NPS Form 10-900a OMB No. 1024-0018

(8-86)

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

Section _____ Page ___

SUPPLEMENTARY LISTING RECORD

NRIS Reference Number: 14000411 Date Listed: 7/18/2014

Snow Flat Snow Survey Shelter	Mariposa	CA
Property Name	County	State

Yosemite National Park MPS
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 7/18/2014 Date of Action

Amended Items in Nomination:

Classification:
The name of the related multiple property listing should read: *Yosemite National Park MPS.*
The Number of Previously Listed Resources should read: *0*

Bibliographical References:
The property was not previously determined eligible by the Keeper of the National Register.
[The determination was made by the NPS for compliance purposes only.]

These clarifications were confirmed with the NPS FPO office.

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

NPS Form 10-900 OMB No. 1024-0018 (Expires 5/31/2012)

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United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in National Register Bulletin, *How to Complete the National Register of Historic Places Registration Form.* If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. **Place additional certification comments, entries, and narrative items on continuation sheets if needed (NPS Form 10-900a).**

1. Name of Property

historic name **Snow Flat Snow Survey Shelter**

other names/site number **Snow Flat Cabin, Snow Flat Patrol Cabin, Yosemite National Park Building No. BC3501**

2. Location

street & number **Located at the terminus of a service road stemming from the May Lake Road, Yosemite National Park (YOSE)** ☐ not for publication

city or town **Yosemite National Park** ☒ vicinity

state **California** code **CA** county **Mariposa** code **043** zip code **95389**

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended,

I hereby certify that this X 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 X meets ___ does not meet the National Register Criteria. I recommend that this property be considered significant at the following level(s) of significance:

___ national ___ statewide X local

Signature of certifying official/Title — Date

State or Federal agency/bureau or Tribal Government

In my opinion, the property X meets ___ does not meet the National Register criteria.

Signature of commenting official — Carol Roland-Nawi, Ph.D. — Date

State Historic Preservation Officer — California Office of Historic Preservation
Title — State or Federal agency/bureau or Tribal Government

4. National Park Service Certification

I hereby certify that this property is:

✓ entered in the National Register

___ determined eligible for the National Register

___ determined not eligible for the National Register

___ removed from the National Register

___ other (explain:) _____

Signature of the Keeper — 7/18/2014 — Date of Action

5. Classification

Ownership of Property
(Check as many boxes as apply.)

- [ ] private
- [ ] public - Local
- [ ] public - State
- [X] public - Federal

Category of Property
(Check only **one** box.)

- [X] building(s)
- [ ] district
- [ ] site
- [ ] structure
- [ ] object

Number of Resources within Property
(Do not include previously listed resources in the count.)

Contributing	Noncontributing	
1		buildings
		district
		site
		structure
		object
1		**Total**

Name of related multiple property listing
(Enter "N/A" if property is not part of a multiple property listing)

N/A

Number of contributing resources previously listed in the National Register

6. Function or Use

Historic Functions
(Enter categories from instructions.)

DOMESTIC – Institutional housing
OTHER – Station for field operations & research

Current Functions
(Enter categories from instructions.)

DOMESTIC – Institutional housing
OTHER – Station for field operations & research

7. Description

Architectural Classification
(Enter categories from instructions.)

NO STYLE

Materials
(Enter categories from instructions.)

foundation: **CONCRETE**
walls: **WOOD – shiplap siding**
roof: **METAL – standing seam metal panels**

Narrative Description

(Describe the historic and current physical appearance of the property. Explain contributing and noncontributing resources if necessary. Begin with **a summary paragraph** that briefly describes the general characteristics of the property, such as its location, setting, size, and significant features.)

Summary Paragraph

The Snow Flat Snow Survey Shelter is located in the central region of Yosemite National Park in California roughly a half mile north of Tioga Road. The building is nestled amongst a moderately dense subalpine forest in close proximity to a seasonal meadow. The property boundary for the snow survey shelter occupies an area of roughly half an acre. Lands bordering the property to the east are designated wilderness and are devoid of any other form of infrastructure. The Snow Flat Snow Survey Shelter is a subdued, single-story, frame building clad in horizontal shiplap siding. The building is rectangular in plan, measuring fourteen and a half feet by sixteen and a half feet, with partially enclosed entry portico extending six and a half feet from the south elevation. The building is supported by a board formed concrete foundation wall and capped by a moderately pitched roof clad standing seam metal. The interior space of the building is a single multi-purpose room consisting of a crude kitchen area and sleeping bunks. Interior walls are left unfinished exposing the structural framing and diagonal dimensional lumber sheathing boards. The Snow Flat Snow Survey Shelter is in good condition and retains all seven aspects of historic integrity as defined by the National Register of Historic Places.

Narrative Description

The collection of hydrologic data at Snow Flat in Yosemite National Park has remained an essential component in the scientific determination of the annual water supplies for the Merced River drainage since the 1930s. As discussed further in Section 8, the Sachse Spring and Snow Flat Snow Survey Shelters were constructed in 1947 by the City and County of San Francisco, which own certain water rights within the boundaries of Yosemite National Park, and the California Department of Water Resources. Both shelters were part of a larger proposal to erect additional snow survey shelters and associated snow survey infrastructure within Yosemite National Park and adjacent to the park's northwestern boundary. The proposal included architectural specifications and design schematics for the future shelter cabins to be constructed of "sawed lumber, log, or stone".[i] The Snow Flat Snow Survey Shelter was constructed according to the "frame cabin" design included in the proposal. The building has been used in association with winter snow surveys since its initial construction and continues to be maintained as a historic resource by the National Park Service.

Setting

The Snow Flat Snow Survey Shelter is located in the central region of Yosemite National Park, 0.6 miles north of Tioga Road (California State Highway 120) and 1.3 miles south of May Lake. The property can be accessed by a dirt service road spurring from the May Lake Road, which runs perpendicular to Tioga Road. The Snow Flat Snow Survey Shelter was erected along an existing snow survey route that initiated from Yosemite Valley and

[i] California Division of Water Resources, Department of Public Works, California, Memorandum Covering Proposed Additional Snow Survey Work in the National Parks in California, June 1946.

continued to Dana Meadows. The location for the Snow Flat Snow Survey Shelter was selected near an area that had the highest recorded snow fall for the park and within a day's trek of a snow survey shelter at Tuolumne Meadows.

At an elevation of 8750', building is surrounded by a moderately dense forest of Lodgepole pine and sparse grasses dispersed amongst granite outcroppings. The climate at Snow Flat, typical of the Sierra Nevada highcountry, is characterized by dry, cool, short summers and lengthy, cold, wet winters. Snow usually begins to fall by early October and may accumulate as much as twenty feet or more within the property boundaries. Historic and present-day photographs document that it is not uncommon for the snow survey shelter to be completely covered by the snow pack during heavy snow years.

A boundary area of approximately half an acre was established for the property in the park's 1989 Wilderness Management Plan. This area encompasses the snow survey shelter and its immediate surroundings, including a fiberglass outhouse. The outhouse structure is located approximately eighty feet to the south of the snow survey shelter and does not retain any historic integrity. It is considered a non-contributing minor resource.

Although the building is accessible from developed roadways, lands adjacent to the fore mentioned corridors and the property for the Snow Flat Snow Survey Shelter are designated wilderness and have only limited infrastructure. The surrounding land designation as wilderness place heavy restriction on new development outside of the property boundary and ensures that remaining structures within the Yosemite backcountry are of special interest to the park. This designation protects the context of the property to be interpreted as a significant natural resource management facility, while at the same time providing a sense of remoteness.

Snow Flat Snow Survey Shelter

The Snow Flat Snow Survey Shelter was constructed in 1947 to building specifications produced by the California Department of Water Resources. The building is a single-story frame structure, rectangular in plan with a partially enclosed entry portico extending from the south elevation. Exterior walls are constructed of horizontal shiplap siding supported by a board formed concrete foundation wall and internal granite rubble piers. The building is capped by a moderately pitched gable roof clad in aluminum standing seam metal. The interior space of the building consists of a single multi-purpose room.

Exterior

The Sachse Spring Snow Survey Shelter has a rectangular footprint measuring approximately fourteen and a half by twenty three feet. This area encompasses the main portion of the building, 210 square feet, and an entry portico formed by the projecting roofline of the southern gable. The portico was incorporated into the overall design of the building to shelter the entrance from heavy snow drifts. It is approximately six and a half feet deep and has an enclosure at the western and eastern end. The western enclosure serves as external storage for the building and contains three horizontal stacked storage compartments. The walls of the storage enclosure are frame construction clad in modern shiplap siding. The eastern enclosure serves as firewood storage and is much more haphazardly constructed. Here plywood panels have been affixed directly to the structural frame for the building. The original design plans for the snow survey shelter show a log post portico; however, historic photographs

document that the building was constructed with square dimensional lumber posts. The western enclosure was added to the building sometime between 1986 and 1993. The eastern enclosure was added sometime after 1993. Although the enclosures do alter the general appearance of the south elevation, the original post structure of the portico is still visible and the modern materials used allow the enclosures to be interpreted as later additions.

The main portion of the building is supported by dimensional lumber sills and stringers that span the entire width of the building and rest directly atop a foundation wall of board form concrete. The structural posts of the south portico are supported by board formed concrete piers. Dry-laid granite rubble piers have been placed beneath the central girders; however, these piers deviate from the original design plans for the building and appear to be a later addition. The height of the building's foundation wall adjusts to the natural contour of the surrounding terrain as it slopes south. The foundation wall increases from approximately three inches high along the north elevation to thirty inches high along the south elevation. An entry stair also constructed of board formed concrete has been incorporated into the foundation wall of the south elevation. The stair consists of two risers and is approximately three feet wide.

The snow survey shelter's exterior walls are constructed of a standard dimensional lumber frame clad in horizontal shiplap siding with a nine inch reveal. Each corner of the building is finished with vertical board trim approximately six inches wide. The building's primary entrance is centrally located along the south elevation. The entry is a wooden three paneled door sawn in half to create a Dutch style door. Plywood patches have been affixed to the door's exterior to conceal damage from intrusive black bears. Although the original design plans call for paneled door, as-built photographs document that a vertical plank style door was initially in place. The plank door was replaced at an unknown time by the existing panel door. An additional significant feature on the building is an alternate attic access door within the southern gable end. This door is located directly above the main entrance and accessed by a dimensional lumber ladder. The door is utilized during heavy snow years when the lower entrance can become completely covered by snow drifts. This feature was incorporated into original design plan for the building and is commonly seen on other snow survey shelters located throughout the Sierra Nevada. The door is constructed of horizontal shiplap siding, like the exterior walls, and measures approximately three feet square. The snow survey shelter contains three window openings: a two lite vertical sash window centrally located on the west and east elevations and a two lite horizontal sash window to the east of the entry door along the south elevation. The vertical sash windows are slightly large in scale measuring approximately twenty four inches wide by fifty four inches in height. The horizontal sash window is approximately thirty inches square. The east and west window openings contain an externally mounted plywood panel casement shutter. Originally these openings contained wooden plank and frame style shutters. These shutters were replaced by non-historic material sometime between 1986 and 1993. The south window opening still contains the original wood plank and frame style shutter. This shutter is also externally mounted and hinges downward. All exterior building fabric is currently painted in a modern National Park Service brown color. The building was initially left unfinished exposing the natural tones of the wood, but began being painted shortly thereafter in 1952.

The gable roof of the building is oriented on a longitudinal axis roughly north-south and has a moderate pitch of twelve over twelve. The roof is clad in aluminum standing seam meal and finished with a metal ridge cap. Over-hanging eaves, approximately twelve inches wide, feature exposed dimensional lumber rafter tails and roof sheathing. A horizontal bargeboard is nailed directly onto the face of the rafters. This feature was added sometime

between 1986 and 1993 and is not part of the original design. A cylindrical metal chimney flue is located on east slope of the roof near the north elevation.

Although the Snow Flat Snow Survey Shelter has received insufficient maintenance repairs and alterations over time, the building still retains a high degree of historic integrity and continues to function in its original capacity. Currently the building is in fair condition due to normal deterioration from extreme weather conditions and pests intrusion. The existing form, layout, exterior siding, and roofing material were all part of the original design of the building and have remained constant over time.

Interior

The interior space of the Snow Flat Snow Survey Shelter is a single multi-purpose room that constitutes approximately 200 square feet. Flooring throughout the space is three and a half inch wide vertical grain Douglas fir tongue and groove. It appears that the flooring was stained at one point; however, it is now heavily worn and weathered. The interior walls and ceiling have been left unfinished exposing the structural framework of the building and diagonal dimensional lumber sheathing boards. Dimensional lumber boards have been placed atop ceiling joists to create an attic storage space. This space is accessed by a dimensional lumber ladder affixed to the south interior wall. The northwest corner of the building contains a crude kitchen area consisting of built-in cabinets and countertop with a basin sink. Although the cabinets do not exude a high degree of craftsmanship, material evidence suggests that they are original to the building and are similar to built-in cabinets detailed on the original design plans. The sink serves as a wash area for dishes but does have running water or the associated faucet fixtures. Along with no running water, the backcountry shelter does not have electricity either, adding to the rusticated charm and feeling of remoteness for the building. Wood framed bunk beds are located in the northeast, southwest, and southeast corners of the space. A small wood burning stove and metal heat shield are centrally located on the north wall of the room. It is unclear if the existing stove is original to the building.

8. Statement of Significance

Applicable National Register Criteria
(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- [x] A Property is associated with events that have made a significant contribution to the broad patterns of our history.
- [ ] B Property is associated with the lives of persons significant in our past.
- [ ] C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- [ ] D Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations
(Mark "x" in all the boxes that apply.)

Property is:

- [ ] A Owned by a religious institution or used for religious purposes.
- [ ] B removed from its original location.
- [ ] C a birthplace or grave.
- [ ] D a cemetery.
- [ ] E a reconstructed building, object, or structure.
- [ ] F a commemorative property.
- [ ] G less than 50 years old or achieving significance within the past 50 years.

Areas of Significance
(Enter categories from instructions.)

CONSERVATION

SCIENCE

Period of Significance

1947

Significant Dates

1946 – The California Cooperative Snow Survey Program proposes adding five new snow survey cabins throughout Yosemite National Park

1947 – The Snow Flat Snow Survey Shelter is designed and constructed by National Park Service and the California State Department of Water Resources

Significant Person
(Complete only if Criterion B is marked above.)

N/A

Cultural Affiliation

N/A

Architect/Builder

Constructed by the City and County of San Francisco in coordination with the California State Department of Water Resources

Period of Significance (justification)

1947

The period of significance for the Snow Flat Snow Survey Shelter is 1947. This date corresponds to the construction of the building for functions associated with acquisition of hydrologic data within the Merced River drainage. The location of the building was selected along an existing snow survey route within an area of Yosemite National Park that receives extremely heavy snowfall. Designs for the building were produced by the California Cooperative Snow Survey Program in 1946. The Department of Water Resources and the National Park Service constructed the building in 1947. The building retains its original footprint and has not been significantly altered since the original construction date. The building has been used continuously for over sixty years by the California Cooperative Snow Survey Program. The period of significance aligns the initial date the building was utilized as an outlying field station for collecting hydrologic data, for Criterion A.

Criteria Considerations (explanation, if necessary)

Statement of Significance Summary Paragraph (Provide a summary paragraph that includes level of significance and applicable criteria.)

The Snow Flat Snow Survey Shelter is locally and regionally significant in the area of natural resource conservation under *Criterion A*. The building is associated with the development and deployment of the California Cooperative Snow Surveys Program, as well as, the evolution of natural resource management within Yosemite National Park. The building was constructed in 1947 to serve specifically as winter accommodations for snow surveyors collecting hydrologic date along the Merced River drainage. In addition to its primary function, the building was also utilized as a summer field outpost for Yosemite National Park and has played a substantial role in the management of Yosemite's backcountry wilderness. It is used at times as a staging area for backcountry projects such as trail work, forestry, resource management, and fire management.

The Snow Flat Snow Survey Shelter is currently maintained by the National Park Service as a historic resource and continues to function in its original capacity. It is in good condition and retains all seven aspects of historic integrity, as defined by the National Register of Historic Places. The building was first recognized as a significant historic resource for Yosemite National Park in the late 1980s and deemed eligible for listing in the National Register of Historic Places in 2004.

Narrative Statement of Significance

Historical Context

The United States Geological Survey (USGS) estimates that as much as seventy-five percent of water supplies in the Western United States are derived from snowmelt. Rightfully so, many refer to the winter snowpack as the "lifeblood" of the West. How wet or dry a year is predicted to be has many economic and natural resource management impacts. Local, state, and regional municipalities, along with irrigation districts and other forms of industry, rely heavily on the implementation of widespread, systematic snow surveys to determine the annual water

runoff from high elevation snowpack. The scientific data collected during these surveys provides scientists and resource managers with the tools they need to predict the availability of water supplies for human consumption, hydroelectric power, agriculture, industry, transportation, and recreation, as well as to predict the potential for spring flooding.

The resource tools available for snow surveying have gradually evolved through the years. Improved technology and advanced scientific calculations have led to more precise measurements of water runoff from snow melt. However, one essential element of snow survey programs has remained constant: the human part of the equation, the snow surveyor. And those hearty individuals rely on remote backcountry shelters to carry out their field work during the extreme winter weather conditions common in mountain environments.

Snow Survey in the Sierra Nevada

The scientific study and prediction of water supplies available from snowmelt began in the Sierra Nevada during the early 20th century. Lands bordering the Sierra to the east, south, and west are dominated by Mediterranean and desert climates, with little to no precipitation falling between May and October. The precipitation of the preceding winter is retained by natural and artificial reservoirs and then distributed by a vast network of irrigation systems to provide a reliable, uninterrupted water supply for all the downstream requirements. Heavily populated cities along the west coast of California and the central San Joaquin Valley, which has been transformed into an agricultural epicenter for the United States, are heavily reliant on these systems for necessary water supplies.

During the early development of irrigation systems in the western United States, government officials and business enterprises relied on anecdotal snow pack reports from animal trappers and mountaineers who ventured into the Sierra during the winter months. In 1895, a professor at the University of Nevada, Dr. James E. Church, began contemplating the effects of orographic precipitation near Lake Tahoe in Northern California. Over the next several decades, Church's research interest in weather provided unprecedented scientific determinations of water availability and altered the course of natural resource management in the West. Church and his colleagues developed specialized equipment and methodologies to measure the water content of snow that are, for the most part, still utilized today by scientists and snow surveyors.

During the early phase of his research, Church immediately recognized the need to have overnight accommodations located near his high elevation experimental sites. The ability to stay overnight provided the opportunity to collect more thorough weather data and study the effects of the environment on snow conservation. With the assistance of federal funds, Church and his coworkers erected the first snow survey shelter in the Sierra, the Summit Observatory, on Mount Rose in August 1906. Soon thereafter, Church developed the Mount Rose Snow Sampler and Scale, a patented device that measured the depth and water content of snow pack to determine snow density. Although scientific calculations have evolved during the last century of snow surveying, Church's sampling device has remained essentially unchanged and is still in use by snow surveyors today. In 1910, Church laid out the first official snow courses in the Sierra, within the Lake Tahoe and Truckee River basins. (The techniques of establishing and using snow courses will be described below.) The research findings derived from the courses allowed Church to predict seasonal water runoff within multiple watersheds and led to the management of Lake Tahoe's water level to avert seasonal flooding.

Building upon Church's pioneering work, states throughout the American West began developing snow survey programs of their own. California's Department of Engineering, in consultation with Church's staff, began establishing snow courses and constructing snow survey shelters in selected watersheds within the central Sierra Nevada in 1917. Although the state recognized the need for scientific determinations of spring runoff, funding for snow survey programs was far from stable. In 1923, state-allocated funds for snow surveys were temporarily discontinued. The expansion of the snow survey courses, however, did continue through the 1920s, but this depended upon various smaller enterprises such as irrigation districts and local agencies.

Between 1929 and 1934, severe droughts swept across the entire United States. In California, the drought was the worst citizens had witnessed since statehood in 1850. State administrators were forced to make drastic changes to the way they managed natural resources. In response to the drought, the California legislature established the California Cooperative Snow Survey Program, to be coordinated by the newly formed Division of Water Resources (now the Department of Water Resources). The purpose of the program was to gather, analyze, and distribute data relating to the overall annual snowpack. The program was initially organized – and continues to operate today – as a collaborative effort among state and federal agencies, local municipalities, irrigation districts, and public utility companies. In the first year of the California Cooperative Snow Survey Program, the Division of Water Resources (DWR) established 150 snow courses and associated infrastructure throughout the Sierra Nevada. Funding for the equipment and construction of snow survey shelters was provided by DWR as well as water and power companies. The brunt of the snow survey fieldwork fell to federal agencies, such as the National Forest Service and the National Park Service, who oversaw the vast majority of lands within the Sierra. The data collected during field surveys was given to scientists within DWR, who then paired the findings with precipitation records and other scientific data relating to environmental factors to predict seasonal spring water runoff. These official predictions were then distributed to all interested parties to help guide natural resource management decisions across the region.

Snow Survey in Yosemite National Park

Yosemite National Park's participation in the California Cooperative Snow Survey Program over the last eighty years has been vital to the compilation of information and statistics for estimating the annual snow melt runoff and water supply of the Sierra Nevada. Centrally located within the Sierra, the park encompasses the headwaters of the Tuolumne and Merced Rivers, two of the largest watersheds in the region. These watersheds provide water resources for the San Francisco Bay Area and the San Joaquin Valley of California.

Yosemite rangers began conducting a limited number of high country snow surveys in 1912. The early surveys were far less scientific then the research being undertaken by Church and his coworkers on Mount Rose, but nonetheless marked the beginning of established snow courses within the Yosemite region. A system of fixed "snow poles," approximately ten to twelve feet in height, were set up at strategic sites (or "courses") throughout the park. The slender poles were constructed of wooden dimensional lumber posts, painted white with black incremental measurements and notched on top to shed snow. Park rangers were assigned to record the depth of winter snowpack using the snow poles while conducting routine patrols. Winter trips were conducted from Yosemite Valley to Tenaya Lake, Tuolumne Meadows, and Tioga Pass via the Tioga Road. The information

collected during the snow surveys was then passed on to United States Geological Survey (USGS) and used by Yosemite administrators to predict seasonal openings of park infrastructure at the higher elevations.

In the mid-1920s, the Merced Irrigation District (MID) completed construction of the impressive Exchequer Dam, along with associated canal systems and power facilities, outside of Yosemite National Park's western boundary. The reservoir was intended for water conservation, flood control, and power generation for multiple municipalities within the San Joaquin Valley. The principal water source for the MID project was the Merced River drainage, which originated almost entirely within the boundaries of Yosemite National Park. To accurately predict the amount of yearly water supply available from the headwaters of the Merced River, the MID proposed a snow survey course and overnight snow survey shelter within the park modeled after Church's.

The proposed snow survey shelter was the first joint venture between the National Park Service and an outside enterprise, other than a park concessioner, to construct infrastructure within the Yosemite backcountry. The shelter and snow course were to be located near Merced Lake at the confluence of Fletcher and Lewis Creeks, approximately fourteen miles from Yosemite Valley. Yosemite's superintendent readily acquiesced to the planned infrastructure because there was a recognized need to have a proper ranger's headquarters in the vicinity. The building would function as a National Park Service ranger station for most of the year and be occupied seasonally by snow surveyors employed by the MID. The district furnished $1000 for the construction of the shelter, while the design, construction labor, maintenance, and ownership of the building fell to the National Park Service. There was brief discussion of a secondary snow survey shelter at Moraine Meadows in the far southwest region of the park; however, plans for this particular building never materialized. The Department of the Interior issued a special use permit for the MID to construct snow survey courses throughout the Merced River drainage and to utilize the Merced Lake Ranger Station during the winter months. The MID established several snow courses in the central region of the park and made use of an existing snow course in Dana Meadow, laid out in 1926.

The Merced Lake Ranger Station was designed in the National Park Service Rustic style by the resident Park Engineer Oliver G. Taylor, under the consultation of National Park Service's Regional Chief Landscape Architect, Daniel Hull. Yosemite National Park staff completed construction of the single-story, two room shelter building in 1927, which was then expanded in 1934. The exterior walls were of log construction and capped by a moderate, cross-gabled roof. Snow survey activities at Merced Lake Ranger Station continued until 1938, when it was deemed access routes to the building were far too hazardous during the winter months. Since that time, the building has been used continuously by the National Park Service for ranger patrol activities and natural resource management activities.

During the 1930s, snow surveying within Yosemite National Park gained momentum with the creation of the California Cooperative Snow Survey Program. As mentioned previously, 1929 marked the beginning of a five-year drought for the western United States. Large state government appropriations and coordinated effortswere put forth for the determination of available water resources statewide. A multitude of snow courses were laid out and mapped throughout the Sierra Nevada under the direction of the Department of Water Resources (DWR). During this time, four separate snow survey routes were established along the headwaters of the Tuolumne and the Merced Rivers within Yosemite. The main route was a loop extending from Yosemite Valley to the eastern boundary of the park. The other routes consisted of "out-and-back" paths of travel to Moraine Meadows from Glacier Point Road,

to Gin Flat from Yosemite Valley, and to Beehive Meadows from Hetch Hetchy Ranger Station. A Yosemite Nature Notes article issued in January 1953, described the manner in which snow courses were designed:

> Each permanent [snow] survey site is established by selecting an area that is open, protected from drifting winds, and representative of a large section of surrounding country. This site is known as a snow course, and here the measurements are taken at spaced intervals, usually 50 feet apart, along straight lines crossing the snow. ...The measurements are made with a hollow steel tube which is thrust downward into the snowpack until it strikes the ground beneath. When the tube is withdrawn it contains a sample or core of snow from the full depth of the pack. The loaded tube is then weighed on specially designed scales that convert the weight of the snow into water content, expressed in inches...
>
> – Assistant Chief Ranger Duane Jacobs, *Yosemite Nature Notes*, Jan. 1953.

The snow survey trips were conducted by National Park Service rangers in a coordinated effort with other agencies across the state. "Traveling through wind and storm, the snow patrol often [covered] twenty to twenty-five miles a day to secure data on snow conditions for irrigationists, power users, and the State." [ii]

In 1931, the DWR appropriated $600 for the construction of a snow survey shelter at Buck Camp and additional funding for the rehabilitation of an existing cabin at Deer Camp to be used for snow surveys. Deer Camp was located within a day's trek of the Wawona Road in the southern portion of the park. The shelter at Buck Camp served as the midway point between Deer Camp and Moraine Meadows, approximately fourteen miles to the east. The architectural plans for the Buck Camp Patrol Cabin were prepared by the National Park Service's Landscape Architect and Field Architect for Yosemite National Park, John Wosky. The plans incorporated principles of National Park Service Rustic style, with special attention to architectural detailing reminiscent of 19th-century homestead cabins common to the Yosemite region. The cabin was a single-story, two-room building situated along the edge of a large seasonal meadow. The building was clad in vertical log posts and capped by a moderately pitched gable roof. Like the Merced Lake Ranger Station, the Buck Camp Patrol Cabin was to be utilized by the National Park Service during the summer field season and the California Cooperative Snow Survey Program during the winter months. The cabin was completed and ready for occupation by January 1, 1932. The existing cabin at Deer Camp (also known as Eleven Mile Annex) was originally constructed in 1916 by the Yosemite Lumber Company during its period of logging within the park. The small cabin was clad in board and batten siding and capped by a gable roof. During the winter of 1935-1936, only a few years after the rehabilitation was complete, the cabin was destroyed by a large falling Ponderosa pine and is no longer standing. The snow survey activities at Buck Camp Patrol Cabin continued through the late 1930s and early 1940s. Since that time, the building has been used continuously in connection with National Park Service ranger patrol activities in the southern region of the park.

While the Buck Camp and Deer Camp cabins were still in use, the National Park Service also authorized the use of existing ranger stations in conjunction with ongoing snow survey activities. These included Tenaya Lake, Tuolumne Meadows, Tioga Pass, Chinquapin, Crane Flat, Mather, and Yosemite Creek. For varying reasons, only a limited number of buildings utilized during the 1930s snow surveys remain intact today – the Buck Camp Patrol Cabin and the Merced Lake, Chinquapin, and Tuolumne Ranger Stations.

[ii] Jacobs, Duane D., "Snow Surveying." *Yosemite Nature Notes* 32, No. 1 (January 1953).

Due to pressures on the state budget during the Great Depression, funding for the state-coordinated snow surveys program was unavailable during 1934 and 1935. The cooperating agencies, however, independently continued to conduct surveys using state-owned equipment that remained in the field. Because of this continuation, the disruption to the scientific record was not as great as anticipated. By 1936, the California legislature was again able to appropriate funds for the snow survey program, which has remained in operation with no subsequent interruption in survey activities since that time.

The expansion of the snow survey program within Yosemite National Park resumed in the 1940s, with the construction of snow survey shelters and associated snow courses in the Tuolumne River drainage. The first phase of the expansion was initiated by the City and County of San Francisco's Public Utilities Commission (SFPUC), a member of the California Cooperative Snow Survey Program, to provide hydrologic data for the Hetch Hetchy Water & Power Project. By a congressional act in 1913, the SFPUC acquired water rights, land appropriations, and the authorization to construct the O'Shaughnessy Dam within Yosemite's Tuolumne River drainage. The primary objective of the SFPUC was to secure and transport clean, reliable water supplied by the Tuolumne River to the city of San Francisco. In order to collect hydrologic data within the drainage, the SFPUC and DWR funded the construction of two snow survey shelters, at Lake Vernon and Wilmer Lake (also known as Wilma Lake), as well as numerous snow courses along a primary tributary of the drainage.

The Lake Vernon and Wilmer Lake Snow Survey Shelters were designed by the SFPUC and approved by the commission's Chief Engineer J. H. Turner in April 1945. The architectural plans for both shelters incorporated the design philosophies of the National Park Service Rustic style, including the use of local materials to harmonize with the surrounding environment, while also incorporating features that allowed the buildings to be functional during extreme winter weather. The shelters were sensible, one-room buildings of log construction capped by a moderately pitched gable roof. In anticipation of the deep snow pack, the architectural designs incorporated a sizable portico within a gable end to shelter the entrance from heavy snow drifts and an alternate attic access door. The Lake Vernon Snow Survey Shelter was constructed on an existing parcel owned by SFPUC located within a day's trek of the O'Shaughnessy Dam developed area. The Wilmer Lake Snow Survey Shelter was constructed approximately six miles from Lake Vernon in a secluded location along the Jack Main Canyon Trail.

The second phase of 1940s snow survey expansion in Yosemite National Park was initiated by the Division of Water Resources. In June 1946, the DWR issued a memorandum proposing additional snow survey infrastructure within the northern region of Yosemite National Park. This proposal was part of a larger plan to greatly expand the California Cooperative Snow Survey Program statewide. The expansion came about in response to a statewide population increase and heightened demand on water resources. The proposal for Yosemite National Park included the installation of six snow courses, four shelter cabins, and eight precipitation gauges in addition to the existing snow survey infrastructure. The proposal also incorporated architectural specifications and design schematics for future shelter cabins: "The proposed shelter cabins would be twelve feet by fourteen feet in plan and depending upon accessibility and materials available at the site, would be constructed of sawed lumber, logs, or stone."[iii] Each shelter cabin would contain a set of double bunks, wood burning stove, and modest furniture pieces. The proposal stated that funding for the added infrastructure would be provided by the state and any other

[iii] California Division of Water Resources, Department of Public Works, California, Memorandum Covering Proposed Additional Snow Survey Work in the National Parks in California, June 1946.

interested organizations or agencies, specifying that the development would be provided at no cost to the National Park Service. The estimated cost for each of the shelter cabins was between $800 and $1000. Yosemite administrators would provide guidance regarding the location of the new infrastructure to ensure it did not conflict with other natural resource management objectives.

Despite the vast importance of previous snow survey activity for natural resource management within the state, the only infrastructure in Yosemite National Park that resulted from the 1946 DWR proposal was a single snow survey shelter at Snow Flat. This would be the last snow survey shelter erected within the park, with the only exception being the rebuilding of Wilmer Cabin following an avalanche in 1986. It is unclear whether the proposed development was hindered by a lack of state funding or if the proposal met opposition from the National Park Service. However, additional proposed shelter cabins and associated snow courses located just beyond the boundaries of the park, within the Stanislaus National Forest, were constructed during the 1940s in accordance with the proposed specifications. These shelters include the Sachse Spring, Huckleberry, and Bond Pass Snow Survey Shelters. The Sachse Spring Snow Survey Shelter falls within feet of Yosemite's northwest boundary and has been subject to debate as to which agency, the National Park Service or the National Forest Service, owns the building. Although official title records have not been located, other archived records indicate that ownership falls to the National Park Service. By 1973, the SFPUC and Stanislaus National Forest "relinquished any interest [they had] in the snow cabins in the park". At that time, Yosemite National Park stepped in to take responsibility for the maintenance and operation of the Sachse Spring Snow Survey Shelter. A DWR document dated August 1981 states that ownership of the Sachse Spring Snow Survey Shelter had been transferred to the National Park Service.

In 1947, the Sachse Spring, Snow Flat, Bond Pass, and Huckleberry Snow Survey Shelters were all constructed to the design specifications outlined by the DWR proposal. (For purposes of this historic context, only the development history for snow survey infrastructure under the jurisdiction of Yosemite National Park will be discussed: the Sachse Spring and Snow Flat Snow Survey Shelters.)The Sachse Spring Snow Survey Shelter was constructed along the crest of Kibbie Ridge, which straddles the northwest boundary of Yosemite National Park. Given its remote location and available local materials, the shelter was built of log construction with a moderately pitched gable roof. The Snow Flat Snow Survey Shelter was constructed near an existing snow course centrally located within the park. The building was in close proximity to the May Lake Road and the developed infrastructure of the May Lake High Sierra Camp. Due to the surrounding development, this shelter cabin was built of frame construction with a moderately pitched gable roof. Similar to the Lake Vernon Snow Survey Shelter, the Sachse Spring building both buildings incorporated a sizable portico to shelter the entry from heavy snow drifts and an alternate attic access door.

Although snow survey shelters located throughout Yosemite were constructed at different times and by varying parties, the terms of agreement regarding each building were very similar. All snow survey shelters, snow courses, and other snow survey infrastructure were erected under special use permits issued by the Department of the Interior. Funding for the installation of snow survey infrastructure was provided by the Merced Irrigation District, the California Division of Water Resources, or the San Francisco Public Utilities Commission. Snow surveyors working within Yosemite National Park consisted of hired employees from the National Park Service, National Forest Service, and the agencies listed above. The shelters, once constructed, were owned and maintained by the National Park Service. Authorization was given to the snow surveyors by Yosemite National Park to utilize

the buildings during the winter months. During the summer season, the buildings were utilized by park personnel as outlying field stations for purposes associated with natural resource management.

Through the years, the methodology of snow surveying has incorporated improved technology and advanced scientific calculations; however, the foundation of the snow surveys program, the snow surveyor and backcountry snow survey shelters, has always endured. Following World War II, the ease and expediency of aerial observation of snowpack led to the placement of aerial snow depth markers in remote areas of the Sierra. Within Yosemite National Park, aerial markers were placed along snow courses at Beehive Meadow, Lake Vernon, Wilmer Lake, Sachse Spring, and Dana Meadow. While this method did reduce the manpower needed for survey work, field crews on the ground were still essential to the program in order to record the water content data of the snowpack. During the late 1950s and 1960s, snow survey programs across the United States turned to the use of automated snow sensors and the use of mechanized equipment to transport ground crews. Snow surveyors in Yosemite and elsewhere began conducting backcountry trips in snow cats and helicopters, which greatly reduced the need for snow survey shelters for a temporary time period. However, this steady progression towards a more mechanized method of snow survey in Yosemite would be nullified in the 1980s with the passage of the California Wilderness Act.

In 1984, nearly ninety percent of federal lands within Yosemite were designated wilderness. Under the Wilderness Act, the use of mechanized equipment was strongly discouraged – to be utilized only in cases of emergency or when the use of such equipment could be justified as a "minimum tool." This meant that operations were to be carried out with as little impact to the environment as possible or feasible by the National Park Service. By 1990, it was agreed that snow surveys conducted on ski, without the assistance of helicopters or other mechanized transport methods, were the best alternative to meet all National Park Service and natural resource management objectives. The use of helicopters for snow surveys was only considered during conditions of high avalanche risk. The Wilderness Act inadvertently revived interest in maintaining the use of backcountry snow survey shelters for field crews. Throughout the 1990s and into the early 2000s, nearly all backcountry snow survey shelters received some degree of restoration or preservation maintenance by the Yosemite Historic Preservation Crew to ensure their longevity. The wilderness designation of park lands placed heavy restrictions on new development and ensured that remaining structures in the Yosemite backcountry were of special interest to the park. This designation also protected the historic context of backcountry properties to be interpreted as significant natural resource management facilities.

Since the drought of the early 1930s, most of the American West has relied on federal and state snow survey programs to help guide the management of water supplies. Today in California, snow surveys are conducted within all of the main watersheds on the eastern and western sides of the Sierra Nevada – twenty-four in total. The development of backcountry snow shelters, in conjunction with snow courses, became an essential component of the program. As Dr. James E. Church discovered at the turn of the 20th century, these shelters facilitated surveyors' research on high elevation snowpack and by doing so, provided more accurate data collection on water supplies. The National Park Service and the California Cooperative Snow Survey Program continue to conduct seasonal snow surveys and utilize the snow survey shelters located throughout Yosemite. Small groups of snow surveyors conduct four separate trips each winter to thirteen snow courses within the Yosemite backcountry. In order to maintain an accurate statistical record of snow pack in the Sierra, it is essential to take snow survey measurements in the same location near the same time period year after year. The courses presently surveyed in Yosemite have

remained essentially unchanged since 1947, and in some cases longer. All information obtained from the snow surveys is funneled to state researchers and scientists within the Department of Water Resources, which assembles data and publishes snow melt runoff forecasts. The existence of backcountry snow survey shelters has proven to be an absolute necessity to the fieldwork conducted during the harsh winter conditions common to the Sierra Nevada. Additionally, the shelters have become an indispensible tool for National Park Service personnel, aiding in backcountry ranger patrols, search and rescue missions, fire management operations, and other natural resource management activities. Fieldwork and the collection of scientific data within the Yosemite backcountry would be greatly hindered without these overnight facilities. The snow survey shelters that remain functioning in their original capacity today serve to document the evolution of natural resource management not only for Yosemite National Park, but also for the American West.

Additional historic context information

Historic Integrity

The Snow Flat Snow Survey Shelter retains all seven aspects of historic integrity as defined by the National Register of Historic Places' standards: ***location, setting, design, materials, workmanship, association, and feeling.***

The Snow Flat Snow Survey Shelter remains in its original ***location*** near the May Lake Road in Yosemite National Park. This particular area boosts some of the heaviest winter snowfall for the park. The building provides winter shelter for fieldwork associated with the acquisition of hydrologic data within the Tuolumne River drainage. Today, it continues to serve in its original capacity and also as an outlying field station for natural resource management activities. Because of the remote location, the ***setting*** has remained essentially untouched. The building is situated within a moderately dense forest at the terminus of a dirt service road. The dirt road passes through a sizable meadow where the mapped Snow Flat snow course is located. In 1984, lands immediately surrounding the property boundary were designated wilderness. This protection ensures that no new development will occur outside of the property boundary or within the viewshed of the snow survey shelter.

The ***design*** for the Snow Flat Snow Survey Shelter was part of a larger standardized proposal to construct five additional snow survey shelters throughout the Yosemite National Park backcountry. (1946) The proposal included elevation and plan drawings for three distinct styles of shelter cabins. The proposed buildings were to be constructed as a log, masonry, or frame structure dependent upon the contextual setting of each. Since the Snow Flat Snow Survey Shelter is located near the developed May Lake Road, a frame structure was desired. The building was intended to be utilized as an outlying shelter cabin within the Yosemite backcountry and was therefore constructed to withstand the harsh winter conditions of the Sierra Nevada.

The building has had minor alterations over the years; however, the majority of its original ***material*** remains intact, including: the original exterior architectural details, exterior siding, roofing material, and interior finishes. The building has been preserved intact; in part due to its remote setting and also to its continued use by the National Park Service as backcountry lodging for wilderness travelers. The building is currently maintained by Yosemite National Park as a historic resource. The snow survey shelter is in good condition and has received only minor repairs over the years, which serves to demonstrate the high level of ***workmanship*** that went into the construction

of the cabin. The cabin was intended to be a permanent building and was constructed accordingly by skilled workers. Additionally, the building's ability to withstand the harsh winter conditions and heavy snow loads serves as a testament to the workmanship put forth during its construction.

The architectural detailing of the Snow Flat Snow Survey Shelter, such as a moderately pitched roof and large entry portico within the gable end, ***associates*** the building with other National Park Service snow survey shelters throughout the park and maintain a similar design. The utilitarian style and setting of the building provides a ***feeling*** of a backcountry outpost for the management of park resources. The surrounding land designation as wilderness places heavy restrictions on new development outside of the property boundary and ensures that remaining structures within the Yosemite backcountry are of special interest to the park. This designation protects the context of the property to be interpreted as a significant natural resource management facility.

Previously Determined Eligible for the National Register of Historic Places

The Snow Flat Snow Survey Shelter was first recognized for its historical significance during a historic resource case study conducted by Yosemite National Park in 1979. National Park Service Historian, Linda Green, recommended the property, among other significant cultural and historic resources throughout the park, to be nominated to the National Register of Historic Places in her 1987 multi-volume historic resource study, Yosemite: the Park and its Resources. A Draft Multiple Property Document (MPD) was composed in 2004 by the University of Las Vegas History Department. The Draft MPD used historic contexts from Greene's resource study and recognized twenty buildings, which included Snow Flat Snow Survey Shelter, for listing in the National Register of Historic Places. The Draft MPD has yet to be finalized by Yosemite National Park staff; however, it has received concurrence from the California State Historic Preservation Office. (*See Continuation Sheet III*) The Snow Flat Snow Survey Shelter has been indentified for its historic significance and is said to be eligible for the National Register of Historic Places under Criteria A and C; however, the current nomination does not concur that this particular building holds significance as a National Park Service Rustic style building.

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Previous documentation on file (NPS):

____preliminary determination of individual listing (36 CFR 67 has been requested)
____previously listed in the National Register
__X__previously determined eligible by the National Register
____designated a National Historic Landmark
____recorded by Historic American Buildings Survey #_____
____recorded by Historic American Engineering Record #_____
____recorded by Historic American Landscape Survey #_____

Primary location of additional data:

____State Historic Preservation Office
____Other State agency
__X__Federal agency
____Local government
____University
____Other
Name of repository: _____

Snow Flat Snow Survey Shelter | **Mariposa, CA**
Name of Property | County and State

Historic Resources Survey Number (if assigned): _____

10. Geographical Data

Acreage of Property **Less than one acre**
(Do not include previously listed resource acreage.)

UTM References
(Place additional UTM references on a continuation sheet.)

	Zone	Easting	Northing		Zone	Easting	Northing
1	11S	280148	4189591	3			
2				4			

Verbal Boundary Description (Describe the boundaries of the property.)

All land adjacent to the Snow Flat Snow Survey Shelter property was designated wilderness in the 1980s. Due to the presence of man-made structures found within the property, the immediate vicinity (within 100 feet) of Snow Flat Snow Survey Shelter was deemed potential wilderness.[iv] For purposes of this nomination this previous property determination is deemed appropriate since there are no known structures, objects, or sites associated with the snow survey shelter that fall outside of a 100 foot radius of the building.

The boundary perimeter for Snow Flat Snow Survey Shelter encompasses a 100 foot radius from a centralized coordinate, N37° 49.636' W119° 29.883 (UTM:11 S 280148 Easting, 4189591 Northing).

Boundary Justification (Explain why the boundaries were selected.)

The location for the Snow Flat Snow Survey Shelter was strategically selected by Yosemite National Park and the California Cooperative Snow Survey Program within an area of heavy snowfall for the park. The boundary designation contains all that is significant and contributing to the historic character of the property.

11. Form Prepared By

name/title **Jennifer Self, Architectural Historian**
organization **Yosemite National Park** date **August 30, 2011**
Division of Resources Management and Science
Branch of History, Architecture, and Landscapes
street & number **5083 Foresta Road** telephone **209.379.1222**
city or town **El Portal** state **CA** zip code **95318**
e-mail **Jennifer_Self@partner.nps.gov**

[iv] Boundary delineated was outlined in the 1989 Wilderness Management Plan for Yosemite National Park.

Additional Documentation

Submit the following items with the completed form:

I. Property Location Maps:

A.Tenaya Lake Quadrangle, California – Mariposa County, 7.5 Minute Series (topographic), United States Department of the Interior, Geological Survey, 1992.

II. Sketch Map from historic construction drawings. Photos keyed to this map.

III. Snow Survey Map:

Reference map showing the locations of historic and present locations of snow survey shelters and snow courses in Yosemite National Park, as well as routes taken by snow surveyors.

IV. Concurrence Letter

Concurrence letter from the California State Historic Preservation Office dated August 23, 2004. States properties identified within a draft Multiple Property Document for Yosemite National Park, including the "Snow Flat Cabin Building #3501", are eligible for listing in the National Register of Historic Places.

V. Historic Construction Drawings

Proposed building design for Snow Flat Shelter Cabin, Drawing No. NP-YOS-8292. Designed by the State of California Cooperative Snow Survey Program May 27, 1947. Approved by Acting Superintendent of Yosemite National Park, John Wosky June 6, 1947, and the National Park Regional Director on June 25, 1947.

VI. Historic Photographs

Photographs:

Submit clear and descriptive photographs. The size of each image must be 1600x1200 pixels at 300 ppi (pixels per inch) or larger. Key all photographs to the sketch map.

Name of Property: Snow Flat Snow Survey Shelter
City or Vicinity: Yosemite National Park
County: Tuolumne State: CA
Photographer: Jennifer Self
Date Photographed: August 2011
Location of original digital files:
Yosemite National Park
Division of Resources Management and Science
Branch of History, Architecture and Landscapes
El Portal, CA

Photo #1 (CA_Tuolumne County_Snow Flat Snow Survey Shelter_0001)
Northwest corner, camera facing southeast.

Photo #2 (CA_Tuolumne County_Snow Flat Snow Survey Shelter_0002)
Southeast corner, camera facing northwest.

Photo #3 (CA_Tuolumne County_Snow Flat Snow Survey Shelter_0003)
Interior of shelter, camera facing southwest.

Property Owner:

(Complete this item at the request of the SHPO or FPO.)

name **Department of the Interior, National Park Service, Yosemite National Park**

street & number **5083 Foresta Road** telephone

city or town **El Portal** state **CA** zip code **95318**

Association with *Historic Resources of Yosemite National Park* Multiple Property Submission

The Snow Flat Ranger Station is associated with the *Historic Resources of Yosemite National Park* Multiple Property Submission. It is representative of the following historic contexts, as defined in Section E of the MPS cover document: Settlement and Industry in Yosemite, 1851-1951; and State and Federal Administration of Yosemite, 1864-1966. It is an example of the following property types, as defined in Section F: Resources Associated with Settlement and Industry (1851-1951), with a subtype of Exploration, Settlement, and Resource Exploitation; and Resources Associated with State and Federal Administration of Yosemite (1864-1966), with a subtype of NPS Administration.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Snow Flat Snow Survey Shelter
Name of Property
Mariposa County, CA
County and State
n/a
Name of multiple listing (if applicable)

Section number **Additional Documentation** Page I

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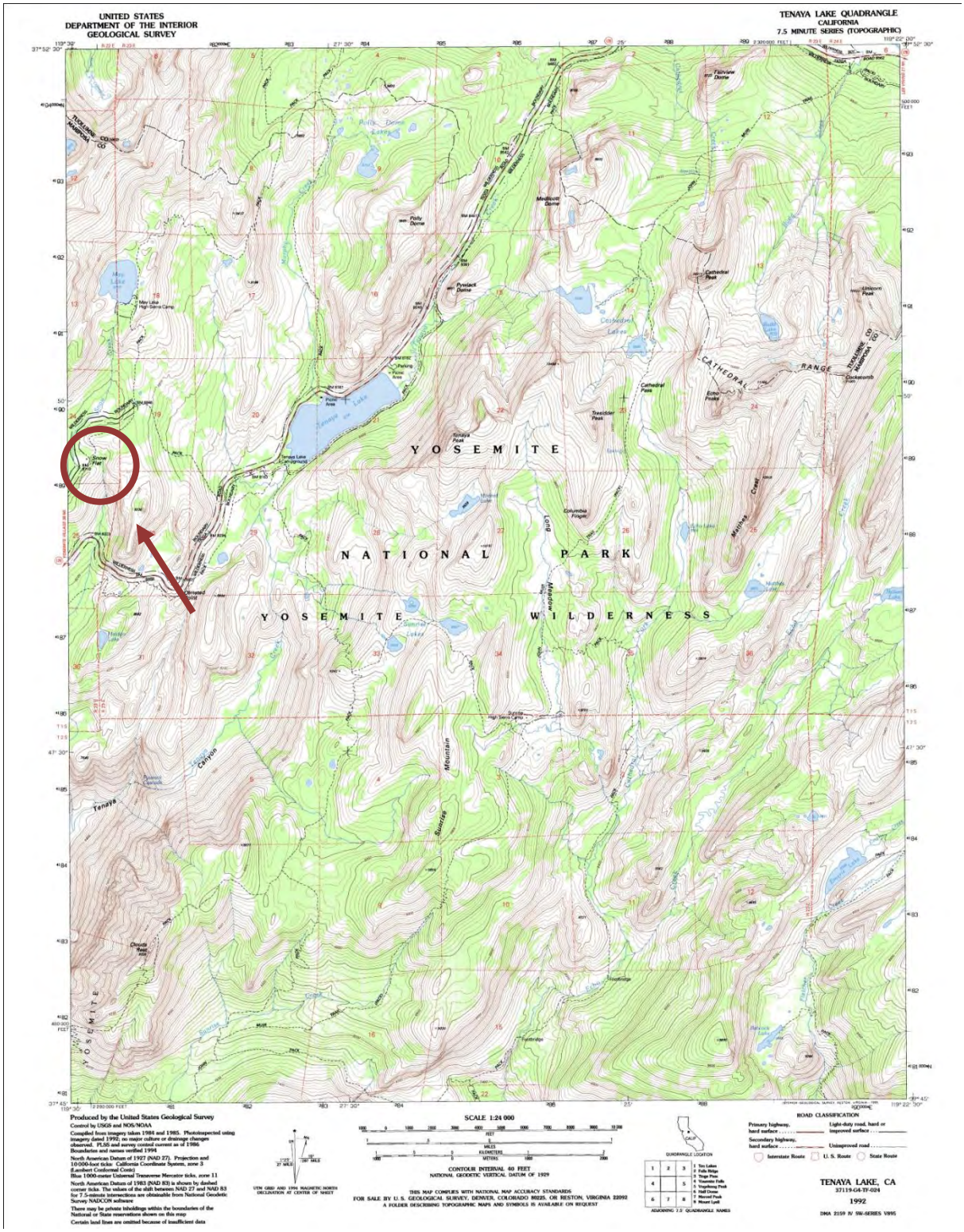


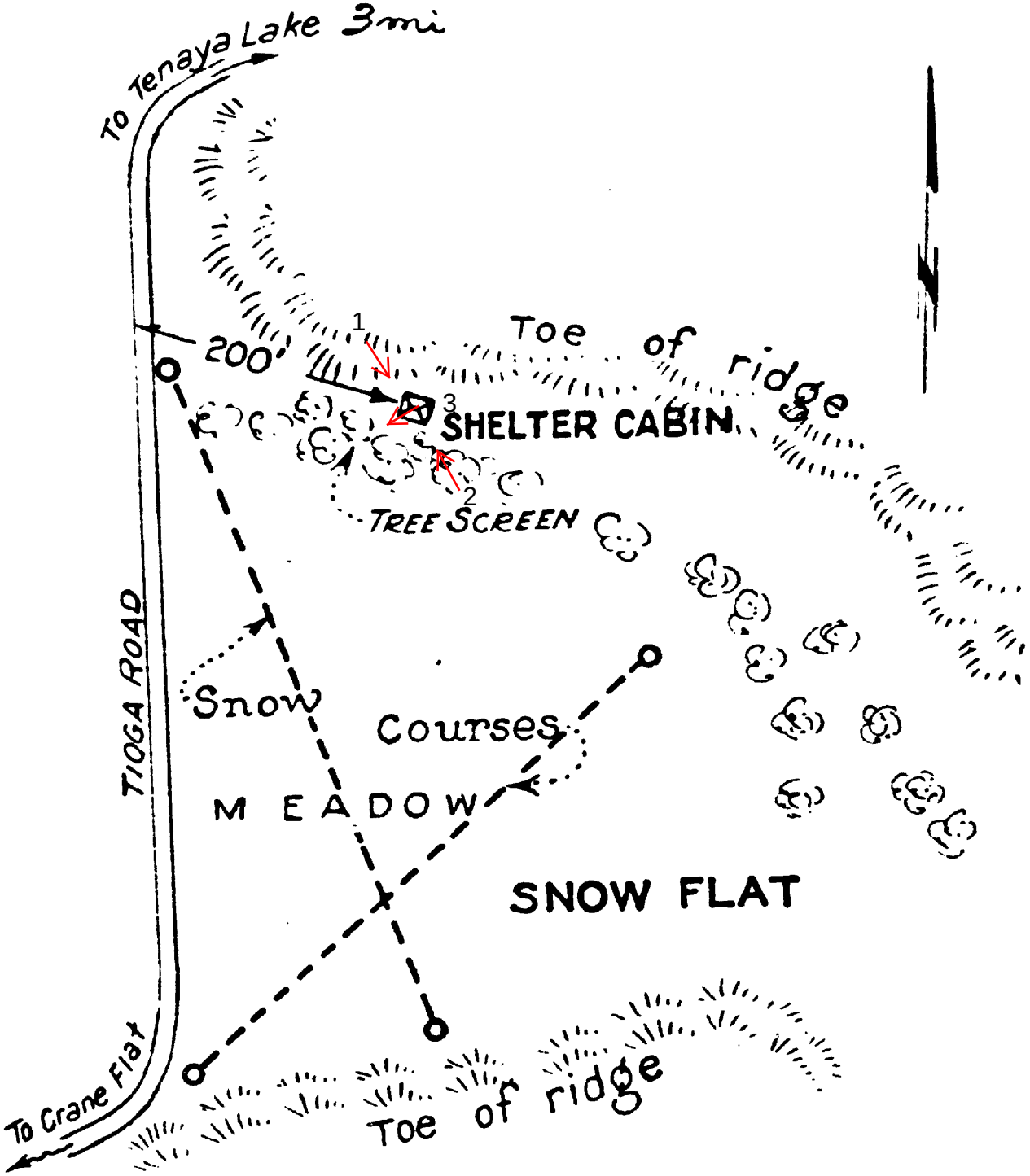
United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Snow Flat Snow Survey Shelter
Name of Property
Mariposa County, CA
County and State
N/A
Name of multiple listing (if applicable)

Section number Additional Documentation Page II

Vicinity map from 1947 construction drawings. Photos are keyed to this map.



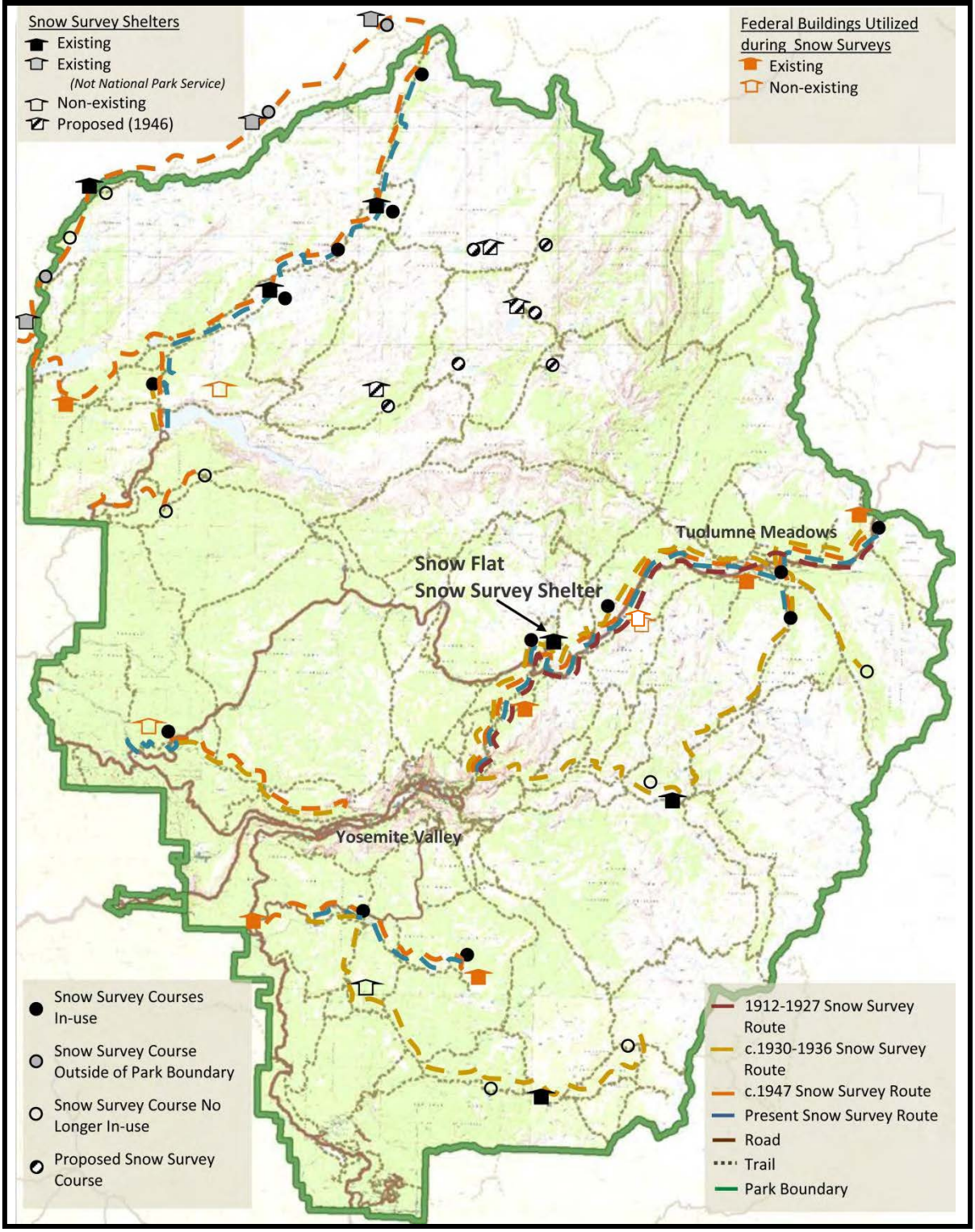
United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Snow Flat Snow Survey Shelter
Name of Property
Mariposa County, CA
County and State
n/a
Name of multiple listing (if applicable)

Section number **Additional Documentation** Page III

YOSEMITE NATIONAL PARK
Snow Survey Infrastructure & Routes
Snow Flat Snow Survey Shelter and Associated Features



STATE OF CALIFORNIA – THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER, Governor

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P O BOX 942896
SACRAMENTO, CA 94296-0001
(916) 653-6624 Fax: (916) 653-9824
calshpo@ohp.parks.ca.gov
www.ohp.parks.ca.gov

August 23, 2004

Dr. Stephanie Toothman
National Park Service
Pacific West Region
909 First Street
Seattle, Washington 98104-4159

Dear Dr. Toothman:

Thank you for the opportunity to comment on the National Register Multiple Property nomination for Yosemite National Park. I concur that the properties identified and evaluated n the nomination do constitute a coherent group of geographically dispersed resources that are eligible for listing in the National Register. The nomination does an excellent job of defining separate, but related contexts that make clear the significance of the individual resources, as well as the reasons that they collectively constitute a multiple property. The inclusion of a number of the park's less elaborate, high altitude resources is particularly noteworthy. The context statements synthesize a large amount of historic documentation in a clear and concise manner and the descriptive material that is provided for the individual resources or resource groupings is excellent.

We concur in all of your findings regarding the resources enumerated in the multiple property nomination. We agree that the following properties are eligible for the National Register as a part of a multiple property.

Lake Vernon Cabin Building #2450
May Lake High Sierra Camp Historic District
Hetch Hetchy Comfort Station Building #2104
Henness Ridge Fire Lookout Building #5300
The Golden Crown Mine
Glen Aulin Sierra Camp Historic District
Chinquapin Historic District
Buck Creek Cabin Building #4800
Snow Flat Cabin #Building #3501
Snow Creek Cabin Building #3450
Sachse Springs Cabin Building #2452
Ostrander Ski Hut Building #5110
Old Big Oak Flat Road
New Big Oak Flat Road
Merced Lake Ranger Station Building #3400
Merced Lake High Sierra Camp Historic District

Wawona Tunnel
Vogelsang High Sierra Camp Historic District
Tuolumne Meadows High Sierra Camp Historic District

I have signed the application as commenting authority. If you have any questions, please call Gene Itogowa of my staff (916) 653-8936.

Sincerely,

Milford Wayne Donaldson
State Historic Preservation Officer

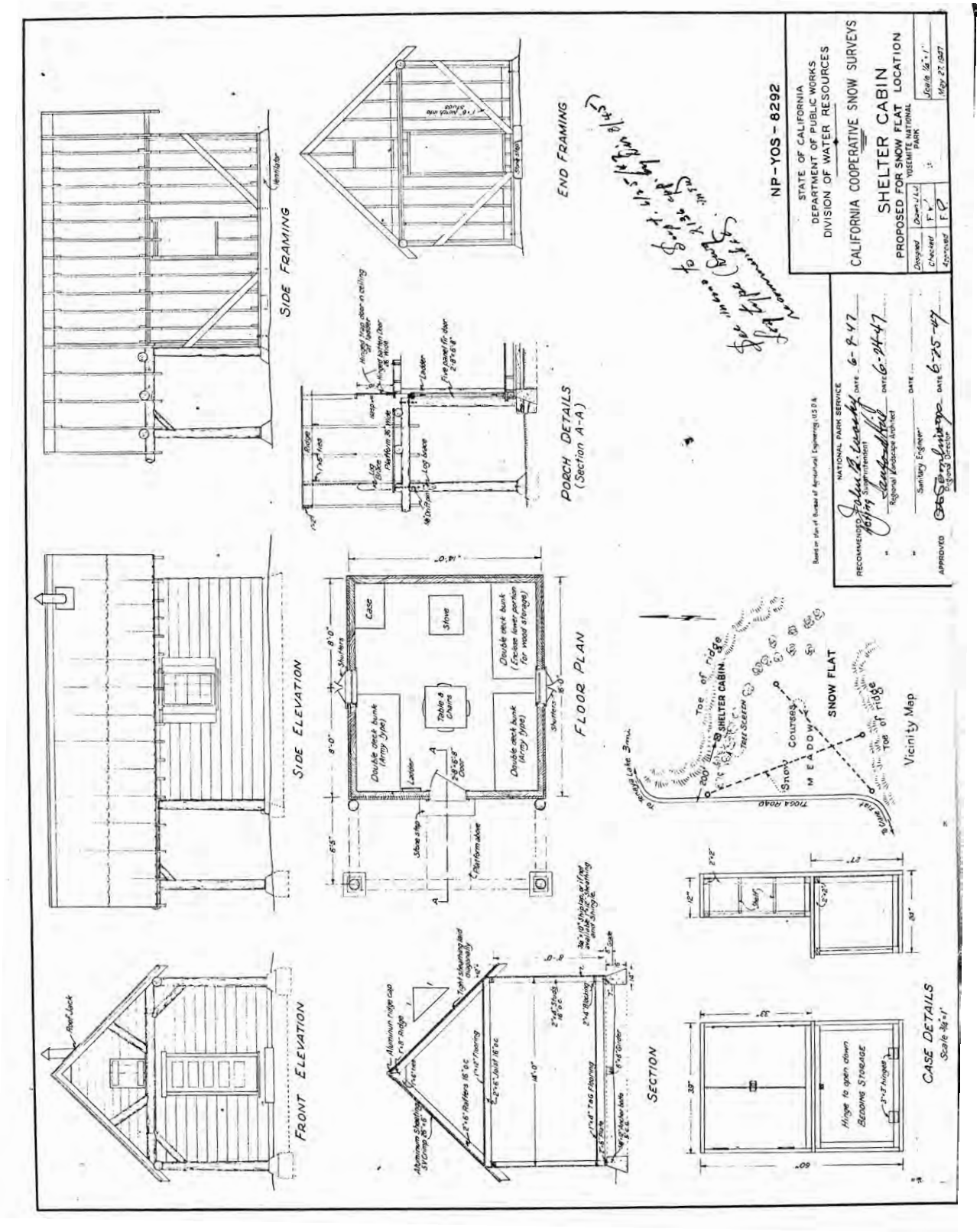
Cc: Kimball Koch

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Snow Flat Snow Survey Shelter
Name of Property
Mariposa County, CA
County and State
n/a
Name of multiple listing (if applicable)

Section number **Additional Documentation** Page V



United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Snow Flat Snow Survey Shelter
Name of Property
Mariposa County, CA
County and State
N/A
Name of multiple listing (if applicable)

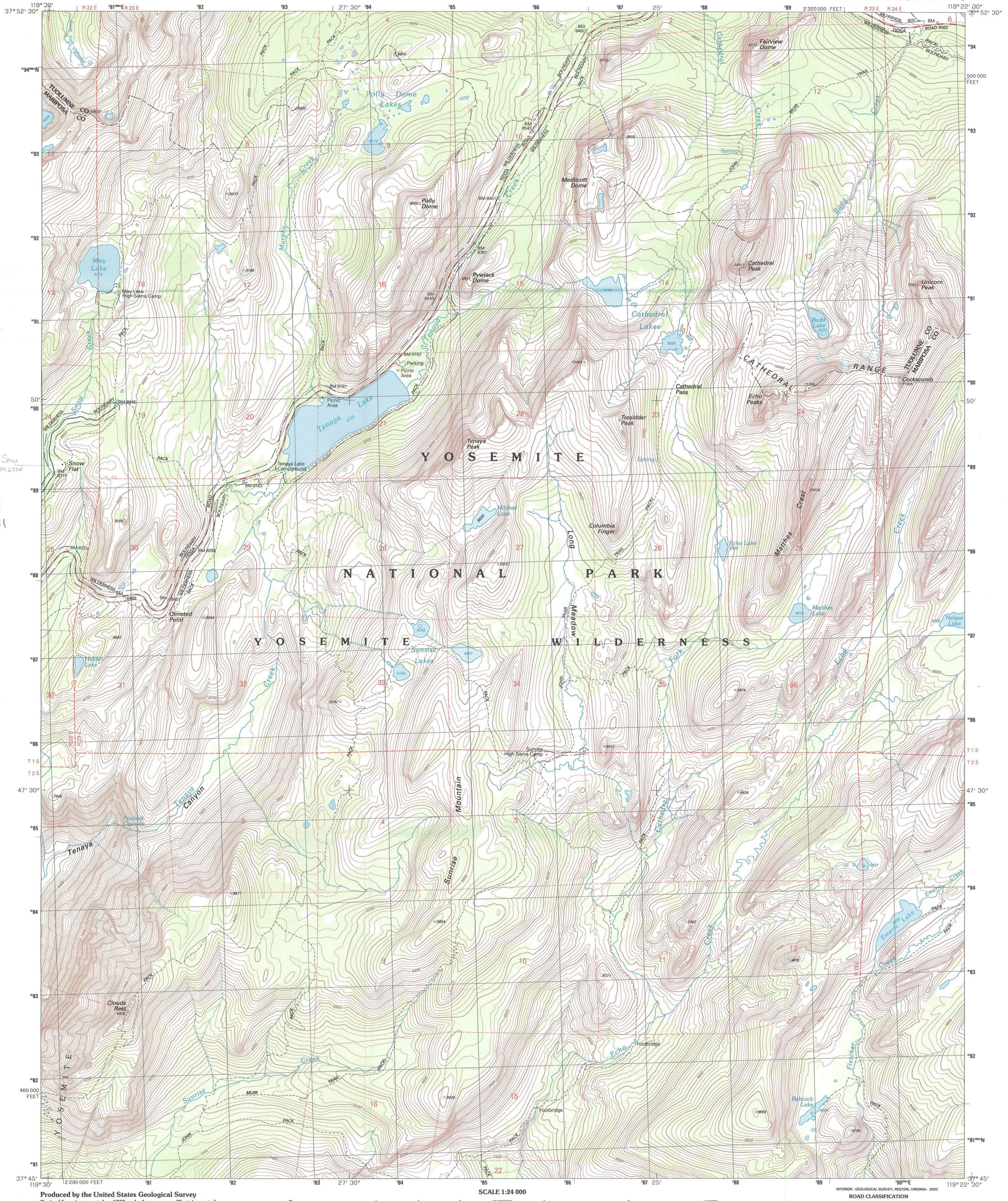
Section number Additional Documentation Page VI

Historic Photo #1. Snow Flat Snow Survey Shelter, 1949. Southwest corner (west and south elevations), camera facing roughly northeast. Photographer: unknown.

Location of original photo:
Yosemite National Park Archives
Slide Collection
History 102 – Sights & Structures
Folder #27 Backcountry Cabins

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

TENAYA LAKE QUADRANGLE
CALIFORNIA
7.5-MINUTE SERIES (TOPOGRAPHIC)



Produced by the United States Geological Survey

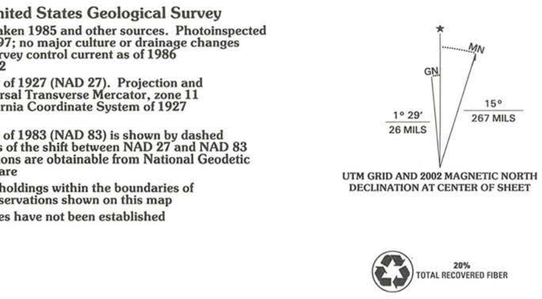
Derived from imagery taken 1985 and other sources. Photoinspected using imagery taken 1997; no major culture or drainage changes observed. PLSS and survey control current as of 1986
Boundaries verified 2002

North American Datum of 1927 (NAD 27). Projection and 1 000-meter grid: Universal Transverse Mercator, zone 11
10 000-foot ticks: California Coordinate System of 1927 (zone 3)

North American Datum of 1983 (NAD 83) is shown by dashed corner ticks. The values of the shift between NAD 27 and NAD 83 for 7.5-minute intersections are obtainable from National Geodetic Survey NADCON software

There may be private inholdings within the boundaries of the National or State reservations shown on this map

Where omitted, land lines have not been established



UTM GRID AND 2002 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

20% TOTAL RECOVERED FIBER

SCALE 1:24 000

1 .5 0 KILOMETERS 1 2
1000 0 METERS 1000 2000
1 .5 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000
FEET

CONTOUR INTERVAL 40 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
(TO CONVERT ELEVATIONS TO THE NORTH AMERICAN VERTICAL DATUM OF 1988, ADD 5 FEET)
TO CONVERT FROM FEET TO METERS, MULTIPLY BY 0.3048

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, P.O. BOX 25286, DENVER, COLORADO 80225
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

1 Ten Lakes
2 Falls Ridge
3 Tioga Pass
4 Yosemite Falls
5 Vogelsang Peak
6 Half Dome
7 Merced Peak
8 Mount Lyell

ADJOINING 7.5′ QUADRANGLES

INTERIOR - GEOLOGICAL SURVEY, RESTON, VIRGINIA - 2002

ROAD CLASSIFICATION

Primary highway hard surface
Secondary highway hard surface
Light-duty road, hard or improved surface
Unimproved road
Interstate Route
U.S. Route
State Route

TENAYA LAKE, CA

1997

NIMA 2159 IV SW-SERIES V895

ISBN 0-607-98830-4

$ 8.00

SNOW FLAT SNOW SURVEY SHELTER

11S
230148
4189591

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
EVALUATION/RETURN SHEET

REQUESTED ACTION: NOMINATION

PROPERTY NAME: Snow Flat Snow Survey Shelter

MULTIPLE NAME: Yosemite National Park MPS

STATE & COUNTY: CALIFORNIA, Mariposa

DATE RECEIVED: 6/02/14 DATE OF PENDING LIST: 6/25/14
DATE OF 16TH DAY: 7/10/14 DATE OF 45TH DAY: 7/19/14
DATE OF WEEKLY LIST:

REFERENCE NUMBER: 14000411

REASONS FOR REVIEW:

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

COMMENT WAIVER: N

___ACCEPT ___RETURN ___REJECT _____DATE

ABSTRACT/SUMMARY COMMENTS:

The Snow Flat Snow Survey Shelter is locally significant under National Register Criterion A, in the areas of Conservation and Science. Built by the City and County of San Francisco (and NPS) from standardized plans during the second phase of 1940s snow survey cabin construction, the 1947 Snow Flat cabin was established as an important component of the dispersed system of snow survey cabins built to aid in the scientific study of regional hydrology. Severe droughts in the late 1920s and early 1930s had highlighted the importance of water conservation in the areas served by the Sierra Nevada Mountains. Remote cabin sites such as this provided important shelter to winter survey crews and provided the Park with seasonal backcountry shelters and field stations. The Snow Flat shelter was the last snow survey shelter built in the Park. The property meets the registrations requirements set out in the Yosemite MPS.

RECOM./CRITERIA Accept Criterion A

REVIEWER Paul Lusignan DISCIPLINE Historian

TELEPHONE _____ DATE 7/29/14

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

If a nomination is returned to the nominating authority, the nomination is no longer under consideration by the NPS.