Building 16 Reuse Guidelines

NASA Ames Research Center, California

prepared for:

NASA/Ames Research Center

prepared by:

Architectural Resources Group

Architects, Planners & Conservators, Inc.

San Francisco, California

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Introduction

NASA Ames Research Center and Architectural Resources Group, Architects, Planners & Conservators, Inc. (ARG) have developed Reuse Guidelines for Building 16 at NASA Ames Research Center, California. This report is one of a series prepared for many of the historic buildings at the site. The Reuse Guidelines have been designed to assist NASA Ames professional staff, tenants, and their consultants in rehabilitating structures on the historic Navy base by identifying character-defining features, outlining the opportunities for reuse and evaluating code deficiencies.

I. Executive Summary

Constructed in 1933 as a part of NASA's construction campaign, Building 16 is a two-story, reinforced concrete building with a colored stucco finish, large, steel-sash, multi-lite pivot windows, and a flat roof. A 1940s wood-frame addition is located at the north end and has a gable parapet. Originally L-shaped in plan, the building is currently characterized by an irregular stepped plan due to the 1940s addition at the intersection of the two wings at the northern portion of the building. In addition to the building addition, exterior modifications in the 1940s resulted in the loss of character-defining features and the current planar appearance of the building's facades. Historically, the north-south wing was the Shop area, and the east-west wing contained the Locomotive and Crane Shed. Today, the building houses the Machine Shop, Carpenter Shop and offices.

The United States Naval Air Station Sunnyvale, California (the historic name of the base) was listed on the National Register of Historic Places (NRHP) as a historic district in 1994 for its important role in the development of U.S. Naval aviation prior to World War II and as a collection of buildings reflective of early twentieth-century military planning, engineering, and construction. (See Appendix 7 for the NRHP Moffett Field District Nomination). Building 16 is a contributor to the district and retains a fair degree of integrity. The building was constructed in 1933. A series of exterior and interior changes and modifications to the building have resulted in the elimination of some character-defining features and a loss of integrity, including: an addition off the north elevation; window replacement; door replacement; and changes to interior finishes.

The building's continued use as a shop and offices is appropriate. Reuse of the building should comply with *The Secretary of the Interior's Standards for Rehabilitation (The Standards)*. The *Standards* can be accessed on the National Park Service website (www.nps.gov) and are presently located at the following URL: http://www.nps.gov/history/hps/tps/tax/rhb. Plans for the reuse of Building 16 should take into consideration the preservation of the building's character-defining and contributing features, including, but not limited to, the overall form of the building, fenestration pattern, materials, and central open interior space. Changes to non-character-defining features may be undertaken, but the impact to the character defining and contributing features should be carefully evaluated. (Character-defining features, including significance and condition ratings are listed in section VII and Appendix 1.)

Future renovations will require Fire/Life Safety and Disabled Accessibility upgrades to comply with current codes. These include, but are not limited to, the addition of fire sprinklers, exit path of travel

and exit door upgrades, and disabled access improvements to door and door hardware, restrooms, and locker rooms. The impact of these upgrades to the character defining and contributing features should be carefully evaluated.

Further analysis is required for the management of hazardous materials and upgrades to the mechanical, electrical and structural systems. Existing mechanical flues, ducts and conduits protruding from windows and exposed on the exterior should be removed. The impact of these upgrades to the character defining and contributing features should also be carefully evaluated.

II. Project Team

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III. Methodology

ARG staff conducted site reviews of Building 16 in January and October 2006. During the site visits, notes were taken on the character-defining features of the building and photographic documentation was completed on the exterior as well as major interior spaces. Documents were provided by NASA Ames Research Center and were used as a general reference in the production of this report. The verification of the accuracy of the documents was not included in the scope of work.

Site reviews were conducted with the understanding that the current use of the building would be continued. The site reviews were limited to a general observation of the buildings and building components and detailed survey of all interior spaces was not included in the scope of work. Furthermore, limited access to some areas of the building were required due to issues of security, privacy, safety, or other limitations.

ARG staff reviewed both primary and secondary research materials at the following institutions:

- 1950 Navy Docks & Yards Micro Film;
- Engineering Documentation Center (located in Building N-213); and
- Ames Imaging Library (located Building in Building N-241).

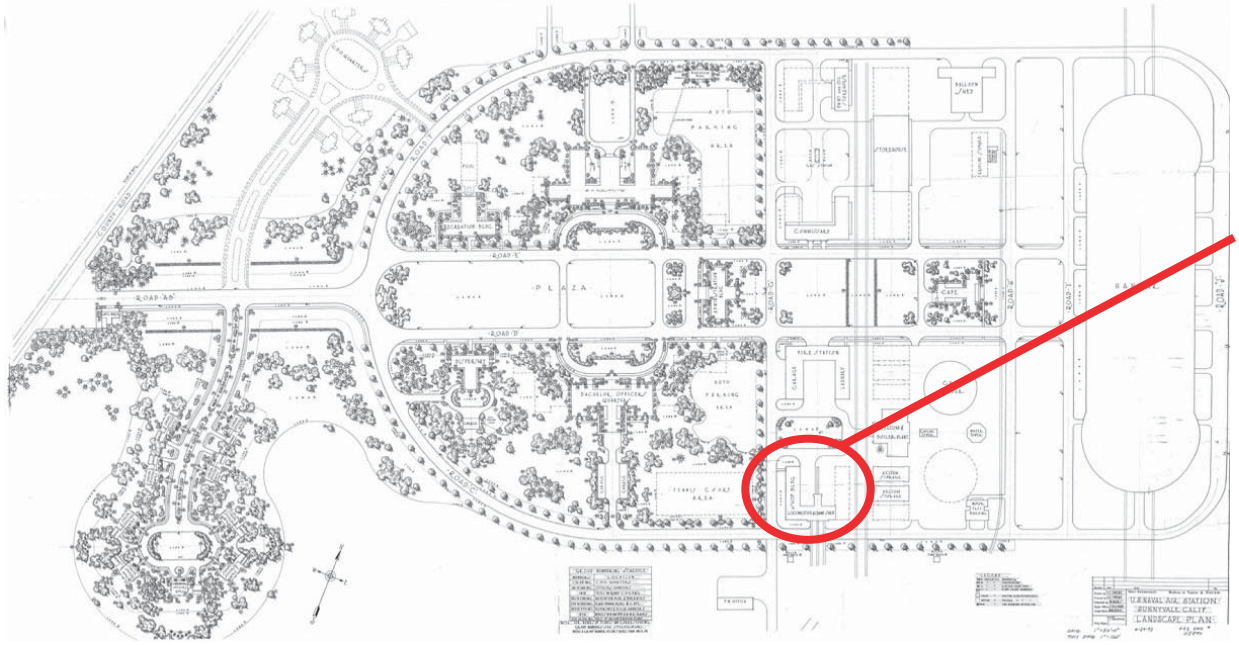
The following documents were utilized as the main sources of information:

- The 1994 National Register of Historic Places Nomination Form for the US Naval Air Station Moffett Field Central Historic District;
- Aerial photographs dating from 1930 through 1982; and
- Architectural Drawings including:
    - Department of the Navy, Bureau of Yards & Docks. U.S. Naval Air Station, Sunnyvale, California. “Loco. & Crane Shed and Shop-Bldg.-Heating.” Drawings dated May 11, 1932; and
    - Department of the Navy, Bureau of Yards & Docks. U.S. Naval Air Station, Moffett Field California. “Building No 16: First Floor Plan Second Floor and Mezzanine.” Drawings dated N/A.

South Elevation of Building 16.

IV. Building 16 Summary

Location:	Shenandoah Plaza, McCord Avenue at Wescot Road
Area:	NASA Ames Research Center – Central Historic District
Date of Construction:	1933
Historic Structure:	Yes
Historic Use:	Shop Building and Locomotive and Crane Shed
Current Use:	Machine Shop, Carpenter Shop, and offices
Hazard Level:	Ordinary
Number of Floors:	Two
1st Floor:	14,025 gross ft^2
2nd Floor:	3,194 gross ft^2
Total:	17,219 gross ft^2
Exterior Materials:	Concrete with integral colored stucco, asphalt shingle and built-up roof
Construction Frame:	Concrete in the original building and wood in addition



"U.S. Naval Air Station, Sunnyvale, Calif., Landscape Plan." 29 April 1933.

V. Historical Background and Site Context

The United States Naval Air Station Sunnyvale, California was commissioned on April 12, 1932. The station was one of two bases constructed to port the Navy's two large airships (dirigibles)—the U.S.S. Macon and the other dirigible, the U.S.S. Akron, which was stationed in Lakehurst, New Jersey. The dirigibles were part of a domestic security program designed by Admiral William A. Moffett. The dirigibles were capable of staying airborne for much longer periods of time than airplanes and were considered ideal for conducting reconnaissance of the nation's coastlines.

The 1933 station was defined by perimeter roads: Wescot Road to the north and west, Bushnell Road to the south and west, and Sayre Avenue to the east. The base was arranged in a formal and hierarchical arrangement typical of American military base design. McCord Avenue, which runs north/south, divided the base into halves; the administration functions were located to the west and the industrial functions, including the massive dirigible hangar, were positioned to east. The western section, including the Administration Building (Building 17), Dispensary (Building 23), Bachelor Officer's Quarters (Building 20), Recreation Building (Building 25), and office building (Building 19) were arranged around a central axis, Shenandoah Plaza. The buildings in the eastern, industrial section, such as the enormous Hangar 1 (the dirigible hangar) and Building 16, were placed in a grid with very little green space or relationship between the buildings. All of the buildings within the original base, with the exception of Hangar 1, were constructed in the Spanish Colonial Revival Style.

Building 16 (Shop Building and Locomotive and Crane Shed) was constructed during the 1931-1933 building

campaign. Plans for Building 16, were approved on May 11, 1932. The building is a large reinforced-concrete structure, located in the southwest corner of the industrial section of Moffett Field. Historically, the building was an "L" shaped footprint constructed as part of the 1933 construction campaign, in the Spanish Colonial Revival Style. An addition was constructed on the north elevation in the 1940s.

The United States Naval Air Station Sunnyvale, California was listed as a historic district in the National Register of Historic Places (NRHP) in 1994. The Period of Significance for these structures is 1930–1935 and 1942–1946, which corresponds to the period of Navy occupation. Building 16 is a contributor to the district.

VI. Building Description

Completed in 1933, Building 16 served as the Shop Building, Locomotive and Crane Shed, and Paint and Varnish Shop. This one-story building with partial second floor has a modified "L" shaped footprint divided into two wings. The structure is constructed with reinforced concrete walls sheathed in stucco with a flat roof over the original building. The north-south wing was the location of the Shop Building and the Paint and Varnish Shop. The east-west wing was the location of the Locomotive and Crane Shed. In the 1940s, an addition was constructed at the intersection of the wings on the north elevation. The building has recently been upgraded and has a fire sprinkler and fire alarm system.

Historic Appearance of the Shop Building
The primary (west) elevation was the location of the Shop Building. This elevation was punctuated by a series of steel-frame windows and doors. Historically, a single, steel-frame, multi-lite sash door with sidelights and transom was located at the far north end. Adjacent to this door was a large, steel-frame, multi-lite window with operable awnings, followed by a paired, multi-lite, sash door, with sidelights and transom. Next to this door was a large, steel-frame, multi-lite window with operable awnings. A paired, steel-frame, multi-lite, sash door, with sidelights and transom was located adjacent to this window. Two, large, metal-fame, multi-lite, windows with operable awnings were located on the south end of the elevation.

The Locomotive and Crane Shed occupied the majority of the east-west wing. This portion of the building had a "T" shaped floor plan and was two stories in height with a stepped parapet roof. A clerestory composed of steel-frame, multi-lite, awning windows illuminated the partial second floor and mezzanine. Three, large, multi-lite, windows with operable hoppers were located on the west end of the south elevation. Adjacent to these windows were three, metal, overhead garage doors. Three locomotive tracks ran north-south through the overhead garage doors. Adjacent to the overhead garage doors was a single, steel-frame, multi-lite window with operable hoppers.

The north elevation was divided into two bays. Two, large, steel-frame, multi-lite windows with operable hoppers punctuated the far west bay. The east bay had a metal, overhead garage door located on the projecting bay of the Locomotive and Crane Shed. The overhead garage door was flanked by two, large, steel-frame, multi-lite windows with operable hoppers.

The east elevation was divided into two bays. The north bay was punctuated by a series of five doors. A single, steel-frame, multi-lite, sash door, with sidelights and transom was located at the far north end. This door was followed by a series of four, paired, steel-frame, multi-lite doors with sidelights and transom. Two, steel-frame, multi-lite windows with operable hoppers punctuated the south bay.

Modifications to the Shop Building
The building has undergone several phases of exterior and interior alterations in response to a need for additional space and interior upgrades. In the 1940s, an addition was constructed between the two wings along the north elevation. This addition was of wood construction, with a gable roof covered with composite shingles. The exterior walls are wood studs with stucco finish. A pair of large, metal, multi-lite, garage doors are located at the center of this elevation, flanked by two, paired, multi-lite, sash doors.

In addition to exterior modifications, the interior has undergone an extensive series of alterations resulting in the elimination of many character-defining features. At various times, alterations were made to the offices, restrooms, and hallways located in all wings. Further alterations were made to the interior materials and fixtures with the replacement of floor and ceiling materials, light fixtures, and the addition of partition walls, altering the interior floor plan. A number of windows and doors have been altered on the exterior impairing the building's overall integrity. These alterations were made as upgrades, but have resulted in the elimination of interior character-defining features.

Current Appearance of the Shop Building
Alterations to the exterior and interior materials of Building 16 have resulted in the impairment of a number of character-defining features, although the overall floor plan and use of the building remains relatively unchanged from its original design and appearance. The extant original, exterior, character-defining features include: stepped, parapet roof in the Spanish Colonial Revival Style; steel-frame, multi-lite, windows with operable hoppers; paired, multi-lite, sash doors; and locomotive tracks running through the interior of the Locomotive and Crane Shed. The building's exterior walls are reinforced concrete sheathed in stucco. Two roof types are evident on the structure, a flat roof covers the majority of the structure with a stepped parapet roof located over the Locomotive and Crane Shed and a gable roof sheathed in composite shingles over the 1940s addition. The windows are a combination of historic, steel-frame, multi-lite windows with operable hoppers, and steel-frame sliders.

The primary (west) elevation is predominantly intact. A square, steel-frame, slider window is located on the far north end. Adjacent to this window is a steel-frame, glazed door. Adjacent to this door are two, steel-frame, slider windows. South of these windows are a pair of steel-frame, multi-lite, sash doors, with sidelights and transom. A large, steel-frame, multi-lite window with operable hoppers is located adjacent to this door. A second, pair of steel-frame, multi-lite, sash doors, with multi-lite sidelights and transom are next to this window. The south end is punctuated by two, steel-frame, multi-lite windows with operable hoppers.

The south elevation remains largely intact, with all of its original windows and overhead garage door openings extant. All three original, steel-frame, multi-lite windows with operable hoppers on the west end are intact. An air conditioning unit has been attached to the exterior of the window adjacent to the overhead garage doors, resulting in the elimination of one of the hopper windows. The central, overhead

garage door is intact. However, the two flanking overhead garage doors have been infilled. The east end is punctuated by a steel-frame, multi-lite window with operable hoppers.

The north elevation is divided into four bays. The original window located on the end of the far west bay has been replaced with two, steel-frame, slider windows. Adjacent to these windows is a large, steel-frame, multi-lite window with operable hopper. A pair of large, metal, multi-lite, garage doors are located in the center of the adjacent bay. Immediately west of this doorway are a pair of metal, sash doors. The original pair of multi-lite, sash doors located to the east of this central entrance have been significantly damaged; one of the doors is missing and has been replaced with a plywood cover. The original overhead garage door of the Locomotive and Crane Shed has been replaced with a single, sash door. Adjacent to this door on the east side is a steel-frame, slider window. The door and window are covered with a small overhang. The far east bay is punctuated by two, paired, steel-frame, multi-lite, sash doors with sidelights and transom.

The east elevation is divided into four bays. The far south bay is punctuated with a steel-frame, multi-lite window with operable hoppers. Adjacent to this window is an attached storage shed of wood construction. The second (central) bay has a wood storage shed attached to the exterior of the projecting bay of the Locomotive and Crane Shed. The multi-lite clerestory is visible from this elevation. The third bay located on the far north end has two, large, multi-lite rectangular windows. The fourth bay on the far north end has a single, steel-frame, multi-lite, sash window. On the north end is a single door with multi-lite sidelights and transom.

Exterior Landscape/Setting Modifications
The location of Building 16 remains unchanged from the time of its initial construction. Historically, the landscaping consisted of a small lawn that wrapped around the west elevation with surface parking and roads surrounding the remainder of the structure. The landscaping for Building 16 has not changed since its initial design. Today, a simple grass lawn borders the buildings primary (west) elevation with surface parking and roadways located adjacent to the east, north, and south elevations.

Overall, in form, material, and details, the exterior portion of Building 16 retains a fair amount of its historic appearance.

VII. Historic Character-Defining Features

Refer to Appendix 1 for a matrix of character defining features, including specific location of building components. For illustrated plans and elevations, see Appendix 3: Significance Diagrams.

Alteration of significant and contributing building components shall be in keeping with original design, configuration and material. For more information, see the S*ecretary of the Interior's Standards for the Treatment of Historic Properties. The Standards* can be accessed on the National Park Service website (www.nps.gov) and are presently located at the following URL: http://www.nps.gov/history/hps/tps/tax/rhb.

See Appendix 5, Current Conditions *Photographs* for photos showing the character-defining building components listed below. For building floor plans, see Appendix 2, Existing Floor Plans and Rehabilitation.

1. Significant Character-Defining Features: these are the features that convey the building's historic character and significance. Alteration or removal of these features could result in a loss of integrity and should be avoided.

The following are significant features:

- Water table base course (exposed concrete);
- Shaped parapets.
- Cement plaster wall surface;
- Multi-lite metal windows with operable awning segments over metal panels, with multi-lite metal doors;
- Multi-lite metal sash clerestory windows with operable awning segments (center block);
- Multi-lite metal doors;
- Collection boxes;
- Metal roll-up doors (center block);
- Large, open volume of machine shop and addition;
- Exposed concrete beams, joists, and roof deck at telecommunications space and machine shop.
- Concrete flooring with 3 pairs of locomotive rails recessed in floor (main space);

Illustration 1: The shaped parapets at the original building are significant features. (Source: ARG, October 2006)

Illustration 2: Collection boxes are a significant feature. (Source: ARG, October 2006)

Illustration 3: Multi-lite metal sash windows with operable awning segments are a significant feature. (Source: ARG, October 2006)

Illustration 4: Skylights are a significant feature. (Source: ARG, October 2006)

Illustration 6: Exposed wood beams and joists are a significant feature. (Source: ARG, October 2006)

Illustration 5: Multi-lite metla doors are a significant feature. (Source: ARG, October 2006)

- Exposed wood beams, joists, and decking (north wing);
- Mezzanine (center block) configuration;
- Crane assembly ("I" beam rails and crane) (Mezzanine);
- Painted concrete floor in machine shop.

2. Contributing Features: these features are important elements that contribute to the understanding of the original design. Alteration or removal of these features may be necessary for programmatic or building system requirements. However, removal should be minimized and where necessary mitigated.

The following are contributing features:

- Multi-lite metal doors and frames, including shop door;
- Shaped parapet (at addition);
- Cement plaster wall surface (at addition);
- Multi-lite wood sash windows (at addition);
- Collection boxes (at addition);
- Asphalt shingle roof with skylights (at addition);
- Multi-lite metal sash windows with operable awning segments over metal panels, with multi-lite metal doors (at east elevation-north block);
- Rough surface concrete walls (building interior);
- Configuration of office space (converted from Locomotive & Crane Shed);
- Exposed steel columns (in main space);
- Exposed concrete columns at mezzanine and machine shop;
- Exposed wood posts (at north wing);
- Exposed steel beams and joists (main space);
- Wood floor framing and deck (main space);
- Wood stairs (one to Mezzanine, one to second floor); and
- Wood flooring at Mezzanine.

3. Tertiary Features: these features are original elements of the building that are of a lower importance relative to the

understanding of the original design. Alteration or removal of these features, if necessary, would have a limited affect on the integrity of the building.

The following are tertiary features:

- Smoke door.

4. Non-Contributing Features: these features are elements of the building that have been remodeled or areas where additional alteration would not affect the original integrity of the building. In some cases, removal of the non-contributing features may be beneficial to the historic integrity of the building.

The following are non-contributing features:

- Metal sash slider replacement windows;
- Wood door and frame (at north elevation);
- Canopy at north elevation;
- Metal door with glazing and frame (north elevation addition);
- Wood frame pipe storage shed with wood doors and corrugated metal roof; and
- Dust collector and duct;
- 6/6 double-hung metal sash window and screen;
- Metal door with glazing (at east elevation-north block);
- Steam pipe entrance within sheet metal enclosure;
- Sprinkler riser;
- Metal door and frame (at west elevation);
- Paneled access door at interior telecommunications space (converted from storage space);
- Telecommunications equipment at interior telecommunications space;
- Carpet at north wing of office space;
- Office doors;
- Sheet vinyl at Mezzanine;
- Doors and lockers at Mezzanine;
- Carpet and vinyl tile flooring at second floor (at center portion of building);

- Mechanical equipment at machine shop; and
- Configuration, flooring, walls, ceilings, interior doors and interior windows at support Spaces (offices, toilet and locker room at north portion of west wing).

5. Conservation of Intact Historic Fabric

The following materials require special care and treatment in their maintenance and rehabilitation:

- Cement plaster exterior wall finish
- Steel sash windows

VIII. Opportunities for Reuse

Building 16's current use as a wood shop and service facility serves a practical function that could be useful for future uses of the NASA Ames Research Center. Alternative uses for Building 16 could include light manufacturing and industrial uses, taking advantage of the relatively large, open, high spaces. The northwest portion of the building is currently divided into offices and does not take advantage of the architectural features of the building, including the high ceilings and large banks of multi-lite windows. Offices at the south elevation have a poor functional layout (access through adjoining offices is required). A redesign of the Offices into a more functional arrangement could improve the buildings use.

IX. Code Evaluations and Recommendations

A. Fire/Life Safety

Description

Building 16, constructed in 1933, is located in the historical Shenandoah Plaza. Originally the building had an "L" shaped plan with a large addition of Carpenter Shop in the 1940s. The building has recently been upgraded and has a fire sprinkler and fire alarm system. The building has a gross floor area of 17,219 ft² and consists of concrete slab, concrete exterior walls of the original building, concrete floors, wood stud walls and wood frame roof of the addition.

Building 16 is a mixed occupancy building with the Office areas classified as B occupancy, and the Machine Shop and the Carpenter Shop classified as F1. The construction type is Type V-N. The following review is based on the occupancies remaining the same. If a change in occupancy is proposed, further detailed code analysis will be required. Section IX B. includes a glossary of building construction types and occupancy types that exist within the scope of this report.

California's State Historical Building Code (SHBC), located in chapter 34 of CBC, shall be used

in conjunction with the California Building Code as stated in section 8-102.1: "These regulations are applicable for all issues regarding building code compliance for qualified historical buildings or properties. These regulations are to be used in conjunction with the regular code to provide alternatives to the regular code to facilitate the preservation of qualified historical buildings or properties. These regulations shall be used whenever compliance with the regular code is required for qualified historical buildings or properties."

Analysis

1. Occupancy and Construction type: The building is currently classified as B and F-1 occupancies, and Type V-N construction. Table 5-A of the CBC allows Occupancies B and F-1 to be construction type V-N.

Recommendation: The current occupancy type is permitted for the building construction type.

2. Location on Property: CBC Table 5-A allows the exterior bearing walls to be NR for both F-1 and B Occupancies when the distances from property lines are more than 20 ft. Exterior openings for both F-1 and B Occupancies are required to be protected less than 20 ft. from property lines. Building 16 is separated more than 20 ft. in width on four sides and does not need exterior opening protection.

Recommendation: Modifications to the building based on its location on the property are not required.

3. Occupancy Separation: CBC Table 3-B requires occupancy separation to be One-Hour between group B and F, Division 1 woodworking establishments with more than 2,500 sq. ft. Building 16's Carpenter Shop area is 2,786 ft^2. SHBC Section 8-302.3 and 8-302.4 also allow historic buildings provided with an approved automatic fire sprinkler system to be unlimited in floor area without fire resistive area or occupancy separations.

Recommendation: Required occupancy separations between Group B and F are not required with the existing fire sprinkler system.

4. Allowable Area: According to CBC Table 5-B Allowable area for both B and F-1 Occupancies/ Type V-N 8,000 ft^2. CBC Section 505.3 allows the area to be doubled in buildings of more than one story if the building is provided with an approved automatic sprinkler system throughout. The Section 505.2 allows unlimited area for B Occupancy if the building is entirely surrounded and adjoined by public ways or yards not less than 60 ft. in width, in addition to a fire sprinkler system. There is one small structure to the east, about 20 ft. away from Building 16. SHBC Section 8-302.3 and 8-302.4 also allow historic buildings provided with an approved automatic fire sprinkler system to be unlimited in floor area without fire resistive area or occupancy separations. The intent of this exception is to protect the historic integrity of the building.

Recommendation: Building 16 is within the allowable area with the existing side yard setbacks

and fire sprinkler system.

5. Allowable Height: Table 5-B of the CBC limits the number of stories of the building to two stories for Construction Type V-NR. SHBC section 8-302.5 allows the height of the structure to not be limited, "provided such height or number of stories does not exceed that of its designated historical design."

Recommendation: The building is within the allowable height.

6. Means of Egress Identification: Section 1003.2.8.2 requires the path of travel to and within exits to be identified with code compliant exit signs. Exit signs are not provided throughout the building and most of them are not code compliant.

Recommendation: Provide code compliant exit signs throughout the building.

7. Doors: CBC Section 1003.3.1.3 requires a clear opening of 32 in. SHBC section 8-603.2 allows certain doors to have a clear dimension as narrow as 30 in. CBC section 1003.3.1.5 requires the door to swing in the direction of egress. Section 1003.3.1.6.2 requires a level landing on each side of all doors that are part of the means of egress system. Currently, not all of the exit doors meet these requirements.

Recommendation: A detailed survey of all doors should be conducted to confirm compliant door width, clearances, and hardware operations.

8. Stairs and Guardrails: CBC section 1003.3.3.3 requires the rise and run of the stair to be a minimum of 7 in. and 11 in., respectively. CBC section 1003.3.3.6.1 requires all stairs (two or more risers) to have a handrail on each side. SHBC section 8-502.1 exception 5 allows the enforcing agent to accept "any other condition which will allow or provide for the ability to quickly and safely evacuate any portion a building with out undue exposure and which will meet the intended exiting and life safety stipulated by these regulations." Currently, only one of the stairs to second floor has handrails.

Recommendation: Provide code-compliant handrails on the interior sides of stairs.

9. Ramps: There are no ramps at Building 16.

10. Travel distance: Section 1004.2.5.2.2 requires that the maximum travel distance in sprinklered buildings not exceed 250 ft. Travel distance is that distance an occupant must travel from any point within occupied portions of the exit access to the door of the nearest exit. Where path of travel includes unenclosed stairways or ramps the distance of travel on such components must be included in the travel distance measurement. The interior stairways are well within the travel distance required.

Recommendation: Travel distance for existing building appears to be compliant.

11. Fire Alarm: A fire alarm system has been provided.

Recommendation: The existing fire alarm system appears to be compliant.

Summary of Fire/Lifr Safety Recommendations

1. Occupancy and Construction type: The current occupancy type is permitted for the building construction type.

2. Location on Property: Modifications to the building based on its location on the property are not required.

3. Occupancy Separation: Required occupancy separations between Group B and F are not required with the existing fire sprinkler system.

4. Allowable Area: Building 16 is within the allowable area with the existing side yard setbacks and fire sprinkler system.

5. Allowable Height: The building is within the allowable height.

6. Means of Egress Identification: Provide code compliant exit signs throughout the building.

7. Doors: A detailed survey of all doors should be conducted to confirm compliant door width, clearances, and hardware operations.

8. Stairs and Guardrails: Provide code-compliant handrails on the interior sides of stairs.

9. Ramps: There are no ramps at Building 16.

10. Travel Distance: Travel distance for existing building appears to be compliant.

11. Fire Alarm: The existing fire alarm system appears to be compliant.

B. Glossary of Terms: Construction and Occupancy Types

The following is a summary description of the Construction and Occupancy Types for Building 16.

Glossary of Construction Types, referenced from the 2001 California Building Code:

Type V-N	Type V buildings may be of any materials allowed by the 2001 CBC. Materials of construction and fire-resistive requirements shall be as specified in CBC Section 601. Structural framework shall be of steel or iron as specified in CBC Chapter 22, concrete as specified in CBC Chapter 19, masonry as specified in CBC Chapter 21, or wood as specified in CBC Chapters 6 and 23.

Glossary of Occupancy Types: Referenced from the 2001 California Building Code

Group B	A building or structure, or a portion thereof, for office, professional or service-type transaction, including storage of records and accounts; eating and drinking establishments with an occupant load of less than 50.nry as specified in CBC Chapter 21, or wood as specified in CBC Chapters 6 and 23.

C. Disabled Accessibility

Analysis

1. Accessible Parking: CBC section 1129B.1 requires that where parking is provided for the public as clients, guests, or employees' accessible parking will also be provided. Section 1129B.4 requires one van accessible space for every eight spaces, but not less than one. Currently, there are no clear parking stalls around building 16; old and new parking strips overlap each other, and there is no accessible parking provided.

> *Recommendation:* Provide two regular and one van accessible parking stalls. Suggested area is shown on Appendix 2/ Existing Floor Plan & Rehabilitation.

2. Accessible Route: CBC Section 1114B.1.2 requires an accessible route of travel to all portions of the building that are required to be accessible. Section 1133B gives all the requirements for entrances, exits, and path of travel. The SHBC Section 8-604 allows for equivalent facilitation to be provided in lieu of a path of travel to all areas of the building where providing access "would threaten or destroy the historical significance or character-defining features of the building or site or cause unreasonable hardship." Currently the second floor is not accessible.

Recommendation: Provide barrier free accessible path of travel without any abrupt vertical changes, in addition to non-slip surface, with slope and width as per CBC, Chapter 11B inside and to the building. This requirement can likely be provided without impacting the historic integrity of the building. The accessible route should extend to the second floor of the building if it is used as part of the public facility. An accessible elevator, located close to the accessible entry is recommended.

3. Doors: Section 1133B.2.4 of the CBC requires a level landing on each side of a door. Section 1133B.2.4.2 requires maneuvering clearance to be 60 in. on the swing side of interior doors and 48 in. on the non-swing side of the door with a closer (44 in. without closer). The clearance on the swing side shall extend 18 in. beyond the strike side of the door for interior doors and 24 in. on exterior doors. The clearance for the non-swing side shall extend 12 in. when the door has a closer. Section 1133B.2.5.2 requires hardware that is hand operable with a single effort without requiring the ability to grasp. Currently most of the doors meet these requirements, but few of them have code compliant lever-handled locksets. Further analysis should be provided for the doors currently not accessible due to temporary furniture and/or storage.

Recommendation: All doors should have code-compliant hardware. Provide a lever-handled lockset for all the doors where accessibility is required. Further analysis should be conducted on the doors currently not accessible.

4. Stairs: Section 1133B.4.4 of the CBC requires striping for the visually impaired on the top and bottom nosing of each run of interior stairs. CBC Section 1133B.4.2 requires handrails to extend 12 in. beyond the top nosing and 12 in plus the tread width, beyond the bottom nosing. Interior stairs do not meet these requirements.

Recommendation: Modify interior stair handrail configuration to comply with CBC Section 1133B.4.2. Provide striping for the visually impaired on the lowest and upper most treads of a run of stairs.

5. Restrooms: CBC, Section 1115B.1 requires buildings which are required to be accessible to have accessible restrooms. Accessible restrooms are not provided in the building.

Recommendation: Modify one of the restrooms as per Accessibility requirements.

6. Signage: Sections 1103.2.4, 1127B.3, 1129B.5, and 1115B.5 of the CBC require code-compliant signage identifying accessible entrances, parking, areas of refuge, passenger loading zone, toilet and bathing facilities, and exit signage at the exit stairs. In addition to the international symbol of accessibility, each unisex toilet or bathing room shall be identified by a tactile sign including raised letters and Braille. Currently, there is no accessible signage in Building 16.

Recommendation: Provide code compliant signage at the building stairs, entrances and toilet rooms.

Summary of Disabled AccessibilityRecommendations

1. Accessible Parking: Provide two regular and one van accessible parking stalls. Suggested area is shown on Appendix 2/ Existing Floor Plan & Rehabilitation.

2. Accessible Route: Provide barrier free accessible path of travel without any abrupt vertical changes, in addition to non-slip surface, with slope and width as per CBC, Chapter 11B inside and to the building. This requirement can likely be provided without impacting the historic integrity of the building. The accessible route should extend to the second floor of the building if it is used as part of the public facility. An accessible elevator, located close to the accessible entry is recommended.

3. Doors: All doors should have code-compliant hardware. Provide a lever-handled lockset for all the doors where accessibility is required. Further analysis should be conducted on the doors currently not accessible.

4. Stairs: Modify interior stair handrail configuration to comply with CBC Section 1133B.4.2. Provide striping for the visually impaired on the lowest and upper most treads of a run of stairs.

5. Restrooms: Modify one of the restrooms as per Accessibility requirements.

6. Signage: Provide code compliant signage at the building stairs, entrances and toilet rooms.

D. Energy Conservation

Description

Building 16 was designed with some energy-conserving features; monolithic concrete floors throughout the building and thick concrete walls contribute to passive climate control for the building. Insulation in the exterior walls could not be confirmed without destructive testing; interior partitions may have received an insulation upgrade, as the building has been updated over the years. Window sashes are single glazed. Energy efficient fluorescent lighting is the primary lighting source.

Analysis

As a contributing building in the Historic District, Building 26 is exempt from energy code requirements. However, measures to reduce energy consumption and provide for user comfort are recommended.

> *Recommendation:* Recommended actions to increase energy-efficiency and improve occupant comfort may include insulating the ceiling and exterior walls during future construction work. The existing steel sash windows are historic features and should be repaired and weather-stripped, rather than replaced. High efficiency mechanical systems should be used to replace mechanical systems that have reached the end of their useful life.

X. Future Studies Needed

A. Hazardous Materials

Although a hazardous materials report has not yet been completed, there are several types of historical materials and finishes that are known to contain asbestos and other hazardous materials in the building construction. The painted surfaces in the building likely have some lead-based paint residues, and should be tested.

It is recommended that a complete hazardous materials report be completed on the building.

B. Mechanical and Electrical Systems

The mechanical and electrical systems were not inspected as part of this report. It is assumed that should the rehabilitation and reuse of Building 26 be undertaken, it will entail the installation of an upgrade to mechanical and electrical systems, and potentially the plumbing drainage/waste system. All new mechanical and electrical systems should be designed to preserve the character of the significant materials and spaces identified in this report.

C. Structural Systems

Building 16 is a comprised of wood framed and concrete walls with concrete floors. The roof structure consists of a combination of wood framing and concrete assemblies. Overall, the building appears to be structurally in good condition. In the course of rehabilitating the building, the structural system should be analyzed for seismic and gravity load deficiencies and reinforced as necessary. Strengthening provisions should be designed to preserve significant materials and elements.

NASA Ames Research Center
Building B-16 Reuse Guidelines

Appendix 1. Character-Defining Features

Character-Defining Features

Elements	Significance	Condition	Comments
Exterior			
North Elevation - first block from east			
Water table base course	S	G	
Cement plaster surface	S	G	
Window/door assembly:			
Multi-lite metal windows with operable awning segments over metal panels, with multi-lite metal doors	S	F	louvered openings added to metal panels, non-contributing hardware
Collection box	S	F	downspout separated at base
North Elevation - second block from east			
Water table base course	S	G	
Cement plaster surface	S	G	
Window/door assemblies:			
Multi-lite metal windows with operable awning segments over metal panels, with multi-lite metal doors	S	F	one door panel removed and replaced with wood door and frame
North Elevation - center/third block			
Water table base course	S	G	
Cement plaster surface	S	G	
Windows:			
Metal sash slider replacement Window	N	G	
Doors:			
Wood door and frame	N	F	
Canopy	N	F	
North Elevation - addition			
Cement plaster surface	C	G	
Doors:			

Significance Rating
S=Significant
C=Contributing
T=Tertiary
N=Non-contributing

Condition Rating
G=Good
F=Fair
P=Poor

Multi-lite metal doors and frame	C	F	one door panel fixed open and opening infilled with fans
Multi-lite metal shop door and frame	C	F	
Metal door with glazing and frame	N	F	
Shaped parapet	C	G	
North Elevation - west block			
Water table base course	S	F	
Cement plaster surface	S	G	
Windows:			
Multi-lite metal sash windows with operable awning segments	S	F	glazing replaced with non-contributing "orange peel" glass, screen assemblies outside awning segments in poor condition
Metal sash slider replacement windows	N	G	
East Elevation - first block from south			
Water table base course	S	G	portion behind the shed not accessible
Cement plaster surface	S	G	
Windows:			
Multi-lite metal sash windows with operable awning segments	S	F	one behind the shed, not accessible
Wood frame pipe storage shed with wood doors and corrugated metal roof	N	F	
East Elevation - second block from south			
Cement plaster surface	S	G	
Water table base course	S	G	
Collection box (above first block roof)	S	P	
East Elevation - center block			

Significance Rating
S=Significant
C=Contributing
T=Tertiary
N=Non-contributing

Condition Rating
G=Good
F=Fair
P=Poor

Water table base course	S	G	portion behind the shed not accessible
Cement plaster surface	S	G	
Windows:			
Multi-lite metal sash windows with operable awning segments	S	F	portion behind the shed not accessible
Multi-lite metal sash clerestory windows with operable awning segments	S	G	
Wood frame pipe storage shed with wood doors and corrugated metal roof	N	F	
Collection box (above second block roof)	S	G	
East Elevation - Addition			
Cement plaster surface	C	F	
Windows:			
Multi-lite wood sash windows	C	F	dust collector penetrates thru window
Dust collector and duct	N	G	
Collection boxes	C	G	
Asphalt shingle roof with skylights	C	F	
East Elevation - north block			
Water table base course	S	G	
Cement plaster surface	S	G	
Windows:			
6/6 double hung metal sash window with screen	N	F	
Doors:			
Metal door with glazing	N	F	
Window/door assembly:			

Significance Rating
S=Significant
C=Contributing
T=Tertiary
N=Non-contributing

Condition Rating
G=Good
F=Fair
P=Poor

Multi-lite metal windows with operable awning segments over metal panels, with multi-lite metal doors	C	F	south window removed and replaced with non-contributing 6/6 double hung metal sash window with screen and metal panel with duct hood penetration, north window glazing replaced with non-contributing "orange peel" glass, screen assembly outside awning segment in poor condition
South Elevation			
Water table base course	S	G	
Cement plaster surface	S	G	
Windows:			
Multi-lite metal sash windows with operable awning segments	S	F	window mounted air conditioner (west block), some glazing replaced with non-contributing louvered openings (east block)
Doors:			
Metal roll-up doors (center block)	S	P	one exposed, two entirely concealed behind concrete and cement plaster infilled openings
Steam pipe entrance within sheet metal enclosure	N	F	
Shaped parapets	S	G	
Sprinkler riser	N	F	
West Elevation			
Water table base course	S	G	
Cement plaster surface	S	G	

Significance Rating
S=Significant
C=Contributing
T=Tertiary
N=Non-contributing

Condition Rating
G=Good
F=Fair
P=Poor

Windows:			
Metal sash slider replacement Windows	N	G	
Multi-lite metal sash windows with operable awning segments	S	F	
Multi-lite metal sash clerestory windows with operable awnings segments (center block)	S	P	north window removed (including awning operation hardware) and replaced with plywood panel and window mounted air conditioner, some glazing replaced with non-contributing "orange peel" glass
Doors			
Metal door and frame	N	G	
Window/door assembly:			
Multi-lite metal windows with operable awning segments over metal panels, with multi-lite metal doors	S	F	awning segment over north door replaced with non-contributing louvered opening
Collection boxes	S	F	North downspout separated at base
Interior			
Telecommunications space (converted from storage space)			
Open volume	S	G	
Flooring:			
Concrete floor	-	-	not accessible for review
Rough surface concrete walls	C	G	added non-contributing partial height furred walls for hanging equipment racks
Exposed concrete beams, joists, and roof deck	S	G	

Significance Rating
S=Significant
C=Contributing
T=Tertiary
N=Non-contributing

Condition Rating
G=Good
F=Fair
P=Poor

Telecommunications equipment	N	G	
Office space (converted from Locomotive & Crane Shed)			
Configuration	C	F/P	
Flooring:			
Concrete flooring with 3 pairs of locomotive rails recessed in floor (main space)	S	F/P	
Carpet (north wing)	N	F	
Walls:			
Exposed steel columns (main space)	C	F	one column removed
Exposed wood posts (north wing)	C	G	
Rough surface concrete	C	G/F	
Office partitions	N	F	
Ceilings:			
Exposed steel beams and Joists, Wood floor framing and deck (main space)	C	G	
Exposed wood beams, joists, and decking (north wing)	S	F	
Multi-lite metal sash windows with operable awning segments	S	F	
Doors:			
Smoke door	T	G	
Office doors	N	G/F	
Window/door assemblies:			
Multi-lite metal windows with operable awning segments over metal panels and integral with multi-lite metal doors (enclosed within addition)	S	P	
Wood stairs (one to mezzanine, one to second floor)	C	F	non-contributing plywood enclosure and door added to stair to second floor
Mezzanine (Center Block)			

Significance Rating
S=Significant
C=Contributing
T=Tertiary
N=Non-contributing

Condition Rating
G=Good
F=Fair
P=Poor

Confirguration	S	P	
Flooring:			
Wood	C	P	
Sheet vinyl	N	F	
Walls:			
Exposed concrete columns	C	F	
Rough surface concrete	C	F	
Exposed concrete beams, joists, and roof deck	C	G	
Crane assembly (“I” beam rails and crane)(mezzanine)	S	F	
Doors	N	P	
Lockers	N	F	
Second Floor (center block)			
Confirguration	C	P	office partitions added
Flooring:			
Carpet	N	F	
Vinyl tile flooring	N	F	
Rough surface concrete walls	C	F	
Exposed concrete beams, joists, and roof deck	C	G	
Addition			
Large open volume	C	G	
Concrete flooring	C	F	
Walls:			
Exposed concrete water table base course	S	F	
Cement plaster surface	S	F/P	
Exposed wood framing and sheathing	C	G	
Exposed wood trusses, purlins, and roof sheathing	C	G	4 corrugated plastic skylights
Machine shop (converted from paint & varnish shop)			

Significance Rating
S=Significant
C=Contributing
T=Tertiary
N=Non-contributing

Condition Rating
G=Good
F=Fair
P=Poor

Large open volume	S	G	
Painted concrete floor	S	F	
Walls:			
Exposed concrete columns	C	G	
Rough surface concrete walls	C	G	
Exposed concrete beams, joists, and roof deck	S	G	
Mechanical equipment	N	G	
Support spaces (offices, toilet, locker room) at north portion of west block			
Configuration	N	F	
Flooring	N	F	
Walls	N	F	
Ceilings	N	F	
Interior doors	N	F	
Interior windows	N	F	

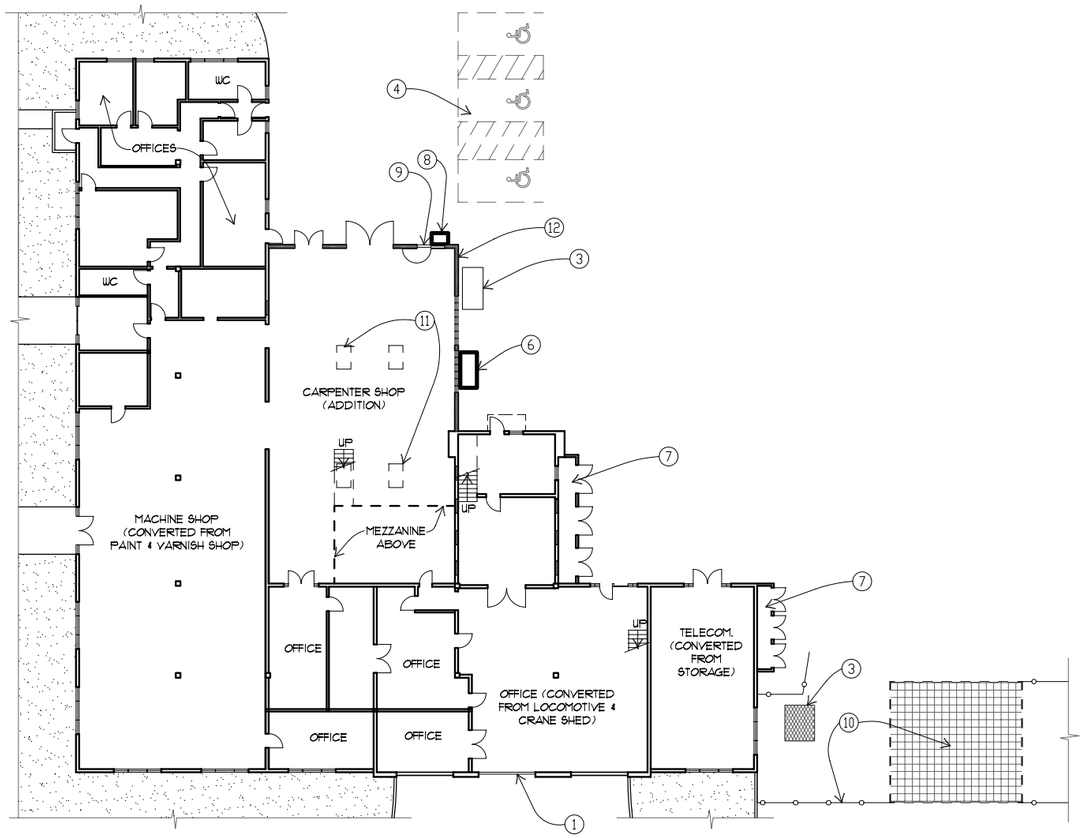
Character Defining Features Matrix

Significance Rating
S=Significant
C=Contributing
T=Tertiary
N=Non-contributing

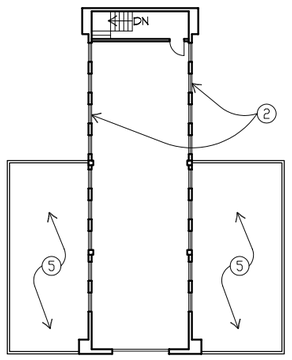
Condition Rating
G=Good
F=Fair
P=Poor

NASA Ames Research Center
Building B-16 Reuse Guidelines

Appendix 2. Existing Floor Plans & Rehabilitation



FIRST FLOOR PLAN



SECOND FLOOR PLAN

REHABILITATION LEGEND & NOTES

1. ROLL-UP DOOR
2. CLERESTORY WINDOWS
3. MECHANICAL EQUIPMENT
4. SUGGESTED AREA FOR NEW ACCESSIBLE PARKING, TWO REGULAR AND ONE VAN ACCESSIBLE STALL
5. STORAGE & LOCKERS BELOW LOW-SLOPE ROOF AREA INDICATED
6. UTILITY BOX ATTACHED TO THE FACADE OF THE BUILDING (REMOVAL RECOMMENDED.)
7. ELECTRICAL STORAGE
8. VENDING MACHINE
9. DOOR BLOCKED WITH A PANEL WITH TWO VENTILATION FANS
10. FENCE AND NEW STRUCTURE, RECOMMENDED TO BE REMOVED
11. FOUR SKYLIGHTS ABOVE, TYPICAL
12. WOOD STUD WALL OF ADDITION

NOTE : INTERIOR WALL PARTITIONS AND LOCATIONS OF CORRIDOR DOORS COULD NOT BE CONFIRMED BECAUSE OF LIMITED ACCESS.

GENERAL NOTE

REFER TO SECTION IX, "CODE EVALUATIONS AND RECOMMENDATIONS" FOR DETAILED DESCRIPTION.

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EXISTING PLANS & REHABILITATION

32 Ø 32
1/32" = 1'-Ø"

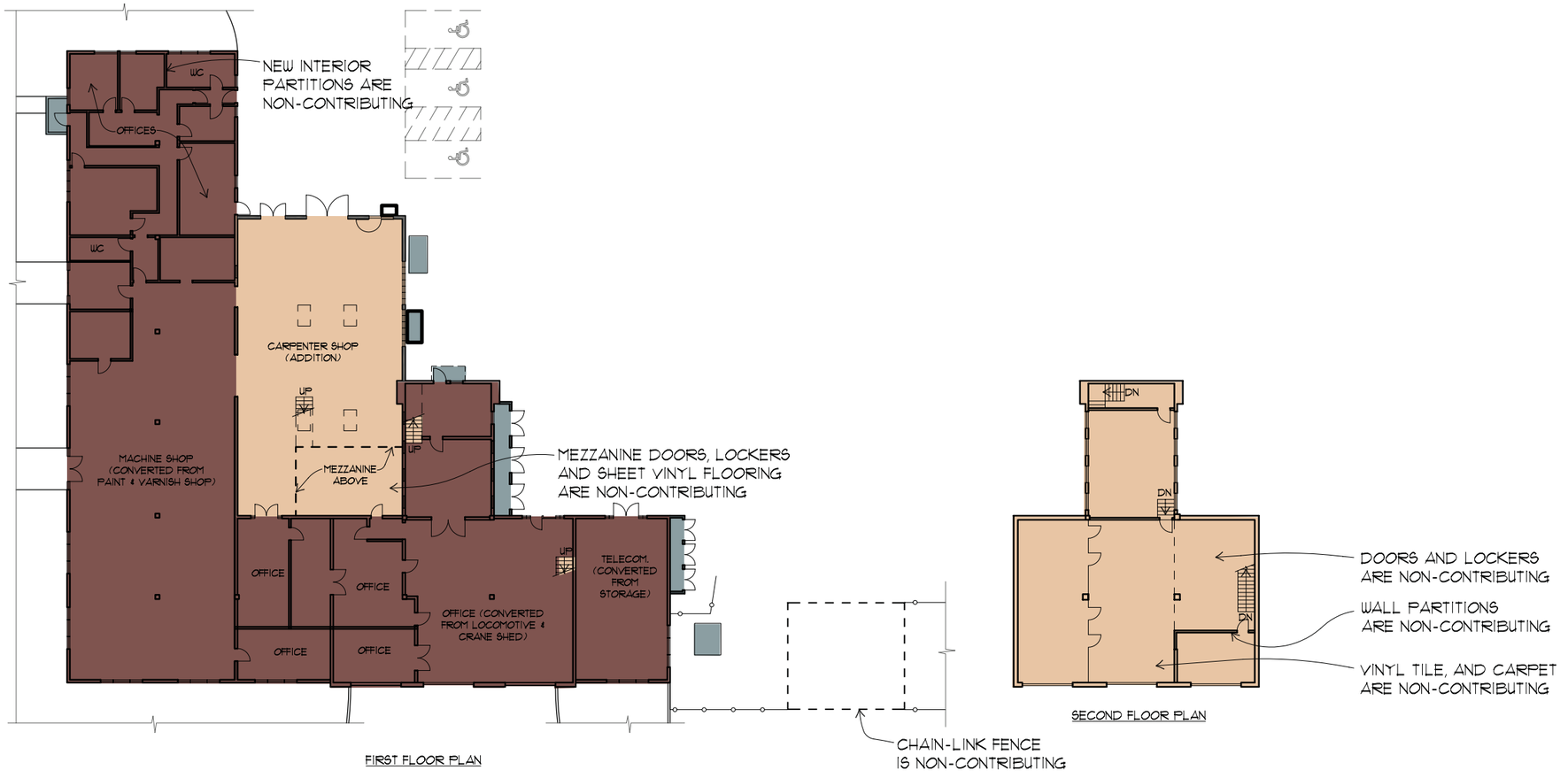
BUILDING 16
NASA Ames Research Center
Sunnyvale, CA

October, 2007

PROJECT NORTH
TRUE NORTH

NASA Ames Research Center
Building B-16 Reuse Guidelines

Appendix 3. Historic Character-Defining Significance Diagrams



FIRST FLOOR PLAN

SECOND FLOOR PLAN

GENERAL NOTES

1. THESE DIAGRAMS ARE INTENDED TO SHOW THE PRINCIPAL CHARACTER-DEFINING FEATURES, NOT SPECIFIC COMPONENTS.

2. FOR A MATRIX OF SIGNIFICANCE RATINGS FOR INDIVIDUAL BUILDING COMPONENTS, REFER TO APPENDIX 1. "HISTORIC CHARACTER-DEFINING FEATURES".

CHARACTER-DEFINING SIGNIFICANCE DIAGRAMS LEGEND

- SIGNIFICANT FEATURE
- CONTRIBUTING FEATURE
- TERTIARY FEATURE
- NON-CONTRIBUTING FEATURE
- NEW CONSTRUCTION - PROPOSED

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HISTORIC CHARACTER-DEFINING SIGNIFICANCE DIAGRAMS - PLANS

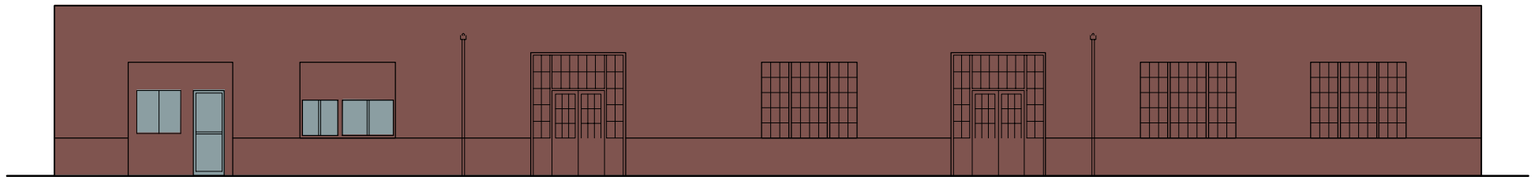
32 ∅ 32
1/32" = 1'-∅"

BUILDING 16
NASA Ames Research Center
Sunnyvale, CA

October, 2007

PROJECT NORTH
TRUE NORTH

NORTH ELEVATION



WEST ELEVATION

GENERAL NOTES

1. THESE DIAGRAMS ARE INTENDED TO SHOW THE PRINCIPAL CHARACTER-DEFINING FEATURES, NOT SPECIFIC COMPONENTS.

2. FOR A MATRIX OF SIGNIFICANCE RATINGS FOR INDIVIDUAL BUILDING COMPONENTS, REFER TO APPENDIX 1. "HISTORIC CHARACTER-DEFINING FEATURES".

CHARACTER-DEFINING SIGNIFICANCE DIAGRAMS LEGEND

- SIGNIFICANT FEATURE
- CONTRIBUTING FEATURE
- TERTIARY FEATURE
- NON-CONTRIBUTING FEATURE
- NEW CONSTRUCTION - PROPOSED

ARCHITECTURAL RESOURCES GROUP
Architects, Planners & Conservators, Inc.

HISTORIC CHARACTER-DEFINING SIGNIFICANCE DIAGRAMS - ELEVATIONS

16 0 16

1/16" = 1'-0"

BUILDING 16
NASA Ames Research Center
Sunnyvale, CA

October, 2007

NASA Ames Research Center
Building B-16 Reuse Guidelines

Appendix 4. Historic Aerial Photographs

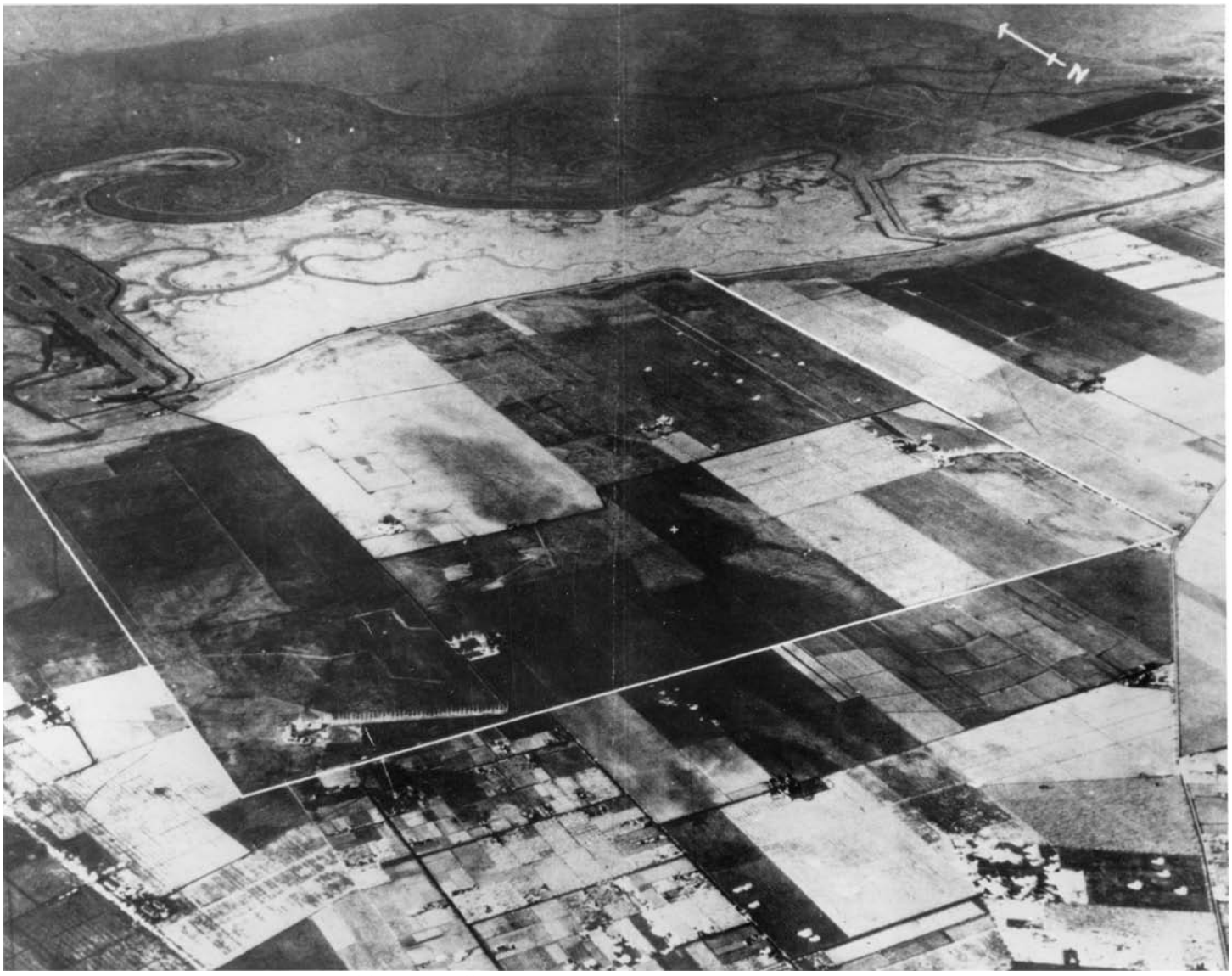


Figure 1: 1930 aerial photograph of future Moffett Field site.

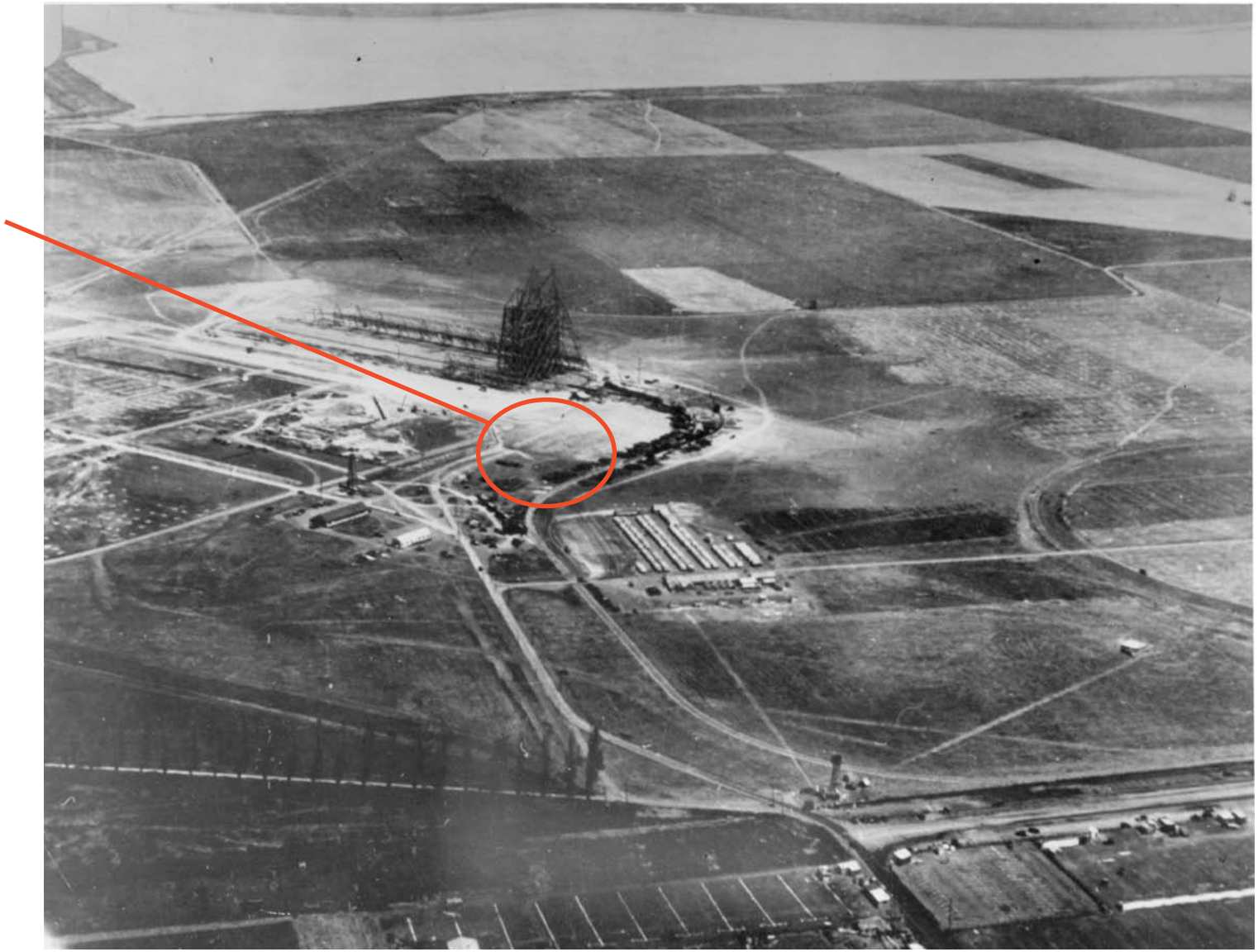


Figure 2: 1931 aerial photograph of Hangar 1 under construction.

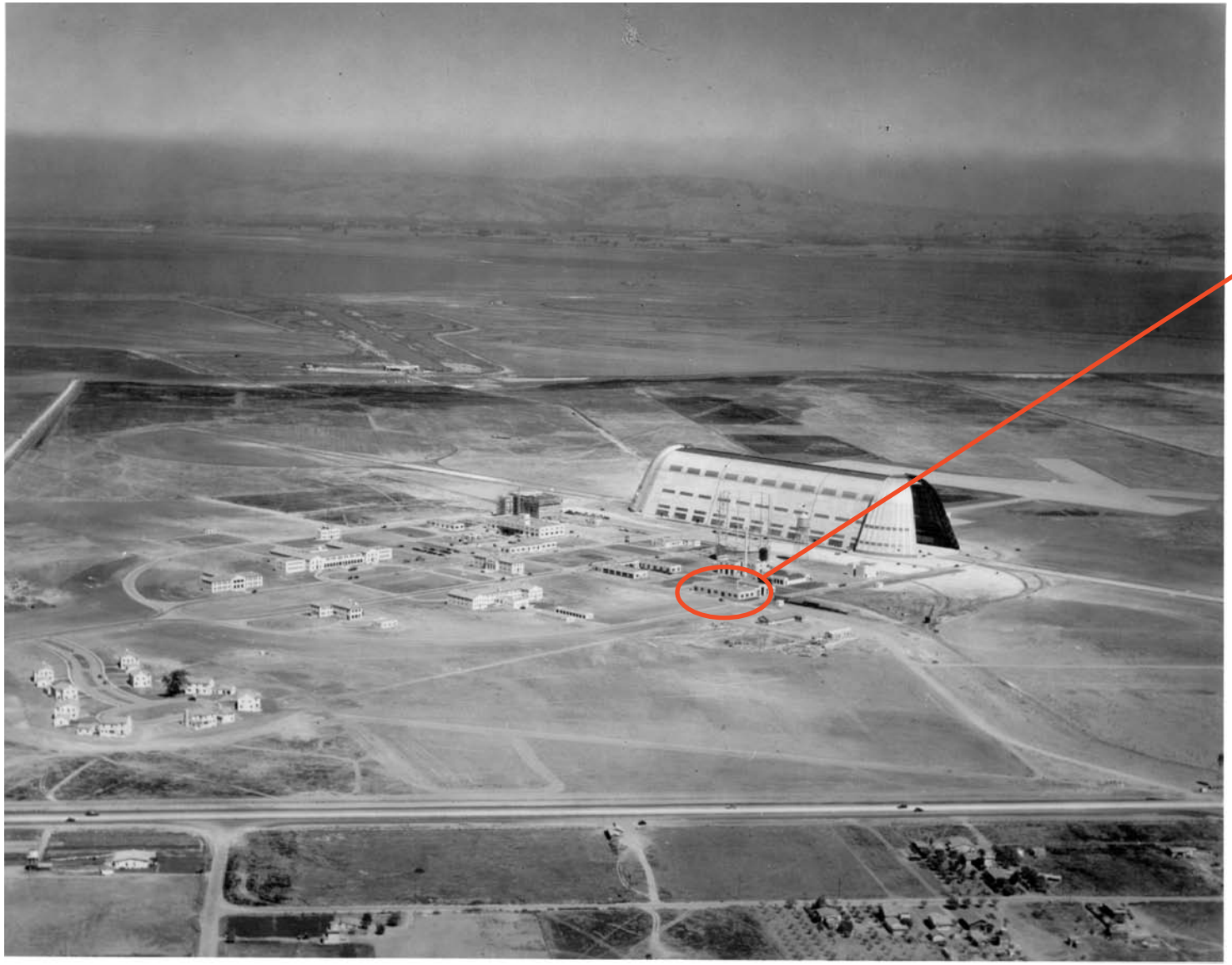


Figure 3: 1935 aerial photograph showing Shenandoah Plaza and Building 16.

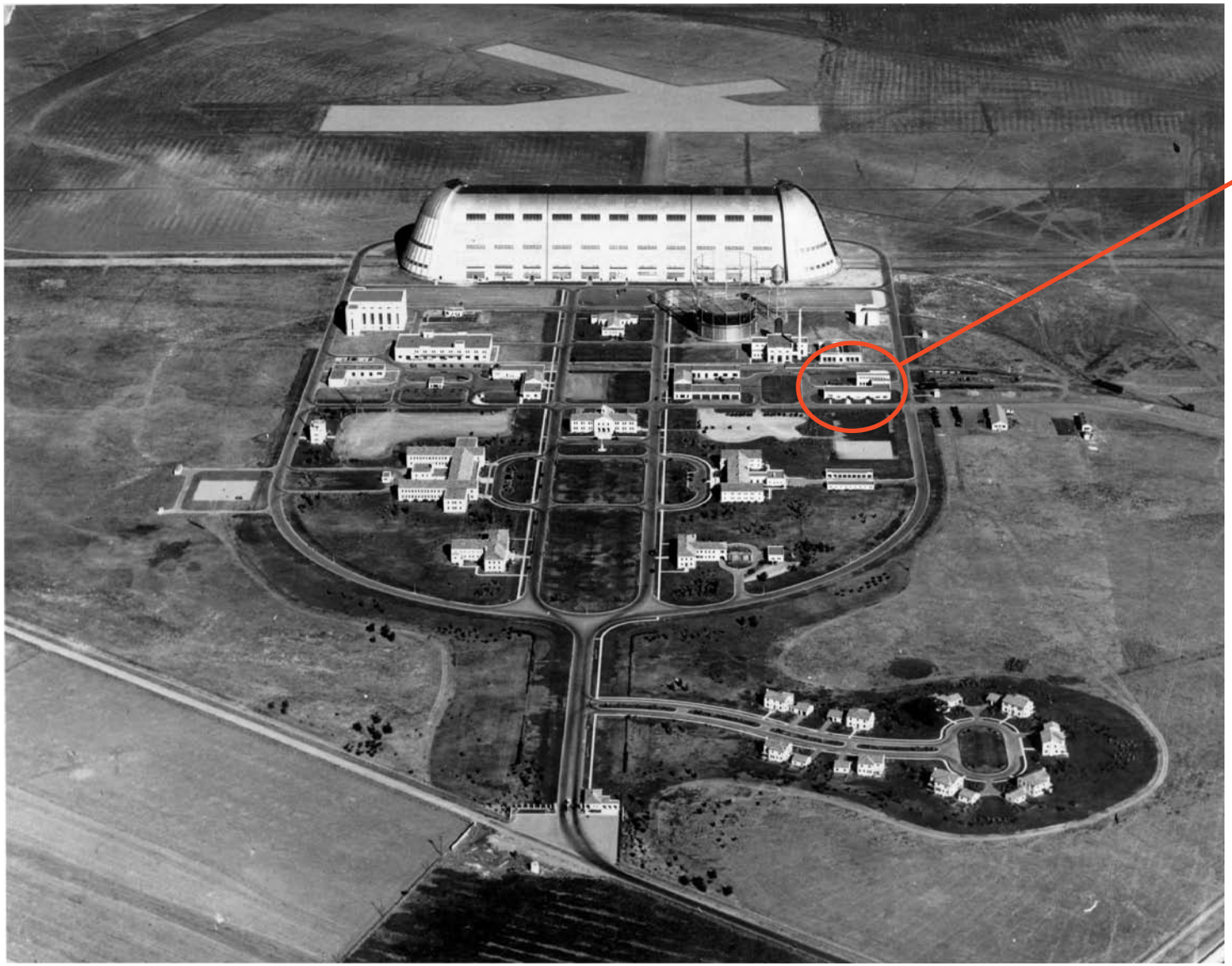


Figure 4: 1935 aerial photograph showing Building 16 on the right.

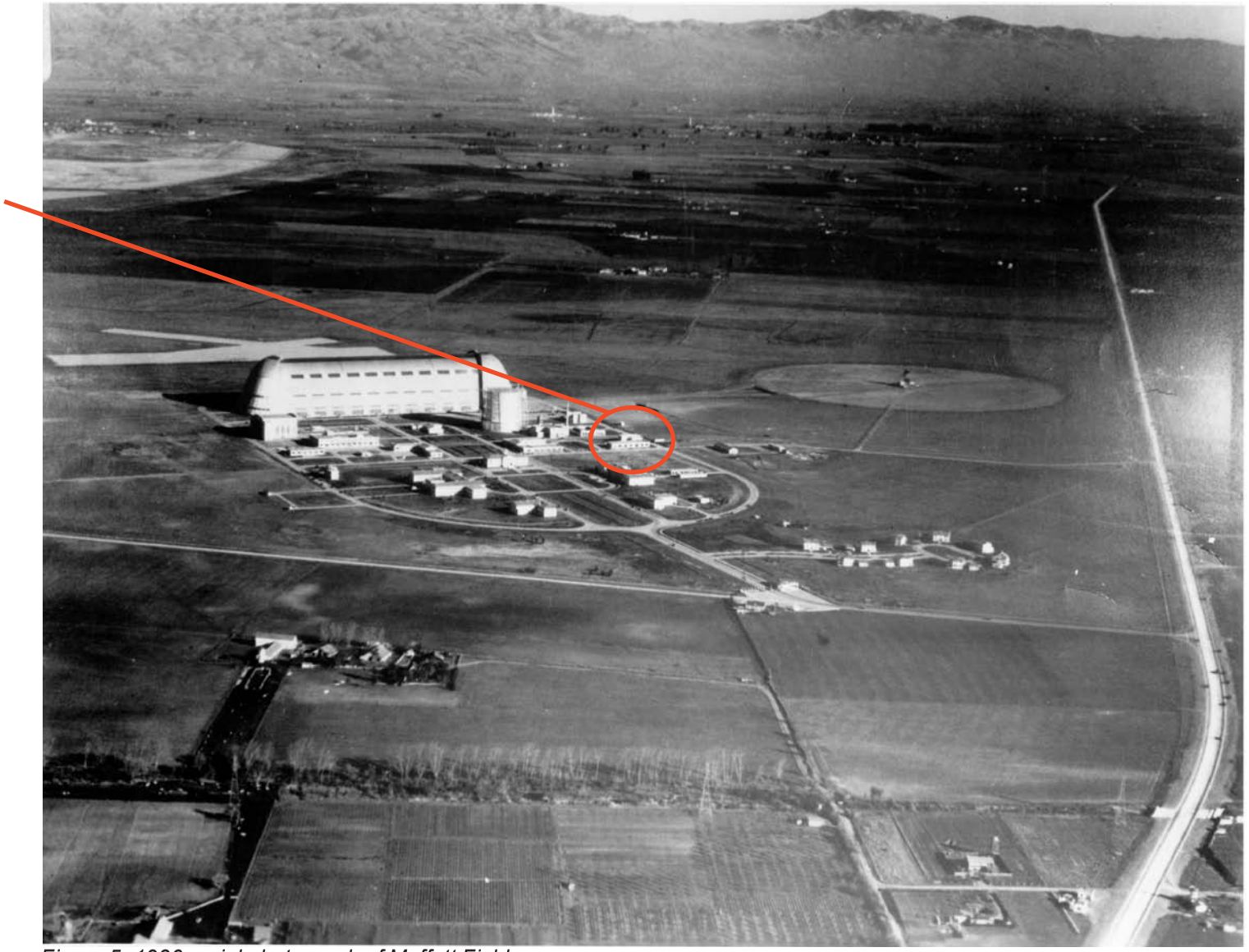


Figure 5: 1936 aerial photograph of Moffett Field.

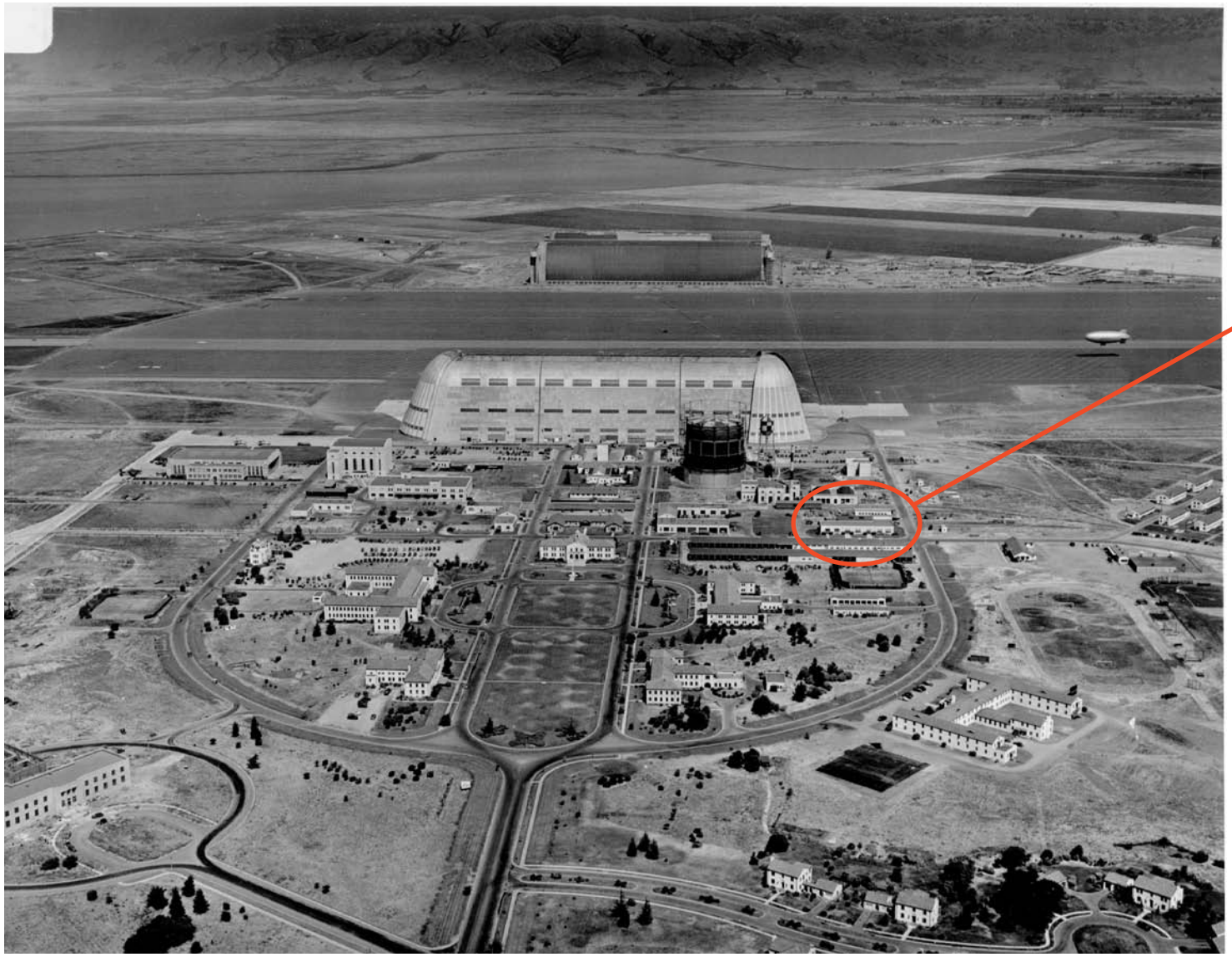


Figure 6: 1943 aerial photograph and Building 16.

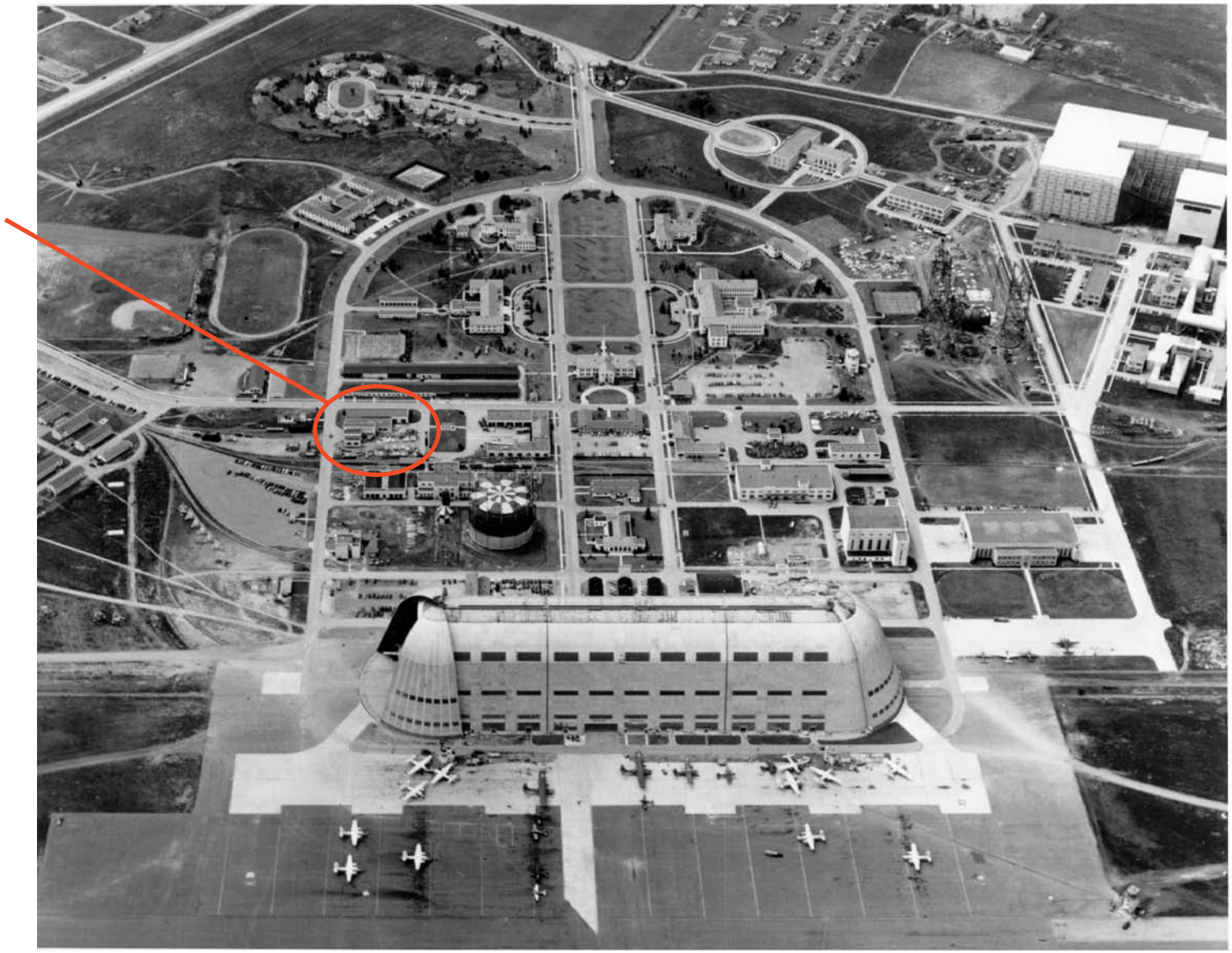


Figure 7: 1944 aerial photograph of Moffett Field.

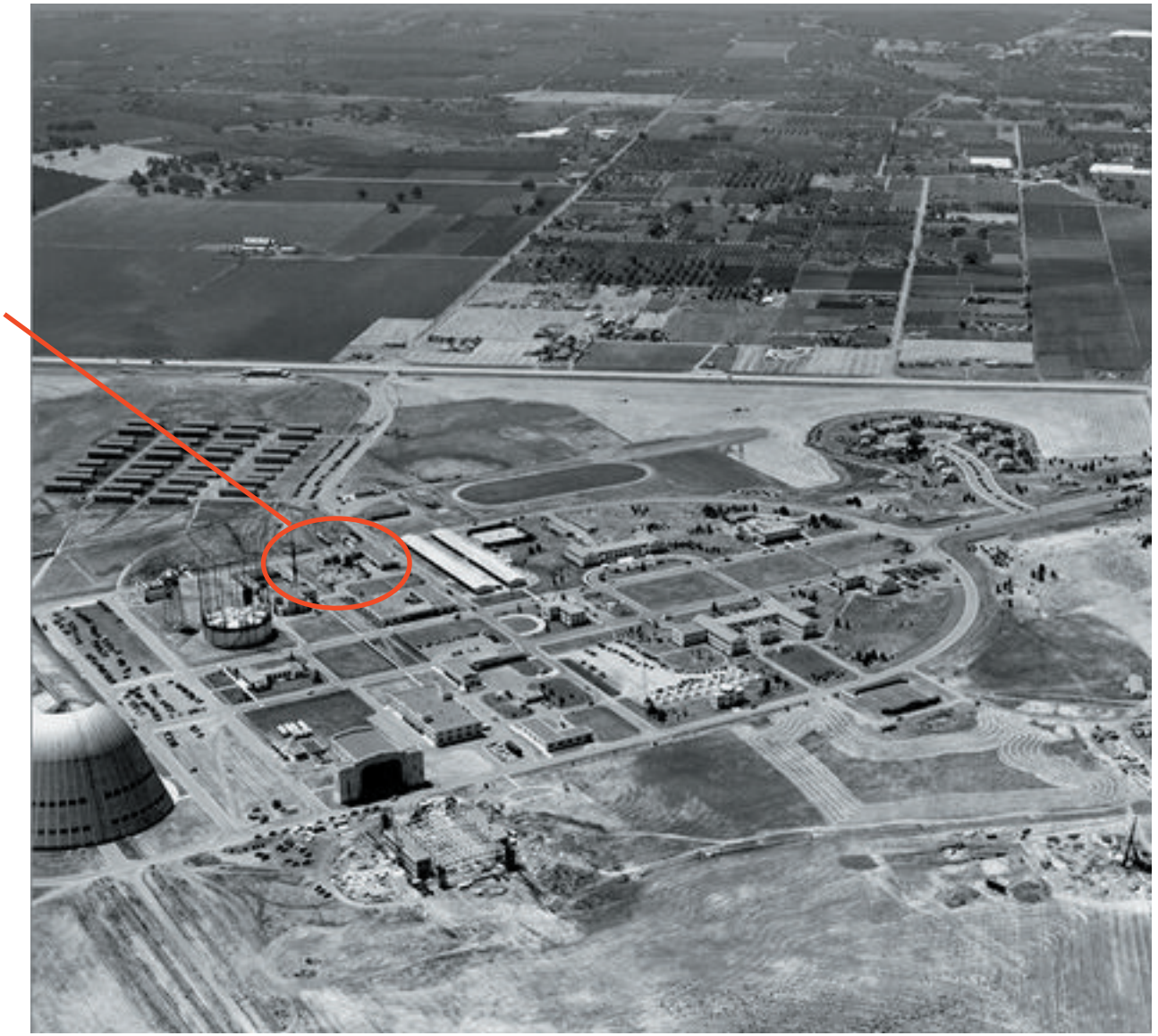


Figure 8: 1940 aerial photograph.

Figure 9: 1940 aerial photograph.

Figure 10: 1940 aerial photograph.

Figure 11: 1958 aerial photograph.

Figure 12: 1982 aerial photograph.

NASA Ames Research Center
Building B-16 Reuse Guidelines

Appendix 5. Current Conditions Photographs (2006)

Figure 13: Building 16 North elevation/ Addition

Figure 14: Doors at Addition exterior

Figure 15: East elevation of west wing

Figure 16: Building 16 from the north

Figure 17: Building 16 entrance

Figure 18: Elevation along west wing

Figure 19: Carpenter Shop entrance

Figure 20: South elevation

Figure 21: East elevation

Figure 22: Storage at east elevation

Figure 23: East elevation

Figure 24: North end of east elevation

Figure 25: East corner of north elevation of addition

Figure 26: Carpenter Shop interior

Figure 27: Carpenter Shop Mezzanine

Figure 28: Detail of addition roof construction

Figure 29: Caprenter Shop looking north

Figure 30: Machine shop

Figure 31: Machine Shop

Figure 32: Stairs to partial second floor

Figure 33: Second floor

Figure 34: Second floor, clerestory windows

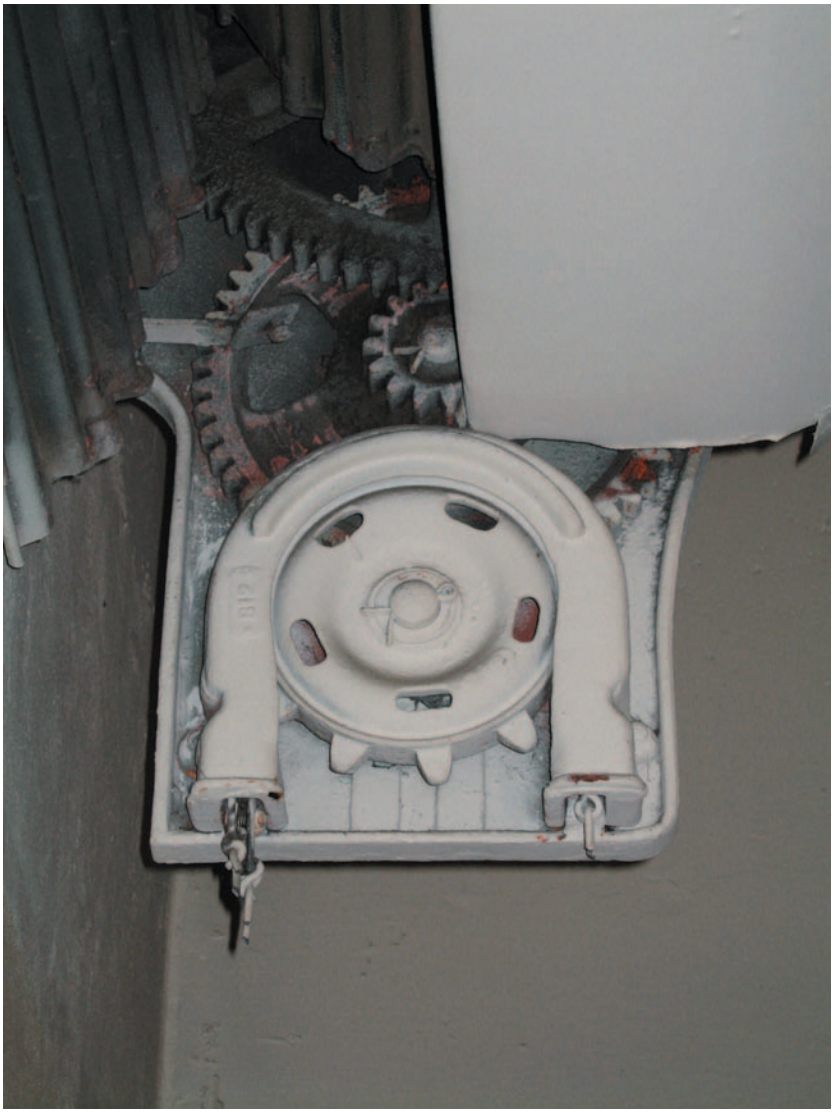


Figure 35: Roll-up door at second floor

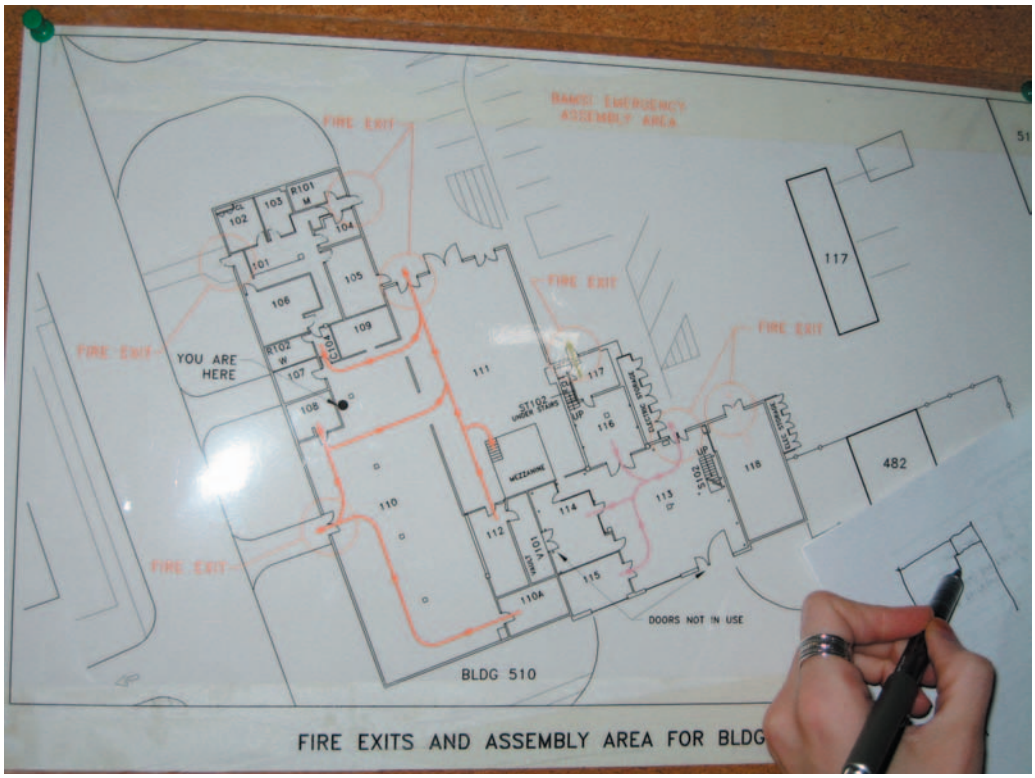
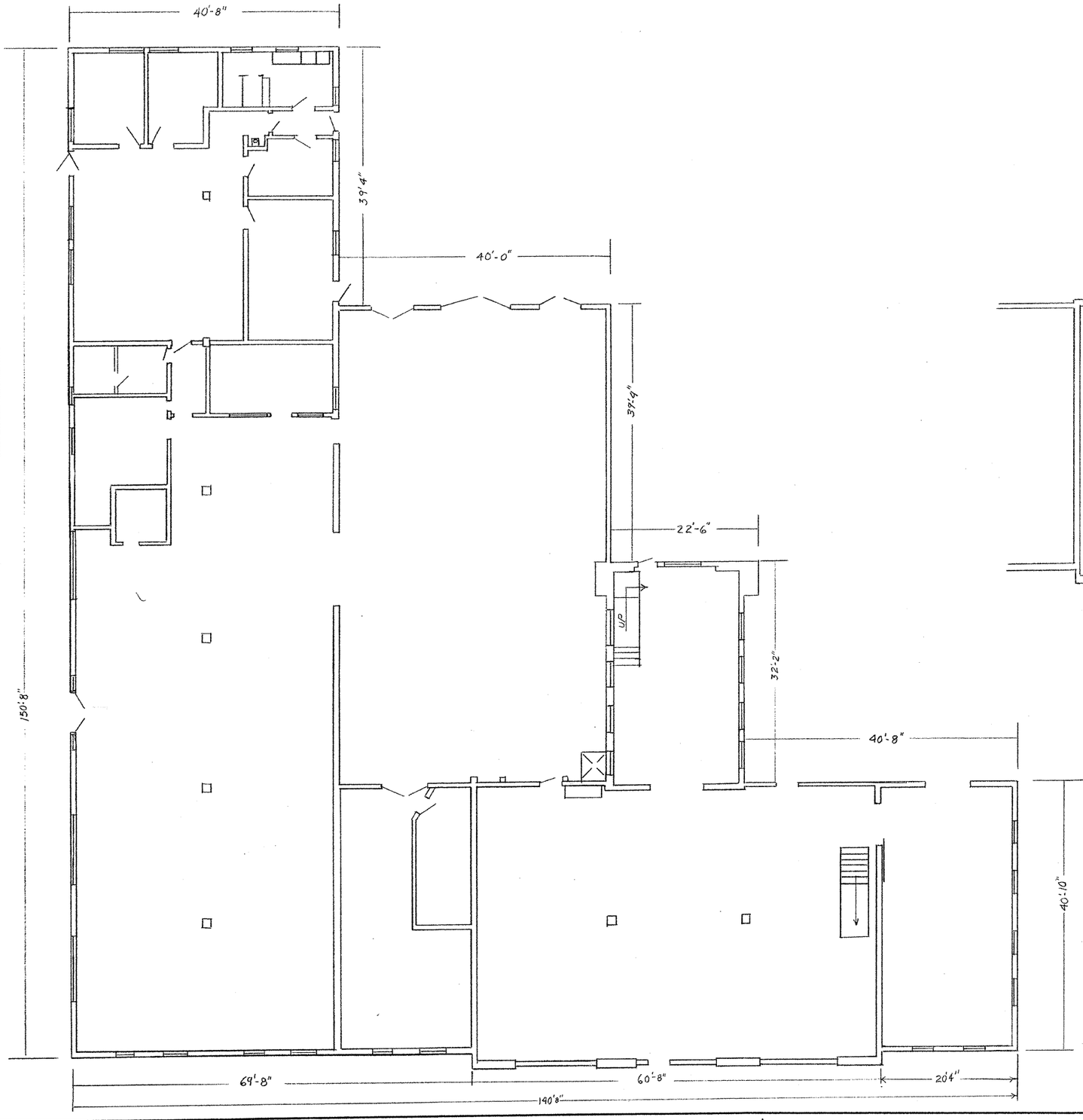


Figure 36: Building 16 Current exit plan

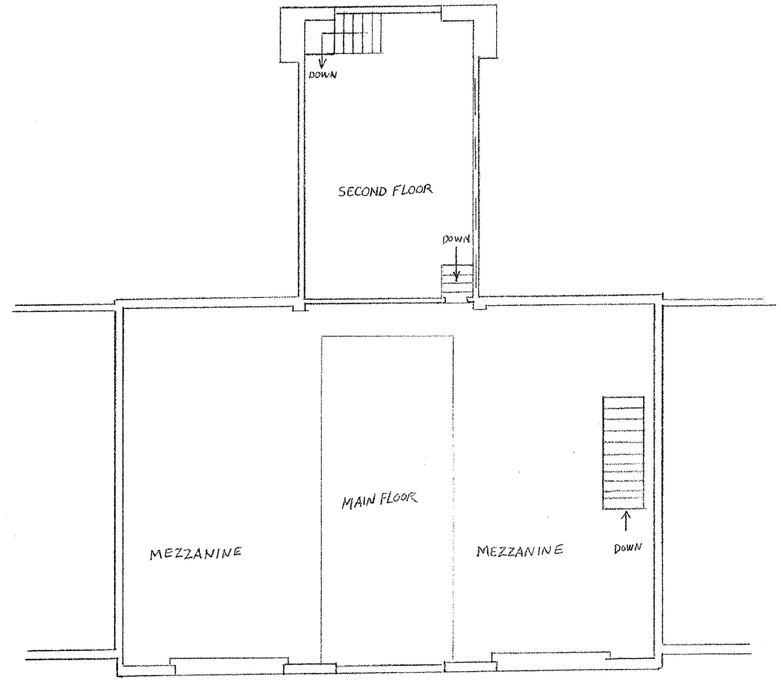
NASA Ames Research Center
Building B-16 Reuse Guidelines

Appendix 6. Construction Plans

REVISIONS				
SYM	DESCRIPTION	PREP'D BY	DATE	APPROVED



LOW MEZZANINE FLOOR PLAN



MEZZANINE AND SECOND FLOOR PLAN

National Aeronautics and Space Administration
Ames Research Center
Moffett Field, California

AM4---0016-A2 | 1 REV -

ARC - MOFFETT

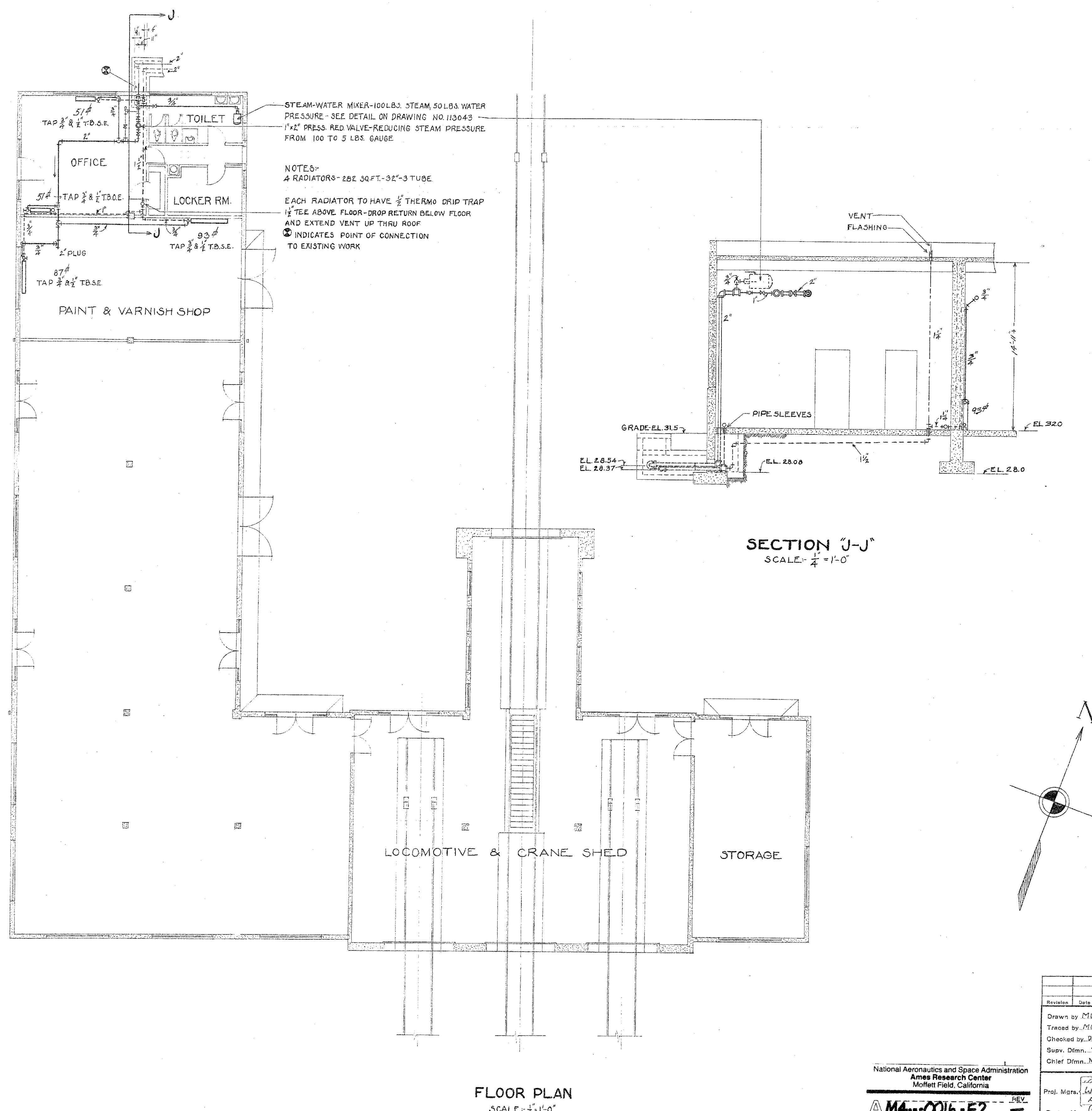
A4566-9202-A0044

PWO. DWG. NO.		DATE	
DSGN.	DR.	DATE	
CHECKED		DATE	
APPROVED BY DIRECTOR ENGINEERING DIV.			
APPROVED BY PUBLIC WORKS OFFICER			
SATISFACTORY TO			
SATISFACTORY TO			

DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND
NAVAL AIR STATION — **MOFFETT FIELD, CA.**

BUILDING 16 FIRST FLOOR PLAN
SECOND FLOOR AND MEZZANINE

SIZE	CODE IDENT. NO.	NAVFAC. DRAWING NO.
D	80091	
SCALE 1/8" = 1'-0"	SPEC.	CONST. CONTR. NO. / SHEET OF



Revision	Date	Brief	By

Drawn by MUNROE.
Traced by MUNROE.
Checked by Daniel
Supv. Dfmn. MSC.
Chief Dfmn. MAGUIRE

Proj. Mgrs.
Design Mgr.

Sheet 44 of 54 accompanying specification No. 6791

Scale: AS INDICATED

NAVY DEPARTMENT — BUREAU OF YARDS & DOCKS

U.S. NAVAL AIR STATION
SUNNYVALE, CAL.
LOCO. & CRANE SHED AND
SHOP - BLDG - HEATING

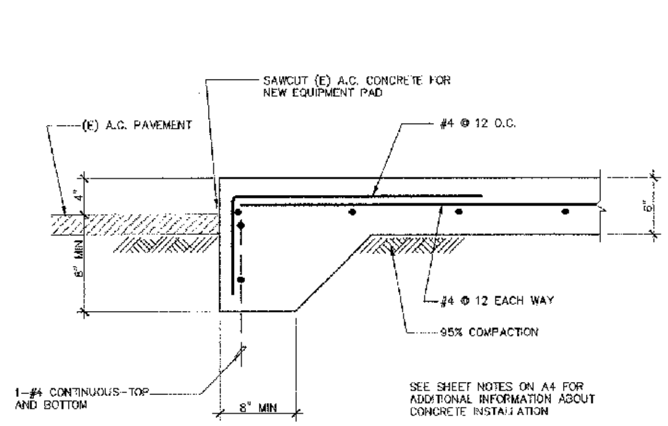
Approved Mar. 11 1932.

For Chief of Bureau

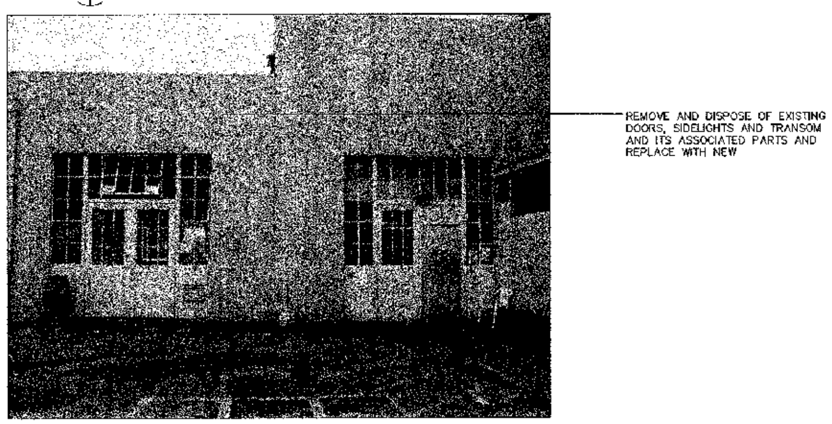
Y. & D. Drawing No. 113044

1202-20-9

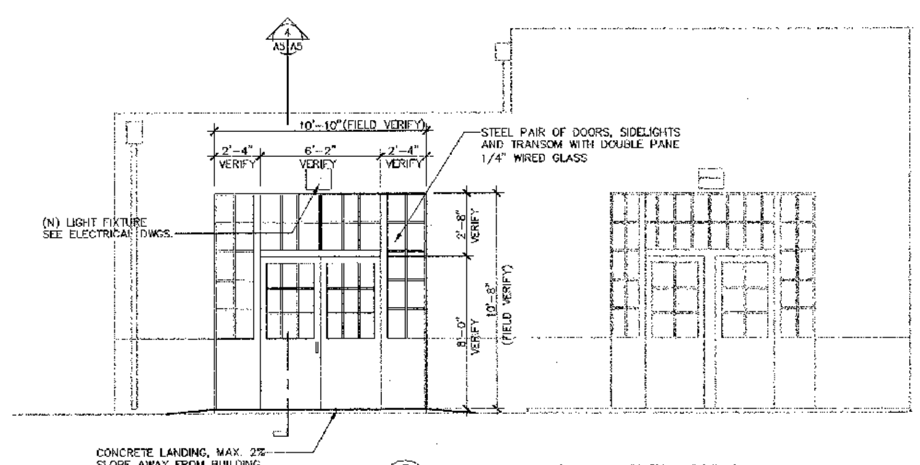
DWG NO. AM2016-0501-A5 | SH. | REV



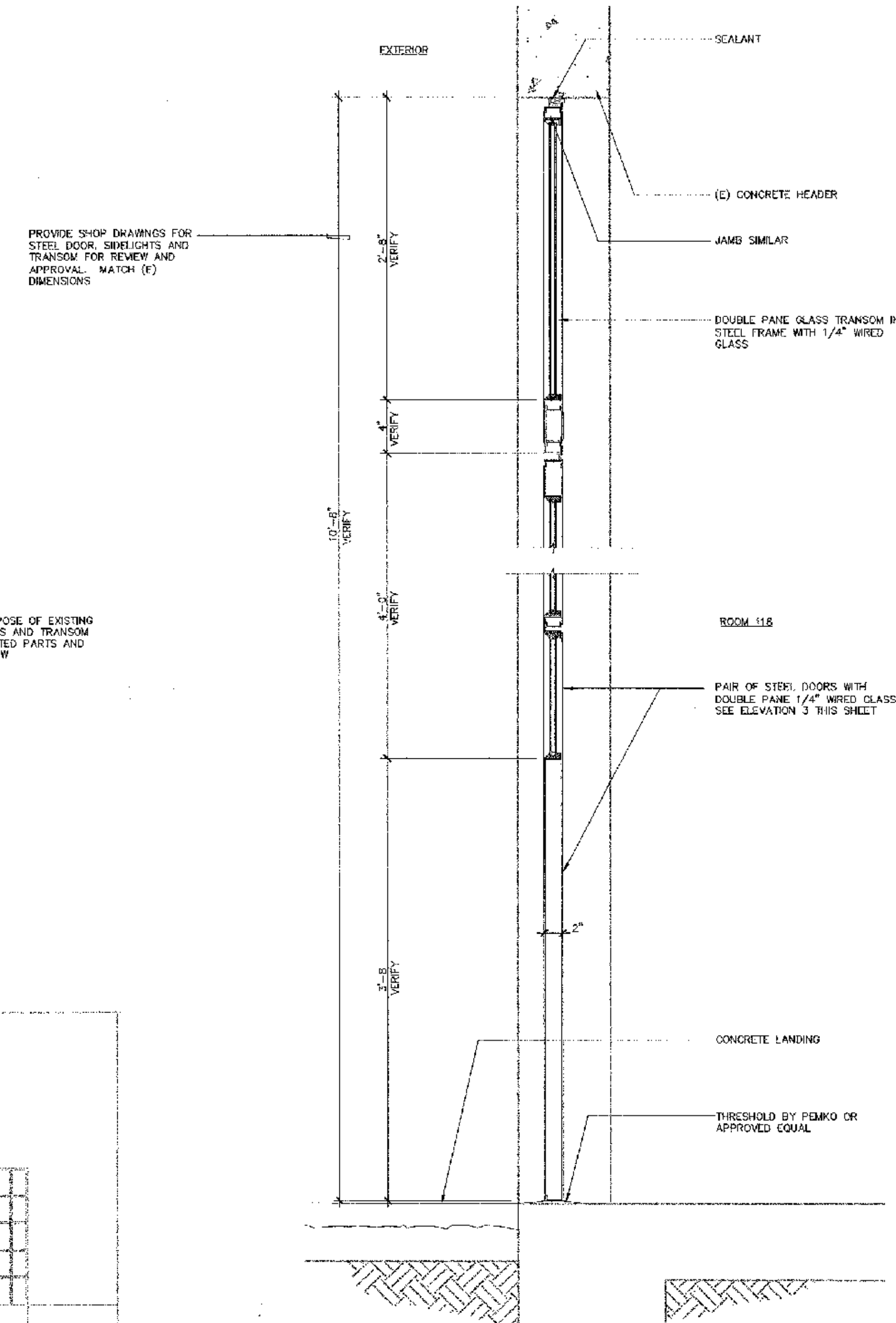
1 (A4 | A5) EQUIPMENT PAD DETAIL
SCALE 1 1/2"=1'-0"



2 (A4 | A5) EXISTING DOORS, SIDELIGHTS AND TRANSOM
N.T.S.



3 PARTIAL NORTH ELEVATION
N.T.S.



4 (A5 | A5) SECTION @ DOOR AND TRANSOM
SCALE 1 1/2"=1'-0"

Approved for Construction
Moffett Field Permit Board
Chief Building Official
Permit No. 06P011

ZONE	LETTER	DESCRIPTION	DRAWN	DATE	APPRVD
		REVISIONS			

DRAWN C.MURPHY	DATE 12-20-5
DESIGNED S.DIANA D.	DATE 12-21-05
CHECKED C.MURPHY	DATE 12-20-5
PROJMGR C. MURPHY	DATE 12-20-5
REQUESTER H. DANFORD	DATE 12-20-05
R&QA	DATE
SAFETY	DATE
SUPERVISOR P. CHAN	DATE 12/22/05
	DATE

Ames Research Center
Moffett Field, California

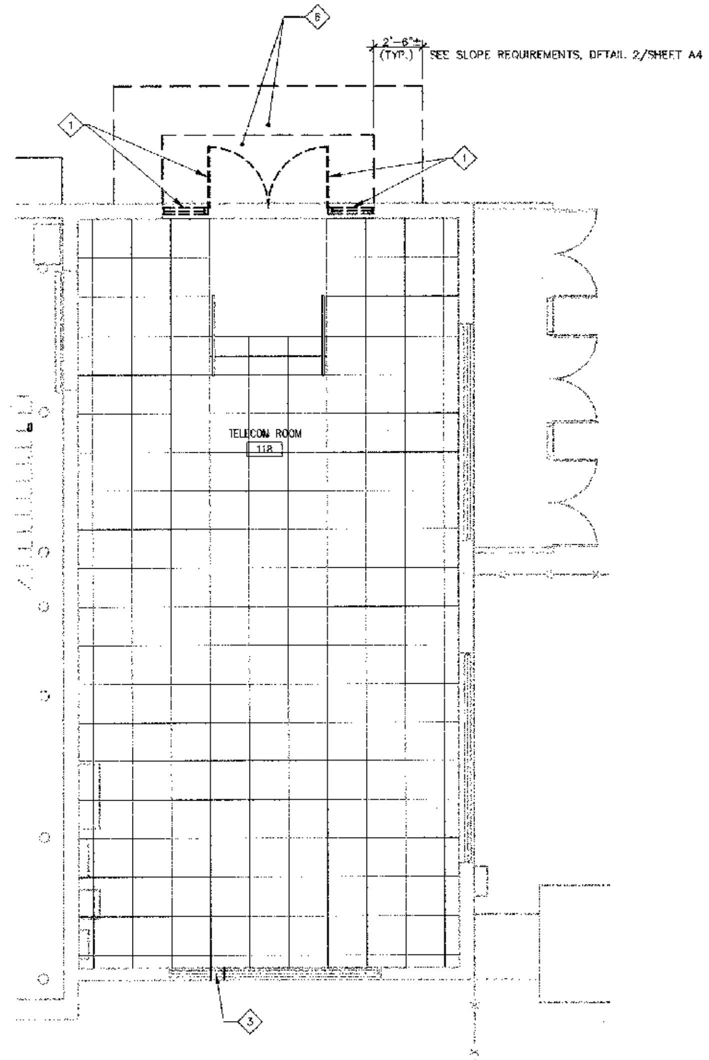
BUILDING M16 ROOM 118 UPGRADE
ARCHITECTURAL

ELEVATION AND DETAILS

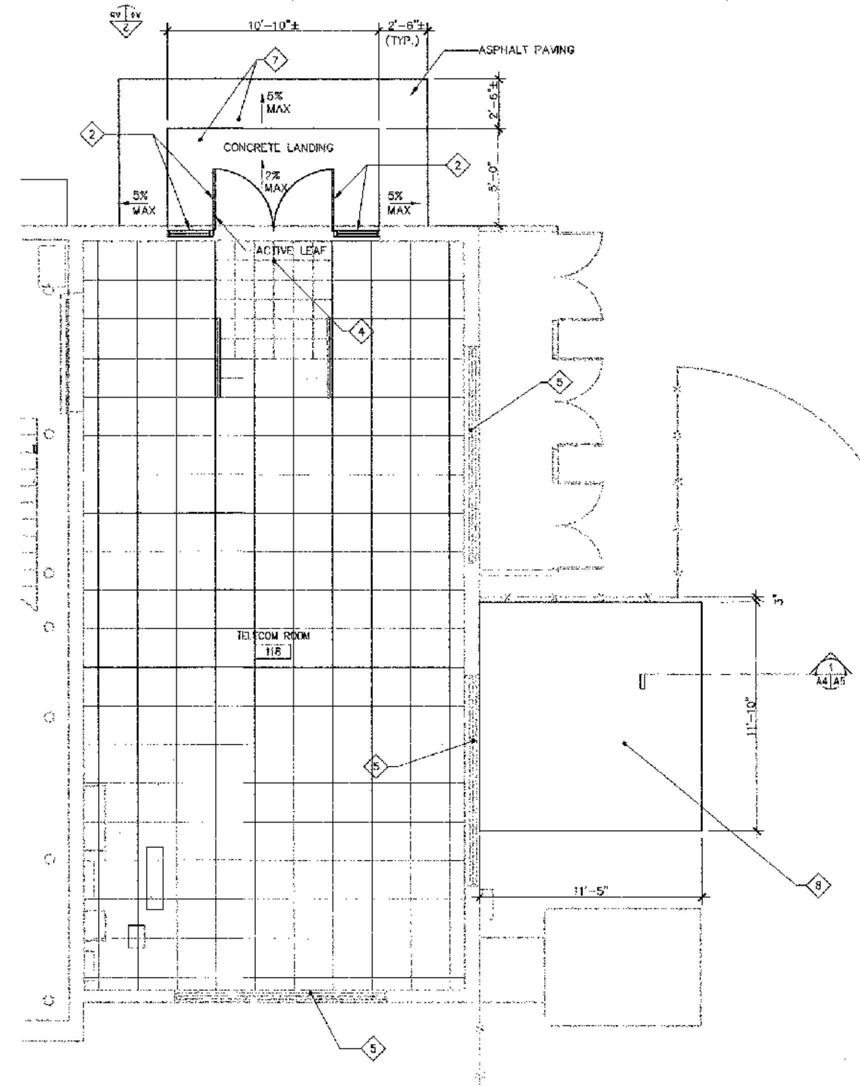
SIZE D | CAGE CODE 25307 | A M2016-0501-A5 | REV
SCALE AS SHOWN | INDEX | SHEET | OF
FILE NAME: 16-A05 | 11-16-05

229:8P.000

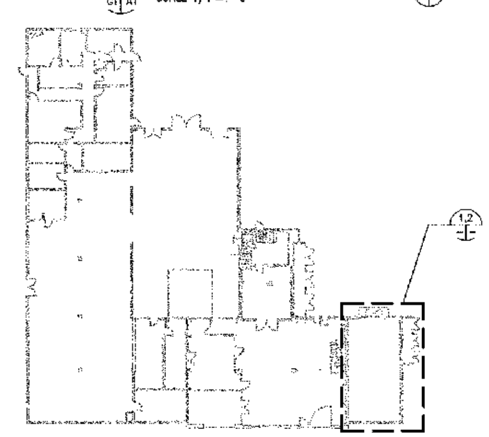
DWG NO. AM2016-0501-A4



PARTIAL DEMOLITION PLAN
SCALE 1/4"=1'-0"



PARTIAL FLOOR PLAN
SCALE 1/4"=1'-0"



N16 KEYPLAN

SHEET NOTES

1. COMPRESSIVE STRENGTH OF CONCRETE SHALL BE 3000 psi @ 28 DAYS.
2. ANCHORING ADHESIVE MATERIALS SHALL BE SELECTED FROM THE FOLLOWING LISTING:
   - A CIA-GEL/7000, COVERT OPERATIONS, INC., P.O. BOX 3009 LONG BEACH, CA 90853 TEL. (310) 490 – 7226.
   - B "SET" HIGH STRENGTH ANCHORING ADHESIVE, SIMPSON TIE DUBLIN, CA 94568
   - C HIT HY 150 INJECTION ADHESIVE ANCHOR, HILTI, INC., P.O. BOX 21148 TULSA, OKLAHOMA 74121 TEL. (918) 252 – 6000.
3. CONTINUOUS INSPECTION IS REQUIRED FOR ALL CONCRETE WHERE THE COMPRESSION STRENGTH EXCEEDS 3000 PSI. SEE NOTE 2 (QUALITY CONTROL).
4. REINFORCING STEEL SHALL BE DEFORMED STEEL CONFORMING TO THE REQUIREMENTS OF ASTM A615, GRADE 60.
5. REINFORCING BARS SHALL BE SPLICED AS SHOWN ON DRAWINGS. ANY ADDITIONAL SPLICING SHALL REQUIRE PRIOR APPROVAL FROM THE STRUCTURAL ENGINEER. MINIMUM SPLICE (IN COMPRESSION) IS 45 DIAMETERS IN CONCRETE; 65 DIAMETERS IN CONCRETE MASONRY UNITS UNLESS NOTED OTHERWISE AND TENSION AS NOTED ON STRUCTUAL DRAWINGS. EMBEDMENT AND HOOK LENGTHS SHALL BE PER ACI (MIN).
6. REINFORCING STEEL EXCEPT FOR STIRRUPS AND TIES SHALL HAVE A MINMUM PROTECTIVE COVERING OF CONCRETE AS FOLLOWS:
   - A CONCRETE PLACED DIRECTLY AGAINST EARTH ____ 3"
   - B CONCRETE PLACED AGAINST FORMS BUT EXPOSED TO EARTH OR WEATHER:
     BARS LARGER THAN #5 ____ 2"
     #5 BARS AND SMALLER ____ 1 1/2"
   - C CONCRETE PLACED AGAINST FORMS BUT NOT EXPOSED DIRECTLY TO EARTH OR WEATHER:
     SLABS AND WALLS ____ 1"
     ALL OTHERS ____ AS PER ACI 318–89
7. ALL BARS SHALL BE CLEAN OF RUST, GREASE AND OTHER MATERIALS LIKELY TO IMPAIR BOND. ALL BENDS SHALL BE MADE COLD.
8. SPECIAL INSPECTION AND TESTING IS REQUIRED FOR ALL EXPANSION OR EPOXY ANCHORS.

KEY NOTES:

1. REMOVE AND DISPOSE OF (E) PAIR OF DOORS, TRANSOM AND SIDELIGHTS.
2. PROVIDE AND INSTALL PAIR OF STEEL DOORS, STEEL SIDELIGHTS AND TRANSOM. GLAZING TO BE DOUBLE PANE WITH 1/4" WIRED GLASS. SEE DETAILS SHEET A5. PROVIDE DOOR THRESHOLD BY PEMKO PER SECTION 1133B2.4.1 OF THE CBC OR APPROVED EQUAL. DOOR HARDWARE SHALL INCLUDE PANIC HARDWARE BY VONDUPRIN 33A/35A WITH CONCEALED VERTICAL RODS, ELECTRICAL DOOR STRIKE BY VONDUPRIN #33/35 A-EL, DOOR STRIKE BOOSTER BY VONDUPRIN #PS873BK, REX BY VONDUPRIN #33/35 A–RX, TWO ZONE CONTROLLER "871.2" BY VONDUPRIN AND MAGNETIC DOOR CONTACTS BY GE SENTROL 1070. PROVIDE ARMORED DOOR CORD(S) TO TRANSFER POWER/SIGNAL FROM MOVABLE LEAF(S) TO DOOR FRAME BY SCHLAGE MODEL 788 OR 798 OR EQUAL.
3. REMOVE (E) METAL FLUE AND REPLACE WITH GLAZING TO MATCH (E) ADJACENT.
4. PROVIDE AND INSTALL 12" x 12" VCT AT CONCRETE LANDING. PREP FLOOR AS REQUIRED. REMOVE ALUMINUM HANDRAILS PRIOR TO INSTALLATION AND REINSTALL. SUBMIT VCT SAMPLES TO ARCHITECT FOR REVIEW AND APPROVAL.
5. REMOVE AND REPLACE DAMAGED OR BROKEN AND COLORED GLASS; MATCH (E). SUBMIT SAMPLES FOR APPROVAL.
6. REMOVE CONCRETE LANDING AT EXTERIOR AND PORTION OF ASPHALT PAVING.
7. PROVIDE AND INSTALL CONCRETE LANDING. SLOPE AS SHOWN.
8. PROVIDE AND INSTALL CONCRETE PAD FOR MECHANICAL CONDENSING UNITS. SEE DETAIL 1 SHEET A5 FOR DETAILS. SEE M2 FOR ANCHORAGE OF CONDENSING UNITS.

Approved for Construction
Moffett Field Permit Board

Chief Building Official
Permit No. 06P011

ZONE	LETTER	DESCRIPTION	DRAWN	DATE	APPRVD
		REVISIONS			

DRAWN C.MURPHY	DATE 12-20-5	Ames Research Center, Moffett Field, California
DESIGNED S.DIANATI	DATE 12-21-05	BUILDING M16 ROOM 118 UPGRADE ARCHITECTURAL
CHECKED C.MURPHY	DATE 12-20-5	ARCHITECTURAL DEMOLITON PLAN AND FLOOR PLAN
PROJ/MGR C. MURPHY	DATE 12-20-5	
REQUESTER H. DANFOURTH	DATE 12-20-05	
R&QA	DATE	
SAFETY	DATE	
SUPERVISOR P. CHAN	DATE 12/22/05	SIZE D · CAGE CODE 25307 · A M2016-0501-A4 · REV
	DATE	SCALE AS SHOWN · INDEX · SHEET OF

FILE NAME: 16-A04 · 11-16-05

22918P.000

NASA Ames Research Center
Building B-16 Reuse Guidelines

Appendix 7. Moffett Field District Nomination

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
EVALUATION/RETURN SHEET

REQUESTED ACTION: NOMINATION

PROPERTY NAME: US Naval Air Station Sunnyvale, California, Historic District

MULTIPLE NAME:

STATE & COUNTY: CALIFORNIA, Santa Clara

DATE RECEIVED: 1/13/94 DATE OF PENDING LIST: 1/26/94
DATE OF 16TH DAY: 2/11/94 DATE OF 45TH DAY: 2/27/94
DATE OF WEEKLY LIST:

REFERENCE NUMBER: 94000045

NOMINATOR: FEDERAL N/A Y

REASONS FOR REVIEW:

APPEAL:	N	DATA PROBLEM:	N	LANDSCAPE:	N	LESS THAN 50 YEARS:	N
OTHER:	Y	PDIL:	N	PERIOD:	N	PROGRAM UNAPPROVED:	N
REQUEST:	N	SAMPLE:	N	SLR DRAFT:	Y	NATIONAL:	Y

COMMENT WAIVER: N

√ ACCEPT ___ RETURN ___ REJECT 2/24/94 DATE

ABSTRACT/SUMMARY COMMENTS:

The U.S. Naval Air Station Sunnyvale, California Historic District is eligible under NR criteria A and C in the areas of Military History, Architecture, and Engineering. The discontiguous district represents a rather unique and significant episode in the development of U.S. naval aviation prior to World War II. The Sunnyvale base was one of two Naval Air Stations built to port lighter-than-air dirigibles during the 1930s. Dirigible Hangar #1, the later blimp hangars #2 and #3, and their accompanying support buildings all represent excellent examples of early twentieth-century military planning, engineering, and construction.

The three enormous airship hangars represent significant engineering accomplishments and they are among a limited number of extant historic airship facilities in the United States. The core of the historic Naval Air Station--centered on a landscaped "common" and dominated by the looming airship hangars--remains largely intact and includes fine regional examples of Spanish Colonial Revival design.

RECOM./CRITERIA Accept A+C
REVIEWER Paul R. Lusignan
DISCIPLINE Historian
DATE 2/24/94

DOCUMENTATION see attached comments Y/N see attached SLR (Y)/N

NPS Form 10-900-a
(8-86)

OMB Approval No. 1024-0018

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Section number _____ Page _____

SUPPLEMENTARY LISTING RECORD

NRIS Reference Number: 94000045 Date Listed: 2/24/94

US Naval Air Station Sunnyvale, California Historic District — Property Name
Santa Clara — County
CA — State

N/A — Multiple Name

This property is listed in the National Register of Historic Places in accordance with the attached nomination documentation subject to the following exceptions, exclusions, or amendments, notwithstanding the National Park Service certification included in the nomination documentation.

Signature of the Keeper

2.24.94
Date of Action

==========

Amended Items in Nomination:

Classification:
The number of previously listed resources is changed to **zero (0)**; Hangar #1 was only determined eligible for listing.

Significance:
Area of Significance:
Architecture is added as an area of significance, defining the district as a good regional example of military design in the Spanish Colonial Revival style.

Significant Person:
The name of Adm. William Adger Moffett is removed from the significant person blank since the district was not nominated under Criterion B.

continued

NPS Form 10-900-a
(8-86)

OMB Approval No. 1024-0018

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Section number _____ Page _____

SUPPLEMENTARY LISTING RECORD

NRIS Reference Number: 94000045 Date Listed: 2/24/94

US Naval Air Station Sunnyvale, California Historic District — Santa Clara — CA
Property Name — County — State

N/A
Multiple Name

==========

Amended Items in Nomination:

continued

U.T.M.:

The UTM coordinates are corrected to read:

A	10	582960	4140460
B	10	583240	4140880
C	10	583800	4141120
D	10	583940	4140740
E	10	583140	4140330
AA	10	584640	4141420
BB	10	584880	4141520
CC	10	584760	4141120
DD	10	584990	4141220

This information was confirmed with Navy FPO J. Bernard Murphy.

DISTRIBUTION:
National Register property file
Nominating Authority (without nomination attachment)

45

NPS Form 10-900
(Rev. 8-86)

RECEIVED

OMB No. 1024-0018

United States Department of the Interior
National Park Service

JAN 13 1994

NATIONAL REGISTER

RECEIVED
JUL 15 1993
OHP

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations of eligibility for individual properties or districts. See instructions in *Guidelines for Completing National Register Forms* (National Register Bulletin 16). Complete each item by marking "x" in the appropriate box or by entering the requested information. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, styles, materials, and areas of significance, enter only the categories and subcategories listed in the instructions. For additional space use continuation sheets (Form 10-900a). Type all entries.

1. Name of Property

historic name: United States Naval Air Station Sunnyvale, California- Historic District

other names/site number: U. S. Naval Air Station Moffett Field - Central Historic District

2. Location

street & number: Central District ☐ not for publication

city, town: Naval Air Station Moffett Field ☐ vicinity

state: California code: CA county: Santa Clara code: CA 085 zip code: 94035

3. Classification

Ownership of Property	Category of Property	Number of Resources within Property	
		Contributing	Noncontributing
☐ private	☐ building(s)	40	54 buildings
☐ public-local	☒ district		sites
☐ public-State	☐ site	1	structures
☒ public-Federal	☐ structure	2	objects
	☐ object	43	54 Total

Name of related multiple property listing:

Number of contributing resources previously listed in the National Register 1

4. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this ☑ nomination ☐ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property ☑ meets ☐ does not meet the National Register criteria. ☐ See continuation sheet.

J. [illegible] Murphy — Jan 5 / 94

Signature of certifying official — Date

Department of the Navy Federal Preservation Officer

State or Federal agency and bureau

In my opinion, the property ☐ meets ☐ does not meet the National Register criteria. ☐ See continuation sheet.

Signature of commenting or other official — Date

State or Federal agency and bureau

5. National Park Service Certification

I, hereby, certify that this property is:

☑ entered in the National Register. ☐ See continuation sheet.

Carl R. Lunger — 2-24-94

☐ determined eligible for the National Register. ☐ See continuation sheet.

☐ determined not eligible for the National Register.

☐ removed from the National Register.

☐ other, (explain:) _____

Signature of [illegible]

6. Function or Use

Historic Functions (enter categories from instructions)	Current Functions (enter categories from instructions)
Defense Naval Facility	Defense Naval Facility
Air Facility	Air Facility

7. Description

Architectural Classification (enter categories from instructions)

Late 19th and 20th Century Revivals
Mission/Spanish Colonial Revival
Other: Dirigible Hangar
WW II Blimp Hangar (2)

Materials (enter categories from instructions)

foundation concrete
walls stucco
roof clay tile
other terra cotta panels

Describe present and historic physical appearance.

SITE DEFINITION

The site consists of a large number of buildings that were constructed over an approximately 60 year time frame from the early 1930's until today. The buildings are clustered in a formal campus-like layout that is defined by a western-facing gated entrance and a very well tended landscape which includes mature specimen trees, shrubs, and manicured 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 that form a coherent core, include the formal cluster of buildings dating from 1933 that lead up to, and include, the imposing Hangar #1 (the original dirigible hangar) and WWII Blimp Hangars. This area of the base is bounded by Bushnell Road on the north, the automobile parking spaces behind Sayre Avenue on the east, Westcoat Road on the south; and the entry, Clark Road, on the west. The central area is laid out in an axial plan in a northeasterly direction with the original buildings symmetrically placed along a grand central greensward. In addition to this very defined central space where the earliest major base buildings are located, there is an equally significant adjunct of 9 officers' residences clustered around Berry Drive just to the south of the main gated entrance in another formally laid out plan 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 1920's and early '30's. 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 United States during the 1920's and into the early 1940's), as well as aspects that presage the modern designs of the Internationalist styles which would predominate in American architecture for the next thirty-five years (from approximately 1940 to 1975) .

[X] See continuation sheet

8. Statement of Significance

Certifying official has considered the significance of this property in relation to other properties:

[X] nationally [ ] statewide [ ] locally

Applicable National Register Criteria [X] A [ ] B [X] C [ ] D

Criteria Considerations (Exceptions) [ ] A [ ] B [ ] C [ ] D [ ] E [ ] F [ ] G

Areas of Significance (enter categories from instructions)	Period of Significance	Significant Dates
Military	1930-1935	
Engineering	1942-1946	

Cultural Affiliation

Significant Person: Moffett, William Adger; Admiral

Architect/Builder: U.S. Navy Bureau of Yards and Docks

State significance of property, and justify criteria, criteria considerations, and areas and periods of significance noted above.

In the nation's quest to provide security for the lengthy expanse of it's coastlines the opportunity for air reconnaissance was realized by the futuristic Admiral William A. Moffett. Through his efforts, two Naval Air Stations were commissioned in the early 1930's to port the two U.S. Naval Airships (dirigibles) he believed capable of this challenge. The Naval Air Station Sunnyvale was the Pacific Coast location selected, designed and developed to port USS MACON (ZRS 5). The immense structure, Hangar #1, designed to house USS MACON, with its larger counterpart in Akron, Ohio, remain the two largest structures in the United States 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) was sufficient to patrol the coast. The significance of the U.S. Naval Air Station Sunnyvale Historic District is attributed to the association with the expanding defense capabilities of the U.S. Navy, the engineering technology found in lighter than air ships, 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 significance of Hangar #1, was recognized when it was designated a Naval Historical Monument. It has been designated a Califronia Historic Civil Engineering Landmark, by the San Francisco section, American Society of Civil Engineers, and has been determined eligible for listing in the National Register of Historic Places by the U.S. Navy in consultation with the California State Historic Preservation Officer. The entire historic district is supported for listing in the National Register of Historic Places at the national level of significance under Criterion A for the association with coastal defense and naval technology that has made a significant contribution to the broad patterns of our history; and Criterion C reflecting the distinctive type, period, method of construction and high artistic values that are represented in the 1933 station plan and buildings. In 1942, the station was recommissioned, 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."

[X] See continuation sheet

9. Major Bibliographical References

Gragg, Dan The Guide to Military Installations, Harisburg, PA; Stackpole Books, 1983
Payne, Stephen M., Santa Clara County: Harvest of Change, Santa Clara,CA;Windsor Publicatio 1987

Unpublished:

Histoirc Civil Engineering Landmarks of San Francisco and Northern California, 125th Annual Conference, American Society of Civil Engineers, San Francisco Section, Sponsor, 1977.

Ifft, Jerry. The Era of Dirigibles at Moffett Field, 1987; California Room, Martin Luther King, Jr. Memorial Library, San Jose, CA

Interviews:

Benjamin Mandweiler, NAS, Moffett Field, Public Works Department
Lt. Col. Robert N. Maupin, USAF. Ret.

☐ See continuation sheet

Previous documentation on file (NPS):
- ☐ preliminary determination of individual listing (36 CFR 67) has been requested
- ☐ previously listed in the National Register
- ☐ previously determined eligible by the National Register
- ☐ designated a National Historic Landmark
- ☐ recorded by Historic American Buildings Survey # _____
- ☐ recorded by Historic American Engineering Record # _____

Primary location of additional data:
- ☐ State historic preservation office
- ☐ Other State agency
- ☒ Federal agency
- ☐ Local government
- ☐ University
- ☐ Other

Specify repository: _____

10. Geographical Data

Acreage of property 124 Acres (approximately)

UTM References

	Zone	Easting	Northing
A	10	377036	4122059 8
B	10	376975	4122060 4
C	10	376999	4122062 5
D	10	377063	4122053 0

☒ See continuation sheet

Verbal Boundary Description

The Naval Air Station Sunnyvale includes all of the 1933 original base plan with the addition of the 22.5 acre detached area containing hangars #2 and #3. The boundary line begins at the Main Gate, including the entrance gate and fence, proceeds along Clark Road to Berry Road where the boundary turns south to encircle the quarters A through H, north behind quarter F to Westcoat Road, east to Sayre Ave., north to Bushnell Road and west to Clark Road. A detached area is included in the historic district to incorporate hangars #2 and #3 with a 25 foot band of land around the pair.

Boundary Justification

The boundary includes the limits of development in the 1933 base plan for the Naval Air Station Sunnyvale, as prepared by the Navy Department, Bureau of Yards and Docks, and the area incorporating hangars #2 and #3 that are associated with lighter than air military aircraft.

☐ See continuation sheet

11. Form Prepared By

name/title Bonnie Bamburg
organization Urban Programmers date November 9, 1991
street & number 1174 Lincoln Avenue telephone 408-971-1421
city or town San Jose state California zip code 95125

This hybrid style forms a unifying element that not only holds the myriad of architectural uses together, but gives the entire complex a very satisfying central theme. The style is highly ornamented in the most significant buildings (such as the Administration and Bachelor Officers' Quarters) and stripped of ornament, but no less supportive of the whole in the smaller out buildings and garages. Interestingly, the building that is the raison d'etre of the entire Naval Air Station, Hangar #1, eschews any historicism in its design, but rather reflects the highest Streamline Moderne forms of modern technology at its finest.

Another slightly newer cluster of buildings is also defined by their distinctive architectural style which reflects the most popular designs of their time. These buildings are those structures which were built in the 1940's and early '50's and that are designed in a very plain International style of architecture defined by the simple stripped geometrical forms of the structures. These interesting examples are located at a few scattered sites within the original plat noted above (i.e. the Post Office, #67, for example), as well as being set in a long row along Dailey Road between the original campus plan and the Bayshore Freeway (#152). Other noteworthy buildings include the Control Tower (#158) at the far eastern edge of the site and the original Chapel Building (#86), which is a reinterpreted hybrid style that exhibits aspects of both a stripped Spanish Colonial Revival design and ornament hinting at more of a Mission Revival style. Additionally, two slightly smaller, but no less impressive hangars (Hangar #2 and #3), were constructed across the runways to the east of Hangar #1. These buildings were designed for the smaller blimps that replaced the huge rigid framed dirigibles of the 1930's for which Hangar #1 was designed. They also were designed in a much more prosaic and conventional architectural style than the metal sheathed futuristic Hangar #1.

A building that provides visual compatibility with the 1930's Spanish Colonial Revival buildings is the Chapel. This is due both to its physical location within the historic district, as well as to its architectural design, which is much more compatible with the older buildings on the base rather than the later International styled buildings. Early photos of the building illustrate a structure whose basic form of rather simply pitched cruciform plan appears to be very standard designed archetype military base chapel of the 1940's. But to this basic form, the designers add very site specific detailing which, though not technically a re-creation of the Spanish Colonial Revivals around it, very handsomely picks up hints of the building characteristics of the older structures. These details include, most importantly, the cupola which mimics the tower on the Administration Building, and the projecting curvilinear portico with its stone-like entry frame which takes directly from the Spanish Colonial Revival interpretations surrounding. The end result is an almost textbook example of a successfully designed new structure sensitive to an established architectural campus. Because the chapel was constructed well after the 1933 period it is not a contributing building to the historic district.

Because the International style buildings are less than 50 years old and are not individually exceptional, they will not qualify for listing in the National Register at this time and will not be discussed in any detail. This group consists of buildings 148-156, 158 and building 67.

In addition to these two major stylistic groupings, there are a number of other buildings on the site that have been constructed over the past approximately 50 years that fill up the site, but do not represent very fine examples of architectural design. These buildings are characterized by their utilitarian function, such as the number of Quonset huts (#111, #118 and #119) found throughout the site, as well as the plethora of small wooden and stucco buildings with little discernible styling that comprise much of the barracks, enlisted housing, shopping and warehousing spaces (#E-52, #E-13, #E-29, #347, #223, #245, and #244).

Thus from a specific design standpoint, the site can be divided into the following five main components that comprise its strongest identifying features:

A. Original Spanish Colonial Revival Design
B. Significant Engineering Features (Hangars #1,#2,&#3)
C. Miscellaneous Supportive Design Features
D. Post 1935 buildings designed in the Spanish Colonial Revival Style
E. International Style Buildings from the 40's

Out of these five categories, the proposed historic district from the 1930's will include all those features identified with item "A, B & C" immediately above.

A. ARCHITECTURAL DESCRIPTION OF THE SPANISH COLONIAL REVIVAL-DESIGNED ORIGINAL BASE BUILDINGS.

The original plan of Moffett Field was constructed in an architectural style that had as its antecedent the exuberant and capricious ornamentation applied by the 17th Century architect, Jose Churriguere, and eloquently revived by Bertram Goodhue in the design for the 1915 San Diego Panama Pacific Exposition. The Navy first attempted the style at Chollas Heights Radio Transmission Station in 1916 and followed with Goodhues' Marine Corps Recruit Depot, c. 1920, Naval Air Station North Island, c.1921, and his sketches for the Naval Training Center in San Diego, a year or so later. This form of Spanish Colonial Revival design reached its zenith at the end of the 1920's and was gradually losing favor to the modern designs of the mid-to-late 1930's. By the 1940's only some very late examples, usually transitional in styling that reflected the rise of both modern schools of architecture (Moderne and Deco styles, as well as the later International or Bauhaus-influenced styles) were being built.

The complex of original buildings that comprise the heart of the Naval Air Station Moffett Field are examples of late Spanish Colonial Revival design reflecting a much more severe example of this style with strong influences of the more modern style precepts, as well as hints of Eastern Colonial designs. The resulting hybrid significantly alters the original architecture of this style.

These buildings are characterized as essentially two-storied white or off-white stucco structures that are capped by very low-pitched Spanish tile roofs, which are punctuated by projecting chimneys, air ducts and, in the case of the true centerpiece building, the Administrative Building (#17), a richly ornamented, roof pavilion where corner columns support a decorated dome. The buildings are all rectangular in plan with either central projecting spaces or corner wings. Wall surfaces are very plain with the major break up of space occurring either in the location of rectangular-shaped windows, slightly projecting stringcourses between the floors, round arched entryways or arcaded ornamentation styled to look like granite around the major entry doors and surrounding significant window spaces.

It is the variation of the above major design elements that define the original base architecture. The two most handsome entrances are the round arched arcades that distinguish both the aforementioned Administration Building and the equally impressive Bachelor Officers' Quarters (#20). Repeated ornamentation include the flattened urn motif, various cartouches, and quarter-foil windows found along the exterior surfaces of all the major structures. The juxtaposition between the flat surfaces of the exteriors contrasting with the florid ornament around the major doors and windows provide the perfect tension that distinguishes the Spanish Colonial Revival style. A notable somewhat stripped example of this style is the impressive original Aircraft Tower (#18).

Some of the minor out-buildings, although stripped of much ornamentation, exhibit sensitive design features such as the low stepped parapets of buildings #22 and #2, the repeated multilight apertures of #10, and the simple, yet distinctive massing of the original portions of #6, which acts to reinforce the common design theme throughout the historic core. All of these original outbuildings significantly reinforce the common design theme of the historic campus.

The second cluster of original buildings, which forms an equally impressive uniform design statement, is found in the earliest residential units of the detached officers housing. In this extremely pleasant space, made so by its luxuriant landscaping and large unbroken lawns, a very simple house plan is repeated with only slight variations. The structures are designed in a very stripped and somewhat severe Spanish Colonial Revival style with two-storied, rectangular plan residences joined to a garage, either a one or two storied garage, by an arcade. The roof lines are low pitched gables that are sheathed in red Spanish tiles and punctuated by end fireplaces. Apertures are symmetrically placed on the structures with the dominant design characteristically reserved for the front entry. Windows are generally rectangular in shape, double hung and 3 over 2 in design. As with the major buildings on the working base section, here two stringcourses and various door surrounds provide the major contrast to the very simple stucco walls. Additionally, a similarly designed structure forms a prominent security building at the front gateway.

B. DESCRIPTION OF THE ORIGINAL ENGINEERING FEATURES (HANGARS #1, #2, AND #3)

Completely separate in design, but of such striking style and size as to warrant separate discussion are the three buildings that form the raison d'etre of the entire complex. The three hangars are of such proportions that for this reason alone they warrant the title "landmark". Aesthetically, the original hangar, which was constructed to hold USS MACON, a dirigible, is of such a unique design that it stands apart even from its later sister buildings. Hangar #1 is a metal sheathed behemoth whose rounded shape is both the epitome of the aerodynamically influenced Streamline Moderne style as well as a stylistic cousin to the huge airship that originally berthed inside the mammoth hangar.

Above all other buildings found on the Moffett Field site, Hangar #1 is without question the most significant building both architecturally and historically. It is one of the major buildings of Northern California, and has been recognized as an Engineering Landmark by the American Society of Civil Engineers.

Hangars #2 and #3 are significant more for their size than their unique styling or design. They represent more prosaic attempts at constructing very large military hangars. Similarly designed structures are found on Marine Corps Air Station, Tustin, California and at Coos Bay, Oregon. The more common design does not, however, detract from the sheer magnitude of the two huge buildings side by side. Along with Hangar #1, these two buildings help define the south San Francisco Bay Area from all distant directions.

C. DESCRIPTION OF THE OTHER SUPPORTIVE DESIGN ELEMENTS (I.E. LANDSCAPING, GATEWAYS, ARTWORK AND ITEMS OF INTEREST IN THE LANDSCAPE, STREET LIGHTING, AND SIGNAGE)

The third and final group of elements add immeasurably to the quality of design cohesion that characterizes the Naval Air Station Moffett Field site. These elements support the physical layout of the site plan as well as the quality of the original historical architecture. They also help define the campus-like quality of the base as well as unify the disparate building styles and types.

Most prominent of these supportive elements is the landscaping. The ubiquitous mature trees, the huge green spaces, and the careful placement of plants and shrubs which add immeasurably to the mise-en-scene. The luxuriant and well tended landscape is the first feature which one experiences after passing through the entry gate. Early photos of the site show a very desolate natural landscape which was essentially bay lowlands. Blueprint plans from April 29, 1933 illustrate the importance that a unifying and coordinating landscaping plan for the air station had in forming the basis for today's superlative luxuriant landscape. There could be no doubt that the existing grounds could not have been produced without a well conceived original plan.

Of almost equal importance in differentiating the site from its surroundings is the entry wall and gate itself (#36). Although very restrained in design, the gate forms a physical entrance into the unique area from the very bland surrounds. It should be noted that the wall, gateway, and gatehouse all derive from the original base architectural design plan.

Street furniture, interesting items on the landscape, and street lighting also add to the unique quality of the site. The furniture includes a detached community message board, a sundial and an historic anchor, both in front of building #25, as well as within the central greensward. The street lighting still retains its original bases, but the lamps themselves, from a later '50's design, are somewhat inconsistent with the Spanish Colonial Revival buildings of the historic core. Replacement with a more original form should be encouraged.

Signage too helps add to the unifying elements of the site. It is, most prominently in the historic core, understated in blue with gold lettering which is very supportive of original high design standards. Such attention to detail should also be encouraged to continue. For it is in the sum of all of these disparate features that the whole of a unique and memorable built environment results .

INDIVIDUAL SITE DESCRIPTIONS:

The following descriptions define the special design characteristics that distinguish the architecturally significant buildings from the 1933 plan (with two notable exceptions being a description of the 1943 designed Hangars #2 and #3).

HANGAR # 1: BUILDING #1

The site consists of a very large (1140'x308'x194') single-story, dirigible hangar that is constructed with three hinged steel truss arches and "X" cross bracing that is sheathed in large metal plates and set on a huge rectangular-oriented, elliptical shaped, floor plan and designed in a slightly flattened parabolic form. The structure further exhibits four rows of very large rectangularshaped and horizontally-oriented window bands along its two dominating eastern and western facing flanks. These apertures appear flush with the immense metallic skin of the building and greatly add to the very futuristic aerodynamic effect of the design.

Of particular engineering note are the hangar doors that run the full height of both the north and south-facing elevations. These doors are retractable and form a halfdome shape when closed.

The building exhibits a very clean, Streamline Moderne design which perfectly mimics the form of the airships themselves. Located perpendicular to the axis of the station plan this dominate structure provides the focus of the 1933 station plan.

The mammoth structure designed to hold fully inflated giant dirigible airships from the 1930's military fleet (such as USS MACON) was actually constructed in 1932 preceding the buildings of the surrounding base which date from 1933. The structure is important due to its unique use (dirigible hangar), beautifully executed Streamline Moderne architectural design, ingenious

engineering construction; and for its very size that still dominates a greatly urbanized Santa Clara County in the 1990's. From all aspects of national landmark status criteria, this building qualifies on its own. When added within the context of the surrounding supporting campus plan, the entire ensemble forms a very unique sense of place within the built environment and continues to exhibit national prominence.

HANGAR #2 AND #3: BUILDINGS #46 AND #47

The site consists of twin hangars that were designed for the, blimp fleet during WWII. They are of treated California redwood frame construction, configured on a rectangular plan in a more flattened parabolic form than Hangar #1; and characterized by their immense, moderately pitched porticoes at each of the north and south-facing hangar doors. These dominating entries are supported by very large concrete piers at each of the four corners. The twin buildings are set on a site plan that is directly oriented with the earlier Hangar #1, which is due west. The scale of the structure is exemplified by their dimensions, which at 1,075'x297'x171' (180,518 sq. ft.) make them slightly smaller than their predecessor, but still very impressive on the landscape. The use of wood construction instead of a steel truss system was in response to the war effort. Like most west coast military facilities constructed after 1941, metal was used very sparingly to conserve the resource for use in constructing ships and armament.

The design of these two buildings is in a much more conservative architectural style than the futuristic form of Hangar #1. These later hangars are almost domestic in their gabled porticoes. They definitely lack the daring and ingenuity of the other hangar's form and they are much less a unique design to the area. In fact, four other structures of like design were built on the west coast during World War II, to house the blimps used to patrol the Pacific coastal waters of the United States. Two in Coos Bay, Oregon which are no longer owned by the Federal Government and two on what is now Marine Corps Air Station, Tustin in Southern California. All four of these structures have been nominated to the National Register.

Although not of equal architectural or design merit as Hangar #1, these two like-structures are significant from both an historic perspective (as excellent extant examples of WWII blimp hangars) as well as an architectural/engineering perspective (they are after all buildings of incredible size and stature upon the landscape). The twin structures further add to the important design whole of the best of the original 1933 plan and the just slightly less impressive structures from the 1940's which help in-fill much of the site. They were completed in 1943. The combined visual power of Hangars #1, #2, and #3 form a physical presence upon the urbanscape which still dominates the low horizontal design of the Santa Clara Valley.

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ADMINISTRATION BUILDING: BUILDING # 17

The site consists of a two-story structure that is constructed on a shallow cruciform rectangular floor plan which is built of wood and sheathed in stucco with red Spanish tile roofing and terra cotta ornamentation, especially notable in the window and door surrounds. The building is the most prominently sited structure within the 1933 campus plan. It is set in the very heart of the open grassy median as a definite center point to the original plan. Its architectural design represents a late example of Spanish Colonial Revival style with some modifications that give it a kinship with Eastern military bases of the same vintage (that were designed in dry formal interpretations of Colonial Revival).

The building is 148'x41 'x37' and contains 18,954 sq. ft. The structure is characterized by the features which define all of the original buildings: the very low pitched, slightly hipped and tiled roofline. Exterior walls are flat and devoid of ornament, save a stringcourse running the entire perimeter of the building and separating the two stories. The eave line is very shallow. Windows are simple, rectangular in plan, vertical in orientation, multi-paned and double hung. Overscaled terra cotta ornamentation define the major front and back entrances, as well as the centered second story window. The main or west-facing entrance projects out from the main structure and exhibits a triple round-arched, recessed entrance.

Ornamental urns, pilasters and floral design (characteristic of Churrigueresque Spanish architecture of the 1 7th Century) add a much needed ornamental counterpoint to the very simple and severe basic design.

A further feature which distinguishes this structure among all of the others in the original campus plan is the small centered Bell Tower. This small belvedere is capped by a diminutive, red-colored dome and distinguished by very flat arches at each of its four faces. This architectural style is much more characteristic of the colonial designs of the Eastern United States and is a major factor in classifying the overall base design as a modified Spanish Colonial Revival style.

With the nearby Bachelor Officers Quarters and the Married Officers' Residencies, the Administration Building, (which is also historically referred to as the Admirals Quarters) is the most architecturally important building from the original 1933 construction (excluding Hangar #1). This building sets the design criteria that is followed throughout the original campus plan. It acts both as a handsome example of hybrid revivalist architecture which is prominently set at the most important axial juncture of the site and as one of the most lavishly ornamented of Moffett Field's original structures. As such, the Administration Building is a key to the historic fabric of the site.

BACHELOR OFFICERS QUARTERS: BUILDING #20

The site consists of a large, two-storied structure that was constructed on an irregular rectangular shaped site plan which is actually symmetrical in form. The building exhibits a more ornamented interpretation of a hybrid Spanish Colonial Revival architectural design. It is characterized by the same basic features that distinguish all of the original buildings. The roofline is lowpitched and sheathed in red Spanish tile, the eave is fairly shallow, wall surfaces are unadorned white stucco; and window shapes are paired rectangular forms which are double hung, 3 over 2 in form. Major entrances are distinguished by terra cotta facing that emulates granite. Three large round arches provide the building with a very elegant entryway. Flat unadorned pilasters separate these arches. They are further adorned with flat urn detailing. The characteristic stringcourse separates the two floors. A rear wing projects toward the south.

The structure is sited symmetrically across from the equally prominent, but slightly less architecturally impressive, Bachelor Enlisted Quarters (#19) which has been greatly enlarged with a rather bland International Style addition at both ends. The structure is further enhanced by a well conceived and equally well maintained landscape plan.

Along with the cluster of major buildings that are set along the formal axis of North and South Akron Roads, the BOQ helps define the high quality design character that distinguishes the historic core of Moffett Field. The structure is an extremely fine example of historicist architecture of the 1930's and remains a key element in the cohesion of the base's physical form.

GYMNASIUM: BUILDING #2

The site consists of a very large, single-story, plaster-sheathed, steel framed building that is constructed on a slightly irregular rectangular floor plan with a flat roof that is distinguished by slightly projecting stepped parapets that hint at the utilitarian designs of the original campus plan of 1933. the roof is wood sheathing on steel beams. This structure exhibits a ubiquitous projecting stringcourse encircling the building, as well as the very plain beige plaster walls. The major design feature on this essentially utilitarian structure is in the window placement. Here, the structure is characterized by very tall, horizontally-banded, multi-paned apertures which act to break up the surface of the exterior walls either as centered indentations on large expansions of plaster or as repeated forms which act almost like columns along the major side elevations.

This structure avoids, as do all of the original functional outbuildings, the Spanish Colonial Revival design of the major living areas of the base. Interestingly, it provides a handsome architectural bridge between the very futuristic Streamline Moderne design of Hangar #1 and the more historicist styles of the original campus plan.

The site is significant both historically and architecturally. It was originally constructed to be a balloon hangar which justifies its extremely large interior single story space (19,691 sq. ft., 130'x88'x63'). Additionally, the building sets the reserved design criteria for the outbuildings on the base which handsomely support their more ornamental Spanish Colonial Revival contemporaries. Features which characterize these original outbuildings include flat roofs, shallow parapets which are slightly stepped; and severely unadorned exterior walls. Windows are rectangular in form and provide the dominant design ornamentation.

Although these buildings do not provide the obvious ornamentation, stylistic historicism or landscaped surroundings of the more apparently significant original Spanish Colonial Revival structures, they exemplify an extremely sophisticated design criteria of their own which greatly adds to the overall cohesion of the existing campus. In their own right, the Gymnasium, along with similarly designed original 1933 outbuildings such as the Garage (buildings #21 and #22), are major factors from the original 1933 design which make NAS Moffett Field so architecturally distinguished .

BUILDING #23, INSTRUCTION BUILDING

Fronting on Akron Road, the former dispensary is one of the buildings that defines the original architectural design and is symmetrically placed, opposite building #25, to balance the entrance to the base's formal plan. The two story, above grade, building is basically a "T" form executed with the typical elements of the Spanish Colonial Revival architecture, low pitched tile roof, stucco sheathing and terra-cotta ornamentation. The front facade has a central entrance recessed behind three arched openings that form an arcade. Terra-cotta surrounds decorate the three windows above the entry and the doors at the east and west ends. The building, originally the base dispensary, was enlarged by the U.S.Army's Air Corps in 1936, when extensions were added to the rear and the east end. The building is 105 feet by 96 feet and 10,995 square feet of floor space.

Of the original buildings, #23 and #25 are significant because of their representation of the Spanish Colonial Revival design and for their locations at the entrance of the working station. Opposite each other, across the central lawn mall, these buildings provide symmetry to the original plan.

BUILDING #25 THEATER

The theater, two stories over a basement, is a typical example of the significant supporting buildings that define the original architecture. The "T" form is executed with a low pitched tile roof, stucco sheathing and terra-cotta ornamentation. The typical protected entry is behind an arcade that, in this case, is projected forward. The fenestration, again typical of the dominant style, is symmetrical for all floors except those voids above the entrance. Here the pattern changes to a band of windows divided into three elements that balance the three arches of the arcade. The building is 150 feet by 110 feet in an irregular plan that accommodates 7,745 square feet of floor space.

BUILDINGS #21, #22 AND #24 - GARAGES

This group of detached garages are supportive elements in the historic district. Each is one story and is constructed using typical materials and simple forms of the ancillary buildings. Buildings #21 and #22 retain the original use and design, including corner parapets. The buildings, located behind Building #20, are almost identical, 98 feet by 24 feet with garage door openings facing each other. Building #24, located behind Building #23, was the ambulance garage. It is smaller 45 feet by 30 feet. The large garage door openings have been infilled and the interior space modified for administrative offices.

The garages are significant supportive buildings that compliment the architecture of the larger buildings. Building #24 retains the original mass and form but, the alterations have changed its appearance as a garage.

BUILDING #10 - HEAT PLANT

One of the original buildings, the heat plant is a large industrial building of block massing in an irregular "T" form that is two stories in height. A single story element fits into the south west corner. Typical of power plant design, the dominate feature is the fenestration. This building has window banks that extend to the second story. A coursing separates the massing with smaller rectangular windows above the band. In keeping with the dominant architecture, this utilitarian building is decorated with a simple surrounds at the entrances. Flat arches top the tall window banks. The glazing is rectangular pane divided mullions. Most of the first floor windows have transoms that are operable. While the upper rows are all operable. A second coursing divides the lower portion of walls at about four feet, the basement line. Building #10, is sheathed in stucco with a flat roof. This building is a handsome version of a utilitarian industrial design.

The heat plant is one of the original buildings. It is significant as an example of the dominate architectural design stripped to the essence, entrance surrounds and arched windows, for industrial use.

STRUCTURE #5 - Water Tower:

Supported by a tall steel frame, the water tank is topped with a conical roof. The traditional red and white checkered paint defines this classic industrial design. One of the original structures, the water tower is a functional and visually distinctive feature.

BUILDINGS A THROUGH I AND ANCILLARY GARAGES A-1 THROUGH I-1

REPRESENTATIVE SINGLE FAMILY RESIDENCES (COMMANDING, SENIOR AND JUNIOR MARRIED OFFICERS QUARTERS):

The original 1933 detached residential structures are all designed in a like architectural style of which any single building represents an archetype for the whole. The example used here is site #A1, which is referred to in the 1933 landscape plan as the "Commanding Officers' Quarters".

The site consists of a very simple, two-storied, rectangular-planned single family residence that is constructed of wood frame with a low gabled red Spanish tiled roof over a very plain stuccoed exterior (which is punctuated by a formal placement of both windows and doors). A simple chimney adorns the western facade. An attached single-storied, round-arched breezeway connects the residence with a large, two-storied, rectangular-planned garage set slightly behind the main structure.

Stylistically, the residence reflects all of the specific design criteria which unifies all of the original 1933 Spanish Colonial Revival architecture on the base. Windows are almost flush with the plain exterior walls. They are also essentially rectangular in shape, double hung, multi-paned and symmetrically placed along the facades. A colored, projecting stringcourse separates the two stories. The front entry is the most prominent exterior feature with a slightly recessed almost flat arched entry with projecting surrounds. An ornamental sidelight window is balanced by a large wrought iron projecting lamp on both sides of the main entrance.

Landscaping is characteristically both formal and very well maintained. The very large mature trees add immeasurably in setting apart the residential quarter as an oasis amid the functioning base. The open greenswards that distinguish the street directly tie in with the more formal axial plan of the rest of the base. The curved street pattern illustrates the influence of contemporary suburban design on such residential planning even on a military base.

The original 1933 detached residences form a key architectural component in the significant whole that distinguishes the site plan of the naval air station. Along with the verdant landscaping and extra wide spacing, this enclave of buildings helps define all that is special about the site from a design perspective.

CONTROL TOWER: (AEROLOGICAL BUILDING FLIGHT CONTROL TOWER) BUILDING #18

The site consists of a moderately-sized (3590 sq. ft.), two-storied building with a centered third story, hexagonal-shaped Control Tower. The structure is designed on a slightly varied rectangular floor plan with a very minimal attempt at exterior ornamentation. It is another of the utilitarian structures from the original plan that exhibits hints of the Spanish Colonial Revival design of the major buildings (in the centered round arch, the overscaled twin wrought iron Spanish styled lamps on both sides of the entry and the ubiquitous terra cotta surrounds ornamenting the front door). Otherwise, this structure is very simple in its design. Its walls are unadorned plaster. Windows are slightly recessed, rectangular in plan, multi-paned, double hung and symmetrically placed along the exterior facade.

The hexagonal tower is, along with the projecting metal tower above, the most distinguishing feature of the structure. It is characterized by its band of vertically oriented windows on each of the eight faces, as well as the iron railing which caps the flat-roofed tower from above.

The building's significance is due both to its history as the original Control Tower for the air station, as well as to its architectural design which once again exemplifies the sophisticated aspects of the original 1933 plan. The structure provides a transition between the more historically refined Spanish Colonial Revival architecture and the simple, yet equally impressive, more modern styles of the utilitarian outbuildings. It is the cohesion provided by the interaction between these two styles that provide the stylistic excellence of the historic core plan.

TWIN SMALL TOWERS (FLOOR WATCHTOWERS): BUILDINGS #32 AND #33

These two twin sites (#32 and #33) consist of very small, two-storied towers that are distinguished by their very unusual design. They are towers that are distinguished by their very unusual design. They are very small structures (578 sq. ft., 14'x14'x25') that appear to be composed of a standard two-story rectangular tower with flat roof joined to a slightly smaller two-storied rounded tower with like flat roof that is capped with metal railing. The buildings are very simple in form. There are really no specific architectural embellishments. They exhibit all of the standard features of the utilitarian structures on the base without any ornament. Recessed, double-hung, multi-paned windows provide the major characteristic design feature which ties them into the surrounding historic core buildings. A prominent projecting stringcourse characteristically separates the two floors.

The significance of these two small utilitarian buildings is primarily in their unique function and form. They are very site specific and add a distinctive counterpoint to all of the rectangular shaped structures on the base. They are architectural curiosities that add immeasurably to the historic and architectural importance of the site.

INTERIOR SPACES:

Naval Air Station Moffett Field has been in continuous use since it was constructed. During the years the interiors of the buildings were altered to accommodate changes in uses and space requirements. The alterations have redesigned the original interior space plans, removed the original surfaces and changed the spacial feeling of the interiors. Due to the alterations, the interiors do not retain architectural integrity or historic significance.

NON-CONTRIBUTING BUILDINGS

Within the boundary of the historic district the number of non-contributing buildings exceeds the number of significant buildings and structures. This unusual ratio does not diminish the significance or integrity of the district. Most of the non-contributing buildings were constructed after the period of significance and are primarily small utilitarian constructions. The Chapel and heating plant, buildings 86 & 87 were constructed after the period of significance yet are designed in the idiom of the district. Thus, Naval Air Station Moffett Field, despite the imbalance in numbers of contributing and non-contributing buildings, maintains exceptional integrity of the 1933 station plan and architectural design.

The International style buildings were predominately constructed after 1944 and are not 50 years old. Therefore, they are not eligible for listing at this time. The Post Office, building #67, constructed in 1943, one of the finest examples of this style, is not significant as an individual building and should be included with the later International style buildings.

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SIGNIFICANT AND CONTRIBUTING BUILDINGS

BLDG. #	CURRENT USE	ORIGINAL USE
1	Hangar #1	Hangar #1
2	Gymnasium	Balloon Hangar
5	Water Tank	Water Tank
10	Heat Plant Building	Storehouse
15	PW Shop	Fire Station/Laundry/Garage
16	PW Shop	Locomotive Crane Shed
17	CPWP Administration	Administrative Building
18	NAV RES Administration	Aereological Center
19	BEQ	BEQ/Brig
20	BOQ	BOQ/Mess Hall & Galley
21	BOQ Detached Garage	BOQ Detached Garage
22	BOQ Detached Garage	BOQ Detached Garage
23	Instruction Building	Dispensary E
24	Administrative Office Building	Ambulance Garage
25	Base Theater/Recreation Service/Thrift Shop	Bowling Alley/Recreation Building
26	Gate House/Iron Fence	Gate House/Iron Fence
32	Storage	Tank House
33	Storage	Water Tower
37	Scale House	Scale House
A, A1 B, B1 C, C1 D, D1 E, E1 F, F1 G, G1 H, H1 I, I1	Officers Housing and Garages	Housing and Garages
46	Hangar #2	Hangar #2
47	Hangar #3	Hangar #3
55	Heat Plant for Hangars #2 and 3	Heat Plant for Hangars #2 and #3

SIGNIFICANT OBJECTS

40	Flagstaff/Commons Memorial Anchor	Flagstaff and Commons Anchor

NON-CONTRIBUTING BUILDINGS

1930-1933 - Altered (loss of architectural integrity): Buildings # 3, #6, #12, #13, #14, #29, #31, #36, #501.

1940-1944 - Altered (loss of architectural integrity): Buildings #240, #241, #242, #514, #515, #516, #517

Assembly Buildings: #45, #85, #115

Quonsets: #81, #117

Sheds: #34, #44, #83, #347

1940 - 1944 (outside period of Significance) Buildings: #67, #64, #86, #87,

All buildings and structures constructed after 1944, including: #76, #77, #123.

All ancillary buildings and structures, in proximity to Hangars #2 and #3, that are very small, altered or constructed after 1944; #79, #98, #186, #346, #350, #367, #368, #396, #440, #470, #472, #499, #539, #540.

Several factors contributed to the commissioning of the U.S. Naval Air Station Sunnyvale on April 8, 1933. Of foremost importance was the vision for the future of aircraft and influence of Admiral William A. Moffett. Appointed by President Harding on July 25, 1924, to be the first as Chief of the Naval Bureau of Aeronautics, Admiral Moffett had already established himself the proponent for increased Naval aircraft as an integral component of the Navy's ability to control the seas off the coasts of the United States. In the 12 years that Admiral Moffett lead the bureau, the U.S. Navy was catapulted into the lasting interlocking strategy of Naval presence in the air as well as the sea. But he also spoke of the future in commercial aviation. In the 1920's, he appears fascinated with the lighter than air technology of the dirigibles. The success of the zeppelins in WWI contributed to the development of the larger dirigibles. This was however, marred by the disasters resulting from the flammability of the hydrogen used to fill the chambers. Each country involved in the hydrogen filled dirigibles experienced tragedy. A memorial plaque in Shenandoah Plaza at Moffett Field commemorates USS SHENANDOAH that was lost with a crew of 14 on September 3, 1925. The largest of the dirigibles, HINDENBERG, burst into flames over Lakehurst, New Jersey in 1937, culminating a series of tragic losses involving the dirigibles and hydrogen. Helium, produced only in Texas and Kansas, had been known to be a reasonable replacement for hydrogen, but was prevented from export by the 1925 Helium Export Act. Moffett began a lobbying campaign to have the U.S. Navy use helium filled dirigibles to patrol the coasts. In Moffett's plan, these giant rigid frame airships would provide the long range observation for the surface Navy below. He believed the dirigibles could be fashioned to carry small planes and might even be equipped with bombs. The idea was not far-fetched. The technology of the 1920's allowed dirigibles which could stay aloft for 14 days and fly 10,000 miles. The lobbying proved successful with the 1926 congressional authorization for two Naval dirigibles capable of carrying aircraft and a new aircraft base for the west coast. The dirigibles were to be built by the Goodyear-Zeppelin Corporation in Akron, Ohio. The first to be completed was based at Lakehurst, New Jersey. The selection of the site and construction of a base to service the second would be undertaken on the west coast.

The west coast site appeared to be slated for Camp Kerney near San Diego when the northern California politicians realized the opportunities to be created and forced the federal planners to accept applications from the entire west coast. Applications were received from 997 locations. San Francisco mayor, James Rolph, saw the benefit to the Bay Area even though his city did not have a site suitable for the base. The appeal was for 2,000 acres with unobstructed approaches, clean water, rail access and good flying weather was heard by Mrs. Laura Whipple, a recently established real estate broker from the East Bay. Familiar with the Sunnyvale area, she selected the Rancho Unigo, a former Indian Reservation, that seemed to meet all the criteria. Appointing herself "Chairman of the Landholders Commission", she obtained an option for 1,750 acres at the price of nearly $500,000. She wired San Jose congressman, Joseph Free,that a perfect site for the dirigible base had been located and optioned. The proposal from San Diego offered free land; in order for the Sunnyvale site to be selected the same offer would have to be made. Under

the leadership of presidents of the Chambers of Commerce from Mt. View and San Jose, a campaign to raise the funds and solidify the offer went forward. The newspapers, including the San Jose Mercury Herald, were enthusiastically in support of the proposal and offered publicity and public relations material to support the proposal. After three years of study and debate, it was time for a decision. On December 28, 1930, the vote registered by the House Naval Affairs Committee for H.R. 6810, introduced by Congressman Free, selected Sunnyvale by 18 to 1 and Camp Kerney as the auxiliary base. As a member of the West Coast Naval Airship Base Board, Moffett had favored Sunnyvale while the Secretary of the Navy, Charles F. Adams, preferred Camp Kerney.

Once selected, the issue remained to raise the money to purchase the land. Under the leadership of A. M. Mortensen, President of the San Jose Chamber of Commerce, the funds were raised and on August 2, 1931, the Chamber's check for $476,165,90 completed the purchase of 1000 acres of the Rancho Unigo. Also on August 2, 1931, the land was transferred to the U.S. Navy for $1.00. This completed a long and arduous partnership between the cities of the Bay Area to gain the prestige, jobs and economic interests that would follow the base.

The budget for constructing the base was $5,000,000. The U.S. Navy of Yards and Docks would be responsible for the design and coordinate the construction. Lt. Commander Earl Marshall was given the responsibility. Ernest Wolf, an experienced engineer from the Goodrich Zeppelin Corporation, was to be the Associate Engineer. Hangar #1, as it would be called, was the most important building and received the first attention. The design had been refined in Akron by Dr. Hugo Ekener, to form a rounded building that followed the form of the dirigible. Enormous curved doors on each end would slide over the building, rolling on 40 wheels over standard gauge railroad track, and propelled by 150 hp electric motors, thus minimizing the turbulence and problems encountered with past designs. In fact, it was the window patterns that dictated the north-south orientation and siting of Hangar #1; the rest of the base followed. Of the $2,250,000 budgeted for the hangar, $1,116,044 was awarded to the Wallace Bridge and Structural Steel Company of Seattle to fabricate the steel for the structure and doors. Seims-Heimers, Inc. of San Francisco bid $398,937 for the roofing, windows and siding on the airdock that would measure 1, 133 feet long, 308 feet wide and 198 feet high. The floor area is just over eight acres. A structural space frame, the design and construction of this hangar remain a feat unparalleled in the engineering of enclosed space.

Railroad tracks ran through the hangar, culminating at the mooring tower. The tower secured the dirigible to the ground by mooring lines. This tower has been removed. The other large structure that was necessary for the dirigible was the helium tank that was located in front of the hangar.

The plan for the base and the design of the buildings was also undertaken by the Naval Bureau of Yards and Docks.

The style for the buildings, Spanish Colonial Revival, is reflective of the popularity of the revival movement and the desire of the local politicians to have the base designed in the "California Style" of white stucco walled buildings with red tile roofs. The plan and building design was very formal, an axial orientation with the bemouth hangar to the east and the base extending west. Following the Spanish influence, a large plaza is the central element with the most ornately decorated building, the Administration Building, at the head of the plaza behind the flag pole and in front of the hangar. On the south side of the plaza were located the dispensary and Bachelor Officers' Quarters. To the north were the recreation building and the barracks. To the southwest on the cul-de-sac were located the nine officers' houses and garages. Extending to the east, and south, behind this formal plaza arrangement were the utilitarian buildings, fire station, garage, laundry boiler plant, locomotive and crane shed, shops, helium storage and water tower. To the north were the commissary, store house, gas station, balloon shed and storage buildings. Directly behind the Administration Building was the cafe (later the Officers' Club), and of course, the Hangar. The base was designed in anticipation of the importance of the automobile. Broad roads, large parking areas and garages were incorporated in the plan.

Landscaping was carefully planned to mature in harmony with the buildings and circulation elements. The area considered the Naval Air Station Sunnyvale Historic District maintain the integrity of the original design and represent one of the finest formal plans for a government facility in California. It was a forward-thinking plan with expansion to occur outside the formal plaza, thus the quality of design has been maintained. The original base is a one-of-a-kind facility in the Santa Clara Valley with great importance in the architectural heritage, facility planning and economic growth of the region.

The primary significance of the historic district is the association with the "lighter than air" dirigible program. The dirigibles, to be the eyes in the sky for the Navy, were in operation for a relatively short time. USS MACON, one of the two dirigibles constructed for the Navy, was christened by Mrs. William Adger Moffett (wife of Admiral Moffett) on March 11, 1933. An article about the landing in Sunnyvale was reported in the October 15, 1933 edition of the San Francisco Chronicle that read, "30,000 Thrilled as the MACON Moors at Home Station." The sister dirigible, AKRON, had been lost on April 13, 1933, making the MACON the last dirigible. For 16 months, USS MACON was a common sight over the Santa Clara Valley as it performed in a number of military maneuvers with the Pacific Fleet. Admiral Moffett had been well aware that the slow moving dirigibles could be of great benefit when assigned as an observatory for the fleet, but were vulnerable if used in maneuvers with the fleet. Shortly after arriving at Sunnyvale, USS MACON was deployed on tactical maneuvers with the Pacific Fleet. Equipped with an internal hangar and steel frame hoist termed a "trapeze", USS MACON carried four small fighter planes. The Sparrowhawks (F9C) were bi-plane fighters developed specifically to be carried in the dirigible by Curtis. Each weighed only 2,500 pounds with a pilot. As an airborne carrier, the dirigible was a hulking target that "failed to demonstrate military usefulness," according to the Commander in Chief of the United States Fleet, Admiral David Sellers. While returning from maneuvers with the fleet on February 12, 1935, USS MACON experienced a structural failure and crashed into the Pacific. Of the 83 crew, only 2 were lost. It was the headline in the San Francisco Chronicle the next day that told the story, "Dirigible Doomed as Defense Factor, Officials Say." The era of dirigibles was over, the only remaining element of the Moffett five year plan was Hangar #1 and the base at Sunnyvale.

During this period, the U.S. Army Air Corps operated a limited number of blimps in conjunction with observation exercises. In September, 1935, seven months after USS MACON went down, the Army assumed control of the base and Hangar #1. The facility was used by the Army for pursuit and observation activities until 1940 when it was converted to the West Coast Air Corps Training Facility. During this period, the dispensary was enlarged and barracks were added.

Shortly after the outbreak of WWII, the base was returned to the U.S. Navy. In April, 1942, the base was recommissioned Naval Air Station Moffett Field.

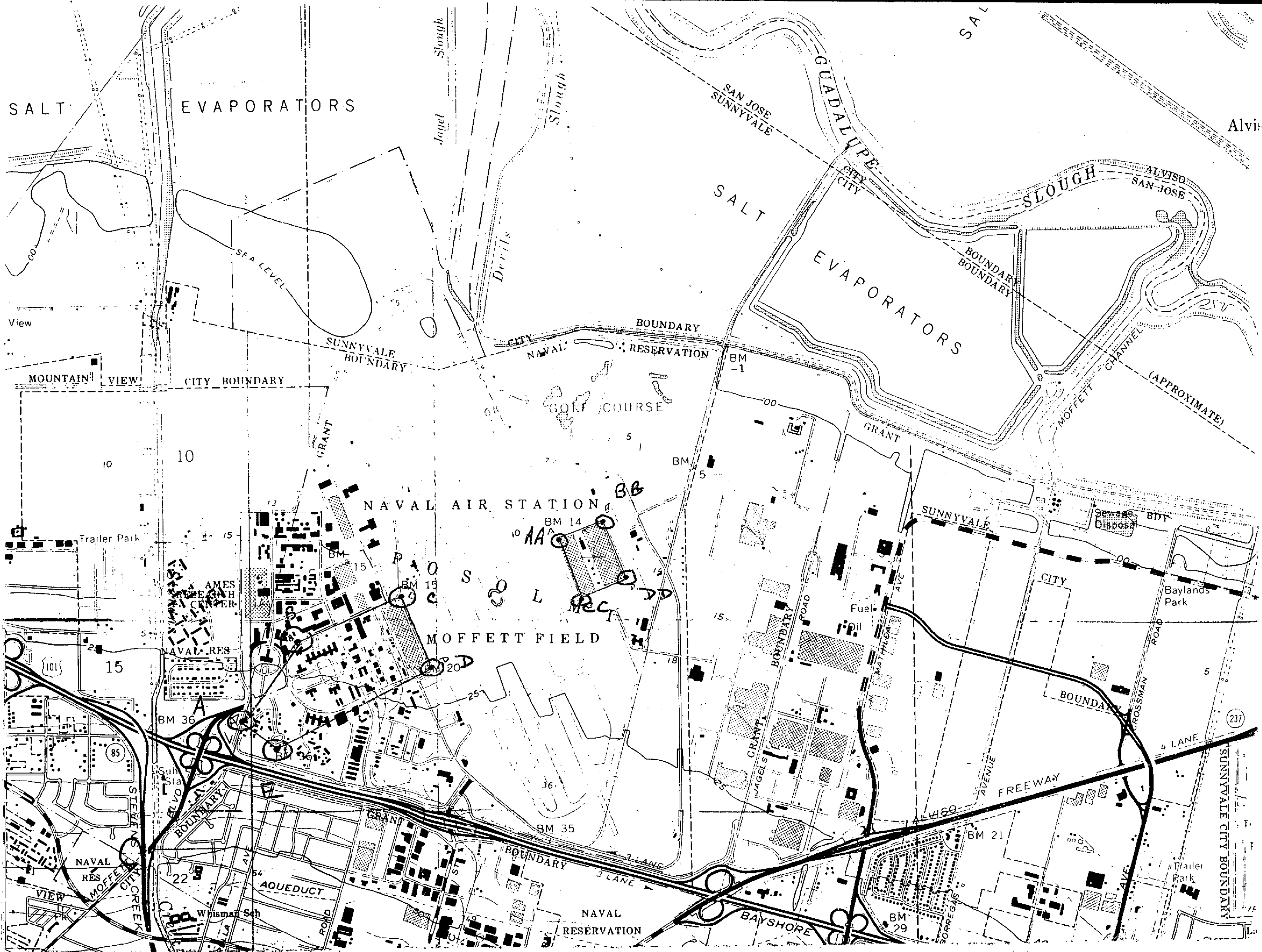
The return to Naval Command was to provide expanded facilities for small blimps and balloons used for coastal observation. Hangars #2 and #3 were constructed for blimps in 1942. They are included in the historic district because of the use as a lighter than air facility, and for their architectural/engineering importance.

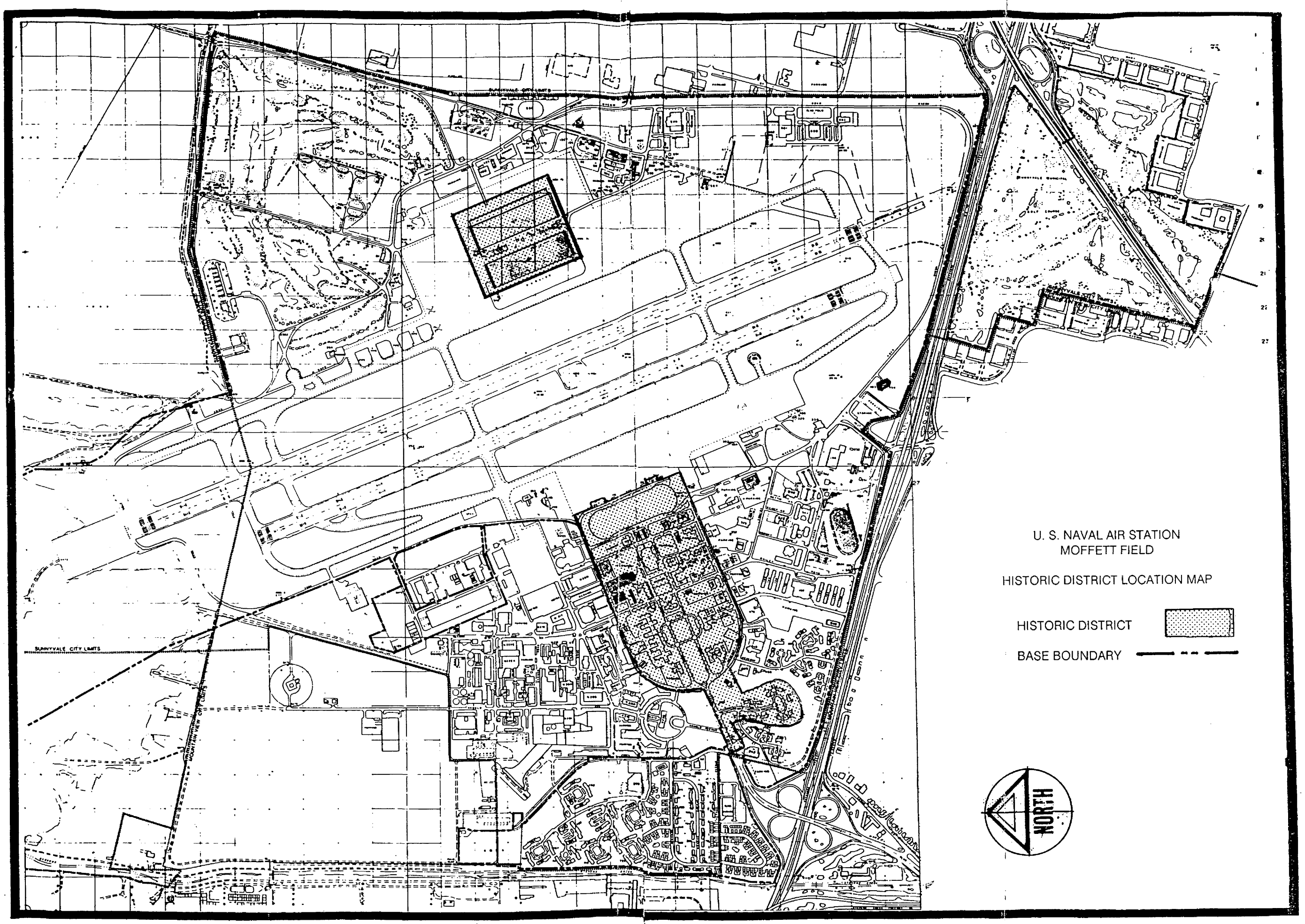
One of the most recognizable landmarks in the San Francisco Bay Area, Hangar #1 and the original base are significant in the history of Naval Aviation, defense and in the development of the Santa Clara Valley. From the original base and because of the facility location and landing field, NASA Ames Research Center is located to the north adjacent to the original plaza boundary and at the north boundary of the historic district. It is far easier to measure the importance of the dirigible in Naval Aviation and defense history than it is to measure the enormous impact upon the growth of the defense and space industry in Northern California because of the original location of this base with the 1000+ acres.

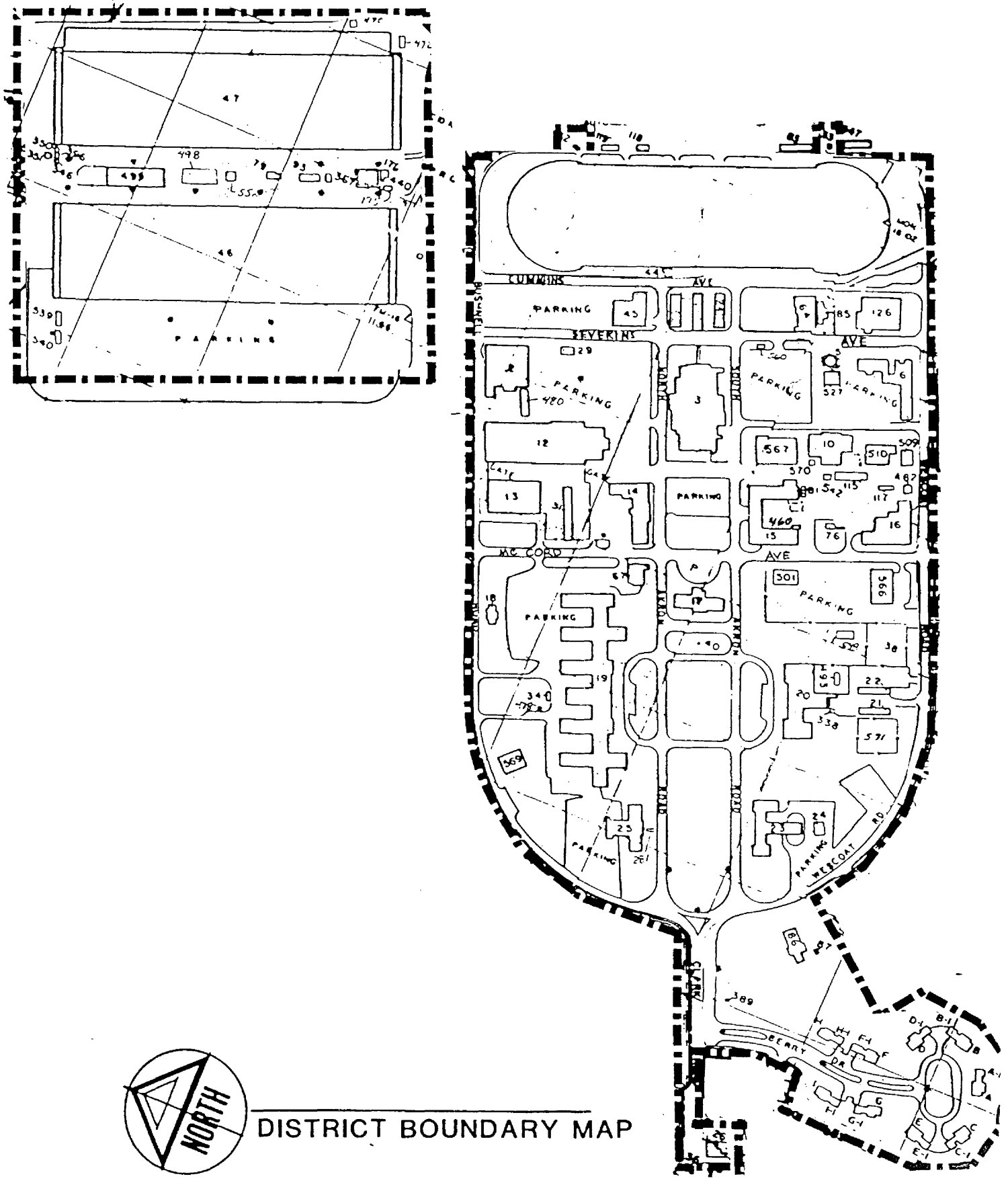
The Naval Air Station Sunnyvale Historic District is recommended for listing in the National Register of Historic Places at the National Level of significance under Criteria A, as the only base designed specifically for the Navy to home port USS MACON, the only dirigible in the fleet, a significant contribution to the broad pattern of our history; and under Criteria C, a facility plan and architectural design that embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.

The landscape plan (Y&D drawing No. 115840) was approved on April 29, 1933. This plan shows the base in its entirety.

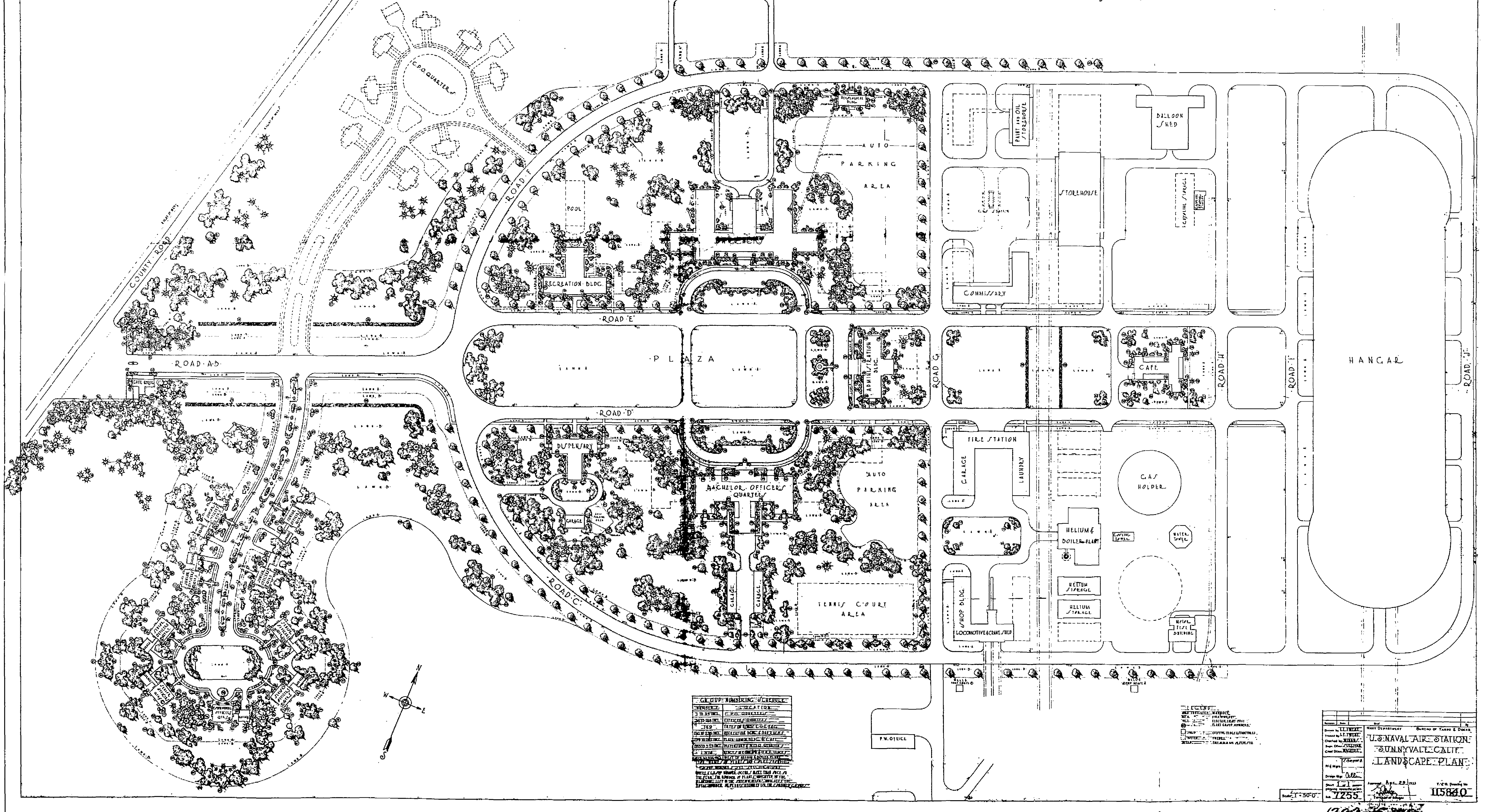
ZONE 10	E	37.7063	122.0530
	A1	37.7095	122.0433
	B1	37.7060	122.0421
	C1	37.7071	122.0394
	D1	37.7105	122.0408

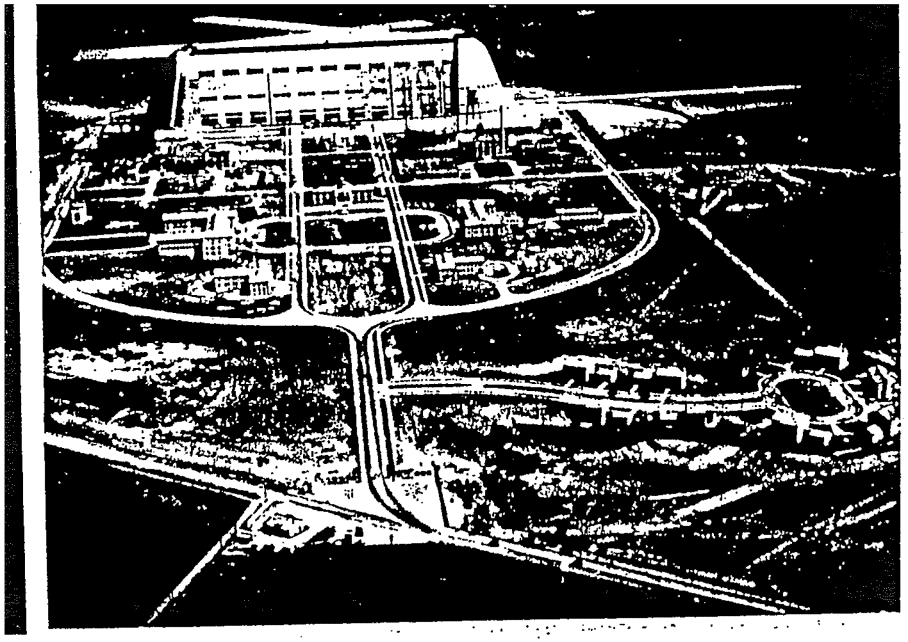

SALT EVAPORATORS
Jagel Slough
Devils Slough
SAN JOSE
SUNNYVALE
GUADALUPE
Alvis
SLOUGH
ALVISO
SAN JOSE
CITY
CITY
SALT
EVAPORATORS
BOUNDARY
BOUNDARY
MOFFETT CHANNEL
(APPROXIMATE)
SEA LEVEL
View
SUNNYVALE BOUNDARY
CITY BOUNDARY
MOUNTAIN VIEW CITY BOUNDARY
NAVAL RESERVATION
BM -1
GOLF COURSE
GRANT
NAVAL AIR STATION
BM 14
BM 15
AMES RESEARCH CENTER
MOFFETT FIELD
BM 20
Trailer Park
NAVAL RES
BM 36
101
85
237
Sub Sta
STEVENS CREEK
BLVD
BOUNDARY
AQUEDUCT
Whisman Sch
NAVAL RES
VIEW
MOFFETT
CITY
NAVAL
RESERVATION
BAYSHORE
FREEWAY
4 LANE
3 LANE
ALVISO
BM 35
BM 21
BM 29
BM 5
SUNNYVALE CITY BOUNDARY
SUNNYVALE BDY
Sewage Disposal
Baylands Park
Fuel Oil
MATHILDA AVE
ROSSMAN ROAD
CITY BOUNDARY
AVENUE
BORREGAS
JAGELS
BOUNDARY ROAD
Trailer Park
AA
BB
DD
MCC

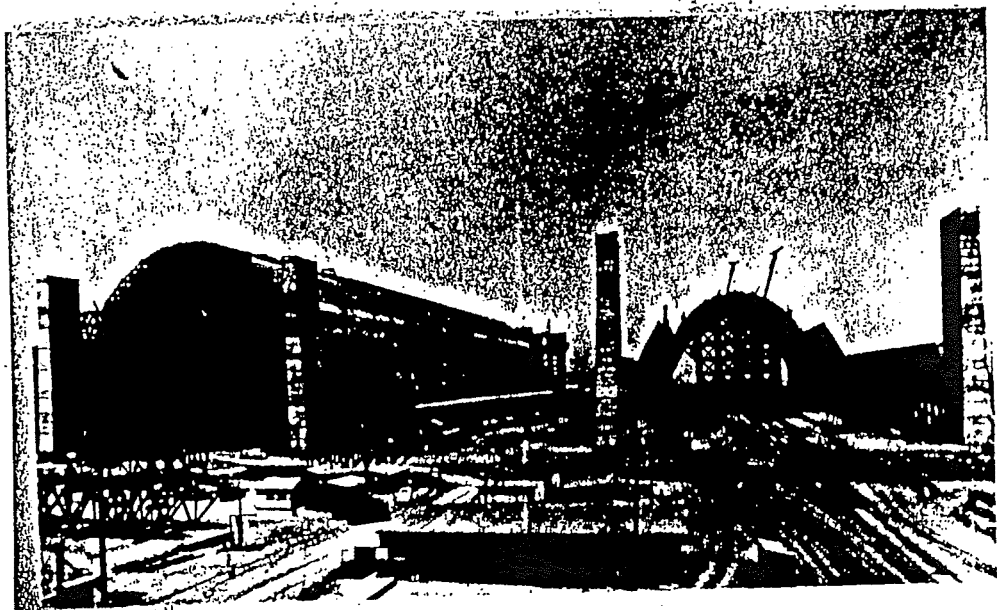

SUNNYVALE CITY LIMITS
MOUNTAIN VIEW CITY LIMITS
U. S. NAVAL AIR STATION
MOFFETT FIELD
HISTORIC DISTRICT LOCATION MAP
HISTORIC DISTRICT
BASE BOUNDARY
NORTH


NORTH
DISTRICT BOUNDARY MAP

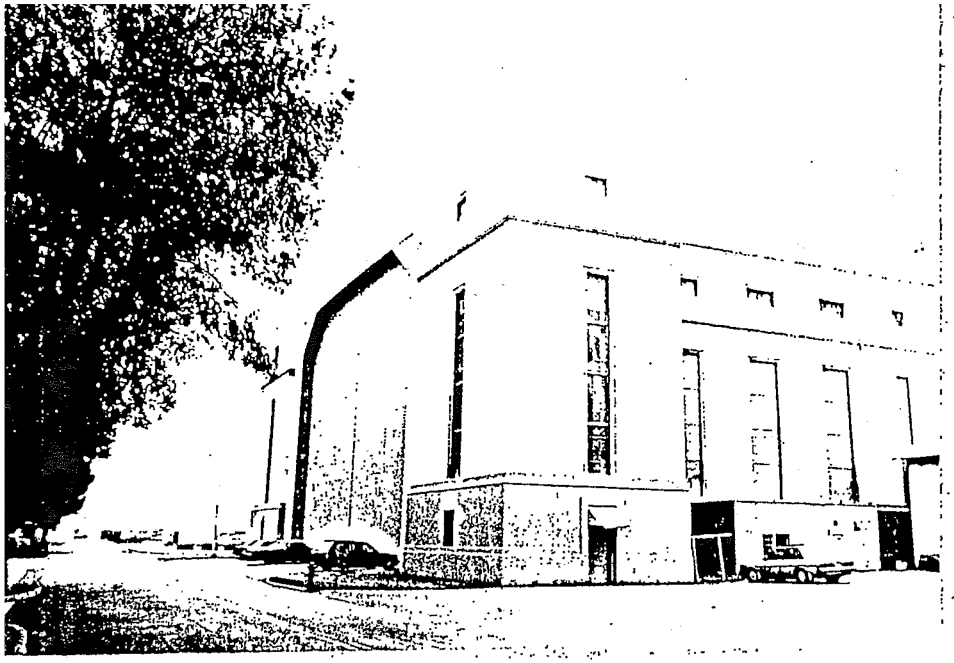
Navy Department-Bureau of Yards and Docks
Landscape Plan April 29, 1933
U.S. Naval Air Station
Sunnyvale, California

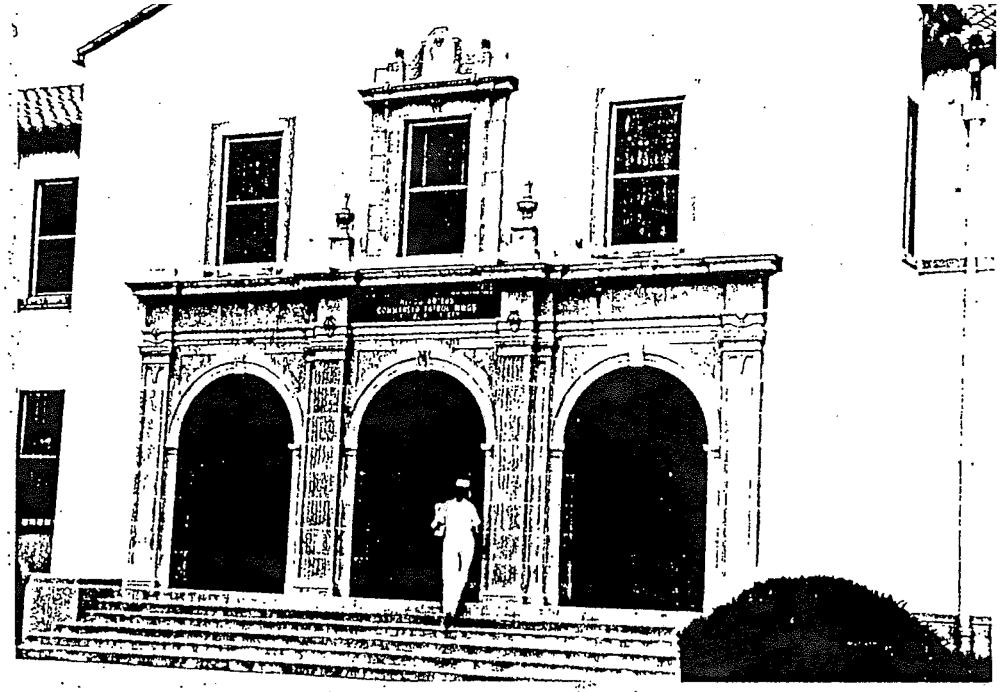


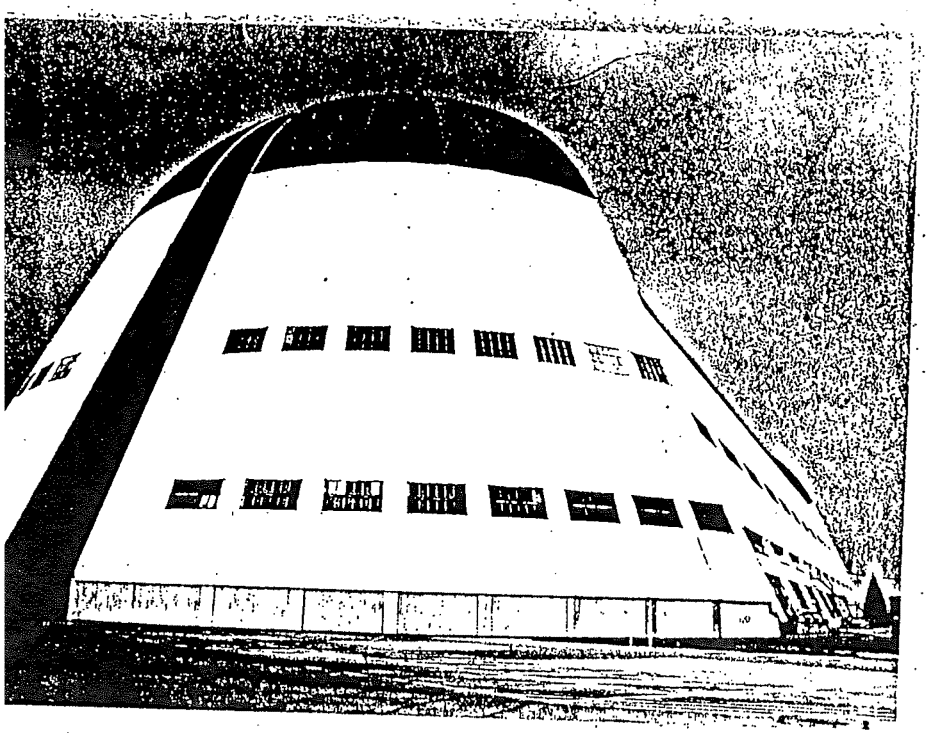


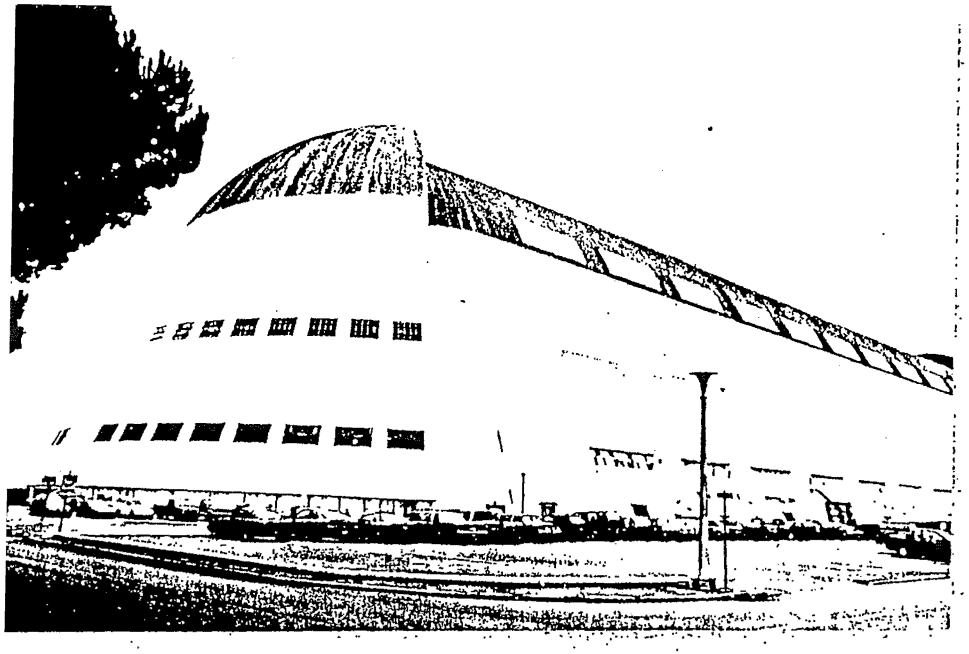


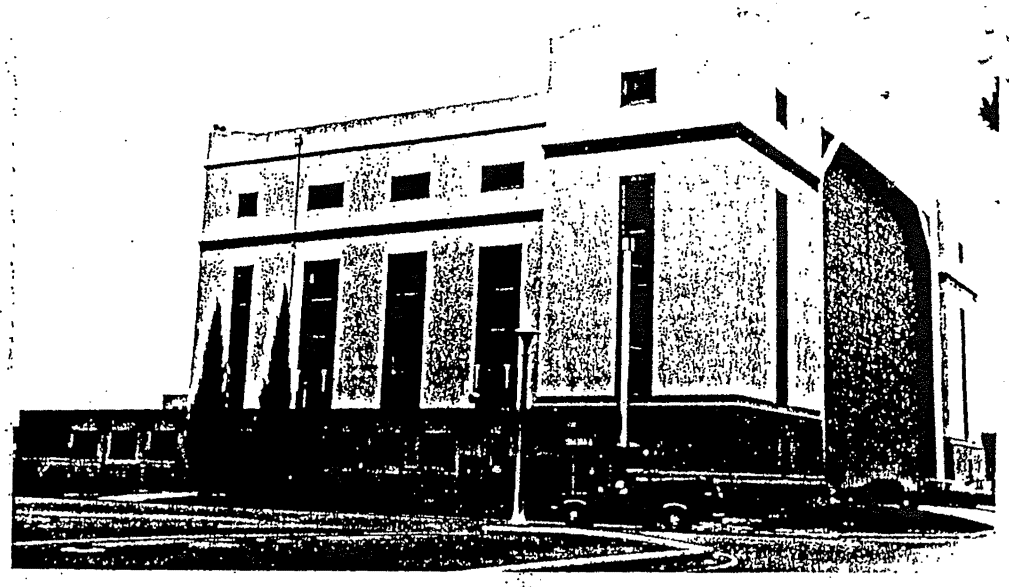
SNVL 1857 Naval Air Station Moffett Field Calif. July 26, 1943
Full View both Hangar #2 and Hangar #3 taken from south end.
Contract NOy-5604 E.W. Heple & J.H. Pomeroy Inc. Contractors

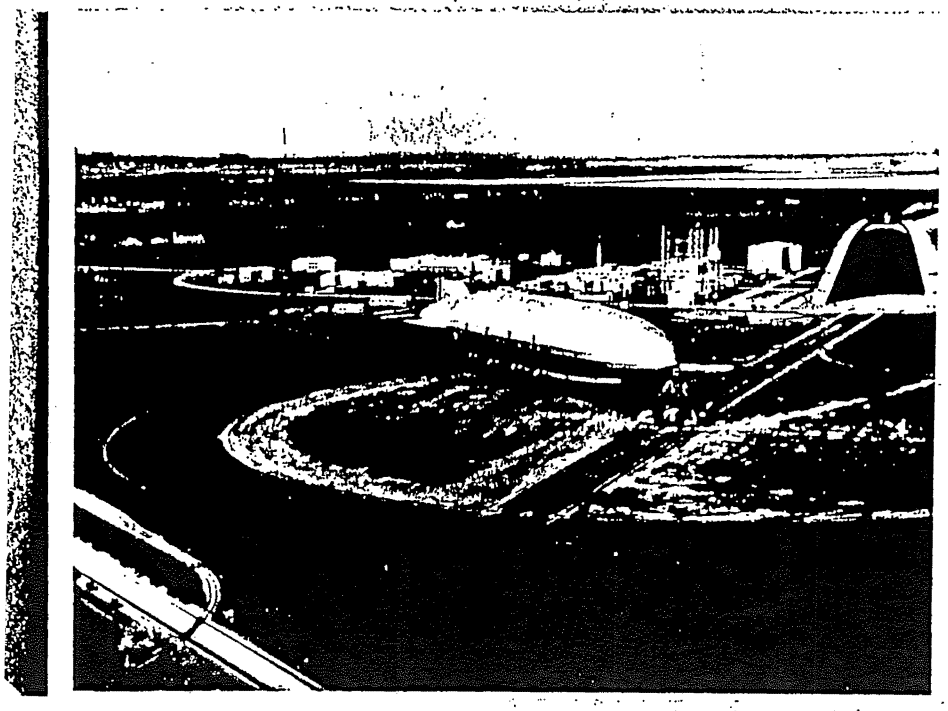


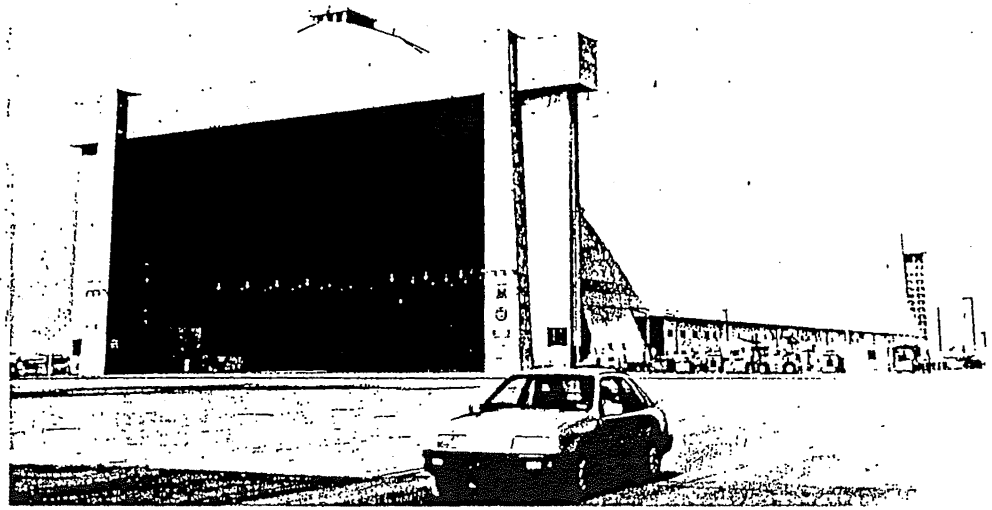


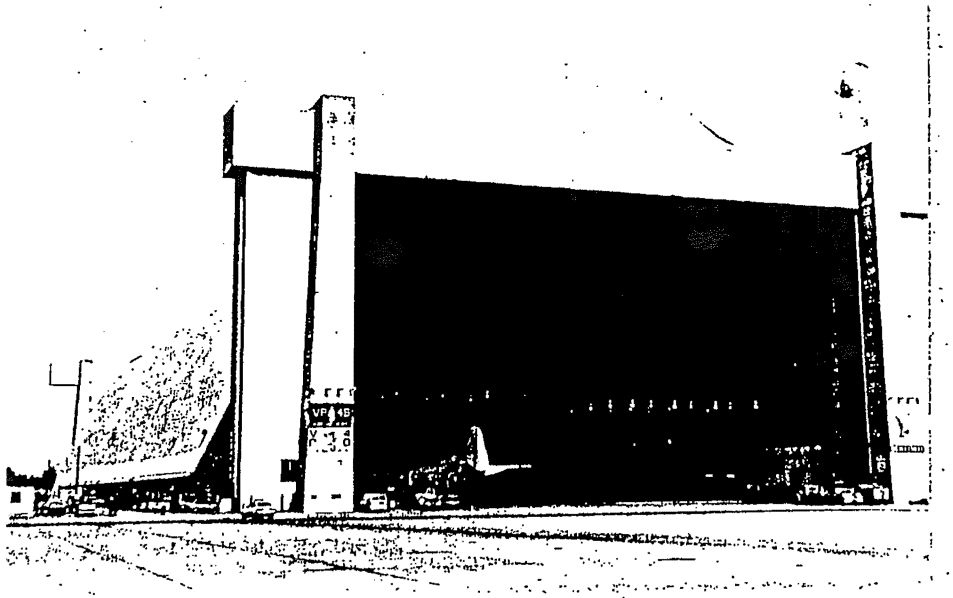


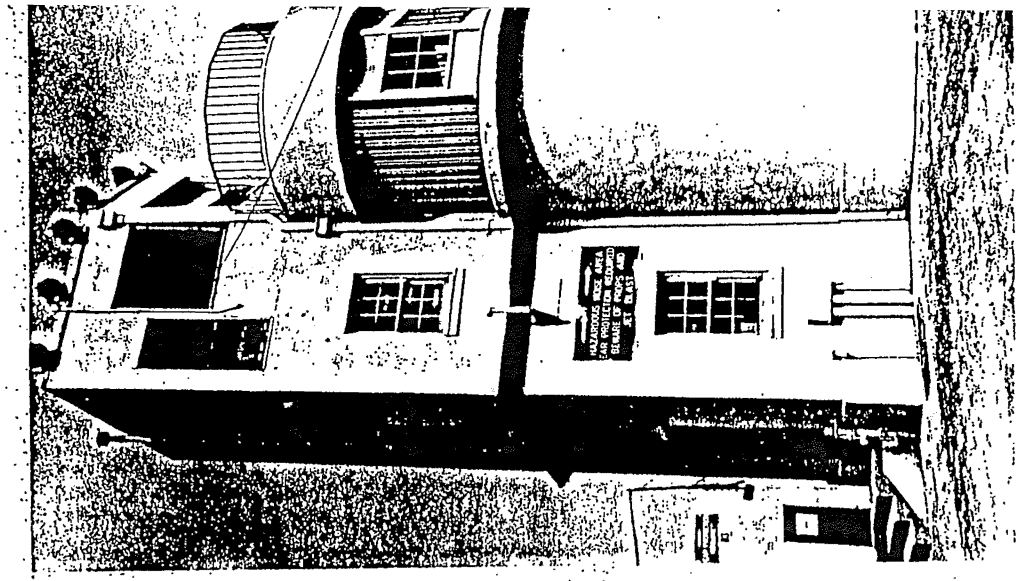


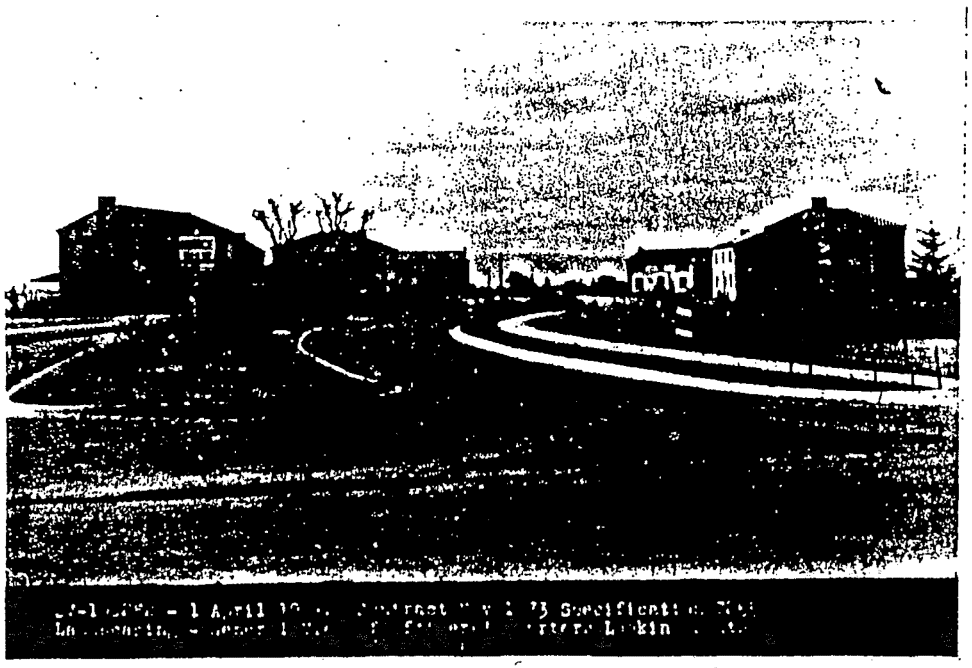


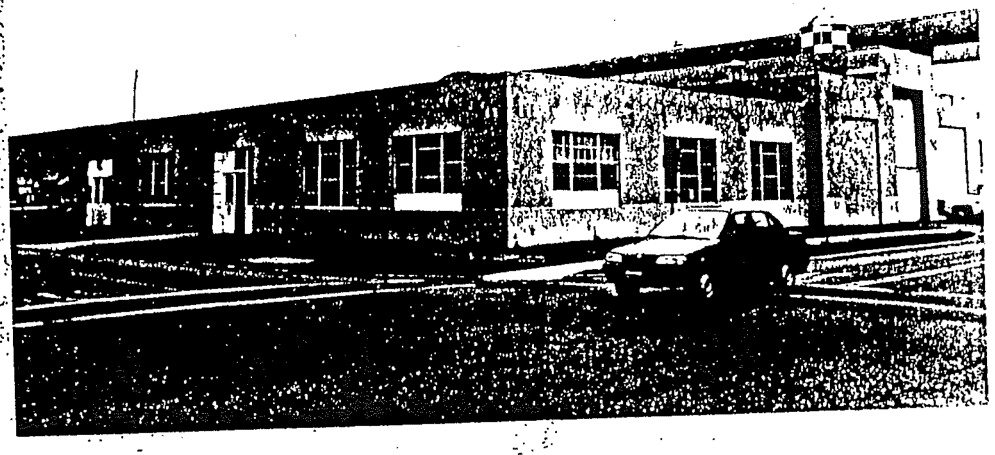


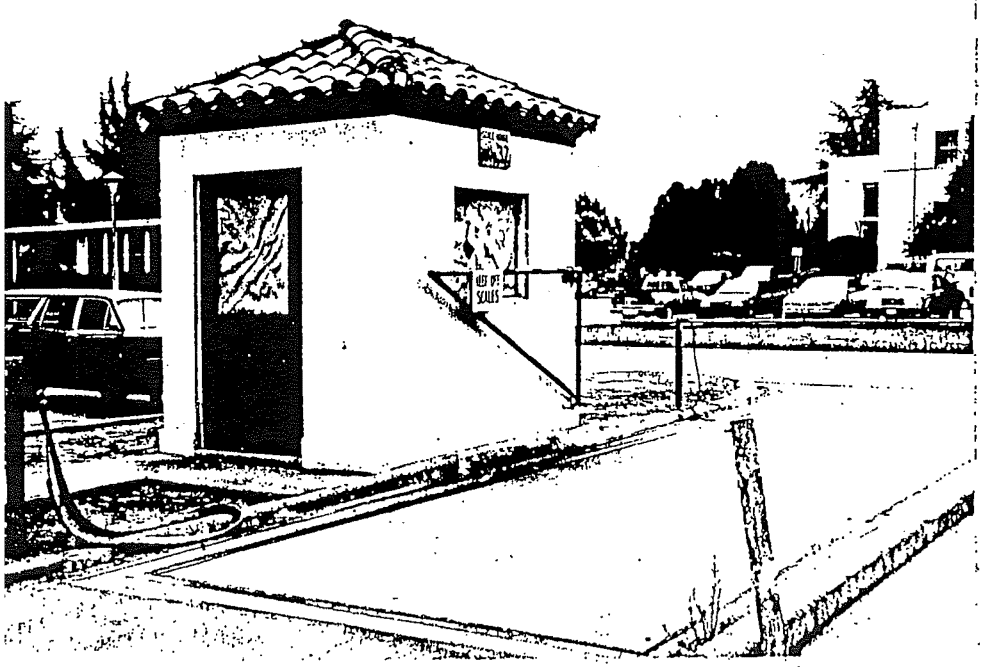


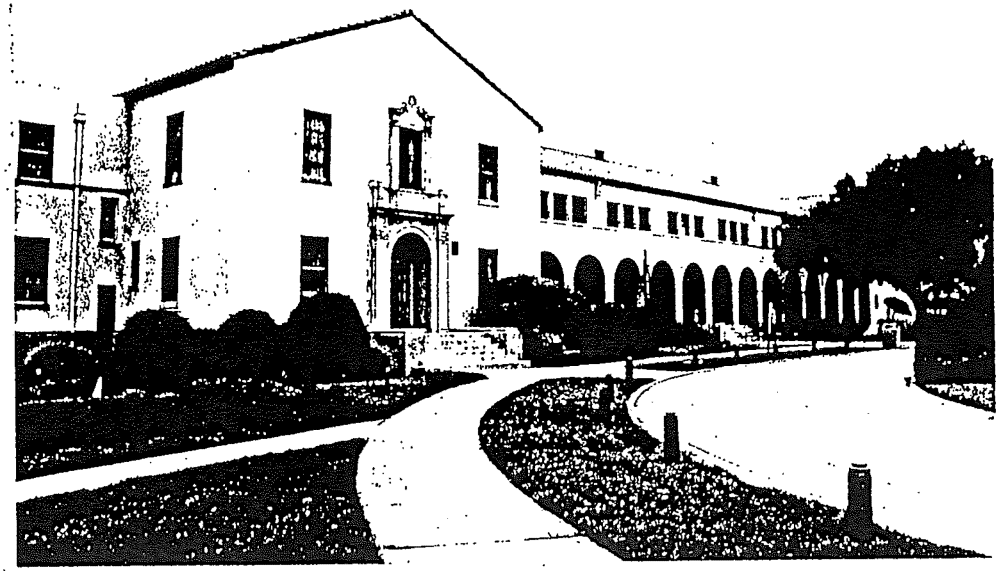


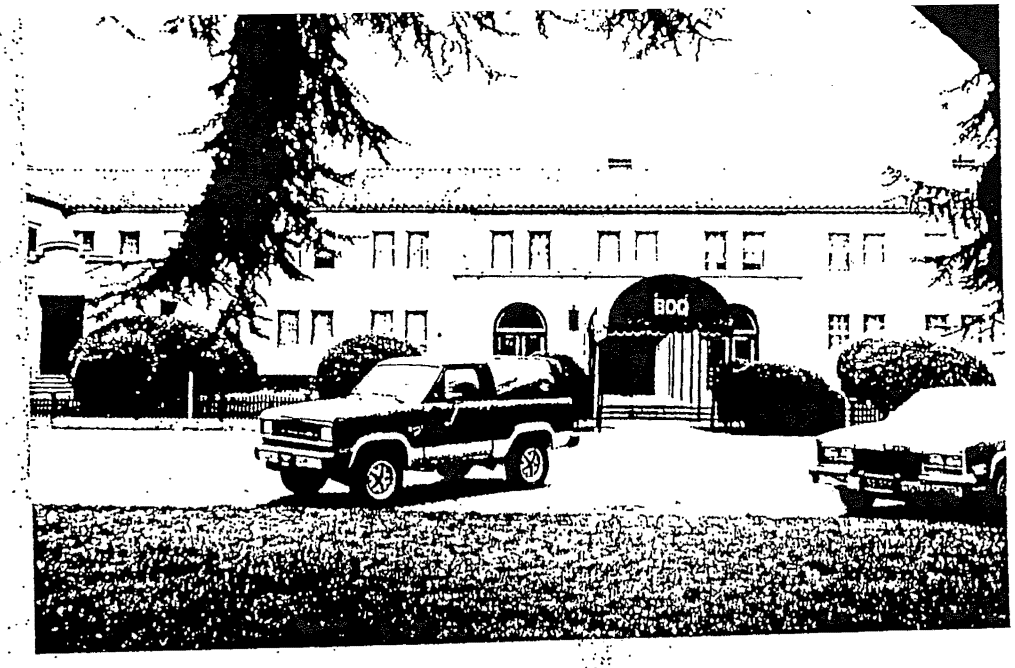








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