AVALANCHE DUPLEX RANGER STATION
Glacier National Park
Avalanche Campground, on Going-to-the-Sun Road, approximately
4.1 miles northeast of intersection with North Lake McDonald Road
West Glacier vicinity
Flathead County
Montana

HABS MT-164
HABS MT-164

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN BUILDINGS SURVEY
INTERMOUNTAIN REGIONAL OFFICE
National Park Service
U.S. Department of the Interior
12795 West Alameda Parkway
Denver, CO 80228

HISTORIC AMERICAN BUILDINGS SURVEY

AVALANCHE DUPLEX RANGER STATION

HABS MT- 164

Location: The Avalanche Duplex Ranger Station is located in Glacier National Park, Flathead County, Montana, near the confluence of McDonald Creek and Avalanche Creek at the entrance to the Avalanche Campground on the Going-to-the-Sun Road.

Quad: Mount Cannon

UTM: 12/292517/5395598 NAD 83

Date of Construction: 1966

Present Owner National Park Service, Glacier National Park

Present Use: Vacant

Significance: The Avalanche Duplex Ranger Station is eligible for listing in the National Register of Historic Places as a building that contributes to the significance of the Avalanche Campground Historic District. The District was determined eligible for National Register listing under Criteria A and C on February 9, 2011. The Avalanche Campground Historic District and its many historic resources represent significant priorities and design directives established by the National Park Service through the twentieth century. The Campground holds close associations with the two major infrastructure development periods of Glacier National Park -- the early development of the Going-to-the-Sun Road and Rustic architectural and landscape design of the 1920s through the 1930s, often referred to as the "Rustic" design era; and the Mission 66 era from 1953 through 1966, reflecting increased visitation and the rise of automobile transportation and car camping through the twentieth century and the corresponding National Park Service Mission 66 initiative to meet those needs. The Avalanche Duplex Ranger Station is an important contributing resource representing that latter period of development.

The Avalanche Duplex Ranger Station retains an extremely high degree of integrity and displays numerous architectural features associated with Mission 66 architecture. These include the modern materials, tall, fixed windows, welcoming porch canopy, and streamlined roofline, which combine an unassuming profile in harmony with the natural setting.

Historians: Jim Jenks, Christine Brown, Kate Hampton, Chere Jiusto
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September 2010 and September 2011

PART 1. HISTORICAL INFORMATION[1]

The Avalanche Duplex Ranger Station is located in Glacier National Park at the entrance to the Avalanche Campground, on the east side of Going-to-the-Sun Road approximately 15 miles northeast of the park entrance at West Glacier. A two-lane road runs east from Going-to-the-Sun Road to the campground. Just narrow inside the campground entrance and to the south of the access road stands the 1966 Avalanche Duplex Ranger Station.

Avalanche Campground lies near the confluence of Avalanche and McDonald creeks, and from here, a two mile trail along Avalanche Creek winds through a spectacular deep, narrow gorge to Avalanche Lake, two miles east of the campground. The area is lush and heavily forested with western hemlock, western red cedars, black cottonwood, and Douglas fir, which form a dense canopy and shady oasis for campers replete with wildflowers and occasional wildlife.

AVALANCHE DUPLEX RANGER STATION HISTORY

Congress established Glacier National Park in 1910, and soon development began, providing infrastructure and services that included transportation and accommodations ranging from an upscale hotel to camping facilities that capitalized on the growing popularity of wilderness recreation. Historian Jessie Ravage explains:

> Camping holidays seized the nation's imagination in the 1880s and 1890s as people escaped to platform tents and cabins reminiscent of the nation's long settlement period. Some of the nation's urbane businessmen went hunting and fishing in the remote places. Writing for *Forest and Stream* in the 1880s, William Wicks noted, "We migrate to the woods, hunt and fish from choice; we go for change, recuperation, pleasure, health. We aim to treasure upper energies in order to better sustain the tension of civilization."[2]

Recognizing both the conservation and recreation interests of the public, the park's enabling legislation delineated twin purposes for its administrators: protection of the resources and increased access for the public. Melding these tasks into policy, administrators called for more roads and trails, both for fire protection and ranger patrols, and to improve visitor access to the park. While the Great Northern Railway (GN) invested quite a bit into park access during the 1910s, it focused mainly on the east side of the Divide, and transporting rail travelers to GN's hotels and chalets. West of the Divide, the beginnings of a trans-mountain road began in 1919, when John Lewis completed a rough road along the east side of Lake McDonald, to provide automobile access to his Glacier Hotel. A vision for a highway connecting the east and west sides to accommodate the visiting public, and provide for management, began to take hold.

Significance of Going-to-the-Sun Road[3]

The National Park Service began construction on Going-to-the-Sun Road in 1921, and in 1928 the western section of the road was completed to Logan Pass. In 1933 the road was officially opened, although construction and improvements continued for two more decades. By 1937, the principal bridges, tunnels, and other structures of the road were all complete with final paving entirely finished in 1952.

When it was begun, Going-to-the-Sun Road was the most ambitious road construction project ever undertaken by the Bureau of Public Roads and the National Park Service. The extreme terrain and conditions, as well as the newness of the administrative agreement between the two federal bureaus, made the road a laboratory of innovative road engineering practices and policies. While building Going-to-the-Sun Road, the Park Service and the Bureau of Public Roads developed the construction standards and the cooperative administration that characterized future road construction not only in national parks, but on other federal lands and after 1933 in state parks as well. In both civil engineering and landscape architecture, the design and construction of Going-to-the-Sun Road also indicated a need to reassess the professional capacities of the Park Service.

Avalanche Campground up until Mid-Century

Through the first years of the park's existence, officials learned where the tourists and in-holders had heretofore explored and set up camps. Prime campsites, selected by guides for their beauty, proximity to water, and appropriate landforms, were to become official park picnic areas and campgrounds. And to attract more visitors, those sites had to become accessible by car.

As early as 1911, Glacier Superintendent Major William R. Logan recognized the need for an improved road system for the convenience of tourists,[4] and early superintendents understood travelers' interests to explore deeper and deeper within the Park boundaries. While Hill's Great Northern developed facilities on the east side of the park, on the west side of the park, private developments included Lewis' hotel, and camping places for hunting and touring parties. Informal camps near Sprague Creek, and the wooded area along Avalanche Creek, just north of Lake McDonald, became park-administered facilities. According to Superintendent Logan:

> Avalanche Basin, a remarkable U-shaped valley 8 miles from Lake McDonald, is one of the most attractive and impressing features of the park. Nestling in the valley below the basin lies Avalanche Lake, into which dash cascades and cataracts that head in the melting snow and ice above and leap thousands of feet to the lake beneath.[5]

The park began to improve trails, including the Avalanche Creek Trail, which received corduroy improvements in 1913. However, early trails and ranger stations were rudimentary at best. In 1915, Superintendent Samuel F. Ralston advocated construction of a road from the foot to the head of Lake McDonald to "greatly increase the automobile travel in the park, from which considerable revenue would be derived."[6] Five years after that, the first link in the Transcontinental Road was finally completed to the head of the lake. Automobile traffic had increased more than tenfold over the

previous decade and Acting Superintendent George Goodwin proclaimed in 1920 that "camping trips… were more popular than ever before… "

The following year, administrators recommended that "hotels, campsites, and chalets should be enlarged as they will no doubt be more congested next year… Permanent camps should be established, similar to the camps now in Yellowstone and Yosemite."[7]

The confluence of Avalanche Creek and McDonald Creek was a natural setting for a campground and familiar to longtime visitors. Lined with cedar trees, Avalanche Creek's natural beauty, lush flora and fauna, and relatively flat creek bottom leading to Avalanche Lake all contributed to its selection as an official campground.

In 1924, the Going-to-the-Sun Road reached that point, and the existing trail became more heavily visited than ever. During the latter 1920s, "public campgrounds were used to a greater extent than ever before in the history of the Park"[8] and Avalanche Campground was officially cleared to accommodate overnight and day use, the campground's main roads were graveled and a water supply system, log fire cache building and two comfort stations were installed.

During the 1930s, the park printed self-guided tours of the campground and the two-mile trail up the creek to Avalanche Lake. National Park Service landscape and building design teams thoughtfully planned these activities, with great attention to the natural space. Roads and pullouts were designed "to bring order to camping activities in natural parks and to preserve natural aspect without hobbling campers' use and enjoyment of a camping area."[9] In addition, a move evolved toward more ordered, designed campgrounds,[10] and by the mid-1930s, Avalanche Campground featured two one-way access loops to camping "spurs."[11]

Though the campground appeared organic, the Park Service carefully planned each improvement to the space, from the roughly forty-five degree angles of the spurs to the Rustic design of the comfort stations (1929), shower/laundry facility (1930), fire cache (1928), camp tenders' cabin (1936), and amphitheater. Park architecture in the first half of the twentieth century emphasized rustic architecture and buildings made from native materials that fit into the park's natural surroundings, and which were intended to evoke the nation's frontier past. Albert Good defined "rustic architecture" as "a style which, through the use of avoidance of severely straight lines and over-sophistication, gives the feeling of having been executed by pioneer craftsmen with limited hand tools, it thus achieves sympathy with natural surroundings and with the past."[12] The buildings reflected this ethic, with log posts, braces, beams and trusses, and low-slung, gabled roofs covered with wood shingles, exposed purlins and rafter ends, vertical-plank exterior walls, and wood-trimmed doors and windows.

Visitation to Glacier National Park, especially automobile traffic, increased substantially through the 1930s. Between 1935 and 1941, visitation to the National Parks increased more than 150%, putting a huge strain on park facilities, the newly completed Going-to-the-Sun Road and its associated campgrounds. The road carried more than just automobiles, as travel trailers increased in popularity through the decade. In 1936, twenty-five of Avalanche Campground's eighty campsites were enlarged for auto-and-trailer campers.

Architect Good explained in his 1938 *Park and Recreation Structures* that the short spur design, like that at Avalanche Campground, was inadequate for trailer campers and offered several design solutions. Glacier National Park officials began to redesign some campsites but entry to World War II in 1941 caused visitation and appropriations to drop significantly, halting most proposed construction projects.[13]

A massive reduction of non-military budgets for federal agencies, including the National Park Service during the World War II years led to park closures across the nation. In Glacier, appropriations were reduced to less than maintenance levels and many of the structures within the park, both public and private, fell into disrepair. During this period at Avalanche Campground, improvements were limited to moving a couple existing buildings within the district: fire cache, Building 70, and a comfort station.

When World War II ended, appropriations began to increase, but demands on park infrastructure increased even more. Visitors were less likely to patronize privately owned concessionaire facilities, and sought public accommodations. Administrators at Glacier and other national parks expended increasing amounts of money to improve roadways and facilities for automobile traffic. However, chronic understaffing and inadequate budgets for large scale improvements continued through the 1940s and early 1950s, and administrators and visitors alike became increasingly frustrated.

Mission 66: Avalanche Campground in a New Era

In 1956, the National Park Service entered a new era of funding and construction that, for the first time in nearly a generation, gave the National Park Service the ability to meet the demands of a modernizing America. Mission 66 was a National Park Service ten-year program intended to dramatically expand national park visitor services by 1966, in time for the 50th anniversary of the establishment of the NPS. The massive, ambitious plan was launched by NPS Director Conrad L. Wirth.

Historian Sarah Allaback, in her comprehensive 2000 study *Mission 66 Visitor Centers: The History of a Building Type*, wrote that Wirth visualized Mission 66 as a program that "would allow the Park Service to repair and build roads, bridges, trails, hire additional employees, construct new facilities ranging from campsites to administrative buildings, improve employee housing, and obtain land for parks."[14] Mission 66 would "elevate the parks to modern standards of comfort and efficiency, as well as an attempt to conserve natural resources." With staunch support from President Dwight D. Eisenhower, Congress approved federal funding for the initiative which was made available for Fiscal Year 1956.

In Glacier, planning and projects progressed in earnest in anticipation of Mission 66. The parks' "Mission 66 Prospectus," dated June 23, 1956 outlined projects and budgets throughout the park. Visitor centers at Logan Pass and St. Mary, additional residences and a new administration building at the park headquarters, modernized comfort stations and ranger facilities throughout the park were proposed and constructed through the era. Campgrounds at Many Glacier, St. Mary, Rising Sun, Two Medicine, Avalanche, and Fish Creek all received upgraded sanitary systems, redesigned and improved roads and campsites and other amenities. At Avalanche, Mission-66 planning and projects called for reconstituting the campground road, a new campground loop

and picnic area, reconstituting the self-guided Trail of the Cedars, and extending the Avalanche Lake Trail. Upgrades proposed also included a new administrative/caretakers duplex, eight comfort stations, replacing the benches at the 1930s-era campfire circle, and new picnic tables and fireplaces. The budget for these improvements at Avalanche was projected to be $277,800.

These plans progressed and by 1959, the proposed changes were drawn as part of the park's master plan. The map shows Loop 1 (historic Loop A) of the campground essentially intact, while Loop B would be obliterated and replaced by a loop designed to better accommodate travel trailers. A third loop to the south is also shown, together with the ranger station duplex at the entrance, and seven new comfort stations. Nearly all the existing buildings were to be removed.

Work began in earnest in July 1960, when the E.F. Matelich Construction Company of Kalispell, Montana began constructing seven new comfort stations at Avalanche campground. Park Service architects provided the building plans to the contractor. In keeping with Mission 66 philosophy, the plans made use of modern materials and technology and provided an efficient blueprint for construction. Details included aluminum windows and screens, pre-fabricated steel stalls, and Formica wall panels.

Between July 1961 and August 1962, contractor Kalispell Plumbing and Heating transformed the southern portion of the 1930s-era campground by obliterating the loop and sites, and constructing two new loops with a total of eighty-seven campsites. The site design included a regular pattern of bypass lanes and campsites on either side of the one-way access loops, and basically follows the plans described in Albert Good's forward-thinking planning guide, the 1938 *Park and Recreation Structures* as "Trailer Campsite Unit H". In this design, "an island separates the bypass parking lane serving an individual campsite from the traveled roadway." The design is less formal than others, "approached not with a determination to produce maximum number of campsites per acres, but instead with the triple objective of (1) suiting an irregular topography, (2) sparing existing desirable natural features, and (3) gaining greater privacy for each campsite." The proposed campsite placement on the 1959 Master Plan map shows a much more regular spacing of sites than was actually built, as flora and undulations in the landscape allowed for additional sites to be constructed.

Concurrently, a NPS landscape design team and survey crew from the Western Office of Design and Construction (WODC) provided the alignment and grading work for the roads at the campground and the Avalanche Picnic Area. The next year, in 1963, WODC crews and day labor installed new picnic tables, fireplaces and garbage cans and holders. The picnic tables featured prefabricated steel table leg frames purchased from Kay Enterprises and lumber tops and seats purchased locally. Crews cut the lumber to length, drilled for bolts, rounded the edges and then weather treated the wood. The tops and seats were then attached to the steel frames. The fireplaces were welded from pre-cut steel material according to NPS standardized design, then placed on poured concrete slabs. The garbage receptacles were similarly constructed using steel parts assembled on concrete slabs.

In 1966, the San Francisco Planning and Service Center provided the plans for the most ambitious project of the Mission 66 activities in Avalanche Campground. NPS awarded

the construction contract to Mahnomen Pile Driving and Erection Company of East Glacier, Montana on October 12, 1966 and construction of the Avalanche Duplex Ranger Station and Office began in November.

Reminiscent of the St. Mary's Visitor's Center on the east side of the park, which was constructed at the same time, the building featured a shallow-pitched side-gabled roof, with wide eaves and a broad, welcoming triangular gabled porch roof extension across the façade. Tall banks of windows provided visitors a clear view of the rangers' offices at the front of the building, while smaller, wood-frame double-hung windows to the sides and rear provided ventilation and light to the duplex quarters. Board-and-batten cedar siding and wood shakes on the roof provided a natural harmony with the wooded surroundings and the building's modern design. On the interior, Formica counters, hand-crafted cabinetry and cedar closets provided storage spaces, and living spaces featured modern tile floors and gypsum board walls. Throughout the building, the fixtures and appliances were carefully chosen from modern design catalogs, including chrome bath fixtures, louvered window coverings, vinyl partition walls, and sleek, efficient electric wall heating units. A crisp, light color palate of whites and birch completed the modern look.

As was the intention of Mission 66 architectural design, the result was a beautiful building that harmonized with the natural surroundings and exhibited a decidedly contemporary feel. The project also included installation of a "Type A" standardized all metal hose house, and an American Flagpole Equipment Company aluminum flagpole. Outdoor concrete patios, with vertical board privacy screens, picnic tables, and clotheslines enhance the living spaces at the rear of the building.

The duplex, along with comfort stations, campsite redesign, fire circle improvements, and water and sewer upgrades improved facilities at Avalanche Campground under the Mission 66 directive. By 1967, the improvements were complete, and visitors stayed at Avalanche Campground in unprecedented numbers.

Figure 1: Location Map
From Mount Cowan USGS Topographic Map
Key: + Indicates Location of Avalanche Duplex Ranger Station

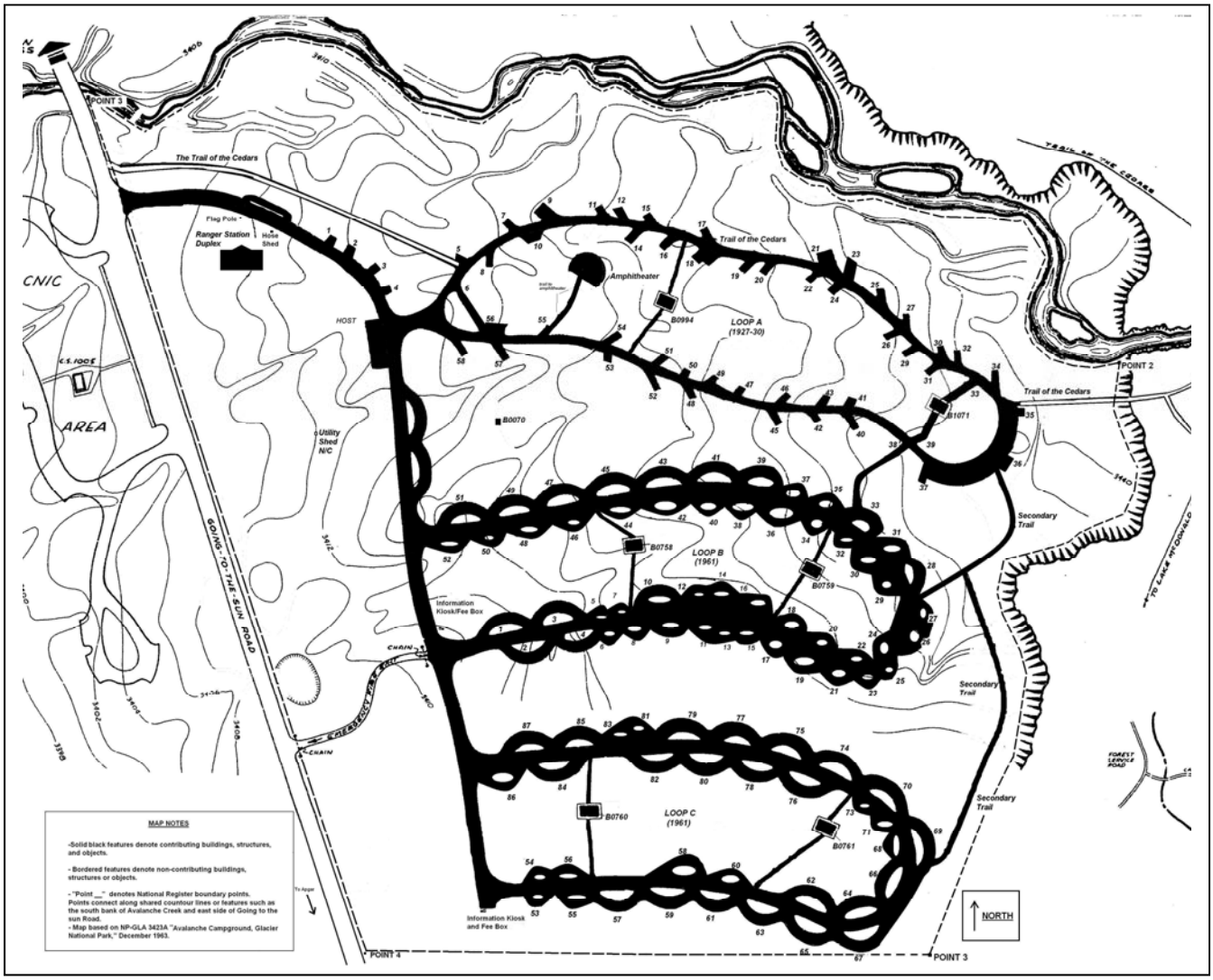


Figure 2: Location Map (detail)
Note: Ranger Station Duplex in upper left

PART II. ARCHITECTURAL INFORMATION

The Avalanche Duplex Ranger Station was constructed in 1966 to serve as an information office at Avalanche Campground as well as seasonal housing for two park rangers. Set back about 20 feet on the south side of the campground access road, the duplex is located just east of Going-to-the-Sun Road.

The one-story residence/office is rectangular in plan with a central pointed office bay covered by a front porch roof. The building rests on a concrete slab foundation and has ½-inch rough sawn red cedar plywood board-and-batten siding. The distinctive overhanging side gable roof is tapered at the corners and is intersected by the projecting porch roof over the office bay. The side gable roof is supported by five, four-inch by 14-inch exposed solid wood purlins. The eave soffit is clad with three-inch by six-inch pine boards and finished with a two-inch by eight-inch fascia board. The roof is clad with wood shake shingles.

The central projecting porch roof is supported by three, four-inch by 14-inch exposed solid wood purlins resting on three, six-inch by ten-inch posts. The exposed framing members, window frames and sash are painted dark brown and the siding is clear-coated to bring out the natural cedar color. The doors, blank panels below the front windows, and fascia boards are painted off white. White "globe" pendant light fixtures hang from the porch ceiling on white conduit cord above each office window.

The east elevation (façade) consists of the central information office. Each side of this central pointed bay is divided into three panels. The right-hand panel of the north office contains a tall metal hollow-core Dutch door. The center and left panels contain one-over-one double hung wood sashes. The right-hand window has a small Formica countertop at its sill. Blank plywood panels are located below each window, and above each window/door panel is a fixed glass unit. The windows, lower panels and upper fixed windows all have wide flat wood trim. The south office bay is slightly different and consists of a tall blank plywood panel at the left. A cork board is fastened to the panel. The center and right panels contain centered one-over-one double-hung wood sashes. The right-hand window has a small Formica countertop at its sill. Blank plywood panels are located below each window, and above each window/blank panel is a fixed glass unit. These openings also have wide flat wood trim.

The north and south elevations are identical and consist of two, evenly spaced, paired one-over-one double hung wood sash with wide flat wood trim and removable storm and screened windows. On the north elevation only, there is a gas utility cabinet attached to the lower west side of the wall. The cabinet houses the gas meter and gas piping/distribution system, and is made of cedar panels with double doors and a shed roof.

The west (rear) elevation consists of north, central and south entrance doors with windows between the doors. The north and south doors are metal hollow-core doors with wood-frame screen doors. The center utility room door is steel with a central rectangular glass panel and a wood-frame screen door. Each door has narrow flat wood trim and a concrete stoop with stairs below it. The north window consists of a large

rectangular fixed sash on the left flanked by a one-over-one double-hung sash on the right. The windows are divided by a six-inch wide mullion and have a slanted wood sill. The south window is an identical mirror image of the north window. Both windows are finished with narrow flat wood trim.

The interior of the duplex building is divided into an office and two identical residential units. The residences each consist of a small L-plan kitchen, dining area, and living area on the west, and a bedroom to the east. The center of the building consists of a utility room on the west, bathrooms in the center, and the offices to the east. The offices are accessible from the outside door on the façade or through interior doors located near the bathroom in each residence.

The simple yet comfortable one-bedroom units are finished with ½-inch thick gypsum board on the walls and two-inch pine trim around the doors. Bedroom, bathroom and closet doors are 1⅜-inch thick hollow-core birch. The kitchen is detailed with 9-inch square vinyl asbestos tile and ¾-inch birch plywood panel cabinetry.

Setting

There is a sidewalk in front of the building from which a Y-shaped asphalt walkway leads to the duplex. The area directly in front of the office service windows is paved with concrete slabs stamped with a diamond pattern. The grounds around the building are shaded by mature hemlock, pine, and cedar trees. An eight-foot wide driveway extends along the south side of the building and ends at a propane tank, screened by a chain link fence. A concrete walkway extends the length of the rear (west elevation) of the duplex. Behind each duplex unit are separate concrete patios with picnic tables. The patios are screened on three sides by a vertical board wood fence. Behind or west of the fence, the drying yard, now overgrown with vegetation, contains one steel T-post clothesline for each duplex unit. A 20-foot tall aluminum flagpole was installed near the sidewalk directly in front of the Avalanche Duplex Ranger Station in 1967. The halyard and truck (at the top of the pole) are still intact, but no ball finial or ornament caps the pole.

Parking spaces line the north side of the road across from the office. From here, the road turns slightly south and leads to the trailhead for the Trail of the Cedars. The Trail of the Cedars follows along the north side of the campground, and Loop 1 with its amphitheater for evening programs and lectures, the original camping "spurs" or parking spaces, and two 1960 comfort stations.

There are three loops in the campground; each connecting at their eastern end via connector trails leading to the Trail of the Cedars. The Trail of the Cedars parallels Avalanche Creek, and a portion of it is located within the northernmost portion of the Avalanche Campground Historic District.

Integrity of Avalanche Duplex Ranger Station

The Avalanche Duplex Ranger station stands in fair condition and retains a high level of architectural integrity. A review of the "As Constructed Drawings" of the building in 1966, shows that the building design and materials have never been altered. The station retains its original wood shake roof, massive wood rafters, cedar siding, and concrete foundation. The windows, doors, trim, light fixtures and details such as door hinges,

window screens, and cork billboard specified in the original working drawings also remain unchanged. The paint colors are the only change. Problems with the building include the deteriorated wood shakes, isolated areas of peeling paint, and moss covered concrete elements. Roof leaks have damaged some interior finishes. In addition, all of the interior finishes specified in the working drawings, such as kitchen cabinets, flooring, doors, trim, and wall finishes are unaltered and in good condition. Overall the building retains the highest level of integrity given that its location, design, setting, feeling, associations, materials, and workmanship have clearly never been altered and represent an outstanding example of the National Park Service's Mission 66 design initiative, which generally rejected the previous rustic style in favor of modern materials, technologies, and design principles.

Future of the Avalanche Duplex Ranger Station

Glacier National Park is proposing to demolish the Avalanche Duplex Ranger Station and Hose House and Hydrant in the Avalanche Campground Historic District. Park rangers are no longer stationed at this area and campground hosts now provide camper information. The park has identified no uses for the building, and as a result, it has been vacant for a number of years and is deteriorating from a leaking roof and lack of maintenance.

A determination of eligibility (DOE) for listing in the National Register of Historic Places was prepared for the Avalanche Creek Historic District 24FH1210 in 2010 and on February 9, 2011 the district, comprised of 12 contributing resources and one noncontributing resource associated with the campground, was determined eligible for listing. The contributing resources include the Avalanche Duplex Ranger Station, a Hose House and hydrant, the Fire Cache Building, three campground loops (1, 2 and 3), and six comfort stations. The Avalanche Duplex Ranger Station was found to be a contributing resource of the Historic District. Demolition of the ranger station will have an adverse effect on the historic district.

In accordance with Section 106 of the National Historic Preservation Act, as amended, the park consulted with the Montana State Historic Preservation Office (SHPO) to seek ways to avoid, minimize or mitigate the adverse effect. The park and the SHPO have reached a preliminary agreement upon a Memorandum of Agreement to mitigate the adverse effect. The park has agreed, among other things, to record the ranger station to the Standards of the Historic American Buildings Survey. This historical narrative and accompanying photographs are the products of the HABS recordation.

The park plans to prepare an Environmental Assessment to meet the requirement of the National Environmental Policy Act (NEPA) and finalize Section 106 of the National Historic Preservation Act responsibilities.

PART III. SOURCES OF INFORMATION

SELECTED SOURCES

Allaback, Sarah. Mission 66 Visitor Centers: The History of a Building Type. Washington, D.C.: National Park Service, 2000.

Andrus, Patrick W. "National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation" edited by Rebecca H. Shrimpton. Washington, D.C.: National Park Service, revised for Internet 2002. Availalble online at http://www.nps.gov/nr/publications/bulletins/nrb15/.

Denver Service Center, "Environmental Assessment for Proposed Upgrade Water System. Package no. 257, Avalanche Campground, Glacier National Park, Flathead County, MT," National Park Service, 1980.

Glacier National Park Records, Development and Maintenance Reports, Situation, Boxes 110 and 134, GLAC Archives, West Glacier MT.

Good, Albert H. Good, Park Recreation and Structures, Parts I- III. Washington, D.C.: USDI, NPS, 1938.

Hampton, Kate, Brown, Christine and Jenks, Jim. "National Register of Historic Places Nomination Form and Determination of Eligibility for the Avalanche Creek Historic District 24FH1210." Montana Preservation Alliance, on file at Montana State Historic Preservation Office, Helena, MT, 2010.

Historical Research Associates, Inc., "Multiple Resources Submission for Historically and Architecturally Significant resources in Glacier National Park, Montana," on file at Montana State Historic Preservation Office, Helena, MT, 1985.

McClelland, Linda Flint. Building the National Parks: Historic Landscape Design and Construction. Baltimore, MD: The Johns Hopkins University Press, 1998.

"Mission 66 Prospectus, June 23, 1956," Box 104, Folder 4, GLAC Archives, West Glacier, MT

Ravage, Jessie. "Recreational Camps on Lake McDonald Multiple Properties Documentation Form." on file at the State Historic Preservation Office, Helena, MT, 2006.

Rydell, Kiki L. and Culpin, Mary Shivers. "Managing the Matchless Wonders: A History Of Administrative Development In Yellowstone National Park, 1872–1965." Historic Resource Study, Volume III, National Park Service, Yellowstone National Park, 2006.

"Superintendent's Annual Reports for Glacier National Park," GLAC Archives, West Glacier, MT, 1912.

Vaught, L.O. *History of Glacier*, Unpublished mansuscript, n.p., n.d. GLAC Archives, West Glacier, MT.

Wicks, William S. *Log Cabins and Cottages. How to Build and Furnish Them*. New York: Forest and Stream, 1920:

ENDNOTES

[1] Historical context and architectural description for this HABS document is drawn from the Determination of Eligibility for the Avalanche Campground Historic District prepared by Montana
Preservation Alliance, Helena, Montana for Glacier National Park, 2010.

[2] As quoted in Ravage, p. 6, from William S. Wicks, *Log Cabins and Cottages. How to Build and Furnish Them* (New York: Forest and Stream, 1920): 8. The first edition came out in the 1880s; 1920's edition appears to be identical. Gibbs Smith of Layton, Utah, published a facsimile edition in 1999.

[3] The contextual history and information for this section is taken from the *Going-to-the-Sun Road, Glacier National Park National Historic Landmark Nomination*, 1999.

[4] William R. Logan, "Superintendent's Annual Report for Glacier National Park," on file at the Glacier National Park [GLAC] Archives, West Glacier, Montana, 1912.

[5] William R. Logan, "Superintendent's Annual Report for Glacier National Park," on file at the Glacier National Park [GLAC] Archives, West Glacier, Montana, 1911.

[6] William R. Logan, "Superintendent's Annual Report for Glacier National Park," on file at the Glacier National Park [GLAC] Archives, West Glacier, Montana, 1912; James L. Galen, "Superintendent's Annual Report for Glacier National Park," GLAC Archives, West Glacier, Montana, 1913; Samuel F. Ralston, "Superintendent's Annual Report for Glacier National Park," GLAC Archives, West Glacier, Montana, 1915.

[7] J. Ross Eakin, "Superintendent's Annual Report for Glacier National Park," GLAC Archives, West Glacier, Montana, 1921.

[8] J. Ross Eakin, "Superintendent's Annual Report, Glacier National Park," GLAC Archives, West Glacier, Montana, 1929.

[9] Albert H. Good, *Park Recreation and Structures, Part III: Overnight and Organized Camp Facilities*, (Washington, D.C.: USDI, NPS, 1938), p. 5.

[10] Plant pathologist Emilio P. Meinecke shaped campground policy at the Forest Service and the National Park Service through reports issued in 1928 and his 1932 *A Camp Ground Policy*, which directed park managers to select and design campgrounds around soil conditions, length of seasonal use, and the type and density of vegetation. Attention was paid to the different types of campers – their use of cars, trailers, and tents, and management of campground sites in a studied and organized manner. Emilio P. Meinecke's work impacted the design and use of public lands throughout the country. For an in-depth discussion, see McClelland, *Building the National Parks*, pp. 276-285.

[11] Good, *Park Overnight and Organized Camp Facilities, Part III*, p. 5. Ohio architect and consultant Albert H. Good wrote several architectural guide books for the National Park Service in the 1930s, and described the design concept:

> Basic in this campsite concept is a short parking spur, taking off from a one-way road as a readily negotiable angle, and bounded by naturalized barriers defining the

parking space and confining the camper's automobile therein. Supplementing principle is a logical grouping of tent site, picnic table, and fireplace in suitable relation to the parked automobile, existing tree growth, and prevailing winds. Finally, a screening of undergrowth around the fringe, to limit and give desirable privacy to the campsite, completes the picture."

[12] Good, *Park and Recreation Structures, Part I: Administration and Basic Service Facilities*, (Washington, D.C.: USDI, NPS, 1938), p. 5.

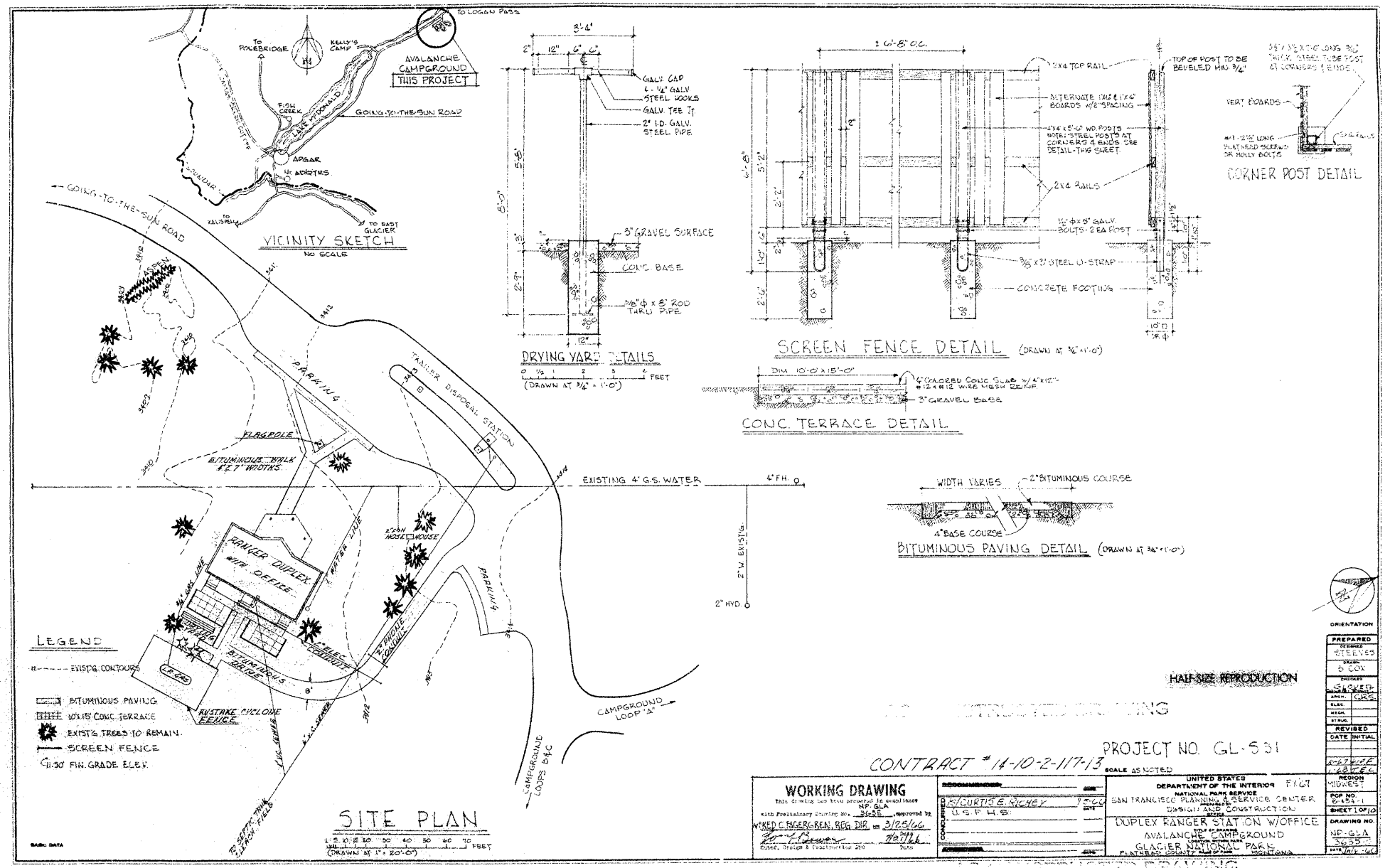
[13] "Annual Superintendent's Report, 1993," GLAC Archives, West Glacier, Montana.

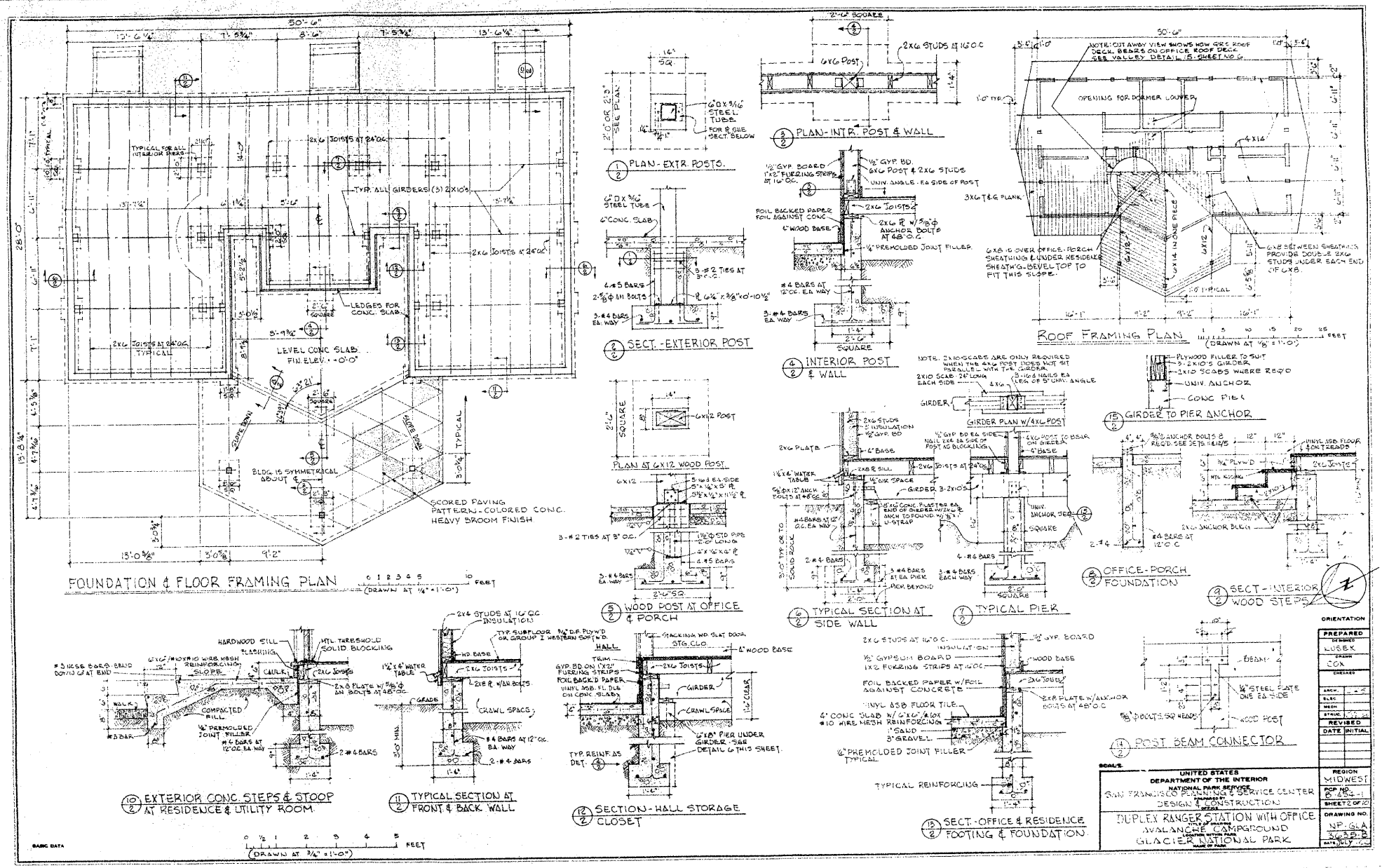
[14] Sarah Allaback, *Mission 66 Visitor Centers: The History of a Building Type*, (Washington, D.C.: National Park Service, 2000), p. 3.

PART III. SOURCES OF INFORMATION

ARCHITECTURAL DRAWINGS

Scanned images of the original construction drawings for Avalanche Campground are not copyrighted. The original drawings are housed in the Glacier National Park Archives, West Glacier, Montana.


VICINITY SKETCH
NO SCALE
TO LOGAN PASS
AVALANCHE CAMPGROUND
THIS PROJECT
TO POLEBRIDGE
KELLY'S CAMP
FISH CREEK
LAKE MCDONALD
GOING-TO-THE-SUN ROAD
APGAR
TO KALISPELL
TO EAST GLACIER
GOING-TO-THE-SUN ROAD
PARKING
TRAILER DISPOSAL STATION
FLAGPOLE
BITUMINOUS WALK 4'&7' WIDTHS
EXISTING 4" G.S. WATER
4" FH.
2" W. EXIST'G.
2" HYD.
RANGER DUPLEX WITH OFFICE
WATER LINE
2" GAS LINE
2" GAS METER HOUSE
ELEC. CONDUIT
TELEPHONE CONDUIT
BITUMINOUS DRIVE
8'
6' RS. CYCLONE FENCE
CAMPGROUND LOOP "A"
CAMPGROUND LOOPS B&C
PARKING
LEGEND
EXIST'G. CONTOURS
BITUMINOUS PAVING
10'x15' CONC. TERRACE
EXIST'G. TREES TO REMAIN
SCREEN FENCE
FIN. GRADE ELEV.
SITE PLAN
(DRAWN AT 1" = 20'-0")
3'-4"
2"
12"
6"
6"
GALV. CAP
L - 1/2" GALV. STEEL HOOKS
GALV. TEE ⊥
2" I.D. GALV. STEEL PIPE
5'-6"
8'-0"
3" GRAVEL SURFACE
CONC. BASE
3/8" ϕ x 8" ROD THRU PIPE
12"
DRYING YARD DETAILS
(DRAWN AT 3/4" = 1'-0")
1'-6" O.C.
1x4 TOP RAIL
TOP OF POST TO BE BEVELED MIN 3/4"
ALTERNATE 1x6 & 1x4 BOARDS W/ 1/8" SPACING
4x4 x 5'-0" WD. POSTS NOTE: STEEL POSTS AT CORNERS & ENDS SEE DETAIL-THIS SHEET
2x4 RAILS
1/2" ϕ x 5" GALV. BOLTS - 2 EA POST
3/8" x 3" STEEL U-STRAP
CONCRETE FOOTING
6'-8"
5'-2"
2'-2"
1'-6"
2'-4"
1'-6"
2'-6"
SCREEN FENCE DETAIL (DRAWN AT 3/4" = 1'-0")
3/8" x 3/8" x 7'-0" LONG 3/16" THICK STEEL TUBE POST AT CORNERS & ENDS
VERT. BOARDS
#14 - 2 1/2" LONG FLAT HEAD SCREWS OR MOLLY BOLTS
CORNER POST DETAIL
DIM. 10'-0" x 15'-0"
4" COLORED CONC. SLAB W/ 4"x12" #12 & #12 WIRE MESH REINF.
3" GRAVEL BASE
CONC. TERRACE DETAIL
WIDTH VARIES
2" BITUMINOUS COURSE
4" BASE COURSE
BITUMINOUS PAVING DETAIL (DRAWN AT 3/4" = 1'-0")
ORIENTATION
HALF-SIZE REPRODUCTION
PROJECT NO. GL-531
CONTRACT # 14-10-2-117-13
SCALE AS NOTED
WORKING DRAWING
NP-GLA
3635
W. FRED C. FAGERGREN, REG. DIR.
3/25/66
CURTIS E. NICKEY
U.S.P.H.S.
UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
SAN FRANCISCO PLANNING & SERVICE CENTER
DESIGN AND CONSTRUCTION
DUPLEX RANGER STATION W/OFFICE
AVALANCHE CAMPGROUND
GLACIER NATIONAL PARK
FLATHEAD COUNTY, MONTANA
PREPARED
STEEVES
D. COX
SACKETT
REVISED
REGION MIDWEST
PCP NO. 6-154-1
SHEET 1 OF 10
DRAWING NO. NP-GLA 3635
DATE MAR. 1966


FOUNDATION & FLOOR FRAMING PLAN
(DRAWN AT 1/4" = 1'-0")
PLAN - EXTR. POSTS.
PLAN - INTR. POST & WALL
SECT. - EXTERIOR POST
INTERIOR POST & WALL
ROOF FRAMING PLAN
(DRAWN AT 1/8" = 1'-0")
PLAN AT 6X12 WOOD POST
WOOD POST AT OFFICE & PORCH
TYPICAL SECTION AT SIDE WALL
TYPICAL PIER
GIRDER TO PIER ANCHOR
OFFICE - PORCH FOUNDATION
SECT. - INTERIOR WOOD STEPS
EXTERIOR CONC. STEPS & STOOP AT RESIDENCE & UTILITY ROOM
TYPICAL SECTION AT FRONT & BACK WALL
SECTION - HALL STORAGE CLOSET
SECT. - OFFICE & RESIDENCE FOOTING & FOUNDATION
POST BEAM CONNECTOR
UNITED STATES
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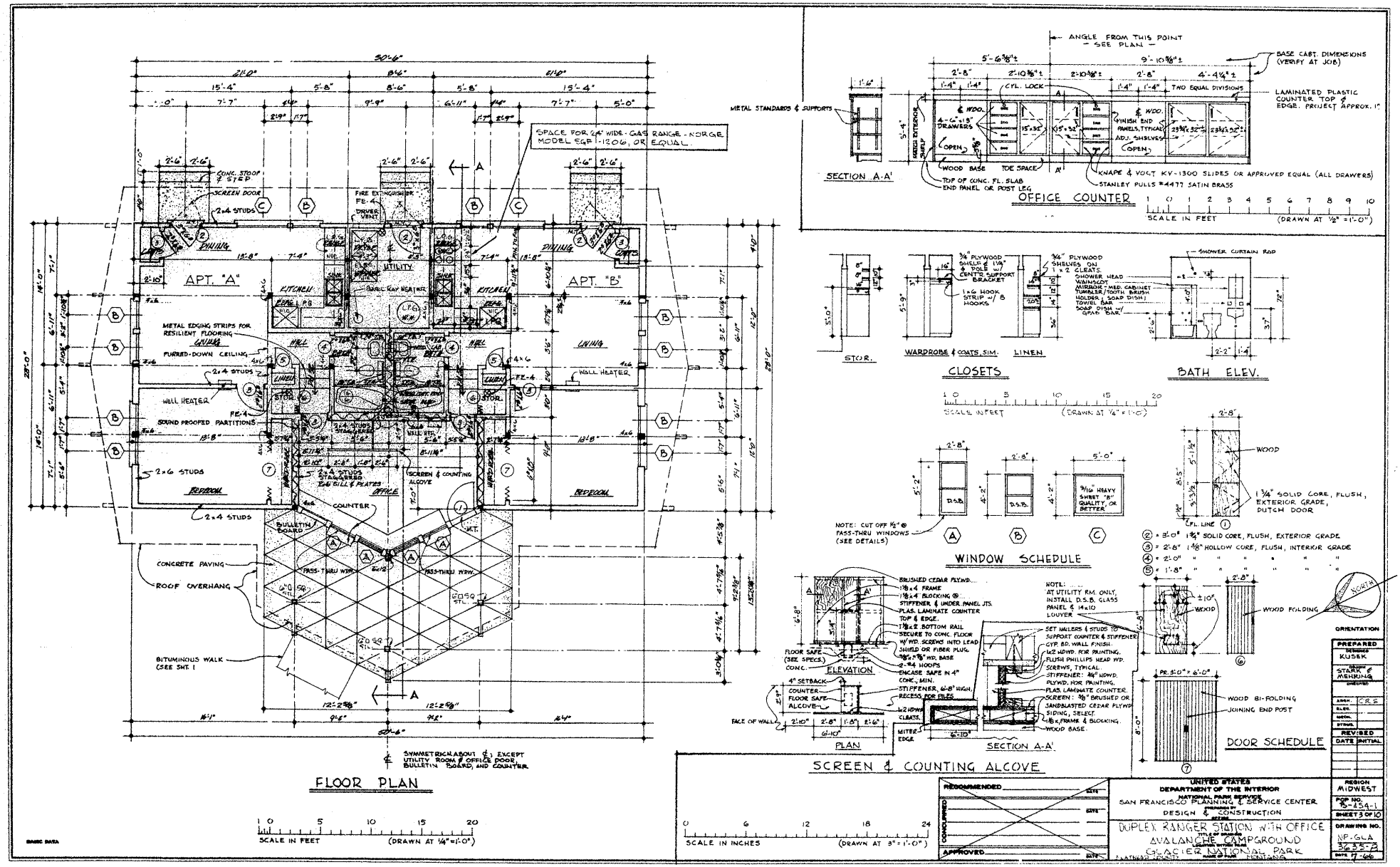
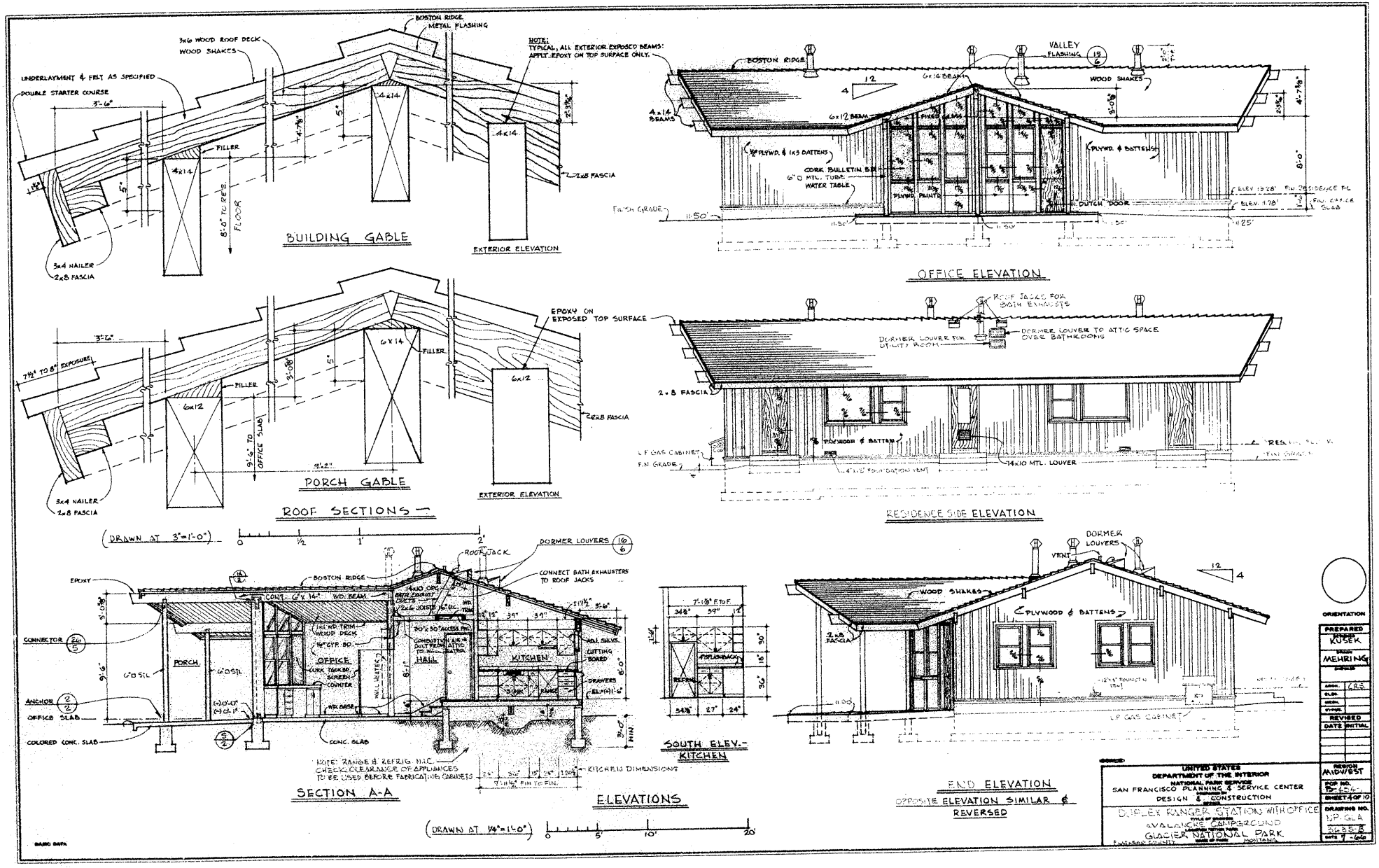
DESIGN & CONSTRUCTION
DUPLEX RANGER STATION WITH OFFICE
AVALANCHE CAMPGROUND
GLACIER NATIONAL PARK
MIDWEST
NP-GLA
3635-B
ORIENTATION
PREPARED
REVISED
DATE
INITIAL


FLOOR PLAN
APT. "A"
APT. "B"
SPACE FOR 24" WIDE - GAS RANGE - NORGE MODEL SGP-1206, OR EQUAL.
SYMMETRICAL ABOUT ℄, EXCEPT UTILITY ROOM & OFFICE DOOR, BULLETIN BOARD, AND COUNTER
SCALE IN FEET (DRAWN AT 1/4" = 1'-0")
OFFICE COUNTER
SECTION A-A'
SCALE IN FEET (DRAWN AT 1/2" = 1'-0")
CLOSETS
BATH ELEV.
SCALE IN FEET (DRAWN AT 1/4" = 1'-0")
WINDOW SCHEDULE
SCREEN & COUNTING ALCOVE
ELEVATION
PLAN
SECTION A-A'
DOOR SCHEDULE
SCALE IN INCHES (DRAWN AT 3" = 1'-0")
UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
SAN FRANCISCO PLANNING & SERVICE CENTER
DESIGN & CONSTRUCTION
DUPLEX RANGER STATION WITH OFFICE
AVALANCHE CAMPGROUND
GLACIER NATIONAL PARK
REGION MIDWEST
SHEET 3 OF 10
DRAWING NO. NP-GLA 3635-B
DATE 7-66


BUILDING GABLE
EXTERIOR ELEVATION
PORCH GABLE
ROOF SECTIONS
(DRAWN AT 3"=1'-0")
OFFICE ELEVATION
RESIDENCE SIDE ELEVATION
SECTION A-A
SOUTH ELEV.-KITCHEN
ELEVATIONS
(DRAWN AT 1/4"=1'-0")
END ELEVATION
OPPOSITE ELEVATION SIMILAR & REVERSED
UNITED STATES
DEPARTMENT OF THE INTERIOR
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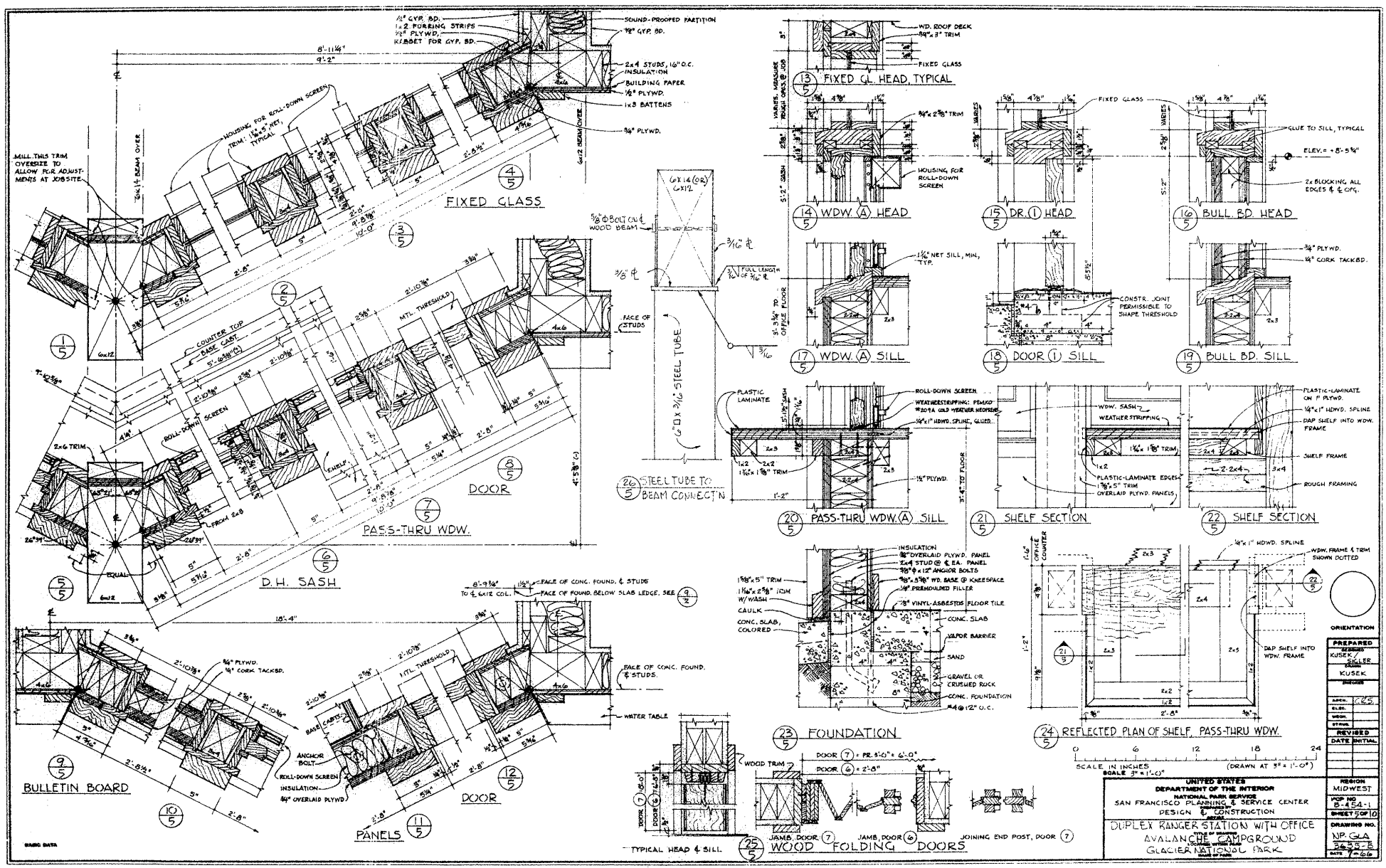
SAN FRANCISCO PLANNING & SERVICE CENTER
DESIGN & CONSTRUCTION
DUPLEX RANGER STATION WITH OFFICE
AVALANCHE CAMPGROUND
GLACIER NATIONAL PARK
MONTANA
PREPARED
KUSEK
MEHRING
REVISED
DATE
INITIAL
MIDWEST
SHEET 4 OF 10
DRAWING NO.
NP-GLA
3685-8
DATE 7-66


FIXED GLASS
PASS-THRU WDW.
D.H. SASH
DOOR
BULLETIN BOARD
PANELS
DOOR
STEEL TUBE TO BEAM CONNECT'N
FIXED GL. HEAD, TYPICAL
WDW. (A) HEAD
DR. (1) HEAD
BULL. BD. HEAD
WDW. (A) SILL
DOOR (1) SILL
BULL BD. SILL
PASS-THRU WDW. (A) SILL
SHELF SECTION
SHELF SECTION
FOUNDATION
REFLECTED PLAN OF SHELF, PASS-THRU WDW.
TYPICAL HEAD & SILL
WOOD FOLDING DOORS
ORIENTATION
PREPARED
KUSEK / SIGLER
KUSEK
REVISED
UNITED STATES
DEPARTMENT OF THE INTERIOR
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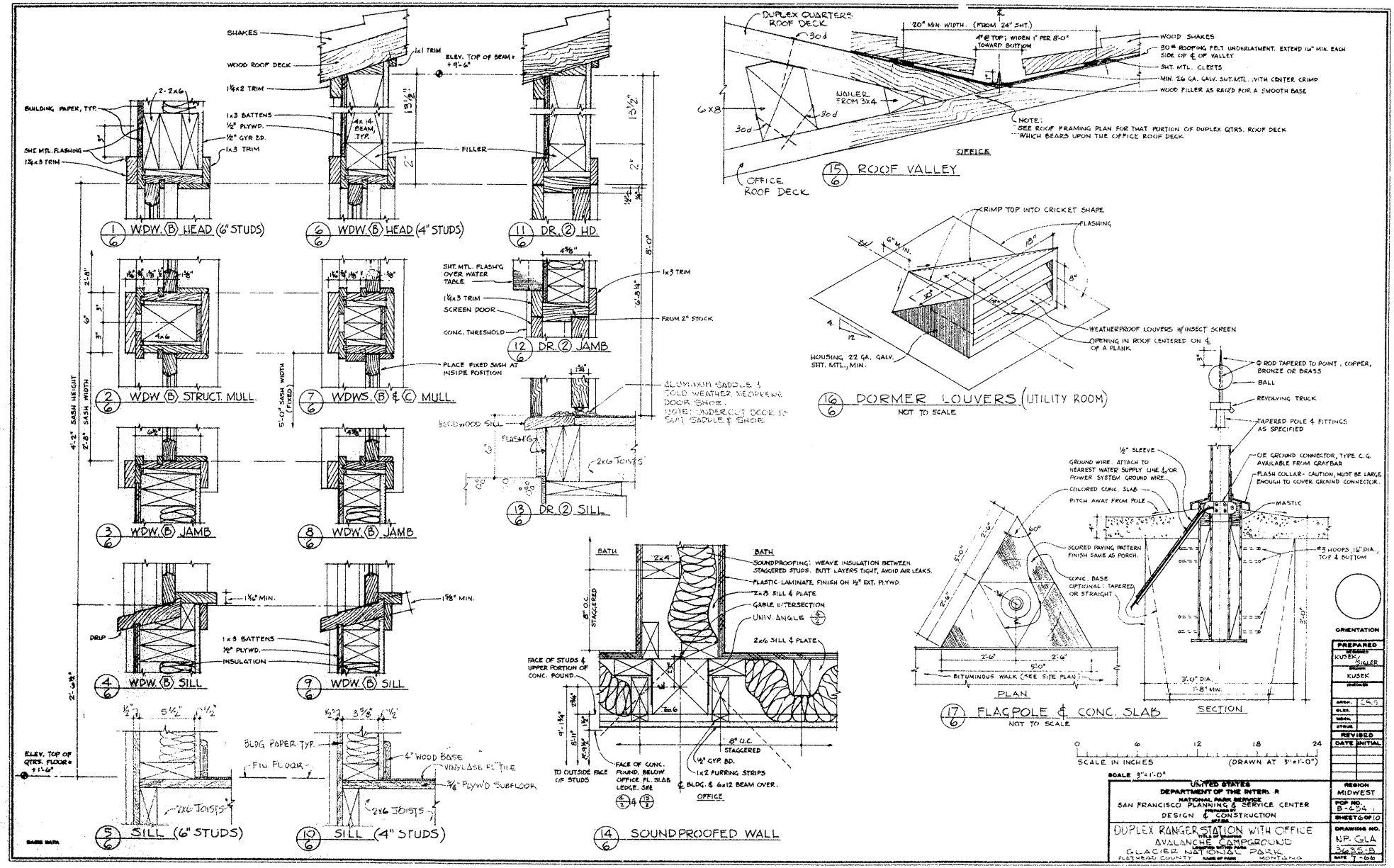
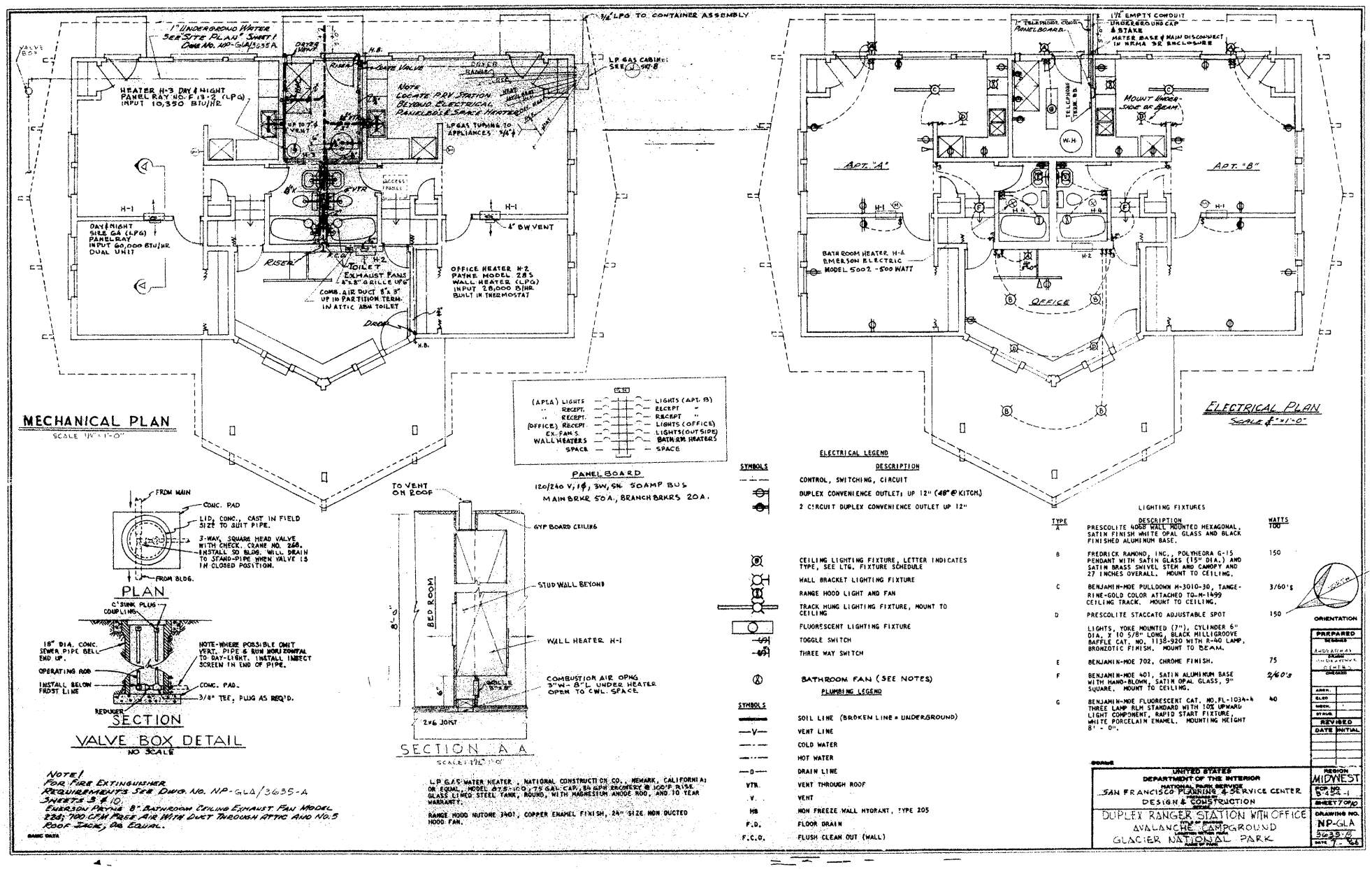
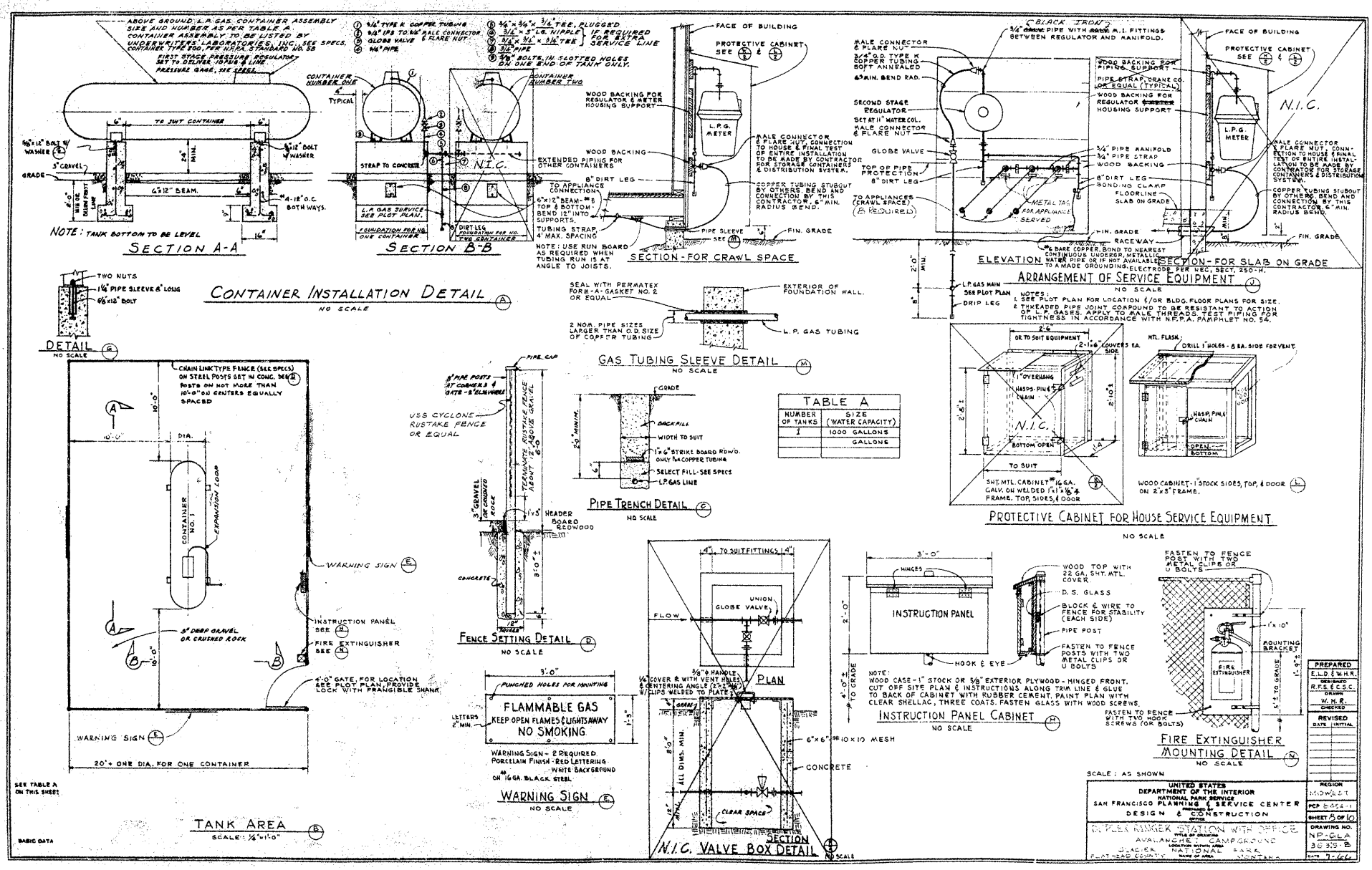
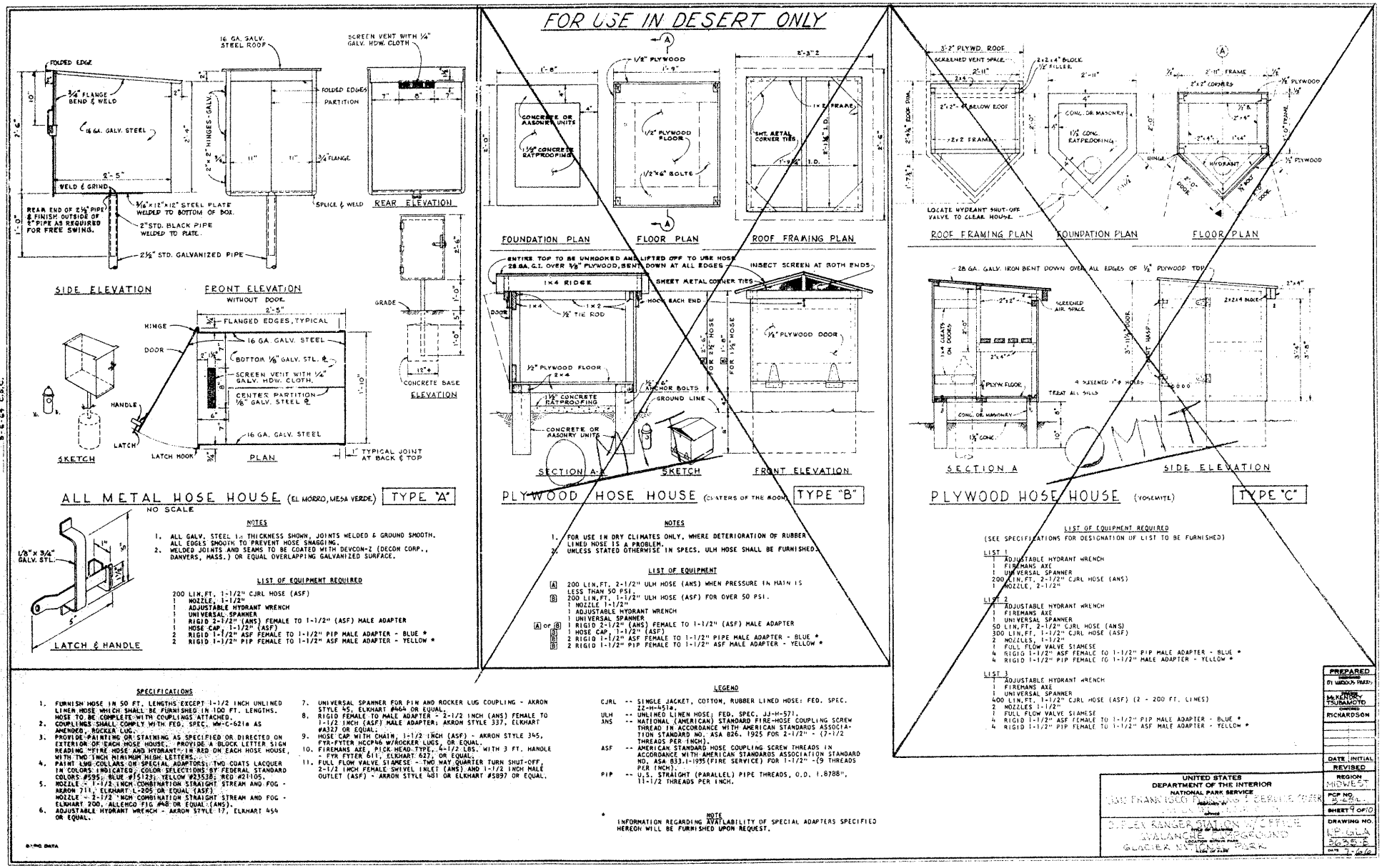
DESIGN & CONSTRUCTION
DUPLEX RANGER STATION WITH OFFICE
AVALANCHE CAMPGROUND
GLACIER NATIONAL PARK
REGION
MIDWEST
SHEET 5 OF 10
DRAWING NO.
NP-GLA
3635-B


1/6 WDW. (B) HEAD (6" STUDS)
6/6 WDW. (B) HEAD (4" STUDS)
11/6 DR. (2) HD.
2/6 WDW. (B) STRUCT. MULL.
7/6 WDWS. (B) & (C) MULL.
12/6 DR. (2) JAMB
3/6 WDW. (B) JAMB
8/6 WDW. (B) JAMB
13/6 DR. (2) SILL
4/6 WDW. (B) SILL
9/6 WDW. (B) SILL
5/6 SILL (6" STUDS)
10/6 SILL (4" STUDS)
14/6 SOUNDPROOFED WALL
15/6 ROOF VALLEY
16/6 DORMER LOUVERS (UTILITY ROOM)
NOT TO SCALE
17/6 FLAGPOLE & CONC. SLAB
NOT TO SCALE
PLAN
SECTION
SCALE IN INCHES (DRAWN AT 3"=1'-0")
SCALE 3"=1'-0"
UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
SAN FRANCISCO PLANNING & SERVICE CENTER
DESIGN & CONSTRUCTION
DUPLEX RANGER STATION WITH OFFICE
AVALANCHE CAMPGROUND
GLACIER NATIONAL PARK
FLATHEAD COUNTY MONTANA
MIDWEST
NP-GLA
3635-B
7-66
ORIENTATION
PREPARED
KUSEK/SIGLER
KUSEK
REVISED
DATE INITIAL


MECHANICAL PLAN
SCALE 1/4" = 1'-0"
ELECTRICAL PLAN
SCALE 1/4" = 1'-0"
PLAN
SECTION
VALVE BOX DETAIL
NO SCALE
SECTION A A
SCALE 1/4" = 1'-0"
PANEL BOARD
120/240 V, 1 Ø, 3W, SN. 50AMP BUS
MAIN BRKR 50A, BRANCH BRKRS 20A.
ELECTRICAL LEGEND
DESCRIPTION
SYMBOLS
CONTROL, SWITCHING, CIRCUIT
DUPLEX CONVENIENCE OUTLET, UP 12" (48" @ KITCH.)
2 CIRCUIT DUPLEX CONVENIENCE OUTLET UP 12"
CEILING LIGHTING FIXTURE, LETTER INDICATES TYPE, SEE LTG. FIXTURE SCHEDULE
WALL BRACKET LIGHTING FIXTURE
RANGE HOOD LIGHT AND FAN
TRACK HUNG LIGHTING FIXTURE, MOUNT TO CEILING
FLUORESCENT LIGHTING FIXTURE
TOGGLE SWITCH
THREE WAY SWITCH
BATHROOM FAN (SEE NOTES)
PLUMBING LEGEND
SYMBOLS
SOIL LINE (BROKEN LINE = UNDERGROUND)
VENT LINE
COLD WATER
HOT WATER
DRAIN LINE
VTR. VENT THROUGH ROOF
V. VENT
HB NON FREEZE WALL HYDRANT, TYPE 205
F.D. FLOOR DRAIN
F.C.O. FLUSH CLEAN OUT (WALL)
LIGHTING FIXTURES
TYPE
DESCRIPTION
WATTS
A PRESCOLITE 4068 WALL MOUNTED HEXAGONAL, SATIN FINISH WHITE OPAL GLASS AND BLACK FINISHED ALUMINUM BASE. 100
B FREDRICK RAMOND, INC., POLYHEDRA G-15 PENDANT WITH SATIN GLASS (15" DIA.) AND SATIN BRASS SWIVEL STEM AND CANOPY AND 27 INCHES OVERALL. MOUNT TO CEILING. 150
C BENJAMIN-MOE PULLDOWN M-3010-30, TANGERINE-GOLD COLOR ATTACHED TO M-1499 CEILING TRACK. MOUNT TO CEILING. 3/60's
D PRESCOLITE STACCATO ADJUSTABLE SPOT 150
LIGHTS, YOKE MOUNTED (7"), CYLINDER 6" DIA. X 10 5/8" LONG, BLACK MILLIGROOVE BAFFLE CAT. NO. 1138-920 WITH R-40 LAMP, BRONZOTIC FINISH. MOUNT TO BEAM.
E BENJAMIN-MOE 702, CHROME FINISH. 75
F BENJAMIN-MOE 401, SATIN ALUMINUM BASE WITH HAND-BLOWN, SATIN OPAL GLASS, 9" SQUARE. MOUNT TO CEILING. 2/60's
G BENJAMIN-MOE FLUORESCENT CAT. NO. FL-1034-4 THREE LAMP RLM STANDARD WITH 10% UPWARD LIGHT COMPONENT, RAPID START FIXTURE, WHITE PORCELAIN ENAMEL. MOUNTING HEIGHT 8' - 0". 40
ORIENTATION
PREPARED
REVISED
DATE INITIAL
UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
SAN FRANCISCO PLANNING & SERVICE CENTER
DESIGN & CONSTRUCTION
DUPLEX RANGER STATION WITH OFFICE
AVALANCHE CAMPGROUND
GLACIER NATIONAL PARK
REGION MIDWEST
DRAWING NO. NP-GLA 3635-B


CONTAINER INSTALLATION DETAIL
NO SCALE
SECTION A-A
SECTION B-B
NOTE: TANK BOTTOM TO BE LEVEL
SECTION - FOR CRAWL SPACE
ELEVATION
SECTION - FOR SLAB ON GRADE
ARRANGEMENT OF SERVICE EQUIPMENT
NO SCALE
DETAIL
NO SCALE
GAS TUBING SLEEVE DETAIL
NO SCALE
PIPE TRENCH DETAIL
NO SCALE
TABLE A
NUMBER OF TANKS
SIZE (WATER CAPACITY)
1
1000 GALLONS
GALLONS
PROTECTIVE CABINET FOR HOUSE SERVICE EQUIPMENT
NO SCALE
FENCE SETTING DETAIL
NO SCALE
WARNING SIGN
NO SCALE
FLAMMABLE GAS
KEEP OPEN FLAMES & LIGHTS AWAY
NO SMOKING
TANK AREA
SCALE: 1/4"=1'-0"
N.I.C. VALVE BOX DETAIL
NO SCALE
INSTRUCTION PANEL CABINET
NO SCALE
FIRE EXTINGUISHER MOUNTING DETAIL
NO SCALE
SCALE: AS SHOWN
UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
SAN FRANCISCO PLANNING & SERVICE CENTER
DESIGN & CONSTRUCTION
DUPLEX RANGER STATION WITH OFFICE
AVALANCHE CAMPGROUND
GLACIER NATIONAL PARK
FLATHEAD COUNTY MONTANA
DRAWING NO. NP-GLA 36 35-B
DATE 7-66
PREPARED
REVISED
DC SSC-STD./1077-SHT 1

STANDARD DRAWING - FIRE HOSE HOUSES A, B & C WODC STD. 1156-C 5-6-64 C.S.C.



SPECIFICATIONS FOR DUPLEX RANGER STATION WITH OFFICE

1. GENERAL

IT IS INTENDED THAT RESIDENCES CONSTRUCTED FROM THESE DRAWINGS AND SPECIFICATIONS SHALL CONFORM TO THE FEDERAL HOUSING ADMINISTRATION'S "MINIMUM PROPER- STANDARDS FOR ONE AND TWO LIVING UNITS", LATEST EDITION.

THE QUALITY OF WORKMANSHIP AND MATERIALS SHALL CONFORM TO ALL APPLICABLE PORTIONS OF THESE STANDARDS EXCEPT WHERE REQUIREMENTS OF THESE DRAWINGS AND SPECIFICATIONS ARE IN EXCESS THERETO, IN WHICH CASE THESE DRAWINGS AND SPECIFICATIONS SHALL TAKE PRECEDENCE.

2. CLEARING, EXCAVATING AND GRADING

CLEAR CONSTRUCTION AREA OF ALL TREES AND SHRUBS AND EXCAVATE AS REQUIRED FOR THIS CONSTRUCTION AND AS SHOWN ON THE DRAWINGS. ALL EXCAVATION SHALL BE ON AN UNCLASSIFIED BASIS AND NO DISTINCTION WILL BE MADE BETWEEN ROCK AND COMMON EXCAVATION. ALL CUTTING, FILLINGS, BACKFILLING AND GRADING SHALL BE DONE TO BRING THE SITE TO THE REQUIRED GRADES AS SHOWN ON THE DRAWINGS. REMOVE ALL SURPLUS EXCAVATION AND FILL MATERIALS, DEBRIS, AND DISPOSE OF AS DIRECTED.

3. FOUNDATIONS

CONCRETE: 2500 PSI AT 28 DAYS

4. CONCRETE SLABS - SEE ITEM 18-D

CONCRETE: 2500 PSI AT 28 DAYS
MEMBRANE: 6 MIL POLYETHYLENE
FINISH: INTERIOR: FLOAT AND STEEL TROWEL
EXTERIOR: STIFF BROOM
EXPANSION STRIP: 1/4" THICK, PREMOLDED ASPHALTIC EXPANSION JOINT MATERIAL.

5. FLOOR FRAMING - SEE ITEM 15.

GIRDERS AND JOISTS: DOUGLAS FIR, CONSTRUCTION GRADE, OR OTHER COMPARABLE SPECIES
SUBFLOORING: 3/4" DOUGLAS FIR PLYWOOD, OR GROUP I WESTERN SOFTWOOD GRADE EXT. C-C PLUGGED W/T & G EDGES OR SOLID BLOCKING

6. EXTERIOR WALL FRAMING AND EXTERIOR FINISH - SEE ITEM 18.

STUDS: CONSTRUCTION GRADE D.F., W.C. HEMLOCK OR #1 PONDEROSA PINE
SILLS: FOUNDATION GRADE REDWOOD OR PRESSURE TREATED DOUGLAS FIR

BUILDING PAPER: 15 LB. ASPHALT SATURATED FELT
EXTERIOR FINISH: 1/2" ROUGH SAWN PLAIN D.F. PLYWOOD PANELS, 8' TO 12' LENGTHS & BATTENS - A-REDWOOD OR C-WEST. RED CEDAR.
EAVE SOFFIT: SAME AS ROOF SHEATHING.

7. INTERIOR WALL FRAMING - SEE ITEM 18

8. ROOF AND CEILING FRAMING.

STRUCTURAL ROOF/MEMBERS SHALL BE:
1500 PSI CONSTR. GRADE DOUGLAS FIR (COAST)
1500 PSI STRUCTURAL GRADE HEMLOCK (WESTERN)
1500 PSI STRUCTURAL GRADE DOUGLAS FIR (ROCKY MOUNTAINS)
1500 PSI STRUCTURAL GRADE LARCH
1500 PSI INDUSTRIAL SOUTHERN PINE OR EQUAL
ALL MEMBERS SHALL HAVE MOISTURE CONTENT BETWEEN 12% AND 18%.
FOR MATERIAL SIZES, AND DETAILS REFER TO DRAWINGS.

9. ROOFING

SHEATHING: 3" x 6" T & G DOUG. FIR "SELECT DEX" RANDOM LENGTHS.
SHAKES: HAND SPLIT & RESAWN RED CEDAR AS REQ'D BY RED CEDAR SHINGLE BUREAU.
GRADE: NO. 1.
UNDERLAYMENT: 30# ASPH. SATURATED FELT-36" WIDE AT EAVES & 18" BETWEEN EACH COURSE.
WEIGHT OR THICKNESS: 3/4" TO 1 1/4" SIZE 24" LONG.
FASTENING: CORROSION-RESISTANT THREADED NAILS.
FLASHING: 26 GA. GALV. SHEET METAL

10. ENTRANCE AND EXTERIOR DETAIL

DOORS: 1-3/4" CS-171-58, TYPE I, GRADE: SOUND (PAINT)
DOOR FRAMES: "C" GRADE POND. OR WHITE PINE
SILLS: CONC. & SELECT OAK.
HEAD FLASHING: 26 GA. GALV. SH. METAL
WEATHERHEAD: ALUMINUM W/VINYL INSERT AT ALL BUT LOUVERED DOORS
TRIM: A-REDWOOD OR C-WEST. RED CEDAR.
SCREEN AND/OR STORM DOOR: 1 1/8" WOOD - 2 PANEL.
SCREENING: 18 x 14 MESH ALUMINUM GLAZING: DS-B CLEAR.

11. WINDOWS

TYPE: 1 3/8" WOOD DOUBLE HUNG, NON PREFITTED SASH WITH BEVELLED AND RABBETED CHECK RAILS, WOOD SCREENS FULL HEIGHT, SASH BALANCES, WEATHERSTRIPPING, & 1 1/8" WOOD SCREENS. CONSTRUCT IN ACCORDANCE W/STANDARDS OF THE NATIONAL WOODWORK MANUFACTURERS ASSOC., INC.

MATERIAL: PONDEROSA/OR WHITE PINE
HEAD FLASHING: 26 GA. GALV. SHEET METAL WEATHERSTRIP: METAL
SCREENS (OPERABLE SASH): FULL, 1 1/8" 2 LITE WOOD.
SCREENING: 18 x 14 MESH ALUMINUM
GLAZING: DS-B CLEAR & AS SHOWN ON DWGS.
TRIM: A-REDWOOD OR C-WESTERN RED CEDAR.
OFFICE WINDOW WALL: ROLLSCREEN BY "NEY-LAND", INC., OR APPROVED EQUAL & SEE DWGS. FOR OTHER SPECS.

12. INSULATION

LOCATION	MATERIAL	INSTALLATION	VAPOR BARRIER
WALLS	3 1/2" MINERAL WOOL BATT	NAIL TO FRAMING	INTERIOR SIDE

BASIC DATA

13. INTERIOR WALL AND CEILING FINISH

GYPSUM BOARD: 1/2" THICK WITH JOINTS TAPED & FINISHED WITH JOINT CEMENT.
WAINSCOT ABOVE BATHTUB: 1/16" LAMINATED PLASTIC ON 1/2" W/P PLYWOOD. SCRIBE TO TUB AND SET IN WATERPROOF MASTIC.
WAINSCOT OPTION: SEE ITEM 17A.

14. INTERIOR DOORS

DOORS: 1-3/8" CS-171, TYPE I OR II, SELECT BIRCH GOOD (STAIN OR NATURAL) GRADE.
FRAMES: "C" GRADE PINE SIZE: 3/4" WITH 1/2" STOP.
TRIM: SAME AS DOOR FRAME - STOCK PATTERN.
FOLDING: PELLA OR APPV'D EQUAL - SELECT BIRCH VENEER GOOD (STAIN OR NATURAL GRADE).

15. INTERIOR DETAIL AND CABINETS

RESILIENT FLOORING: VINYL ASBESTOS TILE, 3/32" THCK 9" x 9".
KITCHEN CABINETS: UNSELECTED BIRCH PLYWOOD CS-35-61, GOOD GRADE ONE-PIECE 3/4" WP PLYWOOD TOP AND 4" HIGH, COVED SPLASH FINISHED WITH 1/16" LAMINATED PLASTIC, SELF-EDGED.
SHELF MATERIAL: 3/4" DOUG. FIR PLYWOOD, INTERIOR TYPE, GRADE B-B
WIDTH: WALL UNIT: 12" BASE UNIT: 24"
OTHER DETAILS: SEE DRAWINGS.

16. BUILDERS' HARDWARE

HARDWARE SHALL CONFORM TO FOLLOWING FEDERAL SPECIFICATIONS OR AS NOTED: LOCKS, FF-H-L)ca; HINGES, FF-H-116c; MISCELLANEOUS, FF-H-00111b; CLOSERS, FF-H-121c.
FURNISH AND INSTALL HARDWARE FOR DOORS AND SCREENS AS FOLLOWS:

BUTTS:
TYPE: 2127p
SIZE: EXTERIOR, 4 x 4 INCH, INTERIOR, 3-1/2 x 3-1/2 INCH.
NO. PER DOOR, EXTERIOR AND BATH: 1-1/2 PR.; ALL OTHERS 1 PR.
LOCKSET TYPES:
ENTRANCE: 161 A-4
REAR ENTRANCE AND GARAGE: 160 A-4.
BEDROOM AND BATHS: 160-L-4; ALL OTHERS 160 N-4.
THRESHOLDS: ALUM. WITH VINYL INSERT, 3-1/2 INCH.
AT FOLDING DOORS: PELLA DOOR HARDWARE OR APPROVED EQUAL.
EXTERIOR TO OFFICE: DUTCH DOOR: BUTTS, 1 PR. EA. LEAF LOWER TO UPPER LEAF SURFACE BOLT STANLEY #263, 6" BRASS.
SCREEN AND/OR STORM DOORS:
BUTTS: STANLEY NO. 173, 3-INCH, 1 PR.
LOCK: TYPE 1086. CLOSER, TYPE 3015. GUARD, TYPE 494.

MISCELLANEOUS:
STOPS: TYPE 1323 WHERE REQUIRED TO PROTECT WALLS.
COAT & HAT HANGERS: TYPE 11/2, REQUIRED NUMBER IN ALL CLOSETS FOR 12-INCH SPACING.

WINDOW:
WINDOW SCREEN AND STORMSASH:
FINISH: BUTTS: USP, ALL OTHERS BATH & KITCHEN: US 26. ALL OTHERS US 28.

KEYING: ALL LOCKS IN EACH RESIDENCE KEYED ALIKE WITH EACH RESIDENCE KEYED IN A SEPARATE GROUP AND MASTERKEYED IN ACCORDANCE WITH EXISTING PARK SYSTEM.

17. OPTIONS AND ALTERNATES

A. TUB WAINSCOT: OPTIONS: ONE-PIECE LAMINATED PLASTIC COVED TUB ENCLOSURE OR CERAMIC TILE, 4-1/4" x 4-1/4" x 3/8" INSTALLED BY ADHESIVE METHOD. TRIM WITH 4-1/4" SURFACE BULLNOSE CAP AND EXTEND DOWN EDGE OF TUB TO FLOOR.

18. MISCELLANEOUS

A. FIRE EXTINGUISHER: FE-4, 2-1/2 LB. DRY CHEMICAL, WITH EXTRA DISPOSABLE, NONREFILLABLE, SEALED CYLINDER, FEDERAL SPECIFICATION O-E-915b, TYPE III, CLASS 2, STYLE 2.

B. ATTIC VENTS: VARI-PITCH ADJUSTABLE W/INSECT SCREEN, SCREEN, SIMILAR AND EQUAL TO THAT MANUFACTURED BY LOUVER MFG. CO., MINNEAPOLIS, MINN.

C. FOUNDATION VENTS: 24 GA. GALV. SHT. MTL. FIXED LOUVERS & 18 x 14 MESH ALUMINUM INSECT SCREEN.

D. FLOOR SAFE: MOSLER NO. BV-711, OR APPROVED EQUAL.

E. STRUCTURAL WOOD: ALL BEAMS & EXPOSED POSTS - SELECT STRUCTURAL D.F., PRESSURE TREATED WITH PENTACHLORAPHENOL PRESERVATIVE TYPE FOR STAIN FINISH. CONCEALED FRAMING, EXCEPT BEAMS - CONSTR. GRADE D.F.

F. STRUCTURAL STEEL: AND MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A-36 SPECIFICATIONS.

G. ALL WELDING SHALL CONFORM TO AMERICAN WELDING SOCIETY CODE & SHALL BE DONE BY QUALIFIED WELDERS.

19. HEATING AND COOLING

FURNACE: (RATING BASED ON SEA LEVEL ELEVATION.)
TYPE: WARM AIR MAKE & MODEL: SEE DRAWINGS AGA OR UL LISTED
FUEL: L.P. GAS
GAS VENT, TYPE B WITH WARNING PLATE, RESTRICTING USE TO GAS BURNING APPLIANCES ONLY. OBTAINABLE FROM CONTRACTING OFFICER. UL LISTED.
GAS VENT, TYPE BW (FOR VENTED WALL FURNACES) - UL LISTED.
ELECTRICAL HEATING: BATHROOMS ONLY
TYPE: MAKE & MODEL: SEE DRAWINGS UL LISTED
120 VOLTS SINGLE PHASE

20. PLUMBING

ALL FIXTURES TO BE WHITE, ALL ACCESSORIES TO BE ONE DESIGN AND MANUFACTURE. TRIM AND APPURTENANCES SHALL BE THOSE LISTED BY MANUFACTURER EXCEPT AS NOTED. FIXTURES AND ACCESSORIES SHALL BE EQUAL TO THE FOLLOWING CRANE NUMBERS:

FIXTURES	MANUFACTURE NO.	SIZE	REMARKS
KITCHEN SINK	5-1405 CRESTMONT	32 x 21	TRIM 8-2750A
LAVATORY	1-126-22 OXFORD	19 x 17	
WATER CLOSET	3-175 HARVARD		WHITE SEAT 3-884
BATHTUB & SHOWER	2-161 L or R OAKMONT	60	TRIM 8-2310 & CHROME CURTAIN ROD
ACCESSORIES			
SOAP DISH	8-7400 STARLITE		
TUMBLER & TOOTHBRUSH HOLDER	8-7402 "		
COAT HOOKS	8-7412 "		
TOILET PAPER HOLDER	8-7414 "		
TOWEL BARS	8-7406 "		SEE PLAN
SOAP & GRAB	8-7418 "		
MEDICINE CABINET	A1826	16 x 24 ROUGH-IN	18 x 26 MIRROR

SEWAGE PIPING (EXT.) CAST IRON
SEWAGE PIPING (INT.) CAST IRON
WATER PIPING (EXT.) GALV. STEEL
WATER PIPING (INT.) GALV. STEEL
VALVE BOX WITH DRAIN PRESSURE REGULATOR IN UTILITY ROOM
GAS PIPING (EXT.): SCHED. 40 WITH 150# M.I. FITTINGS ABOVE GROUND: GALV., UNDERGROUND: BLACK-EXT. PROTECTION.
GAS PIPING (INT.): TYPE K COPPER TUBING, SOFT ANNEALED, WITH REFRIGERATION FLARE TYPE FITTINGS (ASA B70.1)
WATER HEATER: WARRANTY, 10 YEARS (5 UNCONDITIONAL, 5 PRORATED)
TYPE: LP GAS MAKE & MODEL NATIONAL 875-100 AGA OR UL LISTED
CAPACITY: 75 GAL. GLASSLINED STEEL TNK W/PRES. TEMP. RELIEF VALVE.
INPUT: 100,000 BTU / HR
TYPE B GAS VENT - UL LISTED.
UNDERGROUND CORROSION PROTECTED PIPE SHALL BE BEDDED IN A CUSHION OF SELECT MATERIAL PLACED ABOUT THE PIPE TO A DEPTH OF 6" ABOVE THE PIPE.

21. ELECTRICAL WORK

SERVICE TYPE: UNDERGROUND 120/240
1 PHASE, 3 WIRE EMPTY CONDUIT PANEL BOARD TO 5'-0" FROM BLDG.
SERVICE DISCONNECT: ENTIRE INSTALLATION TO SUIT UTILITY CO.
COMB. METER BASE & MAIN CIRCUIT BREAKER IN RAINTITE ENCLOSURE. 50 AMPS. (INTERRUPTING CAPACITY 20,000 AMPS.)
PANEL: CIRCUIT BREAKERS
INTERRUPTING CAPACITY, BRANCH BREAKERS 5,000 AMP)
WIRING: RIGID CONDUIT (SERVICE ENT. TO PANELBOARD)
NON-MET. CABLE BRANCH CIRCUITS. BRANCH CIRCUIT WIRE TO BE DETERMINED BY PANELBOARD CIRCUIT BREAKER RATING AND NEC.

TELEPHONE SERVICE: UNDERGROUND CONDUIT FROM TERM. BOARD TO OUTLET BOX W/COVER HAVING 3/8" DIA. HOLE FOR CORD.

22. UTILITY CONNECTIONS

SEWAGE: CONNECT TO MAIN 5'-0" FROM BLDG.
WATER: CONNECT TO MAIN 5'-0" FROM BLDG.
ELECTRICITY: EMPTY CONDUIT TO 5'-0" OUT
L.P. GAS EXISTING PIPE MANIFOLD AT METER.

23. SHOP DRAWINGS

SHOP DRAWINGS SHALL BE SUBMITTED IN ACCORDANCE WITH CLAUSE 47, GENERAL PROVISIONS FOR THE FOLLOWING:
DOORS, WINDOWS, FRAMES, SCREENS, CABINET WORK, SPECIAL MILLWORK, BUILDERS' HARDWARE, HEATING, VENTILATING AND COOLING EQUIPMENT, PLUMBING FIXTURES, PRESSURE RELIEF AND REDUCING VALVES, WATER HEATER, LIGHTING FIXTURES.

24. FINISH & COLOR SCHEDULE

REFER TO GENERAL PAINTING NOTES BELOW AND COLOR KEY. COLORS NOT LISTED HERE WILL BE PROVIDED DURING CONSTRUCTION.

EXTERIOR:	TYPE FINISH	COLOR		TYPE FINISH	COLOR
CHIMNEY	PAINT	1	DOORS	PAINT (BOTH SIDES)	3
ROOF	CEDAR SHAKES	2	DOOR FRAMES	STAIN	7
ROOF VENTS	PAINT	19	DOOR TRIM	STAIN	7
DORMER LOUVER	PAINT	1	OFFICE PLYW'D PANELS	PAINT	8
FLASHING	PAINT	1	WDO. SASH	STAIN	7
BEAMS & COLUMNS	PAINT	4	WDO. TRIM	STAIN	7
FASCIA	PAINT	3	FOUNDATIONS	STAIN	9
SOFFITS	STAIN	5	FOUNDATION VENTS	PAINT	1
WALLS	STAIN	6	PORCH, TERRACE & PLTMS	STAIN	9
WATER TABLE	STAIN	7	FENCE	STAIN	3
			FLAGPOLE	PAINT	10

INTERIOR:

ROOM	FLOOR (M)	FLOOR (C)	BASE (M)	BASE (C)	WALLS (M)	WALLS (C)	CEIL. (M)	CEIL. (C)	TRIM (M)	TRIM (C)	DOOR (M)	DOOR (C)	WINDOWS (M)	WINDOWS (C)	REMARKS
LIV.-DIN.	R	11	W	1	G	15	W	5	W	1	W	1	W	1	
HALL	R	11	W	1	G	15	G	16	W	1	W	1			
BEDROOMS	R	11	W	1	G	15	W	5	W	1	W	1	W	1	
CLO. & WDRB.	R	11	W	1	G	15	W	5	W	1	W	1			
STORAGE CLOS.	R	11	W	1	G	15	G	16	W	1	W	1			
KITCHEN	R	11	W	1	G	15	W	5	W	1			W	1	*SEE NOTES
UTILITY	R	11	R	14	G	15	W	5	W	1					
BATHS	R	12	R	14	G	16	G	16	W	1	W				
OFFICE	R	13	W	1	G	15	W	5	W	7	W	1	W	7	

NOTES: (REFER TO COLORS)
* CABINETS #6 COUNTER TOPS #17
** PLASTIC WAINS. OVER TUB #18

MATERIAL KEY (M)
A. ALUMINUM
C. CONCRETE
G. GYPSUM BOARD
M. MASONRY
P. PLYWOOD
R. RESILIENT FLOORING
S. STEEL
W. WOOD

COLOR KEY (C)
1. MATCH ADJACENT SURFACES
2. NO COLOR ADDED
3. F.S. #35299
4. F.S. #33434
5. OLYMPIC STAIN #900
6. OLYMPIC STAIN #914
7. OLYMPIC STAIN #713
8. F.S. #23594
9. C. SOVIG #1377-4
10. GLOSS WHITE
11. ARMSTRONG #872
12. ARMSTRONG #1133
13. ARMSTRONG #076
14. BLACK
15. F.S. #33531
16. F.S. #27778
17. FORMICA #054
18. FORMICA #372
19. F.S. #26440
FS = FEDERAL STANDARD NO. 595; COLOR CHIPS OBTAINABLE FROM CONTRACTING OFFICER.

GENERAL PAINTING NOTES:
(1) ALL EXTERIOR CONC. BLOCK - 2 COATS CLEAR SILICONE WATERPROOFING.
(2) ALL EXTERIOR PAINTING - PRIME COAT & TWO FINISH COATS. ALL EXTERIOR TRIM TO BE BACK-PRIMED.
(3) PAINT FINISH FOR WALLS AND CEILINGS: BATHS, KITCHEN, UTILITY - PRIME COAT, UNDERCOAT & ONE COAT SEMI-GLOSS ENAMEL; ALL OTHER LOCATIONS - PRIME COAT AND TWO COATS OF FLAT PAINT.
(4) PAINT FINISH FOR DOORS AND TRIM - PRIME COAT, UNDERCOAT AND ONE COAT SEMI-GLOSS ENAMEL.
(5) NATURAL FINISH FOR DOORS AND CABINETS; ONE COAT STAIN, ONE COAT SHELLAC, AND TWO COAT SATIN FINISH PALE TRIM VARNISH - IN THAT ORDER.
(6) NATURAL FINISH FOR WOOD FLOORS (IF SPECIFIED); ONE COAT PENETRATING SEALER, TINTED; ONE COAT FILLER, TINTED; ONE COAT PENETRATING SEALER AND TWO COATS PASTE WAX - IN THAT ORDER.

25. SPECIAL EQUIPMENT

A. FLAGPOLE: CONTINUOUS STRAIGHT TAPERED STEEL HEAVY TYPE, 20' EXPOSED BY 22' TOTAL LENGTH, 4" BUTT DIM., 2 7/8" TOP DIM. 1/4" WALL THICKNESS. 2 SHOP COATS RED LEAD & OIL, 1 COAT ASPHALTUM INSIDE, WITH STANDARD FITTINGS EXCEPT AS NOTED. AMERICAN FLAGPOLE EQUIPMENT COMPANY OR APPROVED EQUAL. BRONZE BALL BEARING DOUBLE SHEAVE REVOLVING TRUCK, 2 GALV. MALLEABLE IRON 9" CLEATS. 2 HALYARDS - 3/8" STD. U.S. MANILA BOLT ROPE SET WITH 2 BRONZE SWIVEL SNAPS REEVED TO EACH HALYARD; 5" DIA. 20 OZ. COPPER, BRONZE, OR BRASS BALL. GROUNDING WIRE SHALL BE #2 BARE MEDIUM DRAWN COPPER WIRE BRAZED TO POLE AS DETAILED ON THE DRAWINGS.

B. SECONDARY METER SHALL BE ONE ELEMENT 120/240 VOLT, 3 WIRE, 15 AMP, CLASS 100 AND SHALL BE SOCKET TYPE. MOUNT IN WEATHER PROOF ENCLOSURE EQUIPPED WITH LOCK AND KEY. METER SHALL BE FURNISHED WITH CYCLOMETER REGISTER AND SHALL CONFORM TO ALL APPLICABLE ASA AND NEMA STANDARDS

ORIENTATION

SCALE

RECOMMENDED ____ DATE
CONCURRED ____ DATE
APPROVED ____ DATE

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
SAN FRANCISCO PLANNING & SERVICE CENTER
DESIGN & CONSTRUCTION
DUPLEX RANGER STATION WITH OFFICE
AVALANCHE CAMPGROUND
GLACIER NATIONAL PARK

PREPARED
DESIGNED STD.
DRAWN R.N.C.
CHECKED RCG
ARCH. ELEC. MECH. STRUC.
REVISED
DATE | INITIAL
REGION MIDWEST
PCP NO. 8-454-1
SHEET 1 OF 13
DRAWING NO. NP-GLA 3025-B
DATE 7-66

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GLA 3017