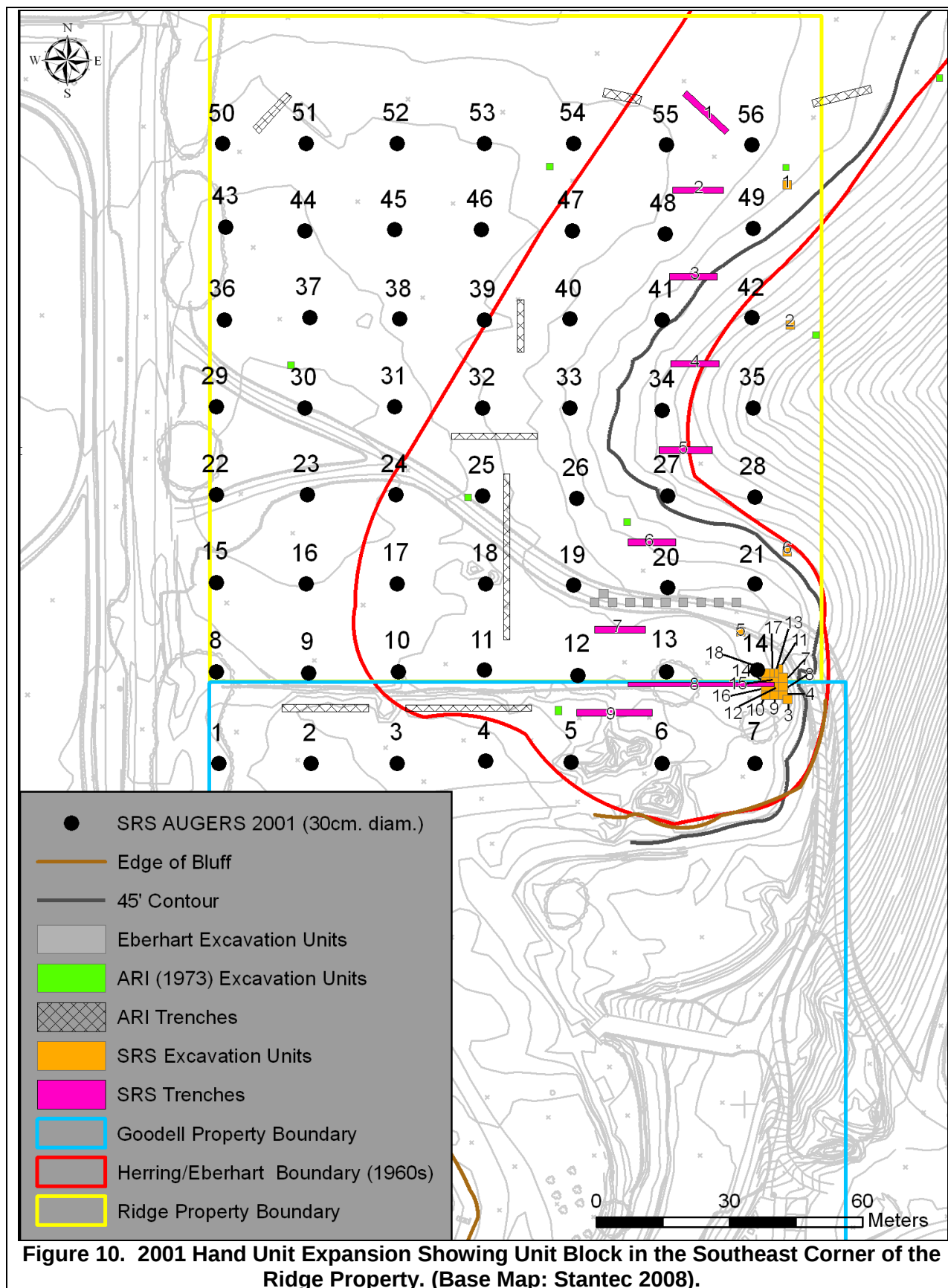
Figure 9 shows the placement of SRS trenches and hand units in relation to the soils data provided by the auger holes. SRS used a multi-pronged approach considering several criteria for unit placement including: 1] stratigraphic integrity, 2] shell density, 3] shell condition, 4] artifact recovery, 5] debitage concentrations and areas already excavated by previous investigators,, which are also shown on Figure 9. The trenches formed a curvilinear pattern, were dug in a systematic fashion, were nearly equidistant in order to provide the most thorough coverage of the westernmost auger rows along the bluff edge, and were placed to bracket the previous subsurface efforts of Hal Eberhart. An additional trench was excavated below augers #13 and 14 due to the quantity of materials recovered from this area by the auger program. This trench located a pit at its east end filled with whole shell and parts of a hearth with fire-affected rock and groundstone fragments. These finds triggered excavation of a series of hand units which were linked as a 'unit block' for full exposure of the pit.

Figure 10 provides a closer view of the trench and unit pattern with numeric labels. The units were excavated in numeric order with Unit 1 and Unit 2 placed between trenches 1 and 2 and Trenches 3 and 4. Test Units 3 and 4 were placed to investigate midden areas; Trench 8 was then dug to delimit the western boundary of the midden deposit. Units 5 and 6 were placed in order to provide exposures on either side of Eberhart's units. And finally Units 7-18 were linked together to form a unit block for complete exposure of the pit and to determine if indeed this depression was a cultural or natural/mechanical pit filled with shell through the agricultural processes.

Figure 11 provides stratigraphic profiles of the units and Trench 8 leading into the SE unit block. The top row of soil profiles are arranged in geographic order so that a stratigraphic sequence can be seen from north to south along the bluff edge, an area that the auger program and trench series suggested had the highest likelihood of artifact recovery in relatively intact sediments. Test Units 1, 2, 6, and 5 did not contain any evidence of archaeological midden deposits. Test Unit 1 was in a former natural shallow depression filled with swale deposits; Test Unit 2 was devoid of soil units III and IV, indicating that the area had been stripped of natural deposits and replaced with plowzone materials; Test Unit 6 was also evidently originally a shallow depression now filled with swale deposits as in Unit 1; and Test Unit 5 again was stripped of the top soil units III and IV. The last two units contained highly fragmented shell in the plowzone as indicated by the ++ sign. These are the two units placed on either side of the Eberhart units series, again providing testament as to why Hal Eberhart excavated in this area.

Test Unit 4 in the series was excavated in order to investigate the pit structure located by Trench 8. The south wall of Unit 4 is shown in the top row of soil profiles which clearly shows the difference between this area of the sites and the rest. The stratigraphic sequence is complex with a plowzone with heavy fragmented shell overlying light beige/gray silty clay (III) situated on the red-brown clay Pleistocene terrace, superimposed on a gray-brown sandy clay. Krotovina (kr), or rodent burrows, are prevalent throughout the trench; this demonstrates that a less compact, softer sediment is present in this area and typical of a filled pit structure.





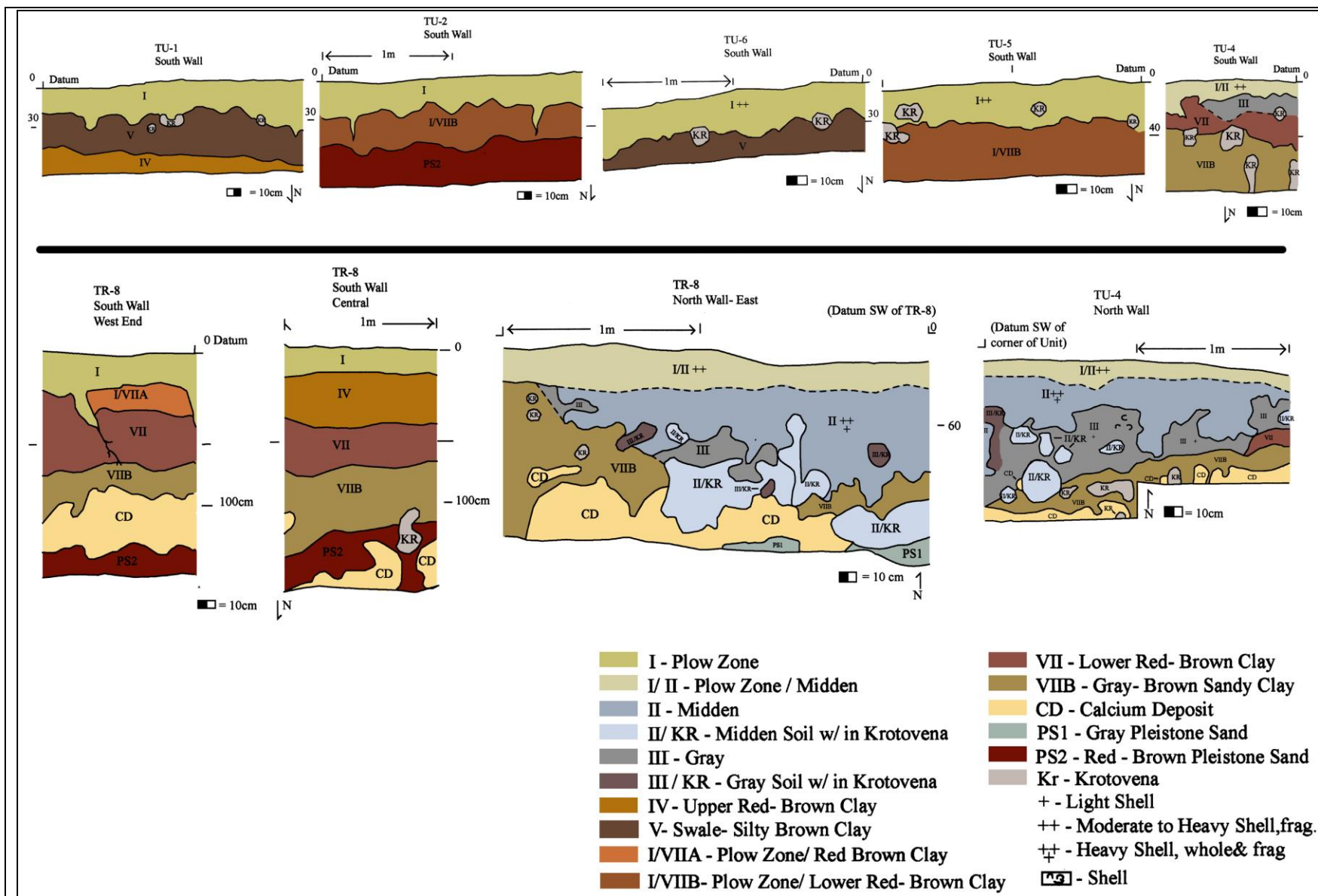


Figure 11. 2001 SRS Selected Trench and Hand Unit Soil Profiles, East Edge of Site CA-ORA-86.

The stratigraphic sequence is expanded in this area to include organic midden deposits (soil unit II) for the first time in any auger, trench, or unit excavation. Note that the plowzone over the midden has a label ++ for moderate to heavy fragmented shell, but within the pit the shell is labeled +++ for heavy, whole, and some fragmented shell; again, this is in stark contrast to the other units. The midden deposits are on light beige/gray silty sediments (III), superimposed over the lower red-brown clay, and gray-brown sandy clay. Under these soil units were exposed calcium deposits and gray Pleistocene sands. Soil unit IV is missing in some areas below III, indicating that the pit was excavated into III and IV when it was originally excavated. Once again, rodent burrowing is prolific; although the heavy shell content would make rodent burrowing more difficult, the previously excavated earth more than countered this impediment allowing for easy excavation. The presence of a hearth located by Trench 8 in the pit, and a whole shell deposit, indicates relatively intact midden soils within the pit, allowing this structure to be labeled a 'cultural depression;' the hearth is indicative of a living structure rather than a storage structure, allowing this feature to also be called a 'housepit.'

Figure 12 indicates the placement of the cultural depression within the unit block. A total of 14 hand units including 1x2 m units, 1x3 m units and 2x2 m units were used to form a block and completely enclose the cultural depression. Figure 13 provides a plan view of the southwest edge of the depression and the relationship of soil units within and outside the feature exposed below the plowzone. Within Test Unit 10, the upper soil units are missing but Test Unit 9 has a darkened light beige/gray sediment, labeled possibly IIIB. The darker III soil unit is attributed to slight mixture with the organic midden deposits. Figure 14 contains an isometric reconstruction of the housepit or cultural depression in the unit block. The black squares superimposed on the photographic collage on the left in the figure represent the points where depth measurements were taken for the digital reconstruction. The photographic collage also shows where Trench 8 penetrated the feature and the excessive amount of animal burrowing is evident by the cleaned rodent runs. The cultural depression measured approximately 9 m (30') in diameter and extended 100± cm in depth.

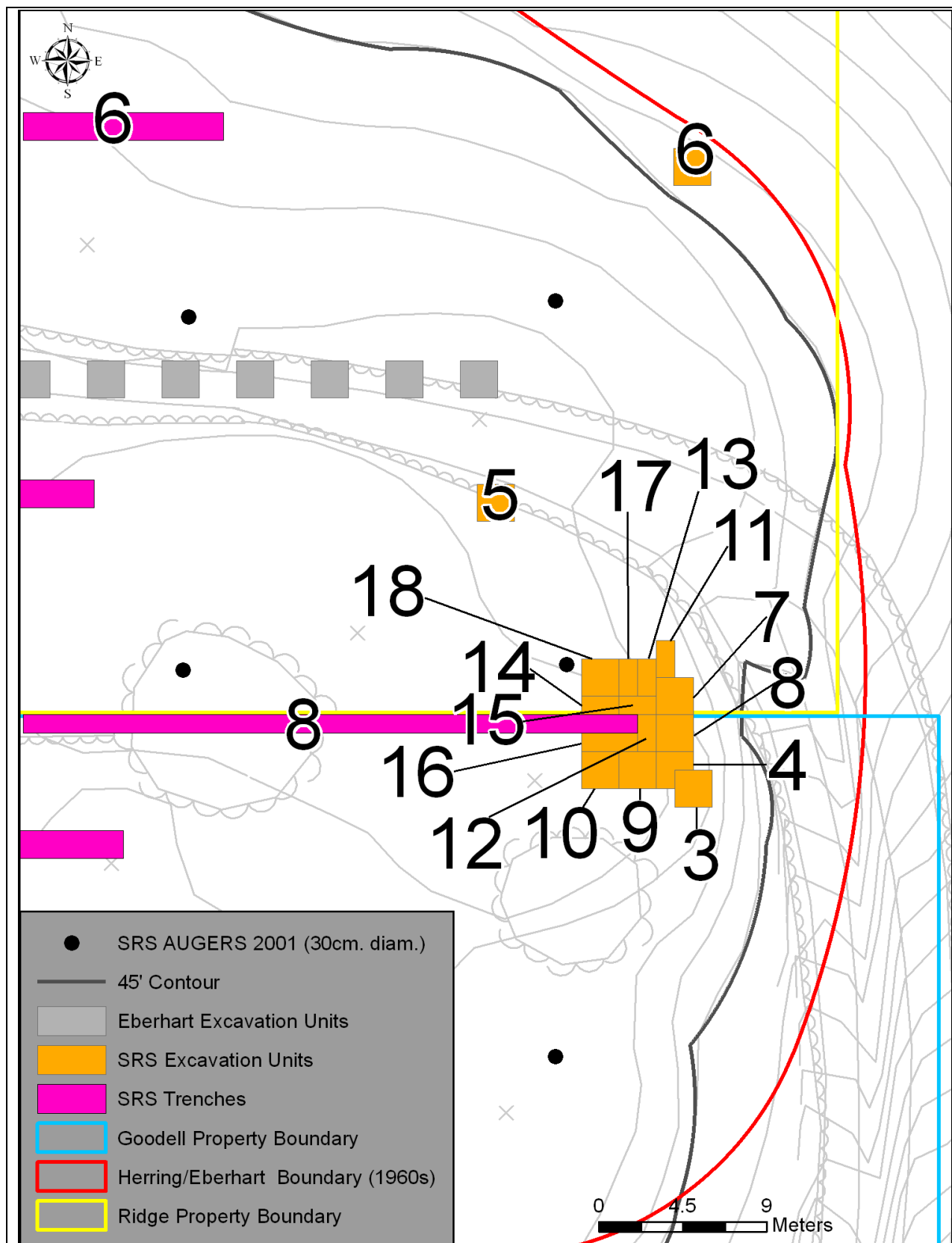
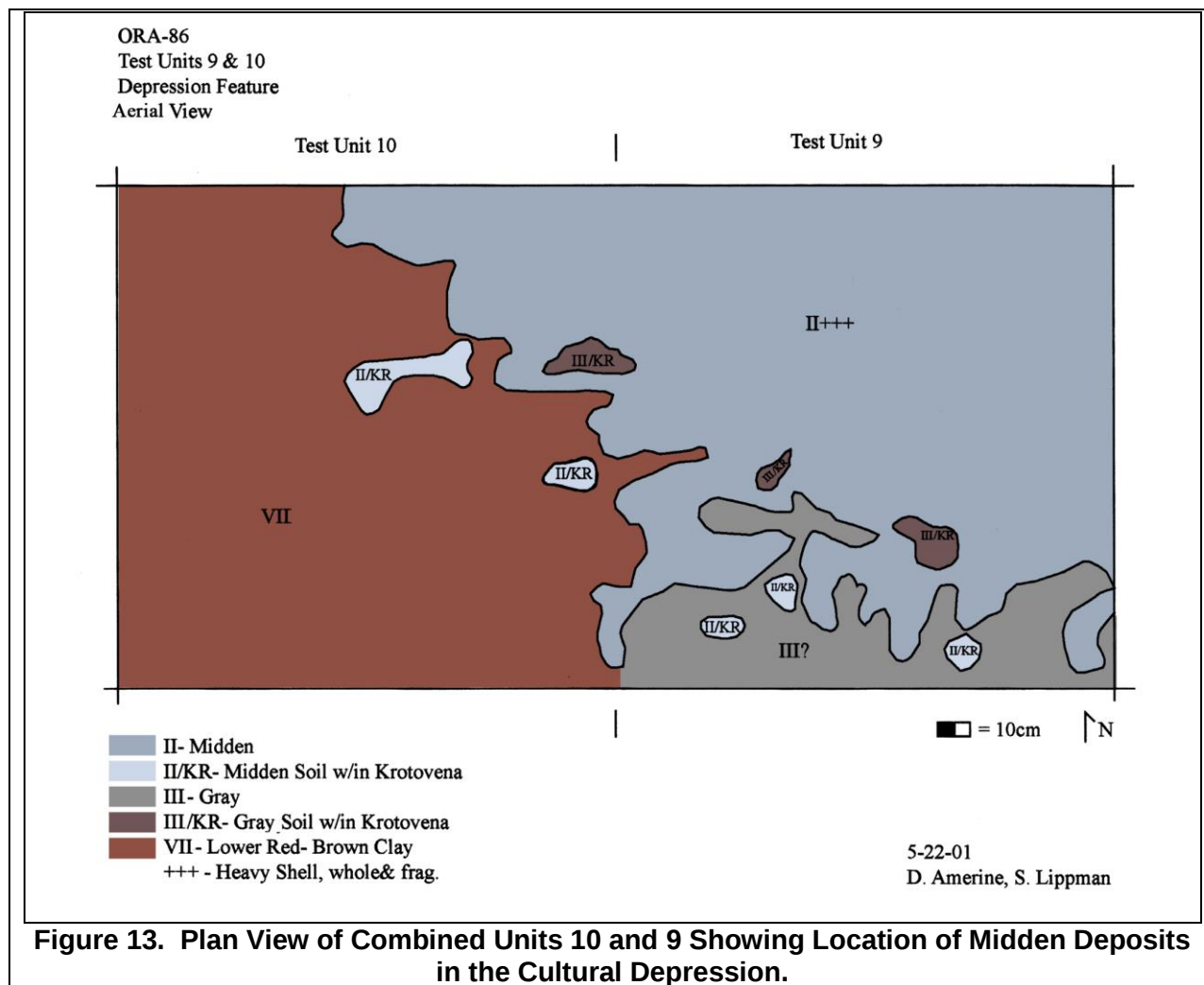


Figure 12. Detail of Figure 11 Emphasizing the Unit Block Excavation Units.
(Base Map: Stantec 2008).



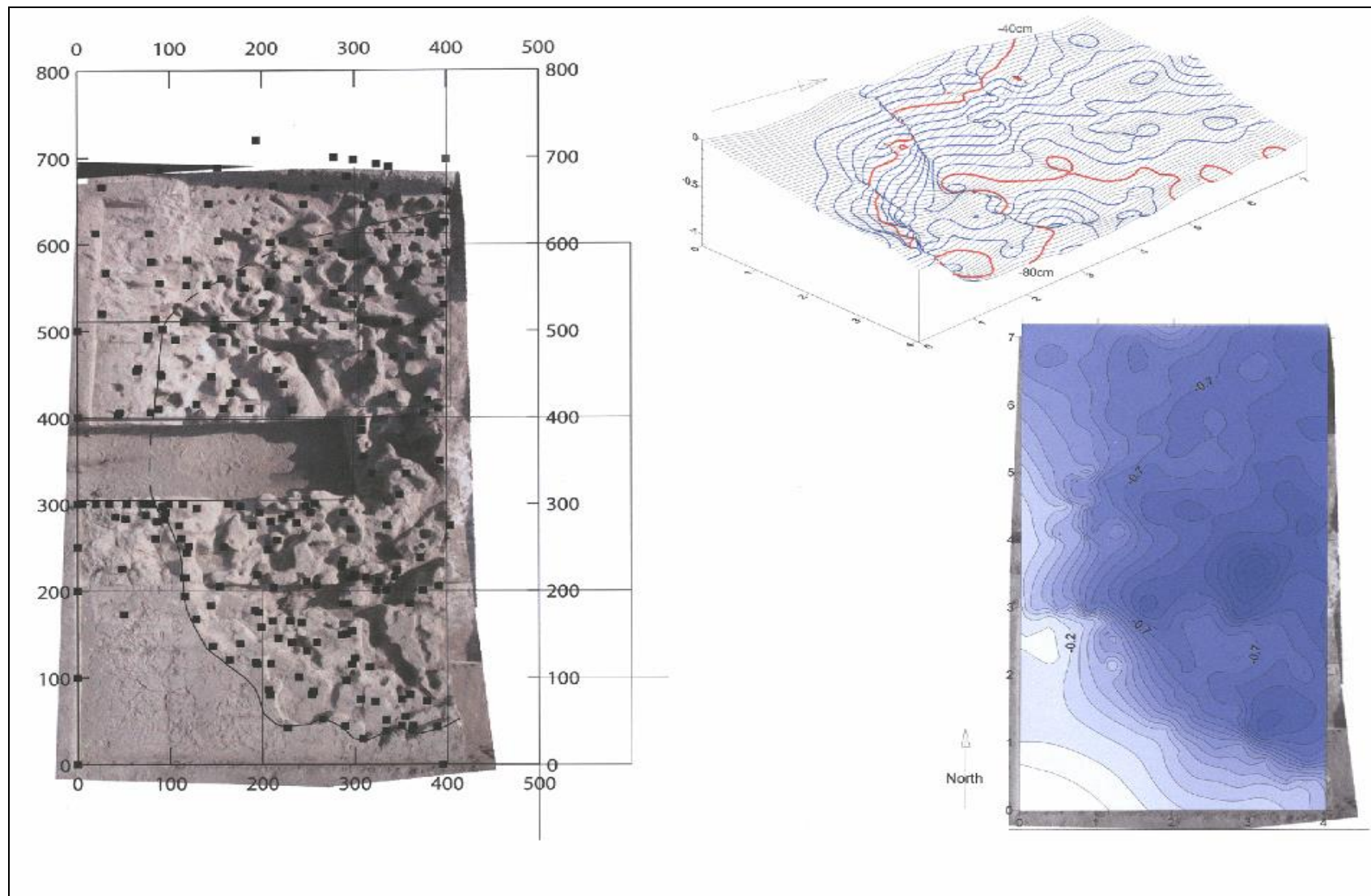


Figure 14. Isometric Reconstruction of the Cultural Depression Uncovered on CA-ORA-86.

2001 Trench and Test Unit Cultural Materials

Bar graphs #6-13 show the cultural materials found within the trenches and units on ORA-86 and Appendix B provides distribution detail. Graph 6 displays historic materials including counts of concrete, brick, glass, metal, and plastic; weights for asphalt and slag are not shown but are significant in Test Unit 5 and Units 8 since as mentioned, both of these units are adjacent to an old road crossing the site from east to west. Historic material counts are greatest in Units 1, 5, 3, and 4, and lacking in Units 9 thru 18, all situated in the unit block excavations. Six of the 9 trenches also contained historic items showing that historic disturbance occurred over much of the archaeological site with the exception of the interior of the cultural depression.

Prehistoric artifacts included shell beads and possible pendants, bone tools, ground stone, lithic tools, and a projectile point in small quantities. These were nearly absent from the trenches but occurred in all units with the exception of Units 12 and 13, which were located in the center of the housepit (Graph 7, Appendix B). It is significant to note that all artifacts found outside of the cultural depression were found in the plowzone, along with highly fragmented shell, and were therefore not *in situ*.

The overall pattern shown on Graph 7 is that the artifact distribution is bimodal with concentrations in Test Units 8 and 16 on the eastern and western sides of the housepit. Graph 8 demonstrates that the quantities of materials along the western edge of the pit are primarily groundstone fragments, many of which are burnt, and are associated with a hearth first located while excavating the east end of Trench 8 and later exposed in adjacent Unit 16 (Figure 15). Graph 9 indicates which units contained fire-affected rock, probably from the Unit 16 hearth. Table 1 provides a summary of all artifactual materials within the unit block and indicates that 2 stone beads and a projectile point were also found in this unit. A total of 4 bone awls were also located along the western side of the cultural depression and 3 shell beads.

The artifact concentration on the eastern side of the housepit is depicted by Units 7, 8, 3, 4, 9, and 10. Graph 10 shows the results of debitage collection for the units and trenches by weight. Unit 8 clearly has the most debitage, indicating that tool manufacture occurred in the area of this unit on the east side of the depression. Other artifacts from these units include 10 shell beads, 3 stone ornaments including a lip labret and stone beads, 3 stone tools, and 2 bone awls (Table 1). The large quantities of shell beads/ stone ornaments and debitage in this area distinguish it from the other side of the housepit.

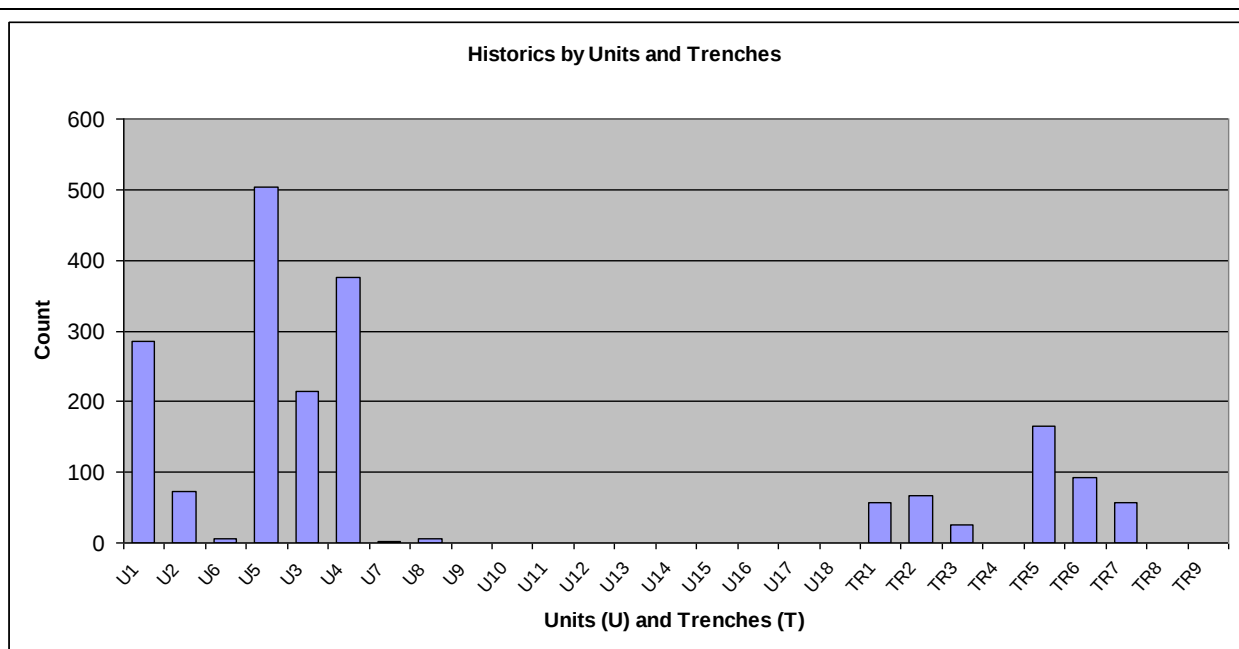
Graph 11 shows the distribution of shell materials in the trenches and unit. The pattern here is trimodal, showing nearly equal quantities of shell on the western and eastern sides of the housepit; but there was also a large quantity in Unit 12, which along with 13, lacked artifactual materials. Graph 12 was prepared to show the distribution of whole shell in the trenches and units on the site. Whole shell was present in Units 3 and 4 along the southeast edge of the cultural depression, and also in very large quantities in Unit 12 (shown here as 12 North and 12 South). Unit 12 North is adjacent to the east end of Trench 8 and Unit 12 South is adjacent to Unit 4 and Unit 3 intersects Unit 4. These are the units, and one trench, which showed whole shell in the stratigraphic profiles. The distribution then forms a wedge from northwest to southeast through the center of the pit. The northwestern portion of the wedge is also next to the hearth in Trench 8 and Unit 16. The remainder of the units within the unit block did not have significant quantities of whole shell; the trimodal bar graph however does show that they have significant quantities of shell, but this shell was highly fragmented, presenting evidence for heavy use of the other areas through trampling which would eventually fragment the shell. Faunal remains were minimally represented in the trenches and units on the site (Graph 13).

Table 1. Summary Listing of Cultural Materials Collected form the Unit Block on CA-ORA-86.

Unit	Quad	shell	other	bone	stone	stone	debitage	ground	bone	shell	whole shell sample	FAR	charcoal	asphaltum
		beads		awls	tool	ornament		stone	[grams]	[grams]	[grams]		present	present
*7	NE	1					3.04		16.35	12528.6		1	X	
*7	NW	1					2.31		85.48	24150.6		1	X	X
*7	SE	1					4.16		28.21	20536.28		1	X	
*7	SW				1 Lithic Bead		13.14		69.92	32973		1	X	
*8	NE	1					15.86		59.7	24759.1		3		
*8	NW						19.28		55.74	28933.7			X	
*8	SE						9.92	1	26.3	19204.2		3	X	
*8	SW	1			1 P.P.	1 Lip Labret	28.8		80.61	31815.3		5	X	X
*3	NE						0.11		1.82	1880.5			X	
*3	NW			1			0.71		31.97	16780.9	2280.77		X	
*3	SE								1.37	2719.7				
*3	SW	1					0.47		6.27	3063.2			X	
*4	NE						0.09		52.56	18117.37		2	X	
*4	NW	1		1	1 Lithic Bead		3.05		122.11	40331	4199	3	X	
*4	SW						20.82		40.11	18850.6		1	X	
*9	NE	1					11.74		79.1	47480.9		10	X	
*9	NW						0.73	1	67.95	32146.8			X	
*9	SE	1					3.35		38.71	29826.7		7	X	
*9	SW						1.1	1	24.65	12853			X	
*9/10	NW/NE						5.22		35.39	7386.3				
*10	NE				1 Biface		8.3		31.8	18350.8		1	X	
*10	NW						0.5	1	5.81	2307.4				
*10	SE						0.24		25.51	17033.6		1		
*10	SW	1 Bead Blank					2.81		5.51	5719.7		1		
totals		10		2	2	3	155.75	4	992.95	469,749	6479.77	41		
11	N			1			1.42		31.71	17289.28				
11	S						0.12		57.98	28699		1		
13	N						1.73		26.66	42,007				
13	S						4.39		37.78	19028.5		2		
12	N						5.76		64.89	43461.4	4759.84	4		
12	S						4.63		121.4	75236.9	9144.18		X	
totals				1			18.05		340.42	225,722	13,904	7		
16	W						0.78	6	36.23	18787.2		**hearth 1		
16	C				2 Lithic Bead		5.17		61.32	42836.6		**hearth 2	X	
16	E				1 P.P.		5.69		85.48	54447.4		**hearth 2		
14	E	1					2.91		29.52	22207.3				
14	W						2.41		15.62	12836.2				
15	E			2			12.62		84.92	48680.1		1		
15	W						2.17		61.51	39913.8		5		
*18	NE			1			2.22		18.62	12096.5		1		
*18	NW								8.57	13890.5				
*18	SE	2 Shell Bead		1 Worked Bone			0.51		37.55	18459.1				
*18	SW								9.65	12870.16			X	
*18	S						11.7		2.51	0				
17	N						0.73	2	33.61	26389.2				
17	S		1 Pearl				0.01		29.47	20991.99				
totals		3	1	4	1	2	46.92	8	514.58	344,406		12		

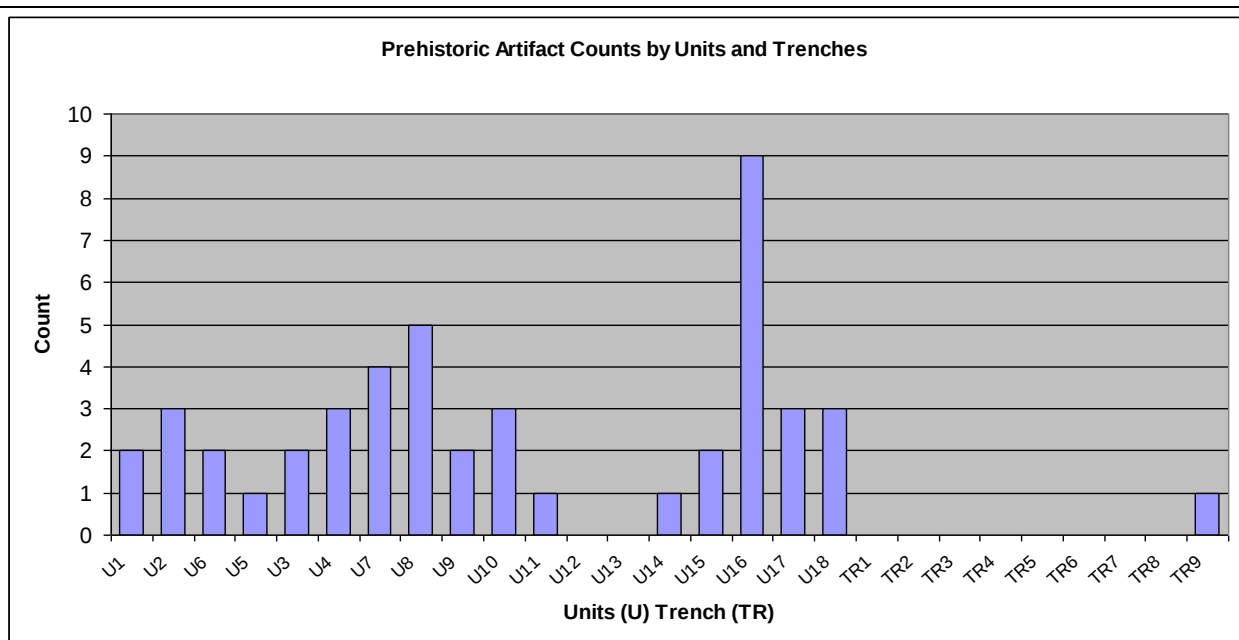
*=2x2m unit

Whole shell was sampled from select unit quads



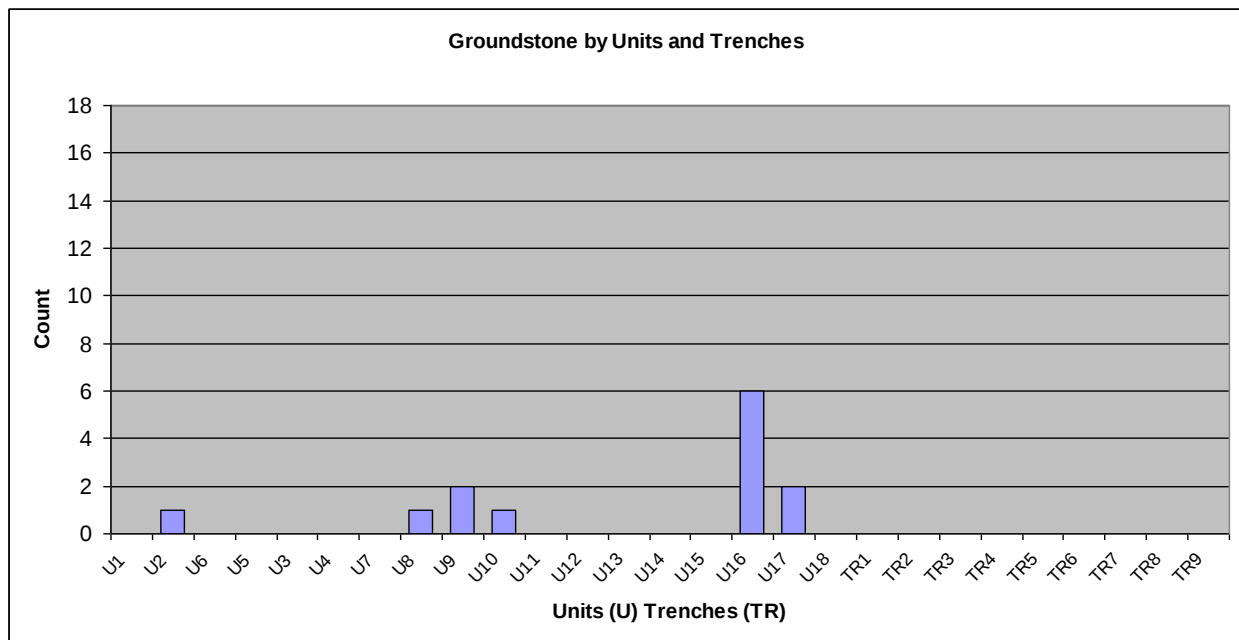
Graph 6. Historic Artifact Distribution in SRS 2001 Trench and Unit Excavations.

Historic material (concrete, brick, glass, metal, and plastic) from units and trenches. Does not include historic material catalogued by weight (asphalt 1081g/Unit 5), (slag 40.1g/Unit 2; 8.81g/Unit 7; 70.89g/Unit 8)

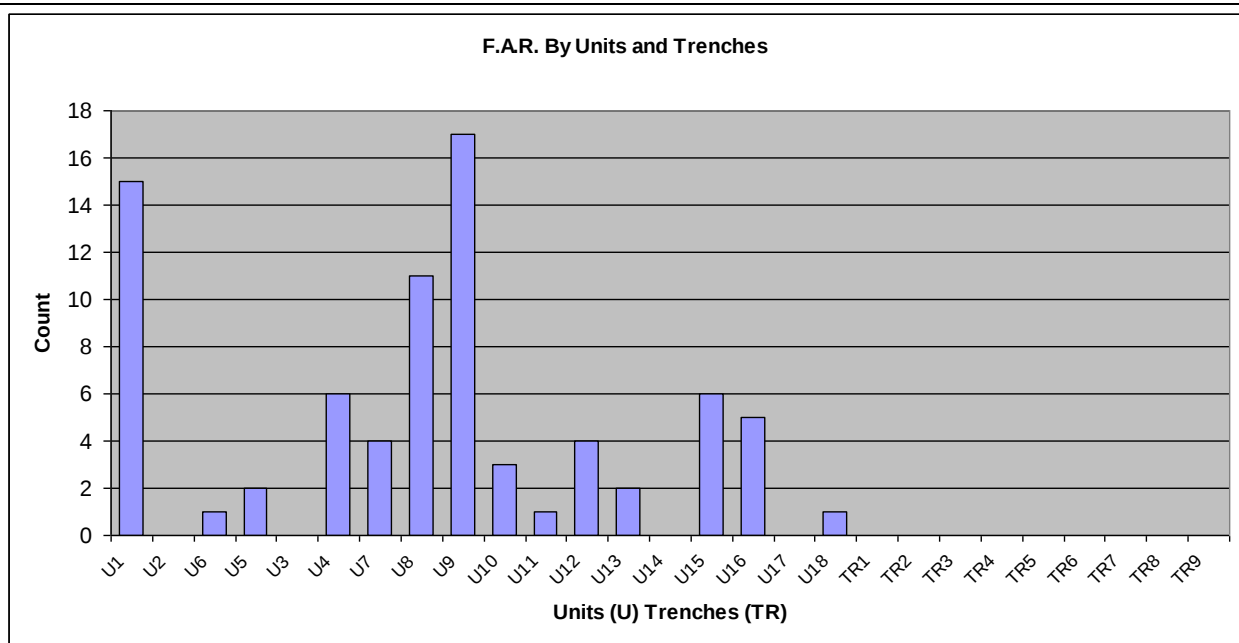


Graph 7. Prehistoric Artifact Distribution in SRS 2001 Trench and Unit Excavations.

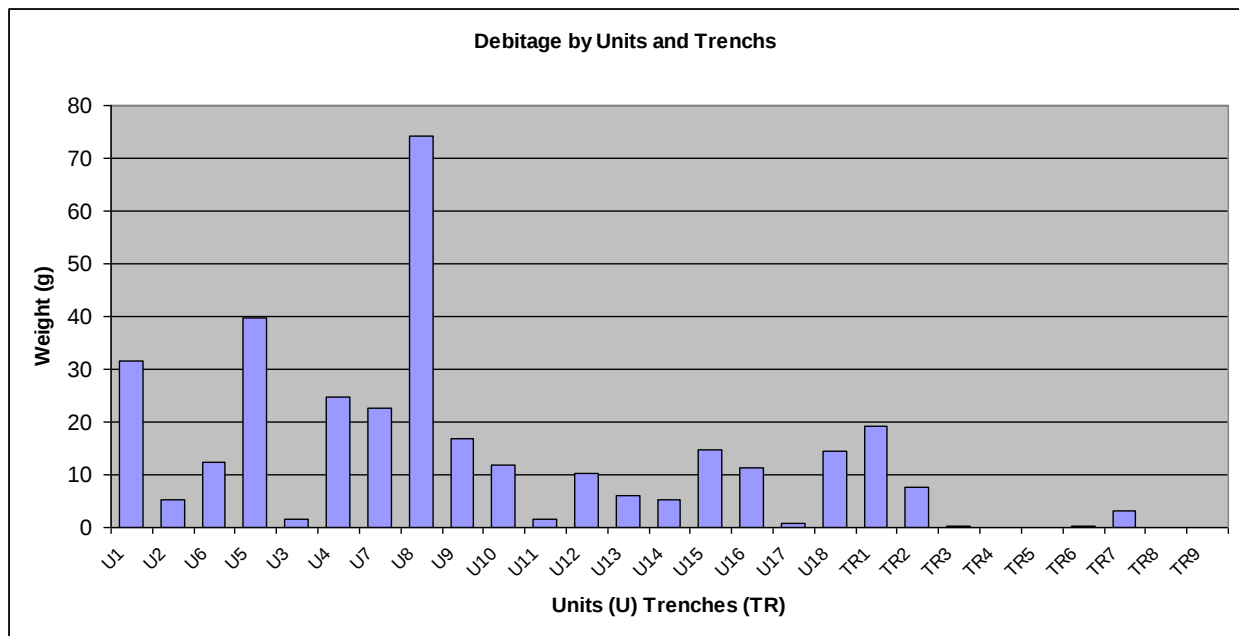
Prehistoric Artifacts by Units (Shell Beads and Pendants, Bone Tools, Ground Stone, Lithic Tools and Projectile Point).



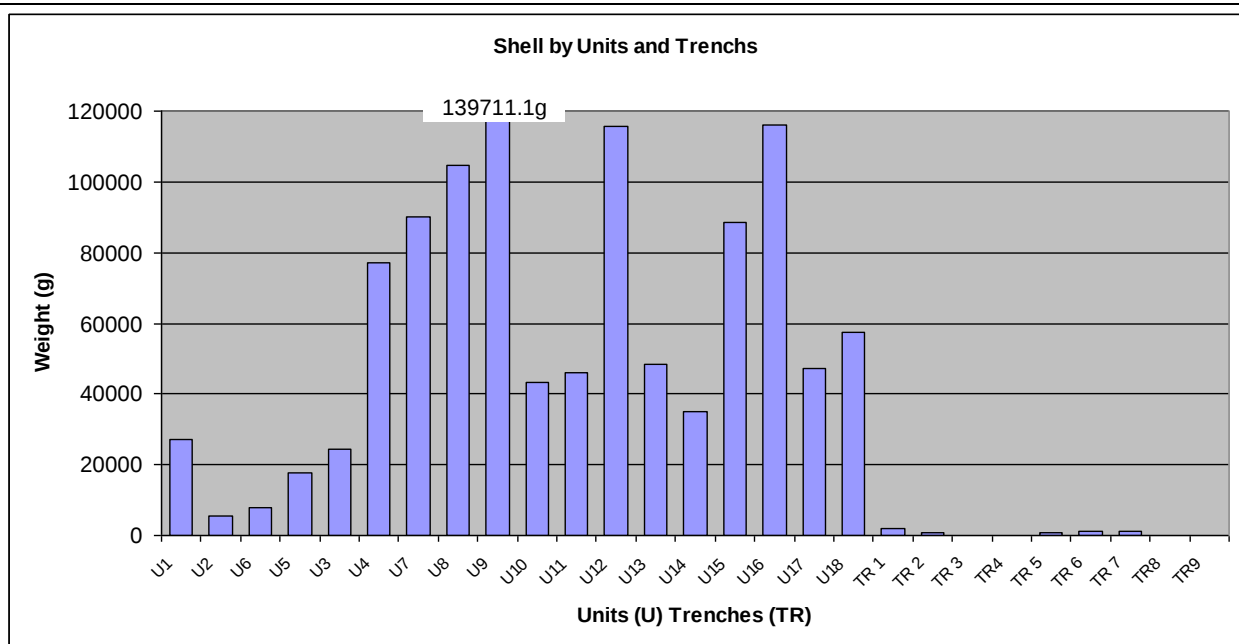
Graph 8. Prehistoric Groundstone Distribution in SRS 2001 Trench and Unit Excavations.



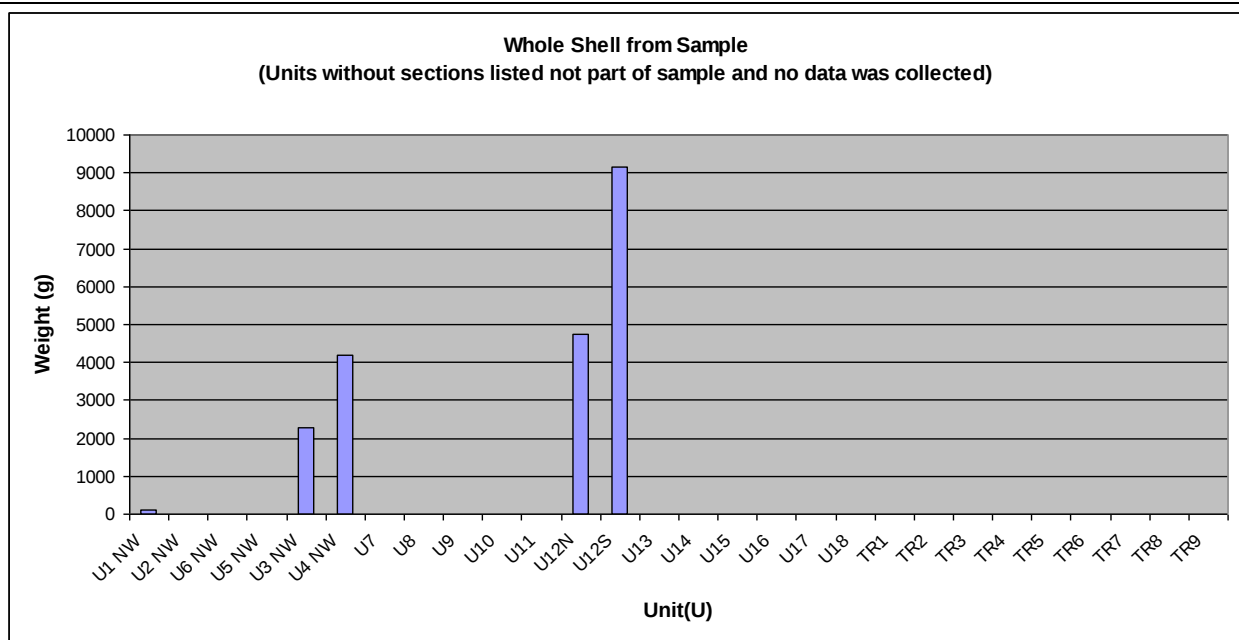
Graph 9. Prehistoric Fire-affected Rock (FAR) Distribution in SRS 2001 Trench and Unit Excavations.



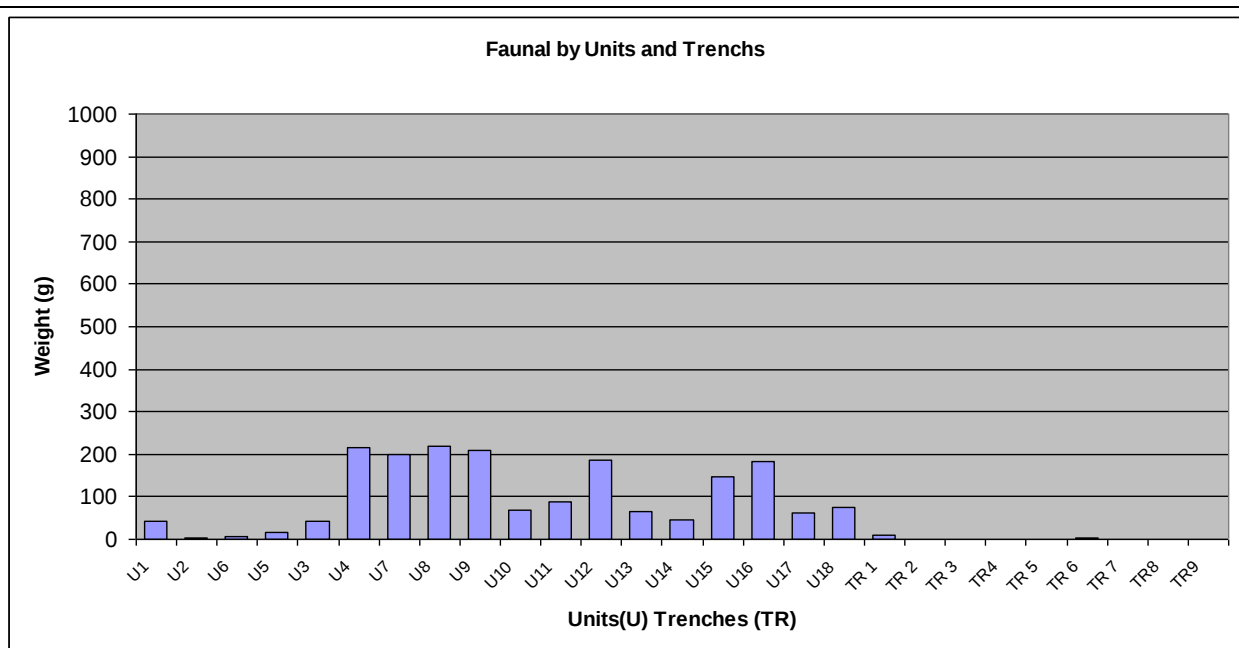
Graph 10. Prehistoric Debitage Distribution in SRS 2001 Trench and Unit Excavations.



Graph 11. Unmodified Shell Distribution in SRS 2001 Trench and Unit Excavations.



Graph 12. Unmodified Whole Shell Distribution in SRS 2001 Trench and Unit Excavations.



Graph 13. Unmodified Faunal Distribution in SRS 2001 Trench and Unit Excavations.

Collectively the pattern described here can be clearly seen on Figure 16 where the distribution of shell, debitage, groundstone, and associated artifacts are mapped within the unit block. This plan aspect allows for another view of the differential distribution of materials. The shell 'wedge' can be seen penetrating the center of the housepit from southeast to northwest where it meets or is adjacent to a hearth depicted by FAR and fragmented, and sometimes burnt quantities of groundstone in both Trench 8 and Unit 16. Four bone awl tips also suggest that leather was being worked next to the hearth. The opposite side (or east side) of the housepit contains a large concentration of debitage and shell and stone beads and ornaments including a lip labret. This area appears to have been reserved for stone tool and ornament and shell bead manufacture. A detailed description of the artifacts follows.

Artifact Descriptions

The subsurface investigations at ORA-86 yielded a variety of prehistoric and historic artifact material. Historic material tended to be fragmented and of material that highlighted historic disturbance of the site. These artifacts consisted mainly of metal, glass, slag, asphalt, concrete, and brick fragments. In addition, some small pieces of tile and roofing shingles were also recovered.

The prehistoric artifacts recovered from ORA-86 consisted of shell and stone beads, bone tools, as well as lithic debitage, tools, and groundstone. Shell and faunal remains were the most abundant material recovered from this site.

Flaked Tools and Debitage

Lithic debitage was recovered from every unit, with the most being discovered from Unit 8. Unit 8 yielded just under 75 grams (g) of debitage. Although a detailed analysis was not conducted on the debitage, it appears that the majority of the material was Monterey Chert, a local material used prehistorically throughout coastal Southern California for the creation of stone tools (Cooley 1984; Lapin 1996).

Of the five projectile points recovered, three are undiagnostic fragments. Two of the fragments are Monterey Chert. The third fragment is made of fused shale. The fused shale projectile appears to be a medial fragment. This artifact was recovered from level 2 of Unit 18. The point appears to have been manufactured in an expedient fashion from a flake. A dorsal ridge, commonly found on flakes especially associated with biface production, is visible. The point does exhibit sharp unpatterned pressure flaked margins. The margins do not show signs of use-wear.

Another projectile point fragment is the base of a Cotton Wood Triangular Point (cat. # 702). This point was excavated from the first level of Test Unit 8, is made of Monterey Chert, and exhibits finely worked transverse parallel pressure flakes. This almost complete point measures 14.63 mm long, by 14.74 mm wide and 3.48 mm thick and weighs .64 g. The point exhibits a perverse fracture, which is a strong indicator that it was broken during manufacture or resharpening.

Finally, the last artifact labeled as a projectile point likely served multiple functions (cat. # 241). This point is made of obsidian and came from the second level of Unit 2. The point is stemmed, possibly fitting in typologically with the Gypsum or Contracting Stem clusters; part of the stem is missing. The point's tip also has been broken off with this fracture, showing use-wear (possibly associated with scrapping activity). In addition, one of the neck margins leading to the contracting stem also appears to have been utilized.

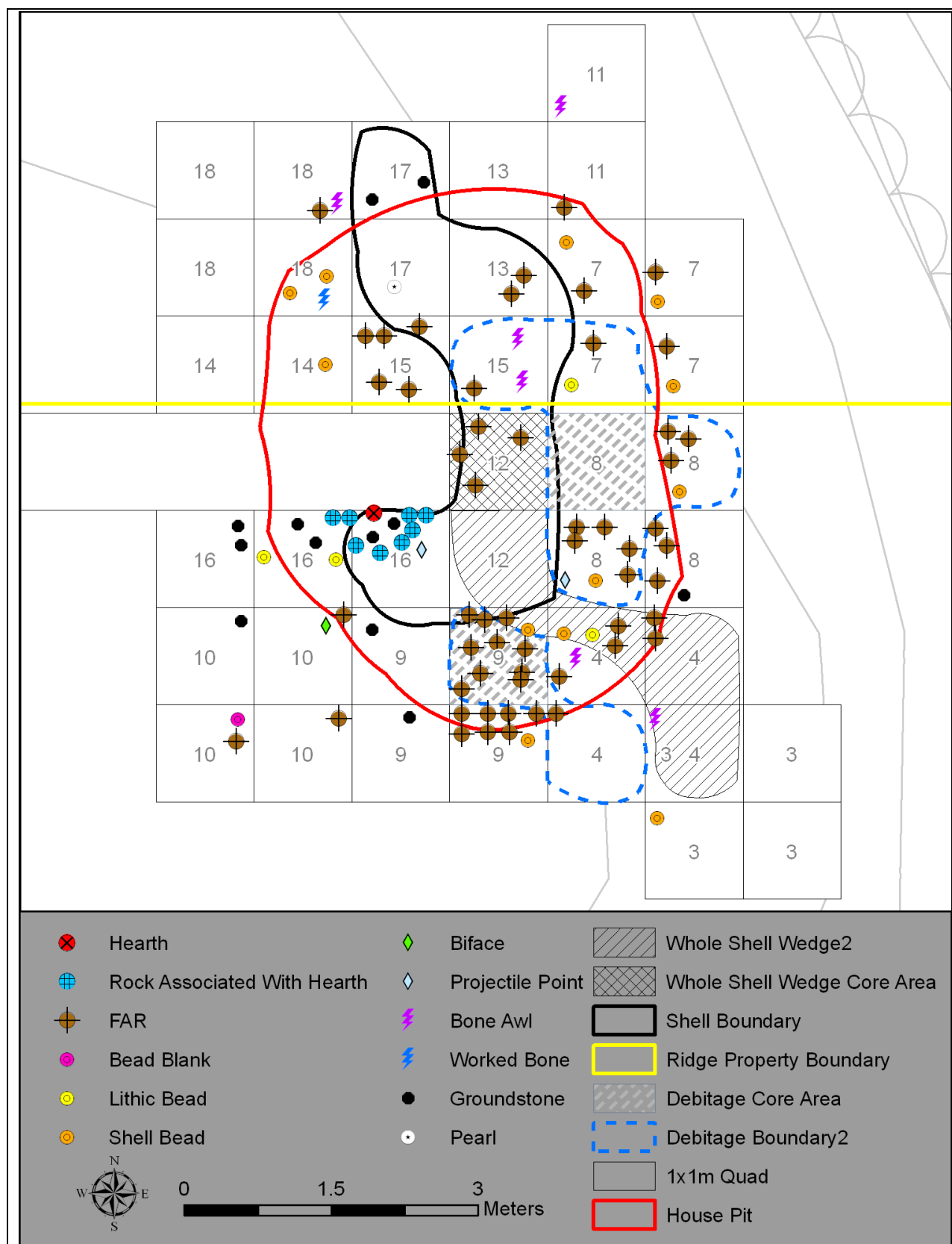




Figure 17. Lithic tools and shell artifacts from ORA-86(A. Projectile Point Cat. 241; B. Cotton Wood Triangular Projectile Point Frag. Cat. 702; C. Cat 10239; D. Cat. 700; E. Possible Pendent Cat. 171; F. Pearl Cat. 10122; G. Bead Blank Cat. 100001).

Using 10x magnification, the faces of this point display small step fractures near the edge, as well as linear striations, which could have resulted through the utilization of this tool as a knife. The piece appears to have gone through multiple episodes of reworking and the edges are sharp. This artifact's maximum measurements are 35.17 mm long, by 19.56 mm wide, and 7.80 mm thick, with a weight of 4.6 g.

Two biface fragments of obsidian were also recovered from subsurface archaeological work. One of these biface fragments could possibly have been part of a projectile point (cat. #700). This biface was recovered from the first level of Unit 6 and is broken medially by a bending break. Further, the biface appears to have been last flaked utilizing bipolar reduction. Interestingly, the other obsidian biface fragment (cat. #704) appears to just be a bifacial edge flaked off of a tool also by bipolar reduction. This artifact is a linear fragment similar to a burin spall, however, a crushed platform and accentuated rings of percussion created at the same time on multiple faces, fits this piece more firmly in-line with the classic "orange wedge" type of reduction material often associated with bipolar (Garrison and Collocho 2011:60). This piece came from the level 3 of Unit 10.

Obsidian is considered "exotic" to the Bolsa Chica Mesa, with known sources occurring over 150 miles from ORA-86. Although many have taken the presence of the material as an indication of trade (Couch 1998; Hughes and Milliken 2007); however, Hughes and Milliken strongly point out that trade cannot be conclusively determined just because of the distance between site and known source (2007:259). Another possible method of obsidian procurement involves prehistoric gleaning, or scavenging, of other sites (Amick 2007). Nevertheless, it can be inferred because of the rarity of the material and distance to sources that obsidian was a prized possession. Further, the use of bipolar reduction on obsidian tools

can be interpreted as a way prehistoric stone workers would rejuvenate exhausted tools of desirable material (Garrison and Coloch 2011:40).

Lithic Beads

Five lithic steatite beads were also recovered from ORA-86. One bead each came from Units 5, 4, and 7 respectively, with the other two beads coming from Unit 16. The steatite beads collected from ORA-86 all appear to have been made from a high quality dark grey talc schist, thought to have originated from Catalina Island.

Table 2. Lithic Bead Dimensional Data from CA-ORA-86.

Cat.#	Prov.	Diam. (cm)	Th. (cm)	Perf. 1 (cm)	Perf. 2 (cm)	Hole
413	5(SW)10-20	3.5	1.7	1.2	1.3	conical
506	4(NW)10-20	3.4	1.1	1.3	1.3	straight
10005	7(SW)20-30	3.6	1.2	1.1	1.3	biconical
10124	16(C)50-60	3.4	1.3	1.3	1.3	biconical
10125	16(C)40-50	4.0	1.5	1.2	1.4	conical

Siltstone Lip Labret

Also recovered from ORA-86 is a siltstone lip labret. The lip labret was discovered in the second level of Unit 10. The artifact has been described by Hank Koerper as one of the most extraordinary artifacts recovered from the Bolsa Chica Mesa (Koerper 2011:15). It has been shaped into two connected ovals. The smaller oval would have been placed into a slit cut into the lip. The face of the larger oval displays some unpatterned scratch marks. The maximum diameter of the smaller disc is 18.36 mm, and the minimum diameter is 15.57 mm. The maximum diameter of the larger disc is 27.11 mm, and its minimum diameter is 24.88 mm. This style of lip labret is not known of coming from any other Orange County sites; however; similar artifacts made of steatite are known to have come from the Late Prehistoric Palos Verdes Estate site as well as within Chumash territory (Wallace 2000:190-192; Clemmer 1962:44-45).

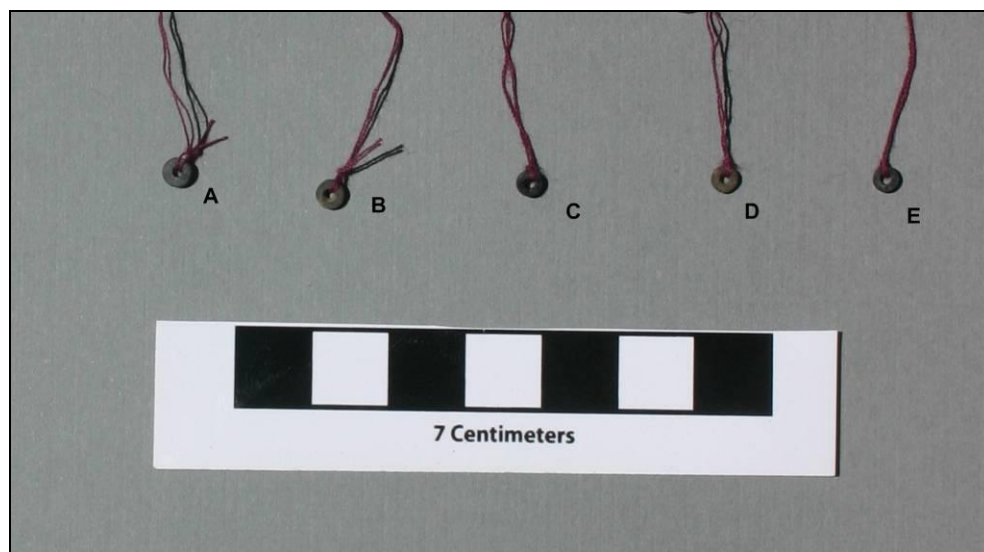
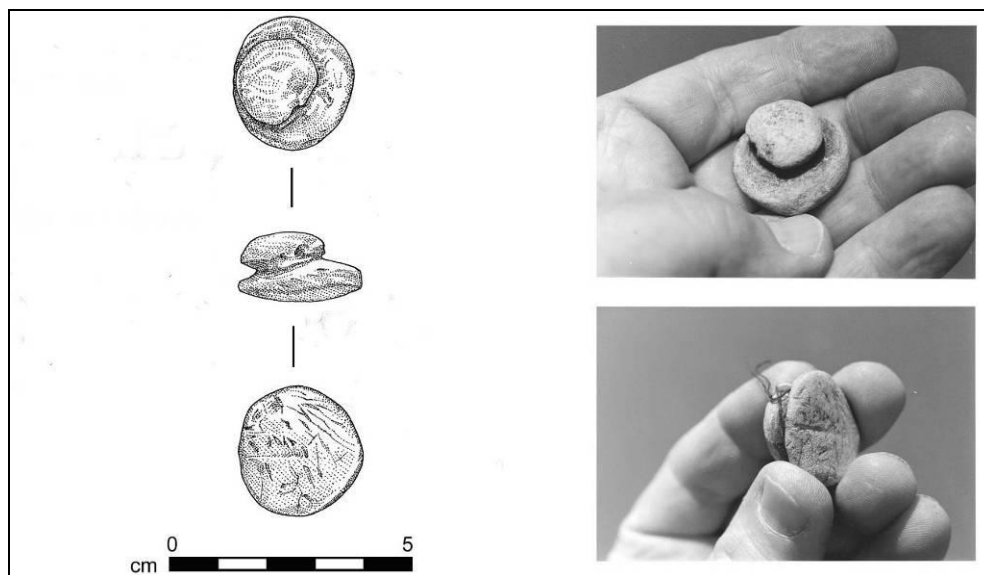


Figure 18. Lithic Beads recovered from ORA-86 (Artifact Catalogue Numbers A. 10125; B. 10124; C. 413; D. 10005; E. 506)



**Figure 19. Siltstone Lip Labret recovered from CA-ORA-86. Illustration by Joe Cramer;
Photo by Hank Koerper.**

Ground Stone

Subsurface groundstone artifacts were minimal (11). The most groundstone artifacts came from Unit 16, which likely were part of a prehistoric rock feature that was also discovered in Trench 8. Five artifacts identified as millingstones/metates, and one as a mano or handstone, were recovered from Unit 16. Of the five millingstone fragments, only one can conclusively be identified as such. The metate fragment appears to have been constructed of andesite. It looks to have originally, when whole, been part of a basin-style metate.

The handstone is interesting as it displays grinding on multiple faces. The artifact is mainly a bifacial mano fragment with an oval or convex, cross section with one face displaying pecking, likely performed to rejuvenate the artifact. Notably, the mano was fragmented prehistorically and then reused as the breaks display grinding and use-wear as well. Fragmenting the mano changed its shape from an ovoid, or circle, to a crescent. One end of the handstone displays battering consistent with the artifact also being used as an expedient pestle. The mano fits ergonomically in one's hand. The maximum measurements on this artifact are 95.83 mm long, by 9.37 mm wide, by 58.38 mm thick and weighs 66.05 g. One other mano fragment was recovered from the second level of Unit 2. The artifact is constructed of granite and appears to also have been a bifacial mano. The fragment weighs 273.66 g.

In addition to the ground stone fragments, two manos and metate fragments, fragments of schist, a material often used prehistorically for metates, were excavated from units 12, 13, 14, and 15, all within the cultural depression.

Worked Shell

A total of 19 worked shell artifacts were recovered from the subsurface investigations at ORA-86. All of the worked shell artifacts except for two are beads. One is labeled as a pendant and another piece appears to be a bead blank with a small beginning of a perforation.

The possible shell pendant was found in level 3 of Unit 1. This artifact has maximum measurements of 10.57 mm, by 9.94 mm, by .91 mm thick, and has a weight of .16 g. The piece is fragmented on one end and slightly rounded on the other. It was originally labeled a pendant because it appears to have been shaped and ground on both faces. Although it likely is a fragment of a pendant and is rather thin, it should not be ruled out as a possible bead blank.

The artifact that clearly appears to be a bead blank was recovered from level 1 of Unit 10. This artifact is interesting as it is ground into a saucer shape. The beginnings of perforations are visible on both faces, indicating that a biconical hole was the intended outcome. The bead blank has a diameter of 5.45 mm and a thickness of 3.93 mm, with a weight of .16 g.

One other item recovered that should be mentioned here is a spheroid, or pearl. The artifact does not appear to be worked in any way and likely was a manuport that could have served as a talisman. The pearl came from level 4 of Unit 17 and weighs .15 g. Koerper and Desautels-Wiley discuss such items in relation to the Bolsa Chica Mesa (2010). This item appears to be what they would call a "free pearl" originating from a bivalve. Ten other pearls



Figure 20. Groundstone from ORA-86. (A. Mano Frag. Cat. 273; B. Metate Frag. Cat. 10227; C1 Mano Cat. 10237, C2 Distal end of Mano 10237 with use-wear associated with pecking and pounding)

from the Bolsa Chica Mesa analyzed by Koerper and Desautels-Wiley all appear to also have been “free pearls” (Koerper and Desautels-Wiley 2010:69).

Seventeen shell beads were found during the subsurface testing, two in Auger 56 and the rest were in units. The majority were manufactured from *Olivella* but *Conus* and *Mytilus* genera were also present. In 2004, Robert Gibson analyzed 10 of the seventeen beads which were whole enough for analysis (Gibson 2011).

Gibson concluded that ORA-86 had four *Olivella* cup beads (K1) indicating Phase 1 of Late period occupation. Two beads were typed as *Olivella* Tiny Saucers (G1) and three were *Olivella* wall discs (J). These two types indicate occupation at the end of the Middle period, and along with the *Olivella* cups, indicate that the occupation continued into the beginning of the Late period when the site were abandoned. Evidence for occupation in the earlier portions of the Middle period is limited to only a few *Olivella* saucer beads and larger holed *Olivella* wall disc (G2). If the site dated to the Early period, it would commonly have *Olivella* barrels, oblique spire removed, end ground, and even small spire removed beads. Thousands of these beads were recovered from ORA-83 and hundreds from ORA-85, however none were found in ORA-86, indicating that this site is a different, more recent time period than nearby Mesa sites, a fact supported by a single bead date of 1530±40 cal YBP.

Table 3. Shell Bead Distribution and Type Identification from CA-ORA-86.

Cat #	Unit #	Quad	Lvl Top	Lvl Bot	Material Group	Material	Object Type	Quan	Comments
170	1	NE	0	10	Shell	<i>Olivella</i> sp.	Bead	1	
272	2	SW	10	20	Shell	<i>Mytilus</i> Sp.	Bead	1	Conv. Date: 1530±40 cal YBP
300	3	NW	20	30	Shell	<i>Conus californicus</i>	Bead	1	
586	4	NW	0	10	Shell	<i>Olivella</i> sp.	Bead	1	Class K: Callus, K1: Cupped
404	5	SW	0	10	Shell	Shell, Undiff	Bead	1	Riker Mount Shell-2, Class K: Callus, K1: Cupped
699	7	NE	10	20	Shell	Shell, Undiff	Bead	1	Riker Mount Shell-2, Class J: Wall Disc
706	7	SE	10	20	Shell	Shell, Undiff	Bead	1	Riker Mount Shell-2, Class J: Wall Disc
707	7	SE	10	20	Shell	Shell, Undiff	Bead	1	Riker Mount Shell-2, Class K: Callus, K1: Cupped
10010	8	NE	40	50	Shell	<i>Olivella</i> sp.	Bead	1	
703	8	SW	50	60	Shell	Shell, Undiff	Bead	1	Wall Disc Bead; Class G: Saucer, G2: Normal Saucer
10019	9	NW	0	10	Shell	<i>Olivella</i> sp.	Bead	1	
708	9	SW	20	30	Shell	Shell, Undiff	Bead	1	Wall Disc Bead; Class G: Saucer, G1: Tiny Saucer
10002	14	E	10	20	Shell	<i>Olivella</i> sp.	Bead	1	Class K: Callus, K1: Cupped
10007/8	18	SE	20	30	Shell	<i>Olivella</i> sp.	Bead	2	Class G: Saucer, G1: Tiny Saucer
10020	AUGER 56		40	60	Shell	<i>Olivella</i> sp.	Bead	1	
10021	AUGER 56		80	100	Shell	<i>Olivella</i> sp.	Bead	1	

The *Olivella* cups functioned in the economic exchange between individuals and villages. It was assumed by Gibson that all *Olivella* cups were manufactured to the north in Chumash territory and functioned in a large multi-national exchange system that included most of California. However, at least one bead is a bead blank, indicating local manufacture. Other *Olivella* wall beads in the sample functioned in social interactions between leaders and other people of status:

Ethnographic data indicates that Olivella disc beads were strung and used as bracelets. Long strings were wound around the wrist several times, or worn as belts by chiefs on fiesta days. Strands were also used as necklaces and functioned in ritual inter-village or inter-regional exchanges between village chiefs and other individuals of high status. Olivella saucers and wall discs were not used as a medium of exchange between individuals or households; rather they were used to validate social and political authority. Olivella wall discs are a low to medium form of bead whose ownership demonstrates rights to community stores as gifts to other chiefs and as gift to those who aided in the maintenance of the community stores (Gibson 2011:10-11; King 1974:89).



Figure 21. Bone tools from ORA-86. All artifacts listed as bone awl fragments except for A. which is listed as Worked Bone. (Artifact Catalogue Numbers: A. 10017; B. 284; C 10018; D. 10011; E. 583; F. 10015; G. 10014)

Worked Bone

Seven worked bone fragments were also recovered through subsurface investigations. One fragment each was recovered from units 3, 4, 6, 11, and 18, with two from Unit 15; all but one were discarded within the housepit. All of the fragments with the exception of the one from Unit 18 were identified as awls. The fragments from Units 6, 4, and 15 are all less than 8mm in length and appear to be broken off awl tips. The worked bone from Unit 3 (cat #284) is rectangular in cross section with a rounded, polished distal end. It measures 49.88 mm in length, by 5.61 mm wide, and 4.99 mm thick. This artifact was recovered from the second level of the unit, displays weathering, and possible rodent gnaw marks along the shaft.

The other slightly larger awl fragment (cat. #10018) came from Unit 11. This fragment is slightly curved with a triangular cross section. It measures 27.5 mm in long, by 6.41 mm wide, by 5.82 mm thick. This piece has a more pronounced taper than the previously discussed piece, with the distal end being slightly pointed. This piece also displays slight weathering and was recovered from level six of the unit.

Finally, the worked bone fragment (cat. #10017) recovered from the second level of Unit 18 measures 29.93 mm by 14.12 mm. This piece appears to be a fragment of polished bone and, unlike all of the other worked bone fragments, this piece appears to be fire-affected.

Implications of the Material Remains from the SRS 2001 Excavations

The SRS 2001 excavations on ORA-86 resulted in the discovery of intact cultural midden deposits on this site and succeeded in finally establishing site boundaries. A comparison of the results of the excavations with areas previously excavated by the other prior investigators resulted in a clear picture of 1] why other excavators gave up on the site, 2] where the remaining midden deposits were and what they consisted of, and 3] what allowed this midden and these materials to remain when all other portions of the site had been destroyed by agricultural and other mechanical activities. As discussed above, the area with the greatest concentration of intact deposits, and which provided the most information regarding this site, is the cultural depression or “housepit” in the southeast corner of the site – a portion of which is on The Ridge property and the remaining portion (not excavated) would lie within the boundaries of the Goodell parcel. The 30’ diameter circular depression provided cultural materials that extended to a depth of 100 cm and their distribution allowed for defining differential use areas. The east side of the structure appears to have been used for stone tool, ornament, and shell bead manufacture, resulting in disposal of significant quantities of debitage in that area. The west side of the structure contained fire-affected rock and groundstone fragments, and was associated with a dense whole shell deposit in the center of the structure which represented the remains of a food processing area and cooking site. That area also produced the broken tips of bone awls. Because this was the only area where intact deposits remained, radiocarbon dating was conducted on a sequence of shell from shell deposits within the center of the structure. In addition, a shell bead was subjected to radiometric dating in order to verify that the various activities conducted within the depression were contemporaneous with the dense shell deposition.

Table 4 provides the results of radiometric dating, which indicate that the cultural depression was used from about from 2370 to 2000 YBP with a two-sigma (or 100-year) correction. The single bead date from Unit 2 provided a slightly younger date as old as 1610 YBP with a two-sigma (or 80-year correction) or as young as 1450 YBP. These dates show that Herring was correct in his initial assessment that this site was the youngest site on Bolsa Chica Mesa, and was never occupied during the heyday of the Cogged Stone Site (ORA-83) from about 9000 to

5000 YBP. The site dates to the Intermediate or early Late Horizon as suggested by Hal Eberhart (1966a, 1966b) and as indicated by the shell bead types and date (Gibson 2004).

Table 4. Conventional C14 Dates from CA-ORA-86.

Provenience	Lab	Lab ID	Object Type	Meas. Age	+/-	Conv. Age	+/-
86 Unit 2	Beta	194139	Bead, Mytilus	1120	40	1530	40
86 TR-8 TU-12	Beta	158681	Shell	1730	50	2100	50
86 TR-8 TU-12	Beta	158682	Shell	1820	40	2230	40
86 TR-8 TU-12	Beta	158685	Shell	1840	40	2240	40
86 TR-8 TU-12	Beta	158683	Shell	1830	40	2260	40
86 TR-8 TU-12	Beta	158684	Shell	1850	50	2270	50

The dates also supported a distinctly different artifact assemblage compared to other mesa sites. ORA-86, Herring's Site 'E', lacks features, cogged stones, charmstones and other ceremonial items present on ORA-83, the Cogged Stone Site from 9000 to 5000 YBP. It also lacks the features and items present at ORA-85, the Eberhart Site, on the western edge of the Mesa, which essentially replaced the Cogged Stone Site from about 5000 to 4000 YBP. ORA-86 also lacks *Olivella* barrels, oblique spire removed, end ground, and even small spire removed beads commonly found during these earlier eras. The single structure at ORA-86 was occupied about 2,000 years after the Eberhart Site was abandoned, and its characteristics suggest an entirely different use from structures on the Cogged Stone Site.

The distinct use areas in different parts of the depression suggest a habitation structure which also appears to have been used by one family (or more likely a single individual) given the few artifacts that were recovered from the cultural depression. The three stone tools within the housepit included a diagnostic chert Cottonwood Triangular projectile point, probably broken when being resharpened, a fused shale crude point manufactured on a bipolar flake, and an obsidian biface fragment which is an edge removed from an original piece (now missing). All appear to have been manufactured at the site as needed, possibly from prehistoric 'scavenging' of local site materials as suggested above. A groundstone tool, probably a basin metate, was fragmented with pieces forming part of the rocks used in a hearth, and a single handstone was also broken and reused as a different tool with pounding functions. All of the stone tools exhibit evidence that their final form resulted from re-using previously existing artifacts. Given the proximity of this site to several others on Bolsa Chica Mesa, it is likely and certainly must be considered, that the stone tools at ORA-86 were 'mined' or salvaged from other locales and brought to the ORA-86 housepit.

Personal ornaments included 4 stone beads, a lip labret, and 17 shell beads. In addition, 7 bone awl tips (or small worked bone pieces) were recovered, representing debris from activities such as leather working. All of these items could easily have belonged to one person and their distribution along with debitage and food debris allow for viewing the individual's personal use areas around and away from the single hearth within the housepit. Since Bolsa Chica Mesa was receiving little use by this time, Herring's Site 'E' has been interpreted as a personal retreat by an individual or individuals wishing to be alone (Wiley 2011). The beads have been interpreted as trade beads or beads acquired by a person of status and the stone lip labret would suggest the same; however, two appear to be bead blanks, indicating some local manufacture as well.

CONCLUSIONS

A series of subsurface excavations were conducted on ORA-86, Herring's Site 'E', by archaeological groups from 1966 to 2001. Each investigation was carried out in an attempt to find soils deposits with integrity so that site boundaries could be established. The early investigators stated that the western half of the site was non-midden bearing; the eastern half contained shell deposits but these were secondary in nature and had been redeposited from some other portion of the site or some other site now destroyed. In addition, this secondary shell deposit was overlain by imported peat from the adjacent lowlands used to enhance the soil chemistry for agricultural endeavors. Only the final program by SRS succeeded in locating any site deposits with integrity; a single relatively intact feature was uncovered in the southeast corner of the site. All earlier investigators abandoned the site as no longer retaining sufficient integrity to provide information for interpretation of site use through time. All investigators prior to SRS stated that due to past damage, and the fact that the site did not have the ability to provide cultural materials *in situ*, no further mitigation measures were required prior to development.

The 2001 SRS investigations were carried out under Coastal Commission permit CDP-89-772, as amended, and an associated Peer Review Memorandum of Agreement. The program was specifically oriented towards establishing accurate site boundaries since a National Register nomination by PCAS connected sites ORA-83 and ORA-86 as one entity. Adding to the confusion and need for site boundary work, the nomination excluded the northern portion of Bolsa Chica Road where human remains were found by SRS in 1999 during grading monitoring. Simultaneously, the work would confirm or deny the conclusions of earlier investigators regarding a total lack of site integrity. Under the direction of the CCC Peer Review Team, a progressive approach was carried out starting with a site grid for an auger program and soils analyses of samples from the drilled holes. Based on these results it was determined that more work was needed to provide larger stratigraphic exposures in areas where auger profiles indicated there may still be possible intact soil sequences prompting a series of backhoe trenches for further examining sediments exposed by the auger program. Hand excavated units were then placed between the trenches, and around earlier excavations, in order to also look for *in situ* deposits and verify the results of previous investigators. Only one area of the site was found to be relatively intact: the southeastern corner of the parcel characterized by whole shell deposits evidently in a subsurface depression; this was in stark contrast to the highly-fragmented shell over the remainder of the property. Excavation included an additional backhoe trench and a series of hand units, eventually linked together to provide a unit block in order to determine if the depression were a natural swale or of cultural origin. The excavations showed that cultural materials within the depression were relatively intact and that the depression extended well below the successive plowzones, providing intact stratigraphy disturbed only by rodent runs. The excavations also resulted in the ability to reconstruct spatially distinct cultural activities within the feature and determined that the depression was a prehistoric residential housepit.

Table 5 below provides a summary of the distribution of cultural materials within and outside the unit block by units and/or by augers, trenches, and units. The distribution shows that over two-thirds of the historic materials are outside the unit block, but conversely, over three-quarters and up to 95 percent of the prehistoric materials were recovered within the unit block excavation. This data strongly indicates that the only intact, undisturbed cultural resource on ORA-86 consisted of a single residential structure situated on the southeast section of the site overlooking Bolsa Bay.

Table 5. Distribution of Cultural Materials Inside and Outside the Unit Block on CA-ORA-86.

Material Type	Only Units		Units, Trenches and Augers	
	% of Material Inside the Unit Block	% of Material Outside the Unit Block	% of Material Inside the Unit Block	% of Material Outside the Unit Block
Historic Material	41%	59%	31%	69%
Prehistoric Artifacts	83%	17%	78%	22%
Debitage	84%	16%	56%	44%
Faunal	96%	4%	95%	5%
Shell	95%	5%	94%	6%

No additional sediments were found that contained intact or even relatively intact, deposits, verifying earlier conclusions by Eberhart in 1966 and ARI in 1973 that the majority of the site lacked integrity and was highly disturbed. No additional evidence of human remains were located beyond the human remains found by SRS in 1999 within Bolsa Chica Road. It was definitively shown that only the housepit in the southeastern portion of the property had survived the decades of disturbance on the property and was the only intact portion of the site.

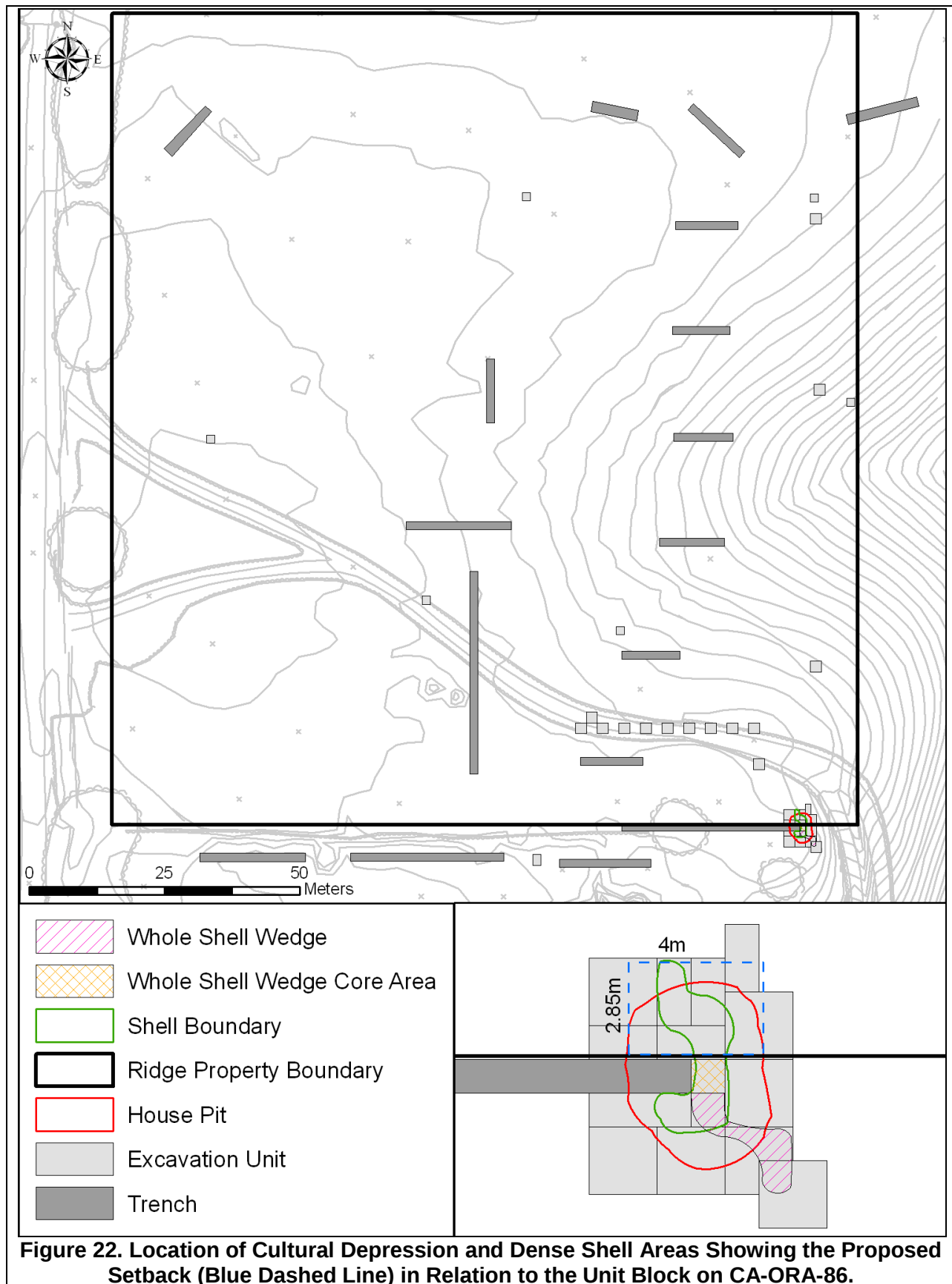
The program was directed and reviewed by Coastal Commission-appointed peer reviewers. Peer Reviewers Dr. Hank Koerper and Prof. Paul Langenwaller were on site during the investigations and Drs. Roger Mason and Paul Chace were frequent visitors and advisors. In addition, Native tribal groups were represented daily by monitors Joyce Perry (Juaneño) and Robert Dorame (Gabrielino), who reported site activities to their councils and the Native American Heritage Commission. All parties approved the scope and duration of the work, and agreed with conclusions reached by the 2001 SRS investigators.

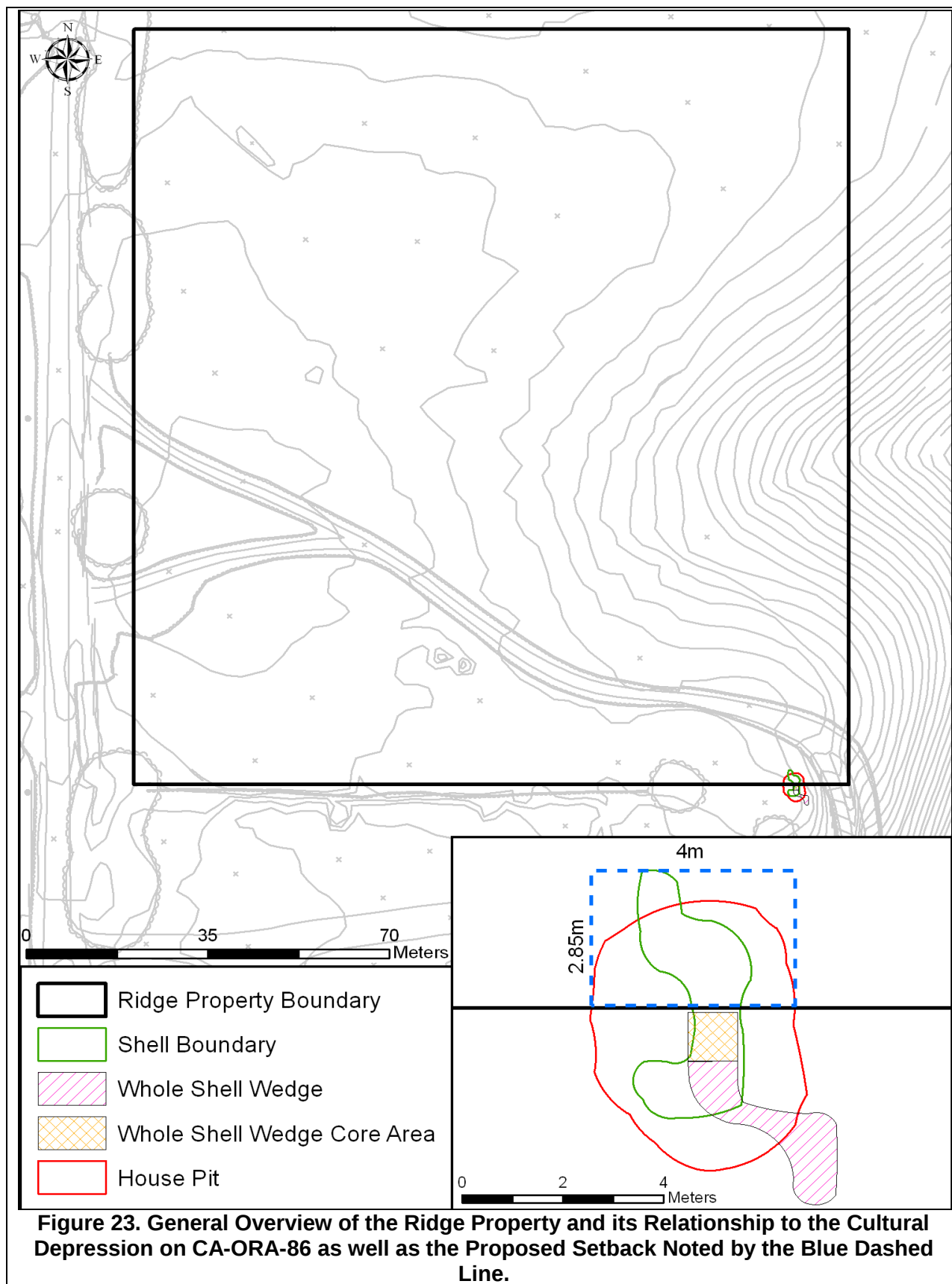
In accordance with CCC requirements, data from these investigations, and all archival information, artifacts, and ecofacts collected from the site are in the process of transfer to a certified institution. In this case, the Cooper Center and California State University Fullerton have agreed to accept all SRS archives from Bolsa Chica investigations including those from ORA-86.

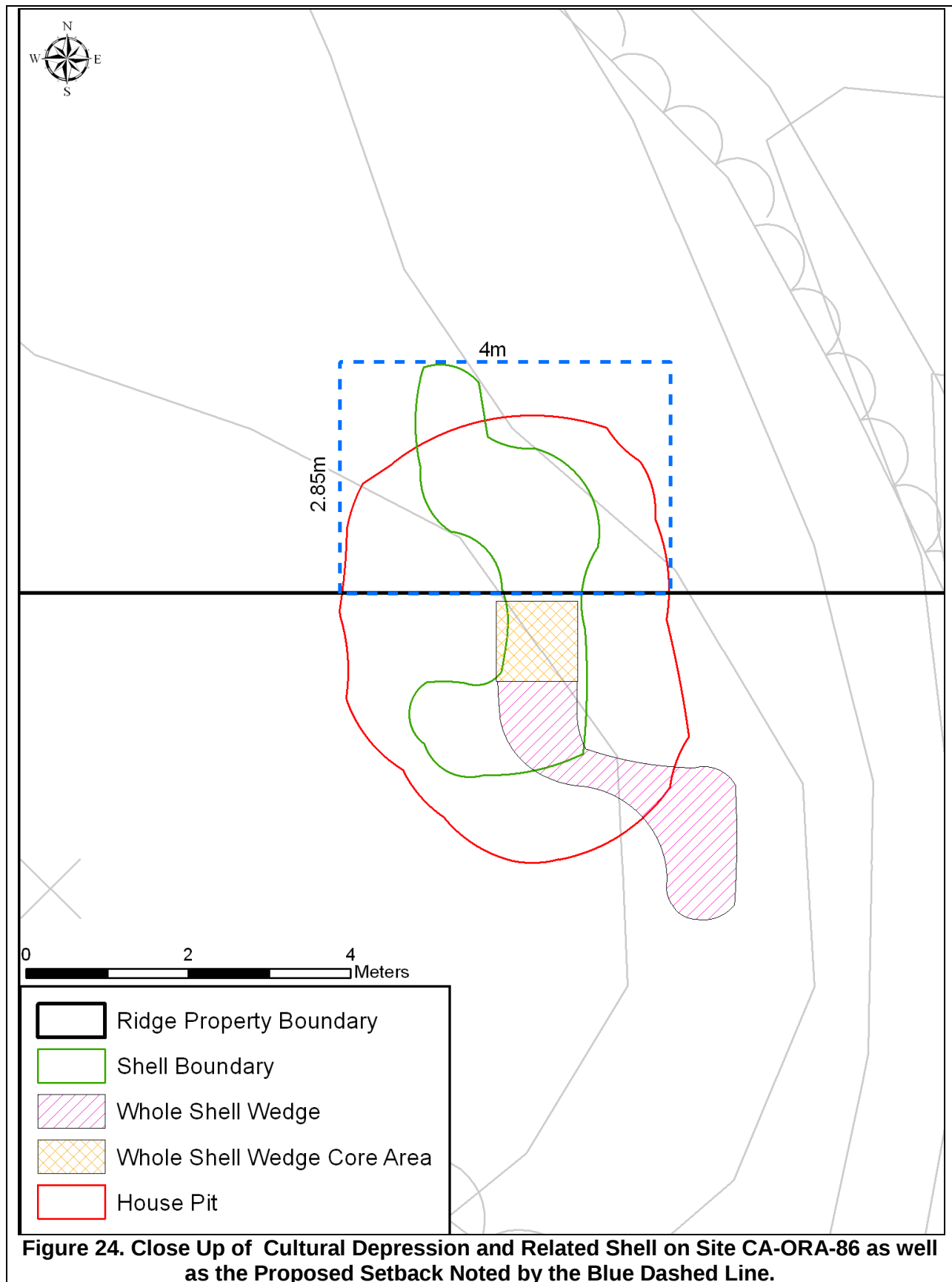
PROPOSED CULTURAL RESOURCE SETBACK

The 2001 excavations on The Ridge property identified a single area of potentially significant resources based on stratigraphic integrity, shell density, shell condition, artifact recovery, and debitage distribution. This area is referred to as a “cultural depression” located in the southeast corner of The Ridge property. The attached exhibits (Figures 22, 23, 24) present a proposed “setback” from the “cultural depression” on The Ridge.

The setback is based on data collected from the 2001 excavations. As shown on the figures, the setback would set aside the entire cultural depression area, as well as the northerly extension of where shell material was uncovered. As noted in the 2013 Archaeological Abstract, all of the artifacts uncovered during the excavations have been removed. The proposed setback (the blue hashed line) allows for the protection of the area in which the cultural depression was identified, and provides a setback from the area in which the highest concentration of whole shell was discovered.







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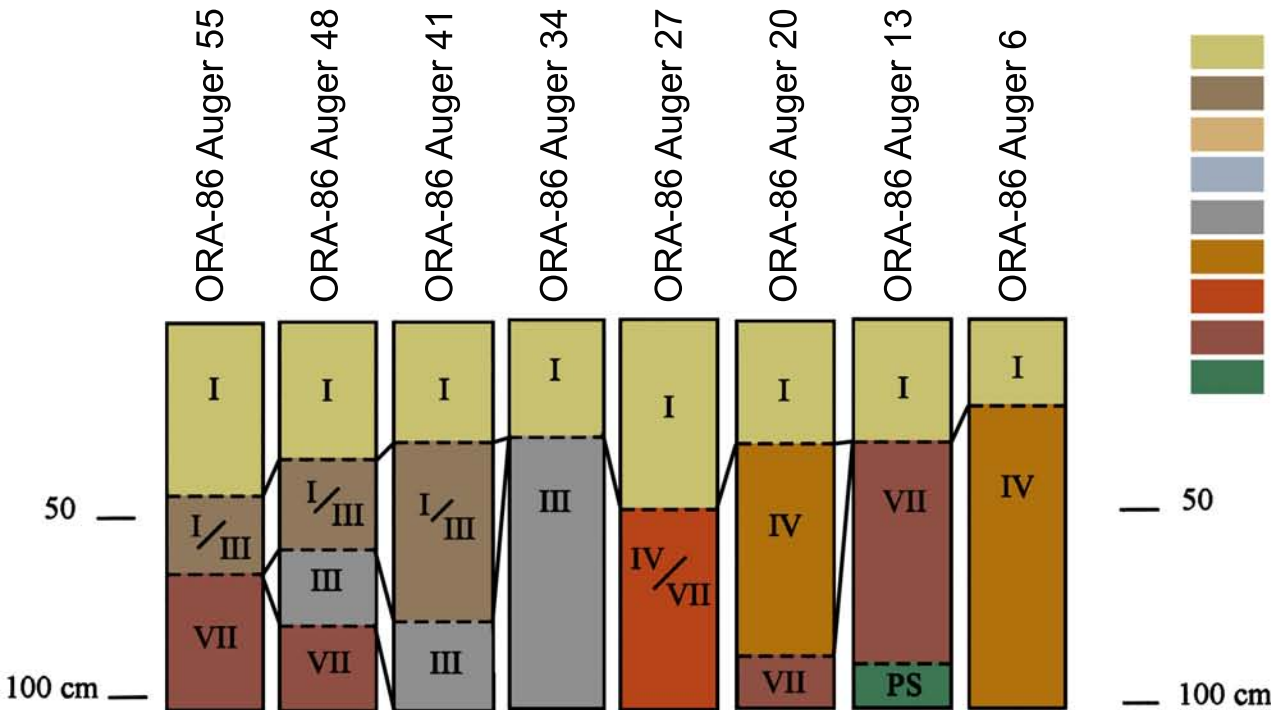
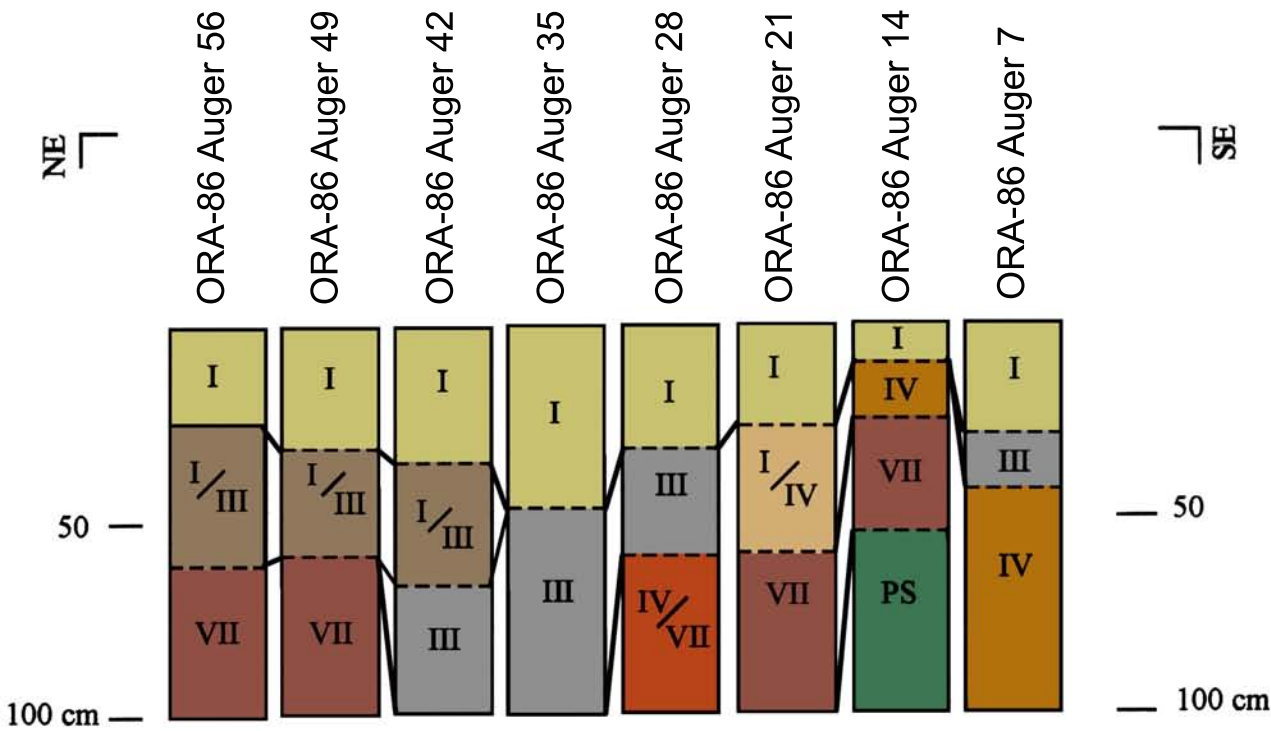
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APPENDIX A.
Detailed Stratigraphic Profiles for Selected Augers, Trenches and Units on CA-
ORA-86.

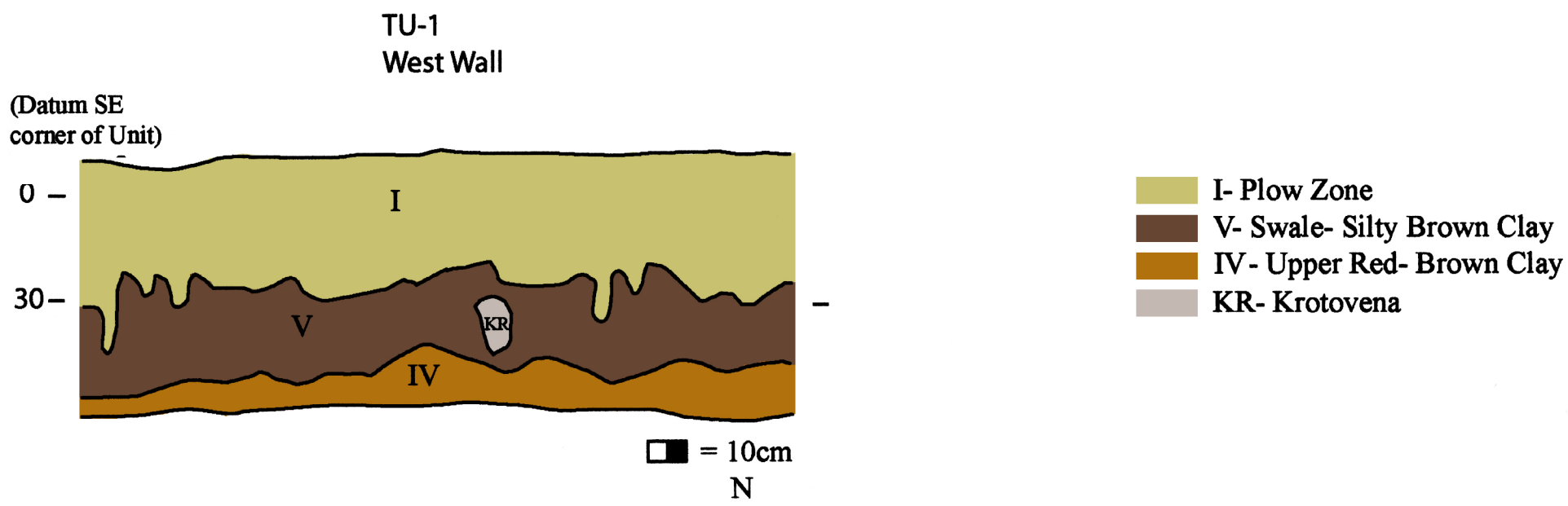
ORA-86
Auger Soil Profiles
East Edge of Site



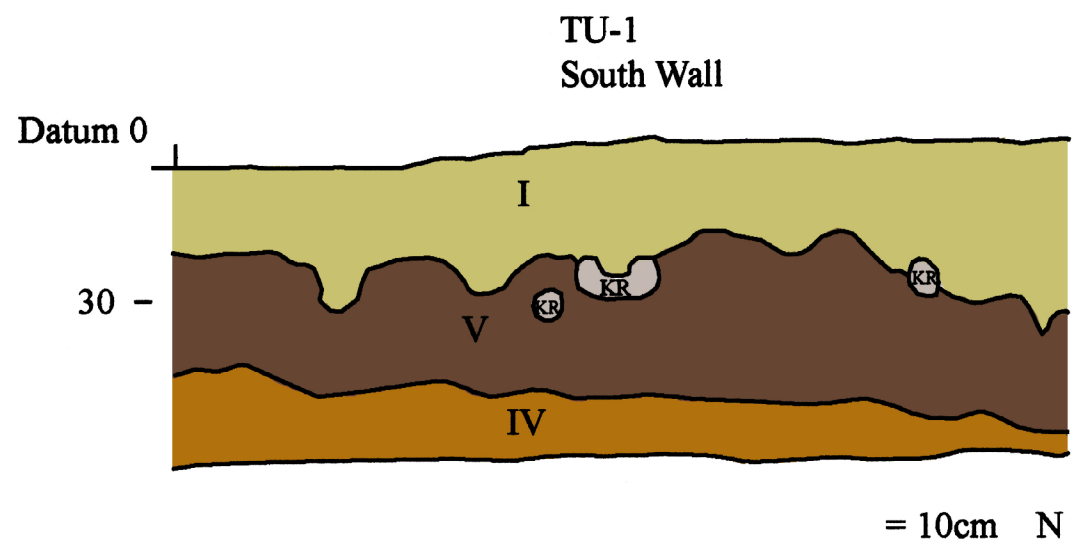
- I - Plow Zone
- I/III - Plow Zone/Beige Silty Clay
- I/IV - Plow Zone/Upper Red-Brown Clay
- II - Midden (absent from soils profiles)
- III - Light/Beige Silty Clay
- IV - Upper Red-Brown Clay
- IV/VII - Upper and Lower Red-Brown Clay
- VII - Lower Red-Brown Clay
- PS - Pleistocene Sand

N □ = 10 cm

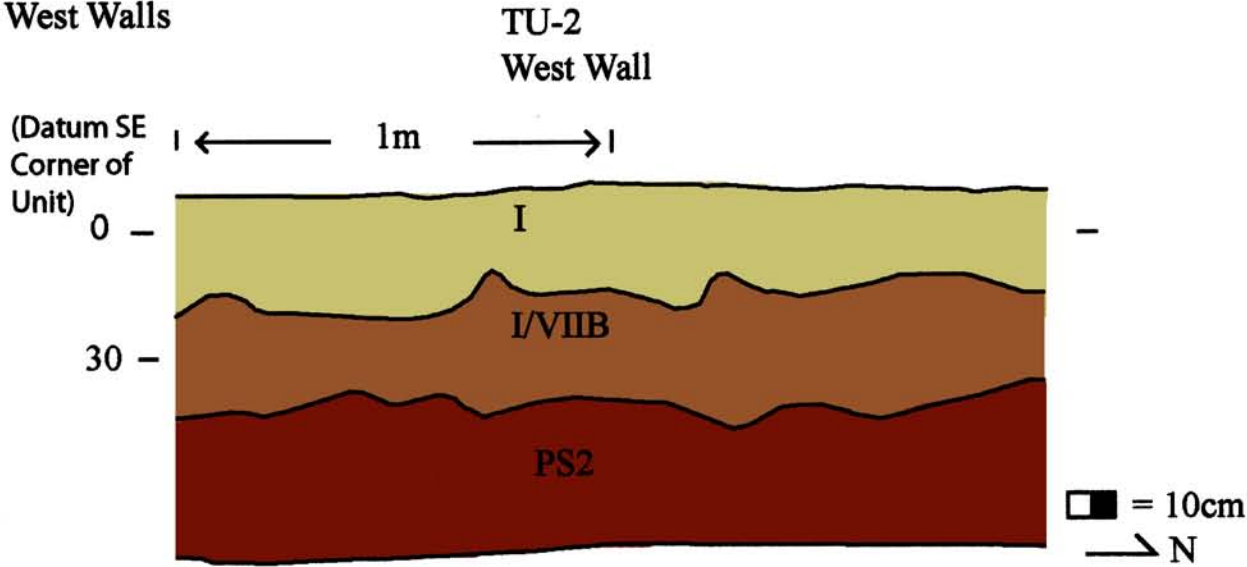
ORA- 86
Test Units 1&2
West Walls



ORA-86
Test Units 1&2
South Walls

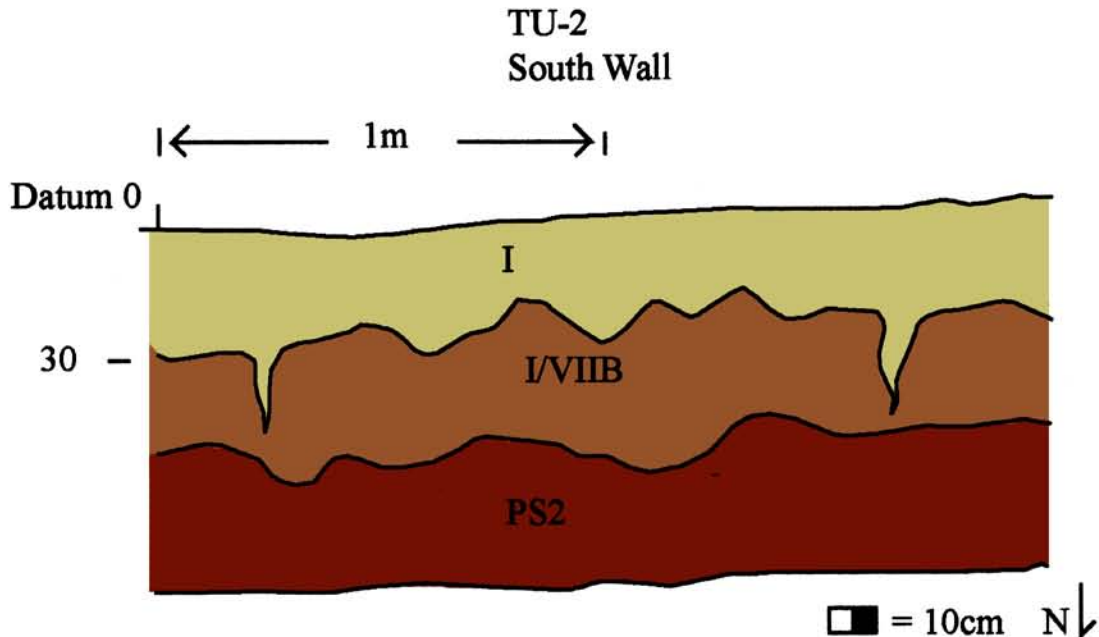


ORA- 86
Test Units 1&2
West Walls



- I- Plow Zone
- I/VIIB- Plow Zone/ Lower Brown Clay
- PS2- Red- Brown Pleistone Sand

ORA-86
Test Units 1&2
South Walls



ORA-86
Test Units 3&4
North Walls
Depression Feature I

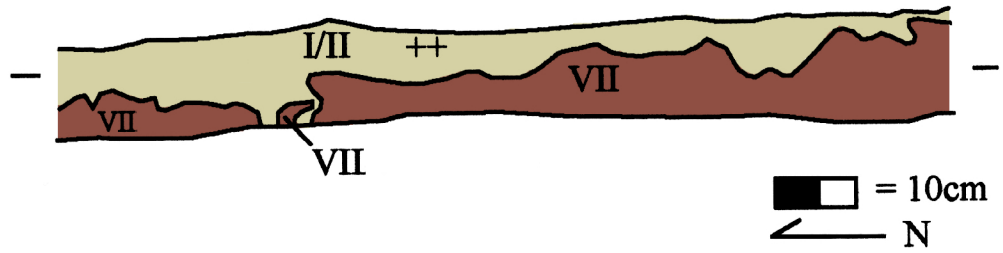
TU-3
North Wall
(Datum SW
Corner of TU-4)



ORA-86
Test Units 3&4
East Wall
Depression Feature

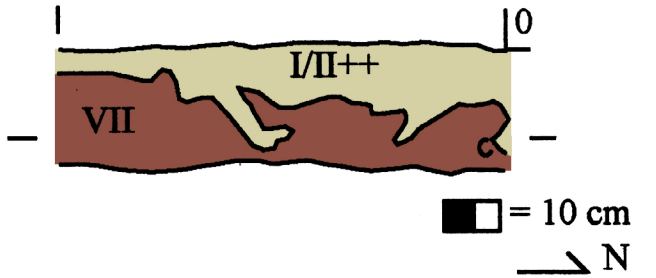
(Datum SW
corner of TU-4)

TU-3
East Wall



ORA-86
Test Units 3&4
West Walls
Depression Feature

TU-3
West Wall
Datum 0



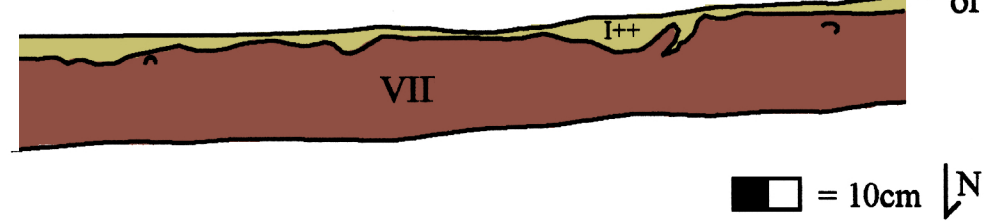
- I - Plow Zone
- I/II- Plow Zone/ Midden
- III - Gray
- VII - Lower Red - Brown Clay
- ++ - Moderate to Heavy Shell
- ☉ - Shell

ORA-86
Test Units 3 & 4
South Walls
Depression Feature

TU-3
South Wall

1m

(Datum SW
of TU-4)

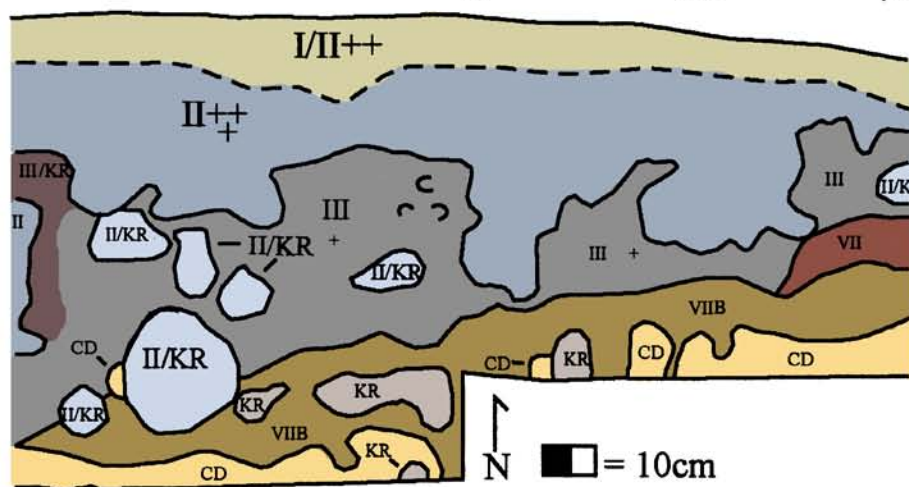


- I/II- Plow Zone/ Midden
- II- Midden
- II/KR- Midden soil w/in Krotovena
- III - Gray
- III/KR- Gray soil w/in Krotovena
- VII - Lower Red - Brown clay
- VIIB- Gray- Brown sandy clay
- CD- Calcium Deposits
- KR- Krotovena
- + - Light Shell
- ++ - Moderate to Heavy shell, fragmented
- +++ - Heavy shell, whole, fragmented
- Shell

(Datum SW of
└ corner of Unit)

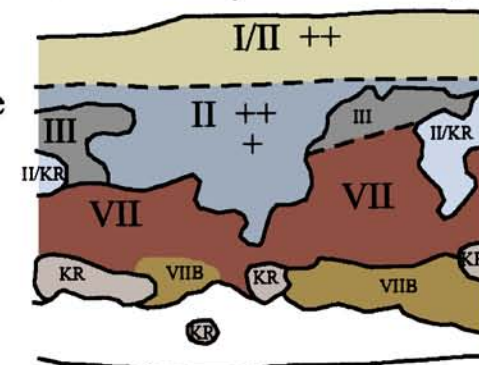
TU-4
North Wall
← 1m →

ORA-86
Test Units 3&4
North Walls
Depression Feature



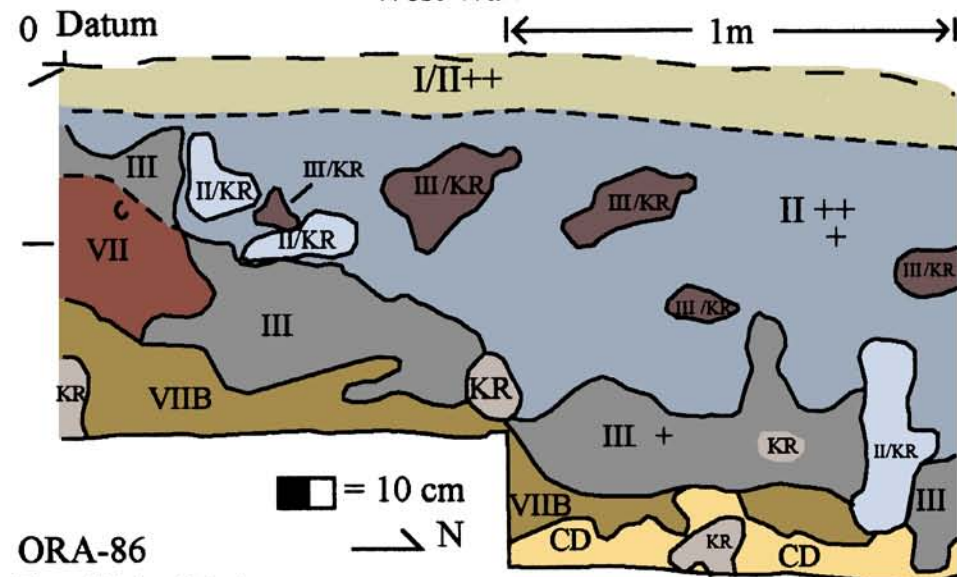
TU-4
East Wall
(Datum SW
corner of TU-4)

ORA-86
Test Units 3&4
East Wall
Depression Feature



10cm
N

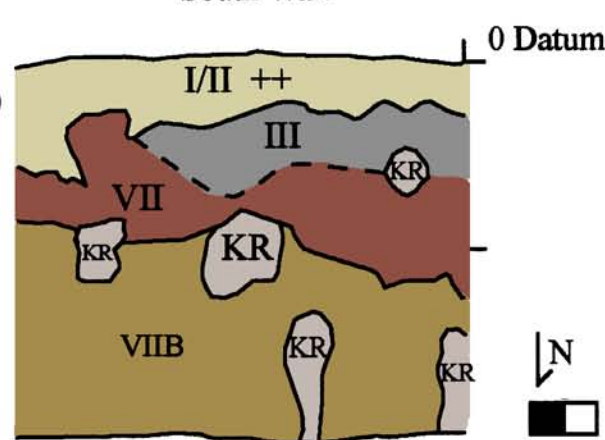
TU-4
West Wall



ORA-86
Test Units 3&4
West Walls
Depression Feature

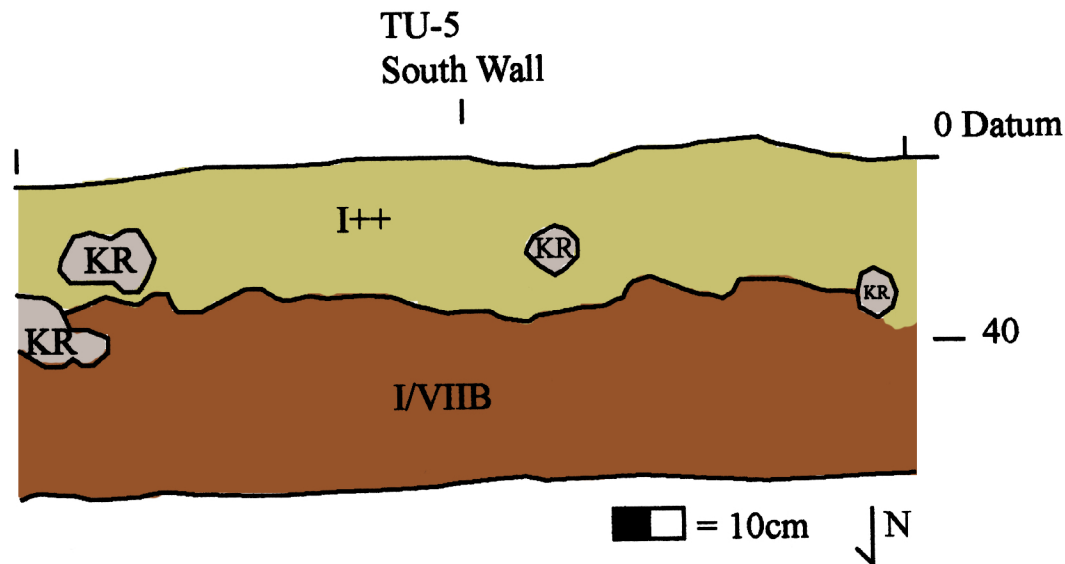
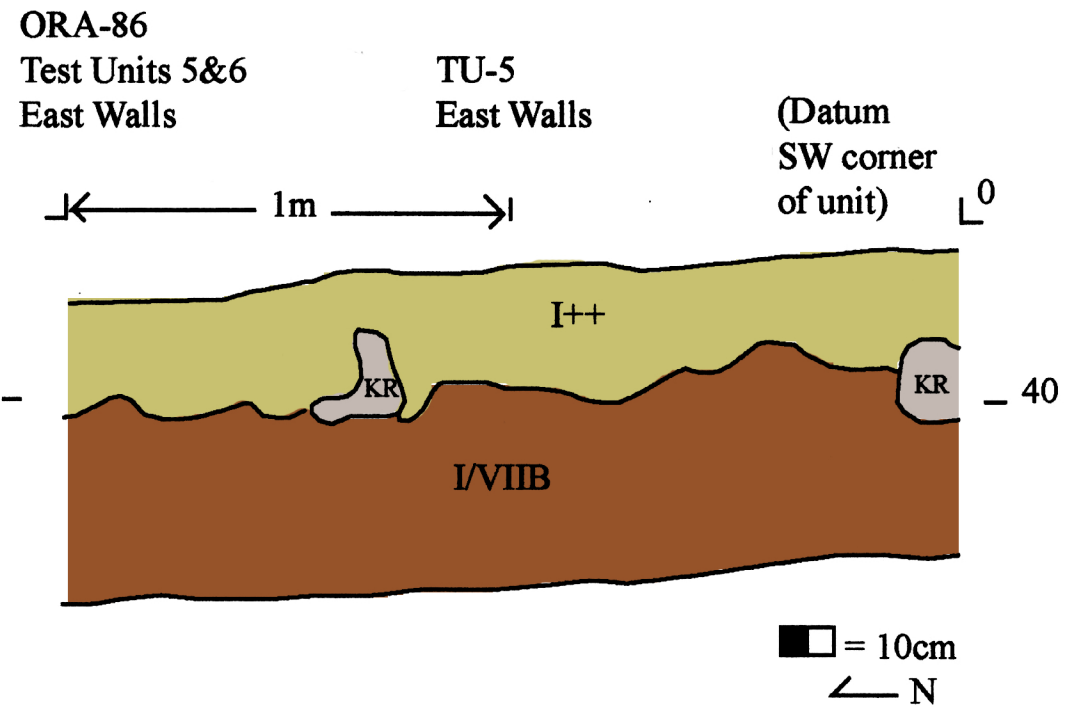
TU-4
South Wall

ORA-86
Test Units 3 & 4
South Walls
Depression Feature



10cm
N

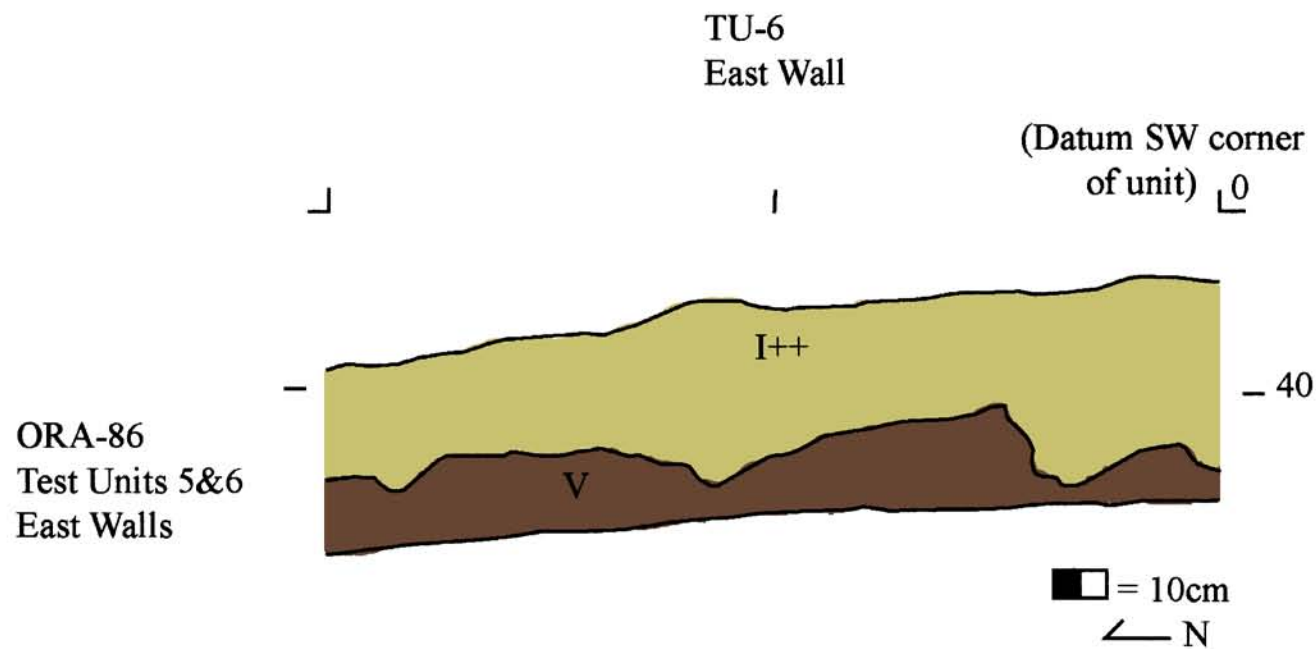
- I- Plow Zone
- I/VIIB- Plow Zone/ Lower Red- Brown Clay
- KR- Krotovena
- ++ - Moderate Shell, fragmented



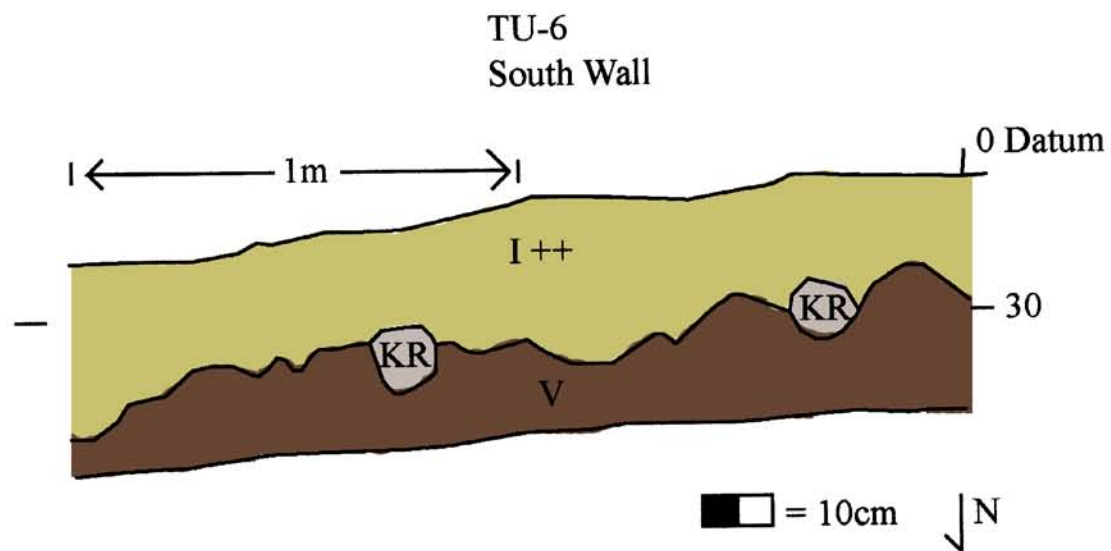
ORA-86
Test Units 5&6
South Walls

5-22-01
D. Amerine, S. Lippman

- I- Plow Zone
- V- Swale
- KR- Krotovena
- ++ - Moderate Shell, fragmented



ORA-86
Test Units 5&6
East Walls



ORA-86
Test Units 5&6
South Walls

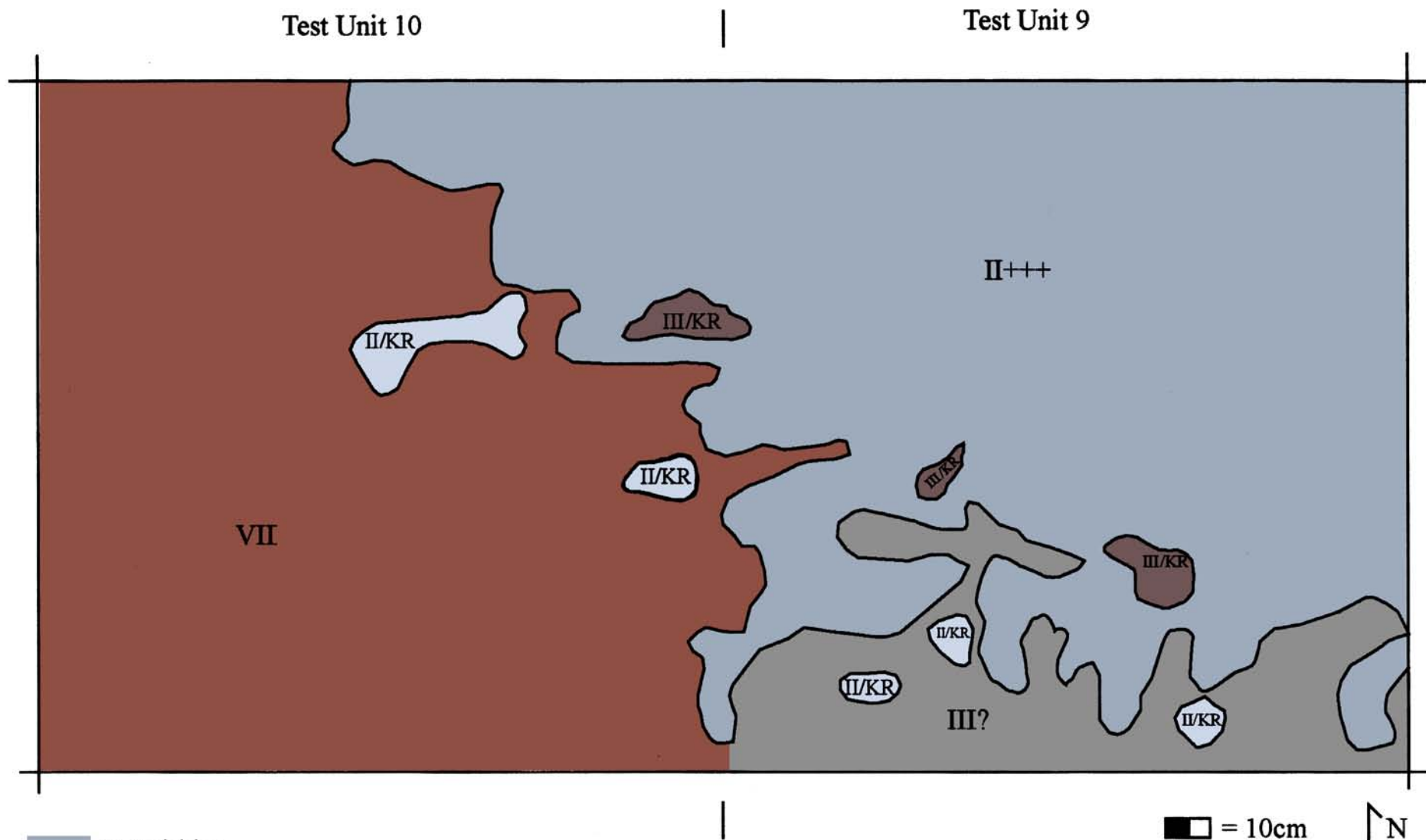
5-22-01
D. Amerine, S. Lippman

TU-8
East Wall

Figure 1 is a detailed geological map of the upper 10 cm of a soil profile. The map shows various soil horizons and their chemical compositions. The top layer is labeled 'metal' and 'nail'. The horizons are color-coded: brown for I/VIIIB+, VII, and VII +; light blue for II/KR; tan for KR; olive green for VIIIB; and yellow for CD. The map includes a scale bar indicating 10 cm and a north arrow pointing upwards.

- 6-4-01 D. Amerine, C. Hunt

ORA-86
 Test Units 9 & 10
 Depression Feature
 Aerial View

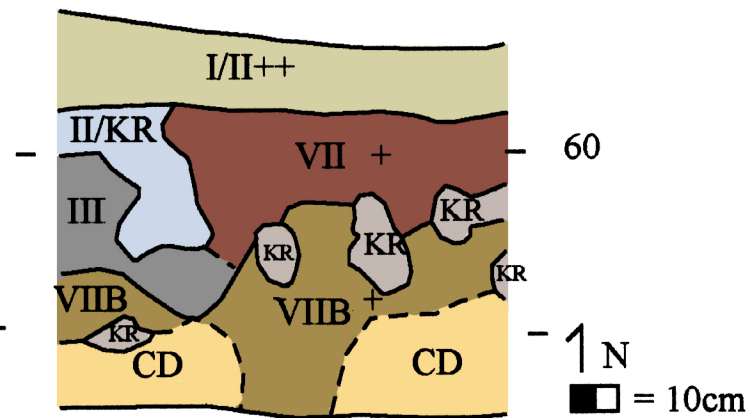


- II- Midden
- II/KR- Midden Soil w/in Krotovena
- III- Gray
- III/KR- Gray Soil w/in Krotovena
- VII- Lower Red- Brown Clay
- +++ - Heavy Shell, whole& frag.

5-22-01
 D. Amerine, S. Lippman

TU-11 (Datum 0)
North Wall SW TU-8)

ORA-86
Test Unit 11
North Wall

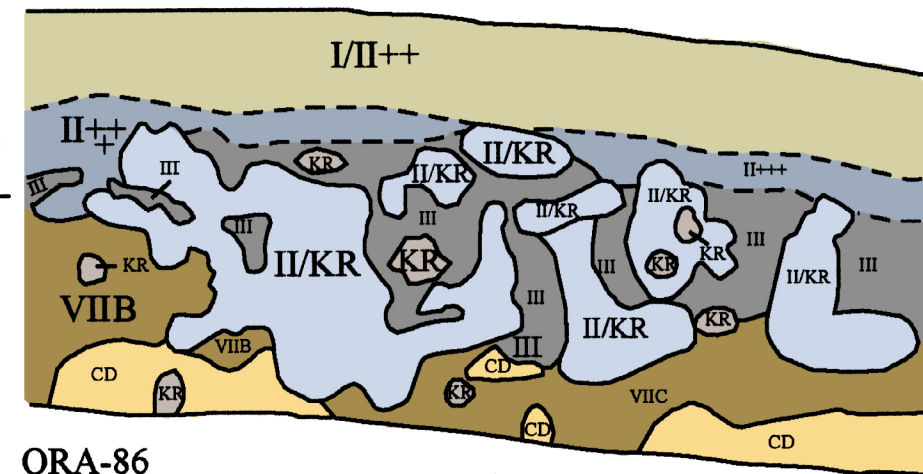


TU-11
West Wall

(Datum SW corner
of TU-8)

0

1m



ORA-86
Test Unit 11
West Wall

10cm

N

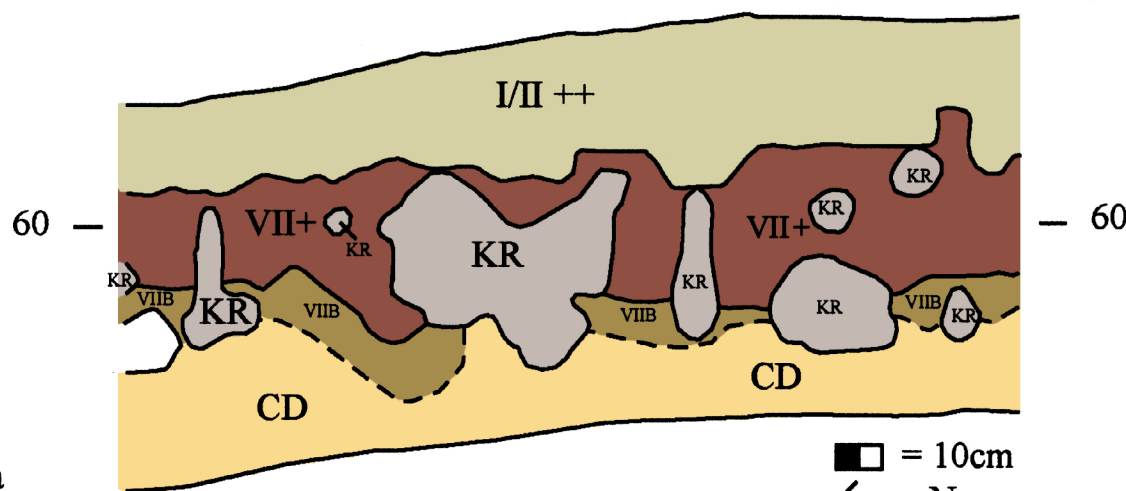
- I/II- Plow Zone/ Midden
- II- Midden
- II/KR- Midden Soil w/in Krotovena
- III- Gray
- VII - Lower Red- Brown Clay
- VIIB- Gray- Brown Clay
- CD- Calcium Deposit
- KR- Krotovena

++ - Moderate to heavy shell, fragmented

+++ - Heavy shell, whole & fragmented

TU-11
East Wall

0 (Datum SW TU-8)



ORA-86
Test Unit 11
East Wall

10cm

N

ORA-86

Trench 1 - 3 Profiles

South Walls

Trench 1
South Wall

West

0 Datum

60-

- 60

10cm

N

- I - Plow Zone
- I/V- Plow Zone/ Swale
- IIIA- Beige
- IV- Upper Red-Brown Clay
- V- Swale
- VIIB- Lower Red-Brown Clay
- KR - Krotovina
- ☞☞☞ - Shell

4 - 11-01
D.Amerine

ORA-86

Trench 1 - 3 Profiles

South Walls

East

West

Trench 2
South Wall

60 -

0 Datum

- 60

- I - Plow Zone
- I/V - Plow Zone/ Swale
- IV - Upper Red - Brown Clay
- VII - Lower Red - Brown Clay
- KR - Krotovina
-  - Shell

 = 10cm

N
↓

4 - 11-01
D.Amerine

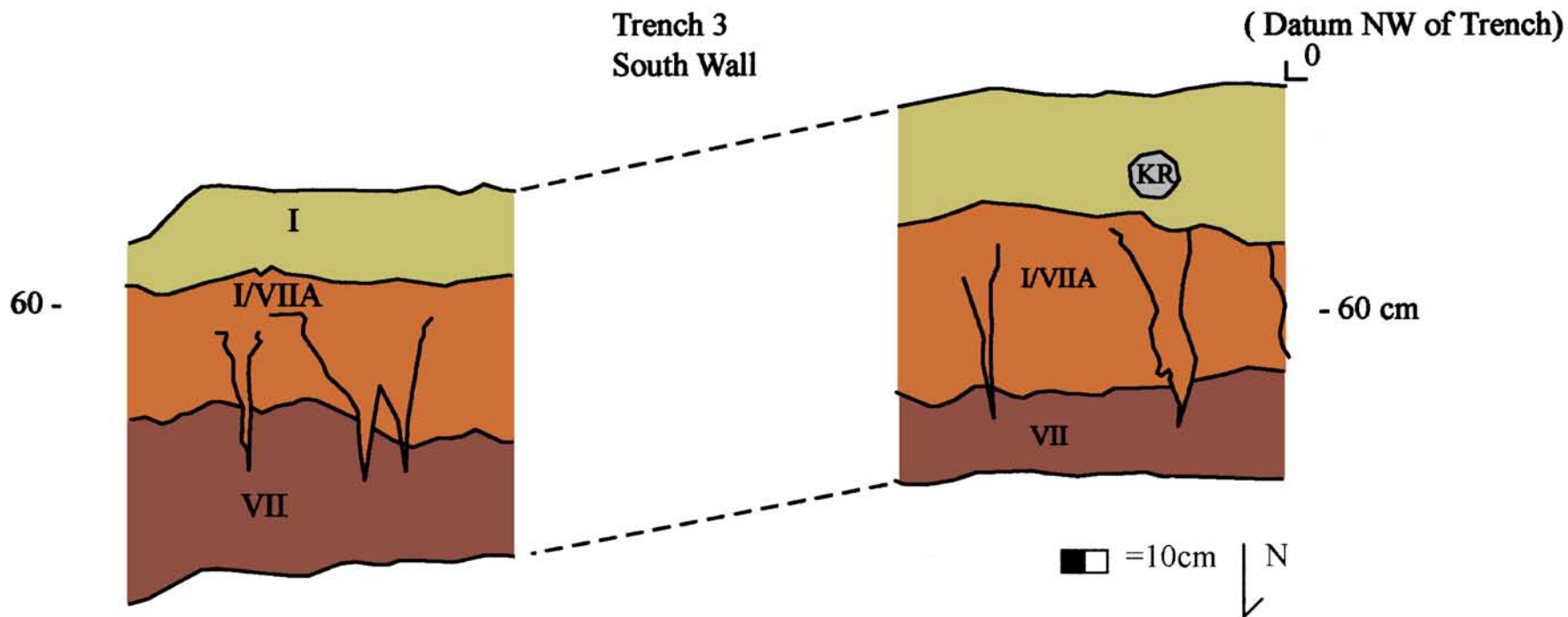
East

ORA-86

Trench 1 - 3 Profiles

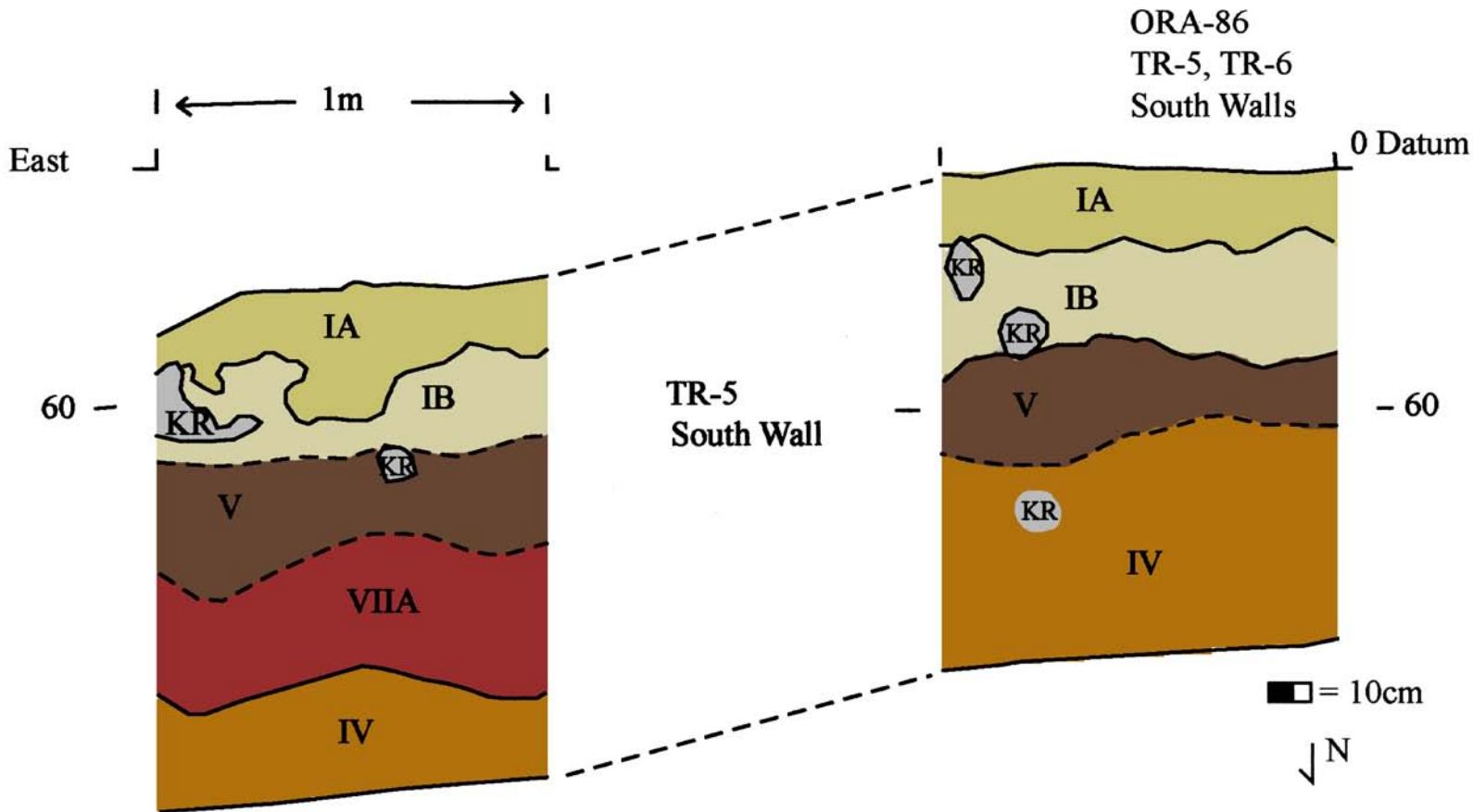
South Walls

West



- I - Plow Zone
- I/VIIA - Plow Zone/ Red Brown Clay
- VII - Lower Red - Brown Clay
- KR - Krotovina

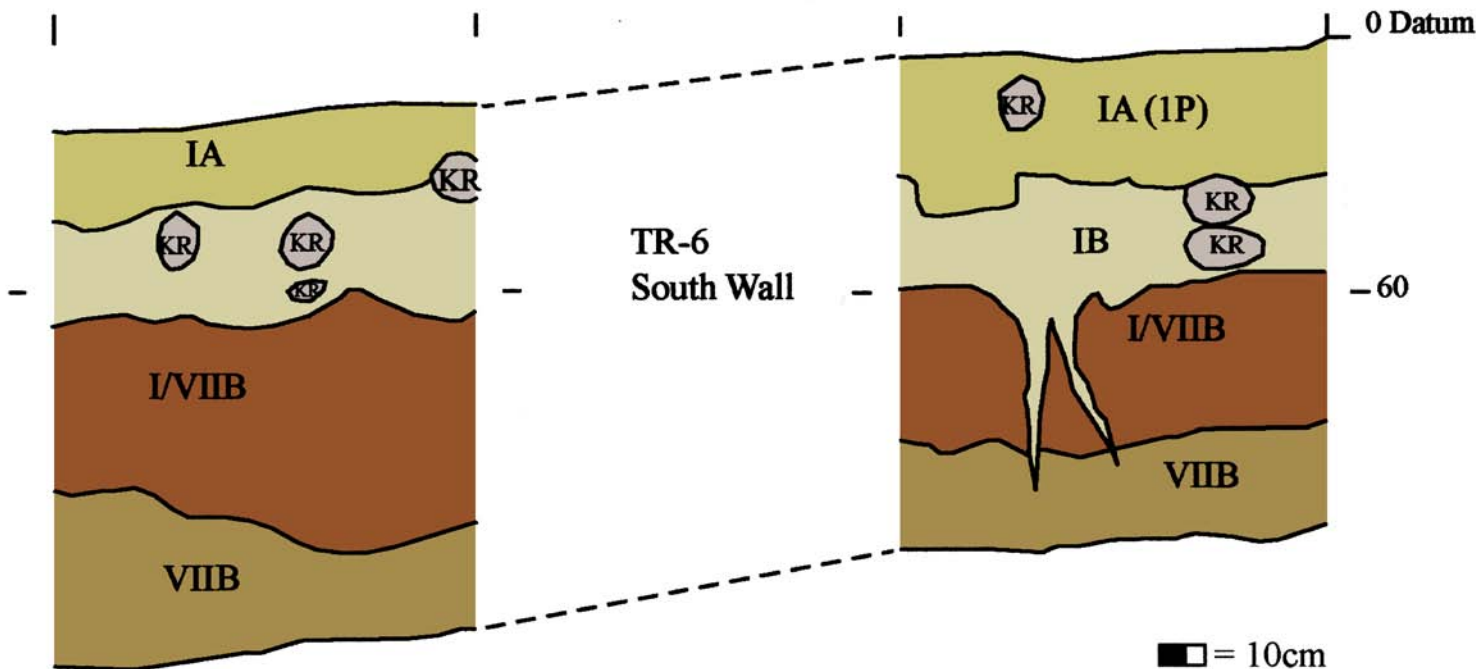
4 - 11-01
D.Amerine



5/2/01

D. Amerine, C. Strete, R. Thanki

ORA-86
TR-5, TR-6
South Walls



- IA- Upper Plow Zone / IP- Import Peat
- IB- Lower Plow Zone
- I/VIIIB- Plow Zone / Lower Brown Clay
- VIIIB- Gray- Brown Sandy Clay
- KR- Krotovena

5/2/01

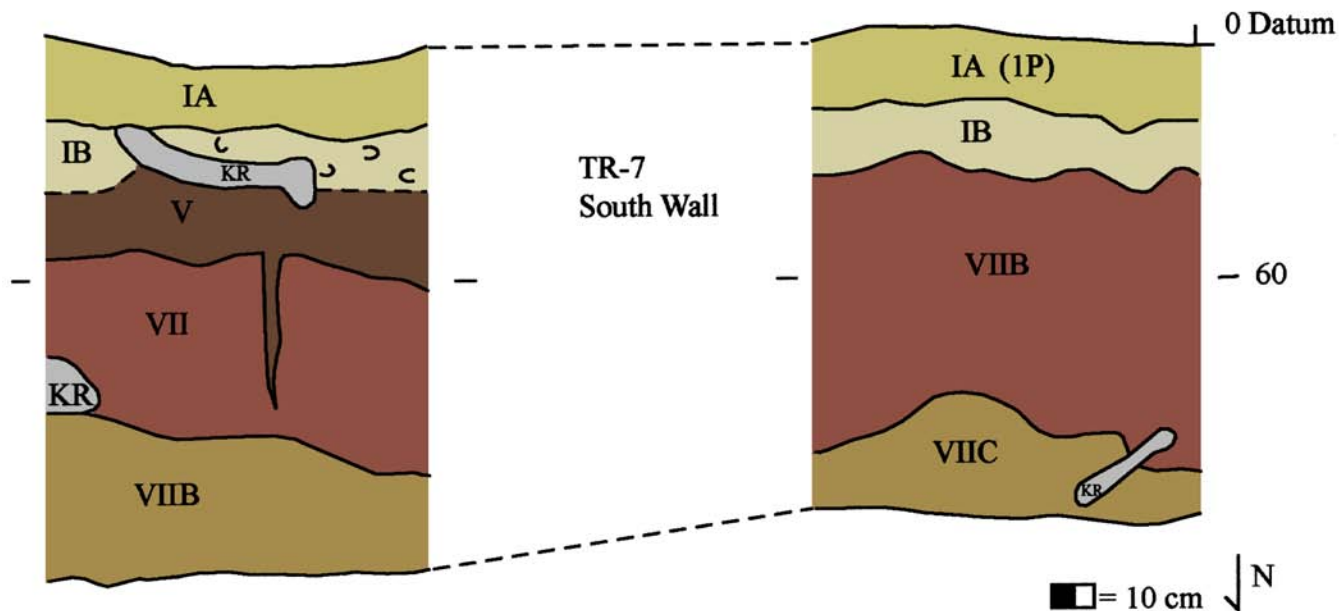
D. Amerine, C. Strete, R. Thanki

ORA-86
TR-7
South Wall

East

West

1m



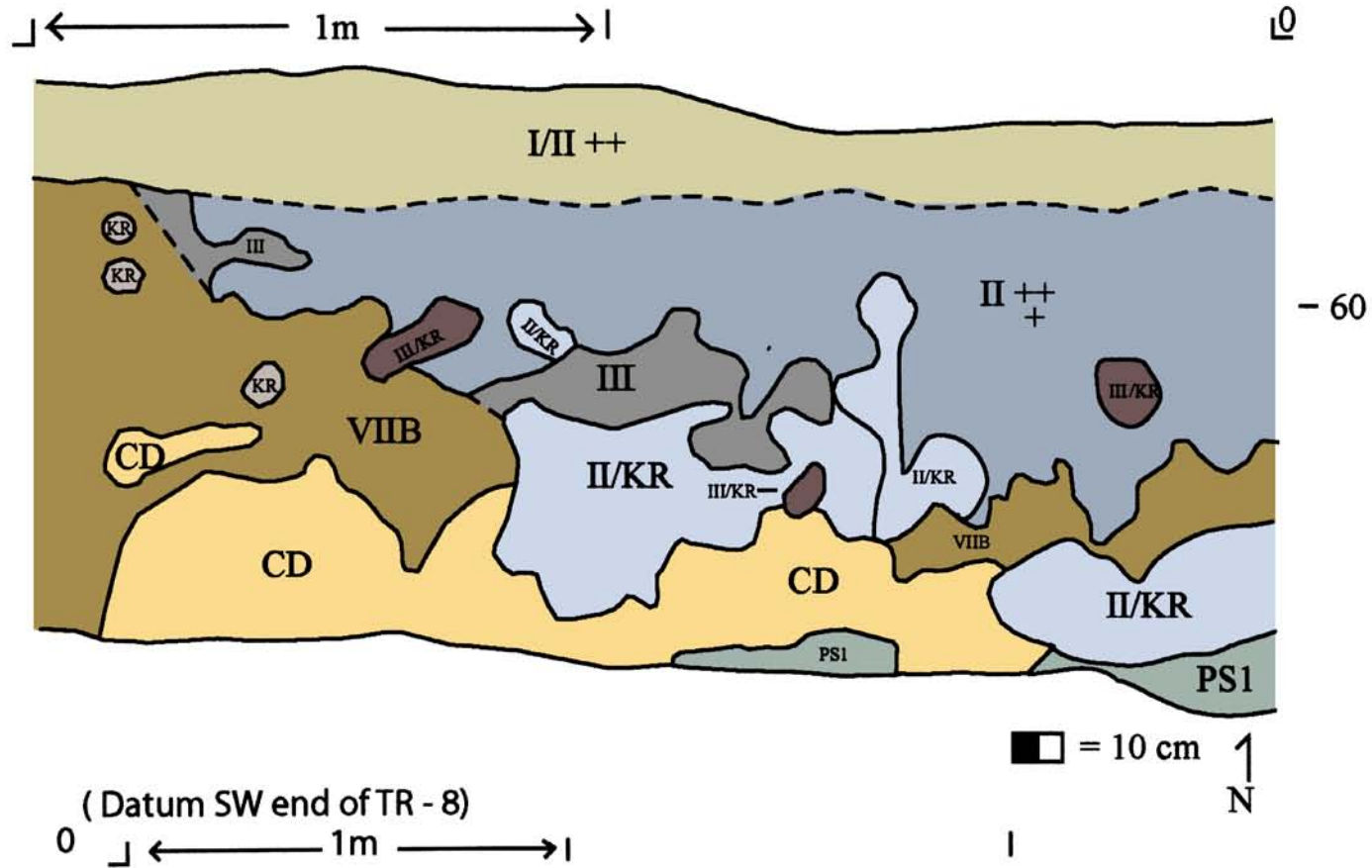
- IA - Upper Plow Zone IA - Import Peat
- IB - Lower Plow Zone
- V - Swale (Silty Brown Clay)
- VII - Lower Red - Brown Clay
- VIIB - Gray - Brown Sandy Clay
- KR - Krotovena
- ☞ - Shell

5/2/01
D.Amerine,C. Strete

ORA-86
TRENCH 8
North Wall - East End
Depression feature
5-22-01
S. Lippman, D. Amerine

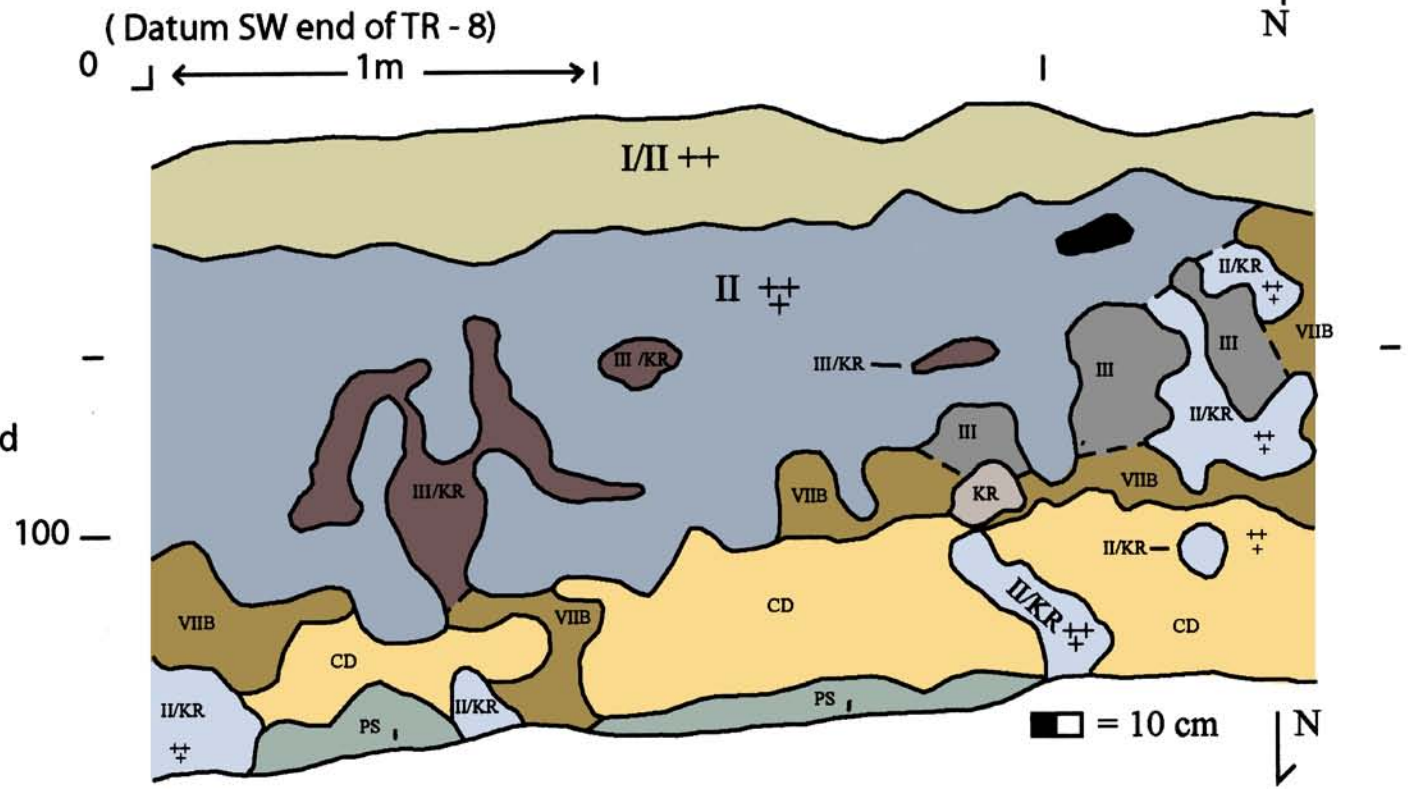
TR-8
North Wall- East

- I/II - Plow Zone/Midden
- II - Midden
- II/KR - Midden soil w/ in Krotovena
- III - Gray
- III/KR - Gray soil w/ in Krotovena
- VIIB - Gray - Brown Sandy clay
- CD - Calcium Deposit
- PS1 - Gray Pleistone Sand
- KR - Krotovena
- ++ - Moderate Shell, fragmented
- +++ - Heavey shell, whole & frag.
- + - Schist Metate fragment



TR - 8
South Wall - East End

CA - ORA 86
Trench 8
South wall - East End
Depression Feature
5-9-01/ 5-24-01
S.Cyphers, R. Thanki, D.Amerine



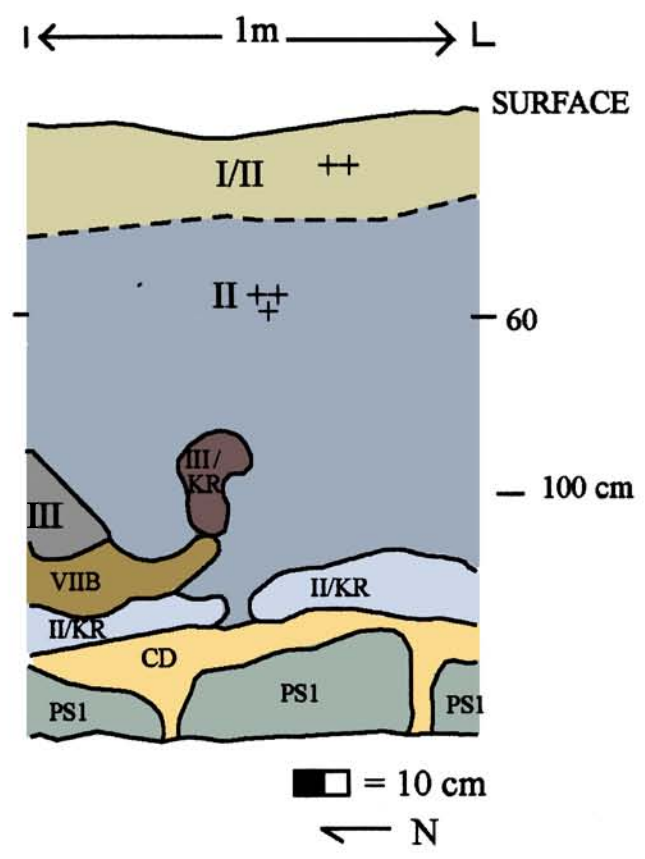
- I - Plow Zone
- I/ II - Plow Zone / Midden
- II - Midden
- II/ KR - Midden Soil w/ in Krotovena
- III - Gray
- III/ KR - Gray Soil w/ in Krotovena
- IV - Upper Red- Brown Clay
- I/VIIA - Plow Zone/ Red Brown Clay

- VII - Lower Red- Brown Clay
- VIIIB - Gray- Brown Sandy Clay
- CD - Calcium Deposit
- PS1 - Gray Pleistone Sand
- PS2 - Red - Brown Pleistone Sand
- Kr - Krotovena
- ++ - Moderate to Heavy Shell, frag.
- +++ - Heavy Shell, whole& frag

CA-ORA-86
TRENCH 8
East Wall
Depression Feature

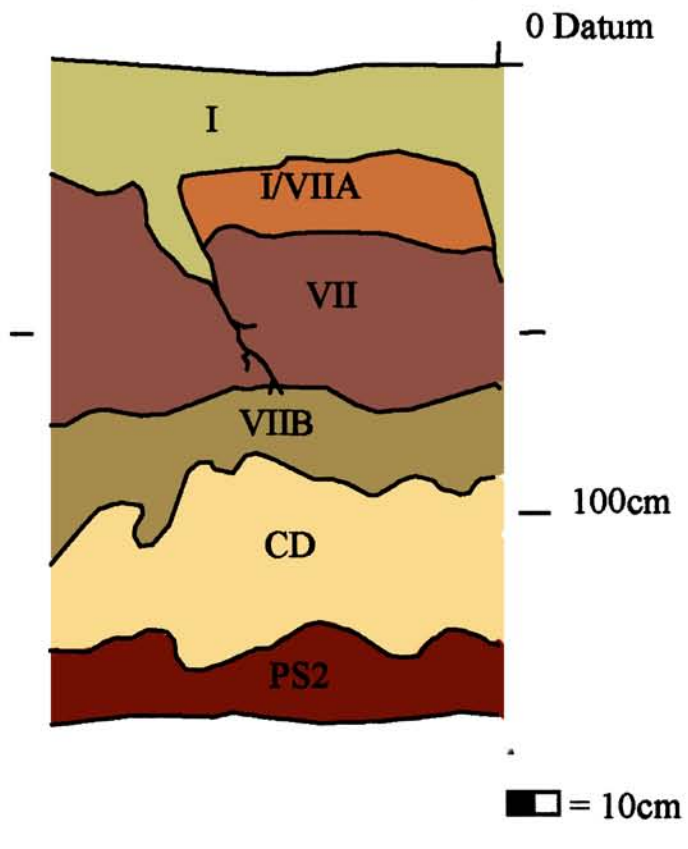
TR - 8
East Wall

(Datum SW corner of TR-8)

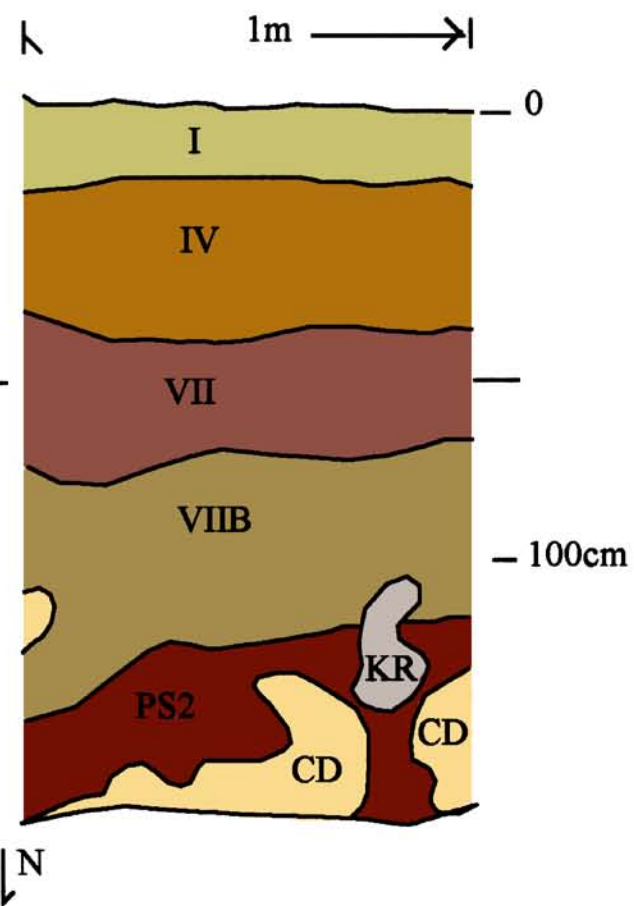


CA- ORA- 86
TRENCH 8
South Wall
West & Central Segments

TR-8
South Wall
West End



TR-8
South Wall
Central



- ORA-86
TU-16
Depression Feature
Rock Feature 1
West Central 20-40cm

APPENDIX B.
**Detailed Listing of Artifacts and Ecofacts from SRS 2001 Excavations on CA-
ORA-86.**

SUMMARY LISTING OF ARTIFACTS AND ECOFACTS FROM SRS 2001 EXCAVATIONS ON CA-ORA-86.

Unit/Level	asphalt (grams)	concrete	brick	glass	metal	plastic	pellet	total:historics	slag (grams)	bead	awl	proj. pt.	debitage (gr)	groundstone	manuport	FAR	charcoal (gr)	asphaltum	shell (grams)	bone (gr)
UNITS																				
U1(10)		24	116	4						1			3.9			1			5883.30	5.35
U1(20)		28	47	11									8.1						9113.70	16.29
U1(30)		4	17	5						1 pendant			11.2			7			7799.80	16.14
U1(40)		8	19			1							8			7			3738.80	3.17
U1(50)				1		1							0.2				0.2		405.00	1.75
U1(60)													0.1						111.50	0.72
U1(70)																			24.00	
totals: U1		64	200	20	1	1	286			1 bead/1 pendant			31.5			15	0.2		27076.10	43.42
U2(10)		12	2	2									1.9						1778.20	0.61
U2(20)		1	47	2	1				15.1	1		1	1.4	1			0.1		2242.70	1.84
U2(30)			4	2					25.0				0.3				0.1		1070.30	0.69
U2(40)													0.1						275.20	1.26
U2(50)													0						97.10	0
U2(60)													0						83.20	0.11
U2(70)													1.5							
totals: U2		1	63	6	3		73			1 bead		1 proj. pt.	5.2	1			0.2		5546.70	4.51
U3(10)			26	159	15								1.0		3		0.8		10912.00	9.39
U3(20)			7	3	4						1		0.2						8670.20	13.84
U3(30)										1			0.1				0.1		1501.40	6.71
U3(40)													0.2						2148.70	6.87
U3(50)																	0.1		1212.00	4.62
totals: U3			33	162	19		214			1 bead	1 awl		1.5		3		1.0		24444.30	41.43
U4(10)		55	267	6						1			1.4				1.2		5735.50	13.05
U4(20)		4	36	3						1			4.5		1	5	0.4		21414.20	41.79
U4(30)													0.5		2		0.6		17421.10	47.7
U4(40)		1	1										15.9		1	1	0.2		13615.70	63.33
U4(50)			1								1		0.3		1		0.2		9865.60	28.15
U4(60)			1										0.8		1		1.6		3793.20	9.85
U4(70)													0.6				0.2		2224.57	1.91
U4(80)													0.6				2.0		1426.09	4.66
U4(90)													0.1						376.92	2.81
U4(100)																	Charcoal Present		1426.09	1.53
totals: U4		60	306	9			375			2 beads	1 awl		24.7		6	6	6.4		77298.97	214.78

SUMMARY LISTING OF ARTIFACTS AND ECOFACTS FROM SRS 2001 EXCAVATIONS ON CA-ORA-86.

Unit/Level	asphalt (grams)	concrete	brick	glass	metal	plastic	pellet	total:historics	slag (grams)	bead	awl	proj. pt.	debitage (gr)	groundstone	manuport	FAR	charcoal (gr)	asphaltum	shell (grams)	bone (gr)
U5(10)	352	49	110	79	103	8	leather			1			8.02		2	1	0.9		4667.00	6.51
U5(20)	707	5	52	29	28								2.07				1.54		6411.30	5.6
U5(30)	21	2	12	4	12								3.39				0.57		5017.10	5.41
U5(40)	1		4	2	2										1	1			772.27	0.13
U5(50)		1	1	1									26.2				0.53		326.95	0.12
U5(60)																			419.08	
U5(70)																			238.90	
totals: U5	1081	57	179	115	145	8		504		1 bead			39.7		3	2	3.54		17852.60	17.77
U6(10)		5									1 awl	1 Biface	9.84		10	1	Charcoal Present	10	4570.00	2.21
U6(20)													1.83		3		Charcoal Present		2252.10	1.02
U6(30)													0.82				Charcoal Present	4	895.90	0.75
U6(40)																			0.00	
U6(50)																			130.00	0.16
U6(60)															4					
totals: U6		5						5			1	1	12.5		17	1		14	7848.00	4.14
U7(10)		2											11.6		23	1	Charcoal Present		8126.90	10.52
U7(20)									2.16	3			2.81		2	1	Charcoal Present		11961.80	24.44
U7(30)										1			2.27		1		Charcoal Present	1	22858.80	35.28
U7(40)													0.75		1		Charcoal Present		9849.90	53.68
U7(50)													0.19		3		Charcoal Present		11649.70	26.14
U7(60)													1.24		1	2			8075.30	20.69
U7(70)													2.51						6308.70	15.78
U7(80)													1.16		1		Charcoal Present		4112.80	9.87
U7(90)									6.65				0.04						7244.68	3.56
totals: U7		2						2		4 beads			22.6		32	4		1	90188.58	199.96
U8(10)		5							70.6		1 lip labret	1	7.98		12			28	6902.00	7.65
U8(20)													36.7		3				11799.00	14.2
U8(30)									0.28				5.26	1	1	8	Charcoal Present		27691.40	56.46
U8(40)													15.8		4	3	Charcoal Present		17156.20	42.31
U8(50)										1			3.4		7		Charcoal Present		15174.80	31.21
U8(60)										1			0.74				Charcoal Present		8407.80	27.58
U8(70)															2		Charcoal Present		8845.80	24.07
U8(80)													4.15						5192.60	8.44
U8(90)													0.07						3542.60	8.32
U8(100)																			0.88	
U8(110)																				
U8(120)																				
U8(130)																			6.33	
totals: U8		5						5	70.9	2 beads	1 lip labret	1	74.2	1	29	11		28	104719.41	220.24

SUMMARY LISTING OF ARTIFACTS AND ECOFACTS FROM SRS 2001 EXCAVATIONS ON CA-ORA-86.

Unit/Level	asphalt (grams)	concrete	brick	glass	metal	plastic	pellet	total:historics	slag (grams)	bead	awl	proj. pt.	debitage (gr)	groundstone	manuport	FAR	charcoal (gr)	asphaltum	shell (grams)	bone (gr)
U9(10)										1			2.89		15	12	Charcoal Present		16885.50	14.8
U9(20)													5.11		4	2			46209.30	43.23
U9(30)										1			5.35	2	3	1	Charcoal Present		31798.30	68.71
U9(40)													0.19			2			23232.40	36.04
U9(50)													2.13				Charcoal Present		15483.10	31.75
U9(60)													1.25						6102.50	15.88
totals: U9								0		2 beads			16.9	2	22	17			139711.10	210.41
U10(10)													11.4	1	6	1			15248.80	24.08
U10(20)										1			0.44			1			19919.00	26.95
U10(30)											1 biface		0.08			1	Charcoal Present		6183.90	11.31
U10(40)																			2059.80	4.67
U10(50)																				1.62
totals: U10								0		1 bead		1 biface	11.9	1	6	3			43411.5	68.63
U11(10)															4				4563.90	14
U11(20)													0.11			1			7572.70	8.76
U11(30)																			9501.10	12.57
U11(40)											1				1				8596.60	14.24
U11(50)													0.24						7081.70	13.95
U11(60)													0.02						4676.40	8.7
U11(70)													1.17						3090.90	7.7
U11(80)																			660.23	8.28
U11(90)																			244.75	0.65
totals: U11								0			1 awl		1.54		5	1			45988.28	88.85
U12(10)													2.64		6	2	Charcoal Present		9288.40	11.23
U12(20)													2.11		2				16299.20	21.04
U12(30)													3.27			1			25305.10	40.39
U12(40)													0.42						18438.00	34.92
U12(50)													1.03						20622.20	23.82
U12(60)													0.88			1			25745.40	54.93
totals: U12													10.4		8	4			115698.30	186.33
U13(10)													0.38		1	1			7550.20	7.24
U13(20)													3.95						8260.30	9.94
U13(30)													1.57			1			16583.40	18.61
U13(40)													0.22						9613.50	15.55
U13(50)															1					13.1
totals: U13								0					6.12		2				42007.4	64.44
U14(10)													2.47		3				7371.40	4.84
U14(20)										1			2.75		1				14164.50	15.19
U14(30)													0.16						13507.60	25.11

SUMMARY LISTING OF ARTIFACTS AND ECOFACTS FROM SRS 2001 EXCAVATIONS ON CA-ORA-86.

UnitLevel	asphalt (grams)	concrete	brick	glass	metal	plastic	pellet	total:historics	slag (grams)	bead	awl	proj. pt.	debitage (gr)	groundstone	manuport	FAR	charcoal (gr)	asphaltum	shell (grams)	bone (gr)
totals: U14								0		1 bead			5.38		4				35043.50	45.14

SUMMARY LISTING OF ARTIFACTS AND ECOFACTS FROM SRS 2001 EXCAVATIONS ON CA-ORA-86.

Unit/Level	asphalt (grams)	concrete	brick	glass	metal	plastic pellet	total:historics	slag (grams)	bead	awl	proj. pt.	debitage (gr)	groundstone	manuport	FAR	charcoal (gr)	asphaltum	shell (grams)	bone (gr)
U15(10)										1		0.03		4	2			10351.70	8.71
U15(20)																		13068.10	13.37
U15(30)										1		3.61			3			15600.30	20.94
U15(40)												11.1		1	1			28369.60	59.15
U15(50)																		21204.80	44.08
totals: U15							0			2 awls		14.7		5	6			88594.5	146.25
U16(10)												0.96		2				10956.60	10.18
U16(20)											1	0.96		6	2			17620.20	22.11
U16(30)												6.9			1	Charcoal Present		20514.50	33.58
U16(40)												0.69	6	3		Charcoal Present		28189.10	46.98
U16(50)									1 bead			1.89			1			25437.60	51.23
U16(60)									1 bead						1			13323.20	18.86
totals: U16							0		2 beads	2 awls	1	11.4	6	11	5			116041.20	182.94
U17(10)												0.49	1					4385.29	5.23
U17(20)												0.24	1	1				5747.5	5.28
U17(30)												0.01						18851.4	21.44
U17(40)									1 Pearl									11328	31.13
U17(50)																		7096	
totals: U17							0		1 Pearl			0.74	2	1				47408.19	63.08
U18(10)												1.42			1	Charcoal Present		15108.90	7.01
U18(20)										1 worked bone	1	12.2						24993.60	28.81
U18(30)									2			0.74						11486.66	28.13
U18(40)												0.06						5727.00	12.71
totals: U18							0		2 beads	1 worked bone	1	14.4			1			57316.16	76.66

SUMMARY LISTING OF ARTIFACTS AND ECOFACTS FROM SRS 2001 EXCAVATIONS ON CA-ORA-86.

Unit/Level	asphalt (grams)	concrete	brick	glass	metal	plastic pellet	total:historics	slag (grams)	bead	awl	proj. pt.	debitage (gr)	groundstone	manuport	FAR	charcoal (gr)	asphaltum	shell (grams)	bone (gr)
AUGERS																			
A1(0-20)																		4.44	
A1(20-40)																		58.49	
A1(40-60)																		165.77	
A1(60-80)																		135.30	
A1(80-100)																		47.99	
totals: A1																		411.99	
A2(0-20)				2														16.12	
A2(20-40)					1													11.95	
A2(40-60)																		16.96	
A2(60-80)																		10.03	
A2(80-100)																		31.52	
totals: A2				2	1		3											86.58	
A3(0-20)																		3.06	
A3(20-40)																		4.32	
A3(40-60)																		1.90	
A3(60-80)																			
A3(80-100)																			
totals: A3																		9.28	
A4(0-20)				2														0.28	
A4(20-40)																		0.36	
A4(40-60)																		2.32	
A4(60-80)																		0.18	
A4(80-100)																			
totals: A4				2			2											3.14	
A5(0-20)																		4.25	
A5(20-40)																		6.72	
A5(40-60)																		10.18	
A5(60-80)																		1.05	
A5(80-100)																		1.34	
totals: A5																		23.54	
A6(0-20)												2.86						37.22	
A6(20-40)																		51.78	
A6(40-60)																		39.96	
A6(60-80)																		62.00	
A6(80-100)																		0.00	
totals: A6							0					2.86						190.96	

SUMMARY LISTING OF ARTIFACTS AND ECOFACTS FROM SRS 2001 EXCAVATIONS ON CA-ORA-86.

Unit/Level	asphalt (grams)	concrete	brick	glass	metal	plastic	pellet	total:historics	slag (grams)	bead	awl	proj. pt.	debitage (gr)	groundstone	manuport	FAR	charcoal (gr)	asphaltum	shell (grams)	bone (gr)
A7(0-20)			1										4.81						313.93	
A7(20-40)																			81.63	
A7(40-60)																			102.02	
A7(60-80)																			108.75	
A7(80-100)																			1.33	
totals: A7			1					1					4.81						607.66	
A8(0-20)			1																35.75	
A8(20-40)																			67.54	
A8(40-60)													0.06						53.56	
A8(60-80)																			41.73	
A8(80-100)																			26.10	
totals: A8			1					1					0.06						224.68	
A9(0-20)													2.49						9.70	
A9(20-40)																			10.70	
A9(40-60)																			8.40	
A9(60-80)																			11.40	
A9(80-100)																			15.40	
totals: A9								0					2.49						55.60	
A10(0-20)																			4.78	
A10(20-40)													0.78						2.15	
A10(40-60)																			4.18	
A10(60-80)																			2.31	
A10(80-100)																			8.08	
totals: A10								0					0.78						21.50	
A11(0-20)																			14.34	
A11(20-40)													0.17						31.51	
A11(40-60)																			23.14	
A11(60-80)																			92.00	
A11(80-100)																			17.67	
totals: A11								0					0.17						178.66	
A12(0-20)			1										0.85						14.25	
A12(20-40)																			13.45	
A12(40-60)																			33.76	
A12(60-80)																			10.35	
A12(80-100)																			4.00	
totals: A12			1					1					0.85						75.81	

SUMMARY LISTING OF ARTIFACTS AND ECOFACTS FROM SRS 2001 EXCAVATIONS ON CA-ORA-86.

[illegible]

SUMMARY LISTING OF ARTIFACTS AND ECOFACTS FROM SRS 2001 EXCAVATIONS ON CA-ORA-86.

Unit/Level	asphalt (grams)	concrete	brick	glass	metal	plastic	pellet	total:historics	slag (grams)	bead	awl	proj. pt.	debitage (gr)	groundstone	manuport	FAR	charcoal (gr)	asphaltum	shell (grams)	bone (gr)
A19(0-20)																			5.40	
A19(20-40)																			13.30	0.14
A19(40-60)																			12.90	
A19(60-80)																			11.70	
A19(80-100)																			1.50	
totals: A19								0											44.80	0.14
A20(0-20)																			89.30	0.07
A20(20-40)																			71.10	
A20(40-60)																			11.40	
A20(60-80)																			19.90	
A20(80-100)																			15.20	
totals: A20								0											206.90	0.07
A21(0-20)																			149.70	
A21(20-40)																			107.10	
A21(40-60)																			26.40	
A21(60-80)																			13.20	
A21(80-100)																			3.00	
totals: A21								0											299.40	
A22(0-20)																			29.10	
A22(20-40)																			6.70	
A22(40-60)																			19.30	
A22(60-80)													0.01						20.40	
A22(80-100)																			9.60	
totals: A22								0					0.01						85.10	
A23(0-20)																			10.30	
A23(20-40)																			7.10	
A23(40-60)																			2.70	
A23(60-80)																			9.90	
A23(80-100)																			5.20	
totals: A23								0											35.20	
A24(0-20)																			8.30	
A24(20-40)													8.13						7.00	
A24(40-60)																			2.50	
A24(60-80)																			2.00	
A24(80-100)																				
totals: A24								0					8.13						19.80	

SUMMARY LISTING OF ARTIFACTS AND ECOFACTS FROM SRS 2001 EXCAVATIONS ON CA-ORA-86.

[illegible]

SUMMARY LISTING OF ARTIFACTS AND ECOFACTS FROM SRS 2001 EXCAVATIONS ON CA-ORA-86.

[illegible]

SUMMARY LISTING OF ARTIFACTS AND ECOFACTS FROM SRS 2001 EXCAVATIONS ON CA-ORA-86.

[illegible]

SUMMARY LISTING OF ARTIFACTS AND ECOFACTS FROM SRS 2001 EXCAVATIONS ON CA-ORA-86.

Unit/Level	asphalt (grams)	concrete	brick	glass	metal	plastic	pellet	total:historics	slag (grams)	bead	awl	proj. pt.	debitage (gr)	groundstone	manuport	FAR	charcoal (gr)	asphaltum	shell (grams)	bone (gr)
A43(0-20)																			8.40	0.02
A43(20-40)													0.02						26.00	
A43(40-60)																			4.90	
A43(60-80)																			2.10	
A43(80-100)																			2.30	
totals: A43							0						0.02						43.70	0.02
A44(0-20)																			3.60	
A44(20-40)																			3.40	
A44(40-60)																			7.10	
A44(60-80)																			1.30	
A44(80-100)													0.06							
totals: A44							0						0.06						15.40	
A45(0-20)																			5.60	0.4
A45(20-40)																			5.10	0.33
A45(40-60)													0.06						1.00	0.08
A45(60-80)																			3.10	0.01
A45(80-100)																				
totals: A45							0						0.06						14.80	0.82
A46(0-20)																			3.90	
A46(20-40)													1.38						10.70	
A46(40-60)																			5.10	0.47
A46(60-80)																			2.20	0.27
A46(80-100)																			4.20	
totals: A46							0						1.38						26.10	0.74
A47(0-20)																			7.20	
A47(20-40)																			8.80	
A47(40-60)																			3.50	
A47(60-80)													0.55						0.20	
A47(80-100)																			3.10	
totals: A47							0						0.55						22.80	
A48(0-20)																			18.50	
A48(20-40)																			13.30	
A48(40-60)													0.14						11.30	
A48(60-80)																			0.60	
A48(80-100)													0.05						12.00	
totals: A48							0						0.19						55.70	

SUMMARY LISTING OF ARTIFACTS AND ECOFACTS FROM SRS 2001 EXCAVATIONS ON CA-ORA-86.

[illegible]

SUMMARY LISTING OF ARTIFACTS AND ECOFACTS FROM SRS 2001 EXCAVATIONS ON CA-ORA-86.

Unit/Level	asphalt (grams)	concrete	brick	glass	metal	plastic	pellet	total:historics	slag (grams)	bead	awl	proj. pt.	debitage (gr)	groundstone	manuport	FAR	charcoal (gr)	asphaltum	shell (grams)	bone (gr)
A55(0-20)																			56.30	
A55(20-40)													1.32						83.70	
A55(40-60)																			15.60	
A55(60-80)																			9.90	
A55(80-100)																			5.50	
totals: A55								0					1.32						171.00	
A56(0-20)																			292.50	0.01
A56(20-40)													6.68						980.40	0.31
A56(40-60)										1									323.80	0.29
A56(60-80)																			151.70	
A56(80-100)										1									38.80	1.59
totals: A56								0		2 beads			6.68						1787.20	2.2

SUMMARY LISTING OF ARTIFACTS AND ECOFACTS FROM SRS 2001 EXCAVATIONS ON CA-ORA-86.

Unit/Level	asphalt (grams)	concrete	brick	glass	metal	plastic	pellet	total:historics	slag (grams)	bead	awl	proj. pt.	debitage (gr)	groundstone	manuport	FAR	charcoal (gr)	asphaltum	shell (grams)	bone (gr)
TRENCHES																				
T1(0-20)			11		12								0.75						858.40	0.58
T1(20-40)			11		4	2							2.76						459.00	2.13
T1(40-60)			4	1									1.94						219.50	1.04
T1(60-80)			3	1									5.14						107.50	2.86
T1(80-100)	24.19	1 tile f	5										7.57						106.80	2.56
T1(100-110)													0.98						88.70	0.66
totals: T1	24.19		34	2	16	2		54					19.1						1839.90	9.83
T2(0-20)			16	2	1								4.18						339.60	0.86
T2(20-40)			15	5	3								2.81						135.60	0.24
T2(40-60)			2	2									0.16						62.30	0.19
T2(60-80)			14	2									0.4						128.50	0.08
T2(80-100)			4	1															28.40	0.03
totals: T2			51	12	4			67					7.55						694.4	1.4
T3(0-20)			12	3															97.00	0.15
T3(20-40)			7		1								0.36						20.90	
T3(40-60)																			14.20	
T3(60-80)			3																24.00	
T3(80-100)																			13.40	
totals: T3			22	3	1			26					0.36						169.50	0.15
T4(0-20)																				
T4(20-40)																				
T4(40-60)																				
T4(60-80)																				
T4(80-100)																				
totals: T4								0											0	0
T5(0-20)			69	41	1	shingle frag 22													254.90	0.23
T5(20-40)			17	5									0.08						340.00	0.29
T5(40-60)			6			shingle frag 2													81.30	
T5(60-80)				1		shingle frag 1													29.20	
T5(80-100)						shingle frag 1													9.40	
totals: T5			92	47	1	26		166					0.08						714.8	0.52
T6(0-20)			39	9	4														500.70	2.11
T6(20-40)			21	3	5								0.22						361.40	0.18
T6(40-60)					2								0.09						317.90	0.23
T6(60-80)			2	1															168.60	
T6(80-100)			2		5														23.40	0.35
totals: T6			64	13	16			93					0.31						1372	2.87

SUMMARY LISTING OF ARTIFACTS AND ECOFACTS FROM SRS 2001 EXCAVATIONS ON CA-ORA-86.

Unit/Level	asphalt (grams)	concrete	brick	glass	metal	plastic	pellet	total:historics	slag (grams)	bead	awl	proj. pt.	debitage (gr)	groundstone	manuport	FAR	charcoal (gr)	asphaltum	shell (grams)	bone (gr)
T7(0-20)		1 tile	29	2	1														537.50	0.15
T7(20-40)			12	1	2								0.55						426.20	0.18
T7(40-60)			1	2									2.6						233.50	
T7(60-80)			2	1															26.20	
T7(80-100)			2																31.90	0.05
totals: T7		1	46	6	3			56					3.15						1255.30	0.38
T8(0-20)																				
T8(20-40)																				
T8(40-60)																				
T8(60-80)																				
T8(80-100)																				
totals: T8								0											0	0
T9(0-20)																				
T9(20-40)												1								
T9(40-60)																				
T9(60-80)																				
T9(80-100)																				
totals: T9								0				1 proj pt							0	0