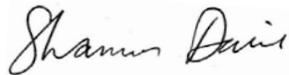

Cultural Resources Technical Report for the Mountain View Housing Ventures LLC Housing Project, NASA Ames Research Center, Moffett Field, Santa Clara County, California

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MANAGEMENT SUMMARY

Mountain View Housing Ventures LLC (MVHV), in conjunction with the National Aeronautics and Space Administration (NASA), proposes the “NRP Housing Lease” long-term enhanced use lease between NASA as Landlord and MVHV as Tenant for development of approximately 46 acres of land at NASA Ames Research Center. Pursuant to the NRP Housing Lease, MVHV will have the right to design, construct, manage, and operate new housing, retail, and related facilities at Moffett Field (the “Housing Project”) adjacent to Mountain View and Sunnyvale, Santa Clara County, California. The Housing Project will be located on federal property and the lease of that property is therefore an undertaking subject to compliance with Section 106 of the National Historic Preservation Act (NHPA) and implementing regulations found in Chapter 36, Code of Federal Regulations (CFR), Part 800.

ASM Affiliates, Inc., under contract to MVHV, has prepared this report for use by NASA. The purpose of this report is to evaluate whether the proposed Housing Project would affect any identified historic properties within the project’s Area of Potential Effects (APE). The Housing Project entails constructing residential and retail buildings ranging from 60 feet to 135 feet in height. This report provides an assessment and evaluation of direct and indirect effects on historic properties as a result of the Housing Project.

This assessment of effects was conducted in compliance with Section 106 (36 CFR 800) of the NHPA, National Environmental Policy Act (NEPA), and guided by the *Secretary of the Interior’s Standards for the Treatment of Historic Properties* (SOI Standards). Section 106 regulations define an adverse effect as one that occurs when an undertaking directly or indirectly alters the characteristics of an historic property that make it eligible for listing in the National Register of Historic Places (NRHP).

Four historic properties have been identified within the APE: the U.S. Naval Air Station Sunnyvale, California Historic District (NAS Sunnyvale HD); Hangar 1; and archaeological sites CA-SCL-15 and CA-SCL-16. The two prehistoric archaeological sites have been previously documented within the Project area; the current condition or presence of either site is unknown. Neither of these sites has been formally evaluated for eligibility to the NRHP, and as such, their eligibility status has not been determined or concurred upon by the State Historic Preservation Office. The two built environment historic properties located within the APE are both listed in the NRHP: the NAS Sunnyvale HD (alternatively known as the U.S. Naval Air Station Moffett Field Central Historic District and the Shenandoah Plaza National Historic District); and the individually eligible Hangar 1. The NAS Sunnyvale HD was listed in the NRHP in 1994 with a boundary expansion in 2013; 26 of the district’s contributing resources and individually eligible Hangar 1 are located within the APE. Because the Housing Project is located within view of the historic properties, the Project poses the potential to cause adverse visual effects to historic properties. Although there will be an impact to a character-defining view toward Hangar 1, a contributing resource to the NAS Sunnyvale HD, that effect will not be adverse. NASA will impose conditions detailed in Chapter 5 to avoid any adverse effect in accordance with 36 CFR 800.5(d)(2) of the NHPA, as the design of the Housing Project is developed to ensure continued conformance with the SOI Standards. As such, under 36 CFR 800, the Housing Project will not result in any adverse visual effects, including cumulative, to the NAS Sunnyvale HD and Hangar 1.

No previously undocumented archaeological resources were found as a result of the pedestrian survey of the Housing Project site or associated utility corridors; however, two previously documented sites may exist within a portion of the proposed APE, CA-SCL-15 and CA-SCL-16. Additionally, the Housing Project will include ground disturbance in areas of potential subsurface prehistoric and historic archaeological sensitivity. Therefore, there is a potential for adverse effects to previously documented and undocumented archaeological resources, which may qualify as historic properties, during construction. NASA will impose conditions detailed in Chapter 5 to avoid any adverse effect in accordance with 36 CFR 800.5(d)(2) of the NHPA.

1. INTRODUCTION

This report describes the goals, methods, and findings of the effects analysis conducted by ASM Affiliates, Inc. (ASM), for the Mountain View Housing Ventures LLC Project (the “Housing Project”) in Moffett Field adjacent to Mountain View and Sunnyvale, Santa Clara County, California. Mountain View Housing Ventures LLC (MVHV), in conjunction with the National Aeronautics and Space Administration (NASA), propose the construction of the Housing Project in the southeast corner of the NASA Ames Research Center and north of U.S. Highway 101 in Santa Clara County. The Project will be located on federal property and the lease of that property is therefore an undertaking subject to compliance with Section 106 of the National Historic Preservation Act (NHPA) and implementing regulations found in Chapter 36, Code of Federal Regulations (CFR), Part 800. ASM has prepared this report to evaluate whether the Housing Project would affect any identified historic properties within the Area of Potential Effects (APE) of the undertaking. The following introductory sections present a description of the undertaking and regulatory framework.

This report is organized as follows: Management Summary, Introduction, Identification of Historic Properties, Historic Properties Affected, Analysis of Effects, Conditions, Project Personnel, and References. Appendix A contains the Height Exhibit including depictions of the change in viewsheds, Appendix B is the project utility plan that illustrates the areas of infrastructure ground disturbance, Appendix C is the response letter from the Native American Heritage Commission, Appendix D contains the California Department of Parks and Recreation (DPR) 523 forms, and Confidential Appendix E illustrates the approximate locations of previously documented prehistoric sites as well as the areas of heightened archaeological sensitivity with the APE.

1.1 PROJECT LOCATION AND SETTING

The proposed undertaking, the construction of new housing, retail, and related facilities, is located in Moffett Field adjacent to Mountain View and Sunnyvale, Santa Clara County, California, within the NASA Research Park Development Area and southeast of the NAS Sunnyvale Historic District (HD). The Project site contains a variety of buildings that serve a mix of residential, commercial, and related uses. It is adjacent to Moffett Federal Airfield to the northeast, approximately 34 miles south of the City of San Francisco and 11 miles northwest of the City of San Jose in Santa Clara County. The southeastern sloughs and wetlands of San Francisco Bay are adjacent to the airfield on the north, and U.S. Highway 101 is adjacent on the south (Figures 1 and 2).

1.2 PROJECT DESCRIPTION

The proposed undertaking (“NRP Housing Lease”) is a long-term enhanced use lease between NASA as Landlord and MVHV as Tenant for development of approximately 46 acres of land at NASA Ames Research Center. Pursuant to the NRP Housing Lease, MVHV will have the right to design, construct, manage, and operate new housing, retail, and related facilities (collectively, the “Housing Project”) necessary to mitigate impacts associated with implementation of the 2002 NASA Ames Development Plan. The NRP Housing Lease allows for redevelopment of NASA Research Park by mitigating impacts to the region’s housing imbalance, improving traffic impacts through greater reductions in vehicle trips compared to other alternatives in the July 2002 Programmatic Environmental Impact Statement (“EIS”), performed for the 2002 NASA Ames Development Plan, and attracting academic and industry partners and their employees to NASA Research Park by providing housing and retail opportunities close to where they work (Design, Community and Environment 2002).

1. Introduction



Figure 1. Project vicinity map.

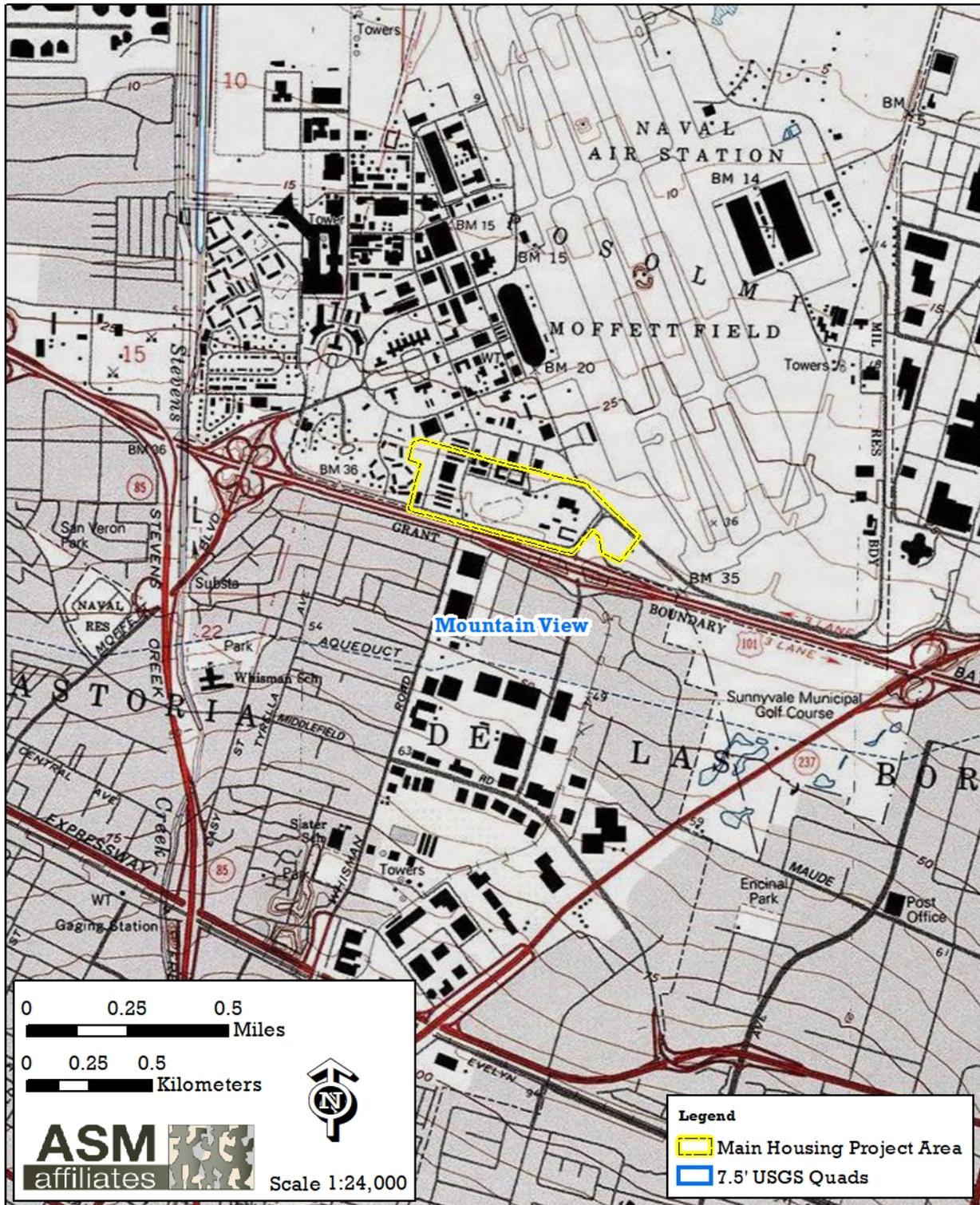


Figure 2. Main Housing Project Area location map.

The Housing Project will include housing ranging from a minimum of 1,900 dwelling units up to a maximum of 2,078 dwelling units. The Housing Project may also include up to 250,000 square feet of complementary ancillary uses, such as but not limited to, community centers, property management, childcare, active and passive recreation facilities, and telecommunications facilities. The Housing Project may also include up to 100,000 square feet of retail, office, hospitality, and/or other non-residential uses based upon market conditions and other factors. There will also be linear ground trenching for subterranean utilities that extend outside the main project area. Several billboards will be located along the southern edge and eastern edge of the Housing Project, which will either be mounted on the buildings or freestanding with the same depth of ground disturbance as buildings. The signage portion of each billboard will be no larger than 60 feet long by 25 feet high, with the area not to exceed 1,200 square feet. The billboards may be double sided, lighted and/or fully electric, and when installed will be no higher than the buildings as indicated in the height limits established in Appendix A.

1.3 REGULATORY FRAMEWORK

Because the Housing Project is located on federal land, the Housing Project is subject to federal regulations including the NHPA and the National Environmental Policy Act (NEPA). NHPA Section 106 regulations (36 CFR 800) define an adverse effect as one that occurs when an undertaking carries the potential to directly or indirectly alter “any of the characteristics of a historic property that qualify the property for inclusion in the National Register” specifically in terms of the resource’s integrity (ACHP 2014). An adverse visual, auditory, or atmospheric effect is one that negatively affects the integrity of setting or feeling of a historic built environment resource to the extent that significance and eligibility for listing in the National Register of Historic Places (NRHP) are compromised. As such, this report addresses adverse effects under Section 106 to historic properties including districts, buildings, and structures.

The criteria of adverse effect are defined in 36 CFR 800.5(a)(1).

An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property’s eligibility for the NRHP. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative.

Pursuant 36 CFR 800.5(b), in consultation with the State Historic Preservation Officer (SHPO), an agency may find no adverse effect when:

- The undertaking’s effects do not meet the criteria of paragraph (a)(1) (*quoted above*); OR
- The undertaking is modified or conditions are imposed, such as the subsequent review of plans for rehabilitation by the SHPO to ensure consistency with the SOI Standards and applicable guidelines, to avoid adverse effects.

1.3.1 Secretary of the Interior’s Standards

The SOI Standards were codified in 1995 (36 CFR 68) to establish professional standards that apply to all proposed development grant-in-aid projects assisted through the National Historic Preservation Fund and serve as general guidance for work on any other historic building (Weeks et al. 2001). The Standards apply to historic properties of all periods, styles, types, materials, and sizes. The Standards also encompass related landscape features and the site and environment as well as attached, adjacent, or related new construction.

1.3.2 Criteria for Assessing Visual Effects

Because there is no universally accepted metric for measuring visual effects, and because those effects do not always affect the defining characteristics of an historic property in any physical manner, assessing them can be difficult and complicated. If we are to consider that an historic property is affected when its historic significance and integrity have been diminished, determining how an undertaking affects a resource's historical significance and integrity is essential to any assessment. In assessing the visual effects for historic properties, the criteria for significance and the aspects of integrity are factors that require careful evaluation and can provide a defensible qualitative method for determining visual effects on historic properties.

To ensure a thorough and complete analysis of visual effects, ASM augmented the Section 106 (36 CFR 800) regulations of the NHPA and SOI Standards with more specific guidance that has been developed by other states and some national agencies for assessing visual effects. This assessment of visual effects was based on guidance developed by National Park Service staff and Argonne National Laboratory for the 2018 Visual Resources Stewardship Conference (Sullivan et al. 2018) and by the Delaware State Historic Preservation Office (Delaware SHPO 2003) and the Wyoming Bureau of Land Management and Wyoming State Historic Preservation Office (Wyoming BLM 2006).

Definitions

For purposes of this analysis, the following definitions have been employed:

Historic Property: a historic site, district, building, structure, or object that is either eligible for inclusion in the NRHP or listed therein.

Adverse Visual Effect: an effect that negatively affects the integrity of the setting or feeling of an historic property, to the extent that significance and eligibility for listing in the NRHP are compromised. In particular, adverse visual effects can be seen as negatively affecting the following characteristics of integrity: setting, feeling, or association.

Obstructive Visual Effects: any visual effect that carries the potential to obstruct any part of the view of an historic property, or the scenic view from such a resource. Adverse obstructive effects can obstruct all or a portion of an historic property and/or its viewshed, in turn negatively affecting the property's historic character.

Foreground: zone of distance nearest to viewer location in which changes to the view are dominant and create the greatest contrast.

Middleground: zone of distance between foreground and background in which detail is still apparent.

Background: zone of distance far from viewer location in which the human eye typically does not perceive line or texture and only sees outlines of form and splashes of color.

Distant Background: zone of distance furthest from viewer location, detail will not be visible.

Scenic Views: any scenic resources or resources that are visually and aesthetically important and that contribute to an historic property's significance.

Viewsheds: those areas visible from a specified location or locations.

Visual Effects: any aspect of a proposed undertaking that will be seen from or will be in the view of an historic property. A visual effect may be beneficial or adverse and may affect the

historic property in an aesthetic or obstructive manner. The determination that a visual effect exists does not automatically imply that the effect is adverse.

Adverse Visual Effects

Adverse visual effects may be created when an undertaking is visible within the viewshed of the historic property, when it blocks a view toward the historic property, or when it introduces an element that is incompatible with the criteria under which the property is eligible.

Simply because an undertaking will be visible from an historic property does not mean it will create an adverse visual effect. Therefore, it is necessary to evaluate the visual changes and alterations the undertaking will introduce to the resource. In assessing adverse visual effects on a historic property, it is necessary to identify the criterion or criteria under which the resource is eligible and what qualities or characteristics of the resource contribute to its significance or eligibility. For example, if a resource is eligible for its innovative engineering qualities, visual effects on the property may not be adverse, whereas if the property is eligible on the basis of its architectural significance, an adverse effect very well may be created.

An adverse effect may be obstructive, which is to say it may block the view to or from an historic property; it may also not be obstructive and still create an adverse effect in that it introduces elements so incompatible with the criterion or criteria under which the property is eligible for listing that it diminishes the property's significance to a substantial degree. For example, a highway proposed to run alongside an historic rural church, while it would not directly obstruct the view to or from the building, might still introduce an element so incompatible with the rural setting of the property that it would have a diminishing effect upon the integrity of the property's setting.

Adverse visual effects should be determined on a case-by-case basis, weighing the following factors:

- **Significance.** An historic built-environment resource's historical significance and its key aspects of integrity must be taken into account in order to evaluate the undertaking effects on the property's eligibility for listing in the NRHP.
- **Character-Defining Features.** The alteration of character-defining features at the project location (including open space) can affect the view from the historic built-environment resource and possibly the location, feeling, setting, and association of that resource.
- **Compatibility.** Whether in an open space or a developed area, the compatibility of the undertaking with the character of its location and surrounding area, including historic properties, is important. The character of the historic property's site and architectural features should be the basis for determining the appropriate characteristics of the undertaking. The compatibility is determined by:
 - Mass—the arrangement of the undertaking's spaces;
 - Scale and proportion—the size and the proportion of the undertaking to the surrounding structures and features;
 - Height—sometimes it may be necessary that building height extend beyond that of the surrounding buildings and other features within view of the undertaking;
 - Shadows;
 - Color;
 - The degree to which the undertaking would contribute to the area's aesthetic value;

- The degree of contrast, or lack thereof, between the undertaking and the background, surrounding scenery, or neighborhood; and
- The amount of open space.
- **Obstructive Effects.** When an undertaking is on or near an historic property, it can block the resource from being viewed, or block a view seen from that resource, thereby possibly diminishing its integrity. Determination of adverse obstructive effects should be made on a case-by-case basis, considering the following factors:
 - The historic property's significance. It is necessary to understand the resource's historic significance and its key aspects of integrity in order to evaluate the effects on the resource's eligibility for listing in the NRHP.
 - Nature and quality of the view from the historic property. This includes such features as natural topography, settings, man-made or natural features of visual interest, and other historic property seen from the historic built-environment resource, any of which would contribute to its significance and integrity.
 - Extent of obstruction. This includes total blockage, partial interruption, or interference with a person's enjoyment and appreciation of a scenic view or historic property viewed from the historic property, to the extent it affects the integrity of the historic property.
 - Obstruction of an historic property. The undertaking might obstruct the historic property from being viewed from the project site or other area. If the historic property is visually appreciated from surrounding viewpoints, obstructing its view may affect its feeling, setting, location, or association.

2. IDENTIFICATION OF HISTORIC PROPERTIES

36 CFR 800.16 defines a historic property as “any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the NRHP criteria.”

2.1 DESCRIPTION OF THE AREA OF POTENTIAL EFFECTS

The APE for the proposed undertaking includes all areas that could potentially be directly or indirectly affected by the proposed Housing Project (Figure 3). The Project area includes the footprint of the Main Housing Project as well as various linear corridors that may be subject to ground trenching for subterranean utilities that will extend outside the Main Housing Project area (see Figure 3 and Appendix B). The vertical APE for the areas of ground disturbance within the Main Housing Project area is expected to be approximately 4 feet, based on the existing conditions; prior to construction, the Main Housing Project site will be raised 2 feet with subsequent excavation for foundations up to approximately 6 feet in depth. Some closed boring or auguring may take place within the foundation footprints that could reach a depth of 75 feet. The overall Project design is still being completed, so the extent to which the surveyed linear portions outside of the Main Housing Project area will be utilized has not yet been confirmed. However, in most locations where open cut and cover trenching for subterranean utilities will occur, the depth of disturbance will typically be to 4 to 6 feet, with storm and sanitary sewer trenching potentially reaching up to 20 feet. Should the alignment that crosses the airfield be selected, jack and bore trenching will be utilized which will be designed to occur deeply enough to avoid potential impacts to cultural resources that may be present within the airfield area.

The APE also includes all areas that could be affected visually. Potential audible, atmospheric, or temporary or permanent vibration effects were not analyzed for this report. The APE was determined in part by the expected visibility of the Housing Project from various points in the surrounding area (Appendix A). The APE overlaps with the NAS Sunnyvale HD; however, this assessment takes into consideration potential effects on the whole district, with a focus on the potential visual impacts on 26 district contributors in the viewshed of the Housing Project. The APE excludes the residential area south of U.S. Highway 101 that is obscured by the existing highway/sound barrier wall and vegetation in the North Whisman neighborhood. The proposed APE was discussed with NASA during the kick-off call for the project prior to the field survey. The adequacy of the APE was then considered by ASM during the field survey to assess effects and found to sufficiently encompass all areas from which the Housing Project has the potential for a visual effect.

2.2 REVIEW OF EXISTING BACKGROUND INFORMATION

2.2.1 Archaeological Background Information

A comprehensive records search for the study area was conducted on March 19, 2016, by the Northwest Information Center (NWIC) of the California Historical Resources Information System to obtain existing information on cultural resources at NASA Ames Research Center (ARC) to develop an Archaeological Resources Study that identifies the potential for archaeological resources at ARC and to inform and guide NASA’s management of archaeological cultural resources (AECOM 2017). The NWIC records search reviewed prehistoric and historic archaeological site and isolate records, previous archaeological studies in the National Archeological Database, the California Office of Historic Preservation (OHP) Historic Properties Directory, the NRHP, the California Register of Historical Resources (CRHR), California

2. Identification of Historic Properties

Historical Landmarks, California State Points of Historical Interest, OHP Archaeological Determinations of Eligibility, and historic maps.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

2. Identification of Historic Properties

[REDACTED]



2.2.2 Built Environment Background Information

The entire APE has been previously surveyed for built environment resources. Prior to the architectural surveys, previous documentation that covered the APE was reviewed. Previous documentation included the NRHP nomination for the NAS Sunnyvale HD (NRHP 1994), the Historic Property Survey Report for the Airfield (AECOM 2013), the Integrated Cultural Resources Management Plan (AECOM 2014), and *Inventory and Evaluation of Cold War Era Historical Resources: Moffett Federal Airfield and NASA Crows Landing Flight Facility* (SAIC 1999).

The background review indicated that 64 building in the APE have been previously evaluated for NRHP eligibility. The NRHP-listed NAS Sunnyvale HD, including 26 contributing resources, overlaps the APE but is outside of the Main Housing Project Area (see Figure 3). The NAS Sunnyvale HD was listed in the NRHP in 1994. Additionally, 38 buildings in the APE were previously surveyed and evaluated as part of an inventory of Cold War Era properties at Moffett Federal Airfield in 1998/1999 (SAIC 1999). Because the properties were less than 50 years old at the time, they were evaluated under Criteria Consideration G for properties that have achieved significance within the past 50 years; none were previously found eligible for the NRHP.

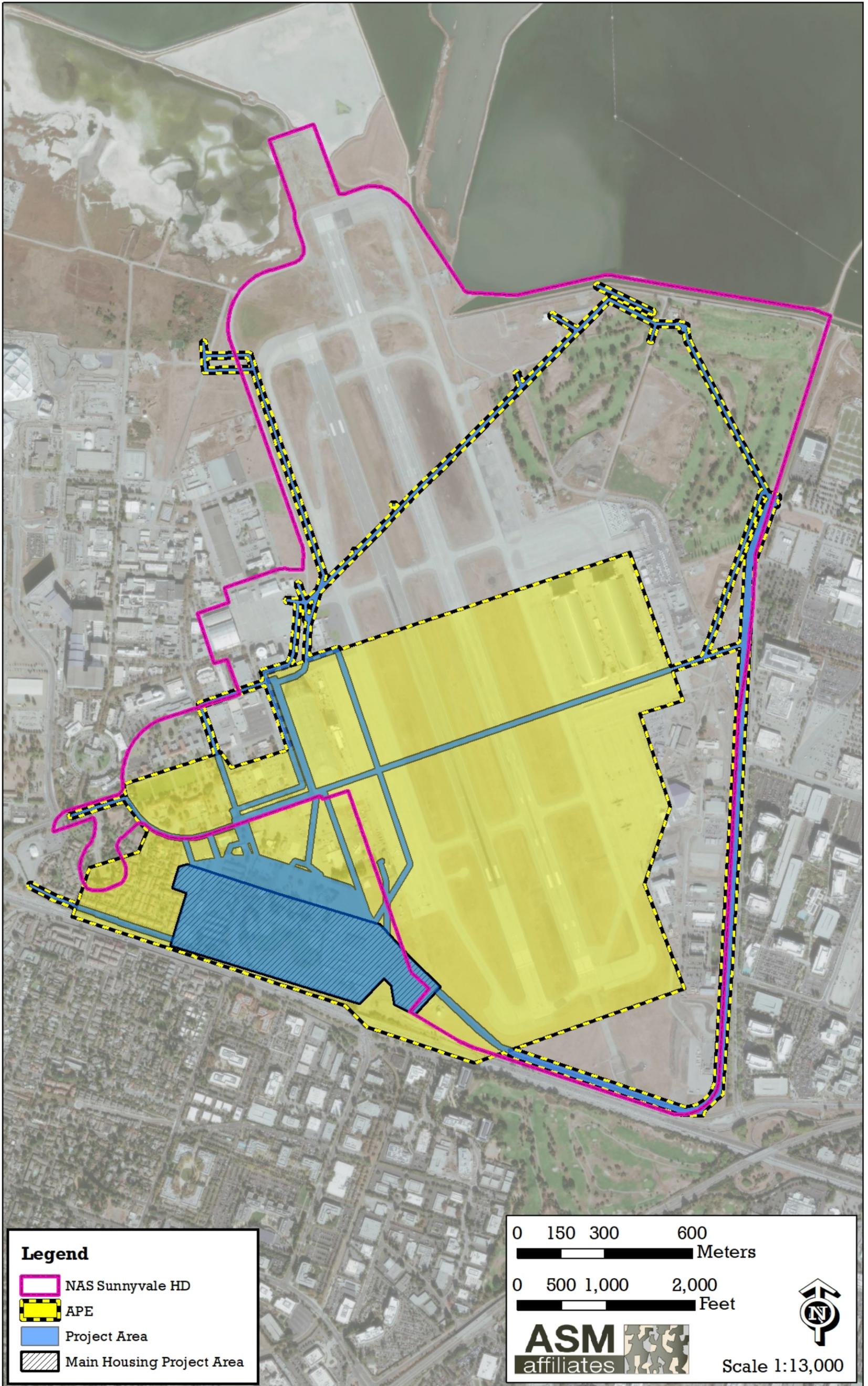


Figure 3. APE map.

2.3 NATIVE AMERICAN HERITAGE COMMISSION REQUEST

ASM sent a request to the California Native American Heritage Commission (NAHC) on November 8, 2019, to search their Sacred Lands File (SLF) to determine whether their files contained any information relating to the presence of Native American cultural resources within the Project parcel. The NAHC response of November 18, 2019, provided a negative result, indicating an absence of specific site information in the SLF. The response also included a list of six tribal contacts who may be able to provide additional information about the project area and query letters were sent to each of those contacts. One response was received on November 24, 2019, which was forwarded to NASA; this response was from Andrew Galvan representing the Ohlone Indian Tribe, who asked about whether literature review and/or survey work had been done for the project and if so, if he could receive a copy of the report. After the expansion of the APE with the addition of the proposed utility corridors, a second query letter was sent on October 30, 2020, to the same list of contacts. No additional responses have been received to date. If any additional responses are received later, they too will be provided to NASA. NAHC-related correspondence is provided as Appendix C.

2.4 FIELD SURVEY METHODOLOGY

As part of the process of identification of historic properties, on-site built environment and archaeological surveys were performed of the APE. The archaeological survey was limited to the Project area, while the built environment survey encompassed the entire APE.

2.4.1 Archaeological Survey

Pedestrian archaeological survey was conducted of all accessible portions of the Project area at no greater than 15-meter transect intervals. Where vegetation was heavier, particular attention was paid to berms, rodent holes, and other areas of visible disturbance where subsurface soils might be exposed. Additional attention was paid to areas of previously documented sites and known archaeological sensitivity (Confidential Appendix E).

2.4.2 Built Environment Survey

A total of 71 built environment properties in the APE were surveyed for this report (Figures 4 and 5). Twenty-six are contributing resources to the NAS Sunnyvale HD (including individually eligible Hangar 1); ASM assessed the condition and integrity of each to confirm their continued status as contributing resources. Of the 45 remaining properties, 38 were previously evaluated and recommended not eligible for the NRHP or CRHR; ASM concurs with those findings of ineligibility. The other seven properties had never been evaluated; none are recommended eligible. All of these buildings were documented during the surveys and are summarized in Table 2. ASM also attempted to survey 16 additional buildings noted in the AECOM 2014 inventory; however, these buildings were not located during the field survey and are presumed to have been demolished.

During the survey, the proposed location for the Main Housing Area Project was identified and photographed in relationship to the NAS Sunnyvale HD. Photographs were taken from the contributing resources toward the south end of the Main Housing Area Project site, which contains building heights up to 135 feet and thus the most likely to be visible from any of the contributors (Appendix A).

2. Identification of Historic Properties

Table 2. Summary of Buildings and Structures Surveyed for this Report

Building No.	Name/Description	Year Built	Prior Evaluation Status	Direct Impact	Visual Impact
1	Hangar 1	1933	Contributing Resource/ Individually Eligible		Yes
5	Water Tower	1932	Contributing Resource		Yes
6	Recycling and Storage	1933	Contributing Resource		Yes
10	Boiler Plant/Heat Plant	1932	Contributing Resource		Yes
15	Fire Station/Laundry	1933	Contributing Resource		Yes
16	Locomotive Crane Shed	1933	Contributing Resource		Yes
17	Admiral's Building	1933	Contributing Resource		Yes
19	Bachelor Enlisted Quarters	1933	Contributing Resource		Yes
20	Bachelor Officers Quarters	1933	Contributing Resource		Yes
21	Bachelor Officers Garage	1933	Contributing Resource		Yes
22	Bachelor Offices Garage	1933	Contributing Resource		Yes
23	Dispensary	1933	Contributing Resource		Yes
24	Ambulance Garage	1933	Contributing Resource		Yes
25	Bowling Alley/Theater	1933	Contributing Resource		Yes
32	North Floodlight Tower	1934	Contributing Resource		Yes
33	South Floodlight Tower	1934	Contributing Resource		Yes
46	Hangar 2	1933	Contributing Resource		Yes
47	Hangar 3	1933	Contributing Resource		Yes
55	Boiler House (east)	1943	Contributing Resource		Yes
77	South Gate Sentry House	1944	Not Evaluated	Yes	
82	Athletic Storage	1944	Not Evaluated	Yes	
104	Substation	1943	Not Evaluated		Yes
105	Airfield Lighting Vault (east)	1947	Contributing Resource		Yes
106	East: Aircraft Compass Calibration Pad (Compass Rose)	1947	Contributing Resource		Yes
107	Navy ROICC Admin Building	1948	Not Eligible (under G)		Yes
108 & 109	NASA Exchange Swimming Pool and Dressing Rooms	1948	Not Eligible (under G)		Yes
111	Transportation Storage	1944	Not Evaluated	Yes	
126	Moffett Field Historical Society	1949	Not Eligible (under G)		Yes
146	Transportation Garage	1952	Not Eligible (under G)	Yes	
148	Barracks	1953	Not Eligible (under G)		Yes
149	Barracks	1953	Not Eligible (under G)		Yes
150	Barracks	1953	Not Eligible (under G)	Yes	
151	Barracks	1953	Not Eligible (under G)	Yes	
152	Admin	1953	Not Eligible (under G)	Yes	

2. Identification of Historic Properties

Building No.	Name/Description	Year Built	Prior Evaluation Status	Direct Impact	Visual Impact
153	Admin	1953	Not Eligible (under G)	Yes	
154	Admin	1953	Not Eligible (under G)	Yes	
155	Admin	1953	Not Eligible (under G)	Yes	
156	Admin	1953	Not Eligible (under G)	Yes	
158	Flight Operations (terminal)	1954	Not Eligible (under G)		Yes
161	Gas Station (small)	1952	Not Eligible (under G)	Yes	
184	Maintenance Storage	1955	Not Eligible (under G)	Yes	
331	Storage	1958	Not Eligible (under G)		Yes
380	Bus Shelter	1957	Not Evaluated	Yes	
400	Storage	1958	Not Eligible (under G)		Yes
454	Transmission Building	1960	Not Eligible (under G)		Yes
459	Recreation Storage	1950	Not eligible	Yes	
463	Antenna-Communications	1960	Not Eligible (under G)		Yes
476	Space University	1964	Not Eligible (under G)		Yes
482	Painting Facility	1963	Not Eligible (under G)		Yes
498	Storage	1965	Not Eligible (under G)		Yes
499	Storage	1966	Not Eligible (under G)		Yes
503	Gas Station and Ancillary Structures	1966	Not Eligible (under G)		Yes
510	Admin	1967	Not Eligible (under G)		Yes
512A-C	Barracks	1970	Not Eligible (under G)	Yes	
526	Club Storage	1970	Not Eligible (under G)		Yes
529	Warehouse	1970	Not Eligible (under G)		Yes
533	Park Restrooms	1971	Not Eligible (under G)	Yes	
534	BBQ Shelter	1971	Not Evaluated	Yes	
543	Hobby Shop	1973	Not Eligible (under G)	Yes	
544	Auto Hobby Shop	1974	Not Eligible (under G)	Yes	
547B-E	Living Quarters	1974	Not Eligible (under G)	Yes	
554	Exchange/Partner Technology Facility	1975	Not Eligible (under G)		Yes
945	Athletic Field Dressing Rooms	1940	Not Evaluated	Yes	
951	Material Storage	1957	Not Eligible (under G)	Yes	
958	Storage	1956	Not Eligible (under G)	Yes	
992	Transportation Truck Repair Shop	1957	Not Eligible (under G)	Yes	
SOQ 1	A Berry Court	1933	Contributing Resource		Yes
SOQ 2	B Berry Court	1933	Contributing Resource		Yes
SOQ 3	C Berry Court	1933	Contributing Resource		Yes
SOQ 4	D Berry Court	1933	Contributing Resource		Yes
SOQ 5	E Berry Court	1933	Contributing Resource		Yes

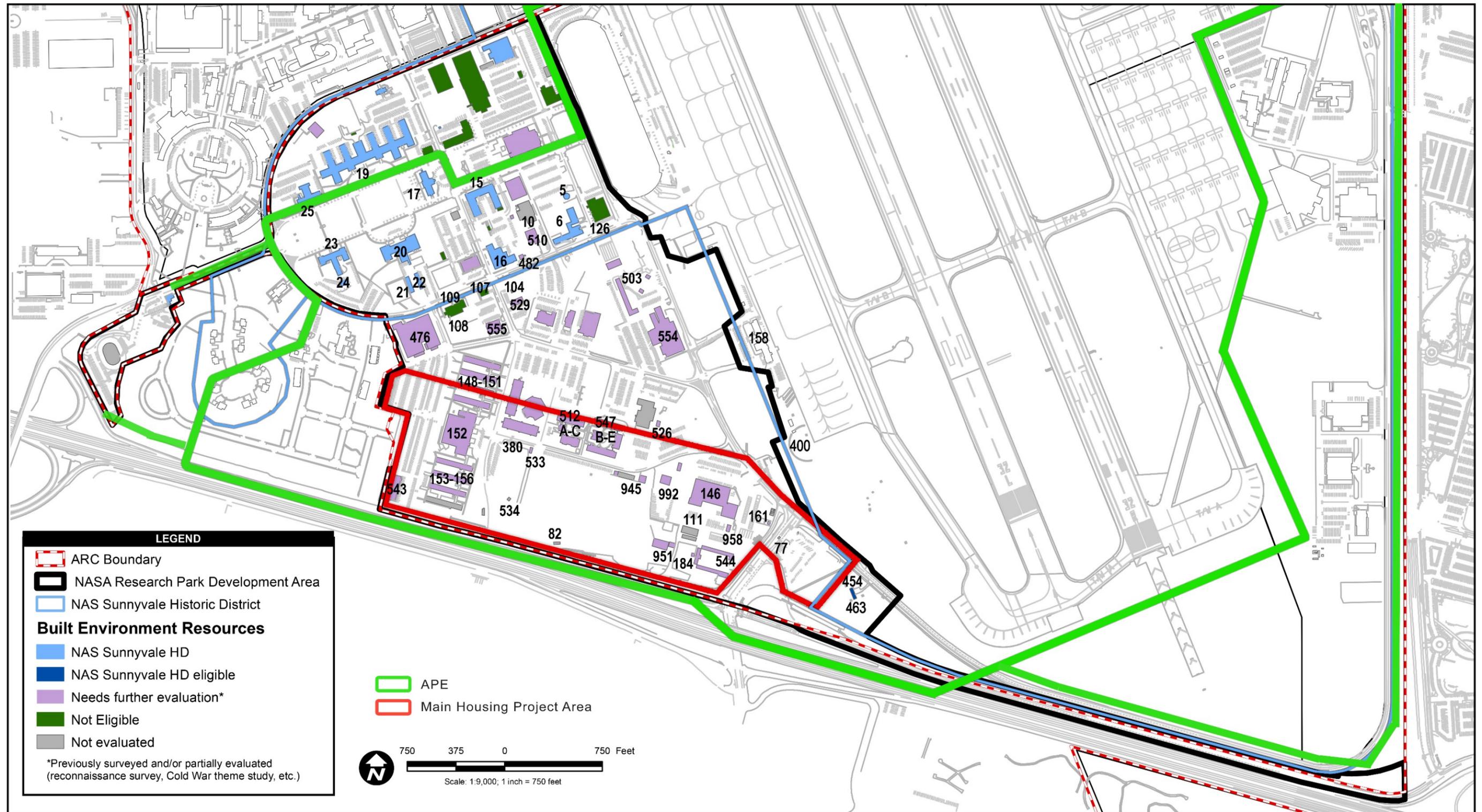


Figure 4. Buildings and structures located within the southwest portion of the APE; blue shading indicates contributors to NAS Sunnyvale HD.

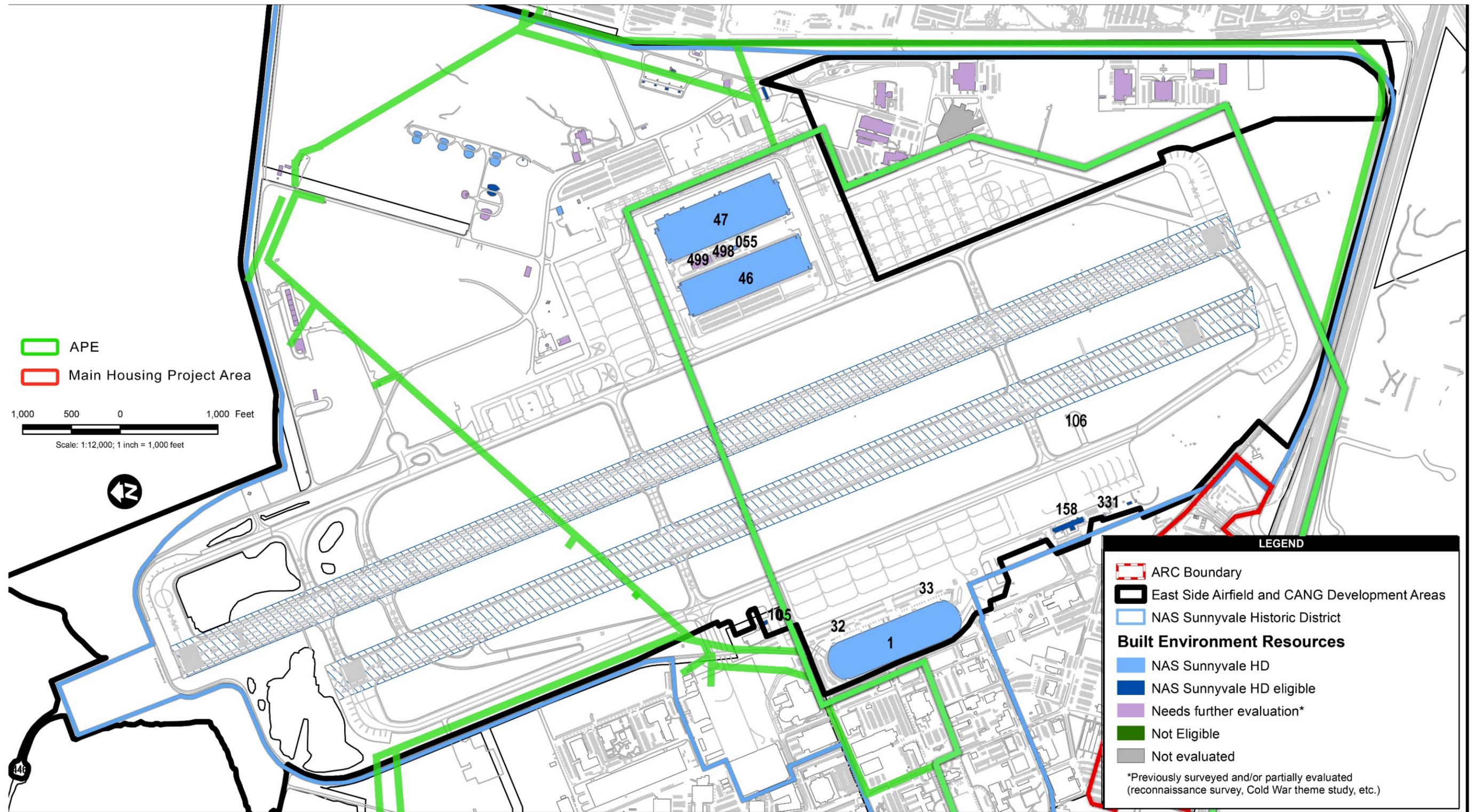


Figure 5. Buildings and structures located within the northeast portion of the APE; blue shading indicates contributors to NAS Sunnyvale HD.

2.5 SURVEY FINDINGS

2.5.1 Archaeological Survey Findings

All areas within the Project area with ground surface visibility were subject to intensive pedestrian archaeological survey. Most of the Project area has been disturbed by prior land uses, including agriculture and ARC facility development. Areas with ground surface visibility are typically landscaped with planting beds or lawns or scraped areas such as road edges with ground surface partially obscured by introduced asphalts or gravels (Figure 6). Soils throughout the facility are fairly uniform, appearing to be made up of dry, silty clay, medium brown, with some gravels.



Figure 6. Typical conditions within the Project area, view toward north.

Any areas of identified archaeological sensitivity or previously documented prehistoric sites were carefully inspected, regardless of the current ground surface condition (see Confidential Appendix E). One of the proposed utility corridors crosses the mapped location of CA-SCL-16; this area is within the airfield and no cultural remains were evident on the ground surface (Figure 7). This same proposed utility corridor also runs just north of the area within which CA-SCL-15 was recorded; this site area is also within the airfield and is currently covered by concrete. A segment of the Project area that runs along Macon Road at the south edge of the facility crosses a small portion of CA-SCL-20/H; however, currently this area is also entirely paved and covered with concrete. Finally, in the southwestern portion of the Project area, the mapped location of CA-SCL-21 lies just north of the proposed utility corridor to be emplaced within Perimeter Road and CA-SCL-24 lies to the west of the Main Housing Area and to the north of the proposed utility corridor within Perimeter Road. No evidence of either prehistoric or historical archaeological materials were observed or documented within the Project area as a result of the survey.

2. Identification of Historic Properties



Figure 7. View across the recorded location of CA-SCL-16 toward the airfield hangars, view toward east.

The easternmost portion of the survey area, comprising the area between Macon Road and the facility boundary fence line, is a somewhat more open area; however, this area has been heavily impacted by the introduction of numerous underground utilities of various types (Figure 8). Some portions of this area had been previously subjected to archaeological survey and testing, which revealed the presence of a small amount of cultural material, primarily lithic debitage and shellfish remains (oyster and horn shell) that appeared to have been in a redeposited context, likely originating from nearby site CA-SCL-12/H (AECOM 2018). During the current survey along the fence line, a number of bivalve (clam) shells were noted that were spatially confined to an area within several feet of the fence but were not found nearer to Macon Road where proposed project effects may occur, nor were they evident in rodent burrows, implying a largely surface or very near-surface manifestation. No other cultural materials were observed in association. Many of the clam shells were complete with both valves attached and/or exhibiting periostracum on their external surfaces, suggesting a more recent age than would be expected in an archaeological deposit. However, as their origin cannot be conclusively ascertained, these shells may be related to dredged fill materials introduced into the area during either fence or utility installation or have resulted from redepositing of materials from nearby archaeological sites outside of the installation boundary.



Figure 8. View of open area utility corridor between Macon Road and eastern boundary fence, view toward north.

2.5.2 Built Environment Survey Findings

2.5.2.1 Contributing Resources to the NAS Sunnyvale HD

Twenty-six contributing resources to the NAS Sunnyvale HD in the APE were surveyed to confirm their continued status as contributing resources and determine effects from the proposed Housing Project. One DPR Continuation Sheet (L) was prepared for these properties, including descriptions, photographs, and confirmation that the buildings retain sufficient integrity to remain contributors to the historic district. Table 3 summarizes the contributing resources surveyed. More information on each property is found in the DPRs attached as Appendix D (Figures 9-13).

Table 3. NAS Sunnyvale Historic District Contributors within the APE

Building No.	Description	Year Built
1	Hangar 1 (also individually eligible)	1933
5	Water Tower	1932
6	Recycling and Storage	1933
10	Boiler Plant/Heat Plant	1932
15	Fire Station/Laundry	1933
16	Locomotive Crane Shed	1933
17	Admiral's Building	1933
19	Bachelor Enlisted Quarters	1933
20	Bachelor Officers' Quarters	1933

2. Identification of Historic Properties

Building No.	Description	Year Built
21	Bachelor Officers' Garage	1933
22	Bachelor Officers' Garage	1933
23	Dispensary	1933
24	Ambulance Garage	1933
25	Bowling Alley/Theater	1933
32	North Floodlight Tower	1934
33	South Floodlight Tower	1934
46	Hangar 2	1933
47	Hangar 3	1933
55	Boiler House (east)	1943
105	Airfield Lighting Vault (east)	1947
106	Aircraft Compass Calibration Pad (Compass Rose)	1947
SOQ 1	A Berry Court	1933
SOQ 2	B Berry Court	1933
SOQ 3	C Berry Court	1933
SOQ 4	D Berry Court	1933
SOQ 5	E Berry Court	1933



Figure 9. Representative view of the NAS Sunnyvale HD including Hangar 1 and Building 17, view toward east.



Figure 10. Representative view of the NAS Sunnyvale HD from the parade ground, view west toward the entrance to the historic district.



Figure 11. Building 17 (Administration Building), an example of one of the contributing resources to the NAS Sunnyvale HD in the APE, view toward east.



Figure 12. Garages (Buildings 21 and 22), examples of the contributing resources to the NAS Sunnyvale HD in the APE, view toward northwest.



Figure 13. Berry Court officer's residence A, an example of one of the contributing resources to the NAS Sunnyvale HD in the APE, view toward east.

2.5.2.2 Properties Previously Evaluated Under Criteria Consideration G

ASM surveyed 38 buildings in the APE that were less than 50 years old when they were previously surveyed and evaluated as part of an inventory of Cold War Era properties at Moffett Federal Airfield in 1998/1999 (SAIC 1999). Because the properties were less than 50 years old, they were evaluated at that time under Criteria Consideration G for properties that have achieved significance within the past 50 years (Figures 14 and 15). All were identified as support buildings found at Naval installations regardless of mission and were previously recommended not eligible; ASM concurs with that recommendation (Table 4). For the current survey, eight of these properties were constructed in the 1970s and thus remain less than 50 years old; therefore, they are re-evaluated under Criteria Consideration G. Thirty-eight properties are recommended not eligible for the NRHP. ASM referred to extant historic context including that for the Cold War and airfield study in the preparation of Continuation forms (Appendix D) to provide an update to those evaluations.

2. Identification of Historic Properties



Figure 14. Building 152 (Barracks Administration Building), an example of one of the buildings re-evaluated for the report without the application of NRHP Criteria Consideration G, view toward northeast.



Figure 15. Building 503 (Gas Station), an example of one of the buildings re-evaluated for the report without the application of NRHP Criteria Consideration G, view toward northeast.

Table 4. Properties Previously Evaluated Under Criteria Consideration G

Building No.	Description	Year Built	Eligibility*
107	Navy ROICC Admin Building	1948	Not Eligible
108 & 109	NASA Exchange Swimming Pool and Dressing Rooms	1948	Not Eligible
126	Moffett Field Historical Society	1949	Not Eligible
146	Transportation Garage	1952	Not Eligible
148	Barracks	1953	Not Eligible
149	Barracks	1953	Not Eligible
150	Barracks	1953	Not Eligible
151	Barracks	1953	Not Eligible
152	Administrative Building	1953	Not Eligible
153	Administrative Building	1953	Not Eligible
154	Administrative Building	1953	Not Eligible
155	Administrative Building	1953	Not Eligible
156	Administrative Building	1953	Not Eligible
158	Flight Operations (terminal)	1954	Not Eligible
161	Gas Station (small)	1952	Not Eligible
184	Maintenance Storage	1955	Not Eligible
331	Storage	1958	Not Eligible
400	Storage	1958	Not Eligible
454	Transmission Building	1960	Not Eligible
459	Recreation Storage	1950	Not Eligible
463	Antenna-Communications	1960	Not Eligible
476	Space University	1964	Not Eligible
482	Painting Facility	1963	Not Eligible
498	Storage	1965	Not Eligible
499	Storage	1966	Not Eligible
503	Gas Station and Ancillary Structures	1966	Not Eligible
510	Administrative Building	1967	Not Eligible
512A-C	Barracks	1970**	Not Eligible (under G)
526	Club Storage	1970**	Not Eligible (under G)
529	Warehouse	1970**	Not Eligible (under G)
533	Park Restrooms	1971**	Not Eligible (under G)
543	Hobby Shop	1973**	Not Eligible (under G)
544	Auto Hobby Shop	1974**	Not Eligible (under G)
547 B-E	Living Quarters	1974**	Not Eligible (under G)
554	Exchange/Partner Technology Facility	1975**	Not Eligible (under G)
951	Material Storage	1957	Not Eligible
958	Storage	1956	Not Eligible
992	Transportation Truck Repair Shop	1957	Not Eligible

* Column provides current recommendations of eligibility

** Less than 50 years old at time of current survey

2.5.2.3 Properties Not Previously Evaluated

Seven properties within the APE had not been previously evaluated (Table 5). ASM evaluated all seven properties; none are recommended eligible for listing in the NRHP (Figure 16). Evaluation of these buildings was based on extant historic context provided in the 1995 NAS Sunnyvale HD NRHP nomination, the Historic Property Survey Report for the Airfield (AECOM 2013), the Integrated Cultural Resources Management Plan (AECOM 2014), *Inventory and Evaluation of Cold War Era Historical Resources: Moffett Federal Airfield and NASA Crows Landing Flight Facility* (SAIC 1999), and *Archaeological Resources Study* (2017). DPR 523A and BSO forms for these buildings are included in Appendix D.

Table 5. Properties Not Previously Evaluated

Building No.	Description	Year Built	Eligibility
77	South Gate Sentry House	1944	Not eligible
82	Athletic Storage	1944	Not eligible
104	Substation	1943	Not eligible
111	Transportation Storage	1944	Not eligible
380	Bus Shelter	1957	Not eligible
534	BBQ Shelter	1971	Not eligible
945	Athletic Field Dressing Rooms	1940	Not eligible

2.5.2.4 Demolished Properties

Sixteen properties previously located within the APE and evaluated as ineligible could not be relocated during the current survey and are presumed to have been demolished (Table 6). All were previously evaluated and recommended not eligible (SAIC; Sunnyvale HD NRHP 1994). DPR continuation sheets have been provided in Appendix D to update these 16 previously evaluated properties.

Table 6. Demolished Properties

Building No.	Description	Year Built	Prior Evaluation
50	Communications Building	1958	Not eligible (under G)
93	Former Aircraft Welding Shop	1946	Not eligible (under G)
175	Line Maintenance Shelter	1956	Not eligible (under G)
176	Line Maintenance Shelter	1956	Not eligible (under G)
343	Rigger's Shop	1942	Not eligible
346/396	Line Operations Shelter	1950	Not eligible (under G)
350	Line Maintenance Shelter	1950	Not eligible (under G)
351	Line Maintenance Shelter	unknown	Not eligible (under G)
367	Unknown	unknown	Not eligible (under G)
382	Line Operations	1950	Not eligible (under G)
459	Recreation Storage	1950	Not eligible (under G)
464	Storage	1964	Not eligible (under G)
472	Air Frames Shop	1961	Not eligible (under G)
525	Bowling Alley	1970	Not eligible (under G)
539	Line Shack	1972	Not eligible (under G)
540	Line Shack	1972	Not eligible (under G)

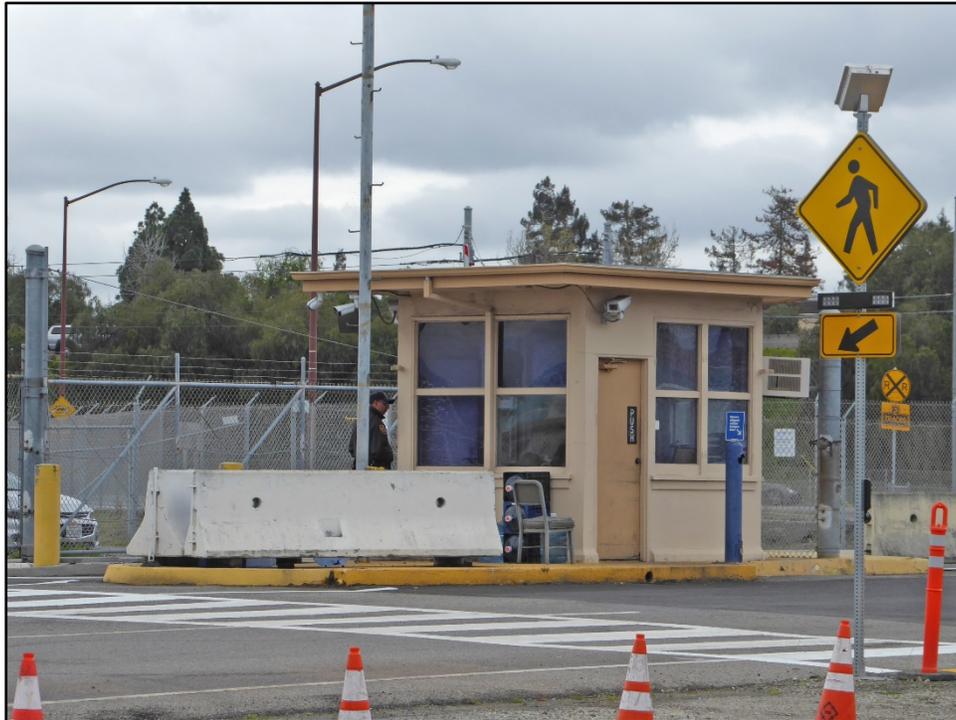


Figure 16. South Gate Sentry House, an example of one of the buildings evaluated for the first time in this report, view toward southeast.

3. AFFECTED HISTORIC PROPERTIES

3.1 BUILT ENVIRONMENT RESOURCES

3.1.1 NAS SUNNYVALE HISTORIC DISTRICT

U.S. Naval Air Station Sunnyvale, California Historic District was listed in the NRHP in 1994.¹ The site consists of a large number of buildings constructed over a period of approximately 60 years beginning in the early 1930s. The buildings are clustered in a formal campus-like horseshoe-shaped layout anchored by a western-facing gated entrance and Hangar 1 prominently anchoring the eastern end of the core (see Figure 9 and section 3.1.2). The core of the district is distinguished by a well-tended landscape, including mature trees, shrubs, and lawns. The site can be easily divided into its stylistic components that also define the different eras of construction over the base's lifetime.

The oldest and most historically significant buildings, from an architectural and engineering standpoint, form a coherent core, and include the formal cluster of buildings dating from 1933 that lead up to and include the imposing Hangar 1 (the original dirigible hangar) and two World War II (WWII)-era blimp hangars across the runways of Moffett Airfield. This area of the base is approached via Clark Road from U.S. Highway 101 to the west. The central area is laid out in an axial plan in a northeasterly direction with the original buildings regularly placed along a grand central parade ground. In addition, there is an equally significant adjunct of officers' residences clustered around Berry Drive just to the south of the main gated entrance in another formally laid out site with grass medians, a grass island at the end of the southern cul-de-sac, and a characteristically suburban curved residential street. In keeping with the symmetry that was so strong to the original plan, another unbuilt residential complex was originally planned for the northern side of the entrance drive.

These earliest buildings, which were designed by the Navy Department Bureau of Yards and Docks, exemplify California's most popular contemporary architectural style of the 1920s and early 1930s. They are constructed in a late Spanish Colonial Revival architectural style (a style that was equally as popular in government construction in the eastern sections of the U.S. during the 1920s and into the early 1940s), while simultaneously displaying features of Modernism, which would predominate in American architecture from approximately 1940 to 1975.

In the nation's quest to provide security for the lengthy expanse of its coastlines, the opportunity for air reconnaissance was realized by Admiral William A. Moffett. Through his efforts, two Naval Air Stations were commissioned in the early 1930s to port the two U.S. Naval Airships (dirigibles) that believed capable of this challenge. The Naval Air Station Sunnyvale was selected as the Pacific Coast location to port the USS Macon (ZRS 5) rigid airship, or dirigible. Hangar 1, the immense structure designed to house the airship, and its larger counterpart in Akron, Ohio, were the two largest structures in the U.S. without internal support. At the onset of WWII, the base was expanded with Hangars 2 and 3, which were designed to accommodate the smaller blimps and balloons used for reconnaissance, until the range of heavier-than-air aircraft (airplanes) became sufficient to patrol the coast. The significance of the NAS Sunnyvale HD is attributed to the association with the expanding defense capabilities of the U.S. Navy, the engineering technology applied in lighter-than-air airships, the design of the hangar and system for porting the dirigible, and in the plan and architectural style of the station designed to support this defense technology.

The entire historic district is supported for listing in the NRHP at the national level of significance under Criterion A for its association with coastal defense and naval technology that has made a significant

¹ This description is excerpted and adapted from the 1994 NRHP nomination for the NAS Sunnyvale HD.

3. Historic Properties Potentially Affected

contribution to the broad patterns of our history; and Criterion C, reflecting the distinctive type, period, method of construction and high artistic values represented in the 1933 station plan and buildings. In 1942, the station was recommissioned as U.S. Naval Air Station, Moffett Field, in recognition of the significant contribution to naval history by Admiral Moffett, contributions that have gained him the unofficial title “Father of Naval Aviation.” However, the NRHP nomination does not recommend significance of the district under Criterion B.

In 2013, AECOM recommended an extension to the boundary of the NAS Sunnyvale HD. The extension allowed for the inclusion of the Airfield and additional historic features directly associated with the district’s core aviation mission. Properties within the extended boundary include support operation features such as runways, taxiways, compass calibration pads, buildings used to house aircrafts, repair shops, control towers, research and training facilities, and administrative facilities. The extension included 22 additional eligible contributing properties to the district.

See Table 3 for the list of district contributors in the APE and Figures 9 through 13 for representative photographs of the district.

Character-defining features of the district include:

- Spanish Colonial Revival architecture
 - Red clay barrel tile roofs with complex gables
 - Smooth stucco cladding
 - Arched arcades and window and door openings
 - Multi-light wood casement windows
 - Quatre-foil, urn, and cartouche ornamentation
 - Projecting chimneys and domes
 - Stringcourses
 - Flat or low stepped parapets on utilitarian buildings
- Cold War era function-specific buildings that created a fully contained air station
- Innovative engineering technology used for hangars
- Symmetrical unified campus-like site plan with central green/parade ground (Shenandoah Plaza)
- Views across Shenandoah Plaza toward the contributing resources surrounding the plaza

3.1.2 HANGAR 1

The significance of Hangar 1 was recognized when it was designated a Naval Historical Monument. It has been designated a California Historic Civil Engineering Landmark by the San Francisco section of the American Society of Civil Engineers, and it has been determined eligible for listing in the NRHP by the U.S. Navy in consultation with the California SHPO. It is eligible under Criterion A for its association with important historical events related to military uses and under Criterion C for an innovative engineering technique and method of construction.

Character-defining features of Hangar 1 include:

- Views toward Hangar 1 from U.S. Highway 101 when passing the airfield
- Size and position at the apex of the horseshoe shape of the historic district forms the anchor
- Enormous size and proportions
- Complex structural system forming an open internal space

- Designed specifically to house a dirigible, tracing the form of the specific airship
- Rounded shape the epitome of aerodynamically influenced Streamline Moderne style
- Uniquely engineered collapsible curved doors at both ends, meeting at the top of the structure, called “orange peel” doors
- Metal sheathing
- Two rows of regularly spaced multi-light windows
- Adjacent to flight line

3.2 ARCHAEOLOGICAL RESOURCES

As described in Chapter 2, archaeological sites CA-SCL-15, CA-SCL-16, CA-SCL-20/H, CA-SCL-21, and CA-SCL-24 have been documented as potentially existing within or adjacent to portions of the Project area. Testing within the mapped portion of CA-SCL-20/H that falls within the current proposed Project area has shown that there are no elements of that site remaining in that location. Further, other remnant portions of the site north of the proposed Project area and located within the airfield have been recommended as not eligible for inclusion in the NRHP. Testing has also been conducted within the mapped location of CA-SCL-24, revealing no intact cultural deposits that might make the site eligible for the NRHP. While systematic testing was not conducted within the mapped location of CA-SCL-21, no evidence of the site was found during surface survey in 1980. Further, there are no records of any discoveries, other than the Berry Court site, associated with the ca. 2005-2006 housing development that encompasses the area within which CA-SCL-21 and CA-SCL-24 were documented.

The exact locations of CA-SCL-15 and CA-SCL-16 are currently unknown and so their current condition or potential eligibility to the NRHP has not been assessed as the area within which they are mapped has not been subject to systematic testing and subsurface ground disturbance in this area has been minimal. As such, they are treated herein as historic properties to which the proposed Project poses a potential for adverse effects.

4. ANALYSIS OF EFFECTS

As stated in Section 1, the criteria of adverse effect are defined in 36 CFR 800.5(a)(1).

An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the NRHP. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative.

Examples of adverse effects on historic properties identified in 36 CFR 800.5(a)(2) include, but are not limited to:

- i. Physical destruction of or damage to all or part of the property;
- ii. Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation and provision of handicapped access, that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR part 68) and applicable guidelines;
- iii. Removal of the property from its historic location;
- iv. Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
- v. Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;
- vi. Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and
- vii. Transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

4.1 ARCHAEOLOGICAL RESOURCES

Archaeological sites CA-SCL-15, CA-SCL-16, CA-SCL-20/H, CA-SCL-21, and CA-SCL-24 have been documented as potentially existing within or adjacent to portions of the Project area.

Early mapping of CA-SCL-20/H shows its southernmost tip crossing the Macon Road portion of the Project area. However, as discussed in Chapter 2, a number of testing efforts over the years have indicated that there are no remaining elements of the site in this area. Testing has also been conducted within the mapped location of CA-SCL-24, revealing no intact cultural deposits that might make the site eligible for the NRHP. While systematic testing was not conducted within the mapped location of CA-SCL-21, no evidence of the site was found during surface survey in 1980. Further, there are no records of any discoveries, other than the Berry Court site, associated with the ca. 2005-2006 housing development that encompasses the area within which CA-SCL-21 and CA-SCL-24 were documented. As such, no impacts to these sites are expected.

Available mapping indicates that the estimated location of CA-SCL-15 is just south of one of the proposed utility corridors and is currently covered by a concrete slab, while no surface manifestation of CA-SCL-16 was observed within the same proposed utility corridor. As the precise location and current condition of

CA-SCL-15 and CA-SCL-16 are currently unconfirmed, they should be treated as historic properties to which the proposed Project poses a potential for adverse effects. Such effects may include damage to or destruction of buried components of the sites within the proposed utility corridors caused by construction activities such as trenching and boring.

4.2 BUILT ENVIRONMENT RESOURCES

The Housing Project would construct new mixed-use commercial and residential buildings adjacent to but outside of the NAS Sunnyvale HD. No built environment resources are in the Project area; therefore, no direct impacts on built environment historic properties are anticipated. Most of the criteria for adverse effect that address direct impacts are not applicable for built environment resources in this undertaking, specifically (ii), (iii), (vi), and (vii). The Housing Project would not cause damage to or remove any historic properties, result in the neglect of any historic properties, or transfer, lease, or sale of any historic properties within Federal control.

Under criterion (i), the type of construction and demolition work proposed for the Housing Project is not anticipated to result in ground vibration strong enough to cause structural damage to nearby historic properties. As such, the Housing Project would not result in physical damage to nearby historic properties per adverse effect criterion (i).

Under criterion (v), the Housing Project would have no permanent impact on the atmospheric or auditory quality of historic properties within the APE. Potential changes to the current air quality and noise levels associated with construction and/or demolition would be temporary. The functions proposed for the Housing Project are not anticipated to create any substantial change to air quality or noise levels beyond existing conditions. As such, the Housing Project would not introduce atmospheric or audible elements that diminish the integrity of any historic properties in the APE per adverse effect criterion (v).

Under criterion (iv), the Housing Project would not change the character of the NAS Sunnyvale HD's use, but the Housing Project has the potential to change the character of physical features within the district's setting that contribute to its historic significance. The physical features of the district's setting in the Main Housing Project area include designed landscapes (grass, shrubs, and trees), circulation spaces (sidewalks/paths and roads), and Cold-War era residential and military support buildings ranging from one to three stories in height.

Under criterion (v), the Housing Project would introduce visual elements that have the potential to diminish the integrity of the NAS Sunnyvale HD's significant historic features. The significant historic features of the district are detailed in Section 3.1.1 and include its Spanish Colonial Revival style architecture, function-specific Cold-war era architecture, engineering technology of the hangars, campus-like site plan organized around Shenandoah Plaza, and views across Shenandoah Plaza toward the contributing resources surrounding the plaza. Views toward the Main Housing Project area from the district are not considered historic features. However, views toward individually eligible Hangar 1 from U.S. Highway 101 when passing the airfield are among its significant historic features.

Visual effects on the NAS Sunnyvale HD potentially include views *toward* and *from* the district as well as views toward and from several specific contributing resources. According to the SOI's *Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Building*, "new construction should be appropriately scaled and located far enough away from the historic building to maintain its character and that of the site and setting" (NPS 2017:26). The Housing Project entails constructing buildings ranging from 60 feet to 135 feet in height for housing, retail, and related facilities. ASM reviewed renderings of the mass and height of the Housing Project and carefully considered the impacts on the viewshed *from* the

historic district toward the Housing Project, especially from areas where the tallest of the buildings will be visible. Of those contributing resources from which the Housing Project will be visible, the viewsheds from Buildings 1, 5, 6, 15-17, 20-24, and SOQ 1-5 (Berry Court) are the most impacted (Appendix A, pp. 3-9). The Housing Project will create an interruption of the mid-ground views from those buildings; however, viewshed from those contributing resources is not a character-defining feature of the historic district. Furthermore, based on the analysis of the current height, mass, and scale proposed for the Housing Project, it will result in a weak contrast to the setting of the historic district as a whole. Although it will be visible, the Housing Project will not dominate the setting or attract the attention of the casual observer as depicted in Appendix A due to its horizontal massing and scale and distance from the historic district. As such, the disruption of the viewsheds from the contributing resources identified above does not constitute an adverse visual effect, as the disruption does not alter the characteristics of the historic properties that make them eligible for listing in the NRHP, specifically in terms of the resources' integrity of location, design, materials, workmanship, feeling, or association. Although the integrity of setting is negatively impacted, only a small portion of the setting is impacted and not to the extent that it would compromise the overall integrity of setting for these contributing resources or the historic district as a whole.

Some views *toward* the district are character-defining, specifically distant views of the hangars; ASM identified the character-defining views toward Hangar 1 that will be obscured by the Project as illustrated in Appendix A, pp. 11-17. Those figures illustrate the disruption of the views of Hangar 1 from two locations on U.S. Highway 101, titled 101 View One and 101 View Two. Those figures illustrate that the Housing Project will only result in a partial disruption of the views toward Hangar 1 and key character-defining views toward Hangar 1 will not be adversely affected. As such, the Housing Project would not introduce visual elements that diminish the integrity of Hangar 1 per adverse effect criterion (v).

To avoid or minimize the potential adverse effects under criteria (iv) and (v) for the NAS Sunnyvale HD, conformance of the new construction design with the SOI Standards for Rehabilitation, specifically Standards 9 and 10, will be required. The architectural plans and renderings for the Housing Project's buildings, including attached or adjacent billboards, will be reviewed at several stages of design development to ensure that the design will be differentiated from the historic district yet be compatible with the massing, size, scale, and architectural features of the district's setting.

4.3 EFFECTS ASSESSMENT SUMMARY

ASM recommends finding that two archaeological sites potentially eligible to the NRHP (CA-SCL-15 and CA-SCL-16) and one NRHP-listed historic district, NAS Sunnyvale HD, within the APE have the potential to be affected by the proposed undertaking.

The actual presence or absence and condition of archaeological sites CA-SCL-15 and CA-SCL-16 is currently unknown and the sites are herein being treated as historic properties for the purpose of this report. As they may fall within the APE, trenching for utility installation for the proposed undertaking has the potential to damage and thus result in adverse effects to these resources. However, adverse effects are avoidable through avoidance, engineering, and construction-period conditions, as detailed below in Chapter 5.

With regard to NAS Sunnyvale HD, after applying the criteria of adverse effect to the undertaking as outlined in 36 CFR 800.5, ASM recommends that the Housing Project with conditions detailed in Chapter 5 will not result in any adverse visual effects to the historic district, as the district's integrity of location, design, materials, workmanship, feeling, and association will not be impacted and the impacts to setting are minimal and will not result in a loss of overall integrity. Furthermore, as the Housing Project will not cause an adverse effect, it does not have the potential to contribute to any cumulative effects to these historic properties.

ASM recommends a finding of No Adverse Effects to Historic Properties for the undertaking, with specific minimization conditions. To avoid physical destruction or damage to known archaeological sites within the Project area per adverse effect criterion (i), and to avoid introduction of visual elements that have the potential to diminish the integrity of NAS Sunnyvale HD's significant features per adverse effect criterion (v), ASM recommends the conditions detailed in Chapter 5 in accordance with 36 CFR 800.5(d)(2) of the NHPA.

5. CONDITIONS IMPOSED TO AVOID AN ADVERSE EFFECT

As the construction of the Housing Project poses the potential to cause visual effects to the contributing resources of the NAS Sunnyvale HD as well as previously documented and potential previously undocumented archaeological deposits that may exist within the area of subsurface disturbance, the below conditions will be imposed to avoid any potential for an adverse effect pursuant to 36 CFR 800.5(d)(2). Pursuant to 36 CFR 800.5(d)(2), the following measures will be incorporated into the NASA approval for the Housing Project in order to avoid any potential for an adverse effect to the NAS Sunnyvale HD and to any previously undocumented or underdocumented archaeological deposits that may exist within the area of subsurface disturbance:

- To ensure conformance with the SOI Standards, the project applicant will retain a qualified professional to consult on and evaluate project construction plans at three phases in design development: conceptual, 30-50%, and 90% design review phases. The qualified professional will meet the *Secretary of the Interior's Professional Qualifications Standards* (36 CFR Part 61) for Architectural History or Historic Architecture. The analysis will be based on the extent of the architectural plans, including elevations/renderings, that are complete at the conceptual, middle (30-50%), and final (90%) phases of design as follows:
 1. The qualified professional will prepare and submit a memorandum (memo) to MVHV and NASA that documents and analyzes the **conceptual** design against the SOI Standards to establish conformance with the SOI Standards. NASA cultural resources staff will review the memo and, should NASA cultural resources staff disagree with any conclusions in the memo, they will notify MVHV within two weeks of NASA's receipt of the memo of proposed design changes. The plans will not be resubmitted, but those changes will be incorporated into the next plan submission.
 2. The qualified professional will prepare and submit a memo to MVHV and NASA that documents and analyzes the **30-50%** design to address any subsequent design changes (which may include proposed design changes from NASA and the design professional from the conceptual design submission) with the potential to cause visual effects to the NAS Sunnyvale HD that occurred from the time the Housing Project was originally found in conformance. Should NASA cultural resources staff disagree with any conclusions in the memo, they will notify MVHV within two weeks of receipt of the memo of proposed design changes. The plans will not be resubmitted, but those changes will be incorporated into the next plan submission.
 3. The qualified professional will prepare and submit a memorandum to NASA that documents and analyzes the **final (90%)** construction plans to address any subsequent design changes (which may include proposed design changes from NASA and the design professional from the 30-50% design submission) with the potential to cause visual effects to the NAS Sunnyvale HD that occurred from the time the Housing Project was originally found in conformance. NASA cultural resources staff must approve the memo that will confirm that final (90%) construction plans are in conformance with the SOI Standards prior to NASA's issuance of a building permit.
- Based on the documented archaeological sensitivity of portions of the Project area as well as findings of recent archaeological testing within the airfield (but outside of the Project area), ASM recommends avoidance of all ground-disturbing activities in the vicinity of previously documented archaeological sites CA-SCL-15 and CA-SCL-16 (see Confidential Appendix E), as well as the other areas of potential sensitivity for both prehistoric and historical-era subsurface resources that have been identified within the APE (Figure 17).

5. Conditions Imposed to Avoid an Adverse Effect

- If project redesign cannot achieve full avoidance of the proposed utility corridor that crosses the airfield just south of the hangars that would have the potential to impact sites CA-SCL-15 and CA-SCL-16, utilities will be installed via underground directional boring rather than open trenching, to allow utility installation below the depth of archaeological sensitivity. Based on geoarchaeological data obtained from nearby airfield site CA-SCL-19, which is situated to the south of CA-SCL-15 and CA-SCL-16, the maximum depth of potential archaeological sensitivity for these two sites is anticipated to be approximately 5.5 feet below surface. Entry and exit pits for directional drilling will be excavated a minimum of 75 feet from the previously mapped boundaries of these two sites, and the drilling/utility installation will be undertaken at a minimum of 9 feet below ground surface.
- Where ground disturbance within the proposed utility corridor segment that has the potential to impact sites CA-SCL-15 and CA-SCL-16 may take place due to an inability to redesign the project to achieve full avoidance, e.g., if manholes must be placed or vertical boring undertaken to advance an underground utility line as described above, the project applicant will retain a qualified professional who meets the *Secretary of Interior's Professional Qualifications Standards* for Archeology to conduct a limited archaeological testing program. The extent of the testing protocol will be developed in consultation with NASA and will take place within each specific targeted manhole or boring location to ensure that no cultural resources are present prior to project construction.
- Where ground disturbance may take place due to an inability to redesign the project to achieve full avoidance within any of the areas of Heightened Prehistoric and Historic-era Archaeological Sensitivity within the APE (Figure 17), the project applicant will retain a qualified professional who meets the *Secretary of Interior's Professional Qualifications Standards* for Archeology to monitor any initial ground disturbance that extends beyond an existing building foundation or where soils subject to ground disturbance have surface visibility (e.g., mass-excavation, open trenching, drill cuttings, etc.). Monitoring shall be conducted within the areas of archaeological sensitivity within the Project area under the following conditions:
 1. The monitor shall be on-site at a pre-construction meeting to discuss monitoring protocols.
 2. The monitor shall be notified at least 48 hours in advance of reaching the estimated depths of previously undisturbed soil.
 3. Monitoring will not be required during underground directional boring activities during which no subsurface soils are visible for inspection.
 4. Monitors shall be empowered to temporarily halt construction or divert equipment to allow assessment and/or removal of archaeological resources.
 5. If any archaeological resources are identified during construction activities, the following shall occur:
 - The qualified archaeologist shall flag the immediate area of the discovery and notify the construction crew immediately. No further disturbance within at least 50 feet of the flagged area shall occur until the qualified archaeologist has cleared the area.
 - The qualified archaeologist shall quickly assess the nature and potential significance of the find. If the material is not significant, it shall be documented in the monitoring notes and the area cleared for

construction to continue. Examples of such finds include isolated artifacts such as debitage, shell fragments, or other such materials that derive from disturbed soils or contexts of secondary deposition.

- If the discovery is potentially significant or requires further investigation, the qualified archaeologist shall notify NASA immediately, providing information about the find and recommendations for treatment. NASA will consult with SHPO as appropriate. Such discoveries include intact midden deposits, human remains, or potential grave goods.

- If there are future design plan changes (e.g., shift in off-site utility locations), MVHV will work with ASM and NASA to review the modifications. If NASA determines that the change is not material or would not necessitate material alterations to the conditions described above, the changes will be approved and no further consultation with the SHPO will be required.

By imposing the above conditions, ASM recommends that the Housing Project will not cause an adverse effect on previously documented archaeological sites CA-SCL-15 and CA-SCL-16, any previously undocumented archaeological resources that may be identified during construction activities within areas of heightened sensitivity, or NRHP-listed NAS Sunnyvale HD nor any of its contributing resources including Hangar 1.

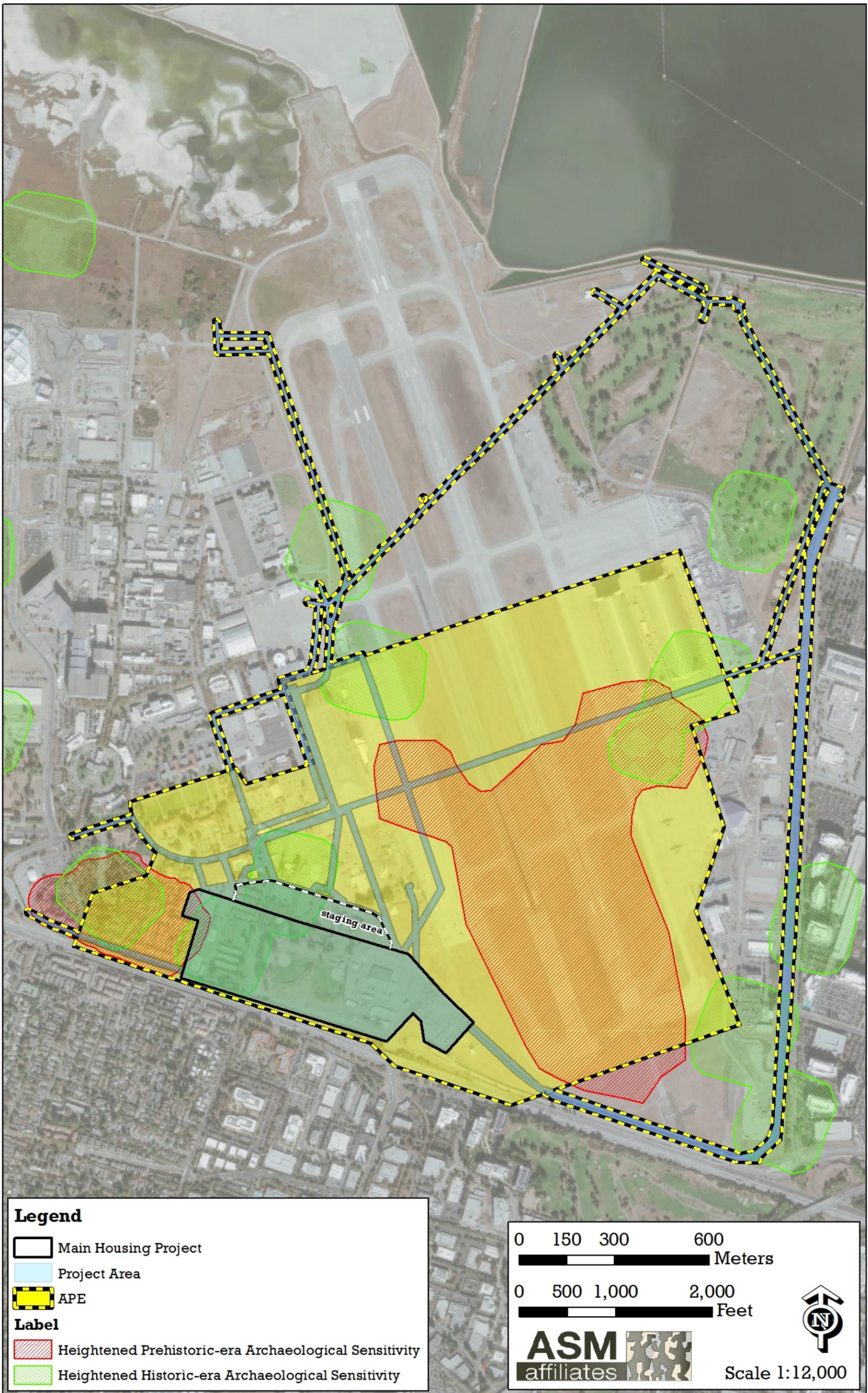


Figure 17. Archaeological sensitivity map adapted from

NASA Ames Research Center: Archaeological Resources Study (AECOM 2017),
with addition of current APE.

6. PROJECT PERSONNEL

ASM Senior Architectural Historian, Shannon Davis, M.A., served as Project Manager for ASM and supervised all aspects of the project including review of all prior documentation, methodology, and the assessment of effects. Ms. Davis exceeds the professional qualification standards for Architectural Historian and Historian as identified in the *Secretary of the Interior's Standards for Archeology and Historic Preservation* (36 CFR 61). As an Architectural Historian at ASM, Ms. Davis has documented and evaluated numerous cultural resources for Section 106 of NHPA compliance, California Environmental Quality Act (CEQA) compliance, impacts/effects analysis, Historic Structures Reports (HSRs), Historic American Building Survey (HABS), and NRHP nominations. Ms. Davis additionally has past professional experience with the cultural resources programs of the National Park Service (NPS), including eight years as an Historian with the NRHP.

ASM Architectural Historian Marilyn Novell, M.S., conducted the survey and evaluations of the properties within the APE of the project. Ms. Novell exceeds the professional qualification standards for Architectural History and History as identified in the *Secretary of the Interior's Standards for Archeology and Historic Preservation* (36 CFR 61). As an Architectural Historian at ASM, Ms. Novell has conducted comprehensive surveys and prepared evaluations for many historic properties, in both California and Hawaii, including the Mojave National Preserve, Edwards Air Force Base, Los Angeles Unified School District, and the Bank of Hawaii. She has also developed historic context statements based on field work and archival research for clients including Ontario International Airport and the City of Monrovia.

ASM Architectural Historian Lisa Demarais, M.H.P., assisted in the evaluation of properties within the APE of the project, the preparation of DPR forms, and contributed to the Cultural Resources Technical Report. Ms. Demarais meets the professional qualification standards for Architectural History as identified in the *Secretary of the Interior's Standards for Archeology and Historic Preservation* (36 CFR 61). As an Architectural Historian at ASM, Ms. Demarais has conducted comprehensive surveys and prepared evaluations for many historic properties for Section 106 of NHPA compliance, California Environmental Quality Act (CEQA) compliance, determination of eligibility to the NRHP/CRHP, and impacts/effects analysis. Ms. Demarais also has experience in public history, including cataloging, curation, site interpretation, and writing educational materials.

ASM Senior Archaeologist, Sherri Andrews, M.A., reviewed the records search, performed the pedestrian surveys, and provided recommendations for monitoring. Ms. Andrews exceeds the professional qualification standards for Archaeology as identified in the *Secretary of the Interior's Standards for Archeology and Historic Preservation* (36 CFR 61). As an Archaeologist at ASM, Ms. Andrews has served as Principal Investigator, Co-Principal Investigator, and Field Director on projects throughout southern California, including the Mojave Desert and the Channel Islands. Ms. Andrews has experience in all aspects of project management, ranging from records searches and fieldwork to report writing and preparation. She also has experience in laboratory management, including artifact analysis, cataloging and curation, and has served as laboratory director for three university-run field schools, including the Eel Point field school run by CSUN, and the San Elijo Lagoon project run by ASM and University of California, San Diego.

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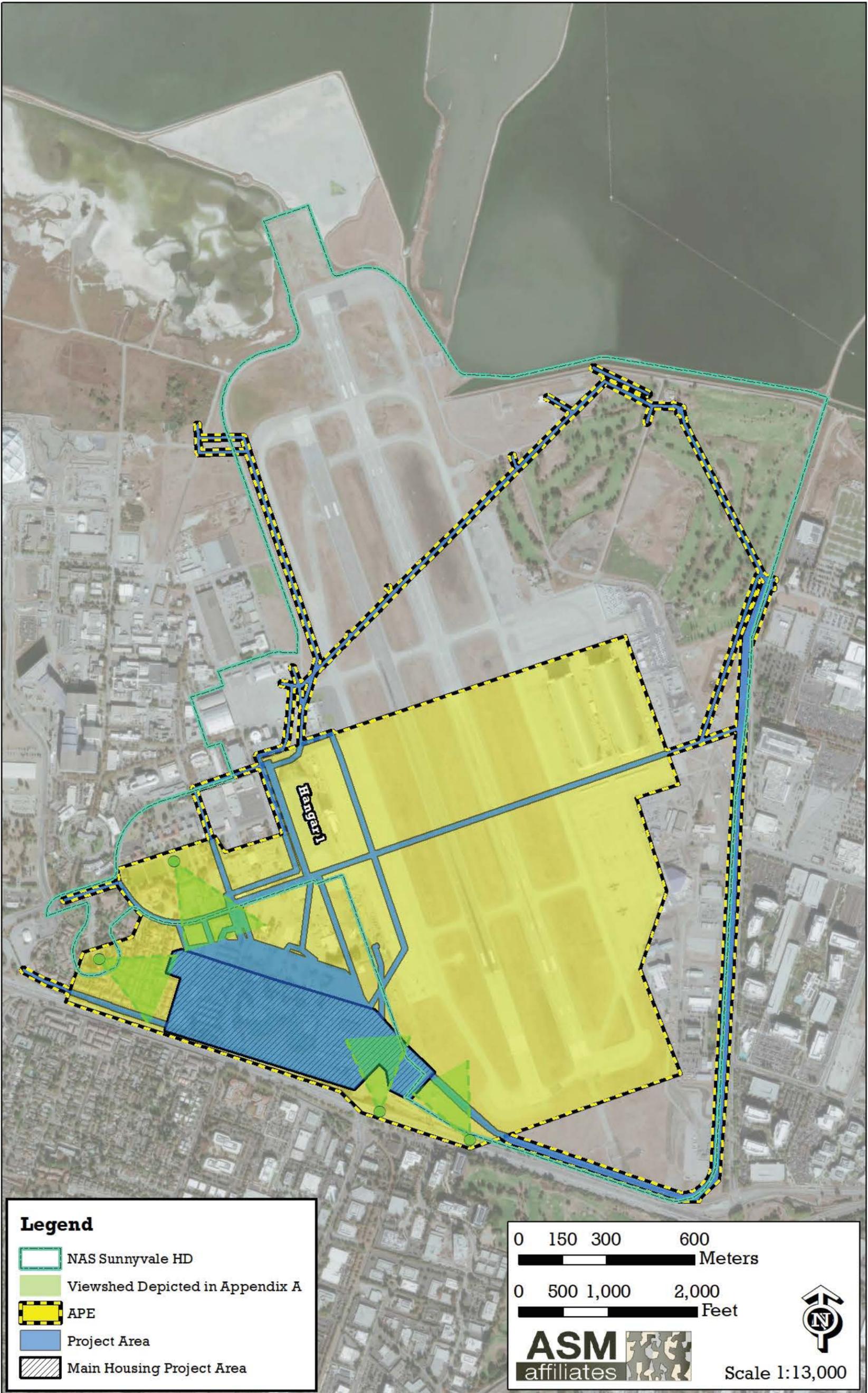
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APPENDICES

APPENDIX A
Height Exhibit
(Prepared by MVHV)



Berry Court



BEFORE

Berry Court



AFTER

NASA Ames Historic District



BEFORE

NASA Ames Historic District



AFTER

101 View One



BEFORE

101 View One



AFTER

101 View One



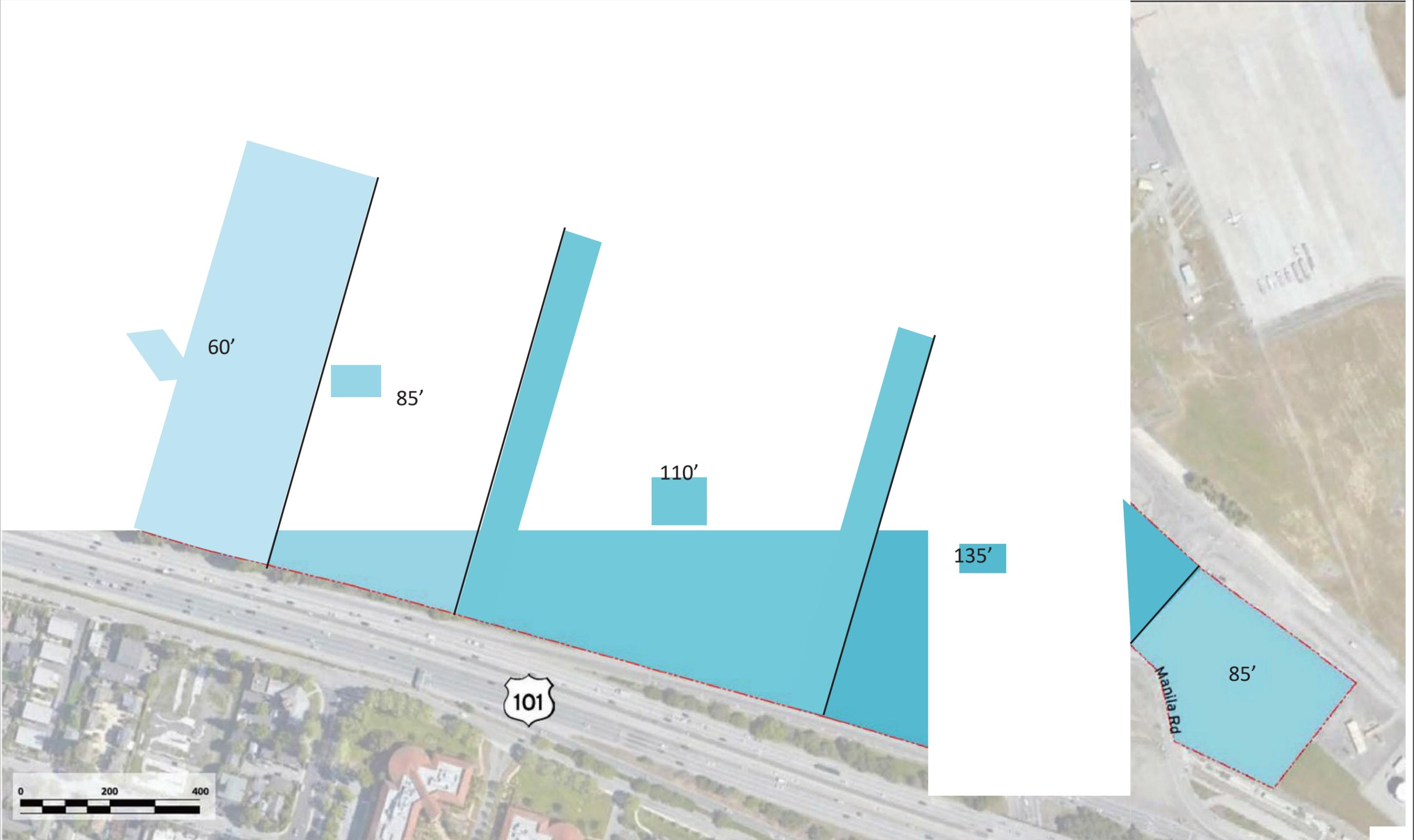
BEFORE

101 View Two



AFTER

Exhibit U – Building Height Restrictions



* Limits do not include elevator penthouses, stair towers, mechanical equipment, or other similar types of structures

APPENDIX B
Project Utility Plan

The following content was redacted from this public posting:

Appendix B: Project Utility Plan

APPENDIX C
NAHC Correspondence

The following content was redacted from this public posting:

Appendix C: NAHC Correspondence

APPENDIX D

California Department of Parks and Recreation 523 Forms

**Contributing Resources to U.S. Naval Air Station Sunnyvale,
California Historic District**

Page 1 of 44

*Resource Name or # (Assigned by recorder)

U.S. Naval Air Station Sunnyvale,
California Historic District

Recorded by: Marilyn Novell and Lisa Demarais

Date: October 25, 2019

 Continuation Update

The information below updates a previous record of the U.S. Naval Air Station Sunnyvale, California Historic District, based on the U.S. Naval Air Station, Sunnyvale, National Register of Historic Places Registration Form, dated February 24, 1994. This update was prepared after conducting an intensive-level pedestrian survey on March 21 and 22, and October 23, 2019, to document a select number of district contributors (those within the Project APE), as listed in the following table:

Contributors to the Historic District Surveyed for this Update

Bldg No.	Description	Year of Construction
1	Hangar 1	1933
5	Water Tower	1932
6	Recycling and Storage	1933
10	Boiler Plant/Heat Plant	1932
15	Fire Station/Laundry	1933
16	Locomotive Crane Shed	1933
17	Admiral's Building	1933
19	Bachelor Enlisted Quarters	1933
20	Bachelor Officers Quarters	1933
21	Bachelor Officers Garage	1933
22	Bachelor Offices Garage	1933
23	Dispensary	1933
24	Ambulance Garage	1933
25	Bowling Alley/Theater	1933
32	North Floodlight Tower	1934
33	South Floodlight Tower	1934
46	Hangar 2	1933
47	Hangar 3	1933
55	Boiler House (east)	1943
105	Airfield Lighting Vault (east)	1947
106	East: Aircraft Compass Calibration Pad (Compass Rose)	1947
Berry Court		
SOQ 1	A Berry Court	1933
SOQ 2	B Berry Court	1933
SOQ 3	C Berry Court	1933
SOQ 4	D Berry Court	1933
SOQ 5	E Berry Court	1933

P1. Other Identifier: U.S. Naval Air Station, Sunnyvale, California Historic District; Moffett Field; NASA Ames Research Center

P2. Location: Unrestricted

***P8. Recorded by:** Marilyn Novell and Lisa Demarais, ASM Affiliates, Inc., 20 N. Raymond Ave., Pasadena, CA 91103

***P9. Date Recorded:** October 25, 2019

P10. Survey Type: Intensive Reconnaissance Other

***P11. Report Citation:** ASM Affiliates, Inc. 2019. *Cultural Resources Technical Report for the Mountain View Housing Ventures LLC Housing Project, NASA Ames Research Center, Moffett Field, Santa Clara County, California*. Prepared for Mountain View Housing Ventures.

The following content was redacted from this public posting:

The bulk of Appendix D: California Department of Parks and Recreation DPR Forms
Appendix E (Confidential Prehistoric Sites and Sensitivity Map)