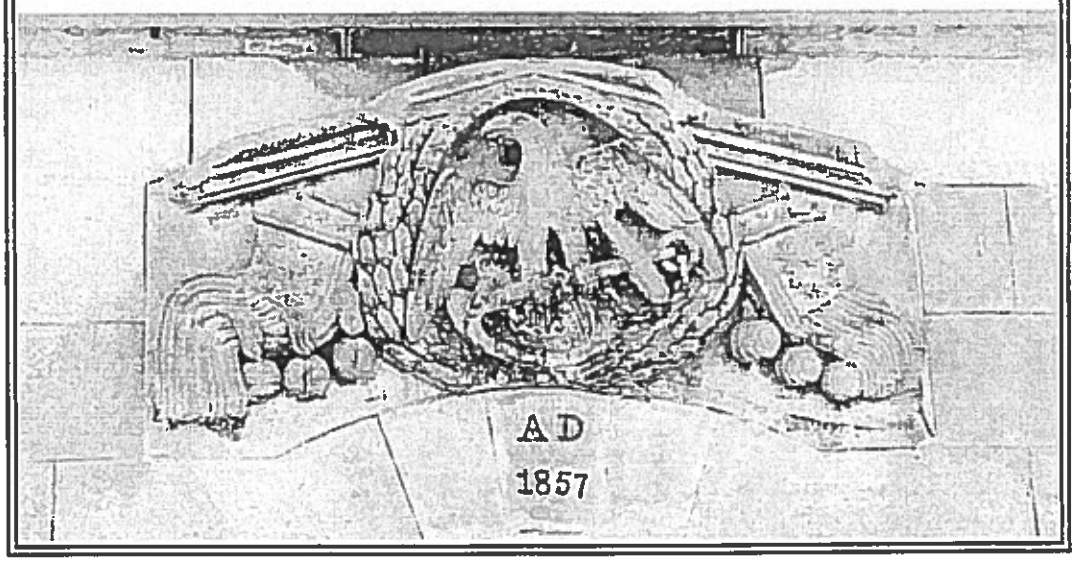
Appendix B.2

Exhibits to Historic Guidelines



Appendix B. 2

Exhibits to Historic Guidelines

List of Exhibits

Exhibit Number	Title
Exhibit 1	Excerpt from the *Secretary of the Interior's Standards for Rehabilitation*
Exhibit 2	Chapter 16.38: "Architectural Heritage and Historic Preservation," Vallejo Municipal Code
Exhibit 3	36 CFR 67: Historic Preservation Certifications, Pursuant to Section 48(g) and Section 170(h) of the Internal Revenue Code of 1986
Exhibit 4	"Revised Predictive Archaeological Model for Mare Island, Vallejo, Solano County, California," October 2000
Exhibit 5	"Archaeological Treatment Plan for Mare Island, Vallejo, Solano County, California," November 2000

Exhibit 1

Excerpt from the *Secretary of the Interior's Standards for Rehabilitation*

Secretary of the Interior's Rehabilitation Guidelines SETTING (District/Neighborhood)	
Recommended	**Not Recommended**
Identifying retaining, and preserving building and landscape features which are important in defining the historic character of the setting. Such features can include roads and streets, furnishings such as lights or benches, vegetation, gardens and yards, adjacent open space such as fields, parks, commons or woodlands, and important views or visual relationships.	Removing or radically changing those features of the setting which are important in defining the historic character.
Retaining the historic relationship between buildings and landscape features of the setting. For example, preserving the relationship between a town common and its adjacent historic houses, municipal buildings, historic roads, and landscape features.	Destroying the relationship between the buildings and landscape features within the setting by widening existing streets, changing landscape materials or constructing inappropriately located new streets or parking.
Protecting and maintaining historic building materials and plant features through appropriate cleaning, rust removal, limited paint removal, and reapplication of protective coating systems; and pruning and vegetation management.	Failing to provide adequate protection of materials on a cyclical basis which results in the deterioration of building and landscape features.
Protecting building and landscape features such as lighting or trees, against arson and vandalism before rehabilitation work begins by erecting protective fencing and installing alarm systems that are keyed into local protection agencies.	Permitting the building and setting to remain unprotected so that interior or exterior features are damaged. Stripping or removing features from buildings or the setting such as wood siding, iron fencing, terra cotta balusters, or plant material.
Evaluating the overall condition of the building and landscape features to determine whether more than protection and maintenance are required, that is, if repairs to features will be necessary.	Failing to undertake adequate measures to assure the protection of building and landscape features.
Repairing features of the building and landscape by reinforcing the historic materials. Repair will also generally include the replacement in kind – or with a compatible substitute material – of those extensively deteriorated or missing parts of features when there are surviving prototypes such as porch balustrades or paving materials.	Replacing an entire feature of the building or landscape when repair of materials and limited replacement of deteriorated or missing parts are appropriate. Using a substitute material for the replacement part that does not convey the visual appearance of the surviving parts f the building or landscape, or that is physically, chemically, or ecologically incompatible.
Replacing in kind an entire feature of the building or landscape that is too deteriorated to repair – when the overall form and detailing are still evident – using the physical evidence as a model to guide the new work. If using the same kind of material is not technically or economically feasible, then a compatible substitute material may be considered.	Removing a feature of the building or landscape that is unrepairable and not replacing it; or replacing it with a new feature that does not convey the same visual appearance.

Secretary of the Interior's Rehabilitation Guidelines SETTING (District/Neighborhood)	
Recommended	**Not Recommended**
Design for the Replacement of Missing Historic Features Designing and constructing a new feature of the building or landscape when the historic feature is completely missing, such as row house steps, a porch, a streetlight, or terrace. It may be a restoration based on documentary or physical evidence; or be a new design that is compatible with the historic character of the setting.	Creating a false historical appearance because the replaced feature is based on insufficient documentary or physical evidence. Introducing a new building or landscape feature that is out of scale or otherwise inappropriate to the setting's historic character, e.g., replacing picket fencing with chain link fencing.
Alterations/Additions for New Use Designing required new parking so that it is as unobtrusive as possible, thus minimizing the effect on the historic character of the setting. "Shared" parking should also be planned so that several businesses can utilize one parking area as opposed to introducing random, multiple lots. Designing and constructing new additions to historic buildings when required by the new use. New work should be compatible with the historic character of the setting in terms of size, scale design, material, color, and texture. Removing nonsignificant buildings, additions or landscape features which detract from the historic character of the setting.	Placing parking facilities directly adjacent to historic buildings which result in damage to historic landscape features, such as the removal of plant material, relocation of paths and walkways, or blocking of alleys. Introducing new construction into historic districts that is visually incompatible or that destroys historic relationships within the setting. Removing a historic building, building feature, or landscape feature that is important in defining the character of the setting.

Secretary of the Interior's Rehabilitation Guidelines NEW ADDITIONS TO HISTORIC BUILDINGS	
Recommended	**Not Recommended**
Placing functions and services required for the new use in non-character-defining interior spaces rather than constructing a new addition.	Expanding the size of the historic building by constructing a new addition when the new use could be met by altering non-character-defining interior spaces.
Constructing a new addition so that there is the least possible loss of historic materials and so that character-defining features are not obscured, damaged, or destroyed.	Attaching a new addition so that the character-defining features of the historic building are obscured, damaged, or destroyed.
Designing a new addition in a manner that makes clear what is historic and what is new.	Duplicating the exact form, material, style, and detailing of the historic building in a new addition so that the new work appears to be part of the historic building. Imitating a historic style or period of architecture in a new addition.
Considering the design for an attached exterior addition in terms of its relationship to the historic building as well as the historic district or neighborhood. Design for the new work may be contemporary or may reference design motifs from the historic building. In either case, it should always be clearly differentiated from the historic building and be compatible in terms of mass, materials, relationship of solids to voids, and color.	Designing and constructing new additions that result in the diminution or loss of the historic character of the resource, including its design, materials, workmanship, location, or setting.
Placing a new addition on a non-character-defining elevation and limiting the size and scale in relationship to the historic building.	Designing a new addition that obscures, damages, or destroys character-defining features of the historic building.
Designing a rooftop addition when required for the new use, that is set back from the wall plane and as inconspicuous as possible when viewed from the street.	Constructing a rooftop addition so that the historic appearance of the building is radically changed.

Secretary of the Interior's Rehabilitation Guidelines BUILDING SITE	
Recommended	**Not Recommended**
Identifying, retaining, and preserving buildings and their features as well as features of the site that are important in defining its overall historic character. Site features may include circulation systems such as walks, paths, roads, or parking; vegetation such as trees, shrubs, fields, or herbaceous plant material; landforms such as terracing, berms or grading; furnishings such as lights, fences, or benches; decorative elements such as sculpture, statuary or monuments; water features including fountains, streams, pools or lakes; and subsurface archeological features which are important in defining the history of the site.	Removing or radically changing buildings and their features or site features which are important in defining the overall historic character of the property so that, as a result, the character is diminished.
Retaining the historic relationship between buildings and the landscape.	Removing or relocating buildings or landscape features, thus destroying the historic relationship between buildings and the landscape. Removing or relocating historic buildings on a site or in a complex of related historic structures – such as a mill complex or farm – thus diminishing the historic character of the site or complex. Moving buildings onto the site, thus creating a false historical appearance. Radically changing the grade level of the site. For example, changing the grade adjacent to a building to permit development of a formerly below-grade area that would drastically change the historic relationship of the building to its site.
Protecting and maintaining buildings and the site by providing proper drainage to assure that water does not erode foundation walls; drain toward the building; or damage or erode the landscape.	Failing to maintain adequate site drainage so that buildings and site features are damaged or destroyed; or alternatively, changing the site grading so that water no longer drains properly.
Minimizing disturbance of terrain around buildings or elsewhere on the site, thus reducing the possibility of destroying or damaging important landscape features or archeological resources.	Introducing heavy machinery into areas where it may disturb or damage important landscape features or archeological resources.
Surveying and documenting areas where the terrain will be altered to determine the potential impact to important landscape features or archeological resources.	Failing to survey the building site prior to the beginning of rehabilitation work which results in damage to, or destruction of, important landscape features or archeological resources.
Protecting, e.g., preserving in place important archeological resources.	Leaving known archeological material unprotected so that it is damaged during rehabilitation work.
Planning and carrying out any necessary investigation using professional archeologists and modern archeological methods when preservation in place is not feasible.	Permitting unqualified personnel to perform data recovery on archeological resources so that improper methodology results in the loss of important archeological material.
Preserving important landscape features, including ongoing maintenance of historic plant material.	Allowing important landscape features to be lost or damaged due to a lack of maintenance.

Protecting the building and landscape features against arson and vandalism before rehabilitation work begins, i.e., erecting protective fencing and installing alarm systems that are keyed into local protection agencies.	Permitting the property to remain unprotected so that the building and landscape features or archeological resources are damaged or destroyed. Removing or destroying features from the building or site such as wood siding, iron fencing, masonry balustrades, or plant material.
Providing continued protection of historic building materials and plant features through appropriate cleaning, rust removal, limited paint removal, and re-application of protective coating systems; and pruning and vegetation management.	Failing to provide adequate protection of materials on a cyclical basis so that deterioration of building and site features results.
Evaluating the overall condition of the materials and features of the property to determine whether more than protection and maintenance are required, that is, if repairs to building and site features will be necessary.	Failing to undertake adequate measures to assure the protection of building and site features.
Repairing features of the building and site by reinforcing historic materials	Replacing an entire feature of the building or site such as a fence, walkway, or driveway when repair of materials and limited compatible replacement of deteriorated or missing parts are appropriate. Using a substitute material for the replacement part that does not convey the visual appearance of the surviving parts of the building or site feature or that is physically or chemically incompatible.
Replacing in kind an entire feature of the building or site that is too deteriorated to repair if the overall form and detailing are still evident. Physical evidence from the deteriorated feature should be used as a model to guide the new work. This could include an entrance or porch, walkway, or fountain. If using the same kind of material is not technically or economically feasible, then a compatible substitute material may be considered.	Removing a feature of the building or site that is unrepairable and not replacing it; or replacing it with a new feature that does not convey the same visual appearance.
Replacing deteriorated or damaged landscape features in kind.	Adding conjectural landscape features to the site such as period reproduction lamps, fences, fountains, or vegetation that are historically inappropriate, thus creating a false sense of historic development.
Design for the Replacement of Missing Historic Features Designing and constructing a new feature of a building or site when the historic feature is completely missing, such as an outbuilding, terrace, or driveway. It may be based on historical, pictorial, and physical documentation; or be a new design that is compatible with the historic character of the building and site.	Creating a false historical appearance because the replaced feature is based on insufficient historical, pictorial, and physical documentation. Introducing a new building or site feature that is out of scale or of an otherwise inappropriate design. Introducing a new landscape feature, including plant material, that is visually incompatible with the site, or that alters or destroys the historic site patterns or vistas.

Alterations/Additions for the New Use Designing new onsite parking, loading docks, or ramps when required by the new use so that they are as unobtrusive as possible and assure the preservation of the historic relationship between the building or buildings and the landscape.	Locating any new construction on the building site in a location which contains important landscape features or open space, for example removing a lawn and walkway and installing a parking lot.
Designing new exterior additions to historic buildings or adjacent new construction which is compatible with the historic character of the site and which preserves the historic relationship between the building or buildings and the landscape.	Placing parking facilities directly adjacent to historic buildings where automobiles may cause damage to the buildings or landscape features, or be intrusive to the building site.
	Introducing new construction onto the building site which is visually incompatible in terms of size, scale, design, materials, color, and texture; which destroys historic relationships on the site; or which damages or destroys important landscape features.
Removing non-significant buildings, additions, or site features which detract from the historic character of the site.	Removing a historic building in a complex of buildings; or removing a building feature, or a landscape feature which is important in defining the historic character of the site.

Source: *Standards for Rehabilitation & Guidelines for Rehabilitating Historic Buildings*, 102-108 and 112-113.

Exhibit 2

Chapter 16.38: "Architectural Heritage and Historic Preservation,"
Vallejo Municipal Code

Vallejo Municipal Code
Chapter 16.38: Architectural Heritage and Historic Preservation

16.38.010 Title of chapter.

The ordinance codified in this chapter shall be known and may be cited as the "Architectural Heritage and Historic Preservation Ordinance." (Ord. 1410 N.C.(2d) § 1 (part), 1999: Ord. 792 N.C.(2d) § 2 (part), 1985.)

16.38.020 Purpose of chapter.

It is found that protection, enhancement, perpetuation and, use of buildings, structures, landscaping, districts and neighborhoods of historic, architectural and engineering significance located within the city are of cultural, aesthetic and economic benefit to the community and region. It is further found that the economic, cultural and aesthetic standing of the city will be enhanced by preserving the heritage of the city. The purpose of this chapter is to:

A. Designate, preserve, protect, enhance and perpetuate those historic buildings, structures, landscaping, districts and neighborhoods which contribute to the cultural and aesthetic heritage of Vallejo;

B. Foster civic pride in the beauty and accomplishments of the past;

C. Stabilize and improve the economic values of certain historic buildings, structures, landscaping, districts and neighborhoods;

D. Protect and enhance the city's cultural and aesthetic heritage;

E. Recognize the uniqueness of historic resources on Mare Island that have contributed to the history of Vallejo, California and the United States and that have significant value to the economic development and land use goals for the island and the community; and

F. Promote and encourage continued private ownership, where appropriate, and utilization of such buildings and other structures now so owned and used, to the extent that the objectives listed above can be obtained under such policy.

(Ord. 1410 N.C.(2d) § 1 (part), 1999: Ord. 792 N.C.(2d) § 2 (part), 1985.)

16.38.030 Purpose of Mare Island amendment.

The purpose of the Mare Island amendment (amendment) is to establish standards, procedures and regulations for contributing resources on the former Mare Island Naval Shipyard (Mare Island). These standards, procedures and regulations provide for a balanced approach to preservation consistent with the city's economic development and land use goals for the successful and expeditious reuse of the island. This amendment implements Stipulation 7, Long Term Preservation Planning, contained in the Memorandum of Agreement for Mare Island's historic properties, as amended. The purpose of this amendment is to:

A. Implement the goals and policies of the Vallejo general plan as they pertain to Mare Island and the goals, standards and procedures of the Mare Island specific plan;

B. Recognize the significance of Mare Island's role in the history of Vallejo, California and United States;

C. Incorporate contributing resources on Mare Island into the city's regulations and procedures so that these resources will be preserved and protected, and thereby continue to contribute to the city's cultural and aesthetic heritage;

D. Encourage the adaptive reuse of contributing resources which is critical to meeting the needs of the community, including economic development, job creation, and additional cultural, educational and recreational opportunities;

E. Enhance property values and increase economic benefits to the community through the exploration and implementation of creative incentives for preservation;

F. Protect and enhance Mare Island's attraction to tourism and thereby economic development; and

G. Integrate preservation of contributing resources into public and private development.

(Ord. 1438 N.C.(2d) § 1 (part), 2000: Ord. 1410 N.C.(2d) § 2 (part), 1999.)

16.38.031 Relationship of Mare Island amendment to Vallejo general plan and Mare Island specific plan; previous environmental review.

A. The Mare Island amendment implements the goals, policies and standards of the Vallejo general plan and Mare Island specific plan, including the specific plan's project guidelines described hereinbelow, as these goals and policies relate to contributing resources on Mare Island.

B. The environmental review documents prepared for the Vallejo general plan and the Mare Island specific plan shall be considered during the implementation of this amendment pursuant to CEQA. However, additional environmental review will be required for the project guidelines and may be required for individual projects as described hereinbelow.

(Ord. 1410 N.C.(2d) § 2 (part), 1999.)

16.38.032 Definitions.

A. "Amendment" means Chapter 16.38, Part II, Mare Island Amendment, of this Title.

B. "Aspects of integrity" means the aspects of integrity (location, design, setting, materials, workmanship, feeling, and association) codified in National Register Bulletin 15.

C. "California Register" means the California Register of Historical Resources.

D. "CEQA" means the California Environmental Quality Act.

E. "Certificate of appropriateness" is the approval issued by the planning manager or commission for a construction, alteration and/or relocation project that is in conformance with all the provisions of this chapter prior to the undertaking of the project.

F. "Certified historic preservation project" means a project certified by the National Park Service for purposes of investment tax credits codified in 36 CFR 67.

G. "Chief building official" means the chief official of the building division of the development services department or his or her designee.

H. "City landmark" means those buildings, structures, landscaping, districts and neighborhoods found to have unique historic, architectural, aesthetic or local interest or value and/or are eligible for or listed in the National Register for Historic Places and/or California Register of Historical Resources, and have been designated as such by the commission.

I. "City of Vallejo Mare Island Historic District" means the district established with the adoption of this amendment. The boundaries of this district are consistent with those of the National Register of Historic Places' Mare Island Historic District.

J. "Commission" means city of Vallejo architectural heritage and landmarks commission.

K. "Contributing resource" means a resource that 1) is listed in the National Register of Historic Places as contributing to the character of the Mare Island Historic District, 2) listed on the California Register of Historical Resources, and/or 3) designated as contributing to the character of the city of Vallejo Mare Island Historic District.

L. "Demolition permit" is the approval issued by the commission for a demolition project that is in conformance with all the provisions of this chapter prior to the undertaking of the project.

M. "Exterior architectural appearance" is defined as the architectural character and general composition of the exterior of a building or structure, including, but not limited to, such character-defining features as: type and texture of building material; type, design, and character of all windows, doors, stairs, porches, rallings, molding and other appurtenant elements.

N. "Interior architectural appearance" means the architectural character and general composition of the interior of a city landmark, including, but not limited to, such character-defining features as: rooms and/or spaces; structural elements and archaic building materials which may be concealed within walls, floors and roofs; wall, celling and floor finishes; and mechanical, electrical and plumbing fixtures and equipment.

O. "Mare Island Historic District" means the district listed in the National Register for Historic Places in 1997. The boundaries of this district include all parts of the National Historic Landmark listed In 1976.

P. "Mare Island Naval Shipyard Historic District" means the National Historic Landmark designated by the Secretary of Interior in 1976. The National Historic Landmark covers five separate areas: Shipyard Historic District; Shipyard Support District; Naval Ammunition Depot; Hospital District; and U.S. Marine Barracks District.

Q. "Mare Island Specific Plan" means the specific plan prepared pursuant to Chapter 16.104 and Chapter 16.116 of this Title.

R. "Memorandum of Agreement" means the "Memorandum of Agreement Among The United States Navy, The Advisory Council on Historic Preservation and The California State Historic Preservation Officer Regarding the Layaway, Caretaker Maintenance, Leasing, and Disposal of Historic Properties on the Former Mare Island Naval Shipyard, Vallejo, California", dated May 1997 and as amended February 2000. Noncontributors listed in the Memorandum of Agreement Appendix C are not subject to the provisions of this amendment.

S. "Planning manager" means the manager of the planning division of the development services department or his or her designee. The planning manager or his or her designee shall serve as the secretary to the commission.

T. "Project" means the whole of any action related to new construction, alteration, relocation or demolition of a contributing resource or group of contributing resources.

U. "Project guidelines" means project guidelines for Mare Island contributing resources.

V. "Project site" means the legal parcel on which a project, as defined herein, is located. If no legal parcel exists which either immediately or reasonably surrounds a project, such project site may be determined by the planning manager or commission.

W. "Recordation requirements" means Historic American Buildings Survey (HABS) documentation appropriate to the significance of a contributing resource to be demolished as determined by the commission in consultation with the National Park Service.

X. "Reuse Area 4: Historic District" means the area designated in the city of Vallejo's Mare Island Final Reuse Plan, dated July 1994, as the Island's historic area.

Y. "Standards for treatment" means Secretary of the Interior's Standards for Treatment of Historic Properties (U.S. Department of the Interior, 1995).

Z. "Substantial adverse change" means when a project would cause a substantial adverse change in the significance of a contributing resource.

(Ord. 1438 N.C.(2d) § 1 (part), 2000: Ord. 1410 N.C.(2d) § 2 (part), 1999.)

16.38.033 Application of amendment.

This amendment shall apply to contributing resources on Mare Island when title to these resources is transferred from the U.S. Navy to a non-federal entity. Prior to a transfer of property, and

pursuant to the approved economic development conveyance, this amendment shall also apply to contributing resources subject to an executed lease in furtherance of conveyance. (Ord. 1438 N.C.(2d) § 1 (part) 2000: Ord. 1410 N.C.(2d) § 2 (part), 1999.)

16.38.034 Designation of landmarks.

Effective with adoption of this amendment, all fifty National Historic Landmarks structures, buildings and landscapes on Mare Island, as listed in Exhibit 1, shall be designated as city landmarks. Additional contributing resources including previously unevaluated or undiscovered resources may be designated as city landmarks by the commission pursuant to Part III of this chapter. Such previously unevaluated or undiscovered resources may be potentially eligible for listing in the California Register of Historical Resources. (Ord. 1410 N.C.(2d) § 2 (part), 1999.)

16.38.035 Establishment of the city of Vallejo Mare Island Historic District.

Effective with adoption of this amendment, the city of Vallejo Mare Island Historic District, as shown in Exhibit 2, shall be established. This district shall be included in the Mare Island specific plan. Establishment of this district shall not affect the Mare Island Naval Shipyard Historic District or the Mare Island Historic District. However, Reuse Area 4: Historic District shall be known as Reuse Area 4: Historic Core in the Mare Island specific plan and all other subsequent planning documents. (Ord. 1410 N.C.(2d) § 2 (part), 1999.)

16.38.036 Project guidelines.

A. The planning manager shall develop project guidelines in consultation with the commission. These project guidelines shall function as the development plan for the city of Vallejo Mare Island Historic District and shall provide specific and detailed standards for each contributing resource by providing recommended and not recommended actions in terms of alteration, new construction, demolition and relocation based on the standards for treatment and determine the project site for each resource or group of resources. These project guidelines shall include the existing designation status for each resource, including identification of those resources designated as city landmarks. These project guidelines shall be developed in consultation with the Office of Historic Preservation and National Park Service.

B. The planning manager shall complete the project guidelines within eighteen months from the effective date of this amendment. Upon completion, the project guidelines shall be reviewed programmatically as required by CEQA, and considered by the commission for recommendation to the city council as an amendment to the Mare Island specific plan.

C. The project guidelines shall be used by the planning manager, commission and other interested persons in the evaluation of projects involving contributing resources. The adoption of these project guidelines does not preclude the need for additional environmental review pursuant to CEQA, for individual projects.

D. Prior to the adoption of project guidelines, the standards of treatment shall be used in their place for the evaluation of projects that include contributing resources.

(Ord. 1438 N.C.(2d) § 1 (part), 2000: Ord. 141 N.C.(2d) § 2 (part), 1999.)

16.38.037 Certificates of appropriateness.

A certificate of appropriateness is required for all alteration, construction and/or relocation projects, except as described in Section 16.38.039. There shall be different levels of review based on the

scope of the proposed project. The proposed project shall be judged for compliance with project guidelines developed pursuant to Section 16.38.036. (Ord. 1410 N.C.(2d) § 2 (part), 1999.)

16.38.038 Certificates of appropriateness--Application contents; time for submittal of application.

An application for a certificate of appropriateness shall be on a form prescribed by the commission and accompanied by plans appropriate to scope of and/or stage of work and historic and existing photographs. An application for a certificate of appropriateness shall be submitted as early as possible in the design process to allow meaningful input regarding environmental and design issues from the planning manager and commission. (Ord. 1410 N.C.(2d) § 2 (part), 1999.)

16.38.039 Certificates of appropriateness--Types of projects; exceptions.

A. A certificate of appropriateness is required for the following types of projects:

1. Construction of a new building or structure, addition to an existing building or structure, within the project site of a contributing resource;
2. Alteration of a contributing resource in any manner which affects the exterior architectural appearance of a building or structure including installation or alteration of any exterior sign;
3. Construction or alteration within the project site of a contributing resource of site features including, but not limited to, landscaping, fencing, walls, paving and grading;
4. Interior alterations of a city landmark; and
5. Relocation of a contributing resource.

B. An application for a certificate of appropriateness may be acted on either administratively by the planning manager or by the commission subject to the following procedures:

1. Administrative decision. Projects to be acted on administratively by the planning manager are those that meet the following criteria:
   a. Consistent with project guidelines developed pursuant to Section 16.38.036; and
   b. Do not include changes to a city landmark or the project site of a city landmark.

   The planning manager shall provide to the commission copies of all applications for administrative approval when deemed complete and copies of all administrative decisions when the decision is made.
2. Commission decision. Projects to be referred to and acted on by the commission are those that are:
   a. Inconsistent with project guidelines developed pursuant to Section 16.38.036;
   b. Include relocation of a contributing resource;
   c. Include changes to a city landmark or the project site of a city landmark;
   d. Requested by a member of the commission when such a request is made within five working days of the administrative decision on the project; or
   e. Appeals of administrative decisions.

C. Exceptions. The following projects do not require certificates of appropriateness:

1. Painting, routine maintenance or minor repair (as defined in the rules of the commission);
2. Interior alterations of contributing resources which are not city landmarks;
3. Emergency measures of construction, alteration or demolition which are deemed necessary to correct unsafe or dangerous condition of any structure, other feature or part thereof,

where such condition has been declared unsafe or dangerous by the chief building official or the fire chief and where measures have been declared necessary by such officials to correct the conditions and where only such measures as are reasonably necessary to correct unsafe or dangerous conditions shall be performed;

4. Memorandum of Agreement Appendix A (1992 Programmatic Agreement, Appendix B, Actions Not Requiring Further Consultation); and

5. National Park Service approved Certified Historic Preservation Projects. The commission shall be notified of such projects by the planning manager and given the opportunity to comment on the project.

(Ord. 1410 N.C.(2d) § 2 (part), 1999.)

16.38.040 Certificates of appropriateness--Process.

The process for consideration and issuance of certificates of appropriateness shall facilitate expeditious reuse of Mare Island. The planning manager and commission shall seek to expedite review and consider applicant requests for action with priority to the maximum extent feasible.

A. Environmental Review. All projects are subject to environmental review to the extent required by CEQA prior to a decision being made on the project. The commission shall be consulted during the environmental review process for projects that have the potential for substantial adverse changes to contributing resources.

B. Administrative Decision.

1. The planning manager shall review, based on the project guidelines developed pursuant to Section 16.38.036, the application and supporting materials and approve, deny, or conditionally approve the certificate of appropriateness within thirty calendar days following receipt of a completed application.

2. Any person adversely affected by the decision may appeal the administrative decision by filing a written request with the secretary of the commission within ten calendar days of the administrative decision.

C. Commission Decision.

1. An application for a certificate of appropriateness shall be reviewed according to the project guidelines developed pursuant to Section 16.38.036.

2. The commission shall make a decision within forty-five calendar days following receipt of a completed application unless the applicant agrees to an extension of time.

3. Any person adversely affected by the commission's decision may appeal the decision to city council by filing a written request with the city clerk within ten calendar days of the commission's action.

D. City Council Decision. Under the terms of an executed lease of furtherance of conveyance, and prior to transfer of title, any certificate of appropriateness application reviewed and denied by the commission and subsequently appealed to and approved by the city council shall be stayed until the planning manager concludes consultation with the United States Navy on the certificate of appropriateness. Within thirty days of receipt of adequate documentation from the planning manager, should the Navy object to such city council action, the city council action shall be deemed null and void. Should the Navy not object within the thirty-day period, the city council action shall be deemed to have full force and effect.

(Ord. 1438 N.C.(2d) § 1 (part), 2000: Ord. 1410 N.C.(2d) § 2 (part), 1999.)

16.38.041 Demolition permits.

A demolition permit is required for all demolition projects. The proposed project shall be judged for compliance with project guidelines developed pursuant to Section 16.38.036. (Ord. 1410 N.C.(2d) § 2 (part), 1999.)

16.38.042 Demolition permits--Application contents; time for submittal of application.

An application for a demolition permit shall be on a form prescribed by the commission and accompanied by plans appropriate to scope of and/or stage of work, historic and existing photographs, and additional supporting materials as required by the planning manager. An application for a demolition permit shall be submitted as early as possible to allow meaningful input regarding environmental issues from the planning manager and commission. (Ord. 1410 N.C.(2d) § 2 (part), 1999.)

16.38.043 Demolition permits--Process; findings; mitigation.

A. Process. The process for demolition permits shall facilitate expeditious reuse of Mare Island. The planning manager and commission shall seek to expedite review and consider applicant requests for action with priority to the maximum extent feasible.

   1. All projects involving demolition of a contributing resource are subject to environmental review to the extent required by CEQA prior to a decision being made on the demolition project. The commission shall be consulted during the environmental review process for projects that have the potential for substantial adverse changes to contributing resources.

   2. An application for a demolition permit shall be reviewed according to the project guidelines developed pursuant to Section 16.38.036.

   3. The commission shall make a decision within forty-five calendar days following receipt of a completed application unless the applicant agrees to an extension of time.

   4. Any person adversely affected by the commission's decision may appeal the decision to city council by filing a written request with the city clerk within ten calendar days of the commission's action.

B. Findings. A permit for demolition of a contributing resource shall be issued if the requirements of CEQA have been met and if the commission makes findings that the project substantially meets the following criteria:

   1. The contributing resource does not meet the National Register aspects of integrity.

   2. The contributing resource has not been willfully neglected by the non-federal owner so as to result in its deterioration or abandonment.

   3. The proposed project is consistent with the goals and policies of the Mare Island specific plan and complies with project guidelines developed pursuant to Section 16.38.036.

   4. The demolition would not cause a substantial adverse change in the National Register of Historic Places and/or California Register of Historical Resources eligibility of Mare Island Historic District.

C. Mitigation Requirement. Reasonable and feasible mitigation identified in compliance with CEQA may be imposed as a condition of demolition at the discretion of the commission. Mitigation may include a requirement for recordation through HABS documentation prior to demolition.

(Ord. 1410 N.C.(2d) § 2 (part), 1999.)

16.38.044 Demolition of hazardous structures.

A hazardous structure that poses an imminent threat to public health or safety, as determined by the chief building official, is exempt from the requirements for demolition of this amendment. If the threat to public health or safety would not be increased, the commission shall be notified of the pending demolition at least five working days prior to the action. Plans for the new construction on the site of the demolition shall comply with the project guidelines for new construction developed pursuant to Section 16.38.036. (Ord. 1410 N.C.(2d) § 2 (part), 1999.)

16.38.045 Related regulations.

A. California State Historical Building Code (SHBC). SHBC offers alternative measures applicable to qualified historic buildings and structures which help avoid the loss of historic character. The chief building official shall apply SHBC in review and approval of projects involving qualified historic buildings and structures. (California Code of Regulations Part 8, Title 24)

B. Seismic Hazard Identification and Mitigation Program for Unreinforced Masonry Buildings (Chapter 12.07, Vallejo Municipal Code).

C. Mare Island Building and Fire Code Compliance (Chapter 12.50, Vallejo Municipal Code).

(Ord. 1410 N.C.(2d) § 2 (part), 1999.)

16.38.046 Conservation easements.

Conservation easements of contributing resources may be conveyed to nonprofit or other qualified organizations pursuant to California Civil Code 815. (Ord. 1410 N.C.(2d) § 2 (part), 1999.)

16.38.047 Mills Act.

Owners of qualified contributing resources who agree to comply with certain preservation requirements pursuant to California Revenue and Taxation Code Article 1.9, Sections 439-439.4, Historic Property, may enter into historic property agreements with the city subject to criteria adopted by city council. (Ord. 1410 N.C.(2d) § 2 (part), 1999.)

16.38.048 Duty to keep in good repair.

The owner of a contributing resource shall keep in good repair all exterior portions of such resource, all interior portions of city landmarks, and all interior portions thereof whose maintenance is necessary to prevent deterioration and decay of any exterior architectural feature. (Ord. 1410 N.C.(2d) § 2 (part), 1999.)

16.38.049 Ordinary maintenance and repair.

Nothing in this amendment shall be construed to prevent ordinary maintenance or repair of any exterior architectural feature of a contributing resource not involving a change in design, material or external appearance thereof. (Ord. 1410 N.C.(2d) § 2 (part), 1999.)

16.38.120 Heritage survey--List.

The commission shall undertake and complete one or more architectural heritage surveys. Upon completion of such survey(s), the commission shall undertake to establish and maintain a list of structures, objects and areas having a special historical, cultural, architectural or aesthetic interest or value. This list may include single structures or sites, portions of structures, groups of structures, manmade or natural landscape elements, objects, works of art, or integrated combinations thereof. (Ord. 792 N.C.(2d) § 2 (part), 1985.)

16.38.130 Heritage survey--List--Studies and analysis.

Upon completion of such list, the commission:

A. May carry out, assist and collaborate in studies and programs designed to identify and evaluate structures, objects, sites and areas worthy of preservation, and establish archives where pictorial evidence of the structures and their architectural plans, if any, may be preserved and maintained;

B. May consult with and consider the ideas and recommendations of civic groups, public agencies and citizens interested in historic preservation;

C. With permission of the owner or, where appropriate, of the owner's authorized agent, inspect structures, objects, sites and areas which it has reason to believe worthy of preservation;

D. May disseminate information to the public concerning those structures, objects, sites and areas deemed worthy of preservation, and may encourage and advise property owners and members of the community generally in the protection, enhancement, perpetuation and use of designated structures, property in historical districts, and other officially recognized property of historical, cultural or architectural interest;

E. May consider methods for encouraging and achieving preservation, and may establish such policies, rules and regulations as it deems necessary to administer and enforce this chapter, subject to approval by the city council.

(Ord. 792 N.C.(2d) § 2 (part), 1985.)

16.38.140 Designation of landmarks.

From the heritage survey list, the commission may designate certain structures, sites, portions of structures, groups of structures, landscape elements, objects, works of art, or integrated combinations thereof as landmarks. Each such designation shall include a description of the characteristics of the designated item which justifies its designation, and shall also include a description of the particular features that should be preserved, and also include the location of the landmark. (Ord. 792 N.C.(2d) § 2 (part), 1985.)

16.38.150 Designation--Criteria.

The commission shall use the following criteria when deciding whether to designate property as a landmark:

A. Architectural Merit:

1. Property that is the first, last, only, or most significant architectural property of its type in the city or region.

2. Property that is the prototype of, or outstanding example of, periods, styles, architectural movements, engineering or construction techniques, or an example of the more notable

work, or of the best surviving work in the city or region of an architect, designer or master builder.

3. Architectural examples worth preserving for the values they add when integrated into the total fabric of the city's neighborhoods.

B. Cultural Value: Structures, objects, sites and areas associated with the movement or evolution or religious, cultural, governmental, social and economic developments of the city;

C. Educational Value: Structures worth preserving for their educational value;

D. Historical Value: Preservation and enhancement of structures, objects, sites and areas that embody and express the history of Vallejo, Solano County, California, or the United States. History may be social, cultural, economic, political, religious or military;

E. Any property which is listed on the National Register and is described in Section 470a of Title 16 of the United States Code and/or is a registered state landmark.

(Ord. 792 N.C.(2d) § 2 (part), 1985.)

16.38.160 Classification of designations.

Any property which the commission finds to meet the criteria specified in Section 16.38.150 may be classified and designated as follows:

A. City Landmark. City landmarks shall include those structures found to have unique historical, architectural or aesthetic interest or value and which are eligible for or listed on the National Register of Historic Places.

B. Historic Structure. Historic structures shall include those structures found to have outstanding historical, architectural or aesthetic interest or value.

C. Structure of Merit. Structures of merit shall include those structures found to have significant historical, architectural or aesthetic interest or value.

D. Contributing Structure. Contributing structures shall include those structures found to warrant special historical, architectural or aesthetic interest or value.

(Ord. 792 N.C.(2d) § 2 (part), 1985.)

16.38.170 Initiation of designation.

The commission shall initiate the designation of a structure. In addition, initiation may be made by the city council or planning commission, or upon the request of the Vallejo Architectural Heritage Foundation, neighborhood associations, historic preservation organizations, the verified application of the owner or authorized agent of property to be designated, or by the application of at least twenty-five unrelated residents of the city.

Any such application shall be filed with the commission upon forms which it shall provide, and shall be accompanied by all data required by the commission. (Ord. 792 N.C.(2d) § 2 (part), 1985.)

16.38.180 Action by commission--Public hearing.

Upon receipt of a request for designation, or the property owners' consent to the designation if nominated by the commission or council the commission, or the secretary, shall schedule a public hearing and cause notice thereof to be published once in a newspaper of general circulation in the city. The secretary shall also cause all owners of property within a two-hundred-foot radius of the property in question, and any neighborhood group applicable to the property, to be notified of such

application by mail. These notifications shall be made at least twenty-one days prior to the date scheduled for the hearing. After conducting a public hearing, the commission shall determine whether to designate the structure as a city landmark, provided that no such designation shall be final prior to ratification at a subsequent meeting of the commission. (Ord. 1164 N.C.(2d) § 1, 1991: Ord. 792 N.C.(2d) § 2 (part), 1985.)

16.38.190 Action by commission--Time limitation.

The commission shall offer a public hearing, approve, disapprove or modify the request within one hundred eighty days after receipt of the request. (Ord. 792 N.C.(2d) § 2 (part), 1985.)

16.38.200 Action by commission--Notice of action taken.

The commission shall promptly notify in writing the applicant and owner of the property of such action taken. The commission shall also mail a notice of its decision to persons requesting such notification. A copy of the notice of decision shall be filed with the secretary. (Ord. 792 N.C.(2d) § 2 (part), 1985.)

16.38.210 Resubmission--Reconsideration.

If a proposal initiated by application has been disapproved by the commission, or by the city council on appeal, subsequent application that is the same or substantially the same may not be submitted or reconsidered for at least one year from the effective date of final action on the original proposal unless substantial additional data becomes available, in which case the commission may rule to hear a resubmitted application after six months. (Ord. 792 N.C.(2d) § 2 (part), 1985.)

16.38.220 Additional native of action.

When a structure has been designated as provided above, the commission shall cause a copy of the designation, or notice thereof, to be recorded in the office of the county recorder and copies filed with the following: planning division, building department, housing authority, Solano County board of realtors, Vallejo Architectural Heritage Foundation, American Institute of Architects--Solano County Branch, Northern California Chapter. Such structure shall also appear on all zoning maps. (Ord. 1368 N.C.(2d) § 17, 1996: Ord. 792 N.C.(2d) § 2 (part), 1985.)

16.38.230 Establishment of overlay districts.

This chapter establishes two overlay zoning districts, the architectural heritage district (AHD) and the historic district (HD). (Ord. 792 N.C.(2d) § 2 (part), 1985.)

16.38.240 Classification and intent of districts.

A. Architectural Heritage District. This district may be made applicable to any area in the city with significant architectural heritage. Any zoning district, or a portion thereof, may be designated an "architectural heritage district." This district is adopted to preserve areas and specific buildings and structures which reflect elements of the cultural, social, economic, political and architectural history of the city. This district is intended to stabilize and improve property values in historical areas and to preserve specific buildings and structures which are considered to be of historical

or architectural value, to foster civic pride and beauty, and to strengthen the community's economy.

B. Historic District. This district may be made applicable to any area in the city found to have significant historical, architectural or aesthetic value. Any zoning district, or a portion thereof, may be designated an "historic district." It is the purpose of this district and the intent of the city council in adopting same to achieve maximum feasible rehabilitation. Rehabilitation, as distinct from restoration, is the process of returning a property to a state of utility, through repair or alteration, which makes possible an efficient contemporary use. In rehabilitation, those portions of the property important to illustrating historic, architectural and cultural values are preserved or restored. (Ord. 792 N.C.(2d) § 2 (part), 1985.)

16.38.250 Initiation of amendment--Procedure.

Any one of the above overlay districts may be applied to property, or amendments regarding such classification of property shall be accomplished, using the procedures established in Chapter 16.86 of this code; however, whenever Chapter 16.86 refers to the "planning commission," for the purposes of this chapter such reference means the architectural heritage and landmarks commission. (Ord. 792 N.C.(2d) § 2 (part), 1985.)

16.38.260 When a certificate of appropriateness is required.

Activity on a site or structure, as set forth in Section 16.38.270A, shall require a certificate of appropriateness when such site or structure is:

A. In an Architectural Heritage District;

B. In an Historic District;

C. A designated City Landmark Structure;

D. A designated Historic Structure;

E. A designated Structure of Merit;

F. A designated Contributing Structure.

(Ord. 1298 N.C.(2d) § 1 (part), 1994: Ord. 1261 N.C.(2d) § 2 (part), 1993: Ord. 792 N.C.(2d) § 2 (part), 1985.)

16.38.270 Applicability--Type of activity; exceptions.

A. A certificate of appropriateness shall be required before the following actions affecting a site or structure designated under Section 16.38.260 may be undertaken:

1. The construction of a new principal or accessory structure;

2. The alteration of an existing structure in any manner which affects the exterior architectural appearance of the structure. "Exterior architectural appearance" is defined as the architectural character and general composition of the exterior of a structure, including, but not limited to, the type and texture of the building material and the type, design, and character of all windows, doors, stairs, porches, railings, molding and other appurtenant elements;

3. The erection or alteration of a sign, accessory structure, fence (see Section 16.38.300C and D) or deck which is more than thirty inches above grade level;

4. The installation or placement of concrete, asphalt or other impervious surfacing, for a purpose other than a driveway, which covers thirty-three and one-third percent or more, or

two hundred square feet or more, whichever is greater, of a front yard on a through lot or covers thirty-three and one-third percent or more, or two hundred square feet or more, whichever is greater, of the front and/or side yards on a corner lot. For the purpose of this section, a "yard" is defined as the area from the back of the sidewalk to the building line parallel to the street;

5. The erection or alteration of a retaining wall within a front yard. For the purpose of this section, a "yard" is defined as the area from the back of the sidewalk to the building line parallel to the street;
6. The addition of one-hundred square feet or more of new building construction or an expansion of one hundred square feet or more of floor area into any existing portion of a structure which will result in modification to the exterior of the structure;
7. The installation or placement of a driveway (see Section 16.38.300F);
8. The interior alteration of a structure designated as a city landmark;
9. The moving or demolition of an existing primary or accessory structure, excluding signs and fences.

B. Exceptions.

1. Commission approval is not required and the provisions of this section do not apply to the painting, routine maintenance, or minor repair has defined in the rules of the commission), nor to the interiors of a structure, unless such structure is designated city landmark.
2. Nothing herein shall prevent any changes in the interior features of a church where such changes are necessitated by changes in the liturgy, it being understood that the appropriate church officials, as owner of the property, are the exclusive authority on liturgy and are the decisive parties in determining what architectural changes are appropriate to the liturgy; provided, that when it is proposed to make changes necessitated by changes in liturgy, the church officials shall communicate the nature of the change to the commission in order to receive comment and, if required, the commission shall issue a certificate of appropriateness. However, prior to the issuance of any certificate, the commission and church officials shall jointly explore such possible alternative design solutions as may be appropriate or necessary in order to preserve the interior features of such church.
3. No certificate of appropriateness shall be required to prevent any emergency measures of construction, alteration or demolition which are deemed necessary to correct the unsafe or dangerous condition of any structure, other feature or part thereof, where such condition has been declared unsafe or dangerous by the building official or the fire marshal, and where the proposed measures have been declared necessary by such officials to correct the condition; provided, however, that only such work as is reasonably necessary to correct the unsafe or dangerous condition may be performed.

(Ord. 1298 N.C.(2d) § 1 (part), 1994: Ord. 1261 N.C.(2d) § 2 (part), 1993: Ord. 181 N.C.(2d) § 1, 1990: Ord. 133 N.C.(2d) § 1, 1989: Ord. 792 N.C.(2d) § 2 (part), 1985.)

16.38.280 Contents of application.

The application shall contain the name, address, and phone number of the applicant, the location of the proposed activity, a concise statement of the nature and extent of the proposed activity, and all other necessary information prescribed by the rules of the commission. The application shall be signed by the applicant, or the applicant's agent. The application shall be accompanied by any required fee as prescribed by the city council. If, at the time of filing of the application, the applicant has made application or submission of the proposed activity for approval by the planning commission or other city agencies, the secretary shall make every reasonable effort to assure that the matters are processed and heard concurrently. (Ord. 1298 N.C.(2d) § 1 (part), 1994: Ord. 792 N.C.(2d) § 2 (part), 1985.)

16.38.290 Certificate of appropriateness--Process.

Within five working days after an application for a certificate of appropriateness has been found to be complete and accepted for processing, the secretary of the commission shall do one of the following:

A. If the proposed project consists of exterior alterations to an existing building, consists of the installation of a driveway, installation of impervious surfacing, the erection or alteration of a sign, fence, retaining wall or deck which is thirty inches or more above grade level, or constitutes new building construction of less than one hundred square feet, and meets the design standards adopted by the commission, the secretary shall approve the certificate of appropriateness. If the proposed project does not, in the judgment of the secretary, meet the design standards adopted by the commission, the secretary shall schedule the project for the next available commission meeting.

B. If the proposed project consists of the moving or demolition of an existing accessory structure which is not listed on the city's historical resource inventory, the secretary shall mail a native of the pending application to the owners of property within two hundred feet of the affected site, the commission, and the president of the Architectural Heritage Foundation, the St. Vincent's Hill Neighborhood Association and the Old City Neighborhood Association, at least seven days prior to the secretary's action on the application. If the secretary or any of the parties notified believe that the project may adversely affect the character of the district, the secretary shall schedule the project for the next available commission meeting. Failure of any party to receive notice of the pending action shall not invalidate the proceedings.

C. If the proposed project is for the interior alteration of a structure designated as a city landmark, the secretary shall schedule the project for the next available commission meeting.

D. If the proposed project is for the construction of a new principal or accessory structure or constitutes new construction of one hundred square feet or more, the secretary shall schedule the project for the next available commission meeting. At least seven days prior to the project being considered by the commission, a notice shall be sent to owners of property within two hundred feet of the subject property and any neighborhood group applicable to the property.

E. If the proposed project consists of the moving or demolition of an existing primary structure, or an accessory structure which is listed on the city's historical resources inventory, the secretary shall schedule a public hearing before the commission. At least twenty-one days prior to said hearing, notice of said public hearing shall be published in a local newspaper, and mailed to the owners of property within 500 feet of the affected site, and the president of the Architectural Heritage Foundation, the St. Vincent's Hill Neighborhood Coalition and the Old City Neighborhood Committee. Failure of any party to receive notice of the hearing shall not invalidate the proceedings.

F. With respect to subsections A. and B. of this section, any interested person may appeal the decision of the secretary to approve the certificate of appropriateness as meeting the minimum design standards by filing notice of appeal with the secretary within five working days after the decision is made. If such an appeal is taken, the secretary shall schedule the matter for the next available meeting and so advise the applicant and the appellant. The secretary shall notify the commission in a timely manner of every application approved by the secretary.

G. Whenever the secretary of the commission finds that the decision on any application is beyond his or her purview of authority, the application shall be forwarded to the commission for its determination.

(Ord. 1298 N.C.(2d) § 1 (part), 1994: Ord. 1261 N.C.(2d) § 2 (part), 1993: Ord. 1195 N.C.(2d) § 1, 1991: Ord. 1165 N.C.(2d) § 1, 1991: Ord. 1072 N.C.(2d) § 1, 1990: Ord. 792 N.C.(2d) § 2 (part), 1985.)

16.38.295 Design review standards.

A. Adoption of Standards. The commission shall develop and adopt minimum regulations and standards. The commission may appoint an advisory board or committee of such number as it determines advisable to recommend such regulations and standards. Upon adoption of such regulations and standards, the commission shall forward them to the city council with a recommendation that such regulations and standards be incorporated into this chapter. The commission shall not so adopt and recommend until it has conducted a public hearing thereon.

B. Basic Site Development Standards. Whenever a property is subject to a zoning district, and has been designated under Section 16.38.260, all of the site development standards and provisions applicable to that zoning district shall also be applicable. In addition, the site development standards and provisions set forth in this chapter shall likewise apply.

C. New Construction Standards. To review and approve new buildings when a certificate of appropriateness is required pursuant to Section 16.38.260, the commission shall adopt and apply "new construction standards."

D. Secretary of Interior's Standards. To review and approve any alterations or other work on existing buildings when a certificate of appropriateness is required pursuant to Section 16.38.260, the commission shall adopt and apply the most current Secretary of Interior's Standards provided by the U.S. Department of the Interior.

(Ord. 1298 N.C.(2d) § 1 (part), 1994: Ord. 1261 N.C.(2d) § 2 (part), 1993: Ord. 792 N.C.(2d) § 2 (part), 1985.)

16.38.300 Special considerations and policies.

A. The following policies of the city shall guide the commission in its deliberations and actions:

1. It is the purpose of this chapter and the intention of the city council in adopting same to achieve the maximum restoration architecturally feasible. "Restoration" is the process of accurately recovering the form and details of a property as it appeared at a particular period of time by removing later work and by replacing missing original work.

2. It is also the purpose of this chapter and the intention of the city council in adopting same that the commission be lenient in its judgment of plans for structures which have little or no historic value, or of plans for new construction unless such plans would seriously impair the historic or architectural value of surrounding structures.

B. With respect to applications containing the moving or demolition of a structure, the following special considerations shall be utilized by the commission when the matter before it so dictates:

1. If an application proposes to move or demolish a structure which the commission considers will be a great loss to the city, the commission shall enter into negotiations with the owner thereof to work out an economically feasible plan for the preservation of the structure;

2. If the commission finds that the retention of the structure constitutes a hazard to public safety and the hazard cannot be eliminated by economic means available to the owner, the commission shall approve the application;

3. If the commission considers the structure valuable for the period of architecture it represents and important to the neighborhood in which it exists, the commission may nevertheless approve the application if any of the following circumstances exists:

   a. The structure is a deterrent to a major improvement program which substantially benefits the city.

   b. Retention of the structure in the judgment of the commission is not in the interest of the majority within the architectural heritage district;

4. The commission may approve the moving of a structure of historical or architectural value as an alternative to demolition.

C. All fencing erected within the architectural heritage or the St. Vincent's historic districts shall be wood, decorative metal, shrubbery, or any other material found by the commission to be in keeping with the character/period of these districts. Cyclone or chain link fences came into general use after 1940; therefore they are detrimental to the renovation/restoration of these districts and are specifically not allowed.

D. The maximum height for fences within any required front yard and/or required street side yard shall be three feet six inches and six feet thereafter. For the purpose of this section, a "required yard" for interior or through lots shall be a minimum depth of fifteen feet from the front property line. For corner lots, required yards shall be a minimum depth of fifteen feet from the front property line and ten feet from any other property line abutting a street. The maximum height for all other fences shall be six feet.

E. Manufactured housing proposed for installation in places listed on the National Register of Historic Places shall be subject to all applicable city design review standards as provided in Section 16.75.040G.

F. With respect to applications for the installation of a driveway, a certificate of appropriateness shall not be issued unless the subject property retains a nonpaved area equal to or greater than the square footage of the footprint of all buildings or structures on the property. (Ord. 1298 N.C.(2d) § 1 (part), 1994: Ord. 1260 N.C.(2d) § 1, 1993: Ord. 1249 N.C.(2d) § 1, 1992: Ord. 1081 N.C.(2d) § 2, 1990: Ord. 1033 N.C.(2d) § 2, 1989: Ord. 792 N.C.(2d) § 2 (part), 1985.)

16.38.310 Required findings.

Prior to granting a certificate of appropriateness the architectural heritage and landmarks commission or the secretary of the commission, as is appropriate, shall find:

A. With respect to property in an architectural heritage district or a historic district, that the proposed work shall not adversely affect the exterior features of the subject property or the relationship and congruity between the subject structure or feature and its neighboring structures and surroundings, including facade, setback, bulk, height, color and wall of continuity; nor shall the proposed work adversely affect the special character or special historical, cultural, architectural or aesthetic interest or value of the district.

B. With respect to the alteration of a designated city landmark, that the proposed work shall not affect the exterior architectural features of the structure or its major interior architectural features; nor shall the proposed work adversely affect the character of special historical, cultural, architectural or aesthetic interest or value of the landmark and its site, viewed both as to the structure and as to the setting.

C. With respect to the demolition, or portion thereof, of a designated city landmark, that the structure is in such condition that it is not feasible to preserve or restore it, taking into consideration the economic feasibility of alternatives to the proposal, and balancing the interest of the public in preserving the designated landmark or portion thereof, and the interest of the owner of the landmark site in its utilization.

D. With respect to historic structures or structures of merit, that the proposed work shall not adversely affect the exterior architectural feature; nor shall the proposed work adversely affect the character or special historical, cultural, architectural or aesthetic interest or value of the structure and its site, viewed both as to the structure and as to its setting.

(Ord. 1298 N.C.(2d) § 1 (part), 1994.)

16.38.315 Variances--Public hearing.

The owner of property which is subject to the provisions of this chapter as specified in Section 16.38.260 may apply for a variance to the development standards of this chapter. Upon receipt of a request for a variance, the secretary shall schedule a public hearing and cause notice thereof to

be published once in a newspaper of general circulation in the city, and also mail a notice of the hearing to appropriate property owners as defined by the noticing procedures specified by state law and/or city policy. The variance shall be reviewed in accordance with the provisions of Chapter 16.84 of this code, entitled variances, except that whenever Chapter 16.84 refers to the "planning commission" for the purposes of this chapter such reference means the "architectural heritage and landmarks commission." (Ord. 1132 N.C.(2d) § 1, 1990.)

16.38.316 Minor exceptions.

The owner of property which is subject to the provisions of this chapter as specified in Section 16.38.260 may apply for a minor exception to the development standards of this chapter. Said requests shall be governed by the provisions of Chapter 16.80 and be processed as described therein, except that the request shall be subject to review and approval by the secretary of the architectural heritage and landmarks commission or his/her designee. (Ord. 1249 N.C.(2d) § 2, 1992.)

16.38.318 Time limitation of approval.

Approval of the certificate of appropriateness shall expire automatically eighteen months after the date of approval by the architectural heritage and landmarks commission or by the secretary, unless authorized construction has commenced prior to the expiration date; except that upon written request prior to expiration, the secretary may extend the approval for an additional twelve months. If the secretary denies the application for extension, the applicant may appeal to the commission within ten days after the secretary has denied the extension. (Ord. 1261 N.C.(2d) § 1 (part), 1993.)

16.38.319 Revocation or suspension of a certificate.

The architectural heritage and landmarks commission shall have the power to revoke or suspend a certificate of appropriateness where the permit was obtained by fraud; or where the conditions of such certificate have not been or are not complied with. (Ord. 1261 N.C.(2d) § 1 (part), 1993.)

16.38.320 Certificate of appropriateness--Refiling application.

At the conclusion of the hearing, or within thirty days thereafter, the commission shall render its decision approving or disapproving the application. If the application is approved, the secretary shall issue a certificate of appropriateness. No application for the same or substantially similar proposed activity may be filed within one year after disapproval of the activity. (Ord. 1261 N.C.(2d) § 2 (part), 1993: Ord. 792 N.C.(2d) § 2 (part), 1985.)

16.38.330 Certificate of appropriateness--Appeal process.

Any person aggrieved by the decision of the secretary of the commission may appeal the matter to the commission by filing a notice of appeal within five days of the secretary's decision. Any person aggrieved by the decision of the commission may appeal to the city council by filing a notice of appeal with the city clerk within ten days after the commission renders its decision. Notice and hearing on such appeal shall be the same as prescribed by the city council for zoning and land use appeals under this title. The decision of the city council shall be final and conclusive in the matter. (Ord. 1261 N.C.(2d) § 2 (part), 1993: Ord. 792 N.C.(2d) § 2 (part), 1985.)

16.38.340 Fees.

The planning division may collect such application or other fees for the administration of this chapter as are authorized from time to time by the city council. (Ord. 1368 N.C.(2d) § 17, 1996: Ord. 792 N.C.(2d) § 2 (part), 1985.)

16.38.350 Alternative building code.

The building official may use the State Historic Building Code in his review of any designated structure. (Ord. 792 N.C.(2d) § 2 (part), 1985.)

16.38.360 Duty to keep in good repair.

The owner of a designated structure, or of a structure in an historic or heritage district shall keep in good repair all of the exterior portions thereof and such interior portions as are necessary to prevent deterioration or decay. (Ord. 792 N.C.(2d) § 2 (part), 1985.)

16.38.370 Property owned by public agencies.

The commission shall notify all public agencies which own or may acquire property in the city about the existence and character of designated landmarks and historic districts. In the case of any public agency which is not subject to the zoning jurisdiction of the city, it is encouraged to seek the advice of the commission prior any construction, alteration or demolition of any structure in an historic or heritage district or of any designated structure. (Ord. 792 N.C.(2d) § 2 (part), 1985.)

16.38.380 Notice; recording.

With respect to the parcels of real property located within the boundaries of the architectural heritage district (AHD) and the historic district (HD) and other parcels designated and made subject to the requirements of Chapter 16.38 of this code, the city clerk shall cause to be recorded in the office of the recorder of Solano County, California, a "Notice of Restriction" substantially as follows:

NOTICE OF RESTRICTION

Notice is hereby given that this property in the City of Vallejo, Solano County, California, is subject to City of Vallejo Municipal Code Restrictions as provided in Chapter 16.38 entitled Architectural Heritage and Historic Preservation Ordinance. Prior to commencing any construction remodeling the property owner shall consult with the Secretary to the Architectural Heritage and Landmarks Commission, in the Planning Division, City of Vallejo and secure a Certificate of Appropriateness if required by the above referenced ordinance.

City of Vallejo

By _____
City Clerk
(Ord. 1261 N.C.(2d) § 2 (part), 1993: Ord. 1020 N.C.(2d) § 1, 1989.)

16.38.390 Amendments.

The commission may initiate amendments to this chapter as needed to accomplish its purpose as defined in Section 16.38.020. Said amendment shall be processed in accordance with the provisions of Chapter 16.86 except that whenever Chapter 16.86 refers to the "planning commission" for the purposes of this chapter such reference means the "architectural heritage and landmarks commission." (Ord. 1132 N.C.(2d) § 2, 1990.)

Exhibit 3

36 CFR 67: Historic Preservation Certifications, Pursuant to Section 48(g) and Section 170(h) of the Internal Revenue Code of 1986

36 CFR 67
Historic Preservation Certifications Pursuant to Section 48(g) and Section 170(h) of The Internal Revenue Code of 1986

Section

Authority: Sec. 101(a)(1) of the National Historic Preservation Act of 1966, 16 U.S.C. 470a-1(a)(170 ed.), as amended; Sec. 48(g) of the Internal Revenue Code of 1986 (90 Stat. 1519, as amended by 100 Stat. 2085) 26 U.S.C. 48(g); and Sec. 170(h) of the Internal Revenue Code of 1986 (94 Stat. 3204) 26 U.S.C. 170(h). Source: 54 FR 6771, Feb. 26, 1990, unless otherwise noted.

Section 67.1 Sec. 48(g) and Sec. 170(h) of the Internal Revenue Code of 1986.

(a) Sec. 48(g) of the Internal Revenue Code of 1986, 90 Stat. 1519, as amended by 100 Stat. 2085, and Sec. 170(h) of the Internal Revenue Code of 1986, 94 Stat. 3204, require the Secretary to make certifications of historic district statutes and of State and local districts, certifications of significance, and certifications of rehabilitation in connection with certain tax incentives involving historic preservation. These certification responsibilities have been delegated to the National Park Service (NPS); the following five regional offices issue certifications for the States listed below them.

Alaska Regional Office, National Park Service, 2525 Gambell Street, Room 107, Anchorage, Alaska 99503:
Alaska

Mid-Atlantic Regional Office, National Park Service, U.S. Customs House, Second Floor, Second and Chestnut Streets, Philadelphia, Pennsylvania 19106:
Connecticut, Delaware, District of Columbia, Indiana, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, Virginia, West Virginia

Rocky Mountain Regional Office, National Park Service, 12795 West Alameda Parkway, P.O. Box 25287, Denver, Colorado 80225:
Colorado, Illinois, Iowa, Kansas, Minnesota, Missouri, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, Utah, Wisconsin, Wyoming

Southeast Regional Office, National Park Service, 75 Spring Street SW, Atlanta, Georgia 30303:
Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Puerto Rico, South Carolina, Tennessee, Virgin Islands

Western Regional Office, National Park Service, 450 Golden Gate Avenue, P.O. Box 36063, San Francisco, California 94102:
Arizona California, Hawaii, Idaho, Nevada, Oregon, Washington

(b) The Washington office of the NPS establishes program direction and considers appeals of certification denials. The procedures for obtaining certifications are set forth below. It is the responsibility of owners wishing certifications to provide sufficient documentation to the Secretary to make certification decisions. These procedures, upon their effective date, are applicable to future and pending certification requests, except as otherwise provided herein.

(c) States receiving Historic Preservation Fund grants from the Department participate in the review of requests for certification, through recommendations to the Secretary by the State Historic Preservation Officer (SHPO). The SHPO acts on behalf of the State in this capacity and, therefore, the NPS is not responsible for any actions, errors or omissions of the SHPO.

(1) Requests for certifications and approvals of proposed rehabilitation work are sent by an owner first to the appropriate SHPO for review. State comments are recorded on National Park Service Review Sheets (NPS Forms 10-168 (d) and (e)) and are carefully considered by the Secretary before a certification decision is made. Recommendations of States with approved State programs are generally followed, but by law, all certification decisions are made by the Secretary, based upon professional review of the application and related information. The decision of the Secretary may differ from the recommendation of the SHPO.

(2) A State may choose not to participate in the review of certification requests. States not wishing to participate in the comment process should notify the Secretary in writing of this fact. Owners from such nonparticipating States may request certifications by sending their applications directly to the appropriate NPS regional office listed above. In all other situations, certification requests are sent first to the appropriate SHPO.

(d) The Internal Revenue Service is responsible for all procedures, legal determinations, and rules and regulations concerning the tax consequences of the historic preservation provisions described in this part. Any certification made by the Secretary pursuant to this part shall not be considered as binding upon the Internal Revenue Service or the Secretary of the Treasury with respect to tax consequences under the Internal Revenue Code. For example, certifications made by the Secretary do not constitute determinations that a structure is of the type subject to the allowance for depreciation under section 167 of the Code.

Section 67.2 Definitions.

As used in these regulations:

Certified Historic Structure means a building (and its structural components) which is of a character subject to the allowance for depreciation provided in section 167 of the Internal Revenue Code of 1986 which is either:

(a) Individually listed in the National Register; or

(b) Located in a registered historic district and certified by the Secretary as being of historic significance to the district.

Portions of larger buildings, such as single condominium apartment units, are no[t] independently considered certified historic structures. Rowhouses, even with abutting or party walls, are considered as separate buildings. For purposes of the certification decisions set forth in this part, a certified historic structure encompasses the historic building and its site, landscape features, and environment, generally referred to herein as a "property" as defined below. The NPS decision on listing a property in the National Register of Historic Places, including boundary determinations, does not limit the scope of review of the rehabilitation project for tax certification purposes. Such review will include the entire historic property as it existed prior to rehabilitation and any related new construction. For purposes of the charitable contribution provisions only, a certified historic structure need not be depreciable to qualify; may be a structure other than a building; and may also be a remnant of a building such as a facade, if that is all that remains. For purposes of the other rehabilitation tax credits under section 48(g) of the Internal Revenue Code, any property located in a registered historic district is considered a certified historic structure so that other rehabilitation tax credits are not available; exemption from this provision can generally occur only if the Secretary has determined, prior to the rehabilitation of the property, that it is not of historic significance to the district.

Certified Rehabilitation means any rehabilitation of a certified historic structure which the Secretary has certified to the Secretary of the Treasury as being consistent with the historic character of the certified historic structure and, where applicable, with the district in which such structure is located.

Duly Authorized Representative means a State or locality's Chief Elected Official or his or her representative who is authorized to apply for certification of State/local statutes and historic districts.

Historic District means a geographically definable area, urban or rural, that possesses a significant concentration, linkage or continuity of sites, buildings, structures or objects united historically or aesthetically by plan or physical development. A district may also comprise individual elements separated geographically during the period of significance but linked by association or function.

Inspection means a visit by an authorized representative of the Secretary or a SHPO to a certified historic structure for the purposes of reviewing and evaluating the significance of the structure and the ongoing or completed rehabilitation work.

National Register of Historic Places means the National Register of districts, sites, buildings, structures, and objects significant in American history, architecture, archeology, engineering, and culture that the Secretary is authorized to expand and maintain pursuant to section 101(a)(1) of the National Historic Preservation Act of 1966, as amended. The procedures of the National Register appear in 36 CFR part 60 et seq.

Owner means a person, partnership, corporation, or public agency holding a fee-simple interest in a property or any other person or entity recognized by the Internal Revenue Code for purposes of the applicable tax benefits. Property means a building and its site and landscape features.

Property means a building and its site and landscape features.

Registered Historic District means any district listed in the National Register or any district which is:

(a) Designated under a State or local statute which has been certified by the Secretary as containing criteria which will substantially achieve the purpose of preserving and rehabilitating buildings of significance to the district, and

(b) Certified by the Secretary as meeting substantially all of the requirements for the listing of districts in the National Register.

Rehabilitation means the process of returning a building or buildings to a state of utility, through repair or alteration, which makes possible an efficient use while preserving those portions and features of the building and its site and environment which are significant to its historic, architectural, and cultural values as determined by the Secretary.

Secretary means the Secretary of the Interior or the designee authorized to carry out his responsibilities.

Standards for Rehabilitation means the Secretary's Standards for Rehabilitation set forth in section 67.7 hereof.

State Historic Preservation Officer means the official within each State designated by the Governor or a State statute to act as liaison for purposes of administering historic preservation programs within that State.

State or Local Statute means a law of a State or local government designating, or providing a method for the designation of, a historic district or districts.

[54 FR 6771, Feb. 26, 1990, as amended at 62 FR 30235, June 3, 1997]

Section 67.3 Introduction to certifications of significance and rehabilitation and information collection.

(a) Who may apply:

(1) Ordinarily, only the fee simple owner of the property in question may apply for the certifications described in Secs. 67.4 and 67.6 hereof. If an application for an evaluation of significance or rehabilitation project is made by someone other than the fee simple owner, however, the application must be accompanied by a written statement from the fee simple owner indicating that he or she is aware of the application and has no objection to the request for certification.

(2) Upon request of a SHPO the Secretary may determine whether or not a particular property located within a registered historic district qualifies as a certified historic structure. The Secretary shall do so, however, only after notifying the fee simple owner of record of the request, informing such owner of the possible tax consequences of such a decision, and permitting the property owner a 30-day time period to submit written comments to the Secretary prior to decision. Such time period for comment may be waived by the fee simple owner.

(3) The Secretary may undertake the certifications described in Secs. 67.4 and 67.6 on his

own initiative after notifying the fee simple owner and the SHPO and allowing a comment period as specified in Sec. 67.3(a)(2).

(4) Owners of properties which appear to meet National Register criteria but are [not] yet listed in the National Register or which are located within potential historic districts may request preliminary determinations from the Secretary as to whether such properties may qualify as certified historic structures when and if the properties or the potential historic districts in which they are located are listed in the National Register. Preliminary determinations may also be requested for properties outside the period or area of significance of registered historic districts as specified in Sec. 67.5(c). Procedures for obtaining these determinations shall be the same as those described in Sec. 67.4. Such determinations are preliminary only and are not binding on the Secretary. Preliminary determinations of significance will become final as of the date of the listing of the individual property or district in the National Register. For properties outside the period or area of significance of a registered historic district, preliminary determinations of significance will become final, except as provided below, when the district documentation on file with the NPS is formally amended. If during review of a request for certification of rehabilitation, it is determined that the property does not contribute to the significance of the district because of changes which occurred after the preliminary determination of significance was made, certified historic structure designation will be denied.

(5) Owners of properties not yet designated certified historic structures may obtain determinations from the Secretary on whether or not rehabilitation proposals meet the Secretary's Standards for Rehabilitation. Such determinations will be made only when the owner has requested a preliminary determination of the significance of the property as described in paragraph (a)(4) of this section and such request for determination has been acted upon by the NPS. Final certifications of rehabilitation will be issued only to owners of certified historic structures. Procedures for obtaining these determinations shall be the same as those described in sec. 67.6.

(b) How to apply:

(1) Requests for certifications of historic significance and of rehabilitation shall be made on Historic Preservation Certification Applications (NPS Form No. 10-168). Normally, two copies of the application are required; one to be retained by the SHPO and the other to be forwarded to the NPS. The information collection requirements contained in the application and in this part have been approved by the Office of Management and Budget under 44 U.S.C. 3507 and assigned clearance number 1024-0009. Part 1 of the application shall be used in requesting a certification of historic significance or nonsignificance and preliminary determinations, while part 2 of the application shall be used in requesting an evaluation of a proposed rehabilitation project or, in conjunction with a Request for Certification of Completed Work, a certification of a completed rehabilitation project. Information contained in the application is required to obtain a benefit. Public reporting burden for this form is estimated to average 2.5 hours per response including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form may be made to the Chief, Administrative Services Division, National Park Service, P.O. Box 37127, Washington, DC 20013-7127 and to the Office of Management and Budget, Paperwork Reduction Project Number 1024-0009, Washington, DC 20503.

(2) Application forms are available from NPS regional offices or the SHPOs.

(3) Requests for certifications, preliminary determinations, and approvals of proposed rehabilitation projects shall be sent to the SHPO in participating States. Requests in nonparticipating States shall be sent directly to the appropriate NPS regional office.

(4) Generally reviews of certification requests are concluded within 60 days of receipt of a complete, adequately documented application, as defined Sec. 67.4 and Sec. 67.6 (30 days at the State level and 30 days at the Federal level). Where a State has chosen not to participate in the review process, review by the NPS generally is concluded within 60 days of receipt of a complete, adequately documented application. Where adequate documentation is not provided, the owner will be notified of the additional information needed to undertake or complete review. The time periods in this part are based on the receipt of a complete application; they will be adhered to as closely as possible and are defined as calendar days. They are not, however, considered to be mandatory, and the failure to complete review within the designated periods does not waive or alter any certification requirement.

(5) Approval of applications and amendments to applications is conveyed only in writing by duly authorized officials of the NPS acting on behalf of the Secretary. Decisions with respect to certifications are made on the basis of the descriptions contained in the application form and other available information. In the event of any discrepancy between the application form and other, supplementary material submitted with it (such as architectural plans, drawings, specifications, etc.), the applicant shall be requested to resolve the discrepancy in writing. In the event the discrepancy is not resolved, the description in the application form shall take precedence. Falsification of factual representations in the application is subject to criminal sanctions of up to $10,000 in fines or imprisonment for up to five years pursuant to 18 U.S.C. 1001.

(6) It is the owner's responsibility to notify the Secretary if application reviews are not completed within the time periods specified above. The Secretary in turn will consult with the appropriate office to ensure that the review is completed in as timely manner as possible in the circumstances.

(7) Although certifications of significance and rehabilitation are discussed separately below, owners must submit part 1 of the Historic Preservation Certification Application prior to, or with, part 2. Part 2 of the application will not be processed until an adequately documented part 1 is on file and acted upon unless the property is already a certified historic structure. Reviews of rehabilitation projects will also not be undertaken if the owner has objected to the listing of the property in the National Register.

Section 67.4 Certifications of historic significance.

(a) Requests for certifications of historic significance should be made by the owner to determine—

(1) That a property located within a registered historic district is of historic significance to such district; or

(2) That a property located within a registered historic district is not of historic significance to such district; or

(3) That a property not yet on the National Register appears to meet National Register criteria; or

(4) That a property located within a potential historic district appears to contribute to the significance of such district.

(b) To determine whether or not a property is individually listed or is part of a district in the National Register, the owner may consult the listing of National Register properties in the Federal Register (found in most large libraries), or contact the appropriate SHPO for current information.

(c) If a property is located within the boundaries of a registered historic district and the owner wishes the Secretary to certify whether the property contributes or does not contribute to the historic significance of the district or if the owner is requesting a preliminary determination of significance in accordance with Sec. 67.3(a)(4), the owner must complete part 1 of the Historic Preservation Certification Application according to instructions accompanying the application. Such documentation includes but is not limited to:

(1) Name and mailing address of owner;

(2) Name and address of property;

(3) Name of historic district;

(4) Current photographs of property; photographs of the building and its site and landscape features prior to alteration if rehabilitation has been completed; photograph(s) showing the property along with adjacent properties and structures on the street; and photographs of interior features and spaces adequate to document significance;

(5) Brief description of appearance including alterations, distinctive features and spaces, and date(s) of construction;

(6) Brief statement of significance summarizing how the property does or does not reflect the values that give the district its distinctive historical and visual character, and explaining any significance attached to the property itself (i.e., unusual building techniques, important event that took place there, etc.).

(7) Sketch map clearly delineating property's location within the district; and

(8) Signature of fee simple owner requesting or concurring in a request for evaluation.

(d) If a property is individually listed in the National Register, it is generally considered a certified historic structure and no further certification is required. More specific considerations in this regard are as follows:

(1) If the property is individually listed in the National Register and the owner believes it has lost the characteristics which caused it to be nominated and therefore wishes it delisted, the owner should refer to the delisting procedures outlined in 36 CFR part 60.

(2) Some properties individually listed in the National Register include more than one building. In such cases, the owner must submit a single part 1 application, as described in paragraph (c) of this section, which includes descriptions of all the buildings within the listing. The Secretary will utilize the Standards for Evaluating Significance within Registered Historic Districts (Sec. 67.5) for the purpose of determining which of the buildings included within the listing are of historic significance to the property. The requirements of this paragraph are applicable to certification requests received by the

SHPOs (and the NPS regional offices in the case of nonparticipating States only) upon the effective date of these regulations.

(e) Properties containing more than one building where the buildings are judged by the Secretary to have been functionally related historically to serve an overall purpose, such as a mill complex or a residence and carriage house, will be treated as a single certified historic structure, whether the property is individually listed in the National Register or is located within a registered historic district, when rehabilitated as part of an overall project. Buildings that are functionally related historically are those which have functioned together to serve an overall purpose during the property's period of significance. In the case of a property within a registered historic district which contains more than one building where the buildings are judged to be functionally related historically, an evaluation will be made to determine whether the component buildings contribute to the historic significance of the property and whether the property contributes to the significance of the historic district as in Sec. 67.4(i). For questions concerning demolition of separate structures as part of an overall rehabilitation project, see Sec. 67.6.

(f) Applications for preliminary determinations for individual listing must show how the property individually meets the National Register Criteria for Evaluation. An application for a property located in a potential historic district must document how the district meets the criteria and how the property contributes to the significance of that district. An application for a preliminary determination for a property in a registered historic district which is outside the period or area of significance in the district documentation on file with the NPS must document and justify the expanded significance of the district and how the property contributes to the significance of the district or document the individual significance of the property. Applications must contain substantially the same level of documentation as National Register nominations, as specified in 36 CFR part 60 and National Register Bulletin 16, "Guidelines for Completing National Register of Historic Places Forms" (available from SHPOs and NPS regional offices). Applications must also include written assurance from the SHPO that the district nomination is being revised to expand its significance or, for certified districts, written assurance from the duly authorized representative that the district documentation is being revised to expand its significance, or that the SHPO is planning to nominate the property or the district. Owners should understand that confirmation of intent to nominate by a SHPO does not constitute listing in the National Register, nor does it constitute a certification of significance as required by law for Federal tax incentives. Owners should further understand that they are proceeding at their own risk. If the property or district is not listed in the National Register for procedural, substantive or other reasons; if the district documentation is not formally amended; or if the significance of the property has been lost as a result of alterations or damage, these preliminary determinations of significance will not become final. The SHPO must nominate the property or the district or the SHPO for National Register districts and the duly authorized representative in the case of certified districts must submit documentation and have it approved by the NPS to amend the National Register nomination or certified district or the property or district must be listed before the preliminary certification of significance can become final.

(g) For purposes of the other rehabilitation tax credits under sec. 48(g) of the Internal Revenue Code, properties within registered historic districts are presumed to contribute to the significance of such districts unless certified as nonsignificant by the Secretary. Owners of nonhistoric properties within registered historic districts, therefore, must obtain a certification of nonsignificance in order to qualify for those investment tax credits. If an owner begins or completes a substantial alteration (within the meaning of sec. 167(n) of the Internal Revenue Code) of a property in a registered historic district without knowledge of requirements for certification of nonsignificance, he or she may request certification that the property was not of historic significance to the district prior to substantial alteration in the same manner as stated in sec. 67.4(c). The owner should be aware, however, of the requirements under sec. 48(g) of the

Internal Revenue Code that the taxpayer must certify to the Secretary of the Treasury that, at the beginning of such substantial alteration, he or she in good faith was not aware of the certification requirement by the Secretary of the Interior.

(h) The Secretary discourages the moving of historic buildings from their original sites. However, if a building is to be moved as part of a rehabilitation for which certification is sought, the owner must follow different procedures depending on whether the building is individually listed in the National Register or is within a registered historic district. When a building is moved, every effort should be made to re-establish its historic orientation, immediate setting, and general environment. Moving a building may result in removal of the property from the National Register or, for buildings within a registered historic district, denial or revocation of a certification of significance; consequently, a moved building may, in certain circumstances, be ineligible for rehabilitation certification.

(1) Documentation must be submitted that demonstrates:

(i) The effect of the move on the building's integrity and appearance (any proposed demolition, proposed changes in foundations, etc.);

(ii) Photographs of the site and general environment of the proposed site;

(iii) Evidence that the proposed site does not possess historical significance that would be adversely affected by the moved building;

(iv) The effect of the move on the distinctive historical and visual character of the district, where applicable; and

(v) The method to be used for moving the building.

(2) For buildings individually listed in the National Register, the procedures contained in 36 CFR part 60 must be followed prior to the move, or the building will be removed from the National Register, will not be considered a certified historic structure, and will have to be renominated for listing. The owner may submit a part 1 application in order to receive a preliminary determination from the NPS of whether a move will cause the property to be removed from the National Register. However, preliminary approval of such a part 1 application does not satisfy the requirements of 36 CFR part 60. The SHPO must follow the remaining procedures in that regulation so that the NPS can determine that the moved building will remain listed in the National Register and retain its status as a certified historic structure.

(3) If an owner moves (or proposes to move) a building into a registered historic district or moves (or proposes to move) a building elsewhere within a registered historic district, a part 1 application containing the required information described in paragraph (h)(1) of this section must be submitted. The building to be moved will be evaluated to determine if it contributes to the historic significance of the district both before and after the move as in Sec. 67.4(i).

(i) Properties within registered historic districts will be evaluated to determine if they contribute to the historic significance of the district by application of the Secretary's Standards for Evaluating Significance within Registered Historic Districts as set forth in Sec. 67.5.

(j) Once the significance of a property located within a registered historic district or a potential historic district has been determined by the Secretary, written notification will be sent to the owner

and the SHPO in the form of a certification of significance or nonsignificance.

(k) Owners shall report to the Secretary through the SHPO any substantial damage, alteration or changes to a property that occurs after issuance of a certification of significance and prior to a final certification of rehabilitation. The Secretary may withdraw a certification of significance, upon thirty days notice to the owner, if a property has been damaged, altered or changed effective as of the date of the occurrence. The property may also be removed from the National Register, in accordance with the procedures in 36 CFR part 60. A revocation of certification of significance pursuant to this part may be appealed under Sec. 67.10. For damage, alteration or changes caused by unacceptable rehabilitation work, see Sec. 67.6(f).

Section 67.5 Standards for Evaluating Significance within Registered Historic Districts.

(a) Properties located within registered historic districts are reviewed by the Secretary to determine if they contribute to the historic significance of the district by applying the following Standards for Evaluating Significance within Registered Historic Districts.

(1) A building contributing to the historic significance of a district is one which by location, design, setting, materials, workmanship, feeling and association adds to the district's sense of time and place and historical development.

(2) A building not contributing to the historic significance of a district is one which does not add to the district's sense of time and place and historical development; or one where the location, design, setting, materials, workmanship, feeling and association have been so altered or have so deteriorated that the overall integrity of the building has been irretrievably lost.

(3) Ordinarily buildings that have been built within the past 50 years shall not be considered to contribute to the significance of a district unless a strong justification concerning their historical or architectural merit is given or the historical attributes of the district are considered to be less than 50 years old.

(b) A condemnation order may be presented as evidence of physical deterioration of a building but will not of itself be considered sufficient evidence to warrant certification of nonsignificance for loss of integrity. In certain cases it may be necessary for the owner to submit a structural engineer's report to help substantiate physical deterioration and/or structural damage. Guidance on preparing a structural engineer's report is available from the appropriate SHPO or NPS regional office.

(c) Some properties listed in the National Register, primarily districts, are resources whose concentration or continuity possesses greater historical significance than many of their individual component buildings and structures. These usually are documented as a group rather than individually. Accordingly, this type of National Register documentation is not conclusive for the purposes of this part and must be supplemented with information on the significance of the specific property. Certifications of significance and nonsignificance will be made on the basis of the application documentation, existing National Register documentation, and other available information as needed. The Keeper may amend the National Register documentation by issuing a supplementary record if the application material warrants such an amendment. If a certification request is received for a property which is not yet listed on the National Register or which is outside a district's established period or area of significance, a preliminary determination of significance will be issued only if the request includes adequate documentation and if there is written assurance from the SHPO that the SHPO plans to nominate the property or district or that

the district nomination in question is being revised to expand its significance or for certified districts, written assurance from the duly authorized representative that the district documentation is being revised to expand the significance. Certifications will become final when the property or district is listed or when the district documentation is officially amended unless the significance of the property has been lost as a result of alteration or damage. For procedures on amending listings to the National Register and additional information on the use of National Register documentation and the supplementary record which is contained in National Register Bulletin 19, "Policies and Procedures for Processing National Register Nominations," consult the appropriate SHPO or NPS regional office.

(d) Where rehabilitation credits are sought, certifications of significance will be made on the appearance and condition of the property before rehabilitation was begun.

(e) If a nonhistoric surface material obscures a facade, it may be necessary for the owner to remove a portion of the surface material prior to requesting certification so that a determination of significance or nonsignificance can be made. After the material has been removed, if the obscured facade has retained substantial historic integrity and the property otherwise contributes to the historic district, it will be determined to be a certified historic structure. However, if the obscuring material remains when a determination of nonsignificance is requested under Sec. 67.4(a)(2), the property will be presumed to contribute to the historic significance of the district, if otherwise qualified, and, therefore, not eligible for the other tax credits under section 48(g) of the Internal Revenue Code.

(f) Additional guidance on certifications of historic significance is available from SHPOs and NPS regional offices.

Section 67.6 Certifications of rehabilitation.

(a) Owners who want rehabilitation projects for certified historic structures to be certified by the Secretary as being consistent with the historic character of the structure, and, where applicable, the district in which the structure is located, thus qualifying as a certified rehabilitation, shall comply with the procedures listed below. A fee, as described in Sec. 67.11, for reviewing all proposed, ongoing, or completed rehabilitation work is charged by the Secretary. No certification decisions will be issued on any application until the appropriate remittance is received.

(1) To initiate review of a rehabilitation project for certification purposes, an owner must complete part 2 of the Historic Preservation Certification Application according to instructions accompanying the application. These instructions explain in detail the documentation required for certification of a rehabilitation project. The application may describe a proposed rehabilitation project, a project in progress, or a completed project. In all cases, documentation, including photographs adequate to document the appearance of the structure(s), both on the exterior and on the interior, and its site and environment prior to rehabilitation must accompany the application. The social security or taxpayer identification number(s) of all owners must be provided in the application. Other documentation, such as window surveys or cleaning specifications, may be required by reviewing officials to evaluate certain rehabilitation projects. Plans for any attached, adjacent, or related new construction must also accompany the application. Where necessary documentation is not provided, review and evaluation may not be completed and a denial of certification will be issued on the basis of lack of information. Owners are strongly encouraged to submit part 2 of the application prior to undertaking any rehabilitation work. Owners who undertake rehabilitation projects without prior approval

from the Secretary do so strictly at their own risk. Because the circumstances of each rehabilitation project are unique to the particular certified historic structure involved, certifications that may have been granted to other rehabilitations are not specifically applicable and may not be relied on by owners as applicable to other projects.

(2) A project does not become a certified rehabilitation until it is completed and so designated by the NPS. A determination that the completed rehabilitation of a property not yet designated a certified historic structure meets the Secretary's Standards for Rehabilitation does not constitute a certification of rehabilitation. When requesting certification of a completed rehabilitation project, the owner shall submit a Request for Certification of Completed Work (NPS Form 10-168c) and provide the project completion date and a signed statement that the completed rehabilitation project meets the Secretary's Standards for Rehabilitation and is consistent with the work described in part 2 of the Historic Preservation Certification Application. Also required in requesting certification of a completed rehabilitation project are costs attributed to the rehabilitation, photographs adequate to document the completed rehabilitation, and the social security or taxpayer identification number(s) of all owners.

(b) A rehabilitation project for certification purposes encompasses all work on the interior and exterior of the certified historic structure(s) and its site and environment, as determined by the Secretary, as well as related demolition, new construction or rehabilitation work which may affect the historic qualities, integrity or site, landscape features, and environment of the certified historic structure(s). More specific considerations in this regard are as follows:

(1) All elements of the rehabilitation project must meet the Secretary's ten Standards for Rehabilitation (Sec. 67.7); portions of the rehabilitation project not in conformance with the Standards may not be exempted. In general, an owner undertaking a rehabilitation project will not be held responsible for prior rehabilitation work not part of the current project, or rehabilitation work that was undertaken by previous owners or third parties.

(2) However, if the Secretary considers or has reason to consider that a project submitted for certification does not include the entire rehabilitation project subject to review hereunder, the Secretary may choose to deny a rehabilitation certification or to withhold a decision on such a certification until such time as the Internal Revenue Service, through a private letter ruling, has determined, pursuant to these regulations and applicable provisions of the Internal Revenue Code and income tax regulations, the proper scope of the rehabilitation project to be reviewed by the Secretary. Factors to be taken into account by the Secretary and the Internal Revenue Service in this regard include, but are not limited to, the facts and circumstance of each application and (i) whether previous demolition, construction or rehabilitation work irrespective of ownership or control at the time was in fact undertaken as part of the rehabilitation project for which certification is sought, and (ii) whether property conveyances, reconfigurations, ostensible ownership transfers or other transactions were transactions which purportedly limit the scope of a rehabilitation project for the purpose of review by the Secretary without substantially altering beneficial ownership or control of the property. The fact that a property may still qualify as a certified historic structure after having undergone inappropriate rehabilitation, construction or demolition work does not preclude the Secretary or the Internal Revenue Service from determining that such inappropriate work is part of the rehabilitation project to be reviewed by the Secretary.

(3) Conformance to the Standards will be determined on the basis of the application documentation and other available information by evaluating the property as it existed prior

to the commencement of the rehabilitation project, regardless of when the property becomes or became a certified historic structure.

(4) For rehabilitation projects involving more than one certified historic structure where the structures are judged by the Secretary to have been functionally related historically to serve an overall purpose, such as a mill complex or a residence and carriage house, rehabilitation certification will be issued on the merits of the overall project rather than for each structure or individual component. For rehabilitation projects where there is no historic functional relationship among the structures, the certification decision will be made for each separate certified historic structure regardless of how they are grouped for ownership or development purposes.

(5) Demolition of a building as part of a rehabilitation project involving multiple buildings may result in denial of certification of the rehabilitation. In projects where there is no historic functional relationship among the structures being rehabilitated, related new construction which physically expands one certified historic structure undergoing rehabilitation and, therefore, directly causes the demolition of an adjacent structure will generally result in denial of certification of the rehabilitation unless a determination has been made that the building to be demolished is not a certified historic structure as in Sec. 67.4(a). In rehabilitation projects where the structures have been determined to be functionally related historically, demolition of a component may be approved, in limited circumstances, when:

(i) The component is outside the period of significance of the property, or

(ii) The component is so deteriorated or altered that its integrity has been irretrievably lost; or

(iii) The component is a secondary one that generally lacks historic, engineering, or architectural significance or does not occupy a major portion of the site and persuasive evidence is present to show that retention of the component is not technically or economically feasible.

(6) In situations involving rehabilitation of a certified historic structure in a historic district, the Secretary will review the rehabilitation project first as it affects the certified historic structure and second as it affects the district and make a certification decision accordingly.

(7) In the event that an owner of a portion of a certified historic structure requests certification for a rehabilitation project related only to that portion, but there is or was a larger related rehabilitation project(s) occurring with respect to the certified historic structure, the Secretary's decision on the requested certification will be based on review of the overall rehabilitation project(s) for the certified historic structure.

(8) For rehabilitation projects which are to be completed in phases over the alternate 60-month period allowed in section 48(g) of the Internal Revenue Code, the initial part 2 application and supporting architectural plans and specifications should identify the project as a 60-month phased project and describe the number and order of the phases and the general scope of the overall rehabilitation project. If the initial part 2 application clearly identifies the project as a phased rehabilitation, the NPS will consider the project in all its phases as a single rehabilitation. If complete information on the rehabilitation work of the later phases is not described in the initial part 2 application, it may be submitted at a later date but must be clearly identified as a later phase of a 60-month phased project that was previously submitted for review. Owners are cautioned that work undertaken in a later

phase of a 60-month phased project that does not meet the Standards for Rehabilitation, whether or not submitted for review, will result in a denial of certification of the entire rehabilitation with the tax consequences of such a denial to be determined by the Secretary of the Treasury. Separate certifications for portions of phased rehabilitation projects will not be issued. Rather the owner will be directed to comply with Internal Revenue Service regulations governing late certifications contained in 26 CFR 1.48-12.

(c) Upon receipt of the complete application describing the rehabilitation project, the Secretary shall determine if the project is consistent with the Standards for Rehabilitation. If the project does not meet the Standards for Rehabilitation, the owner shall be advised of that fact in writing and, where possible, will be advised of necessary revisions to meet such Standards. For additional procedures regarding rehabilitation projects determined not to meet the Standards for Rehabilitation, see Sec. 67.6(f).

(d) Once a proposed or ongoing project has been approved, substantive changes in the work as described in the application must be brought promptly to the attention of the Secretary by written statement through the SHPO to ensure continued conformance to the Standards; such changes should be made using a Historic Preservation Certification Application Continuation/Amendment Sheet (NPS Form 10-168b). The Secretary will notify the owner and the SHPO in writing whether the revised project continues to meet the Standards. Oral approvals of revisions are not authorized or valid.

(e) Completed projects may be inspected by an authorized representative of the Secretary to determine if the work meets the Standards for Rehabilitation. The Secretary reserves the right to make inspections at any time up to five years after completion of the rehabilitation and to revoke a certification, after giving the owner 30 days to comment on the matter, if it is determined that the rehabilitation project was not undertaken as represented by the owner in his or her application and supporting documentation, or the owner, upon obtaining certification, undertook further unapproved project work inconsistent with the Secretary's Standards for Rehabilitation. The tax consequences of a revocation of certification will be determined by the Secretary of the Treasury.

(f) If a proposed, ongoing, or completed rehabilitation project does not meet the Standards for Rehabilitation, an explanatory letter will be sent to the owner with a copy to the SHPO. A rehabilitated property not in conformance with the Standards for Rehabilitation and which is determined to have lost those qualities which caused it to be nominated to the National Register, will be removed from the National Register in accord with Department of the Interior regulations 36 CFR part 60. Similarly, if a property has lost those qualities which caused it to be designated a certified historic structure, it will be certified as noncontributing (see Sec. 67.4 and Sec. 67.5). In either case, the delisting or certification of nonsignificance is considered effective as of the date of issue and is not considered to be retroactive. In these situations, the Internal Revenue Service will be notified of the substantial alterations. The tax consequences of a denial of certification will be determined by the Secretary of the Treasury.

Section 67.7 Standards for Rehabilitation.

(a) The following Standards for Rehabilitation are the criteria used to determine if a rehabilitation project qualifies as a certified rehabilitation. The intent of the Standards is to assist the long-term preservation of a property's significance through the preservation of historic materials and features. The Standards pertain to historic buildings of all materials, construction types, sizes, and occupancy and encompass the exterior and the interior of historic buildings. The Standards also encompass related landscape features and the building's site and environment, as well as

attached, adjacent, or related new construction. To be certified, a rehabilitation project must be determined by the Secretary to be consistent with the historic character of the structure(s) and, where applicable, the district in which it is located.

(b) The following Standards are to be applied to specific rehabilitation projects in a reasonable manner, taking into consideration economic and technical feasibility. (The application of these Standards to rehabilitation projects is to be the same as under the previous version so that a project previously acceptable would continue to be acceptable under these Standards.)

(1) A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.

(2) The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.

(3) Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.

(4) Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.

(5) Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a historic property shall be preserved.

(6) Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.

(7) Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.

(8) Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.

(9) New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.

(10) New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

(c) The quality of materials and craftsmanship used in a rehabilitation project must be commensurate with the quality of materials and craftsmanship of the historic building in question. Certain treatments, if improperly applied, or certain materials by their physical properties, may cause or accelerate physical deterioration of historic buildings. Inappropriate physical treatments

include, but are not limited to: improper repointing techniques; improper exterior masonry cleaning methods; or improper introduction of insulation where damage to historic fabric would result. In almost all situations, use of these materials and treatments will result in denial of certification. Similarly, exterior additions that duplicate the form, material, and detailing of the structure to the extent that they compromise the historic character of the structure will result in denial of certification. For further information on appropriate and inappropriate rehabilitation treatments, owners are to consult the Guidelines for Rehabilitating Historic Buildings published by the NPS. "Preservation Briefs" and additional technical information to help property owners formulate plans for the rehabilitation, preservation, and continued use of historic properties consistent with the intent of the Secretary's Standards for Rehabilitation are available from the SHPOs and NPS regional offices. Owners are responsible for procuring this material as part of property planning for a certified rehabilitation.

(d) In certain limited cases, it may be necessary to dismantle and rebuild portions of a certified historic structure to stabilize and repair weakened structural members and systems. In such cases, the Secretary will consider such extreme intervention as part of a certified rehabilitation if:

(1) The necessity for dismantling is justified in supporting documentation;

(2) Significant architectural features and overall design are retained; and

(3) Adequate historic materials are retained to maintain the architectural and historic integrity of the overall structure.

Section 48(g) of the Internal Revenue Code of 1986 exempts certified historic structures from meeting the physical test for retention of external walls and internal structural framework specified therein for other rehabilitated buildings. Nevertheless, owners are cautioned that the Standards for Rehabilitation require retention of distinguishing historic materials of external and internal walls as well as structural systems. In limited instances, rehabilitations involving removal of existing external walls, i.e., external walls that detract from the historic character of the structure such as in the case of a nonsignificant later addition or walls that have lost their structural integrity due to deterioration, may be certified as meeting the Standards for Rehabilitation.

(e) Prior approval of a project by Federal, State, and local agencies and organizations does not ensure certification by the Secretary for Federal tax purposes. The Secretary's Standards for Rehabilitation take precedence over other regulations and codes in determining whether the rehabilitation project is consistent with the historic character of the property and, where applicable, the district in which it is located.

(f) The qualities of a property and its environment which qualify it as a certified historic structure are determined taking into account all available information, including information derived from the physical and architectural attributes of the building; such determinations are not limited to information contained in National Register or related documentation.

Section 67.8 Certifications of statutes.

(a) State or local statutes which will be certified by the Secretary. For the purpose of this regulation, a State or local statute is a law of the State or local government designating, or providing a method for the designation of, a historic district or districts. This includes any by-laws or ordinances that contain information necessary for the certification of the statute. A statute must

contain criteria which will substantially achieve the purpose of preserving and rehabilitating properties of historic significance to the district. To be certified by the Secretary, the statute generally must provide for a duly designated review body, such as a review board or commission, with power to review proposed alterations to structures of historic significance within the boundaries of the district or districts designated under the statute except those owned by governmental entities which, by law, are not under the jurisdiction of the review body.

(b) When the certification of State statutes will have an impact on districts in specific localities, the Secretary encourages State governments to notify and consult with appropriate local officials prior to submitting a request for certification of the statute.

(c) State enabling legislation which authorizes local governments to designate, or provides local governments with a method to designate, a historic district or districts will not be certified unless accompanied by local statutes that implement the purposes of the State law. Adequate State statutes which designate specific historic districts and do not require specific implementing local statutes will be certified. If the State enabling legislation contains provisions which do not meet the intent of the law, local statutes designated under the authority of the enabling legislation will not be certified. When State enabling legislation exists, it must be certified before any local statutes enacted under its authority can be certified.

(d) Who may apply. Requests for certification of State or local statutes may be made only by the Chief Elected Official of the government which enacted the statute or his or her authorized representative. The applicant shall certify in writing that he or she is authorized by the appropriate State or local governing body to apply for certification.

(e) Statute certification process. Requests for certification of State or local statutes shall be made as follows:

(1) The request shall be made in writing from the duly authorized representative certifying that he or she is authorized to apply for certification. The request should include the name or title of a person to contact for further information and his or her address and telephone number. The authorized representative is responsible for providing historic district documentation for review and certification prior to the first certification of significance in a district unless another responsible person is indicated including his or her address and telephone number. The request shall also include a copy of the statute(s) for which certification is requested, including any by-laws or ordinances that contain information necessary for the certification of the statute. Local governments shall also submit a copy of the State enabling legislation, if any, authorizing the designation of historic districts.

(2) Requests shall be sent to the SHPO in participating States and directly to appropriate NPS regional offices in nonparticipating States.

(3) The Secretary shall review the statute(s) and assess whether the statute(s) and any by-laws or ordinances that contain information necessary for the certification of the statute contain criteria which will substantially achieve the purposes of preserving and rehabilitating properties of historic significance to the district(s) based upon the standards set out above in Sec. 67.8(a). The SHPO shall be given a 30-day opportunity to comment upon the request. Comments received from the SHPO within this time period will be considered by the Secretary in the review process. If the statute(s) contain such provisions and if this and other provisions in the statute will substantially achieve the purpose of preserving and rehabilitating properties of historic significance to the district, the Secretary will certify the statute(s).

(4) The Secretary generally provides written notification within 30 days of receipt by the NPS to the duly authorized representative and to the SHPO when certification of the statute is given or denied. If certification is denied, the notification will provide an explanation of the reason(s) for such denial.

(f) Amendment or repeal of statute(s). State or local governments, as appropriate, must notify the Secretary in the event that certified statutes are repealed, whereupon the certification of the statute (and any districts designated thereunder) will be withdrawn by the Secretary. If a certified statute is amended, the duly authorized representative shall submit the amendment(s) to the Secretary, with a copy to the SHPO, for review in accordance with the procedures outlined above. Written notification of the Secretary's decision as to whether the amended statute continues to meet these criteria will be sent to the duly authorized representative and the SHPO within 60 days of receipt.

(g) The Secretary may withdraw certification of a statute (and any districts designated thereunder) on his own initiative if it is repeal or amended to be inconsistent with certification requirements after providing the duly authorized representative and the SHPO 30 days in which to comment prior to the withdrawal of certification.

Section 67.9 Certifications of State or local historic districts.

(a) The particular State or local historic district must also be certified by the Secretary as substantially meeting National Register criteria, thereby qualifying it as a registered historic district, before the Secretary will process requests for certification of individual properties within a district or districts established under a certified statute.

(b) The provision described herein will not apply to properties within a State or local district until the district has been certified, even if the statute creating the district has been certified by the Secretary.

(c) The Secretary considers the duly authorized representative requesting certification of a statute to be the official responsible for submitting district documentation for certification. If another person is to assume responsibility for the district documentation, the letter requesting statute certification shall indicate that person's name, address, and telephone number. The Secretary considers the authorizing statement of the duly authorized representative to indicate that the jurisdiction involved wishes not only that the statute in question be certified but also wishes all historic districts designated by the statute to be certified unless otherwise indicated.

(d) Requests shall be sent to the SHPO in participating States and directly to the appropriate NPS regional office in nonparticipating States. The SHPO shall be given a 30-day opportunity to comment upon an adequately documented request. Comments received from the SHPO within this time period will be considered by the Secretary in the review process. The guidelines in National Register Bulletin 16, "Guidelines for Completing National Register of Historic Places Forms," provide information on how to document historic districts for the National Register. Each request should include the following documentation:

(1) A description of the general physical or historical qualities which make this a district; and explanation for the choice of boundaries for the district; descriptions of typical architectural styles and types of buildings in the district.

(2) A concise statement of why the district has significance, including an explanation of the areas and periods of significance, and why it meets National Register criteria for listing (see 36 CFR part 60); the relevant criteria should be identified (A, B, C, and D).

(3) A definition of what types of properties contribute and do not contribute to the significance of the district as well as an estimate of the percentage of properties within the district that do not contribute to its significance.

(4) A map showing all district properties with, if possible, identification of contributing and noncontributing properties; the map should clearly show the district's boundaries.

(5) Photographs of typical areas in the district as well as major types of contributing and noncontributing properties; all photographs should be keyed to the map.

(e) Districts designated by certified State or local statutes shall be evaluated using the National Register criteria (36 CFR part 60) within 30 days of the receipt of the required documentation by the Secretary. Written notification of the Secretary's decision will be sent to the duly authorized representative or to the person designated as responsible for the district documentation.

(f) Certification of statutes and districts does not constitute certification of significance of individual properties within the district or of rehabilitation projects by the Secretary.

(g) Districts certified by the Secretary as substantially meeting the requirements for listing will be determined eligible for listing in the National Register at the time of certification and will be published as such in the Federal Register.

(h) Documentation on additional districts designated under a State or local statute the has been certified by the Secretary should be submitted to the Secretary for certification following the same procedures and including the same information outlined in the section above.

(i) State or local governments, as appropriate, shall notify the Secretary if a certified district designation is amended (including boundary changes) or repealed. If a certified district designation is amended, the duly authorized representative shall submit documentation describing the change(s) and, if the district has been increased in size, information on the new areas as outlined in Sec. 67.9. A revised statement of significance for the district as a whole shall also be included to reflect any changes in overall significance as a result of the addition or deletion of areas. Review procedures shall follow those outlined in Sec. 67.9 (d) and (e). The Secretary will withdraw certification of repealed or inappropriately amended certified district designations, thereby disqualifying them as registered historic districts.

(j) The Secretary may withdraw certification of a district on his own initiative if it ceases to meet the National Register Criteria for Evaluation after providing the duly authorized representative and the SHPO 30 days in which to comment prior to withdrawal of certification.

(k) The Secretary urges State and local review boards of commissions to become familiar with the Standards used by the Secretary of the Interior for certifying the rehabilitation of historic properties and to consider their adoption for local design review.

Section 67.10 Appeals.

(a) An appeal by the owner, or duly authorized representative as appropriate, may be made from

any of the certifications or denials of certification made pursuant to this part or any decisions made pursuant to Sec. 67.6(f). Such appeals must be in writing and received by the Chief Appeals Officer, Cultural Resources, National Park Service, U.S. Department of the Interior, P.O. Box 37127, Washington, DC 20013-7127, within 30 days of receipt of the decision which is the subject of the appeal. The appellant may request an opportunity for a meeting to discuss the appeal but all information the owner wishes the Chief Appeals Officer to consider must be submitted in writing. The SHPO will be notified that an appeal is pending. The Chief Appeals Officer will consider the record of the decision in question, any further written submissions by the owner, and other available information and shall provide the appellant a written decision as promptly as circumstances permit. Such appeals constitute an administrative review of the decision appealed from and are not conducted as an adjudicative proceeding.

(b) The denial of a preliminary determination of significance for an individual property may not be appealed by the owner because the denial itself does not exhaust the administrative remedy that is available. The owner instead must seek recourse by undertaking the usual nomination process (36 CFR part 60). Similarly, the denial of preliminary certification for a rehabilitation for a rehabilitation project for a property that is not a certified historic structure may not be appealed. The owner must seek a final certification of significance as the next step, rather than appealing the denial of rehabilitation certification. Administrative reviews in these circumstances may be performed at the discretion of the Chief Appeals Officer. The decision to undertaken an administrative review will be made on a case-by-case basis, depending on particular facts and circumstances and the Chief Appeals Officer's schedule, the expected date for nomination, and the nature of the rehabilitation project (proposed, ongoing, or completed). Administrative reviews of rehabilitation projects will not be undertaken if the owner has objected to the listing of the property in the National Register.

(c) In considering such appeals or administrative reviews, the Chief Appeals Officer shall take in account alleged errors in professional judgment or alleged prejudicial procedural errors by NPS officials. The Chief Appeals Officer's decision may:

(1) Reverse the appealed decision;

(2) Affirm the appealed decision;

(3) Resubmit the matter to the appropriate Regional Director for further consideration; or

(4) Where appropriate, withhold a decision until issuance of a ruling from the Internal Revenue Service pursuant to Sec. 67.6(b)(2).

The Chief Appeals Officer may base his decision in whole or part on matters or factors not discussed in the decision appealed from. The Chief Appeals Officer is authorized to issue the certifications discussed in this part only if he considers that the requested certification meets the applicable statutory standard upon application of the Standards set forth herein or he considers that prejudicial procedural error by a Federal official legally compels issuance of the requested certification.

(d) The decision of the Chief Appeals Officer shall be the final administrative decision on the appeal. No person shall be considered to have exhausted his or her administrative remedies with respect to the certifications or decisions described in this part until the Chief Appeals Officer has issued a final administrative decision pursuant to this section.

Section 67.11 Fees for processing rehabilitation certification requests.

(a) Fees are charged for reviewing rehabilitation certification requests in accordance with the schedule below.

(b) Payment shall not be made until requested by the NPS regional office according to instructions accompanying the Historic Preservation Certification Application. All checks shall be made payable to: National Park Services. A certification decision will not be issued on an application until the appropriate remittance is received. Fees are nonrefundable.

(c) The fee for review of proposed or ongoing rehabilitation projects for projects over $20,000 is $250. The fees for review of completed rehabilitation projects are based on the dollar amount of the costs attributed solely to the rehabilitation of the certified historic structure as provided by the owner in the Historic Preservation Certification Application, Request for Certification of Completed Work (NPS Form 10-168c), as follows:

Fee	Size of Rehabilitation
$500	$20,000 to $99,999
$800	$100,000 to $499,999
$1,500	$500,000 to $999,999
$2,500	$1,000,000 or more

If review of a proposed or ongoing rehabilitation project had been undertaken by the Secretary prior to submission of Request for Certification of Completed Work, the initial fee of $250 will be deducted from these fees. No fee will be charged for rehabilitations under $20,000.

(d) In general, each rehabilitation of a separate certified historic structure will be considered a separate project for purposes of computing the size of the fee.

(1) In the case of a rehabilitation project which includes more than one certified historic structure where the structures are judged by the Secretary to have been functionally related historically to serve an overall purpose, the fee for preliminary review is $250 and the fee for final review is computed on the basis of the total rehabilitation costs.

(2) In the case of multiple building projects where there is no historic functional relationship among the structures and which are under the same ownership; are located in the same historic district; are adjacent or contiguous; are of the same architectural type (e.g., rowhouses, loft buildings, commercial buildings); and are submitted by the owner for review at the same time, the fee for preliminary review is $250 per structure to a maximum of $2,500 and the fee for final review is computed on the basis of the total rehabilitation costs of the entire multiple building project to a maximum of $2,500. If the $2,500 maximum fee was paid at the time of review of the proposed or ongoing rehabilitation project, no further fee will be charged for review of a Request for Certification of Completed Work.

Exhibit 4

"Revised Predictive Archaeological Model for Mare Island, Vallejo, Solano County, California," October 2000

REVISED PREDICTIVE ARCHAEOLOGICAL MODEL FOR MARE ISLAND, VALLEJO, SOLANO COUNTY, CALIFORNIA

Prepared for

Chattel Architecture, Planning & Preservation, Inc.
13322 ½ Valleyheart Drive South
Sherman Oaks, CA 91423

Prepared by

PAR ENVIRONMENTAL SERVICES, INC.
1906 21st Street
P.O. Box 16075
Sacramento, CA 95816-0756
Mary L. Maniery, author

October 2000

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INTRODUCTION

In 1995 PAR Environmental Services, Inc. (PAR) provided "Historic Preservation Services for Base Realignment and Closure, Mare Island Naval Shipyard (Mare Island), Vallejo, California." for the United States Navy (Navy) as part of the shipyard closure project. The former shipyard is located on a natural island at the edge of San Pablo Bay, near Vallejo (Figure 1). Documents prepared for the Navy by PAR, William Self & Associates, and JRP Historical Consultants (JRP) included an historical context statement, revision of a National Register of Historic Places (National Register) nomination for historically significant buildings, structures, objects, sites, and districts at Mare Island, and identification and evaluation of prehistoric properties. William Self & Associates and PAR also provided information necessary to predict and assess prehistoric and historical archaeological properties within the former shipyard. Information from the historic archaeology predictive model was incorporated into both the historical context statement and the revised National Register nomination.

PAR has continued to work at Mare Island since 1995, primarily monitoring Navy base clean-up activities that involved excavation within those areas defined in the predictive model as potentially sensitive for historical archaeological sites. The monitoring work has identified several National Register-eligible sites and has allowed for a refinement of the 1995 predictive model.

Since 1995 the Navy and the City of Vallejo (City) have been working on the transfer of portions of the base to the City. As part of this acquisition agreement the City has adopted an historic ordinance detailing the preservation plan for Mare Island's future development. A Memorandum of Agreement (MOA) between the Navy, the City, the California State Historic Preservation Officer, the Advisory Council on Historic Preservation, and the National Park Service outlines the City's responsibilities regarding City property within the Mare Island National Register District. The MOA was signed by all parties in mid-2000 and is now in effect.

In light of the stipulations in the MOA and the new historic ordinance, the City is preparing a Supplemental Environmental Impact Report (SEIR). As part of this SEIR process, PAR contracted with Mellon & Associates (the City's Historic Preservation consultant) to update and refine the 1995 predictive models, based on the results of monitoring the former base's clean-up activities. This current model incorporates both prehistoric and historic archaeological data into one document and is intended as a guide to identify potential eligible archaeological resources to assist in the City's development planning process for Mare Island.

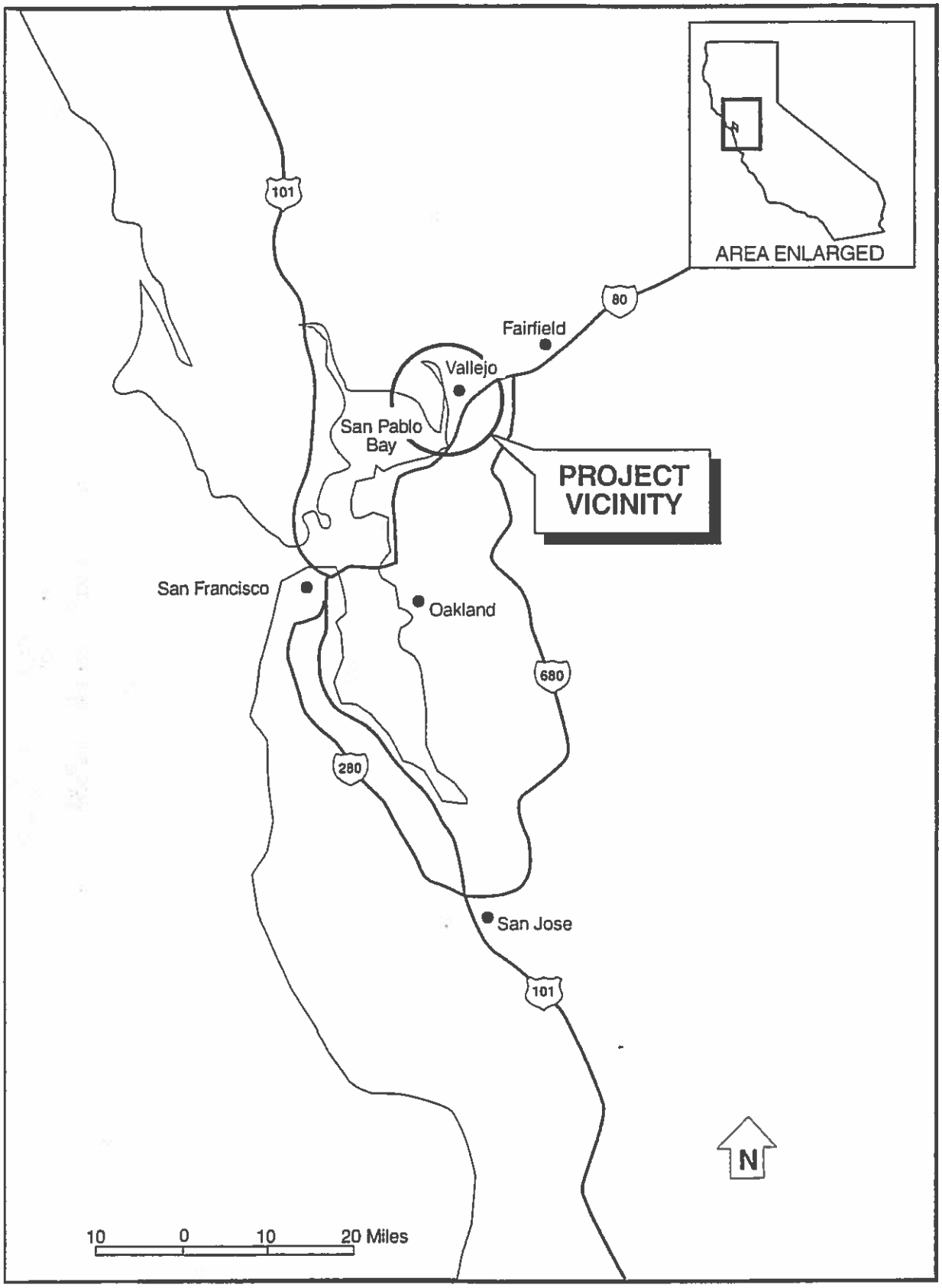

Figure 1. Project Vicinity Map

METHODS

PAR's 1994 work for the fire suppression system installation in the Navy Ammunition Depot (NAD) area proved that intact subsurface features associated with the early military occupation of Mare Island do exist. While construction and development has resulted in numerous (and sometimes substantial) alterations to the original landform, some areas have been covered with fill, effectively burying intact or fragmented remnants of Mare Island's past. The uncovering of the original 1860s NAD seawall 60 feet inland and under several feet of fill is a case in point.

Work in the early 1990s at the San Francisco Presidio resulted in a predictive sites model for that installation, based on a careful assessment of primary historical records compared to land disturbance activities. Given limited funds to conduct archaeological excavations, absence (or near absence) of surface indications of archaeological features because of land changes through time, and abundance of historical records, the National Park Service (NPS) chose to prepare a sensitivity model of the base. The model provided a means of identifying predicted archaeological features that could be considered contributing elements to the National Historic Landmark (NPS 1992). This approach is also suitable to Mare Island, with its long history of military occupation, proliferation of primary maps and manuscripts, and alterations to the land that have obliterated surface indications of many features.

Following precedent set by the NPS approach to the San Francisco Presidio, the 1995 Mare Island predictive model treated the former shipyard as a single archaeology site containing numerous features. The contributing historical archaeological features are functional components of a single, long-term military occupation and are therefore elements of a whole (or features of one site). Potential features range from foundation remains to discrete refuse disposal and are related to domestic use, industrial activities, defense, and architectural features. Prehistoric sensitivity areas were defined by archaeological testing, and examination of historic maps outlining the original landform of the island, and comparative studies. Potential remains minimally include middens, shell deposit, toolstone, and human burials.

Specific features were mapped based on physical evidence (if any) and historical records. Known sites, such as the NAD seawall and others observed by Roop and Flynn (1986) and PAR (Brown and Maniery 1994), were plotted as features on the predicted maps. A careful study of Mare Island primary maps dated between 1852 and 1945, and primary records (Navy commanders' logs, letters) was conducted and data were used to identify areas with a high probability of containing subsurface deposits or features that could contribute to a greater understanding of the Island's early historical development and military occupation. Features that contain archaeological potential, particularly residential and occupation feature and prehistoric locations identified through newspaper accounts or early 1900s archaeological surveys., were mapped to include backlots and other areas that could contain associated subsurface deposits (e.g., outhouse pit near residential housing). Most predicted feature locations are not visible on the ground today and were extrapolated based on historic maps data compared to buildings currently standing at Mare Island.

Because pin-pointing exact locations was not possible without excavation, a buffer was placed around each predicted prehistoric and historic location to allow for a margin of error when plotting from historic maps to modern maps. For, example, the hospital wharf occurs somewhere within the 300-foot-wide zone plotted as Feature F13 but, did not encompass the entire plotted area.

While most potential areas were plotted on maps, exact locations could not be pinpointed for a few features. For example, in times of military buildup tents were often set up to accommodate overflow. Tent "cities" were noted associated with both the hospital and the Marine Corps area in the nineteenth and early twentieth centuries; their locations are uncertain. Refugees from the 1906 San Francisco earthquake were also housed in tents at Mare Island for a time, but the location of the refugee camp is uncertain. These potential features are mentioned in the text but are not plotted on the sensitivity map and are not assigned a feature number.

Once potential areas were plotted, a comparison of the projected feature locations with known land disturbance activities, such as filling of marshy areas or grading of Dublin Hill, was made. Many of the features were then eliminated from the map, as they were most likely obliterated through cut and fill work. For example, archaeological features once located on Dublin Hill would have been destroyed when the hills were leveled and the soil placed elsewhere on the island during filling activities. Figure 2 provides a visual representation of the most evident land disturbance activities at Mare Island. All potential feature locations were examined on the ground by prehistoric and historical archaeologists to determine possible surface manifestations (e.g., undulations in the terrain, artifacts, foundation remains) and visible disturbances.

Only features that contribute to the overall significance of the archaeological site were plotted. The value of a feature varies based on the availability of historical records, knowledge regarding a specific period in time, and the data potential contained in deposits that could address ongoing research questions and domains. Generally, historic archaeological features have the potential to provide important information regarding Mare Island's social, economic, industrial, and physical history. Data retrieved from intact historic features may also be useful in addressing ongoing research topics in military history, frontier adaptation, self-sufficiency, trade (especially during the early formative years of the base when supply and demand in California was erratic due to lack of transportation and the gold rush), and industrial technology.

Prehistoric-era features may contribute ongoing research topics regarding chronology, settlement patterns, resource procurement strategies, technological changes, trade and migration, to name just a few. Any intact deposits related to prehistoric use of Mare Island would be considered significant, given the paucity of such deposits in the area.

The contributions of archaeology to the history of Mare Island are greatest for the early periods of use when records are often sketchy and disposal patterns are most beneficial to archaeological data collection. After World War I the historic record can often be reconstructed through a combination of archival research, oral interviews and records, and the contributions of archaeology to understanding this period of military history, technology, and social development lessens considerably. In addition, refuse disposal and sanitation practices underwent major changes after 1898, decreasing the likelihood of discrete subsurface deposits associated with a particular house or activity. Given these limitations in the value of the archaeological record, identified potential historic features primarily date prior to 1900.

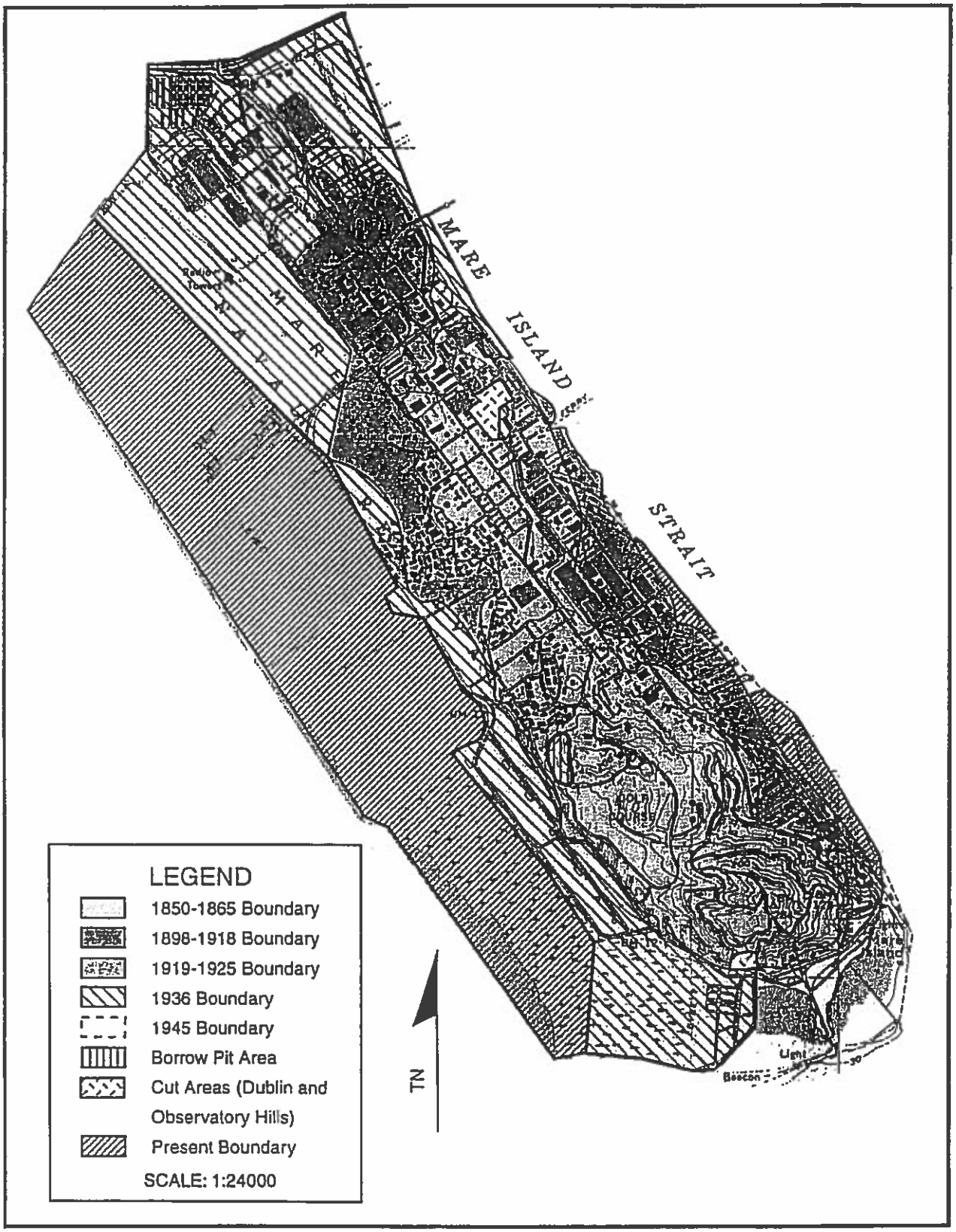

Figure 2. Land Disturbance Map, Mare Island Naval Shipyard

As noted above, given the long military occupation of Mare Island and the continuous function as a shipyard, this study considers Mare Island as one large contributing historic site. The historic site is divided into seven subareas, based on functional use and chronological development: Shipyard North, Shipyard South, NAD, Hospital, Residential-Administrative Area, Marine Corps Area, and North End. These represent distinct geographic areas, as well as functional areas, and are outlined in Figure 3. Subareas used in this report are identical to those referenced in the National Register nomination.

The historic site originally included 28 contributing features found within the subareas. This revised model contains 27 features (one was eliminated based on monitoring results). Some of these, such as the Civil War earthworks and seawall, are known to exist; others are predicted based on land configuration and disposal patterns. Several of these archaeological features could also be considered structures. For example, the brick retaining wall that extends around the original NAD area is a structure but is counted as an archaeological feature on the sensitivity map, and thus is part of the single historical archaeological site.

Figure 4 identifies probable locations of potential archaeological features. Feature numbers (e.g. F2) correspond to both the text and Figure 4. The majority of numbered areas are related to a single feature (such as the NAD seawall). In some cases one feature number was assigned to a functional area that contained a grouping of similar features. For example, the entire residential military officers' housing area was assigned one feature number, even though each residence had a backyard with numerous outbuildings (barns, privies, sheds, gardens). Multiple subsurface deposits, all capable of contributing to the significance of the site, may be found in this one feature area. The same approach was taken in the area that once contained Marine Corps officer's housing. Features without near-exact locations (such as the tent camps) and those that are likely to have been obliterated or greatly disturbed through grading and soil disturbance were not plotted.

Public works features, such as redwood box drains, abandoned ceramic sewer pipe, cobblestone paving, brick walkways or retaining walls, and brick manholes are known to exist at Mare Island and have been identified during past archaeological studies (Brown and Maniery 1994; Dougherty 1999a; Roop and Flynn 1986). These features occur ubiquitously on base and were not plotted as features. They do, however, contribute to understanding the cultural landscape and military design layout of the base.

One notable lack in the potential archaeological record is the identification of marine resources, such as shipwrecks or abandoned vessels. Extensive research of records and oral interviews did not identify any known sites. There are records of ships being towed out of the straits and sunk elsewhere, but vessels apparently were not abandoned close to Mare Island. In addition, the straits have been routinely dredged for over 100 years as a way to increase channel depth to accommodate ships entering Mare Island for repair. Remnants of wharfs and piers may have survived in the straits close to the quay wall, but generally the potential for underwater resources is low.

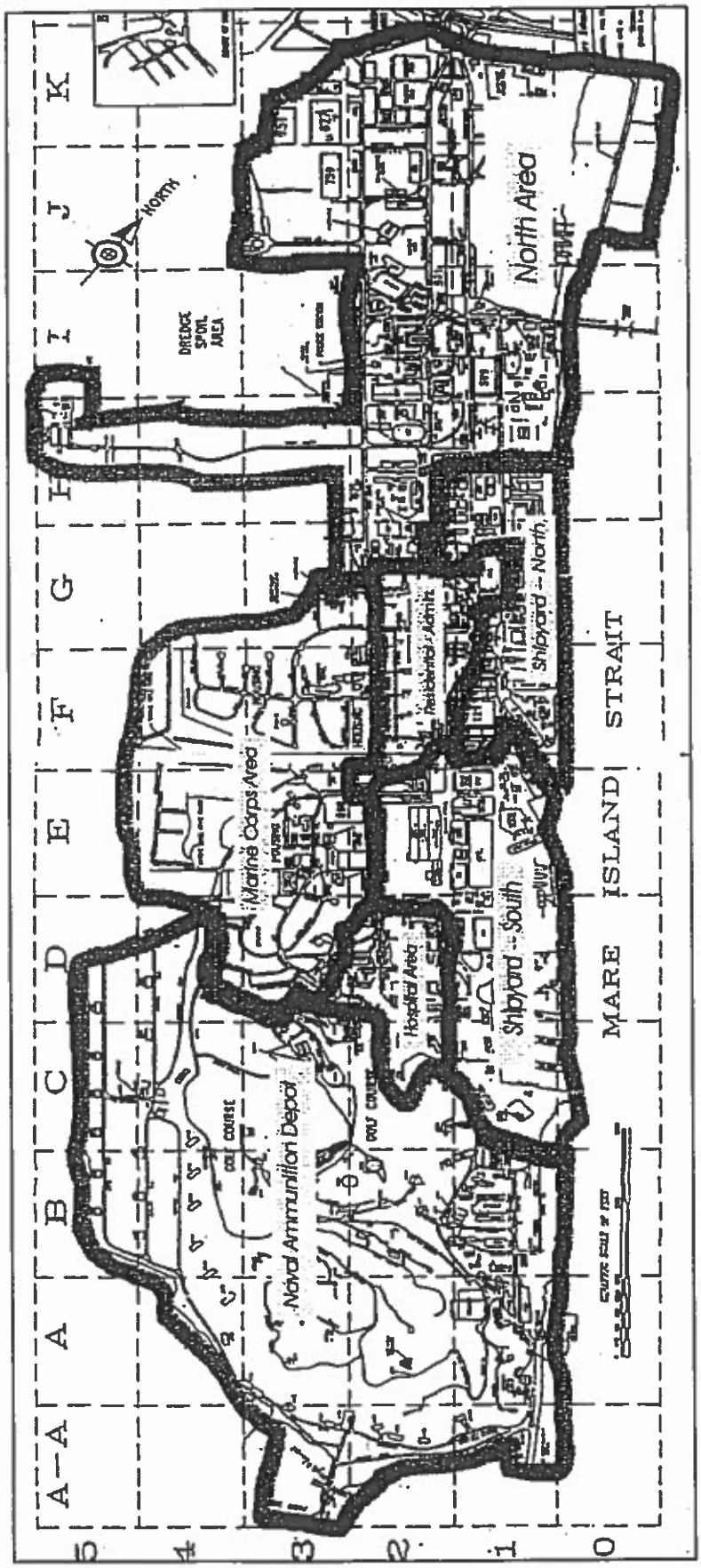

Figure 3. Areas of Mare Island

Figure 4. Potential Archaeological Features, Mare Island Naval Shipyard

FEATURES

F1	Industrial Area	F10	Civil War Battery	F19	Medical Officers' Housing/Stable
F2	First Independence Berth	F11	Officers' Housing Area	F20	Marine Corps Officers' Housing
F3	Marine Railway	F12	Second Independence Berth	F21	Marine Corps Barracks
F4	Sawmill	F13	Hospital Pier/Wharf	F22	Marine Corps Seawall
F5	Stable Complex	F14	NAD Watchman's House	F23	Independence Crew Quarters
F6	NAD Wharf	F15	Lighthouse Reservation	F24	Hospital Wharf
F7	NAD Seawall	F16	Ordnance Reservoir	F25	~~Torpedo Boat Wharf~~ Void.
F8	NAD Retaining Wall	F17	Yard Reservoir/Tunnel	F26	Bandstand
F9	NAD Keeper's House	F18	Civilian Housing Area	F27	Submarine Repair Base
				F28	Bay Model

LEGEND

- Historical Boundary
- 1854-1865
- 1866-1897
- 1898-1918
- 1919-1938
- Medium Prehistoric Sensitivity
- High Prehistoric Sensitivity

0 500 1000
SCALE IN FEET

Areas Eliminated from Predictive Model

MARE ISLAND NAVAL SHIPYARD

HISTORICAL ARCHEOLOGY LOCATION MAP

Figure 4. Potential Historical Archaeological Features, Mare Island Naval Shipyard

PREHISTORIC SUMMARY

According to Self and Associates Mare Island was occupied by the Patwin, descendants of Miwok-Costanoans at the time of historic contact. The Miwok-Costanoan ancestral Utian population moved into the Sacramento River valley area around 1900 B.C. from eastern Contra Costa County. Western Miwok populations expanded into the Napa Valley (1500-1000 B. C.), extending north as far as Clear Lake. The Patwin and Wintuans emerged from these early Miwok populations (Allan and Self 1995a, 1995b:1).

The prehistoric chronological sequence for the central California region, as defined through over 100 years of archaeological research, begins with the Windmiller Pattern. Sites from this period date from about 5000 BC to 2000 BC. The Windmiller Pattern predates the arrival of the Patwin into the Mare Island region and the island appears to have been unoccupied during this time (Allan and Self 1995b:3).

The Berkeley Pattern followed the Windmiller and lasted until about 500 AD. Sites associated with this pattern are found in diverse environmental settings and are characterized by deeply stratified midden deposits, an abundance of milling and grinding stones for processing vegetal resources, and an introduction of the bow and arrow by the end of the period. The Berkeley Pattern coincides with the Patwin entry into the region and Mare Island was likely used by prehistoric peoples during this time (Allan and Self 1995b:4).

The late prehistoric period in the Bay Area ranges from about 300 to 500 AD until the historic period. The period, characterized as the Augustine Pattern, is typified by intensive fishing, hunting and gathering, increased trade and exchange networks and large population increases. The people living in the late prehistoric period had a rich material culture characterized by bone awls, pottery, clay effigies, bone whistles, stone pipes, and exquisitely-worked projectile points and tools. This emerging Augustine Pattern was destroyed by the Spanish mission system and subsequent historical development (Allan and Self 1995b:4; Moratto 1984:283). Mare Island was used during this time period.

Spanish mission registers from 1811 and 1821 indicate mission influence in the area. Emissaries from Mission Dolores took at least 1,800 Indian neophytes from Patwin settlements such as *Aguasto*, located on the northeastern side of the Mare Island peninsula, north of the Mare Island Causeway (Johnson 1978). The indigenous Patwin population was quickly and significantly impacted by the increasing Euro-American population. In addition to the effects of missionization and raids, malaria and small pox epidemics in 1837 decreased the population by an estimated 75 percent. By 1924, the only remaining Patwin survived in Cortina and Colusa. By 1955, only 3 to 7 people who were a quarter or more Patwin lived in Napa Valley, and in 1972, the Bureau of Indian Affairs listed only 11 Patwins in the entire territory (Cook 1955; Kroeber & Heizer 1970; Johnson 1978).

PREHISTORIC PREDICTIVE MODEL

In 1995, William Self and Associates tested nine recorded or suspected prehistoric archaeological sites on the island, none of which led to recommendations of National Register eligibility. Four locations, while not revealing cultural deposits, were believed to contain a higher level of sensitivity than the remaining five tested areas. These four sensitive areas are outlined below.

Prehistoric Site 2

Situated on the bluff above a recorded prehistoric site (CA-SOL-232), the area defined by Roop and Flynn (1986) as Prehistoric Site 2 appears to be in a relatively natural state, except for the impacts associated with construction of three residential structures, a garage and several small outbuildings. The bluff area to the east, and the slope area to the south and southeast of theses structures appears to have been undisturbed though the historic occupation of the island. The area's location on the original uplands along the Strait, above a recorded site, suggests it may potentially contain evidence of a prehistoric presence. Although testing of the site by Self and Associates (Allan and Self 1995b) was negative, this may have been in part a function of accessibility. Portions of the site were not testable due to the steepness of the terrain or the location of buildings and fences that precluded situating bore holes in certain areas of the site.

Buildings 85, 87, 89, 91

The area to the west of this building complex may be the location of CA-SOL-17. Although the surrounding terrain is paved, very little of the subsurface appears to have been impacted by past excavation. Remains of CA-SOL-17 may be capped by the pavement and by whatever fill material was used to bring the terrain to pre-paved grade (Allan and Self 1995a, 1995b).

The potential sensitivity the area immediately surround this building complex is enhanced by references in a 1918 issue of the *Vallejo Evening News*. A brief article in the local newspaper described the discovery of "five Indian skulls in the vicinity of Machine Shop No. 2," which at one time was housed in Building 89. The possibility exists that more burials could be encountered during future excavations in the area; as such, this locale should be considered an area of archeological sensitivity.

CA-SOL-233

The recorded location of this site appears to have been severely impacted by the excavation associated with the construction of ammunition bunkers A151 and A150. Although test bores in the area were negative, thick, laminated stratum of fragmentary shells deposits were observed in visual inspections of the exposed bluff face behind the ammunition bunkers (Allan and Self 1995a). Self and Associates believed these to be natural deposits, based on the apparent absence of charcoal, midden, firecracked rock, or lithic material. They noted, however, the

possibility that cultural materials and portions of SOL-233 may still be encountered in subsurface excavations of the area.

Hospital Area

In 1898, the Navy was working on construction of a road between the hospital and the magazine at the southern end of the island. The August 29, 1898 edition of *The Vallejo Evening Chronicle* describes the work of "laborers with scrapers and teams . . . grading . . . the new roadways between the two points. . . . Last Friday, while digging away on the embankment opposite the hospital, they brought to light two skeletons supposed to be those of Indians buried years ago."

The description of the burial finds does not clearly indicate their location relative to the roadway. The area presently surrounding the roadway that now passes in front of the hospital has been heavily impacted by construction grading and paving. The "embankment opposite the hospital" may have been leveled and removed to form the area now containing the former General Mess, former McDonald's restaurant, and the large, paved yard adjacent to it. Alternately, the "embankment" may refer to the extant upland area to the southwest, south, and southeast of the hospital facility. Self and Associates noted that "Although unlikely, to the extent that this area may encompass the location of the historic burial finds, it should be viewed as potentially containing additional prehistoric remains or other prehistoric cultural materials" (Allen and Self 1995b:26).

Self and Associates to suggested that the upland area of the island be classified as two zones of archaeological sensitivity. The first zone, classified as Selective Sensitivity contained that unaltered original upland area and the four sensitive areas discussed above. The second zone, consisting of the developed, topography-altered areas of the uplands, was considered of Minimum Sensitivity.

According to Allan and Self (1995a:4), "Given the nature and amount of land alteration on Mare Island, it is highly unlikely that evidence of prehistoric residential structures, such as pit-house depressions, will be encountered. If identified, however, such evidence would be significant and could qualify for nomination to the NRHP under Criterion C if it is embodied any distinctive characteristics. Prehistoric sites of a non-structure nature, such a lithic scatters, shell middens, burials, could be significant and could qualify for nomination to the NRHP under Criterion D if they possess the potential to yield important information on prehistory."

Portions of the City of Vallejo's Mare Island parcels are located along the original shoreline of Mare Island and are considered sensitive. Much of the area, especially the finger piers, is constructed on fill and the probability of encountering prehistoric archaeological evidence is very slight. That portion of the island located on or within 100 meters of the original shoreline (as depicted above in Figure 4) and within the four sensitive zones identified by Allen and Self (1995b:26) are considered to have potential sensitivity for prehistoric archaeology.

HISTORICAL SUMMARY

As part of a National Register nomination effort, JRP prepared a comprehensive historical overview for Mare Island. Their context provided a detailed history of Naval development in the nation, focusing on Mare Island. The following summary is extracted from JRP's work and modified to focus on the development of Mare Island from 1854 to present, and the events that affected the developmental phases on base. For an understanding of Mare Island's role in national events and naval history the reader is referred to Section 8 of the National Register nomination for Mare Island (JRP with PAR Environmental Services 1995).

Introduction

Mare Island presents a complex set of issues that must be addressed in an historical context. While it is a relatively small geographic area, the former shipyard had been occupied and used for over 140 years. Because of this long usage, the history of the base cannot be appreciated as an unbroken chain of events; rather, the history of the base can be understood only within the larger context of American military history since the late 1850s. For this reason, this context is built around six distinct periods: 1854 to 1865, from the founding of the base through the Civil War; 1866 to 1897, from the Civil War to the eve of the Spanish American War; 1898 to 1918, from the Spanish American War through World War I; 1919 to 1938, the period between the world wars; 1939 to 1945, the build up for World War II through the end of the war; and 1946 to 1995, which includes the Cold War era (1947-1989).

The shipyard at Mare Island was never operated as a single unit or in pursuit of a single mission. Rather, there were always distinct zones of activity, each zone generating different types of resources. To recognize this complexity of usage, the former base is discussed in terms of seven different areas: Shipyard North (the original shipyard area), Shipyard South (a major shipyard that developed during the 1920s and became the hub of activity during World War II), the Ammunition Depot area at the south end of the base, the Hospital area, the Marine Corps area, the Residential-Administrative area (west of the old shipyard), and the North End (which developed slowly as land was filled, beginning in the 1920s).

1854-1865: Founding of the Navy Base through the Civil War

The founding of the Mare Island Naval Shipyard can be traced to the exigencies of military occupation of California after the cession of the area from Mexico in the 1848 Treaty of Guadalupe Hidalgo, and the closely-related need to preserve civil peace during the chaotic Gold Rush years in California. California, admitted to the Union in 1850, was slow to develop civil institutions to manage the transfer from Mexican authority and the burgeoning Gold Rush population. The United States military, Army and Navy, represented an important stabilizing impact on the civil institutions of California during this period.

While the Army established many small installations throughout California during the 1850s, the Navy established only one base on the West Coast—Mare Island. The first West Coast naval installation, Mare Island was also the only such facility in California for many years. As a pioneering facility, Mare Island claims a long string of other "firsts" in California and Western American naval history. These various distinctions are highlighted throughout this narrative.

After the Mexican War, the Navy's Pacific Squadron, consisting of 14 vessels, remained the most obvious representative of U. S. strength in California. As such, the Navy was an important participant in the Gold Rush. Similarly, the Gold Rush had a significant impact on the Navy. With the signing of the Treaty of Guadalupe Hidalgo the Navy was left with the task of defending a nation with two sea frontiers some 2,500 miles apart by land, but 14,000 miles apart by sea. The maritime commerce and trade initiated by the Gold Rush and the growth of San Francisco demonstrated the importance of the new sea frontier in the Pacific. The task of protecting California's shores and the ships that sailed to and from her various ports led to the expansion of the Pacific Squadron as the mightiest naval power on the Pacific (Delgado 1990:123).

In 1852, Secretary of the Navy William A. Graham commissioned a board of naval officers to survey the San Francisco Bay thoroughly for a protected site for a navy yard and to plan the best locations for drydocks, piers, wharves, shops, storehouses, offices, a hospital, and residences once they found a suitable location. In July of that year the board notified Secretary Graham that they considered Mare Island to be the most suitable location in the region. In August, a sectional floating drydock, authorized by the Secretary of the Navy for use in California, arrived at San Francisco. The drydock, built in New York and shipped in pieces around Cape Horn, was considered a symbol of United States naval expansion on the West Coast and interest in the growing importance of the Pacific maritime industry. It remained the dominant feature at Mare Island until after 1855. On the recommendation of the Board of Officers, the U.S. government bought the island in 1853 for $83,491 and the drydock was moved into place in the Mare Island Strait (Lott 1954:8-9, 21).

Based on observations made at the site, one of the board members, Bureau of Yards and Docks Engineer William P. S. Sanger, conceived the original plans for the navy yard at Mare Island. The Sanger plan for the Mare Island shipyard covered the relatively level plateau at the north end of the island (now the center of the island). The plan called for a wharf a mile in length along the Mare Island Strait at a point where the depth of water at mean low tide was approximately 25 feet. Sanger planned the yard level at the quay line at ten feet above mean high tide and planned to use excess dirt from the uplands as fill from the edge of the uplands to the wharfside. A 100-foot-wide quay was to extend the length of the wharf, interrupted in the center by a permanent dry dock flanked by building ways with ship houses and a wet basin for an existing floating drydock.

To the north of the central permanent drydock the Sanger Plan designated an area for 300-foot-long timber sheds. These sheds were to include spaces for the molding lofts, house joiners, and paint shops. Next to the shed Sanger proposed several warehouses for ships stores. Further north, separated by a 500-foot-wide gun shot and anchor park, was the site for a machine shop with foundry and a boiler room. To the south of the central drydock, Sanger planned three large shop buildings, with work areas over storage space, for mast production and repair. Further south, beyond the warehouses, was the large wet basin with eight dry docks, each planned at about 275 feet in length (Cardwell 1985:31; U.S. Navy 1854).

West of the main ship yard buildings and separated by a 100-foot-wide street, Sanger's plan called for a second row of buildings. These were to include stables and cart yard, a bakery, flour storage, a cooperage, an administrative building with library and courtrooms, the smithery flanked by copper, tin, and plumbers shops, the powerhouse for the marine railway, storehouses for timber, rigging, sails, and oakum, and shops for ship joiners. Backing the shipyard was another 100-foot-wide street with three blocks of unassigned space, each measuring 300 by 900 feet. Next were three blocks for residential buildings. The flagstaff was located in the central park space, opposite the Commandant's residence. A chapel and schoolhouse were to be erected at the southernmost end of the residential block. A tract measuring approximately 600 by 700 feet, located about 250 yards southwest of the residential zone, was reserved for a hospital. A similarly-sized district was also reserved for a Marine compound (Lott 1954:24; U.S. Navy 1854).

The original plan for Mare Island centered on five north-south axes: the wharf or quay wall, California Avenue (formerly Dock Street), Railroad Avenue, Walnut Avenue (formerly Walnut Street), and Cedar Avenue. The first four streets provided access within the shipyard area, while Cedar Avenue led to the Marine Corp and Hospital areas. Although there were several roads extending to the southern tip of the island, these were either poor and muddy much of the year or else wound over the high bluffs at that end of the island. Consequently, during the early periods access to the Ammunition Depot was gained primarily by boat. The island's principal east-west axis, Central Avenue, extended from the ferry slip on the wharf past the central administration offices (Building 47) to the Commandant's Quarters. For most of the nineteenth century, Central Avenue provided the principal point of entry into Mare Island Navy Yard (Lott 1954:24; U.S. Navy 1862, 1874, 1878, 1883a, 1898a).

The buildings at Mare Island initially were grouped according to the bureau that oversaw their function. Within the shipyard area shops that dealt directly with ship construction tended to be clustered around the drydocks and building ways, while those associated with manufacturing equipment were grouped at the northernmost end of the yard. The Bureau of Ordnance originally administered two groups of shops under its jurisdiction, one for manufacturing guns and shells in the shipyard and one for storing explosives at the south end of the island. Personnel from the Bureau of Surgery and Medicine oversaw the original dispensary and then later the hospital.

In August 1854, the Secretary of the Navy assigned Commander David Glasgow Farragut to Mare Island as the station's first commandant. Farragut and his Superintendent of Yards and Docks, Daniel Turner, set about construction of the smithery, steam engineering complex, and storehouses (Lott 1954:24).

In 1855 work began on the original officers' quarters at Mare Island. The houses, built along the west side of Walnut Avenue in accordance to the Sanger Plan, were fashioned after those in the Norfolk Navy Yard. They were made of brick, stood three-stories high, and were described by a contemporary as being "uniformly ugly." An earthquake in 1898 destroyed these original structures. The current officers' quarters are sited along the same row (sometimes called "Captains Row") and in approximately the same location (Lott 1954:25; *Scribner's Monthly*, April 6, 1872:643).

During its early years, the shipyard existed chiefly to service commercial vessels, underscoring its role as a stabilizing influence on the development of California and the West Coast. When the base was founded in 1854 the Pacific Squadron consisted of only seven ships. Dozens of commercial ships, as well as ships of foreign registry, docked at Mare Island for repair. By 1858, the importance of the repair facilities at Mare Island for both private and public vessels was being realized. During the Civil War, the yard ensured that ships of the Pacific Squadron were available for service (Johnson 1963:215; Lott 1954:31; U.S. Navy 1858).

The early buildings in the northernmost part of the shipyard were the first in the Bureau of Steam Engineering complex. The industrial shops were built around an open central courtyard in the center of which was a boiler house with a large smokestack. Construction of an iron and brass foundry began in 1858; however, delays in appropriations slowed completion until after the Civil War. A machine shop and boiler shop were also begun in 1858. This whole complex of buildings marked the northern boundary of the shipyard until World War I. For most of the nineteenth century, docks were located on the eastern and northern sides of these buildings.

The first shipbuilders on Mare Island were woodworkers —the shipwrights, the joiners, and the boatbuilders. The shipwrights were involved in many phases of construction. They prepared the keel blocks in the building slips before the keel was laid and erected the scaffolding. During construction, they assured everything was level and plumb, and checked the lines and heights to keep the ship in shape. The shipwrights also assisted riggers in the handling of machinery and the launching of the ship. After the ship was out of the shipway, the shipwrights installed decks and boat stowage, and manufactured booms and spars. They also constructed barges, floats, and small boats. Additionally, the shipwrights were responsible for the docking of all ships.

Boatbuilders constructed wooden boats of all types. This involved bending frames and planks, caulking, planing, sanding, and painting. On the larger ships, the boatbuilders installed the bulkheads and constructed the floors, deck beams, and decks. They were also responsible for such ships' furniture as benches, tables, lockers, and boxes. The joiners' shops made all types of fine furniture and equipment for ships and Navy shore installations. Items produced by the joiners included sashes, doors, tables, chairs, and blocks for riggers. The nineteenth century woodworkers' shops were clustered around the sawmill located at the southern edge of the original shipyard area (*Mare Island Grapevine* December 1942).

Another feature in Shipyard North during this period was the *USS Independence*. In 1856, unfit to make the journey around Cape Horn and not worth the expense of an overhaul, the *USS Independence* was turned over to the commandant of Mare Island for use as a receiving ship. It served as a station to receive, process, house, mess, clothe, pay, and transfer transient personnel until 1914 (Lemmon and Wichels 1977:3).

In 1856, Farragut received a request from the Acting Chief of the Bureau of Ordnance and Hydrography to temporarily store ordnance material at Mare Island. Around the same time the Bureau of Yards and Docks asked for recommendations for a site for a magazine to store ordnance from ships under repair at the Navy Yard. Farragut located the ammunition depot at the southern end of the island. The site was chosen for two reasons: warships could easily unload ordnance there for storage before proceeding to the shipyard for repairs; and the bluffs of up to 300 feet

provided the shipyard buildings and personnel natural protection from explosion (Lott 1954:64; Vann 1995).

The original function of the Ammunition Depot was to store ordnance belonging to ships stopping at Mare Island for repairs. When a ship put into Mare Island, it first stopped at the Ammunition Depot wharf at the southern end of the island to unload all explosive material from the vessel, after which the ship could continue up the strait to the shipyard. Once the ordnance was unloaded from the ship, the black powder was removed from the shells and stored in the magazine (Building A1). The empty shells were stacked outside, placed with the fuse hole down to prevent moisture buildup. Loaded shells ready to be returned to their vessels were stored in the shell houses (Buildings A3 and A4). These structures were also where crews would reload their empty shells with black powder (Vann 1995).

Given its rather limited function and the relatively few warships in the Pacific Squadron at the time (7 to 14 vessels), the Ammunition Depot remained small during this period. Except for the buildings described above, the depot required few other structures. The size of the Ammunition Depot remained relatively static until after 1892 when the Navy instituted changes in ordnance handling policy.

With the advent of the Civil War, the Pacific Squadron's most important duty turned to protecting the California gold shipments carried by mail steamers to Panama. By July 1861, with only six ships, the Pacific Station was the only one of the U.S. distant stations which still maintained a squadron. By late summer three ships had been damaged, reducing the Pacific Squadron to half its force (Johnson 1963:114).

The situation might have been critical had it not been for Mare Island Naval Shipyard. The presence of the base meant that the ships of the Pacific Squadron were able to be thoroughly overhauled and repaired without leaving the station. Moreover, Mare Island's magazine was well stocked so no warships were forced to borrow gunpowder or shot from a foreign government or private company as they had to in previous years (Johnson 1963:114).

1866-1897: Civil War to the Spanish-American War

After the Civil War the U.S. Navy lapsed into a period of decline that lasted nearly 20 years. At war's end, the Navy, with over 700 ships, was one of the strongest in the world. Yet by the mid-1870s, the government had auctioned off or sold for scrap more than two-thirds of this force (Alden 1943:282).

The decline in the Navy and U.S. merchant marine that followed the Civil War did not have an immediate effect on the shipyard at Mare Island. In 1866, the floating dry dock serviced over two dozen foreign and domestic ships. This number soon declined as the nation's interest in sea trade waned and the Navy responded by cutting the fleet. In June, the warship *USS Monadnock* was decommissioned and tied up "in ordinary" at Mare Island. Three months later the *USS Comanche* was similarly docked and allowed to decay. By 1872, seven of the ten ships docked at Mare Island were tied up in ordinary.

Despite the neglect American naval equipment suffered during this period, in 1872 the U.S. Congress recognized the defensive importance of a well-maintained Pacific fleet to the defense of the nation by authorizing construction of a stone drydock at Mare Island. Designed after a European plan by Civil Engineer Calvin Brown, the dry dock was the Navy's second and the first on the West Coast.

Between 1869 and 1881 Brown also supervised the construction of a large portion of the foundry and machine shops, the sawmill, the ordnance storehouse, and the iron plating shop (established to house the newest function on base). Also completed during his term were the Marine barracks, the hospital, a powder magazine, and a reservoir system for the protection of the NAD.

The process of reclaiming the tidelands south of the shipyard began prior to 1898. According to the Sanger Plan, material from the uplands was to fill this area to make it an even grade with the Shipyard North. It was also the planned location for the large basin and eight drydocks. By 1874, however, the only major improvement to the area was a roadway through the tules and a small pier that served as a landing for the hospital and stables complex. In the mid-1880s the *USS Independence* was moved into this area and moored to a wharf in Mare Island Straits. It was moved to the south to make room for the coaling sheds and large cranes (Johnson 1963:108; Lemmon and Wichels 1977:3; Noel 1978:242).

The function of the ammunition depot changed little during the early years of this period, with crews from each ship still responsible for the handling and storage of their own ordnance. This being the case, little improvement was needed except for additional storage as the number of ships in the Pacific Squadron increased. After an explosion killed 15 sailors in 1892, the Navy and the Bureau of Ordnance changed the policy of ordnance handling. In addition to having only qualified civilians do the work, the Bureau designated separate facilities for loading and unloading shells. The construction of a filling house and gun cotton magazine in 1895 appear to reflect this policy change. Additionally, several temporary sheds were built on piers in the mud flats.

The mid-1870s saw major changes in the water system at Mare Island. In 1873 a reservoir was constructed above the magazine to supply water to the ordnance area. In 1876 this reservoir was joined by a second yard reservoir located on the next hill to the north (current Lake Rodgers). A series of ditches circled around the foot of the two hills, emptying water into the reservoirs. Water was then sent through a tunnel from the yard reservoir south to a pipe. A series of pipes conveyed the liquid to the shipyard areas and residential housing where it was available for fire protection and industrial use.

Another addition at this time was the establishment of a lighthouse reservation on the south-central end of the island on a point west of the ammunition depot. Built in 1872, the lighthouse was a two-story frame structure with a square tower and light. The reservation had its own "T"-shaped wharf and numerous outbuildings, including a shed, water tank, and barn. It was operated from 1881 until 1916 by Kate C. McDougal, widow of Lieutenant Commander Charles J. McDougal (original keeper of the light). The lighthouse was abandoned in 1917, although the buildings remained in place for many years.

Throughout this period the south end of the island was used for pasture and farmland. Hay and grains were grown on the uplands for the many animals used on the island. A vineyard was planted near the location of Magazines 217 and 218 sometime between 1874 and 1878. This vineyard flourished for about 10 years.

Although a hospital reservation of approximately ten acres was included in the original shipyard plans, construction of the base hospital did not begin until after the Civil War. From 1854 to 1870, doctors from the Bureau of Medicine and Surgery had to nurse the sick and wounded in a temporary facility apparently located in the civilian employee residential area of Dublin. Although given the title "hospital," the facility operated more as an dispensary rather than an infirmary. Responding to the need for adequate medical centers demonstrated by the Civil War, congress authorized funds to enlarge and modernize base hospitals. In 1869, under the direction of Calvin Brown and Surgeon J. M. Browne, work began on the hospital at Mare Island that would serve the Pacific Station. Estimated to cost about $250,000, the structure was 256 feet long and 50 feet wide and consisted of three stories and an attic with a Mansard roof. The million and a half bricks used in the building were made from clay extracted at the site. This first brick hospital was destroyed in the 1898 earthquake and the replacement building was constructed on the basement story of the original. Quarters for the Chief Medical Officer, hospital stables and ambulance house, and other outbuildings were also built during this period (Lott 1954:102)

As with the hospital area, the ten-acre parcel for a Marine reservation laid out in the Sanger Plan was not built upon until after the Civil War. Shortly after the establishment of Mare Island Naval Shipyard in 1854, Commander Farragut requested a Marine guard for the safety and protection of the station. It was not until 1862, however, that a contingent of 140 Marines was ordered to Mare Island. Captured and released by the Confederacy while in the Caribbean, the Marines finally arrived at Mare Island in 1863. They were temporarily quartered on the *USS Independence*, and then in the loft of the unfinished foundry. Permanent quarters were not established until nearly a decade later (Lott 1954:76; U.S. Navy 1863).

The original Marine Corps barracks at Mare Island was completed in 1871. It was a yellow, two-story, brick structure some 500 feet in length and contained a kitchen, bakery, mess hall, and laundry. A prison and a large H-shaped privy were located behind the building. Fronting the barracks to the east, a parade ground extended out approximately to Cedar Avenue. Flanking the parade ground on the south was a house for the commander of the Marine Corps detachment, completed in 1870. Three additional structures for Marine officers' quarters were built on the north side of the parade ground.

Use of the original Marine barracks changed when the Marine compound moved to a more westerly location on the island and a new barracks building was built in 1917. The original building was used for a variety of purposes until the early 1950s. The original Marine Corps Parade Ground was converted to baseball diamonds. In 1952, the Navy razed the original barracks building to make room for Building 866. At the same time the officers' quarters were moved to their current location on the base.

In 1878, a *San Francisco Chronicle* article stipulated that the Mare Island Navy Yard would probably have to be abandoned because of the "rapidly decreasing depth of the harbor" caused by silt build-up associated with hydraulic mining debris deposited in the bay. In 1882, Congress

ordered the Secretary of the Navy to appoint a three-person committee to assess the condition of the nation's naval yards. Additionally, the commission was to report on the advisability of closing any of the yards not suited to the manufacture and repair of ships in the "steel age." In a report dated June 6, 1883, the commission concluded that it was absolutely necessary to retain Mare Island Navy Yard (*San Francisco Chronicle* January 27, 1878; U.S. Navy 1883b 5-10, 33).

Even though the commission's conclusions saved Mare Island from closure, work during this period was slow. Between 1866 and 1897, the Mare Island Navy Yard launched only six major vessels: three tug boats, a monitor, a cruiser, and a revenue cutter. Of these, the tug *Unadilla* is of special significance as it was the first steel vessel laid down in the yard. Launched on September 21, 1895, the 355-ton *Unadilla* served the station for over 50 years (Lemmon and Wichels 1977:215; Lott 1954:124).

1898-1918: Spanish-American War through World War I

During the 1880s and 1890s, the United States watched the major powers of Europe and Asia increase their spheres of influence through territorial expansion. America's program of expansion, including naval expansion, came to fruition during this period and the Mare Island facility grew enormously as a result.

The Spanish-American War (1898) was a momentous event in American history; it gave the United States a colonial empire, and it marked the emergence of this country as a world power. The Spanish-American War also demonstrated that two fleets were needed, for fighting against even one weak empire required operations in two oceans. Congress appropriated $50 million for national defense and the Navy rushed to mobilize. The far western Pacific naval bases were called upon to support the war effort in the Caribbean. In one month the work force at Mare Island almost doubled from 900 to 1,700. The shipyard continued to expand in the early 1900s, particularly during Roosevelt's presidency (1901-1908). Before 1900 only 8 ships had been built at the Mare Island shipyard; in the next 18 years 30 ships were constructed at the building ways, 10 before World War I and 20 during the war years (1914-1918) (Braisted 1971; Lott 1954:255; Munro 1964).

Mare Island yard crews were busy repairing ships for the Spanish-American war effort on the night of March 30, 1898, when a severe earthquake struck Mare Island, sending brick chimneys and walls and slate roofs tumbling down. The quake severely damaged the Steam Engineering shops at the north end of the shipyard, including the machine shop, the boiler shop, the smithery, and the foundry. The east walls of the boiler and foundry, which were constructed on fill, toppled and jagged cracks ran from bottom to top of the side walls. The two-story brick sawmill and paint shop were reduced to rubble. The unreinforced masonry walls of the 14 officers' residences on Walnut Avenue were cracked and crumbling and some roofs were shaken off. The naval hospital building also was severely damaged with cracks in its brick walls. All 14 officers' quarters and the hospital were later demolished. Damages to several other buildings were notable but not threatening (Lott 1954:125-127; U.S. Navy 1898b; *Vallejo Evening Chronicle* March 31, 1898). The Navy requested $350,000 for repair and reconstruction of 32 buildings at the navy yard damaged in the earthquake. The surgeon-general asked for another $100,000 to rebuild the

hospital. The Marine Corps' buildings suffered minor damages with repair costs estimated at $5,425 for damages to the Marine barracks and officers' quarters (U.S. Navy 1898c, 1898d, 1898e).

Following the earthquake, Lieutenant R. C. Hollyday, the Public Works Officer at Mare Island, constructed three major industrial buildings with brick walls reinforced with steel frames. In 1900, the 14 officers' residences were replaced with 12 new redwood-framed residences set on the old brick foundations. The hospital was also rebuilt in 1900 in a Classical Revival style (Cardwell 1985; Lemmon and Wichels 1977).

The development of the waterfront and investment in public works by the Bureau of Yards and Docks was quite remarkable immediately after the Spanish-American War, and the trend continued through the presidency of Theodore Roosevelt. During this 10-year period, 17 officers' quarters, 8 civilian employee residences, and 83 workshops, storehouses, offices, and miscellaneous structures were built on Mare Island. The Ammunition Depot, Hospital Reservation, and the Marine Corps area also expanded during this period.

In the decade following the earthquake at Mare Island, the new construction program in the industrial area included steps to provide more modern shops. Ventilating monitors were added to existing shops and extensions were made to lighting, water, and fire protection systems. Work also included the conversion of the central power plant from coal to oil fuel, an improved waterfront (including construction of dikes to maintain water depth, new berths, a new ferry slip, and reconstruction of the railroad track), an extension of the quay wall south of the entrance to Drydock No. 2, an addition of a larger drydock (Drydock No. 2) capable of docking any ship of the Navy afloat or under design, and improved coaling facilities (U.S. Navy n.d.a.:17-18, 1909:115-118, 139-147).

During the nineteenth century, the Navy contracted the construction of most of its vessels to private industry. After the Spanish-American War, Mare Island and other naval yards insisted they be allowed to compete with private yards in shipbuilding. Finally, Mare Island was awarded the contract for building the steel-hulled training ship *USS Intrepid*, a full-masted sailing vessel. The launching of the *USS Intrepid* on October 8, 1904, signaled the emergence of Mare Island as a shipbuilding plant. Mare Island next constructed two steel colliers, the *USS Prometheus* (1908) and the *USS Jupiter* (1912) (Neuhaus 1938). The construction of the two successful collier projects was followed by construction of several smaller river boats in the years leading up to the outbreak of World War I. The only other large ships undertaken at Mare Island prior to the war was the 5,500-ton steel oil tanker *USS Kanawha* and her sister ship the *USS Maumee* (Lott 1954:147-157).

Many improvements to the shipyard shops, storehouses, drydocks, and shipways were undertaken at Mare Island to prepare for the coming of the Pacific Fleet and in preparation for World War I. But even with all these improvements channel restrictions inhibited access to Mare Island shipyard by the largest battleships and cruisers of the fleet. Thus, Mare Island constructed only one battleship, the *USS California*, launched on November 20, 1919. Construction of destroyers remained the yard's specialty. Eight destroyers were launched at Mare Island during World War I and another eight commissioned during the war were launched by 1920. Supplying these vessels (and all others constructed or repaired at Mare Island) with ammunition was the responsibility of the Mare Island Ammunition Depot (U.S. Navy 1916a 64:1).

The U.S. Radio Reservation on Mare Island also has its origins in this period. In 1899, the Navy conducted the first experiments with the use of Marconi's wireless telegraph on U.S. warships. In 1900, a Marconi unit was installed at the Naval Torpedo Station, Newport, Rhode Island. Further tests were conducted by a board of Naval officers in 1902 on communication between two ships at sea and between a ship and land station. The following year seven sets were ordered for as many ships and 13 additional sets were ordered for shore establishments. In 1903, Mare Island and four other Navy yards were provided instructions in fitting radio equipment in Naval vessels (Howeth 1963:60-115; Neuhaus 1938).

During the mobilization effort, the Navy formulated a six-year building program that included an unprecedented expansion of Navy facilities by the Bureau of Yards and Docks. The preparedness program of 1916 provided for expansion of the fleet and drydocks, Marine bases, fuel depots, training stations, arsenals, and other shore facilities to service the fleet. A large part of the Bureau of Yards and Docks activities pertained to improving and equipping Navy yards for the construction of ships. Another of the Navy's immediate needs was trained men, and the Bureau built at least 35 training camps, many of which (like the training camp on the South Shipyard at Mare Island) were erected with temporary structures located on ungraded open space at existing naval facilities (Peltier 1961:16-17). When the country eventually entered the war, one of the most complete mobilizations of the personnel and materials resources of the country was undertaken (U.S. Navy n.d.a.:19).

1919-1938: The Inter-war Years

Following World War I, the Pacific Fleet was placed under the command of Admiral Hugh Rodman. To accommodate the fleet, the Navy planned the construction of new shore facilities on the Pacific coast and the enlargement of existing ones. Mare Island obtained waterfront improvements and a dramatic expansion of its shipbuilding capabilities.

The Helm Investigating Commission of 1916 recommended that the San Francisco Bay Area receive the main home base of the Pacific Fleet. However, that commission de-emphasized the importance of Mare Island as a home base because of the impracticality of bringing carrier and larger battleships into the shallow and narrow Mare Island Strait. Nearby San Pablo Bay and the Straits of Carquinez contained limited deep water for anchorage of the fleet. Furthermore, the Mare Island site was as limited in its land base as it was of a deep navigable channel. As the debate unfolded in the years following World War I, the Navy Department clearly favored a mid-bay site.

For various reasons, including a Naval disarmament treaty in 1922, Mare Island evaded an attempt to downgrade its facility to a second-class naval yard. The shipyard retained its designation as the principal West Coast supply depot and its drydock facilities remained open for ship repair and refitting. Despite its physical disadvantages, Mare Island fulfilled its mission by improving the navigable channel in San Pablo Bay and Mare Island Strait, making waterfront improvements, modernizing its repair plants, enlarging the supply depot, and upgrading other facilities for the maintenance and operation of Naval forces in the Pacific (Braisted 1971:225-230, 475-490; Lotchin 1992:42-43). Mare Island and the other shipyards were kept busy completing shipbuilding work commissioned during World War I.

Mare Island also became the major West Coast submarine repair facility during this time. Special facilities to serve submarines, namely quarters for personnel, special supplies, and some special repair facilities, made it a significant submarine base. Mare Island Naval Shipyard continued to expand its submarine repair base throughout this period and was awarded a contract to build its first submarine in 1925.

The increasing appreciation of the strategic and commercial importance of the Pacific in the interwar years was reflected in the continued growth of the Yard. Shops were rearranged and modernized, transportation and docking facilities extended, and the ship-building ways improved. The hospital, ammunition depot, and submarine repair base areas were developed further with modern, Bureau of Yards and Docks-designed fire-proof buildings. Mare Island was finally connected to the mainland by a causeway in 1919. An improved causeway was constructed some distance to the north in 1935. The latter structure is still in use (U.S. Navy n.d.b. "Causeway").

Waterfront structures all around the island were rebuilt in the early 1920s to repair the damages done by the marine borer teredo that had invaded Mare Island Channel, destroying wharfs, pilings, and piers. These damages were gradually overcome by the replacement of the wood structures with quay walls, piers, and wharfs constructed of concrete or stone. Much of this work was completed by 1925 using station labor (U.S. Navy 1925a).

The 1930s brought fundamental physical changes to Mare Island that opened new areas to construction. One was the removal of Dublin Hill, a tract of high land near 5th and Walnut Streets; the other was the reclamation of tule land through the construction of dikes and levees to capture the spoils of channel dredging.

Excavators gnawed away at the margins of Dublin Hill as early as 1910 to make way for a modest expansion of the shipyard. Additional material was removed for fill under the submarine base wharf in 1925. Six years later, fill for a 1,000-foot expansion of the quay wall, extension of the submarine base north into the former tule lands, and excavation for a supply building and dispensary took more of the hill. Additional fill requirements in the mid-1930s led to razing or relocating some 20 buildings from Dublin Hill, among them old civilian and junior officers' quarters (U.S. Navy n.d.b.).

Land reclamation in the 1930s roughly doubled the usable acreage on the island. The low-lying tule lands on the north end of the island were raised above the high tide line and became available for construction of housing, shops, storehouses, shipbuilding, and a proposed aviation field. Areas along the western, southern, and southeastern shoreline were also leveed and diked to reclaim additional acreage for expansion of the ammunition depot, additional berthing slips, and expansion of the south shipyard.

After 1930 the Naval building programs of Japan, and later Italy and Germany, led the United States to reconsider its Naval requirements. During the period of 1933 to 1941, the Navy replaced over 200 obsolete, flush-deck, World War I-style destroyers. Three destroyers, *USS Smith, USS Preston,* and *USS Hendley* were built and launched at Mare Island in 1936 and 1937 (Potter 1955; Lemmon and Wichels 1977:45-48). The Mare Island shipyard also constructed three submarines between 1936 and 1939—the *USS Pompano, USS Sturgeon*, and *USS Swordfish*. The success and popularity of a later improved submarine design set the stage for the mass production of submarines at Mare Island Naval Shipyard that commenced in 1940 (Lott 1954:198-203; Weir 1991:42-43, 103-109).

In summary, the post World War I era was one of disarmament. Building activity on Navy Yards came to a virtual halt after the reduction of arms conference of 1922. Nevertheless, under a 1918 wartime appropriation Mare Island secured a modern shipbuilding plant. In the 1920s Mare Island also obtained a submarine repair base, developed a radio communications center, almost doubled its effective size through reclamation of tidelands, and dramatically expanded and improved its facilities for assembling ordnance and storing high explosives. In the early 1930s, and increasingly after 1933, shipbuilding activities escalated at Mare Island and the other Navy yards.

1939-1945: World War II

Mare Island Naval Shipyard underwent considerable growth as a result of a massive expansion of aircraft and shipbuilding industries during World War II. The number of buildings in the Industrial Department alone increased from 323 to 525 (U.S. Navy 1946c).

Naval expansion and defense programs authorized building of combatant vessels and auxiliary, patrol, scout, and miscellaneous craft. Money to build the ships was released to the Bureau of Ships who in turn allotted funds to the Bureau of Yards and Docks to build the facilities to construct and repair the additional vessels (Lane 1951:36-40; U.S. Navy 1947).

Many of the buildings erected on Mare Island during World War II were constructed as light wood frame temporary buildings. Their construction methods and their vast numbers reflect the emergency expansion of naval activities associated with World War II.

Major groupings of World War II buildings of the more permanent type occur in all sections of the base, but most notably in three areas. The North End was transformed into a major ship assembly plant with huge warehouses, barracks, vast storage yards, shops, and building ways. The Shipyard South area underwent a similar change with several of the major shops from the old shipyard relocating to this area into modern industrial shops, offices, and storehouses. These buildings are closely associated with repair of battle damaged vessels and construction of the larger warships and submarines built at Mare Island during and after the war. The waterfront in the Shipyard South region was also completely redesigned adding significantly to the docking and berthing capabilities of the shipyard. Finally, the Ammunition Depot continued to expand both its productive and storage capacities to handle the huge quantities of ordnance and explosives required by the war effort.

Prior to the wartime expansion, Mare Island Navy Yard had a usable area of approximately 635 acres. By 1945, the yard covered an area of approximately 1,500 acres, including a substantial tract of reclaimed land at the north end of the island, and contained four drydocks and eight shipbuilding ways (U.S. Navy 1946c).

During World War II, the Mare Island yard was one of the busiest shipyard repair facilities in the Navy. Mare Island repaired some 31 cruisers, 43 destroyer escorts, 84 submarines, 117 auxiliaries, 165 destroyers, 9 aircraft carriers, 63 LSTs, and 5 LCTs. New construction also was undertaken during the war at Mare Island. The Mare Island Naval Shipyard constructed 5 submarine tenders, 19 submarines, 2 fuel oil barges, 4 seaplane wrecking derricks, seven floating workshops, 31 escort destroyers, 3 tank landing crafts, 6 water barges, 301 landing craft, and a 500-ton covered lighter during the war. The great majority of these ships were built between 1942 and 1944.

The shipyard was the heart of the base at Mare Island, but the other major commands at the island experienced great changes during the war also. The Marines guarded the island and continued to run the second largest naval prison in the country, prior to its closure in 1946. The ammunition depot maximized its explosive and munitions storage capacity and produced enough ordnance to supply ships constructed at the yard with ammunition. The hospital complex had ever increasing responsibilities caring for the large increase in Navy personnel stationed at the yard and treating battle casualties. The years between 1939 and 1945 were expansive ones for every command on the island.

1946-Present

For Mare Island, the post-war era – until recently called the "Cold War" era – was both a period of expansion and retrenchment. Many facilities, such as the hospital and prison, closed altogether, and other facilities, such as the Marines detachment, were scaled back. The shipbuilding function, the heart of Mare Island's operation since the early twentieth century, essentially disappeared. Other functions, however, increased considerably, including the repair of nuclear submarines and key training functions. On balance, the Cold War meant for Mare Island a fundamental retrenchment from World War II, including a decline in personnel from 40,000 to about 10,000. Nonetheless, it remained an important facility in certain key areas.

In addition to the activation and deactivation of ships necessitated by the Korean War, Mare Island was assigned an important role in developing various specialized submarines. This early Cold War submarine work, Mare Island's reputation as the West Coast's submarine shipyard, and a growing emphasis on the submarine by the Navy appear responsible for Mare Island's evolution during the Cold War into a nearly exclusive submarine-oriented shipyard (Ryan 1981).

The Cold War led Mare Island through an evolution from a major Naval Base to an ever smaller facility increasingly dependent upon its industrial activity as the basis for its existence. The frenzied pace of 1945, in which upwards of 40,000 workers were involved in the construction and maintenance of a variety of ships plus countless thousands more in the form of ships' crews, hospital patients, and so forth, was initially replaced in 1946 by an equally frantic downsizing at World War II's end. The long-term trend at Mare Island after 1945 was the deactivation of major

facilities and their replacement with a handful of commands and missions of lesser size and importance, scattered throughout the base.

HISTORICAL ARCHAEOLOGICAL PREDICTIVE MODEL

In preparing a model for predicted archaeological sites, it is important to consider several factors. First, historical maps and records must be examined to generally locate potential features across the landscape. Second, land use activities that could affect the physical condition of deposits or features must be considered (e.g., excavated areas would result in destruction of potential archaeological features). Finally, potential features must be assessed according to their data potential.

There are many archaeological sites in California and most contain some type of information. The key to productive archaeology is to assess whether a property is likely to contain important information. In order to achieve this goal a researcher must examine the data potential in light of an archaeological research design. A design outlines topics or questions that could be addressed given the kinds of data that a particular property type is likely to contain, and evaluates if that information can be gained form other sources. For example, at Mare Island an examination of the iron and brass foundry may be conducted in light of research questions concerning the technology of metal working within a shipyard context.

A variety of property types are expected to occur at Mare Island. Generally, a property type is a grouping of properties that share some important characteristics. Examples include domestic occupation, industrial technology, or defense-related features. Domestic sites could be represented by hollow features used as receptacles for the by-products of everyday living (discarded ceramics, food bones, glass containers, personal items, etc.) or by sheet refuse. Hollow features include wells, cisterns, subterranean basements or cellars, outhouse pits (also called privy pits or latrines), or lined and reusable garbage pits. These features are often filled as a result of sudden, transitional changes, such as clean up after a natural disaster (e.g., fire, earthquake). Sheet refuse is material that accumulates horizontally and can sometimes build up several feet in depth. Often it is composed of material deliberately brought in as fill. The fill layers seal off caches of artifacts and provide evidence of change over time. Analysis of sheet refuse deposits can shed light on backyard use, functional layout of yards, garden designs, and other aspects of daily living.

Industrial sites usually consist of a series of discrete elements that reflect the technology involved. Each component is a resource type with its own potential. M. Praetzellis et al. (1993:243), for example, noted that a foundry site could include coke ovens and fuel storage areas, woodworking shops and wood storage areas, flask storage areas, iron storage areas, cupola furnaces, casting floors, and machine shops. Each component or element of the foundry contains potential value as a part of the overall process. Taken as a whole, a complete reconstruction of a technological type can be accomplished.

Defense sites are also multi-component and could include exterior wall fortification, gun emplacements, magazine storage areas, and watchman living quarters. Each component contributes to the overall interpretation of a feature and allows for a reconstruction of the interaction between different aspects of one feature.

Each property type relates to specific research themes that can be addressed through analysis of materials associated with the resource. Several themes are pertinent to the predicted features that comprise the Mare Island site. These are described below.

Consumer Behavior/Social and Economic Status

The study of individual households and the response of each to economic and social conditions of the time have been under investigation for over a decade. A household, which is defined as a group of people living together for domestic purposes (not necessarily a family), is a convenient unit of study (Beaudry 1984:30; Praetzellis and Praetzellis 1985:94). Self-sufficiency, use of manufactured products, gender issues, and occupational productivity can all be addressed at the household level, and studies of individual households can be combined to examine broader regional patterns.

This approach has a number of proponents in historical archaeology (see, for example, Beaudry 1984, 1986; Beaudry and Mrozowski 1987; LeeDecker et al. 1987; Mrozowski 1984; Starbuck 1984). Wilke and Rathje (1982:613, 618) write that the "archaeology of the individual household is an essential building block in reconstruction of past societies" and that the material culture seen in individual households reflects the demographic composition of the households. Some of the concepts relevant to household studies include household composition, life cycle (of the household itself, not the individuals living in it), income strategy, and status. All of these concepts influence consumer behavior and need to be taken into account when interpreting material culture derived from a household.

Recently, attention has been given to examining individual nineteenth-century households in light of the Victorian attitudes that prevailed at the time. The values toted during the Victorian era ("piety, purity, submissiveness, domesticity in women [Welter 1966:152]; rectitude, thrift, sobriety, and hard work in men [Wiebe 1967:4]; self discipline, temperance, and respect for authority [Mann 1982:210]; and steady work, punctuality, and compulsive behavior in general [Howe 1976:210]" as outlined in Praetzellis et al. 1993:26), were readily adopted by middle-class commercial and professional interests. Victorianism filtered down into the artifacts chosen by households, behavior patterns, and specific historical events and processes on many levels, including household decorations, municipal work projects, and children's toys. In contrast, working class consumer practices were distinctive, perhaps being a way of rebellion or resistance to the overwhelming Victorian values of the middle-class (A. Praetzellis 1991; Praetzellis et al. 1993:26-27). On military bases, Victorian attitudes could be expected among officers, but may be lacking in the civilian working class and enlisted men.

The archaeological deposits associated with mid-nineteenth century households often contain material that provides evidence of the degrees of participation in or rejection of the Victorian patterns of domestic behavior. Artifacts associated with formal dining and socializing

can offer evidence regarding the increased importance of these activities through time. The context of the influences of Victorian values on individual households has been developed in other research designs put forth for San Francisco (Praetzellis and Praetzellis, eds. 1993), Oakland (Praetzellis ed. 1994) and Sacramento (Praetzellis and Praetzellis 1992, Praetzellis et al. 1993) and is applicable at Mare Island as well.

Consumer behavior and social and economic status can be studied through the examination of refuse. Refuse, quite simply, is garbage and includes remains of food preparation and consumption, such as bottles and cans, leftovers, seeds, bones, as well as broken and discarded household objects (dishes, personal items, etc.). Refuse deposits associated with specific households can be studied to answer questions about how people lived, what they ate, how they spent their money, where they obtained their products, how (and to what degree) they were influenced by marketing, social movements, or their bosses, what medicines they used, whether women or/and children were living in the house, and a multitude of other questions. Faunal remains, in particular, are crucial in reconstructing diet, economic status, consumer preferences, social status, and in some cases, ethnicity.

At Mare Island, household deposits from a variety of social groups are predicted. Comparison of deposits from Naval, Medical, and Marine Corps officers' housing, civilian housing, watchman and gunner's quarters, and enlisted men's barracks can be crucial in reconstructing the social or economic lives of people stationed on the Island in the nineteenth century. The lives of the common sailor or worker is not well documented in the historical record, a factor that enhances the value of remaining archaeological features and remains.

Ethnicity/Urban Subcultures

Cultural heritage and gender-related choices can also be examined through material cultural remains. In some studies with a high degree of faunal preservation, distinctions between Irish, African American, and Spanish households have been made based on comparing the faunal record with historical data on food preferences (Maniery and Brown 1994). Ethnic diversity may be evident in Mare Island deposits, particularly in civilian housing areas, and could add to a reconstruction of the lifeways of the Island's inhabitants.

Material remains can demonstrate the relative influences of economic distinctions and the development of mass production and world trade of materials. Artifact assemblages found in sealed deposits are literally time capsules, normally created within a short period of time. A study of these capsules results in an understanding of what was purchased and used in a household. These choices are affected by primary age, gender composition, income level, social standing, education, family background, and personal beliefs.

Industrialization/Technology

Currently, the archaeological study of industrial technology is in its infancy. George Teague (1987) has been studying waste products from industry, such as slag, and has found that the waste

can often provide information on undocumented technologies not available through historical research. Unglik (1984, 1990) and Council et al. (1982) have also examined and analyzed cast iron products and by products recovered in archaeological contexts. Perhaps most pertinent, however, is ongoing analysis and work at the Risdon Ironworks, Industrial Ironworks, and Golden State Miner's Ironworks on Tar Flat, San Francisco (A. Praetzellis 1993), where deposits have allowed for a comparison of technological variation and change, through the analysis of the process of ironworking, rather that the architectural trappings of the factory or shop (A. Praetzellis 1994).

The Tar Flat work in San Francisco resulted in a detailed description of iron foundry technology in the nineteenth century. According to A. Praetzellis (1993:327), "Foundries convert metal ore into refined metal; this raw metal is then turned into finished products by heating the raw material until it liquifies and separates from the impurities. . . metal was melted in a cupola furnace -- a brick-built, chimney-shaped construction -- and cast into the desired shapes." Detailed descriptions of foundry practices at the turn of the century were published by John Sharp in 1900 and are useful in reconstructing the process.

Generally a cupola is lined with clay to protect the brick from the extreme temperatures, and the fuel is prepared. Molds are constructed to receive the molten metal and are created by pressing wooden patterns into the molding material, using a type of sand. large objects are cast directly into concavities prepared on the foundry floor (called floor casting), while small objects are cast in boxes. These boxes, called flasks, are made in two parts, When metal is molten the plug in the base of the cupola is broken and the metal is poured into a clay-lined crucible. Slag is periodically skimmed off during the cooling process and discarded. Once the slag is removed the metal is poured into the molds and left to cool. Once cool the flasks are broken open and castings are removed to the machine shop for cleaning, filling, buffing, drilling, and cutting, if needed (A. Praetzellis 1993:327).

While metal working and other activities associated with the steam engineering complex are likely to have visible byproducts, woodworking and shipbuilding activities are often less represented in the archaeological record. In San Francisco, for example, shipyards were plentiful in the nineteenth century and moved around regularly in response to filling activities and San Francisco's changing shoreline. Carpenters usually owned personal tools and built ships anywhere that met three requirements: cheap land, mud flats, and tides. Carpenters were economical and reused everything, leaving little byproducts of the woodworking industry associated with shipbuilding. At John North shipyard in San Francisco, for example, archaeological investigations uncovered only the platform that once supported the mounted capstan; all equipment had been removed (Olmstead 1995).

Investigations at Matthew Turner shipyard in Benicia, a State Historic Landmark, revealed that stone ways were visible at low tide, along with wharf remains, timber ties and steel cable of the marine railway, boiler house foundations, capstan remnants, and byproducts of blacksmithing, such as iron scrap, slag, and piece of coke. These remains are associated with a shipyard that built commercial wood vessels between 1883 and 1918 (Cooper 1995; Delgado 1986:8-1).

Studying industrial processes associated with shipbuilding, blacksmithing, or other activities could provide data on undocumented technologies or could indicate evidence of local innovations as opposed to use of standardized technology. Extensive reuse of equipment, artifacts, or sites may also be discerned through the archaeological record.

Of more importance is the potential comparative information obtainable through intact deposits from shipbuilding activities. Knowledge regarding Pacific Coast maritime history is sparse. There is little documentation from the commercial shipyards and generally no plans or descriptions of shipbuilding activities. According to Diane Cooper, archeologist with the San Francisco Maritime Museum, so few historical shipyards have been preserved in the west that any buried wooden foundations or remains would be considered of high research value. Most of the shipbuilding knowledge comes from studies of historical photographs that often cannot provide detailed data on construction methods, yard activities, and technology. Given the lack of data available for both commercial and military Pacific Coast shipyards, any remains from shipbuilding that would add knowledge to the existing data base would be a valuable resource, particularly if it dealt with pre-1880 activities (Cooper 1995; Olmstead 1995). In addition, most of the shipyards in the region built commercial wooden boats. Mare Island would offer a chance to compare these commercial ventures with specialty boats, iron-clad, and steel-hulled vessels. Adaptations to ships due to west coast resources or influences could also be addressed through studies of intact remnants of Mare Island shipyard.

Cultural Geography

Archaeology offers an ideal means of examining changing land use and spatial organization through time. On a household level, examination of botanical debris is useful in identifying location and composition of backyard gardens. On a wider scale, placement and layout of water system remnants, sewer and drainage systems, and trash disposal areas can be enhanced by combining the historical and archaeological record. Archaeological remains can significantly add to the description and study of the evolving formal and informal landscape and layout of Mare Island through time. Identification and study of architectural remains (building foundations, cellars) can be compared to the historical record to complement the study of base design and layout.

The Archaeology of Fill

Several use areas and resources were identified during the archival search but were not included as potential archaeological features. Foremost among these areas is the base landfill, used at least from 1906 until about 1930. Numerous studies have been conducted regarding the value of fill and its study (Deetz 1977:14-16; Yentsch 1993:331-346). While a drawback in the study of fill is the lack of association with a particular household, commercial venture, or industrial activity, research has focused on using fill to define overall patterns of urban development, social history, and changing city health standards (Deetz 1977; Geismar 1987). These studies have been met with varying degrees of success. While in some instances data have successfully addressed ongoing research domains, in others, such as the study of fill as part of a San Francisco wastewater treatment

project, analysis of fill did not contribute worthwhile information not available in historical documents and through other means (M. Praetzellis 1995).

Mare Island's fill was deposited daily from all over base, including the industrial, hospital and residential areas. Annual sanitation reports on the Island from the early 1900s note that refuse was picked up daily and transported in sealed, iron containers to the dump area (U.S. Navy 1910, 1911a, 1911b). Historic maps of the base depict this "Dumping Ground" and clearly show the boundaries expanding north through time (U.S. Navy 1906, 1925a, 1925b, see Appendix A). In later years another dump site was established near Dike 12 on the south side of the Island. This dump site was primarily used by the ordnance bureau (Randall 1995; Vann 1995). Both of these dump sites could contain contaminated soil and objects associated with both the industrial shipbuilding activities and with ordnance. Unexploded ordnance has been frequently found on the south side of the island and efforts to carefully sift and clean the refuse dumped near Dike 12 have been completed as part of base clean-up actions (Vann 1995). Given the contaminated soil, potential health risks associated with the landfill material on Mare Island, and its post-1900 deposition date, the dumping areas were not included as significant potential archaeological features.

Predicted Archaeological Features

Predicted archaeological resources are expected in several subareas on base. Features include the remains of defense fortifications, industrial activities, shops, residential quarters and associated dumps, cisterns, and latrines (Table 1). These are described below by subarea. Locations of feature (F) numbers are depicted in Figure 2.

Although not assigned a number, deposits associated with residence of squatters and early non-military use of Mare Island could also occur on base. Several locations of the Hanscomb-Secur and Squatter Turner houses are generally reported (Roop and Flynn 1986). The Hanscomb-Secur house was rented by Farragut upon his arrival to the island and served as an administrative center for a time (Lemmon and Wichels 1977). Deposits associated with these residences could yield data relating to social and economic lifeways of the inhabitants.

A number of previous research projects have been completed at Mare Island (Appendix B).

1854 - 1865: Founding of the Navy Base through the Civil War

Shipyard North

F1: Industrial Area. This feature encompasses Mare Island's original steam engineering complex, including the foundry, machine shop, boiler, coal sheds, cisterns, and associated industrial refuse and latrines. Immediately behind the foundry lay Mare Island's first stables (1854-1862 [presently under Buildings 98 and 107], and the original location of the ordnance storage area and gunpark. Remnants of the woodworking area, joiners shops, and other features were built partially on Dublin Hill and have been removed, although some refuse may exist around Building 46, the original shop on base.

Table 1. Predicted Historical Archaeological Features *(combined features counted as a single contributing historical archaeology site)*

No.	Date	Original Use	Remarks
F1	1854	Industrial Area	Includes steam engineering complex, original stable area, gun park, cisterns
F2	1857-1883	First Independence Berth	
F3	1856	Marine Railway	
F4	1861-1898	Sawmill	Destroyed in 1898 earthquake
F5	1862	Stable Complex	By Building 88
F6	1864-1941	NAD Wharf	
F7	1864	NAD Seawall	Determined eligible by OHP as a contributing element of National Register district
F8	1863	Ordnance Retaining Wall	Determined eligible by OHP as a contributing element of the National Register district
F9	1860	NAD Keeper's House	Building A45
F10	1864-1907	Civil War Battery	
F11	1858-1898	Officer's Housing Area	Destroyed in 1898 earthquake and rebuilt
F12	1883-1914	Second Independence Berth	
F13	1869-1906	Hospital Pier/Wharf	
F14	1874	NAD Watchman's House	
F15	1872-1930	Lighthouse Reservation	Vacant after ca. 1916
F16	1873	Ordnance Reservoir	Remodeled in 1897
F17	1876	Yard Reservoir/Tunnel	Now called Lake Rodgers
F18	1870s	Civilian Housing Area	called "Dublin Hill" community
F19	1870s-1940s	Medical Officer's Housing/Hospital Stable Complex	
F20	1874-1940s	Marine Corps Officers' Housing/outbuildings	
F21	1874-1900	Marine Enlisted Men's Barracks/latrines	
F22	1866-1898	Marine Corps area seawall	now under Farragut Village
F23	1899	Independence quarters	
F24	1900	Hospital Wharf	
F25	1904	Torpedo Boat Wharf	Uncovered during clean-up activities in 1999 and archaeologically documented
F26		Bandstand	
F27		Submarine repair base	
F28	1923	Bay model	Designed 1919

Access to potable water was and continued to be a problem from the outset for Mare Island. Mare Island had no flowing streams. Wells were dug in an effort to use the ground water, but the water was found to be brackish and unusable by the end of each day. For the first few decades of naval habitation, all potable water came by way of water boat from nearby Port Costa. The water was stored in underground brick cisterns located around the Island (Lemmon and Wichels 1977:213). Cisterns were located between buildings 69 and 71, behind the foundry, and at other locations with the Shipyard area. These cisterns were gradually abandoned as more efficient water collection and storage facilities were built, but remained visible on the island into the twentieth century.

Extensive archaeological monitoring occurred in Area F1 in 1999 and 2000 as part of the Navy clean-up activities. Land between buildings 507 and 98, and south, east, and north of Building 98 was trenched. Two brick manhole features, remnants of the nineteenth-century sewer system, were exposed and documented, as well as isolated occurrences of bottles and ceramics. The manholes were removed after documentation and the artifacts were not deemed significant (Dougherty 1999a, 2000). Therefore, the area of F1 between Railroad and California avenues, north of 2nd Street was eliminated from the predicted sensitive areas.

Deposits from the Industrial area, including filled cisterns, could be used to address topics of industrial technology and cultural geography. Features from early shipbuilding and foundry activities would be of particular importance for their comparative value.

F2: First Independence Berth. The *USS Independence* arrived at Mare Island around 1857 and was permanently berthed next to the stone quay wall by the foundry. This ship carried medics operating the yard dispensary, prisoners, and Marines (Lemmon and Wichels 1977:3). Refuse disposed over the side of the ship or off the edge of the berth could provide data useful in reconstructing the function of the ship and daily activities of the men who lived on the vessel. The shoreline has expanded slightly east in this area and refuse from the *USS Independence*, along with her berth on the quay wall may be preserved under fill.

F3: Marine Railway. In 1986 construction uncovered granite blocks associated with the 1856 marine railway and wet basin originally located in the vicinity of Dry Dock 2 and Building 125. These blocks, or "rails" were about three feet thick by four feet wide and varied in length from three to twelve feet. The granite rails rested on redwood pilings, also identified during construction (Roop and Flynn 1986:219).

The marine railway and engine house, although partially obliterated, is important as an example of shipyard operations and as the first marine railway built at a naval yard in the west. While other marine railways have been identified in San Francisco (Cooper 1995; Olmstead 1995) and Benicia (Delgado 1986), these typically were wooden with iron rails and no longer exist. According to maritime historians at the San Francisco Maritime Museum, stone railways are very unusual and the preservation of one at Mare Island is significant (Cooper 1995; Olmstead 1995).

F4: Sawmill Site. Built in 1861, this brick building had a cellar, was two stories high and measured 150 feet by 55 feet. A brick wing, measuring 55 feet by 55 feet and one story high, extended from the side of the sawmill. The mill provided wood for the joiners and boatbuilders located nearby. The mill was destroyed in the 1898 earthquake (Roop and Flynn 1986). The site of the mill is underneath Buildings 106 and 113.

Features that are associated with early development of Mare Island potentially could yield data useful in addressing industrial and technological research issues, as well as shipyard layout and activities. The details of shipyard operations for this early period are not gleaned from the historic record but can be interpreted through a study of archaeological remains.

Shipyard South

The eastern portion of the marine railway and the wet basin were located in Shipyard South at Dry Dock 2.

F5: Stables. In 1862 a new location for stables was chosen in Shipyard South. Today, only Building 88 remains of the original complex. Other outbuildings (blacksmith area, shed, stablekeeper's residence) were present around the stables but have been removed. A comparison of refuse from this area and from the original stable complex in the Shipyard North area could provide data relevant to industrial technological studies, as well as cultural geography issues. Blacksmithing efforts and domestic refuse associated with this complex could also provide important information to fill in gaps in this early period's history.

Naval Ammunition Depot

F6: NAD Wharf. The original ammunition area's wharf, built in 1864, stretched into the water from the centerpoint of the depot. The wharf provided the main access to the ammunition area and was a key element. It remained in service until World War II, when it was removed during the war effort. While the majority of the wharf remains have disappeared through intensive dredging activities, the base of the wharf is likely preserved under fill.

The original NAD pier provided a landing for loading ordnance onto the ships and for unloading ammunition and supplies. For many years it served as the only access into the NAD. Remnants of the pier are potentially preserved under fill and could contribute to understanding early construction and functional layout and design. The wharf may also be important for its association with the early development of the NAD area. Artifacts, tools, and other deposits discarded over the sides of the wharf and preserved in bottom mud may also be present.

F7: NAD Seawall (CA-SOL-386H). The NAD sea wall was begun in 1861. Sea walls were designed to minimize wave action and erosion and protect the magazine from flooding (Bearss 1973; U.S. Navy 1861, 1981:25.4-2 to 25.4-3). Made of sandstone, the NAD wall was six to seven courses in height, 480 feet in length, and was roughly dressed on the exposed surface. By 1866 the wall had been extended north an additional 360 feet. It was extended north several more times by 1896. Filling began in the 1920s and by 1930 the original seawall was located 60 feet inland from Mare Island Strait and was buried under three to four feet of fill. Segments of the seawall were uncovered in 1993 and again in late 1999 and are remarkably intact. It provides data

on seawall construction methods, base design and layout. It was determined eligible to the National Register district in consultation with the acting State Historic Preservation Officer for its historic value and construction methods (Brown and Maniery 1994; Dougherty and McIvers 2000; Widell 1994).

F8: Ordnance Retaining Wall (CA-SOL-388H). Built around 1863, this brick retaining wall is composed of mostly stretcher courses capped with one course of headers. Originally, the wall consisted of eight courses of bricks topped with a course of headers and averaged two feet in height. It was raised in some places and extended in the early 1900s and today is over 1,300 feet long. Brick buttresses are present behind Building A15, stabilizing the wall. The wall was determined eligible to the National Register district in consultation with the Acting State Historic Preservation Officer in 1994 for its historical association with the NAD and its design and construction methods (Brown and Maniery 1994; Widdell 1994).

F9: Keeper's House. It is probable that refuse deposits are associated with the watchman's or keeper's house (Building A45). This house was established in 1860 to provide shelter for the magazine Chief Gunner. It was still in use today, as late as 1994, although it had been altered. According to historical maps of the area, the house once had an associated garden, outbuildings (including latrine), and other features.

Deposits associated with the domestic feature of the Chief Gunner's house can yield information regarding the social organization, economic status, and possible ethnic affiliation of this civilian residence. These deposits, when compared to similar deposits from officers' or civilian housing could shed light on social and economic lifeways on base.

F10: Civil War Earthworks (CA-SOL-385H). Built in 1864, the Civil War defense battery was shaped like an inverted "J" and had 12 to 14 gunpits. A walkway led from the west center of the earthworks downhill to the NAD area. The earthworks were partially destroyed around 1907. Remnants of the earthworks measures 93 feet by 78 feet and are characterized by an earthen berm and a partially visible brick wall from the brick magazine. In addition, an intact portion of the brick walkway that led to the magazines was uncovered during PAR's 1994 work (Brown and Maniery 1994:66).

Three Civil War defense fortifications were built at Mare Island in the 1860s. The two on Dublin Hill were destroyed in later years. The crescent-shaped earthworks at the south end of the island are partially intact. These earthworks were unique for the Navy in that they were designed with assistance from the Army Corps of Engineers in a typical Army design, similar to that used at Fort Point (Barker 1995). In addition, the defense system represents the only Civil War earthworks at a Navy yard in the west (Brown and Maniery 1994:62-67). Although 50 percent of the structure has been destroyed, the remaining portions provide valuable data in layout and construction techniques.

Residential - Administrative

F11: Officers' Housing Area. The residential area set aside for officers was developed beginning in 1858. Work orders indicate that these early brick structures had basements, outhouses, livestock holding pens or stables, sheds, and/or gardens. The officers' housing consisted of single

family dwellings and duplexes with a long back lot. The earthquake in 1898 and its aftershocks destroyed the 14 officers' houses. When rebuilding occurred the duplexes were not reestablished. Single houses were constructed, in some cases, on the same foundations or over basements of earlier dwellings. Archaeological features associated with the housing between 1858 and 1898 could include discrete trash deposits, refuse pits associated with cleanup activities, sheet refuse, filled cisterns, wells, and basements, and foundation remains.

Deposits from this domestic occupation area would be extremely important in examining dietary habits of officers' households, social and economic lifeways of people stationed on base, functional layout and landscaping, and Victorian idealism on what began as a frontier setting. Comparison of deposits with others from the Marine Corps area, civilian housing, and NAD watchman cottages could also reveal data on social and economic conditions at Mare Island that would not be available in the written record.

1866-1897: Civil War to Spanish-American War

Most of the areas identified as archaeological features in the previous period continued to be used in this and subsequent periods.

Shipyard North

In conjunction with the Dry Dock construction and other buildings erected in this area after 1866, numerous brick cisterns were put underground around the industrial area. By 1893, 14 cisterns were in place in the Shipyard North. In addition, water for industrial use was transported via ditches and pipes to the buildings from the reservoirs. Intact redwood box drains, ceramic pipes, and other linear remnants could be present in this area and would contribute data pertinent to cultural geography research domains.

Shipyard South

F12: Second Independence Berth. In 1883 a new berth for the receiving ship *USS Independence* was constructed north of the hospital wharf. The *USS Independence* was moved into the Shipyard South area from the North to make room for coal sheds. It was reached by a long pier that extended east from the end of today's 13th Avenue into the straits. The *USS Independence* remained at this berth until 1914, when the ship was towed away and destroyed (Lemmon and Wichels 1977:3).

Early records note that in summer time the ship was essentially grounded on mud flats (U.S. Navy 1908-1911; 1911:146). These conditions, combined with the fill that capped the site after her sale, would have preserved refuse and other deposits from use of the *Independence* and could contribute to the overall knowledge of daily life aboard the receiving ship. Remnants of the pier could contribute to reconstructions of pier and berth construction methods and cultural geography studies of the base.

F13: Hospital Pier/Wharf. When the new hospital was built in 1870 a long roadway led from the front of the hospital to the Mare Island Straits along the general route of 13th Avenue. This road was constructed across the tule fields on piers and ended at a wharf. The modest wharf, built in 1869, served the hospital and the stables (Building 88) until 1906. Filling of the tule lands probably preserved the remains of the hospital pier and wharf and archaeological deposits are predicted.

This pier was used for many years to unload and load supplies, patients, and equipment for use at Mare Island's hospital. It was the first hospital pier built for the Navy in the west and it is likely buried under fill. Associated tools, supplies, equipment, and refuse that was discarded over the sites of the elevated walkway and pier would also be preserved under fill and could provide important information on hospital equipment or diet. Recent research in San Francisco noted the lack of detailed construction data on early wharves and discussed the scientific and historical value of pre-1880s wharves (Olmsted with Praetzellis 1993:349-364). Remnants of Mare Island's early wharves could provide important comparative data to ongoing maritime resource studies.

Naval Ammunition Depot

F-14: Watchman's House (A44). Built in 1874, this house once had an associated latrine, sheds, chicken house, garden, and other ancillary structures. Artifactual deposits from this house are likely to be present around the house, as are structural foundations and other architectural features. Deposits associated with this residence could be used to address questions regarding consumer behavior, social and economic status and economic lifeways, ethnicity, and cultural geography.

F15: Lighthouse Reservation. Established in 1871, the lighthouse was sited on a point of land at the south end of Mare Island. From 1883 to 1916 it was operated by Kate McDougal, but remained primarily vacant after her death. Although the lighthouse was demolished and its site excavated and removed after 1930, the back area of the reservation was not impacted. Foundation remains from the original water tank, surface artifact scatters, and remnants of sheds are visible today. Subsurface deposits associated with refuse disposal and domestic occupation at the lighthouse reservation are also predicted in the back yard area.

Refuse deposits from this feature could contribute to themes of consumer behavior, social and economic lifeways, cultural geography, and ethnicity/gender. While the lighthouse was removed and the point it once sat on cut away in the 1930s, the backyard of the reservation, where refuse would have been disposed of, is still intact. Built in 1871, the lighthouse was operated from 1881 to 1916 by a woman (Lemmon and Wichels 1977:80) and domestic deposits from this time could be used in gender studies and Victorian idealism interpretations.

A small portion of the lighthouse reservation was excavated in 1999 as part of a navy fuel line and underground storage tank removal project. Archaeological monitoring in this area identified no evidence of cultural stratigraphy, features, or artifact deposits. This area has been eliminated from the 1995 F-15 area and is depicted above in Figure 4 (Dougherty 1999).

F16: Ordnance Reservoir (CA-SOL-394H). The ordnance reservoir, designed by Chief Engineer Calvin Brown and built in 1873, provided water for fire suppression activities at the NAD and had an earthen dam with a brick gauging station and spillway. The feature was extensively remodeled in 1897 under the direction of engineer Mr. Vogel, who constructed a brick spillway and sandstone-faced dam. Today the feature consists of a water reservoir including a dam, spillway, and gauging station with a gangway. The reservoir sits in a large swale in the hills at the south end of the Island, surrounded by grasslands, live oaks, eucalyptus and acacia trees.

As part of the Navy's ordnance removal process, the reservoir was drained and dredged in 1997. Archaeological monitoring of this process recovered several artifacts of historical interest, including a reach rod assembly (used in the gauging station), a pick-axe head and a hand forged iron ring and eye-bolt. The reach rod assembly was disposed of by the ordnance removal team. The other artifacts were curated by the Mare Island Historical Park Foundation (Syda 1998). The reservoir and related features is still considered a contributing element of the Mare Island Historic District. Predicted archaeological features associated with the reservoir include remnants of the bathhouses, artifactual refuse deposits from recreational use, and construction debris.

F17: Yard Reservoir (Lake Rodgers). Named for Rear Admiral J. Rodgers, the yard reservoir was constructed in 1876 and was notable because of the granite block lining and granite dam. It also had a large earthen berm at the west end. Water was discharged into iron pipes through a bricked tunnel that led east from the reservoir. A series of "filling ditches" connected the two water reservoirs in the NAD area. Remnants of the ditch system, in use through World War II, are still discernible around the hills (Lemmon and Wichels 1977:133).

Mare Island's industrial and agricultural water supply system consisted of two reservoirs, a system of ditches used to convey the water from one reservoir to another and to the NAD, a brick-lined tunnel, and iron pipes to transport the liquid throughout the base. While the ditch system is fragmented and has been impacted by magazine and golf course construction, the tunnel associated with the yard reservoir is likely present underground. This is a significant contributing element of Mare Island's early water system, and contributes to understanding base layout and design. The stone features, bathhouse, and potential refuse deposits at the Ordnance reservoir could answer questions regarding cultural geography, recreational use, and engineering design.

Residential – Administrative

F8: Civilian Residential Area. Perhaps the most important development during this time was the expansion of the civilian employees' community around Dublin Hill. The community began to build up by 1874 and continued until the 1940s. While the area of historical Dublin Hill east of Walnut Avenue has been removed and used as fill, destroying any potential archaeological resources, the western portion of the civilian housing area, west of Walnut Avenue near Building 535, has remained relatively undisturbed under fill. Potential archaeological deposits could include filled cellars, privies, cisterns, basements, surface sheet scatter of artifacts, or discrete trash deposits. Associated deposits could shed light on cultural diet preferences, social and economic lifeways, ethnicity, gender, and cultural geography.

Hospital Area

F19: Medical Residential Complex/Stables. Development of the hospital in the 1870s led to a need for medical staff housing and equipment. A walkway, constructed on top of a narrow line of fill, led to the pier and wharf that serviced the hospital. In 1891 a house was constructed north and west of the hospital for the medical director's use. This house was surrounded by a vast lawn, concrete walkways, rock work, and other landscaping. A "Japanese summer house" was located behind the house to the west. The house remained in use until the 1960s when it was dismantled. Today a park is located at this site, although the sidewalks, concrete stairs that led to the front entrance, and other landscaping features remain. Potential archaeological features at this location include foundation remains and possible sheet refuse or discrete refuse deposit areas.

Located east of the medical officer's house on the east side of Cedar Avenue was the stable complex that served the hospital. Built in 1874 this area near Seely Circle once contained a barn, corral, and carriage house. It was situated just south of the main naval yard stable complex and may have been operated in conjunction with Building 88. In addition to the hospital and its outbuildings and housing, the area contained a large brick cistern. This cistern was situated west of the main hospital building and had a 121,526 gallon capacity (Roop and Flynn 1986:175). Deposits associated with the Medical officer's quarters, hospital stables, cistern, and outbuildings could contribute to domestic occupation reconstruction, industrial technology, and cultural geography.

Marine Corps Area

F20: Marine Corps Officer Quarters. The Marine Corps Commander's residence and three officers' quarters flanked the north and south sides of the parade ground in front of the enlisted men's barracks. Sheds, latrines, livestock areas, and gardens were incorporated into the landscape.

F21: Marine Corps Enlisted Barracks Area/Prison. The Marine Corps barracks and prison was located at the site of Building 866. A long outhouse (privy) was built behind and west of the prison in 1874 and was expanded into an H-shaped feature in the 1880s. This facility served the marines until it was abandoned in the 1890s. Its location is under fill in the paved area south of Building 1242. Other outbuildings in this area constructed during this period likely include sheds and chicken houses.

The Navy removed several sections of fuel oil lines within Area F21 in 1998. During the trenching activities a section of red brick wall with lime-based mortar, and a layer of plaster, lime mortar and brick rubble were observed and recorded. The brick wall was in the immediate area of the 1871 Marine barracks and was believed to be part of the original barracks wall. The layer of rubble was thought to represent the remains of the building following its 1952 demolition (Farncomb 1998). Remnants of the building were entered into the state system and assigned trinomial number CA-SOL-401H.

The two-foot-long segment of wall exposed during trenching was located east of Building 866 near Suisun Avenue (Figure 5). Its presence indicates that the foundation and lower walls of the building may remain intact underground. These remains could add significant information regarding cultural geography of the Marine Corps area, construction techniques, and building design and lay-out.

In the Marine Corps area, refuse from the enlisted men's barracks and mess hall, prison (F21), and officers quarters (F20) would also contribute to an understanding of daily activity, dietary differences between prisoners, enlisted men, and officers, and social and economic status. A study of additional foundation remains could contribute data regarding cultural geography.

F22: Seawall. In conjunction with the Marine Corps area development came the need to control the bay to the west. Constructed started in 1866 on a granite seawall that spanned the mouth of a U-shaped cove located west of the barracks. This wall held back the sea until around 1898, when filling began in this area. It is now under fill in Farragut Village.

The seawall constructed in the Marine Corps area is likely to be intact under fill and would serve as an example of construction methods and engineering design from this period of growth and development at Mare Island. It would also be important for its historical association with the Marine area.

1898-1918 - Spanish-American War through World War I

The 1898 earthquake resulted in many changes that effectively altered the disposal pattems on base. With the reconstruction of officers' housing, indoor plumbing was added, eliminating privies. Refuse from all areas of base was collected every morning in cans and transported north of A Street and dumped (U.S. Navy 1908-1911, 1909:331). Dumping continued in this area, gradually spreading north, throughout the period. The importance of domestic occupation deposits from this period dwindles due to increased data in the written record and change in disposal pattems.

Shipyard South

F23: *USS Independence* Crew Quarters. The drill hall, latrine, and bathhouse used by the *USS Independence* crew were built in 1899 in the general vicinity of Building 630. Remnants of these outbuildings and the base of the *USS Independence* wharf, are predicted to occur under fill and under the building at this vicinity. Expected features include trash deposits, foundation remains, wood piers, and structural remnants. Deposits from the new crew quarters next to the *USS Independence* berth could also provide important comparative data regarding consumer behavior, social and economic status, and cultural geography.

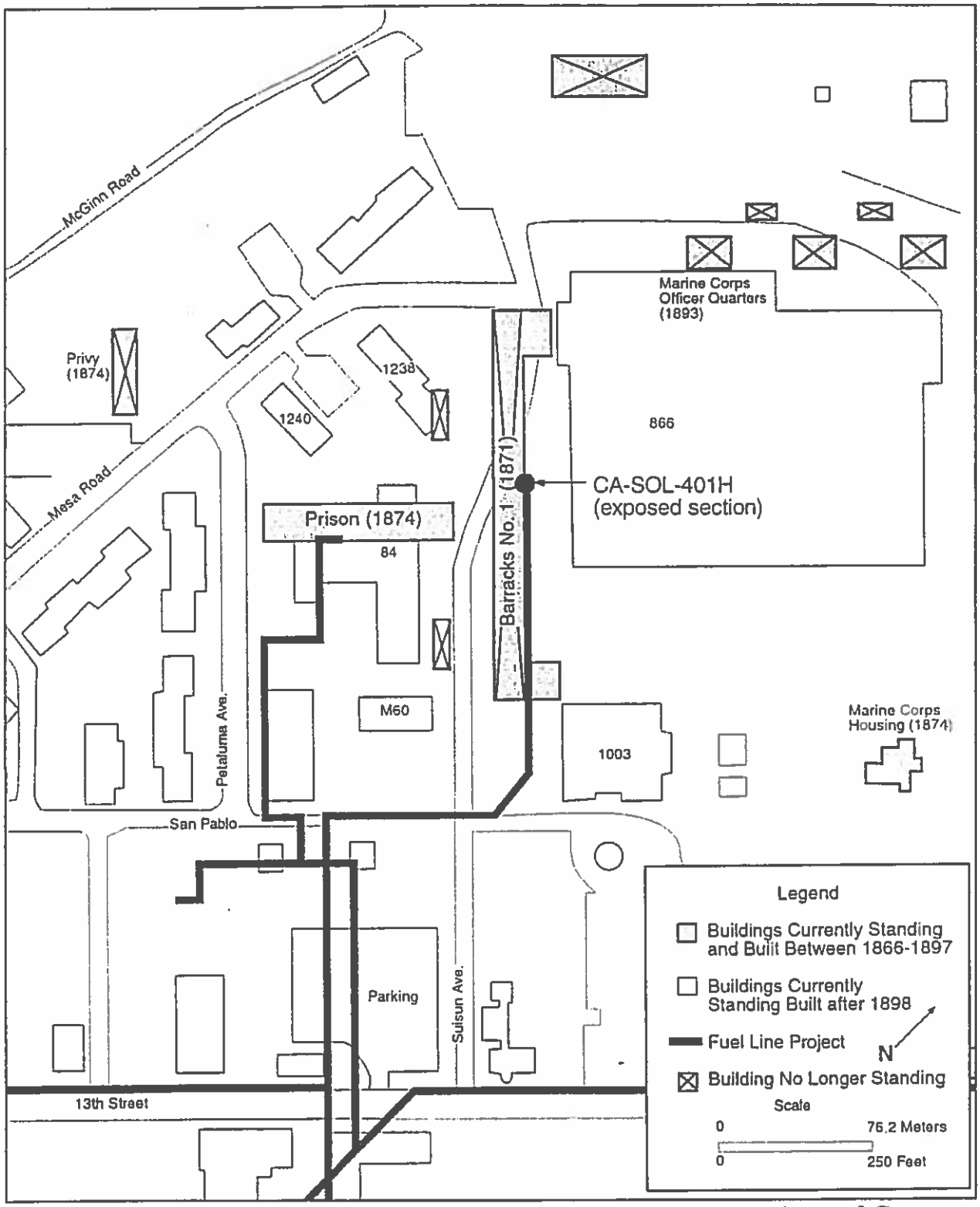

Figure 5. CA-SOL-401H in Relation to the 1998 Fuel Line Removal Project and Current Buildings

F24: Hospital Wharf. The hospital wharf was greatly expanded after 1900. Several buildings were constructed at this wharf and are associated with World War I activities. Remnants of the wharf, discarded tools, and refuse could be present under fill in this area. Deposits preserved in the bottom mud and in fill could provide information on wharf construction techniques.

Naval Ammunition Depot

F25: Torpedo Boat Wharf. A major facility labeled a Torpedo Boat Wharf was built in 1904 and was situated between buildings A224 and A225, extending into the strait. Two perpendicular docks, each containing a building, extended south from the wharf. This facility played an important role in ammunition transport during World War I but was removed by 1929. The 1995 predictive model suggested that remnants of this wharf could be present under fill in the NAD area. Deposits from the wharf could contribute to studies of technological advances in wharf construction, ordnance use, and ship building activities (Maniery with Baker 1995).

In 1999 the Navy began excavation in this area to remove industrial contaminants prior to the disposal of the property. Archaeological monitoring of work in Area F25 identified and documented structural remains associated with Dike 8 and the northem end of the Torpedo Boat Wharf. Following the documentation, remnants of wharf and dike were removed. In addition, artifacts recovered during this work included industrial items and person/consumption-related pieces. These appear to have been discarded from the wharf randomly in the 10 years following construction of the wharf (1904). These deposits were not considered significant due to their lack of context (Dougherty 1999b). A few complete bottles were collected and were given to the Mare Island Historical Park Foundation for curation. Given the extensive monitoring efforts, removal of the wharf and Dike 8, and lack of significant associated deposits, Area F25 has been eliminated as a potentially sensitive area.

Hospital Area

F26: Bandstand/Pavilion. A bandstand and pavilion were located in front of the hospital and provided a greeting place for dignitaries and entertaining for patients. These locations are marked by circular raised concrete platforms, steps, and portions of walkways. While the sides and roof of the bandstand and hospital pavilion (F26) have been removed, the structural remains evoke a sense of time and place on the hospital grounds. They represent a recreational outlet on base and contribute to the base under Criterion A.

North End

F27: Submarine Base/Wharf. Perhaps the most significant feature in the north end dating to this period is the submarine repair dock and associated facilities. The area generally between B and E streets and Waterfront and California Avenues may contain deposits and structural remains associated with the submarine repair and building station. Mare Island played an important role in the development of submarines in the Navy and was a leader in submarine repair and construction. Deposits and features associated with this facet of the shipyard are important for the association with submarine development and for chronicling industrial technology and cultural geography in this functional activity area.

1918-1938: Inter-war Years

Naval Ammunitions Depot

F28: Bay Model (CA-SOL-395H). The Bay Model was designed by Captain Leonard Cox in 1919 as part of a proposal illustrating the feasibility of maintaining a major shipyard located at Mare Island after World War I. The proposal was in response to the Helm Committee selection of another site for bay area shipbuilding activities. The resource consists of a concrete model on a knoll overlooking San Pablo Bay. The model is constructed of a one- to three-inch layer of concrete trowelled over excavated and sculpted dirt. It measures approximately 25 feet by 25 feet and varies from 7 to 17 inches in depth. Site vegetation of seasonal grasses, anise and sage has overgrown the model and footings that supported a viewing platform.

Generally, archaeological deposits and features that post date World War I do not contribute to the significance of Mare Island. They are from a well-documented period of time and are not unique. The exception is this 1920s Bay Model. While overgrown and no longer operational, the archaeological remains of the Bay Model are intact. Built in an attempt to impress members of a Congressional committee with the suitability of Mare Island as a shipyard, the model was created by Public Works officer Captain Leonard Cox in an effort to save the shipbuilding activities on base (Lemmon 1995). It played a unique role in the history of Mare Island and also is a contributing element to the NAD area for its engineering design and layout.

CONCLUSIONS

Mare Island has a rich and lengthy history. As the first Naval shipyard built on the Pacific Coast he base presents a unique opportunity to study early shipbuilding techniques and industry, social and economic status, ethnic and gender issues, and cultural geography through its archaeological remains. The episodes of cutting and filling on base, while extensive, have also served to preserve many of the remains of early features, while obliterating others. The continued use of historical buildings associated with the earliest shipbuilding activities on base, combined with a wealth of historical maps and written data, and likelihood of intact archaeological refuse deposits, foundations, and other features, suggests a truly multidisciplinary approach to managing the base's resources. The archaeological deposits affords a unique opportunity to fill in the gaps in the historical record, particularly in regards to personal lifeways, industrial technologies, status, and cultural geography. This predictive model provides a basis for assessing underground deposits for their scientific, historic, and research value and identifies probable locations of significant features, based on land use alterations through time.

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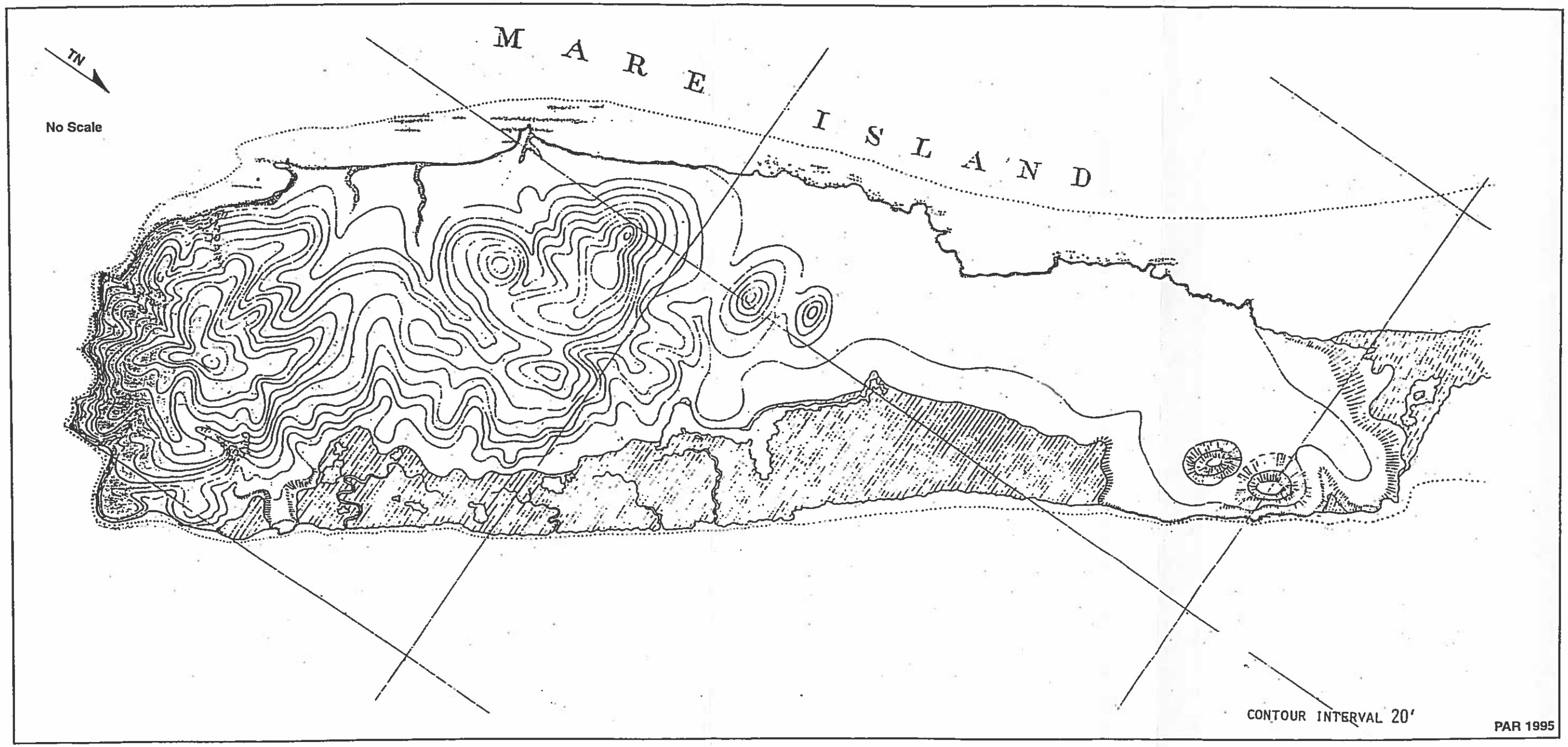
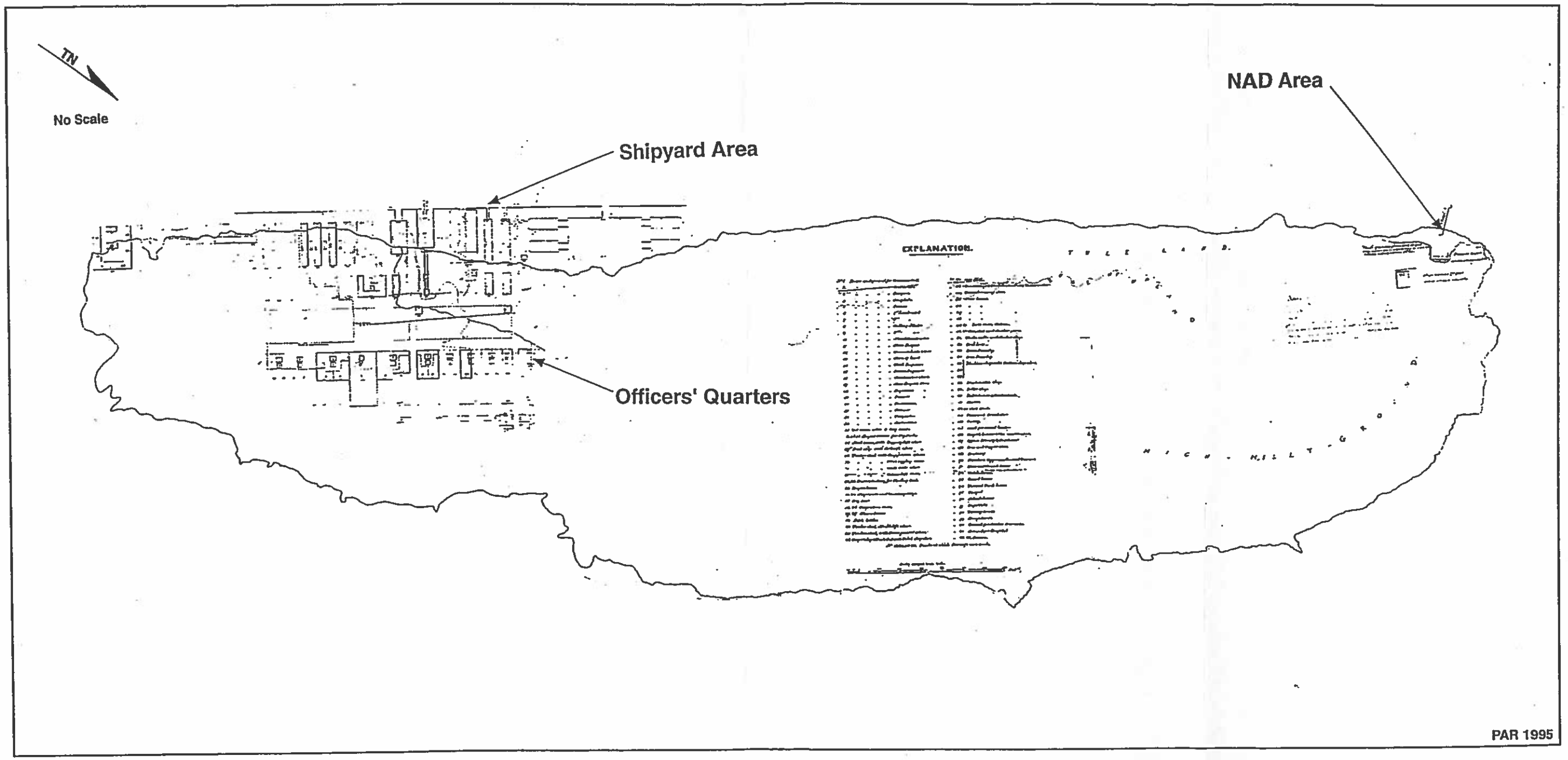
APPENDIX A
Mare Island Historic Maps

Map 1. Historic Map of Mare Island, 1851



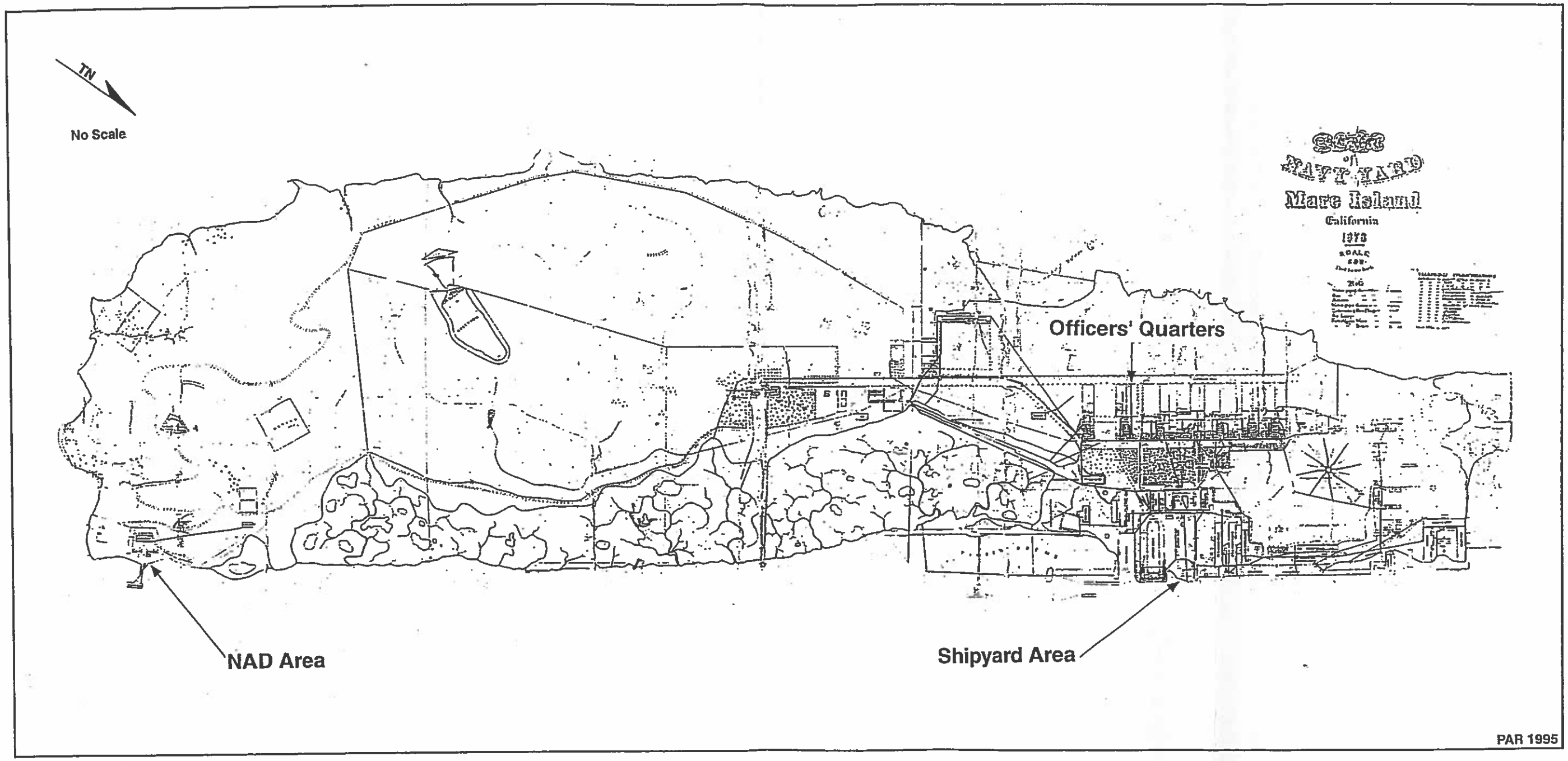
Map 1. Historic Map of Mare Island, 1851.

Map 2. Historic Map of Mare Island, 1861



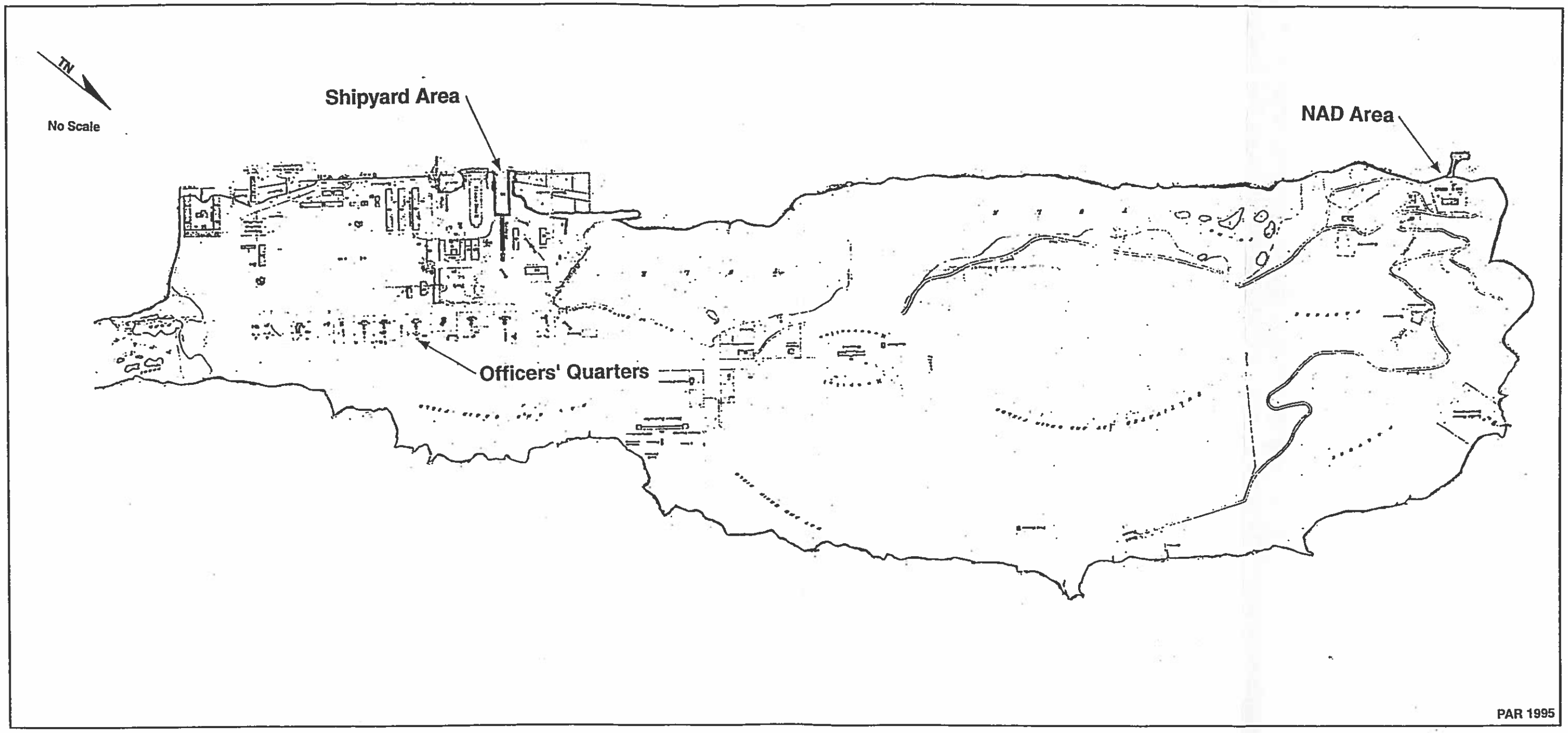
Map 2. Historic Map of Mare Island, 1861.

Map 3. Historic Map of Mare Island, 1878



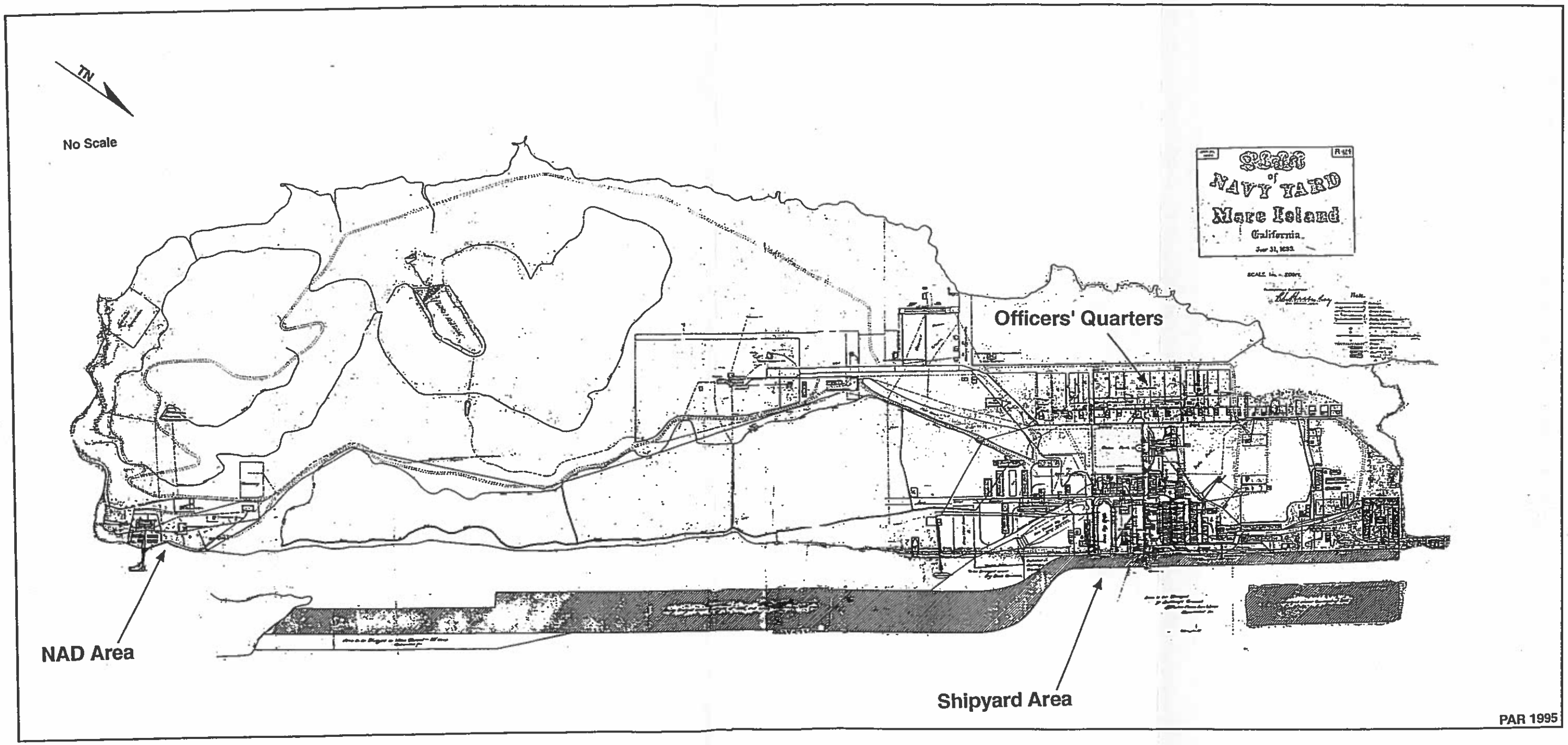
Map 3. Historic Map of Mare Island, 1878.

Map 4. Historic Map of Mare Island, 1883



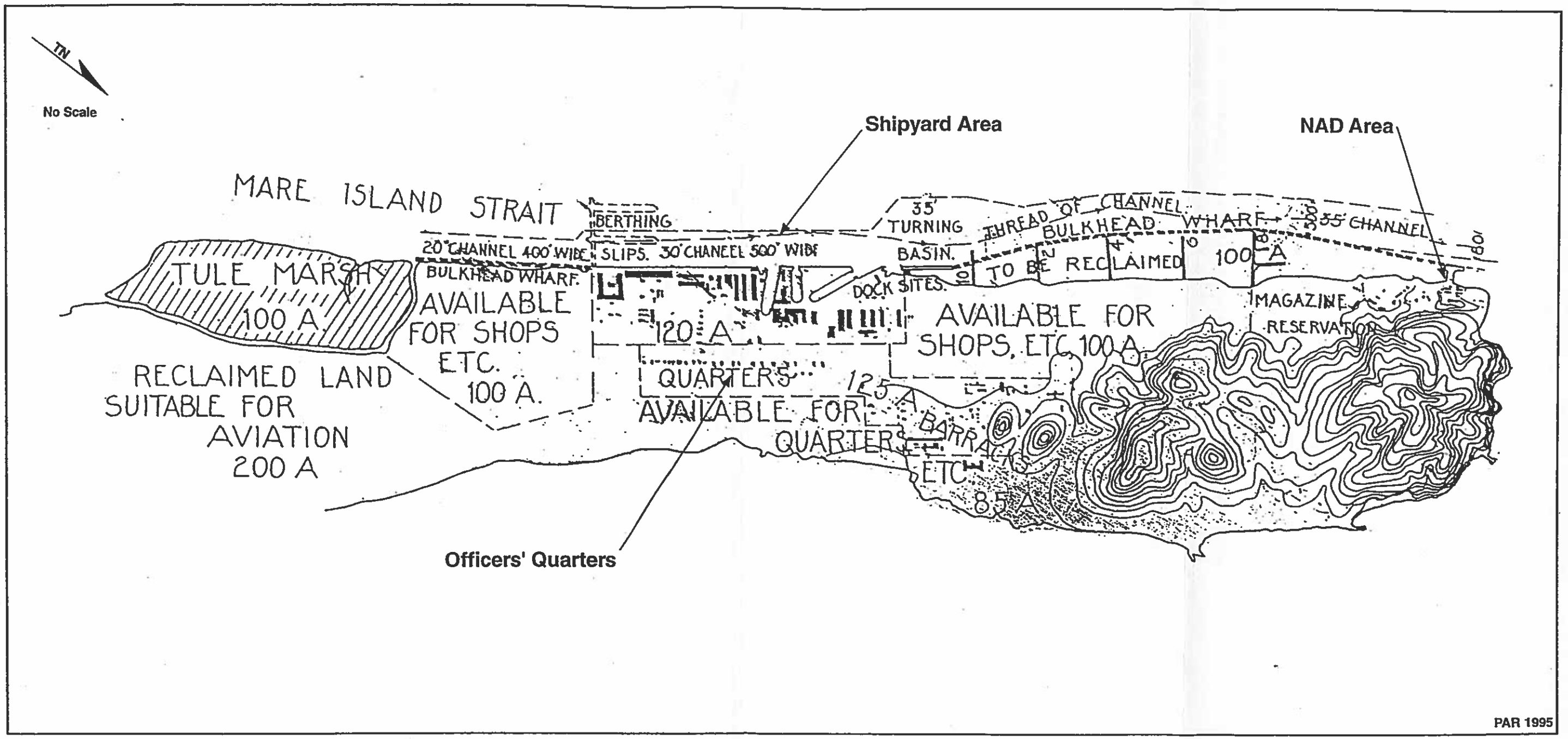
Map 4. Historic Map of Mare Island, 1883.

Map 5. Historic Map of Mare Island, 1899



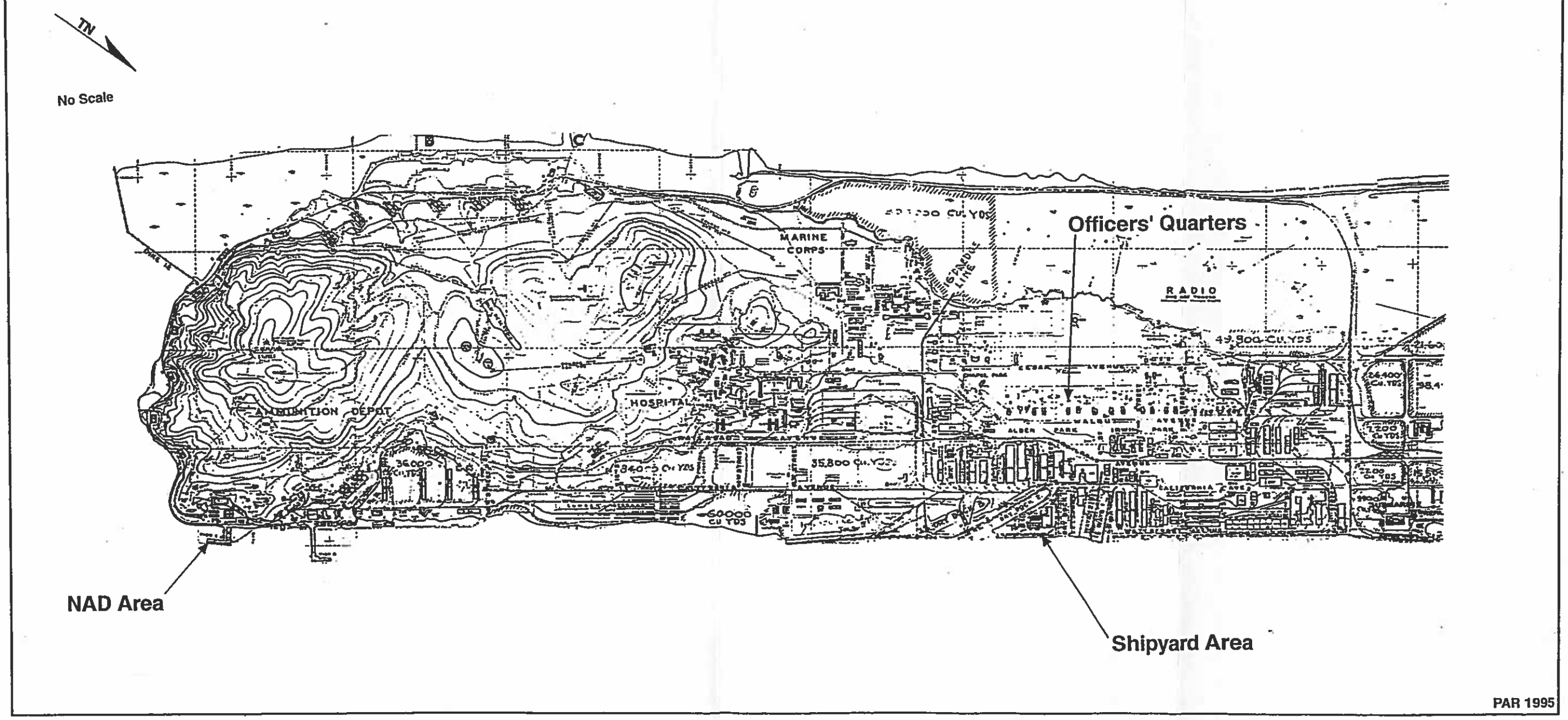
Map 5. Historic Map of Mare Island, 1899.

Map 6. Historic Map of Mare Island, 1916



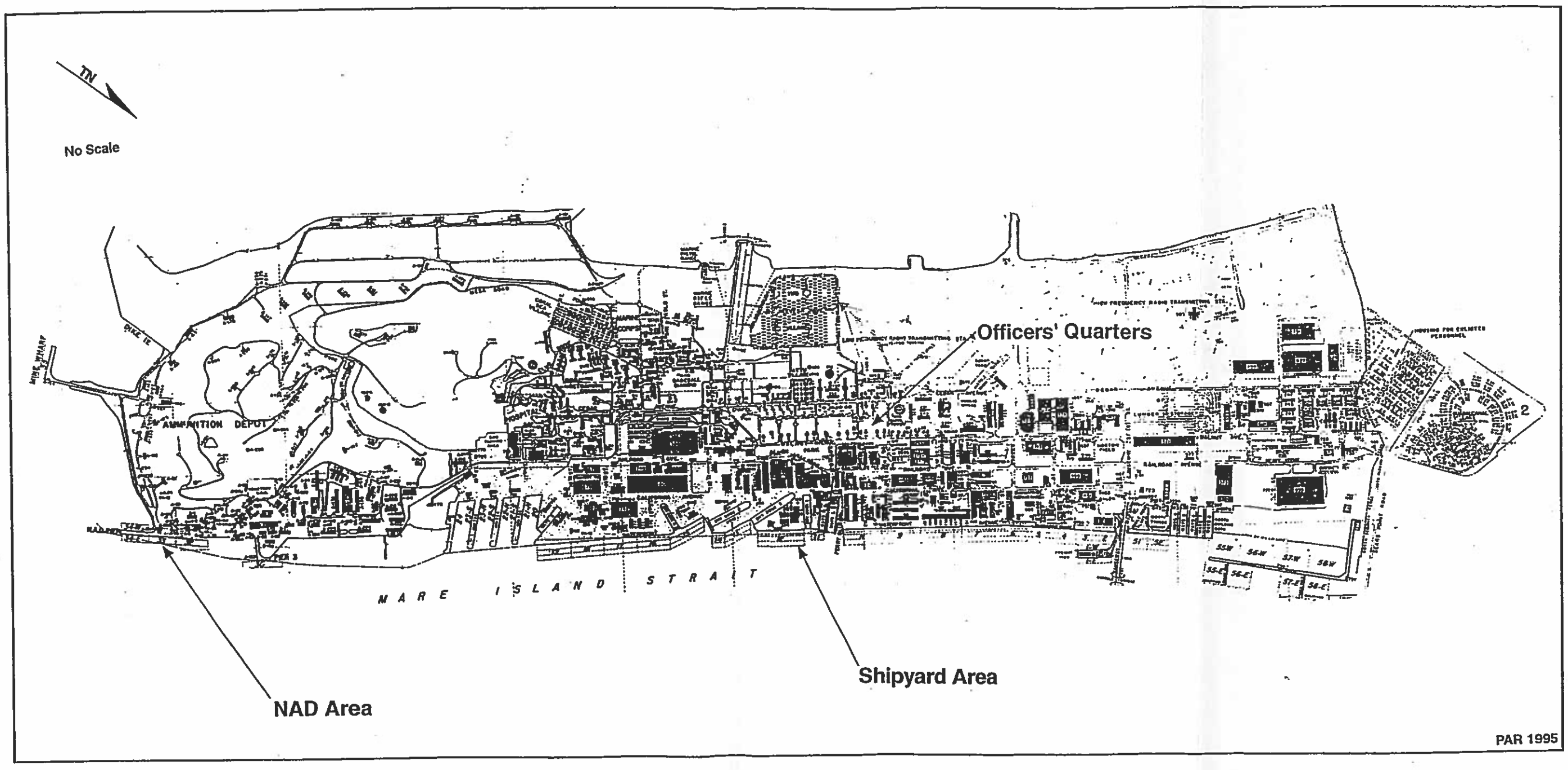
Map 6. Historic Map of Mare Island, 1916.

Map 7. Historic Map of Mare Island, 1936



Map 7. Historic Map of Mare Island, 1936.

Map 8. Historic Map of Mare Island, 1946



Map 8. Historic Map of Mare Island, 1946.

APPENDIX B
List of Archaeological Research Projects/ Studies at Mare Island

LIST OF ARCHAEOLOGICAL RESEARCH PROJECTS/STUDIES AT MARE ISLAND

Report Title	Date	Author	Sites Encountered	Description
Archaeological Site Survey Record for CA-SOL-232	1907	Nelson	CA-SOL-232	Shell midden
Archaeological Site Survey Record for CA-SOL-233	1907	Nelson	CA-SOL-233	Shell mound
Archaeological Site Survey Record for CA-SOL-17	1949	Pilling	CA-SOL-17	Shell mound
Cultural Resource Survey on Mare Island Naval Reserve, Solano County, California	1980	Flynn	CA-SOL-17 (updated)	Shell mound
Mare Island Archaeological Resources Inventory, First Complete Draft	11/86	Roop & Flynn	CA-SOL-17 (updated), CA-SOL-232 (updated), CA-SOL-233 (updated), PS 2,4-9, HS 1 to HS 55	Shell mound Shell midden Shell mound Potential prehistoric sites based on archival research (revised in 1995 by Allen & Self) Potential historic sites based on archival research (revised in 1994 by Brown & Maniery)
Cultural Resources Monitoring and Site Evaluation for the Saltwater Fire Suppression System, Mare Island Naval Shipyard, Vallejo, Solano County, California	06/94	Brown & Maniery (PAR)	CA-SOL-385H, CA-SOL-386H, CA-SOL-387H, CA-SOL-388H, P-48-000002, P-48-000006	Civil War earthworks NAD Seawall Shell midden, Naval cemetery Ordnance retaining wall Redwood plank drain pipe Redeposited midden

Predictive Historic Archaeological Sites Model for the Mare Island Naval Shipyard, Vallejo, Solano County, California	10/95	Maniery & Baker (PAR)	CA-SOL-385H (updated), CA-SOL-394H, CA-SOL-395H F 1 to F 25	Civil War earthworks Ordnance Reservoir Bay Model Potential historic site locations
National Register of Historic Places Registration Form for Mare Island Historic District, Vallejo, California - Draft	05/95	JRP/PAR	F 1 to F 25	Potential historic site locations
Historic Preservation Services for Base Realignment and Closure, Mare Island Naval Shipyard, Vallejo, California; Prehistoric Archaeology Context Statement and Site Prediction Model	06/95	Allan & Self	PS 2,4-9 (updated)	Tested shell middens and revised Roop & Flynn's predicted site locations
Historic Preservation Services for Base Realignment and Closure, Mare Island Naval Shipyard, Vallejo, California, Prehistoric Resources Report - Draft	06/95	Allan & Self	PS 2,4-9 (updated)	Tested shell middens and revised Roop & Flynn's predicted site locations
Monitoring of Historic Archeological Sites for Base Realignment and Closure, Mare Island Naval Shipyard, Vallejo, California, Report 1: Cultural Resources Monitoring for Ordnance Removal at Historic Features F-16 and F-17	05/98	Syda & Maniery (PAR)	CA-SOL-394H (updated), F 17 (updated)	Ordnance Reservoir Yard Reservoir/Lake Rogers Reservoir
Monitoring of Historical Archeological Sites for base Realignment and Closure, Mare Island Naval Shipyard, Vallejo, California, Report No. 2: Cultural Resources Monitoring for the Fuel Line Removal Project, Marine Corps Area, Historic Feature F21	08/27/98	Farncomb (PAR)	CA-SOL-401H	Marine Corps barracks
Monitoring of Historical Archeological Sites, Mare Island Naval Shipyard, Vallejo, California, Report No. 3: Cultural Resources Monitoring at Historic Features F1, F15, F18, and F23	06/01/99	Dougherty (PAR)	F 1.1 and F 1.2	2 brick manholes
Monitoring of Historical Archeological Sites, Mare Island Naval Shipyard, Vallejo, California, Report No. 4: Cultural Resources Monitoring at Historic Feature F-25, the Torpedo Boat Wharf	08/31/99	Dougherty (PAR)	Historic Feature F 25 (updated)	Torpedo boat wharf (F 25) and Dike 8

Monitoring of Historical Archeological Sites, Mare Island Naval Shipyard, Vallejo, California; Report No. 5: Cultural Resources Monitoring at CA-SOL-386H, the Naval Ammunition Depot Sea Wall	01/31/00	Dougherty & McIvers (PAR)	CA-SOL-386H (updated)	NAD Seawall
Monitoring of Historical Archeological Sites for the Freshwater Fire Line Project, Mare Island Naval Shipyard, Vallejo, California	07/12/00	Dougherty (PAR)	---	---

Exhibit 5

"Archaeological Treatment Plan for Mare Island, Vallejo, Solano County, California," November 2000

ARCHAEOLOGICAL TREATMENT PLAN FOR MARE ISLAND, VALLEJO, SOLANO COUNTY, CALIFORNIA

Prepared for

Chattel Architecture, Planning & Preservation, Inc.
13322½ Valleyheart Drive South
Sherman Oaks, CA 91423

Prepared by

PAR ENVIRONMENTAL SERVICES, INC.
1906 21st Street
P.O. Box 16075
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Mary L. Maniery, author

November 2000

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INTRODUCTION

Mare Island, once the site of a large United States naval shipyard, is located in northern California on the western edge of Vallejo in southwestern Solano County. Approximately 30 miles northeast of San Francisco, Mare Island is entirely within the incorporated boundaries of the City of Vallejo, and close to the cities of Benecia, Fairfield, Napa, Martinez and Richmond. Mare Island is bounded by the Mare Island Strait (part of the Napa River) on the east, Carquinez Strait on the south, and the Napa Marsh and historic diked marshlands on the north (Figures 1 and 2).

Mare Island received its first historical name, *Isla Plana,* from Juan Manuel de Ayala of the vessel *San Carlos* in 1775. The island received its current name when a barge carrying livestock owned by General Vallejo capsized in the Carquinez Strait. One white mare, a favorite of Vallejo's wife, Benecia, swam to the island and was rescued there a few days later. As a result, Vallejo named the island *La Isla de la Yegua*, or Mare Island. Other than a short-lived residency by two families of squatters, there is no other record of historic land use on the island before the establishment of the naval shipyard (Hoover et al 1990:472).

The Mare Island Naval Shipyard was established in 1854, when it was used to dock the Navy's Pacific Squadron. During World War II, Mare Island grew into one of the world's largest ship construction and repair facilities, with over 41,000 employees. In the 1950s, the shipyard was used for submarine building and overhaul. Mare Island was included in the Base Realignment and Closure Act (BRAC) and the Navy completed all shipyard work in 1996, closing the yard.

Mare Island is a designated National Historic Landmark (NHL [since 1974]) and a National Register of Historic Places (NRHP) District. As part of the BRAC action the Navy inventoried and evaluated historic properties on base, revised the NHL, and prepared a comprehensive NRHP nomination for the entire base that included both built environment and archaeological resources (JRP Historical Consultants with PAR Environmental Services 1995). Predictive models for prehistoric and historic archaeological resources were also prepared (Allan and Self 1995a, 1995b; Maniery and Baker 1995a, 1995b).

Mare Island is currently in interim U. S. Navy caretaker status during the process of transitioning to planned reuses. On-site activities by the Navy Caretaker Site Office (CSO) are limited to management of interim leasing activities, security, maintenance, environmental restoration and caretaker management of surplus property. Properties on the shipyard are owned by the Federal Government. All former Navy activities have been relocated. Property at Mare Island has been or will be transferred to the U. S. Forest Service, the U. S. Army, U. S. Coast Guard, the U. S. Fish and Wildlife Service, and the City of Vallejo.

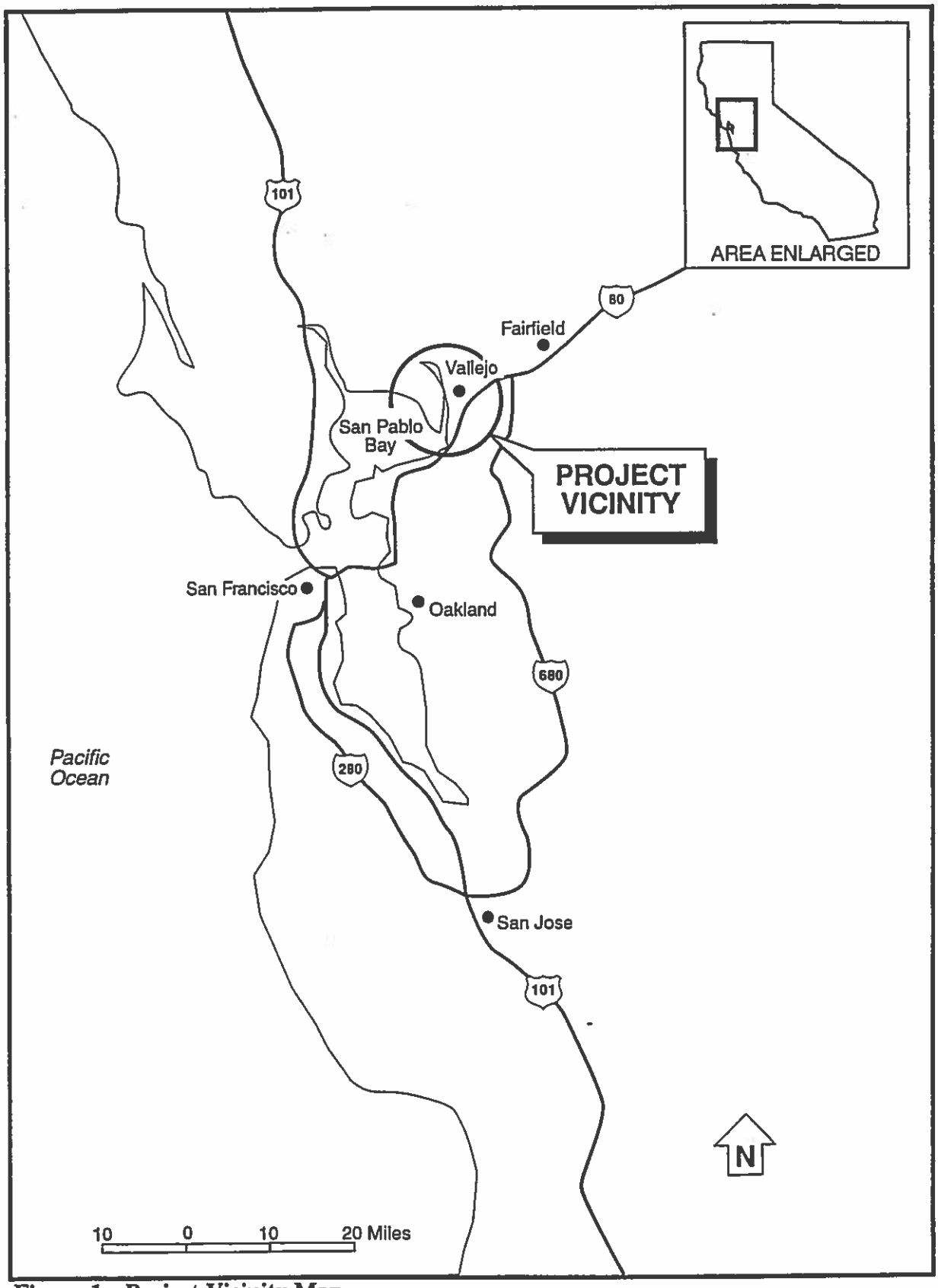

Figure 1. Project Vicinity Map

Figure 2

Figure 2. Potential Historical Archaeological Features, Mare Island Naval Shipyard

Since 1995 the Navy and the City of Vallejo (City) have been working on the transfer of portions of the base to the City. The City of Vallejo has been recognized by the Secretary of Defense as the Local Redevelopment Authority (LRA) and is responsible for all Section 106 compliance on non-federally owned land at Mare Island. As part of this acquisition agreement the City has adopted an historic ordinance detailing the preservation plan for Mare Island's future development. A Memorandum of Agreement (MOA) between the Navy, the City, the California State Historic Preservation Officer, the Advisory Council on Historic Preservation, and the National Park Service outlines the City's responsibilities regarding City property within the Mare Island National Register District. The MOA was signed by all parties in mid-2000 and is now in effect.

In light of the stipulations in the MOA and the new historic ordinance, the City is preparing a Supplemental Environmental Impact Report (SEIR). As part of this SEIR process, PAR contracted with Mellon & Associates (the City's Historic Preservation consultant) to update and refine the 1995 predictive models, based on the results of monitoring the former base's clean-up activities. This current model incorporates both prehistoric and historic archaeological data into one document and is intended as a guide to identify potential eligible archaeological resources to assist in the City's development planning process for Mare Island.

RESEARCH GOALS

The predictive model prepared for Mare Island in 1995 and updated in 2000 contains a detailed context and research design (Maniery and Baker 1995; Maniery 2000). This text is summarized below. There are many archaeological sites in California and most contain some type of information. The key to productive archaeology is to assess whether a property is likely to contain important information. In order to achieve this goal a researcher must examine the data potential in light of an archaeological research design. A design outlines topics or questions that could be addressed given the kinds of data that a particular property type is likely to contain, and evaluates if that information can be gained form other sources. For example, at Mare Island an examination of the iron and brass foundry may be conducted in light of research questions concerning the technology of metal working within a shipyard context.

A variety of property types are expected to occur at Mare Island. Generally, a property type is a grouping of properties that share some important characteristics. Examples include domestic occupation, industrial technology, or defense-related features. Domestic sites could be represented by hollow features used as receptacles for the by-products of everyday living (discarded ceramics, food bones, glass containers, personal items, etc.) or by sheet refuse. Hollow features include wells, cisterns, subterranean basements or cellars, outhouse pits (also called privy pits or latrines), or lined and reusable garbage pits. These features are often filled as a result of sudden, transitional changes, such as clean up after a natural disaster (e.g., fire, earthquake). Sheet refuse is material that accumulates horizontally and can sometimes build up several feet in depth. Often it is composed of material deliberately brought in as fill. The fill layers seal off caches of artifacts and provide evidence of change over time. Analysis of sheet refuse deposits can shed light on backyard use, functional layout of yards, garden designs, and other aspects of daily living.

Industrial sites usually consist of a series of discrete elements that reflect the technology involved. Each component is a resource type with its own potential. M. Praetzellis and A. Praetzellis (1993:243), for example, noted that a foundry site could include coke ovens and fuel storage areas, woodworking shops and wood storage areas, flask storage areas, iron storage areas, cupola furnaces, casting floors, and machine shops. Each component or element of the foundry contains potential value as a part of the overall process. Taken as a whole, a complete reconstruction of a technological type can be accomplished.

Defense sites are also multi-component and could include exterior wall fortification, gun emplacements, magazine storage areas, and watchman living quarters. Each component contributes to the overall interpretation of a feature and allows for a reconstruction of the interaction between different aspects of one feature.

Each property type relates to specific research themes that can be addressed through analysis of materials associated with the resource. Several themes are pertinent to the predicted features that comprise the Mare Island site. These are described below.

Consumer Behavior/Social and Economic Status

The study of individual households and the response of each to economic and social conditions of the time have been under investigation for over a decade. A household, which is defined as a group of people living together for domestic purposes (not necessarily a family), is a convenient unit of study (Beaudry 1984:30; Praetzellis and Praetzellis 1985:94). Self-sufficiency, use of manufactured products, gender issues, and occupational productivity can all be addressed at the household level, and studies of individual households can be combined to examine broader regional pattems.

This approach has a number of proponents in historical archaeology (see, for example, Beaudry 1984, 1986; Beaudry and Mrozowski 1987; LeeDecker et al. 1987; Mrozowski 1984; Starbuck 1984). Wilke and Rathje (1982:613, 618) write that the "archaeology of the individual household is an essential building block in reconstruction of past societies" and that the material culture seen in individual households reflects the demographic composition of the households. Some of the concepts relevant to household studies include household composition, life cycle (of the household itself, not the individuals living in it), income strategy, and status. All of these concepts influence consumer behavior and need to be taken into account when interpreting material culture derived from a household.

Recently, attention has been given to examining individual nineteenth-century households in light of the Victorian attitudes that prevailed at the time. The values toted during the Victorian era ("piety, purity, submissiveness, domesticity in women [Welter 1966:152]; rectitude, thrift, sobriety, and hard work in men [Wiebe 1967:4]; self discipline, temperance, and respect for authority [Mann 1982:210]; and steady work, punctuality, and compulsive behavior in general [Howe 1976:210]" as outlined in Praetzellis et al. 1993:26), were readily adopted by middle-class commercial and professional interests. Victorianism filtered down into the artifacts chosen by households, behavior pattems, and specific historical events and processes on many levels, including household decorations, municipal work projects, and children's toys. In contrast, working class consumer practices were distinctive, perhaps being a way of rebellion or resistance to the overwhelming Victorian values of the middle-class (A. Praetzellis 1991; Praetzellis et al. 1993:26-27). On military bases, Victorian attitudes could be expected among officers, but may be lacking in the civilian working class and enlisted men.

The archaeological deposits associated with mid-nineteenth century households often contain material that provides evidence of the degrees of participation in or rejection of the Victorian pattems of domestic behavior. Artifacts associated with formal dining and socializing can offer evidence regarding the increased importance of these activities through time. The context of the influences of Victorian values on individual households has been developed in other research designs put forth for San Francisco (Praetzellis and Praetzellis, eds. 1993), Oakland (Praetzellis ed. 1994) and Sacramento (Praetzellis and Praetzellis 1992, Praetzellis et al. 1993) and is applicable at Mare Island as well.

Consumer behavior and social and economic status can be studied through the examination of refuse. Refuse, quite simply, is garbage and includes remains of food preparation and consumption, such as bottles and cans, leftovers, seeds, bones, as well as broken and discarded household objects (dishes, personal items, etc.). Refuse deposits associated with specific households can be studied to answer questions about how people lived, what they ate, how they spent their money, where they obtained their products, how (and to what degree) they were influenced by marketing, social movements, or their bosses, what medicines they used, whether women or/and children were living in the house, and a multitude of other questions. Faunal remains, in particular, are crucial in reconstructing diet, economic status, consumer preferences, social status, and in some cases, ethnicity.

At Mare Island, household deposits from a variety of social groups are predicted. Comparison of deposits from Naval, Medical, and Marine Corps officers' housing, civilian housing, watchman and gunner's quarters, and enlisted men's barracks can be crucial in reconstructing the social or economic lives of people stationed on the Island in the nineteenth century. The lives of the common sailor or worker is not well documented in the historical record, a factor that enhances the value of remaining archaeological features and remains. Pertinent questions could include the following:

- Is there evidence between officer, civilian, and enlisted men households of differing economic, social characteristics or status?

- How did personal food and accoutrement preferences differ between class/status/gender groups or in households within the same class/status/gender group?

- Is there evidence of women and children in households? Do these multi-gender households show a higher degree of the practice or influence of Victorian values than bachelor or civilian households?

- Is evidence of Victorian values confined to officer's households, or was it uniform across the base?

- Is there a change through time or by class/status/group in acquisition and consumption of foodstuffs or in organization and use of space?

- Did the availability of products and use of imported items change through time, given the occupation from the Gold Rush era through World War II?

Data requirements for answering these questions and others could include functionally and temporally identifiable archaeological features, interfaces, and artifacts, faunal remains with butchering marks, botanical remains, economic/status information from documentary sources, documentary evidence of residents by area, their occupation and military ranking on base, and length of occupation.

Ethnicity/Military Subcultures

Cultural heritage and gender-related choices can also be examined through material cultural remains. In some studies with a high degree of faunal preservation, distinctions between Irish, African American, and Spanish households have been made based on comparing the faunal record with historical data on food preferences (Maniery and Brown 1994). Ethnic diversity may be evident in Mare Island deposits, particularly in civilian housing areas where many Irish families dwelled, and could add to a reconstruction of the lifeways of the Island's inhabitants.

Material remains can demonstrate the relative influences of economic distinctions and the development of mass production and world trade of materials. Artifact assemblages found in sealed deposits are literally time capsules, normally created within a short period of time. A study of these capsules results in an understanding of what was purchased and used in a household. These choices are affected by primary age, gender composition, income level, social standing, education, family background, and personal beliefs. In military societies, such as Mare Island, deposits could vary according to rank, communal versus individual housing, and adherence to the strict military social society that was prevalent in nineteenth-century military bases. Pertinent questions could include the following:

- Is there evidence of social stratification between various use areas of base?

- Are there any symbols of ethnic or religious preferences? Victorian values?

- Within the civilian housing area, were living areas arranged by ethnic affiliation? Were traditional ethnic dietary preferences practiced?
- Is there evidence of military influence on personal choices in deposits from officer's households? Enlisted households? How did this differ from civilian living areas?

Data requirements include identifiable faunal remains, archival information regarding inhabitants of households, ethnic preferences, style and artifact catalogs, and intact, contextually discrete artifact deposits. Artifacts capable of providing interpretative data include ceramic, glass, and metal containers.

Industrialization/Technology

Currently, the archaeological study of industrial technology is in its infancy. George Teague (1987) has been studying waste products from industry, such as slag, and has found that the waste can often provide information on undocumented technologies not available through historical research. Unglik (1984, 1990) and Council et al. (1982) have also examined and analyzed cast iron products and by products recovered in archaeological contexts. Perhaps most pertinent, however, is work at the Risdon Ironworks, Industrial Ironworks, and Golden State Miner's Ironworks on Tar Flat, San Francisco (A. Praetzellis 1993), where deposits allowed for a comparison of technological variation and change, through the analysis of the process of ironworking, rather that the architectural trappings of the factory or shop.

While metalworking and other activities associated with the steam-engineering complex are likely to have visible byproducts, woodworking and shipbuilding activities are often less represented in the archaeological record. In San Francisco, for example, shipyards were plentiful in the nineteenth century and moved around regularly in response to filling activities and San Francisco's changing shoreline. Carpenters usually owned personal tools and built ships anywhere that met three requirements: cheap land, mud flats, and tides. Carpenters were economical and reused everything, leaving little byproducts of the woodworking industry associated with shipbuilding. At John North shipyard in San Francisco, for example, archaeological investigations uncovered only the platform that once supported the mounted capstan; all equipment had been removed (Olmstead 1995).

Studying industrial processes associated with shipbuilding, blacksmithing, or other activities could provide data on undocumented technologies or could indicate evidence of local innovations as opposed to use of standardized technology. Extensive reuse of equipment, artifacts, or sites may also be discerned through the archaeological record.

Of more importance is the potential comparative information obtainable through intact deposits from shipbuilding activities. Knowledge regarding Pacific Coast maritime history is sparse. There is little documentation from the commercial shipyards and generally no plans or descriptions of shipbuilding activities. Most of the shipbuilding knowledge comes from studies of historical photographs that often cannot provide detailed data on construction methods, yard activities, and technology. Given the lack of data available for both commercial and military Pacific Coast shipyards, any remains from shipbuilding that would add knowledge to the existing database would be a valuable resource, particularly if it dealt with pre-1880 activities (Cooper 1995; Olmstead 1995). In addition, most of the shipyards in the region built commercial wooden boats. Mare Island would offer a chance to compare these commercial ventures with specialty boats, ironclad, and steel-hulled vessels. Adaptations to ships due to west coast resources or influences could also be addressed through studies of intact remnants of Mare Island shipyard.

- How were shipbuilding techniques adapted to west coast resources, climate, and technology?
- Were any technologies developed or discovered in response to environmental and procurement conditions at Mare Island?
- Is there evidence of a local adaptation of accepted industry technology? What caused these adaptations?
- Is there evidence of undocumented or poorly understood industrial processes?
- Were tools, facilities, or artifacts reused or adapted for specialized use at Mare Island?
- How did shipbuilding technology changed on the Island through time?

Data requirements include documentary evidence of technological change or advances, Industrial-related artifacts, features, or layers, functionally and temporally discrete archaeological features and deposits, remains of ships, wharfs, piers, seawalls, marine railway, foundries, or other structures related to shipbuilding operation and Mare Island's industry.

Cultural Geography

Archaeology offers an ideal means of examining changing land use and spatial organization through time. On a household level, examination of botanical debris is useful in identifying location and composition of backyard gardens. On a wider scale, placement and layout of water system remnants, sewer and drainage systems, and trash disposal areas can be enhanced by combining the historical and archaeological record. Archaeological remains can significantly add to the description and study of the evolving formal and informal landscape and layout of Mare Island through time. Identification and study of architectural remains (building foundations, cellars) can be compared to the historical record to complement the study of base design and layout.

- Early maps and photographs of residential areas on base indicate a clear definition of space through use of fencing, outbuildings, and landscaping. Is there archaeological evidence to support this definition? Did design of back yards change through time? How did landscaping design differ by class/gender/status?

- What was the relationship between buildings and garden areas? Did this differ by military rank versus civilian use?
- How did the layout and spatial arrangement of Mare Island compare to other military bases, such as Presidio of San Francisco? How was space rearranged during the rebuilding efforts following the late 1890s earthquake?

- If evidence of gardens is present, was the design of the garden space formal, adhering to Victorian values? What is the difference between military and civilian household garden areas? Were nature elements of the environment incorporated into the garden design?

- Was arrangement of landscaping more formal in some areas (such as the hospital) compared to others (living quarters, industrial work areas)?

- When did formalized disposal of sewage and refuse occur? How was water provided to the houses?

Data sets needed to address these and other questions include intact structural remains (privies, wells, foundations, walls), functionally and temporally discrete archaeological features, intact water, sewer, refuse disposal systems, documentary evidence of base layout and design, photographic evidence of base layout and design, botanical specimens from intact archaeological deposits.

TREATMENT MEASURES

The redevelopment of Mare Island will result in impacts to potentially significant archaeological resources, both prehistoric and historic. Several treatment measures (tm), used alone or in combination, may be necessary to comply with terms set forth in the Memorandum of Agreement between the Navy, OHP, and City, and in the City of Vallejo's Historic Ordinance for Mare Island. The level of effort that may be required is dependent on the type of proposed impact, amount of exposure of a feature or deposit, and intactness of a deposit. Archaeological work should be conducted following the Advisory Council of Historic Preservation's (ACHP) *Treatment of Archaeological Properties: A Handbook* (ACHP 1990). Historians, archaeologists, and other preservation specialist's employed during the development phase of Mare Island's reuse should meet the Secretary of Interior's *Professional Qualification Standards* in education and experience (National Park Service 1983; 48 CFR 44738-44739).

TM-1: Archival Research

The archaeological research effort for the predictive model and National Register nomination concentrated on identifying features through perusal of historic maps, photographs, and (in the case of prehistoric remains) auguring. Detailed research of commander's logs, journals, letters, or manuscripts was not undertaken, except for the NAD seawall evaluation. An examination of records for the NAD seawall revealed a rich source of information exists in the journals and letters written to, and received by, the base commander. For example, the source of the sandstone blocks used in construction, information on Italian stonemasons employed to build the wall, and even the amount of wall completed per day were available in the archival record. Additional research may be necessary to complement the information provided in the predictive model and to assist in the evaluation of a particular subsurface deposit or feature.

Archival research would consist of examining the Mare Island records at the National Archives in San Bruno and at the Vallejo Naval and Historical Museum. Commandant logs, journals, records of the yard, and other data may contain valuable information necessary in interpreting the archaeological remains exposed during excavation. Accounts of activities on Mare Island gleaned from local newspapers may also prove useful.

TM-2: Record Features on State of California Department of Parks and Recreation 523 Forms

Archaeological monitoring in areas F-1 and the NAD area over the past several years have exposed small, discrete features, such as brick manholes, redwood box pipes, and small segments of walls or foundations. These types of features are simple in design and construction and occur fairly frequently throughout the historic district of Mare Island. To date, these types of features have been documented on DPR 523 forms and photographed. The forms have been submitted to the Northwest Information Center of the California Historic Resources Information System for assignment of a permanent state number. Once this recordation process has been completed no other work is necessary for the small intact features. Segments of seawalls or structural foundations have also been recorded in this manner, if only a small portion of the resource is visible. Complete exposure of a seawall or foundation may require a separate documentation process as described below in TM-3.

TM-3: Historic American Building Survey/Historic American Engineering Record (HABS/HAER) Recordation

Some archaeological features contain elements that are conducive to recordation at a HABS/HAER level of documentation. These include long, linear resources, such as seawall or marine railway, intact foundations or walls, or cooking features. HABS/HAER is a National Park Service (NPS)-sponsored program that is used to record the built environment or engineering features, such as bridges and tunnels. It consists of a written report with a history of the resource and physical description, as well as large-format photography. Mare Island, as a landmark, has been assigned a HABS/HAER number. All new submittals and documents are assigned a sub-number by

NPS Pacific Division in San Francisco. Any new HABS/HAER forms generated as treatment for development should be coordinated with, and submitted to, the NPS for their approval and input.

TM-4: Archaeological Fieldwork

The archaeological fieldwork should be oriented to 1) determining the legal significance of subsurface features or deposits, and 2) resolving the identified research questions for each Feature area or prehistoric sensitivity area identified in Figure 2. Ideally, two phases of fieldwork – testing and data recovery – are preferred. In urban areas, or on projects where time is of the essence, a consolidated approach to CEQA and Section 106 of the NHPA may be useful. In this latter approach, the identification, evaluation and data recovery efforts are collapsed into a single phase. Mechanized equipment may be employed to identify the remains. Hand excavation is then used to cross-section or sample and further expose features or cultural deposits, collect information regarding probable function and age of the deposit, and ascertain its level of physical intactness. Field determinations can then be made regarding the following:

- potential of each deposit to address stated research domains;
- intactness (integrity) of each feature or deposit;
- clear association with an historical event, use, or household;
- the variety and range of artifact types and amounts of materials;
- level of discrete horizontal and vertical stratigraphy; and
- relative rarity of resource type.

Deposits deemed to meet Criterion D of the NRHP, or Criterion 4 of the California Register of Historic Resources (CRHP), based on the field evaluation, are then subjected to a more detailed data recovery effort. Deposits that do not retain adequate integrity, do not date to a pre-1905 context as stated in the research design, or are limited in artifactual content, number or type or otherwise do not meet criteria are not subjected to further excavation and analysis efforts.

Field methods will be structured toward determining legal significance and collecting archaeological data needed to address relevant research domains and questions in a meaningful way. In order to address the significance and examine research domains, data from several types of archaeological resources are needed. Vertical resources, such as hollow features used as receptacles for the by-products of everyday living (discarded ceramics, food bones, glass containers, personal items) include wells, cisterns, basements or cellars, outhouse pits, or garbage pits, and usually represent use by a single household or work areas. These features are often filled an abandoned as a result of sudden transitional changes, such as clean up after an earthquake or fire. Horizontal features include structural or landscaping remains or sheet refuse. Sheet refuse is material that accumulates horizontally and can sometimes build up several feet in depth. Often it is composed of material deliberately brought in as fill. The fill layers seal off caches of artifacts and provide

evidence of changes through time. Linear resources may represent engineering elements and could be important in their own right.

There are several ways to retrieve the data necessary to identify, evaluate, and interpret archaeological features. Mechanized trenching and surface clearing can allow quick exposure of the historic land surface and related features, crucial during the identification phase. Hand excavation is useful in exposing and carefully recording and collecting data. Photography is essential in documenting both the field effort and the location and appearance of exposed features. Mapping is also an essential part of any excavation effort. All trenches, surface cleared areas, features, deposits, and excavation areas should be mapped from a permanent datum.

Prior to beginning any fieldwork involving excavation or mechanized equipment, the Principal Investigator or lead archaeologist should meet on site with staff to familiarize the field crew with historical and prehistoric features that may be present and discuss anticipated field strategies. This orientation will alleviate confusion in the field and will provide the crew with field expectations, research goals, types of expected artifacts, and methodology. The site safety plan, safety measures, logistics, and expected scheduling of work should also be discussed.

Archaeological excavations or trenching should occur after all buildings have been removed from the site, but prior to construction activities. Therefore, prior to fieldwork, the proposed impact area should be cleared of standing structures, surface concrete slab foundations for foundation remains, vegetation, and topsoil or fill. It may be necessary to fence or secure each work site during the field phase for safety measures. In addition, arrangements should be made to provide security during off-work hours as a protection against artifact collecting or vandalism.

TM-4a: Trenching

Excavating trenches using mechanical equipment is a useful tool in archaeological fieldwork. Initially, a sample trench should be dug across back lot areas or potential features to identify the stratigraphy present at the site. Work should be completed using a hydraulic backhoe with a 36-inch bucket. The amount of fill deposited across Mare Island varies from area to area. During monitoring, from 12 to 48 inches of fill were observed. In some locations, fill may be deep enough to necessitate shoring, an excavated safety zone, or a 1:1 trench wall slope to meet OSHA requirements. Examination of the trench profile can result in identification of the historic (1854) ground surface, the post-1898 earthquake surface, and subsequent filling episodes. These data are important in planning the second, surface-clearing phase of excavation.

Several of the potential features, notably the Marine Corps seawall and the marine railway, are linear resources. The general location of these features is known, but their condition and precise alignments are not. Using trenches to crosscut these features could result in exact locational data, information on their physical condition, and provide construction data to address research questions. Locational data is useful for subsequent management, preservation, and long-term protection of these important resources. Trenches can also be useful to crosscut historic building locations, expose back lot areas, and cross section side yards or building frontages. All trench locations should be accurately mapped and measured from a permanent datum. Trenches should be photographed using black and white film in a 35 mm format.

TM-4b: Mechanized Surface Clearing

In areas that will be subjected to extensive subsurface disturbance, such as F-11 and F-18, it is necessary to identify and evaluate archaeological deposits and features that could be disturbed by the construction. Mechanized surface clearing should be employed with the use of a front-end loader with a front-mounted bucket measuring three or more feet across or an excavator. The goal of surface clearing is to scrape back the ground surface until the historic ground surface (identified during the trenching effort) is exposed. The scraped material must be removed from the site or deposited at the far ends of the surface-cleared area so as not to impede further archaeological excavation. At the completion of the grading the historical ground surface for each feature area should be exposed, revealing foundation remains, circular hollow-filled features, sheet refuse areas, or other deposits. For example, the F-18 area, once used for civilian housing, may contain the tops of foundations/cellars, circular or square features representing wells or privies, and a scatter of artifacts associated with the household disposal of trash. Once the historical ground surface is exposed additional testing and data recovery should be conducted using hand excavation methods.

TM-4c: Hand Excavation

Historical Archaeology. Ideally, trenching and surface clearing should result in the exposure of the tops of historic features. As each feature is located it should be exposed in plan, using hand methods and mechanical removal of the overburden. The object of the excavation is to assess each deposit or features' legal significance in light of the research design themes, and to recover samples of the deposit. To this end, a probe should be used to assess the depth of refuse-filled pits and other hollow features, and to follow the outline of structural foundations. Initially, fieldwork should focus on determining the structure and stratigraphic integrity of a feature, approximate date of deposition, functional representation, and quantity of artifactual material and historical contextual association. Deposits that appear to contain data relevant to the research themes, in combination with physical integrity, should be cross-sectioned. An appropriate sample of the deposit, to be determined by the field director and the principal investigator, should be excavated to gather enough of a sample of the types of material contained in the feature or layer to ascertain its legal significance. During the testing phase, artifacts should be preliminarily identified and, if possible, dated in the field. Artifacts associated with potentially significant features or deposits should be transported to a laboratory for further cleaning and analysis. Material from ineligible deposits may be disposed of in the field, or, if unusual or unique, kept for museum display and public interpretation purposes.

For legally significant deposits, additional data recovery work may be necessary and a larger sample of potentially eligible deposits or features exposed or collected. Manual data recovery excavation should follow stratigraphic layers (physical layers of deposition), if possible. If no cultural stratigraphy is evident, excavation should proceed in arbitrary 10 cm (4 inch) layers. All material from the excavation unit should be screened through one-quarter-inch hardware mesh. At the discretion of the lead archaeologist, a one-eighth-inch mesh screen should be used to recover bone and other small classes of artifacts (beads, buttons, etc) or faunal debris.

Hollow-fill features, such as privies, trash pits and wells were often filled upon abandonment and may contain dense layers of refuse. The sheer volume of material contained in a deep pit precludes a total collection and excavation of the feature. At the discretion of the field

supervisor, such features may be cross-sectioned and sampled. Some hollow-filled features, such as a brick or rock well are narrow, confined spaces that could pose safety hazards for excavators. Ideally, these features are exposed on a pedestal (using backhoes to excavate a large trench around them) and excavated from the outside, creating a wide safety trench. Shoring of small places is inhibitive to hand excavation and is not always efficient. While all wells should be photographed, drawn in plan, mapped, and probed, excavation of these and similar features should weigh the time involved in this type of excavation against the research potential.

Sheet refuse deposits often are found as a continuous horizontal scatter of material occurring in thin or thick layers. Often, examination of artifact placement within the refuse sheet deposits can lend itself to interpreting functionally discrete work or living areas. Therefore, provenience is very important. Effort should be taken to examine the sheet refuse horizontally and in broad exposures, rather than in small vertical units.

All excavation should be documented on field level/layer forms. These forms should document site structure and content. Unit or feature profiles should be drawn to scale and photographed. Scaled sketches may be made to illustrate details of some features. Sketches should be attached to detailed feature records maintained by each excavator. Field notes should also be maintained field supervisors. Features and excavation areas should be accurately mapped from a permanent datum. Black and white 35 mm photographs should be taken of all features and excavation areas. Artifacts should be bagged by provenience and transported to a laboratory for further analysis. Artifacts with uncertain provenience should be left on site, unless possessing potential value for public interpretation.

TM-4p: Prehistoric Archaeology

Several areas of potential prehistoric sensitivity were identified during the predictive model phase. A few of these, in the industrial area and near the old hospital, are in areas that could be impacted by development, or are within historical feature areas also slated for development. Should prehistoric material be identified during excavation, a Native American observer should be brought in to monitor subsequent prehistoric excavations. Non-cultural material (e.g., fill) should be removed using mechanized equipment. Units should be plotted horizontally and vertically from a permanent datum.

Material should be screened using a one-quarter-inch-mesh screen and one--inch mesh sample as a control. All artifacts should be bagged according to level or feature and marked with provenience. Unit level records should be maintained, as well as supervisors' field notes. Excavations should be documented on 35 mm black and white film. Any features should be cross-sectioned, recorded in plan and profile, and mapped. Samples of materials useful in specialized studies (radiocarbon and/or flotation, obsidian) may be collected. If deemed necessary by the field director, soil samples for chemical analysis or flotation may be collected for processing in the laboratory.

TM-5: Analysis and Reporting

Generally, analysis includes washing, sorting, cataloging, and interpreting the artifactual material collected during excavations, and the processing and synthesizing historical and prehistorical data collected during the archival research phase. Certain classes of historic artifacts contain data that can be retrieved in the field. For example, undiagnostic glass shreds, some ceramic fragments, nails, bits of scrap metal, slag, and other similar undiagnostic material can be counted, weighed cataloged and reburied or discarded on site. Large pieces of equipment (boilers, railroad tracks) are unwieldy to curate and should be photographed and described on site, unless an interest curating in this type of artifact is expressed by the Mare Island Historic Foundation.

All laboratory procedures should be based on standard professional methods, but should be oriented toward the desired goal of addressing relevant research topics. Specifically, the sorting description, and analysis of collected material should be completed in a manner designed to facilitate the interpretation of the collection relative to specific information needs.

All artifacts should be washed or cleaned, then sorted by material type, artifact class, and provenience. Materials of limited interpretive value as described above should be counted and/or weighed and cataloged by lot and provenience. Distinctive specimens should be measured, described, and individually cataloged to facilitate further analysis. Specialists should divide materials into appropriate categories and lots for presentation in their analysis (e.g., faunal, floral, buttons).

The artifactual materials, stratigraphic data, and information on horizontal and vertical site structured obtained through the fieldwork phase should be examined. The goals of this analysis are to address chronology, intersite relationships, correlation with archival data, and application to other stipulated research domains and goals.

The functional classification used in organizing the collection should allow placement of artifacts within their most appropriate context of use. Strategies developed by South (1977), Adams (1980), Sprague (1981), Tordoff (1987) and others works well with historical material where functional context of artifacts is usually discernable. While this scheme does not allow for reuse of materials (such as glass containers) or tentative identification of use of fragmentary artifacts, it is useful as a general organizational tool and provides a fairly accurate reflection of the types of activities represented by the artifacts from a given site or feature. Functional categories include domestic, structural, personal, activities, industrial, and unidentified use.

Based on results of the Mare Island monitoring efforts, artifacts will generally consist of glass, ceramics and metal. Glass should be sorted by functional category, color and type using established definitions and methods (e.g., Jones et al. 1985). Makers' marks, diagnostic design elements, and manufacturing methods should be noted. Minimum numbers of vessels should also be calculated. Chronologically sensitive manufacturing methods, such as automatic bottling machines, should be noted and combined with other material (ceramics, etc.) to determine deposition dates. Glass items are essential in addressing questions of consumer behavior, commercialism and adaptive strategies.

Ceramics should also be sorted and tabulated by functional category, form, decorative treatment and place of manufacture. The minimum number of vessels should also be calculated. The use of standardized terminologies derived from the collections analyzed at similar military sites (e.g., San Francisco Presidio [Voss 2000]) allows for the establishment of a good comparative database and subsequent analysis. Ceramics are useful in establishing chronological placement of features, and addressing questions of consumer behavior (economic status, gender) and commercialism.

Metal preservation at Mare Island, as seen in monitoring efforts, is poor. However, metal rings from tin cans, solder seams, and handles from buckets and other contains can provide valuable information. Metal objects should be sorted by material (ferrous, copper alloy, cast iron, etc.). Tin canisters should be identified and described using Rock's (1987) nomenclature. Tin cans and metal objects can provide information of foodstuff and consumer behavior, assisting in reconstruction of past life ways. In addition, tin can technology changed through time and intact canisters can provide data on chronological placement of deposits. Non-ferrous metal objects, such as copper alloy fixtures or buttons, are also useful in addressing behavior and personal preference questions, including economic status, gender and Victorian lifeways.

Faunal preservation at Mare Island also appears poor. Faunal material should be sorted according to burned and unburned red fractions, counted and weighed. Identifiable specimens should be separated and layered according to class-order-family-genus-species levels. Specimens should be examined for butchering marks and cuts should be analyzed according to ethnic preferences, consumer behavior, retail versus home butchering, and economic status. Faunal identification and analysis should be conducted by a specialist experienced in examining food remains from Civil-war era sites.

Specimens related to prehistoric use could include lithic debitage, stone or bone tools, groundstone, flora or fauna remains, and shell. Materials should be washed, dried and sorted by material and provenience. Lithic debitage, obsidian, projectile points, milling tools, and other artifact classes should be analyzed as appropriate. All non-burial related material should be stored in plastic 4 mm thick bags, labeled, and curated. Burial-related formal artifacts (beads, bone tools, projectile points, etc.) should be cataloged as associated material and prepared for repatriation according to terms set forth in the burial agreement.

The results of fieldwork and analysis should be presented in comprehensive reports for each feature (e.g., civilian housing area, officers' housing) or prehistoric area describing the project goals and objectives, methods, and results. Reports should follow acceptable professional format and should meet Secretary of Interior's *Format Standards for Final Reports of Data Recovery Programs* (42 CFR 53777-53779) and the California Office of Historic Preservation's *Archaeological Resource Management Reports (ARMR): Recommended Contents and Format* (1989). The reports should correlate the archaeological material with information from the archival research and should apply these data to addressing stated research domains. Copies of the administrative draft report should be submitted to the City of Vallejo for review, as well as appropriate state or federal agencies. The final document should incorporate responses to any comments received on the draft.

Once the work is completed, the artifact collection should be curate at the Mare Island Historic Trust Foundation or City of Vallejo Museum facility following standards set forth in the

California Office of Historic Preservation's publication *Guidelines for the Curation of Archaeological Collections* (State Historic Resources Commission 1993). Copes of field notes, photographs, drawings, reports, the catalog, and other pertinent information generated through the excavation should be included with the curated artifacts. Curation agreements should be in place prior to any excavation work. Guidelines for curation are provided in Appendix A.

TM-6: Native American Coordination/Treatment of Human Remains

Several of the sensitive areas identified during the predictive model stage have reported removals or discoveries of human remains in the past. Given this history of interments on the island, a pre-construction burial agreement should be developed between the City of Vallejo and the most Likely Descendants. If human remains are uncovered during archaeological testing, data recovery, or subsequent development, these materials should be dealt with according to procedures outlined in the burial agreement.

The Cortina Band of Wintuan Indians, a non-Federally recognized tribe, has a vested interest in Mare Island. They should be kept informed of any actions that uncover or disturb buried Native American or prehistoric remains. Prior to development, coordination should occur with this band to develop a proposed plan of action to be followed should any Native American human remains be uncovered during construction or excavation.

The City of Vallejo should ensure that the treatment of any human remains, regardless of age or cultural affiliation, should comply with all applicable State and Federal laws and regulations. If human remains are exposed, the archaeological field director or construction foreman should immediately stop work in that vicinity and notify the City of Vallejo, who should in turn contact the County Coroner. If remains are deemed Native American in origin, the Native American Heritage Commission and Cortina Band of Wintuan Indians should be contacted. All work should cease in the immediate area of the find until appropriate studies, as outlined in the pre-construction burial plan of action, have been completed.

TM-7: Archaeological Monitoring

There are several situations where archaeological monitoring may be more appropriate than a full-scale test excavation. The primary reason to monitor is when underground disturbance is limited to narrow trenches (utility lines, etc.). Where trenching is occurring through a sensitive area, not in conjunction with major development, it is appropriate to have an archaeological monitor on hand.

Ideally, a monitor should be on hand during the beginning of the work to ascertain the amount of fill or disturbance within the given trench route. Past monitoring efforts on the island have indicated that some areas of F-1, for example, have been extensively disturbed in the past, and monitoring was not beneficial on a daily basis. Monitoring should continue in the sensitive area at the discretion of the lead archaeologist, based on the underground stratigraphy.

Some of the proposed impacts to sensitive areas include removal of existing foundations and/or grading and leveling sites to create lay down areas or parking. Normally, these activities

would not require excavation or monitoring. If materials are uncovered during this work, however, an archaeologist should monitor the remainder of the excavation in the vicinity of the find. Archaeologists used for monitoring should be provided with the research design for the Island, and should be experienced in historical archaeology and familiar with the types of prehistoric resources that may occur. Archaeologists should also meet the Secretary of Interior's Professional Standards.

TM-8: Public Interpretation

Both CEQA and Section 106 of the NHPA require public involvement and participation, to the extent possible. Some of the features or sites known to occur on Mare Island lend themselves to public interpretation efforts. Excavation efforts, and subsequent documentation and curate artifacts are also of interest to the public. Minimally, copies of any final reports generated through archival research, excavation, analysis, monitoring, or other historical or archaeological efforts should be filed with local libraries, City Hall, and the local museum.

In addition to dissemination of technical reports, efforts should be made to provide popular accounts of the results of work, or to present these results to the City and public. Appropriate venues for this effort includes presenting a short slide show with highlights of the work to City Council and local museums or historical societies. Avocation societies and professional societies (e.g., Society for California Archaeology, Society for Historical Archaeology, California Committee for the Promotion of History) have newsletters and annual meetings where results of the excavation work can be summarized and presented.

It is possible that some small, discrete features (brick cooking features, manholes, etc.) may be uncovered during development, particularly in F-11 and F-18 areas. Similar features found on other sites have been drawn in detail, numbered in sections, dismantled, and reconstructed in the outside display areas of local museums in order to preserve and interpret the feature for the local citizens. Similar interpretive efforts may be possible on Mare Island.

In addition, interpretive trails or paths through the historic NAD area, the Ordnance Reservoir, Lighthouse Reservation, or Bay Model site could provide an opportunity to increase the awareness, of and appreciation for, Mare Island's historical resources. Signage, plaques, and other methods of providing dates of construction, original use, or history of a site or feature are useful ways to interpret these important resources.

Additional options for public interpretation opportunities are listed below:

- design a portable exhibit for use in classrooms, City Hall, libraries, or other publicly-accessible facilities;
- develop or sponsor a video documenting Mare Island Naval Shipyard history and archaeology;
- produce an informational booklet for distribution at libraries, local museums, or City Hall;

- include archaeological information, excavation updates, or a synopsis of finds on the City's web page, or create a new web page for the project; or

- present a synopsis of findings at a City Council, local historical society, or library meeting.

TM-9 New Discovery

The predictive model and this treatment plan provide information on potentially sensitive areas of Mare Island that may contain significant subsurface deposits, and direction on the treatment of these resources. It is not economically feasible to excavate or explore each potential area archaeologically prior to construction. In some sensitive areas, scheduled work is minimal and extensive subsurface excavations are not anticipated. In addition, not all land use is thoroughly documented through time, and it is possible that significant deposits may exist outside of the recognized areas of prehistoric and historical sensitivity. These deposits may be uncovered during the course of construction.

Prior to construction an archaeologist should attend a tailgate meeting with the construction foreman and crew to discuss characteristics of potentially significant deposits. If archaeological properties (e.g., trash pits, brick foundations, dark soil containing shell, bone and stone) are encountered during construction in areas that have not been subjected to archaeological excavation, then ground disturbing activities in the immediate vicinity of the find should be halted until the discovery has been examined by a qualified archaeologist. If the deposit or features appears to meet CEQA or NRHP criteria as a legally significant deposit, then archaeological data recovery (TM 4, TM-5) should be implemented expeditiously so that construction work can continue with minimal delay.

POTENTIAL IMPACTS

Current development plans would result in a variety of impacts to the potentially sensitive areas at Mare Island. These impacts range from minimal disturbance to features or deposits to whole-scale removal of soil up to depths of at least three feet, resulting in the destruction of underground resources.

Impact 1: Retain in Open Space

Some of the features are located on parkland or the golf course and are slated to remain relatively undisturbed in an open space area. Impacts could consist of increased pedestrian or bicycle traffic, which could lead to vandalism or other disturbances. Generally, this impact is considered a minimal disturbance and no treatment is necessary. These features that occur in proposed open space, however, lend themselves to passive public interpretation through signage, a self-guided walking tour, or similar venues.

Impact 2: Improve Existing Road Infrastructure

Some of the existing roads would be widened or landscaped as part of the development project. Others, such as California Street, would no longer be a through street, but would be blocked. Generally, the road system at Mare Island was laid out early in the island's development and significant subsurface deposits under the road would not be expected, unless they were of prehistoric origin. Monitoring in the vicinity of the island cemetery during road construction revealed that redwood box drains are present under some of the roads (Mare Island's early water system), as well as some other utility lines. While these types of features contribute information regarding Mare Island's early water and sewage systems and warrant documentation upon exposure, they do not appear significant. Therefore, most of the work to upgrade the existing road system would not be considered a significant impact.

Impact 3: New Road Construction

New road construction is proposed in areas of new housing development. New construction includes excavation of an alignment to grade, paving, and signage. The excavation and grading could impact subsurface deposits that potentially occur in the feature areas defined on base. This would be considered a significant impact.

Impact 4: Create Equipment Laydown Areas

Several laydown areas to accommodate barge-sized equipment are proposed in the industrial areas. Creation of these laydown areas consists of removing some existing buildings, removing foundation walls, footings, and perhaps pads, minimal grading to level the site, and paving. Generally, these activities would be confined to the top one-foot of ground and impacts would not occur below this depth. The features identified to date at Mare Island occur at deeper elevations below the existing ground surface and would not be disturbed by this activity. Generally, this type of impact would not be considered significant.

Impact 5: Relocate/Demolish Existing Structures

There are several existing buildings at Mare Island that are scheduled to be moved during the developmental phase. This work entails physically removing the building from its foundation and relocating it at another site on the Island. Other buildings are scheduled for demolition. This type of work, including removal of the foundation after the building has been moved or demolished, is confined to the top one-foot of soil, and subsurface impacts to buried archaeological deposits are not likely to occur.

Impact 6: Add Fill to Grade

In one area of the island it is proposed to bring in fill to raise the existing ground surface to a grade consistent with that proposed for housing development. Adding soil to a potentially sensitive area in effect provides a protective covering for the subsurface deposits and is a way of protection for that archaeological resource. This is considered a positive impact.

Impact 7: New Construction

Several areas that contain potential archaeological deposits are slated for new construction. This work includes removing some or all of the existing buildings on the lots, excavating down to a minimum depth of three to four feet, compacting the soil back into place, grading to level the ground, and building new housing units. This work is considered a significant disturbance to any subsurface deposits that may exist in the areas slated for new housing construction.

Impact 8: New Construction on Pile Foundations

New mixed-use construction is also proposed by the waterfront. This type of construction would not require the soil compacting and would instead rely on pile drivers to place foundations into the ground. This type of work, while disturbing the soil to a greater depth, is less destructive than soil compacting. It is still considered a significant impact.

Impact 9: New Utility Lines

In conjunction with the development projects, it is necessary to lay new sewer, storm, water, and other utility lines. Some of the work may require replacing existing facilities by trenching through previously disturbed ground. This retrenching would not be considered a significant impact, since the damage to any subsurface deposits would have occurred during the initial trenching episode. Trenching for new lines through undisturbed ground, however, would significantly impact any subsurface deposits that may lay along the trench alignment.

DISCUSSION

Historical Features

There are 28 predicted historical features identified on Mare Island. Historical features include the remains of defense fortifications, industrial activities, shops, residential quarters and associated dumps, cistems, and latrines (Table 1). Locations of sensitive areas are depicted in Figure 2.

Although not assigned a number, deposits associated with residence of squatters and early non-military use of Mare Island could also occur on base. Several locations of the Hanscomb-Secur and Squatter Turner houses are generally reported (Roop and Flynn 1986). The Hanscomb-Secur house was rented by Farragut upon his arrival to the island and served as an administrative center for a time (Lemmon and Wichels 1977). Deposits associated with these residences could yield data relating to social and economic lifeways of the inhabitants prior to 1854 and would be considered extremely significant, if intact.

Table 1. Predicted Historical Archaeological Features *(combined features counted as a single contributing historical archaeology site)*

No.	Date	Original Use	Remarks
F-1	1854	Industrial Area	Includes steam engineering complex, original stable area, gun park, cisterns
F-2	1857-1883	First Independence Berth	
F-3	1856	Marine Railway	
F-4	1861-1898	Sawmill	Destroyed in 1898 earthquake
F-5	1862	Stable Complex	By Building 88
F-6	1864-1941	NAD Wharf	
F-7	1864	NAD Seawall	Determined eligible by OHP as a contributing element of National Register district
F-8	1863	Ordnance Retaining Wall	Determined eligible by OHP as a contributing element of the National Register district
F-9	1860	NAD Keeper's House	Building A45
F-10	1864-1907	Civil War Battery	
F-11	1858-1898	Officer's Housing Area	Destroyed in 1898 earthquake and rebuilt
F-12	1883-1914	Second Independence Berth	
F-13	1869-1906	Hospital Pier/Wharf	
F-14	1874	NAD Watchman's House	
F-15	1872-1930	Lighthouse Reservation	Vacant after ca. 1916
F-16	1873	Ordnance Reservoir	Remodeled in 1897
F-17	1876	Yard Reservoir/Tunnel	Now called Lake Rodgers
F-18	1870s	Civilian Housing Area	Called "Dublin Hill" community
F-19	1870s-1940s	Medical Officer's Housing/Hospital Stable Complex	
F-20	1874-1940s	Marine Corps Officers' Housing/outbuildings	
F-21	1874-1900	Marine Enlisted Men's Barracks/latrines	
F-22	1866-1898	Marine Corps area seawall	Now under Farragut Village
F-23	1899	Independence quarters	
F-24	1900	Hospital Wharf	
F-25	1904	Torpedo Boat Wharf	Uncovered during clean-up activities in 1999 and archaeologically documented
F-26		Bandstand	
F-27		Submarine repair base	
F-28	1923	Bay model	Designed 1919

F-1: Industrial Area

This feature encompasses Mare Island's original steam engineering complex, including the foundry, machine shop, boiler, coal sheds, cisterns, and associated industrial refuse and latrines. Immediately behind the foundry lay Mare Island's first stables (1854-1862 [presently under Buildings 98 and 107], and the original location of the ordnance storage area and gunpark. Remnants of the woodworking area, joiners shops, and other features were built partially on Dublin Hill and have been removed, although some refuse may exist around Building 46, the original shop on base. Deposits from the Industrial area, including filled cisterns, could be used to address topics of industrial technology and cultural geography. Features from early shipbuilding and foundry activities would be of particular importance for their comparative value.

In conjunction with the Dry Dock construction and other buildings erected in this area after 1866, numerous brick cisterns were put underground around the industrial area. By 1893, 14 cisterns were in place in the Shipyard North. In addition, water for industrial use was transported via ditches and pipes to the buildings from the reservoirs. Intact redwood box drains, ceramic pipes, and other linear remnants could be present in this area and could contribute information pertinent to Cultural Geography research domains.

Impacts: This area is slated for mixed use. Impacts could include the following and are also outlined in Table 2.

I-2: Improve Existing Road Infrastructure
I-3: New Road Construction
I-5: Relocate/Demolish Existing Structures
I-9: New Utility Lines

Treatment: Treatments could include the following:
TM-9 New Discovery

F-2: First Independence Berth

The *USS Independence* arrived at Mare Island around 1857 and was permanently berthed next to the stone quay wall by the foundry. Refuse disposed over the side of the ship or off the edge of the berth could provide data useful in reconstructing the function of the ship and daily activities of the men who lived on the vessel. The shoreline has expanded slightly east in this area and refuse from the *USS Independence*, along with her berth on the quay wall may be preserved under fill. This feature could contribute to themes of Consumer Behavior and Industrialization.

Impacts: This area is also slated for mixed use. A waterfront path will be constructed as well.

I-2: Improve Existing Road Infrastructure

Treatment:
TM-9: New Discovery

Table 2. Matrix of Impacts and Treatment Measures

Feature	Impact	Treatment
F-3, F-4, F-12, F-13, F-23	Relocate/demolish existing structure(s), Create equipment laydown area	New Discovery
F-1, F-2, F-5, F-12, F-13, F-19, F-20, F-21, F-23, F-24, Prehistoric Area A	Improve existing road infrastructure or New road construction, New utility lines	New Discovery, Native American Coordination (Prehistory) Archaeological Monitoring (Prehistory)
F-19, F-20, F-21, F-24, F-26	Minimal or no grading, No impact	New Discovery
F-27	Relocate/demolish existing structure(s), New construction with pile foundations	Archaeological Monitoring, New Discovery
F-6, F-7, F-8, F-9, F-10, F-14, F-15, F-16, F-17, F-26, F-28, Prehistoric Area C, D	Retain in open space, No impacts	None Required, Public Interpretation (optional)
F-11, F-18, Prehistoric Sensitive General Area	Relocate/demolish existing structure(s), New construction, Soil compaction	Mechanized Surface Cleaning, Trenching, Excavate Features, Analyze and Report, Public Interpretation, Native American Coordination (Prehistory), Archaeological Monitory (Prehistory)
F-21, F-22	Add fill to grade	Archival Research, Record exposed Section of Seawall/ Barracks to State (short segments) or HABS/HAER (long segments) standards,

F-3: Marine Railway

In 1986 construction uncovered granite blocks associated with the 1856 marine railway and wet basin originally located in the vicinity of Dry Dock 2 and Building 125. These blocks, or "rails" were about three feet thick by four feet wide and varied in length from three to twelve feet. The granite rails rested on redwood pilings, also identified during construction (Roop and Flynn 1986:219). The marine railway is important under the theme of Industrialization/Technology and cultural geography.

Impacts: This area is proposed for industrial reuse as an equipment laydown area.
I-2: Improve Existing Road Infrastructure
I-4: Create Equipment Laydown Area
I-5: Relocate/Demolish Existing Buildings
I-9: New Utility Lines

Treatment:
TM-9: New Discovery

F-4: Sawmill Site

Built in 1861, this brick building had a cellar, was two stories high and measured 150 feet by 55 feet. A brick wing, measuring 55 feet by 55 feet and one story high, extended from the side of the sawmill. The site of the mill is underneath Buildings 106 and 113. Features that are associated with early development of Mare Island potentially could yield data useful in addressing industrial and technological research issues, as well as shipyard layout and activities (Cultural Geography).

Impacts: Proposed impacts to the sawmill area are industrial in nature and include removal of Building 113 and continued use for industrial purposes.

I-2: Improve Existing Road Superstructure
I-4: Create Equipment Laydown Areas
I-5: Relocate/Demolish Existing Buildings
I-9: New Utility Lines

Treatment: Treatment for these impacts could include the following:
TM-9: New Discovery

F-5: Stables

In 1862 a new location for stables was chosen in Shipyard South. Today, only Building 88 remains of the original complex. Other outbuildings (blacksmith area, shed, stablekeeper's residence) were present around the stables but have been removed. A comparison of refuse from this area and from the original stable complex in the Shipyard North area could provide data relevant to industrial technological studies, as well as cultural geography issues. Blacksmithing efforts and domestic refuse associated with this complex could also provide important information to fill in gaps in this early period's history.

Impacts: This area would continue to be used for industrial purposes.
I-2: Improve Existing Road Superstructure

Treatment:
TM-9: New Discovery

F-6: NAD Wharf

The original ammunition area's wharf, built in 1864, stretched into the water from the center point of the depot. While the majority of the wharf remains have disappeared through intensive dredging activities, the base of the wharf is likely preserved under fill. The original NAD pier provided a landing for loading ordnance onto the ships and for unloading ammunition and supplies. Remnants of the pier are potentially preserved under fill and could contribute to understanding early construction and functional layout and design. Artifacts, tools, and other deposits discarded over the sides of the wharf and preserved in bottom mud may also be present.

Impacts:
I-1: Retain in Open Space

Treatment:
TM-8: Public Interpretation (optional)

F-7: NAD Seawall (CA-SOL-386H)

The NAD sea wall was begun in 1861 and completed in 1896. Filling began in the 1920s and by 1930 the original seawall was located 60 feet inland from Mare Island Strait and was buried under three to four feet of fill. Segments of the seawall were uncovered in 1993 and again in late 1999 and are remarkably intact (Brown and Maniery 1994; Dougherty and McIvers 2000).

Impacts:
I-1: Retain in Open Space

Treatment:
TM-8: Public Interpretation (optional)

F-8: Ordnance Retaining Wall (CA-SOL-388H)

Built around 1863, this brick retaining wall is composed of mostly stretcher courses capped with one course of headers. The wall was determined eligible to the National Register district in consultation with the Acting State Historic Preservation Officer in 1994 for its historical association with the NAD and its design and construction methods (Brown and Maniery 1994; Widdell 1994).

Impacts:
I-1: Retain in Open Space

Treatment:
TM-8: Public Interpretation (optional)

F-9: Keeper's House

It is probable that refuse deposits are associated with the watchman's or keeper's house (Building A45). This house was established in 1860 to provide shelter for the magazine Chief Gunner. According to historical maps of the area, the house once had an associated garden, outbuildings (including latrine), and other features. Deposits associated with the domestic feature of the Chief Gunner's house can yield information regarding the social organization, economic status, and possible ethnic affiliation of this civilian residence. These deposits, when compared to similar deposits from officers' or civilian housing could shed light on social and economic lifeways on base.

Impacts:
I-1: Retain in Open Space

Treatment:
TM-8: Public Interpretation (optional)

F-10: Civil War Earthworks (CA-SOL-385H)

Built in 1864, the Civil War defense battery was shaped like an inverted "J" and had 12 to 14 gunpits. A walkway led from the west center of the earthworks downhill to the NAD area. The earthworks were partially destroyed around 1907. Remnants of the earthworks measures 93 feet by 78 feet and are characterized by an earthen berm and a partially visible brick wall from the brick magazine. In addition, an intact portion of the brick walkway that led to the magazines was uncovered during PAR's 1994 work (Brown and Maniery 1994:66). Although 50 percent of the structure has been destroyed, the remaining portions provide valuable data in layout and construction techniques.

Impacts:
I-1: Retain in Open Space

Treatment:
TM-8: Public Interpretation (optional)

F-11: Officers' Housing Area

The residential area set aside for officers was developed beginning in 1858. Work orders indicate that these early brick structures had basements, outhouses, livestock holding pens or stables, sheds, and/or gardens. The earthquake in 1898 and its aftershocks destroyed the 14 officers' houses. When rebuilding occurred single houses were constructed, in some cases, on the same foundations or over basements of earlier dwellings. Archaeological features associated with the housing area between 1858 and 1898 could include discrete trash deposits, refuse pits associated with cleanup activities, sheet refuse, filled cisterns, wells, and basements, and foundation remains.

Deposits from this domestic occupation area would be extremely important in examining dietary habits of officers' households, social and economic lifeways of people stationed on base, functional layout and landscaping, and Victorian idealism on what began as a frontier setting. Comparison of deposits with others from the Marine Corps area, civilian housing, and NAD watchman cottages could also reveal data on social and economic conditions at Mare Island that would not be available in the written record. Pertinent themes include Consumer Behavior, Social and Economic Status, Ethnicity/Military Subgroup, and Cultural Geography.

Impacts: The majority of the back lot area of the officer's housing quarters is scheduled to be developed as a medium density residential area. This would include removing most of the existing garages and outbuildings, and would significantly impact any subsurface deposits.

I-2: Improve Existing Road superstructure
I-3: New Road Construction
I-5: Relocate/Demolish Existing Buildings
I-7: New Construction
I-9: New Utility Lines

Treatment: Because of the potential significant impact, treatment of the F-11 areas slated for construction would requires a combination of archival research and excavation methods.

TM-1: Archival Research

TM-4: Archaeological Fieldwork
TM-4a: Trenching
TM-4b: Mechanized Surface Trenching
TM-4c: Hand Excavation
TM-5: Analysis and Reporting
TM-7: Archaeological Monitoring
TM-8: Public Interpretation

F-12: Second Independence Berth

In 1883 a new berth for the receiving ship *USS Independence* was constructed north of the hospital wharf. The *USS Independence* was moved into the Shipyard South area from the North to make room for coal sheds. It was reached by a long pier that extended east from the end of today's 13th Avenue into the straits. The *USS Independence* remained at this berth until 1914, when the ship was towed away and destroyed (Lemmon and Wichels 1977:3).

Early records note that in summer time the ship was essentially grounded on mud flats (U.S. Navy 1908-1911; 1911:146). These conditions, combined with the fill that capped the site after her sale, would have preserved refuse and other deposits from use of the *Independence* and could contribute to the overall knowledge of daily life aboard the receiving ship. Remnants of the pier could contribute to reconstructions of pier and berth construction methods (Industrialization/Technology theme) and cultural geography studies of the base.

Impacts: This area is scheduled for industrial use. Potential impacts could occur form abandonment of 13th Street, removal of buildings and road improvement.
I-2: Improve Existing Road Superstructure
I-4: Create Equipment Laydown Areas
I-5: Relocate/Demolish Existing Buildings
I-9: New Utility Lines

Treatment: Treatment for these impacts could include the following:
TM-9: New Discovery

F-13: Hospital Pier/Wharf

When the new hospital was built in 1870 a long roadway led from the front of the hospital to the Mare Island Straits along the general route of 13th Avenue. This road was constructed across the tule fields on piers and ended at a wharf. The modest wharf, built in 1869, served the hospital and the stables (Building 88) until 1906. Filling of the tule lands probably preserved the remains of the hospital pier and wharf and archaeological deposits are predicted. Associated tools, supplies, equipment, and refuse that was discarded over the sites of the elevated walkway and pier would also be preserved under fill and could provide important information on hospital equipment or diet. Remnants of Mare Island's early wharves could provide important comparative data to ongoing maritime resource studies in Industrialization/Technology and contribute to a study of base cultural geography.

Impacts: Impacts in this area could include construction of a new building on the site of Building 682, removal of other structures, and creation of a laydown area for barge-sized equipment.

I-2: Improve Existing Road Superstructure
I-4: Create Equipment Laydown Areas
I-5: Relocate/Demolish Existing Buildings
I-9: New Utility Lines

Treatment: Treatment for these impacts could include the following:
TM-9: New Discovery

F-14: Watchman's House (A44)

Built in 1874, this house once had an associated latrine, sheds, chicken house, garden, and other ancillary structures. Artifactual deposits from this house are likely to be present around the house, as are structural foundations and other architectural features. Deposits associated with this residence could be used to address questions regarding consumer behavior, social and economic status and economic lifeways, ethnicity, and cultural geography.

Impacts:
I-1: Retain in Open Space

Treatment:
TM-8: Public Interpretation (optional)

F-15: Lighthouse Reservation

Established in 1871, the lighthouse was sited on a point of land at the south end of Mare Island. From 1883 to 1916 it was operated by Kate McDougal, but remained primarily vacant after her death. Although the lighthouse was demolished and its site excavated and removed after 1930, the back area of the reservation was not impacted. Foundation remains from the original water tank, surface artifact scatters, and remnants of sheds are visible today. Subsurface deposits associated with refuse disposal and domestic occupation at the lighthouse reservation are also predicted in the back yard area. Refuse deposits from this feature could contribute to themes of consumer behavior, social and economic lifeways, cultural geography, ethnicity/gender and Victorian idealism interpretations.

Impacts:
I-1: Retain in Open Space

Treatment:
TM-8: Public Interpretation (optional)

F-16: Ordnance Reservoir (CA-SOL-394H)

The ordnance reservoir, designed by Chief Engineer Calvin Brown and built in 1873, provided water for fire suppression activities at the NAD and had an earthen dam with a brick gauging station and spillway. The feature was extensively remodeled in 1897 under the direction of engineer Mr. Vogel, who constructed a brick spillway and sandstone-faced dam. The reservoir and related features is still considered a contributing element of the Mare Island Historic District (Syda and Maniery 1998). Predicted archaeological features associated with the reservoir include remnants of the bathhouses, artifactual refuse deposits from recreational use, and construction debris.

Impacts:
I-1: Retain in Open Space

Treatment:
TM-8: Public Interpretation (optional)

F-17: Yard Reservoir (Lake Rodgers)

Named for Rear Admiral J. Rodgers, the yard reservoir was constructed in 1876 and was notable because of the granite block lining and granite dam. It also had a large earthen berm at the west end. Water was discharged into iron pipes through a bricked tunnel that led east from the reservoir. A series of "filling ditches" connected the two water reservoirs in the NAD area. Remnants of the ditch system, in use through World War II, are still discernible around the hills. While the ditch system is fragmented and has been impacted by magazine and golf course construction, the tunnel associated with the yard reservoir is likely present underground. This is a significant contributing element of Mare Island's early water system, and contributes to understanding base layout and design. The stone features, bathhouse, and potential refuse deposits at the Ordnance reservoir could answer questions regarding cultural geography, recreational use, and engineering design.

Impacts:
I-1: Retain in Open Space

Treatment:
TM-8: Public Interpretation (optional)

F-18: Civilian Residential Area

Perhaps the most important development during after the Civil War ended was the expansion of the civilian employees' community around Dublin Hill. The community began to build up by 1874 and continued until the 1940s. While the area of historical Dublin Hill east of Walnut Avenue has been removed and used as fill, destroying any potential archaeological resources, the western portion of the civilian housing area, west of Walnut Avenue near Building 535, has remained relatively undisturbed under fill. Potential archaeological deposits could include filled cellars, privies, cisterns, basements, surface sheet scatter of artifacts, or discrete trash deposits.

Associated deposits could shed light on cultural diet preferences, social and economic lifeways, ethnicity, gender, and cultural geography.

Impacts: The majority of the F-18 area is scheduled to be developed as a high-density residential area. This would include removing existing buildings and would significantly impact any subsurface deposits.

I-2: Improve Existing Road superstructure
I-3: New Road Construction
I-5: Relocate/Demolish Existing Buildings
I-7: New Construction
I-9: New Utility Lines

Treatment: Because of the potential significant impact, treatment of the F-18 areas slated for construction would requires a combination of archival research and excavation methods.

TM-1: Archival Research
TM-4: Archaeological Fieldwork
  TM-4a: Trenching
  TM-4b: Mechanized Surface Trenching
  TM-4c: Hand Excavation
TM-5: Analysis and Reporting
TM-7: Archaeological Monitoring
TM-8: Public Interpretation

F-19: Medical Residential Complex/Stables

Development of the hospital in the 1870s led to a need for medical staff housing and equipment. A walkway, constructed on top of a narrow line of fill, led to the pier and wharf that serviced the hospital. In 1891 a house was constructed north and west of the hospital for the medical director's use. This house was surrounded by a vast lawn, concrete walkways, rockwork, and other landscaping. Today a park is located at this site, although the sidewalks, concrete stairs that led to the front entrance, and other landscaping features remain. Potential archaeological features at this location include foundation remains and possible sheet refuse or discrete refuse deposit areas. Located east of the medical officer's house on the East Side of Cedar Avenue was the stable complex that served the hospital. Built in 1874 this area near Seely Circle once contained a barn, corral, and carriage house. Deposits associated with the Medical officer's quarters, hospital stables, cistern, and outbuildings could contribute to consumer behavior, industrial technology, and cultural geography.

Impacts: The area south of Cedar Avenue would be used for education and civic purposes. North of the road will remain open parkland. Impacts in this area would consist of improving Golf Course Road to better serve the golf course facility.

I-2: Improve Existing Road Superstructure

Treatment:

TM-9: New Discovery

F-20: Marine Corps Officer Quarters

The Marine Corps Commander's residence and three officers' quarters flanked the north and south sides of the parade ground in front of the enlisted men's barracks. Sheds, latrines, livestock areas, and gardens were incorporated into the landscape. Deposits associated with this early officer's housing area could contribute to questions addressing domestic occupation, status, ethnicity and military subcultures, and cultural geography.

Impacts: This area would be used for mixed purposes and high-density residential development. Work would be confined to minimal grading and road improvements.

I-2: Improve Existing Road Superstructure

I-9: New Utility Lines

Treatment:

TM-9: New Discovery

F-21: Marine Corps Enlisted Barracks Area/Prison

The Marine Corps barracks and prison was located at the site of Building 866. A long outhouse (privy) was built behind and west of the prison in 1874 and was expanded into an H-shaped feature in the 1880s. This facility served the marines until it was abandoned in the 1890s. Its location is under fill in the paved area south of Building 1242. Other outbuildings in this area constructed during this period likely include sheds and chicken houses. Remnants from these buildings, or deposits associated with the Marine Corps barracks could address questions of domestic occupation, status, and cultural geography.

The Navy removed several sections of fuel oil lines within Area F-21 in 1998. During the trenching activities a section of red brick wall from the 1871 Marine barracks with lime-based mortar, and a layer of plaster, lime mortar and brick rubble were observed and recorded. The layer of rubble was thought to represent the remains of the building following its 1952 demolition (Farncomb 1998). The two-foot-long segment of wall exposed during trenching was located east of Building 866 near Suisun Avenue (Figure 3). The wall continued in both directions but was not excavated at that time. The top of the wall was at 14 inches below ground surface and extended 38 inches below the present ground surface. These remains could add significant information regarding cultural geography of the Marine Corps area, construction techniques, and building design and layout.

In the Marine Corps area, refuse from the enlisted men's barracks and mess hall, prison (F-21), and officers quarters (F-20) would also contribute to an understanding of daily activity, dietary differences between prisoners, enlisted men, and officers, and social and economic status. A study of additional foundation remains could contribute data regarding cultural geography.

Impacts: Proposed uses for this area include low to medium density residential housing. This work would require removal of some buildings, new road construction and new utilities. Underground excavation and grading for this work could result in significant impacts to both known and undiscovered resources.

I-2: Improve Existing Road superstructure

I-3: New Road Construction
I-5: Relocate/Demolish Existing Buildings
I-9: New Utility Lines

Treatment: Ideally, the Marine barracks foundation should be avoided and protected during road construction. If this is not feasible, then one or more of the following treatment measures, for the foundation and privy should be implemented. Archaeological fieldwork should be limited to areas around the known barracks and privy where excavation would occur below the top one foot of soil.

TM-1: Archival Research
TM-3: HABS/HAER Recordation of the Barracks foundation
TM-4: Archaeological Fieldwork
  TM-4a: Trenching
  TM-4b: Mechanized Surface Clearing
  TM-4c: Hand Excavation
TM-5: Analysis and Reporting
TM-9: New Discovery

F-22: Seawall

In conjunction with the Marine Corps area development came the need to control the bay to the west. Constructed started in 1866 on a granite seawall that spanned the mouth of a U-shaped cove located west of the barracks. This wall held back the sea until around 1898, when filling began in this area. It is now under fill in Farragut Village. The seawall

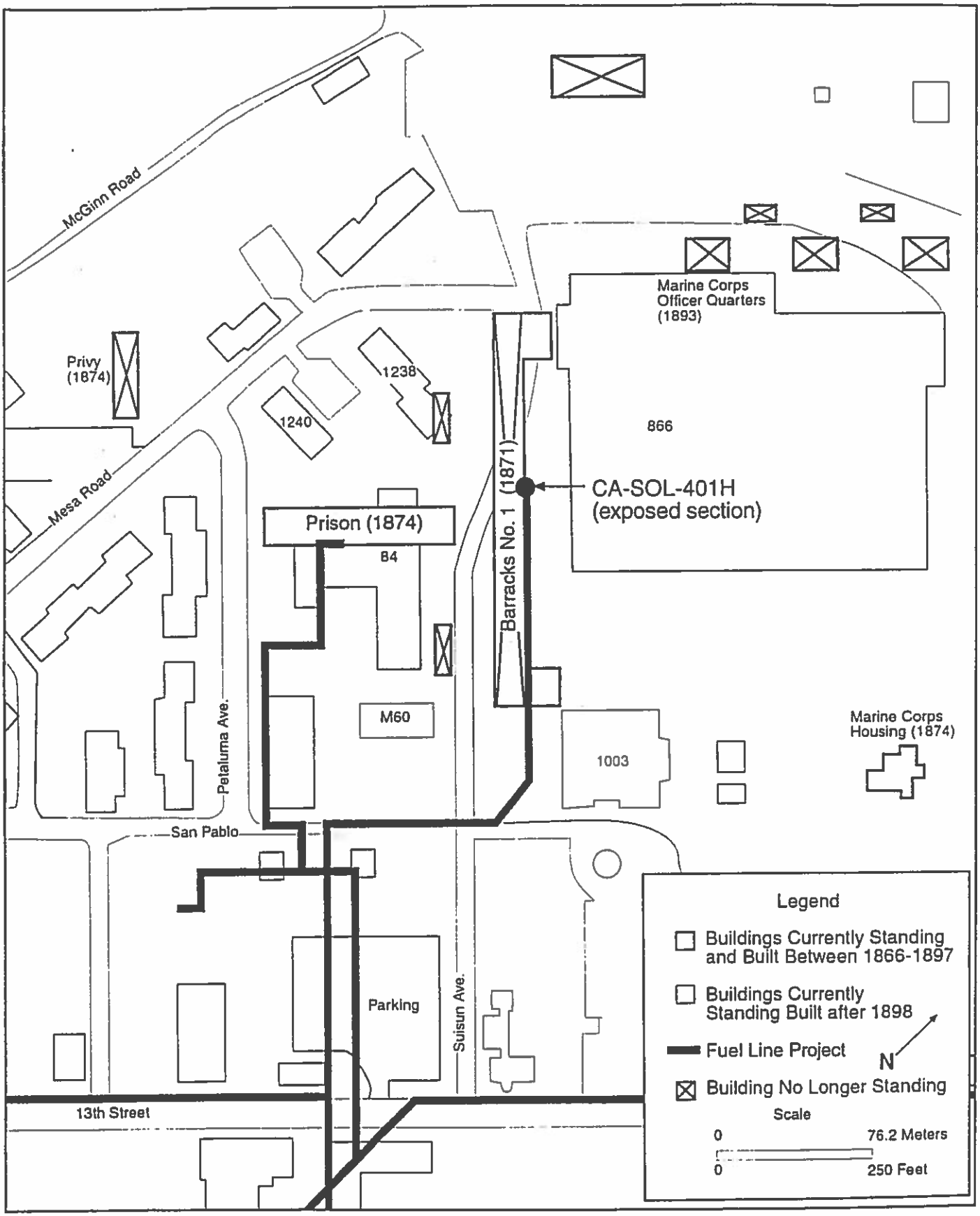

Figure 3. CA-SOL-401H in Relation to Current Buildings

constructed in the Marine Corps area is likely to be intact under fill and would serve as an example of construction methods and engineering design from this period of growth and development at Mare Island. It would also be important for its historical association with the Marine area.

Impacts: This area is scheduled for residential housing and for use as an open space. The middle of the seawall would be retained as open space. The two predicted end locations of the wall would be covered with some fill to allow elevated views for the new houses proposed for this site.

I-1: Retain in Open Space
I-3: New Road construction
I-6: Add Fill to Grade
I-7: New Construction
I-8: New Utility Lines

Treatment: The placement of fill should serve to preserve the seawall in place. It may be feasible, however, to conduct minimum trenching prior to construction to identify the exact location of the seawall, determine its depth below the existing (or proposed fill) ground surface, and estimate its alignment route. This information would then be used in planning future subsurface activities in this area.

TM-4a: Trenching
TM-2/3: Record on DPR 523 or HABS/HAER forms (depending on amount of seawall exposed)

F-23: USS Independence Crew Quarters

The drill hall, latrine, and bathhouse used by the *USS Independence* crew were built in 1899 in the general vicinity of Building 630. Remnants of these outbuildings and the base of the *USS Independence* wharf, are predicted to occur under fill and under the building at this vicinity. Expected features include trash deposits, foundation remains, wood piers, and structural remnants. Deposits from the new crew quarters next to the *USS Independence* berth could also provide important comparative data regarding consumer behavior, social and economic status, and cultural geography.

Impacts: This area is scheduled for industrial use. Potential impacts could occur from removal of buildings to create equipment laydown areas, and road improvement on California Street.

I-2: Improve Existing Road Superstructure
I-4: Create Equipment Laydown Areas
I-5: Relocate/Demolish Existing Buildings

Treatment: Treatment for these impacts could include the following:
TM-9: New Discovery

F-24: Hospital Wharf

The hospital wharf was greatly expanded after 1900. Several buildings were constructed at this wharf and are associated with World War I activities. Remnants of the wharf, discarded tools, and refuse could be present under fill in this area. Deposits preserved in the bottom mud and in fill could provide information on wharf construction techniques and cultural geography.

Impacts: The Hospital Wharf area would remain an industrial use area. Improvements to the waterfront would be made but would require minimal excavation or grading.

I-2: Improve Existing Road Superstructure

Treatment:

TM-9: New Discovery

F-25: Torpedo Boat Wharf

Area F25 has been eliminated as a potentially sensitive area.

F-26: Bandstand/Pavilion

A bandstand and pavilion were located in front of the hospital and provided a greeting place for dignitaries and entertaining for patients. These locations are marked by circular raised concrete platforms, steps, and portions of walkways. While the sides and roof of the bandstand and hospital pavilion (F26) have been removed, the structural remains evoke a sense of time and place on the hospital grounds. They represent a recreational outlet on base and contribute to the base under Criterion A and under the theme of cultural geography.

Impact: This area would remain in educational and civic use and would not be impacted by development.

Treatment: No treatment is required.

F-27: Submarine Base/Wharf

The area generally between B and E streets and Waterfront and California Avenues may contain deposits and structural remains associated with the submarine repair and building station. Mare Island played an important role in the development of submarines in the Navy and was a leader in submarine repair and construction. Deposits and features associated with this facet of the shipyard are important for the association with submarine development and for chronicling industrial technology and cultural geography in this functional activity area.

Impacts: This area is scheduled for a mixed use. Development would require demolishing existing buildings and constructing new facilities on pier foundations.

I-2: Improve Existing Road Superstructure
I-5: Relocate/Demolish Existing Structures
I-8: New Construction on Pile Foundations
I-9: New Utility Lines

Treatment: Driving piles into the ground for foundation work is not as destructive to archaeological deposits as is compaction of soil. However, it is possible that material may be visible in the backdirt. Archaeological monitoring during construction at the initial onset of excavation should be adequate to identify cultural material related to the use of the F-27 areas as a submarine base and to record that data as it appears. Monitoring should be necessary only during the pile-driving phase of work.

TM-8: Archaeological Monitoring
TM-9: New Discovery

F-28: Bay Model (CA-SOL-395H)

The Bay Model was designed by Captain Leonard Cox in 1919 as part of a proposal illustrating the feasibility of maintaining a major shipyard located at Mare Island after World War I. The resource consists of a concrete model on a knoll overlooking San Pablo Bay. The model is constructed of a one- to three-inch layer of concrete trowelled over excavated and sculpted dirt. It measures approximately 25 feet by 25 feet and varies from 7 to 17 inches in depth. Site vegetation of seasonal grasses, anise and sage has overgrown the model and footings that supported a viewing platform. This 1920s Bay Model played a unique role in the history of Mare Island and also is a contributing element to the NAD area for its engineering design and layout.

Impacts: The Bay Model is within the open parkland area. Impacts could occur from increased visitation of the site, vandalism of the viewing platform remnants, or graffiti.

I-1: Retain in Open Space

Treatment: At this time the Bay Model is not in a scheduled development area, but could be indirectly impacted through increased residential use of the Island. Interpretive signage could inform the public of the history and importance of this site and create a site stewardship attitude towards it protection. As part of interpretation, vegetation could be cleared off to more thoroughly expose the feature, the viewing platform could be rebuilt, and the site recorded to HABS/HAER standards.

TM-1: Archival Research (optional)
TM-3: Record to HABS/HAER standards (optional)
TM-8: Public Interpretation (optional)

Prehistoric Sensitive Areas

The predictive model identified several areas that are considered of high sensitivity for prehistoric deposits (see Figure 2). Two of these areas, one near F-1 (the Industrial Area) and one near the Hospital, reportedly contained human burials at one time. In addition, any of the original land surface of Mare Island could contain prehistoric shell midden sites, burials, or other occupational remains (Allan and Self 1995a, 1995b; Maniery 2000).

Impact: The majority of the original Island land mass identified as a prehistoric sensitive area would remain in open space. A small portion of the original island area (near the old Naval Ammunition Depot area) and the F-1 area will be developed for industrial use. This use would include removing some existing buildings, constructing new facilities on piles, improving some existing roads and creating new roads.

I-1: Retain in Open Space
I-2: Improve Existing Road Infrastructure
I-3: New Road Construction
I-5: Relocate/Demolish Existing Buildings
I-8: New Construction on Pile Foundations
I-9: New Utility Lines

Treatment: Prior to beginning work in this area a plan should be in place to guide future work, should human remains be discovered during excavation. An archaeologist should attend a tailgate safety meeting on the first day of ground disturbance to alert the crew and foreman to signs of prehistoric occupation or deposits. An archaeologists should remain on call during construction in this area in case prehistoric deposits are found.

TM-7: Native American Coordination
TM-9: New Discovery

Prehistoric Area A

This area is located near the old Industrial Area marked as F-1. Newspaper accounts note that human remains were found in this area at the turn of the century.

Impacts: Work in this area includes improvements to better serve the proposed mixed use. Underground excavations would include trenching for utility lines, grading for new roads and leveling of lots after removal of buildings.

I-3: New Road Construction
I-5: Relocate/Demolish Existing Structures
I-9: New Utility Lines

Treatment: This area is considered extremely sensitive for prehistoric deposits. Monitoring indicated that some fill has been placed in this location, up to depths of one foot. Any trenching below this depth should be monitored and construction crews should be altered as to the possibility of encountering prehistoric remains in this area.

TM-7: Native American Coordination
TM-8: Archaeological Monitoring
TM-9: New Discovery

Prehistoric Area B

This area is situated around the old hospital. Human burials have also been reported in this area.

Impacts: No proposed work connected with the redevelopment of the Island is currently planned for this location.

Treatment: If any work is proposed for the future, the proponent should keep in mind the sensitive nature of this area and care should be taken to have an agreement plan in place and an archaeologist on call prior to excavation.

TM-7: Native American Coordination

TM-9: New Discovery

Prehistoric Areas C and D

Both of these areas are on the southwest side of the Island in area slated for open space or golf course use. These potentially sensitive areas should not be disturbed during redevelopment.

Impacts:

I-1: Retain as Open Space

Treatment:

TM-9: New Discovery

CONCLUSIONS

Mare Island has a rich and lengthy history. As the first naval shipyard built on the Pacific Coast the base presents a unique opportunity to study early shipbuilding techniques and industry, social and economic status, ethnic and gender issues, and cultural geography through its archaeological remains. The predictive model established for the Island provided a basis for assessing underground deposits for their scientific, historic, and research value and identified probable locations of significant features, based on land use alterations through time. This treatment plan is focused on potential impacts to the predicted features and sensitive areas and suggests measures that could be taken to mitigate these impacts. These treatment measures range from having an archaeologist on call during construction in case any deposits are uncovered, having an archaeologist monitor the underground excavation in some areas, and conducting extensive archaeological excavations in a controlled situation using mechanical equipment and hand excavation methods prior to beginning construction.

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