



Building 19 Rehabilitation for USGS

Section 106 Report
Project 019-1600



Figure 1: Building 19's main facade faces the centrally located Shenandoah Plaza.

This report includes:

1. This narrative
2. Attachment A: Preparer's credentials
3. Attachment B: Excerpt (page 7-14) of National Register Nomination
4. Attachment C: Maps
5. Attachment D: Specifications for Daikin condensing units
6. Attachment E: Drawings:
 - a. 65% Design Development Drawing Package
 - b. A301 Line of Sight Sections



Description of the Undertaking

NASA has entered into an agreement for USGS (United States Geological Survey) to lease space in Building 19 at the Ames Research Center. USGS has developed plans for rehabilitation of approximately 22,000 square feet of the second floor of the building for offices and 3,400 square feet of the basement for storage. The project site is located at the southwest end of the horseshoe around Shenandoah Plaza, facing southeast towards North Akron Road. It is flanked by Buildings 25 and 67 (Post Office).

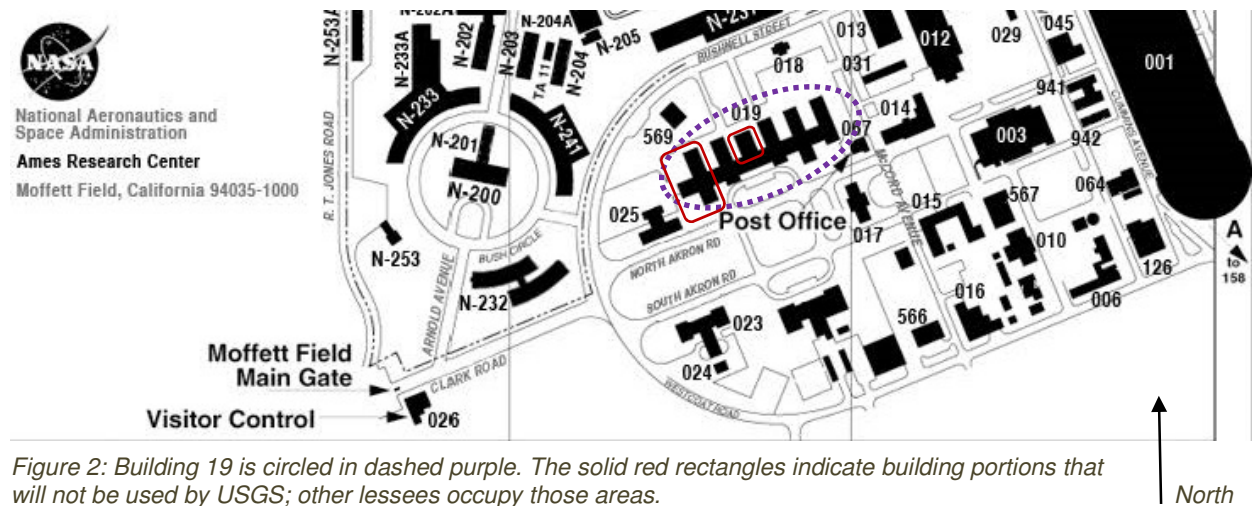


Figure 2: Building 19 is circled in dashed purple. The solid red rectangles indicate building portions that will not be used by USGS; other lessees occupy those areas.

The proposed USGS project will consist of the following:

1. Remodeling of part of the interior 2nd floor of the building. The area includes the main spine and four intersecting wings. The two areas circled in solid red above are not included in this scope of work, as they are leased to other entities.
 - a. Existing Steel Double-Hung Multi-Lite Windows: The window air conditioning units will be removed and the windows lubricated for ease of operation. Where metal is exposed, it will be repainted (except where previously unpainted).
 - b. Demolition of interior corridor and office walls and office partitions, and construction of new walls and partitions. Toilet rooms will be reduced in size, to accommodate the lesser code requirements for this occupancy.
 - c. The 1933 plumbing fixtures and marble partitions that are removed will be salvaged, labeled with location of origin, and handed over to NASA.
2. Installation of condensing units on the roof for the VRV (Variable Refrigerant Volume) mechanical system to provide conditioned air to the offices on the second floor.
 - a. The condensing units will be located on the two flat roofs.
 - b. The condensing units are 48.9" wide by 66.7" high x 30.2" deep. The units are not stacked.



Area of Potential Effects (APE)

An area of potential effects means: “the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking.”¹

Building 19 is a historic property present within the Area of Potential Effects. The building has been identified and evaluated by a qualified cultural resources professional; it is considered a contributing resource in the U.S. Naval Air Station Sunnyvale, California Historic District. This district was accepted into the National Register of Historic Places in February 1994.

The APE is delineated to encompass the first tier of surrounding buildings adjacent to the building’s footprint, as shown in Attachment C, Figure 8. This area is entirely within the National Register Historic District.

The APE is delineated to encompass both direct and indirect effects on historic properties:

1. *Direct effects:* Direct effects includes the area where the proposed undertaking will occur and where the physical character of the historic property could potentially be negatively impacted by the undertaking. The direct effect of this project includes the work within the building footprint: the remodeling of the interior second floor of Building 19 assigned to USGS and the two flat roofs where mechanical units are proposed to be located.
2. *Indirect effects:* The indirect effects represent the physical extent to which the undertaking might change the character of the property’s physical features with the property’s setting that contribute to its historic significance. The indirect effect related to these potential changes is the potential visibility of the condensing units on the two flat roofs.

¹ 36 CFR PARTY 800 – Protection of Historic Properties (incorporating amendments effective August 5, 2004), Section 800.16, page 15.



Identification of Historic Properties

Located at the southwest end of the US Naval Air Station Sunnyvale Historic District, Building 19 is one of seven (7) contributing resources located within the APE. Building 19 was originally constructed in 1933 as the Bachelor Enlisted Quarters Building and was used for dormitories. The original, central, portion of this two-story building is an excellent example of the Spanish Colonial Revival style. Two-story wings of the International style were added at the east and west ends of the building in 1952.



Figure 3: Building 19 – south façade. Front-gabled entry is from 1933; the building wing to the right was added in 1952.

The east-west length of the building faces south toward Shenandoah Plaza. The concrete frame construction is finished with integral-colored stucco on the exterior; the roofing is clad with barrel-type Spanish style terra cotta clay roofing tiles.

Building 19 is considered a contributing feature of the U.S. Naval Air Station Sunnyvale, California Historic District, which is eligible under National Register criteria A and C - for its representation of a unique period in the development of U.S. naval aviation and for the fine regional examples of Spanish Colonial Revival design. The listing, which occurred in 1994, identified two Periods of Significance: 1930-1935 and 1942-1946. The nomination states that the International style buildings were not currently considered eligible for listing since they were less than fifty years old (and not considered of exceptional significance to warrant listing regardless); it is probable that they would now be considered contributing. The nomination form reflects the attitude of the early 1990's, when the International style was not understood and appreciated to the level it is today. The brief mention of Building 19 appears to have been flavored by this distaste: "...but slightly less architecturally impressive, Bachelor Enlisted Quarters (#19) which has been greatly enlarged with a rather bland International Style addition at both ends."²

At the time of the National Register preparation (1991), Building 19 still functioned as a Bachelor Enlisted Quarters. The building functions largely as offices today; the westernmost wing is used as a hotel.

² Bonnie Bamberg, *National Register Nomination for the United States Naval Air Station Sunnyvale, California – Historic District* (November 1991), Section 7 – Page 9.



Affected Historic Properties

On February 24, 1994, the US Naval Air Station Sunnyvale Historic District (also known as Shenandoah Plaza Historic District) was accepted into the National Register of Historic Places. Building 19 is considered a contributing resource in this historic district. The immediately adjacent buildings within 200 feet of Building 19 are potentially affected properties. These properties are identified as follows, proceeding counterclockwise from Building 19:

1. Building 25 to the west.
2. Building 23 to the southwest.
3. Building 20 directly across Shenandoah Plaza.
4. Building 301 to the southeast.
5. Building 15 to the southeast.
6. Building 17 to the southeast.
7. Building 67 (Post Office) to the southeast.
8. Building 14 to the east.
9. Building 31 to the east.
10. Building 13 to the northeast.
11. Building 18 to the north.
12. Building 569 to the northwest.

Of the above listed buildings, the following six are considered contributing to the historic district, and thus are considered in the Assessment of Effects: Building 25, 23, 20, 15, 17, and 18. These buildings were part of the original 1933 campus plan and were all constructed in the Spanish Colonial Revival style.

Assessment of Effects

The Criteria of Adverse Effect pursuant to 36 CFR 800.5(a)(1) are applied to assess effects of the undertaking on historic properties within the APE:

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



Application of the Criteria for Adverse Effect

According to 36 CFR Part 800.5(a)(2), examples of adverse effects include, but are not limited to:

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

To comply with Section 106, the criteria of adverse effects are applied to historic properties in the proposed Area of Potential Effects (APE), pursuant to 36 CFR Part 800.5(a)(1). A finding of no adverse effect may be appropriate when the undertaking's effects do not meet the criteria of adverse effect stated above. Per the Application of Criteria for Adverse Effects stated in 36 CFR Part 800.5(a)(2) above, an analysis of the undertaking results in the following:

1. *Direct effects:*

a. *Interior:*

- i. The physical character of the interior of the building is not negatively impacted by the remodeling into offices, as the interior had been previously deemed to have no remaining character-defining features nor sufficient integrity. The National Register nomination specifically states: "Due to the alterations, the interiors do not retain architectural integrity or historic significance."
- ii. The original windows will be retained; areas of missing paint will be repainted and the operating mechanism will be lubricated.

b. *Exterior:* The mechanical units on the two flat roofs will not be visible from the grade adjacent to the building.

c. *Resolution:* Building 19 will not be negatively impacted by the interior remodeling or the installation of mechanical units on two flat roofs.

2. *Indirect effects:* The proposed undertaking's boundary for indirect effects includes six historic properties in the direct neighborhood of Building 19. All six properties are considered contributing to the historic district. Examination of criteria (iv) is warranted, i.e., it needs to be determined if the installation of mechanical units on two flat roofs of Building



19 changes the character of the property's physical features within the property's setting. The indirect effect of these potential changes is considered to be defined by a 200-foot distance around the building.

- a. *Application:* An average height person (5'-6") would have to be 230'-0" away from the building to be within a viewing angle of the unit on the roof of Building 19. This is illustrated in Appendix D, Drawing A301: Sight Line Sections. Based on a prior on-site discussion between the HPO and a SHPO representative, in which they determined that a distance of 200 feet away from a building was suitable to determine the visual intrusion of rooftop condensing units, the HPO required that the condensing units not be visible within a 200-foot buffer. The condensing units as designed are not visible from a greater distance than the 200-foot distance requirement indicated by the HPO.
- b. The 44"-high parapets will conceal the units from this designated 200-foot distance.
- c. These units cannot be located in the ampler attic spaces at the gable-roofed wings, because this would require creation of ventilation grilles in the existing historic gable end walls.
- d. See attachments:
 - i. Line of Sight Sections, showing the lack of visibility of these units, are included on attached drawing A301 (Attachment E).
 - ii. Specifications for the condensing units are included as an attachment to this report, in Attachment D.
- e. *Resolution:* The six historic (and other buildings in the historic district) will not be negatively impacted by the installation of mechanical units on two flat roofs of Building 19.

The proposed alterations to Building 19 comply with *The Secretary of the Interior's Standards for Rehabilitation* (36 CFR 67).

Public Participation

Pursuant to 36 CFR 800.5(c), if NASA proposes a finding of no adverse effect, the agency official will notify all consulting parties of the finding and provide them with the documentation specified in 36 CFR 800.11(e). Currently, no federally recognized Native American Tribes are associated with the location of the Ames Research Center.

Recommendation

The proposed undertaking primarily involves remodeling of the interior second floor of Building 19 and installation of two rooftop mechanical units. The National Register nomination for the historic district clearly states that the interior has no remaining character-defining features and thus has no integrity to maintain. The undertaking does not appear to have the potential to alter, directly or indirectly, any of the characteristics that qualify the historic properties for inclusion in the National Register of Historic Places.

After consideration of the Criteria of Adverse Effect, under 36 CFR 800.5(b), it is CTA Architects Engineer's historic preservation architect's opinion that the undertaking would not change the

NASA AMES RESEARCH CENTER
Building 19 - Section 106 Report



character of the property's physical features within the property's setting. The undertaking complies with the *Secretary of the Interior's Standards for Rehabilitation* (36 CFR 67) and would not diminish any of the characteristics of the historic properties that have qualified them for listing as a historic district in the National Register of Historic Places. This evaluation therefore finds that the proposed undertaking would result in a finding of No Adverse Effect.

END OF NARRATIVE

NASA AMES RESEARCH CENTER
Building 19 - Section 106 Report



ATTACHMENT A
PREPARER'S CREDENTIALS



This narrative has been prepared by Lesley M. Gilmore, AIA, LEED AP-BD+C, historic preservation architect at, and director of, Historic Preservation Services of CTA Architects Engineers. Ms. Gilmore meets the Secretary of the Interior's Standards for Professional Qualifications for Architecture and Historic Architecture, as follows:

The following requirements are those used by the National Park Service, and have been previously published in the Code of Federal Regulations, 36 CFR Part 61. The qualifications define minimum education and experience required to perform identification, evaluation, registration, and treatment activities. In some cases, additional areas or levels of expertise may be needed, depending on the complexity of the task and the nature of the historic properties involved. In the following definitions, a year of full-time professional experience need not consist of a continuous year of full-time work but may be made up of discontinuous periods of full-time or part-time work adding up to the equivalent of a year of full-time experience.

Architecture

The minimum professional qualifications in architecture are a professional degree in architecture plus at least two years of full-time experience in architecture; or a State license to practice architecture.

Application - Lesley M. Gilmore has:

1. A Masters in Architecture from the University of Illinois at Chicago.
2. A license to practice architecture in Illinois, Montana, and Wyoming.
3. Thirty years' full-time experience in architecture.

Historic Architecture

The minimum professional qualifications in historic architecture are a professional degree in architecture or a State license to practice architecture, plus one of the following:

1. At least one year of graduate study in architectural preservation, American architectural history, preservation planning, or closely related field; or
2. At least one year of full-time professional experience on historic preservation projects.

Application - Lesley M. Gilmore:

1. Has thirty years of full-time professional experience on historic preservation projects.
2. In working only for historic preservation architecture firms, she has performed and led detailed investigations of historic structures, prepared historic structure reports, and prepared plans and specifications for preservation projects.
3. Has taught in the Masters for Historic Preservation Program at the School of the Art Institute of Chicago.
4. Has been a board member and treasurer of the Association for Preservation Technology and remains an active member of APT's Student Scholarship and Outreach Committee and an active peer reviewer for the APT Bulletin.

Lesley M. Gilmore's resume follows.

PROFESSIONAL REGISTRATION

Architect – IL, MT, WY

AFFILIATIONS

LEED Accredited
NCARB Certified

Association for Preservation
Technology International
Board Member, 2008-2013
Peer Reviewer & Scholarship
Committee, 2008-Present

Montana Preservation Alliance Board,
2016 - Present

Montana Preservation Review Board
Member, 2009-2016
Chairperson, 2012-2014

EDUCATION

Masters in Architecture
University of Illinois at Chicago
1987

Bachelors in Mathematics
University of Vermont
1980

LESLEY M. GILMORE

AIA, LEED AP BD+C

Historic Preservation Architect

Lesley is the director of CTA's Historic Preservation Services Division. She has over 25 years' experience in various aspects of historic preservation, preservation planning, and related architectural design and coordination. She provides the framework for the appropriate research, investigation, and analysis of existing built resources and a thorough knowledge of historic construction styles, materials, methods, and symbolism that results in quality assessments, additions, renovations, and restorations.



**PIONEERING
ENVIRONMENTS**

RELEVANT EXPERIENCE

- Albright Visitor Center Historic Structure Report & Renovation; Yellowstone National Park - Mammoth Hot Springs, WY
- Alliance for Historic Wyoming Historic Architecture Assistance; Assessments of more than Twenty Properties in Wyoming
- Apostle Islands Lighthouse Restorations; Bayfield, WI
- Art Institute of Chicago, Front Entry Renovation; Chicago, IL*
- Art Institute of Chicago, Fullerton Hall Renovation; Chicago, IL*
- Boulder Development Center Building Assessments, Adaptive Reuse Planning, and Reroofing; Boulder, MT
- Bozeman Northern Pacific Railway Passenger Depot Assessment; Bozeman, MT
- Broadwater & McKinley Elementary School Assessments and Exterior Masonry Restorations; Billings, MT
- Canyon Village Lodge & Administration Building Historic Structure Report & Renovation; Yellowstone National Park
- Copshaholm Mansion Condition Assessment & Long-Range Plan; South Bend, IN
- Davis Stamp Mill Assessment; Nevada, CA
- Electric Light Building Preliminary Architecture Report; Anaconda, MT
- Flathead County Courthouse Renovation; Kalispell, MT
- Fort Sam Huston Building 133 Renovation / Adaptive Reuse; San Antonio, TX
- General Services Administration – Eligibility Assessments of several modern Federal Courthouses
- Governor's Mansion Historic Structure Report; Helena, MT
- Kimball Hall Renovation & Addition, Rocky Mountain College; Billings, MT

RELEVANT EXPERIENCE (Continued)

- Lake General Store Historic Structure Report & Renovation; Yellowstone National Park, WY
- Lincoln Community Center - Exterior Log Wall Restoration; Lincoln, MT
- MaiWah Building Assessment; Butte, MT
- Masonic Temple #18 Rehabilitation; Bozeman, MT
- Meeteetse Museum Assessment & Renovation; Meeteetse, WY
- Montana Heritage Center Master Plan; Helena, Montana
- Montana State Capitol Campus Master Plan; Helen, MT
- Montana State Parks Facility Condition Inventories of Heritage Properties; Bannack, Chief Plenty Coups, Elkhorn, and Fort Owen State Parks
- MSU Exterior Masonry Restoration of Five Historic Buildings; Bozeman, MT
- MSU Romney Gym Adaptive Reuse Study; Bozeman, MT
- Morledge-Kimball Hall Assessment, Renovation & Addition - Rocky Mountain College; Billings, MT
- Maxwell Museum of Anthropology at the University of New Mexico CAP Assessment; Albuquerque, NM
- Museum of Geology at South Dakota School of Mines & Technology CAP Historic Structure Assessment; Rapid City, SD
- Museo de las Americas Historic Structure CAP Assessment; Denver, CO
- William Nichols' Residence Historic Structure Report & Renovation; Yellowstone National Park, WY
- Old Faithful Haynes Photo Shop Renovation & Addition; Yellowstone National Park, WY
- Ouellette Place Apartments Renovation & New Construction; Lewistown, MT (Federal Tax Credit Recipient)
- Robie House Historic Structure Report; Chicago, IL**
- Soldier Field Renovation for 1993 World Cup Soccer Tournament; Chicago, IL**
- Paul Stock House Assessment & Adaptive Reuse Feasibility Study – Buffalo Bill Historical Center; Cody, WY
- St. Xavier Mission Church Assessment; St. Xavier, MT
- Tallgrass Prairie National Reserve - Restoration of 1888 Stone Barn & House; Strong City, KS
- Tower General Store Renovation; Yellowstone National Park, WY

*Performed while president of Gilmore Franzen Architects.

**Performed while at the employ of Hasbrouck Peterson Zimoch Sirirratumrong.



ATTACHMENT B
NATIONAL REGISTER NOMINATION EXCERPT



NPS Form 10-900-a
(2-89)

OMW Approval No. 1024-0018

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Section number 7 Page 14

This statement supports the approach that no review is required for the interior work at Building #19.

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.

Figure 4: Excerpt from National Register Nomination for US Naval Air Station Sunnyvale Historic District, listed in 1994.



ATTACHMENT C

MAPS

NASA AMES RESEARCH CENTER
Building 19 - Section 106 Report

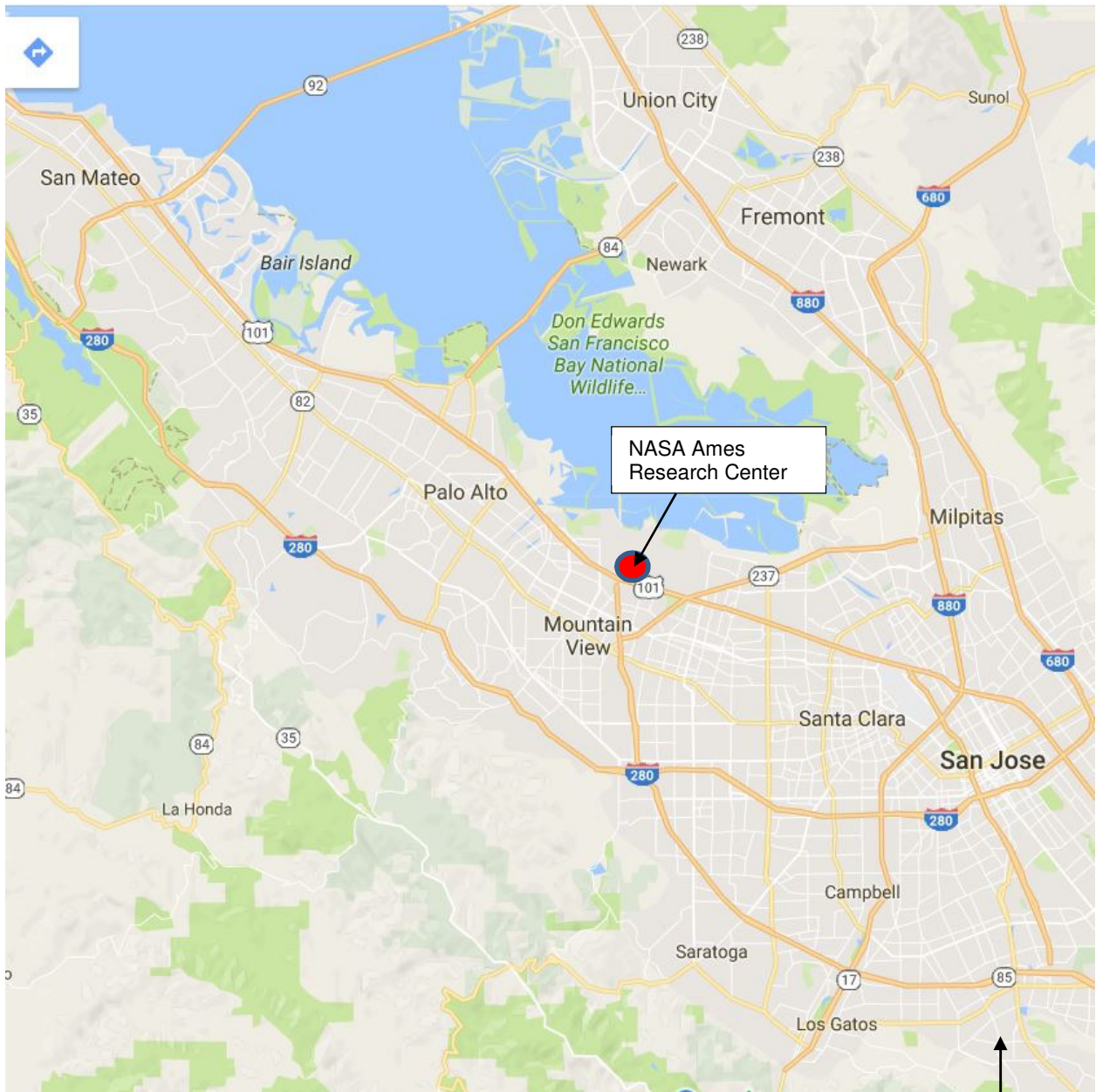


Figure 5: Regional map provided by GoogleMaps.

NASA AMES RESEARCH CENTER
 Building 19 - Section 106 Report

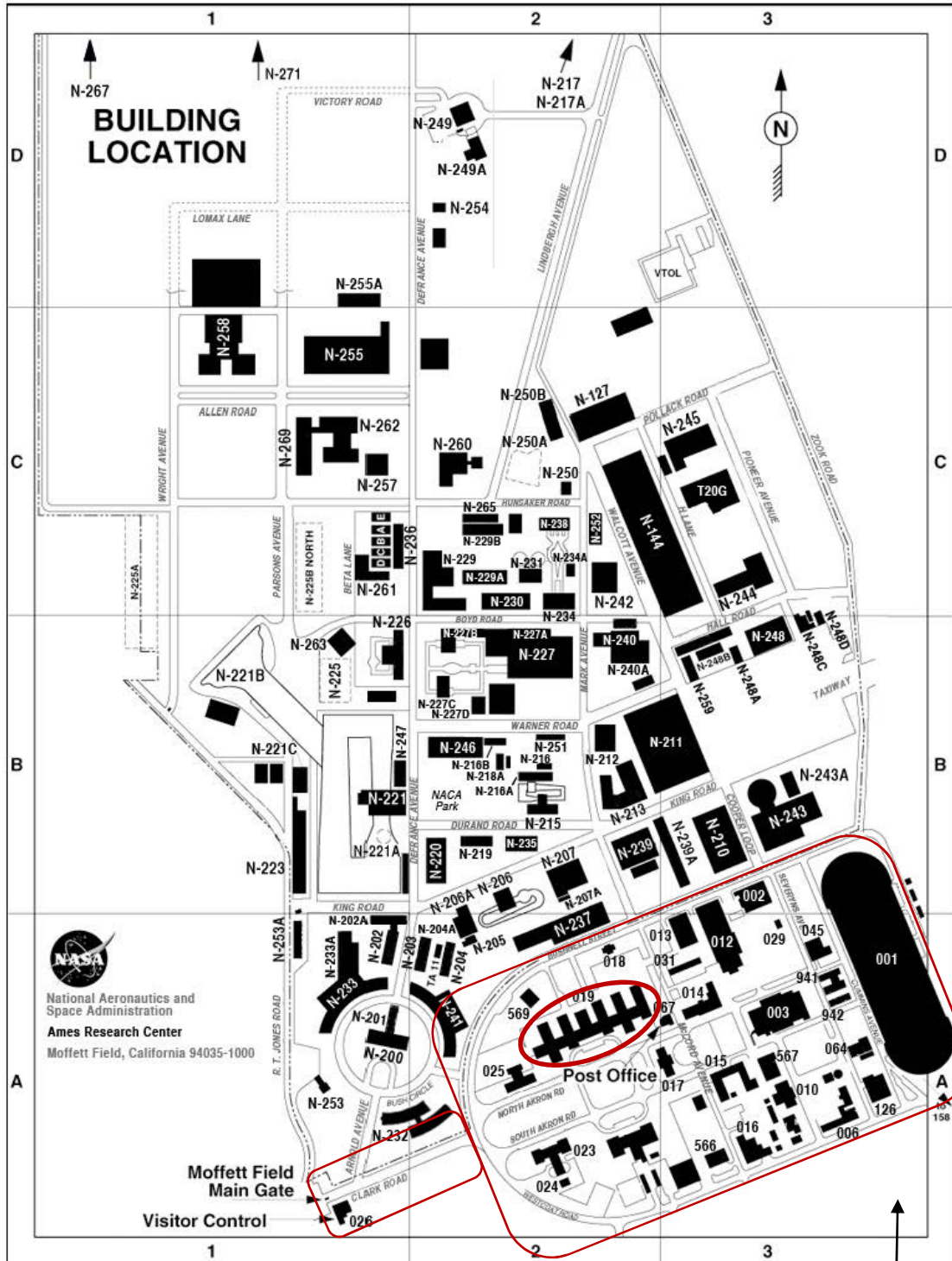


Figure 6: NASA provided map of the Ames Research Center. Building 19 is circled, within the historic district.

North

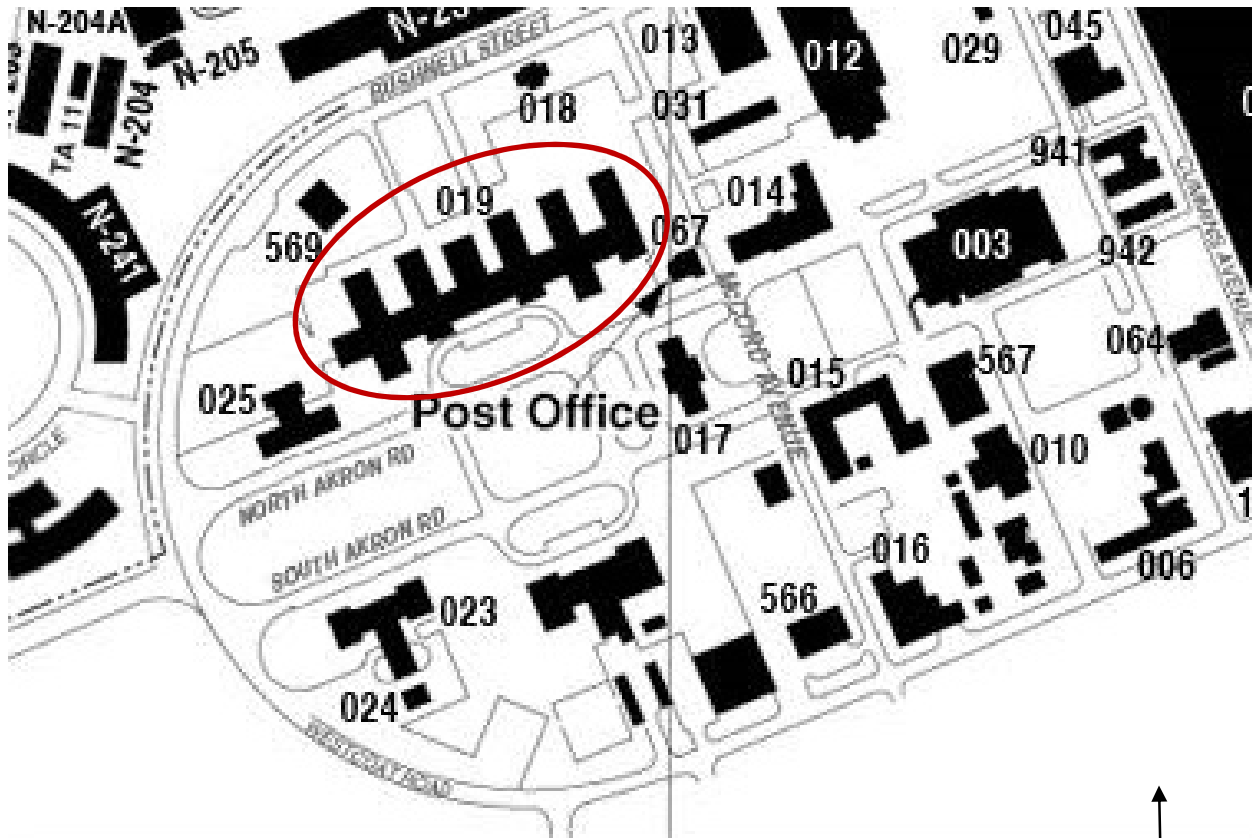
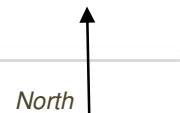


Figure 7: Close-up of project site. Building 19 is circled.



NASA AMES RESEARCH CENTER
Building 19 - Section 106 Report



Page left intentionally blank.



ATTACHMENT D
SPECIFICATIONS FOR VRV CONDENSING UNITS

NASA AMES RESEARCH CENTER
Building 19 - Section 106 Report



Page left intentionally blank.



3. Outdoor Unit Details

3.1. Table of Abbreviations

Name	Logical name of the device
Model	Device model name
▼	Optimized selection: Smaller outdoor model selected than standard proposed model
Tmp C	Outdoor temperature in cooling
CC	Available cooling capacity
Rq CC	Required cooling capacity
Tmp H	Outdoor conditions in heating (dry bulb temp. / wet bulb temp.)
HC	Available heating capacity (integrated heating capacity)
Rq HC	Required heating capacity
Piping	Largest distance from indoor unit to outdoor unit
Bse Refr	Standard factory refrigerant charge (5m actual piping length) excluding extra refrigerant charge For calculation of extra refrigerant charge refer to the databook
Ex Refr	Extra refrigerant charge
PS	Power supply (voltage and phases)
MCA	Minimum Circuit Amps
Fuses	Fuses
WxHxD	WidthxHeightxDepth
Wght	Weight of the device
EER	EER value at nominal conditions
IEER	IEER value at nominal conditions
COP 47°F	COP value at nominal conditions and ambient temperature of 47°F
COP 17°F	COP value at nominal conditions and ambient temperature of 17°F



3.2. Outdoor Details

Name	Model	Comb	Tmp C	CC	Rq CC	Tmp H	HC	Rq HC
		%	°F	BTU/h	BTU/h	°F	BTU/h	BTU/h
CU-101	RXYQ312TYDN ▼	116	89.6	266677 (-2.6%)	273831	32.0 / 27.0	239484 (-8.6%)	262147
CU-102	RXYQ216TYDN	108	89.6	172510	169450	32.0 / 27.0	189439	185881
CU-201	RXYQ360TYDN	122	89.6	329700	323947	32.0 / 27.0	303266	267803

Name	Model	Piping ft	Refrigerant		
			Type	Bse Refr	Ex Refr
				lbs	lbs
CU-101	RXYQ312TYDN	222.5	R410A	35.3	58.0
CU-102	RXYQ216TYDN	177.6	R410A	45.6	23.9
CU-201	RXYQ360TYDN	24.6	R410A	68.8	n/a

Name	Model	PS	MCA	Fuses	WxHxD	Wght
			A		inch	lbs
CU-101	RXYQ312TYDN	460V 3ph				
	* RXYQ168TYDN		25.9	35A	48.9x66.7x30.2	710
	* RXYQ144TYDN		25.9	35A	48.9x66.7x30.2	710
CU-102	RXYQ216TYDN	460V 3ph				
	* RXYQ120TYDN		20.6	25A	48.9x66.7x30.2	556
	* RXYQ96TYDN		20.6	25A	48.9x66.7x30.2	553
CU-201	RXYQ360TYDN	460V 3ph				
	* RXYQ120TYDN		20.6	25A	48.9x66.7x30.2	556
	* RXYQ120TYDN		20.6	25A	48.9x66.7x30.2	556
	* RXYQ120TYDN		20.6	25A	48.9x66.7x30.2	556

Sufficient distance should be respected between the modules according to the service & operation space rules as mentioned in the databook.

Name	Ducted				Non-ducted			
	EER	IEER	COP 47°F	COP 17°F	EER	IEER	COP 47°F	COP 17°F
CU-101	9.8	18.8	3.26	2.2	14.1	25.8	4	2.65
CU-102	11.7	20	3.65	2.48	14.1	25.8	4	2.65
CU-201	10.9	18.5	3.25	2.41	14.1	25.8	4	2.65

Attachment E removed.