

ROBERT F. WOODS

MAGRUDER RANGER STATION,
BITTERROOT NATIONAL FOREST

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MAGRUDER RANGER STATION,
BITTERROOT NATIONAL FOREST

Part I of a
Terminal Project in Architecture

By
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as partial fulfillment of the requirements
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INTRODUCTION

The Magtuder Ranger District is located in Northern Idaho, southwest of Hamilton, Montana, and makes up part of the Bitterroot National Forest. The district is comprised of three distinct areas: the Selway-Bitterroot Wilderness Area, the Salmon River Breaks Primitive Area and the Magruder Corridor. The station site itself is in a rather rugged portion of the Corridor.

Having worked at Magruder for a number of summers and discussed the station's situation with the Ranger and Fire Control Officer, I have learned that the station is in urgent need of repair and rebuilding. In addition to the state of the buildings themselves the station is poorly planned and inadequate of existing needs.

Since the Forest Service works for the public the district headquarters should project an attractive image of itself. In addition to a better relationship with the public, a well planned layout would allow the district to perform its activities more efficiently.

MAGRUDER RANGER DISTRICT

Bitterroot National Forest

Forest Supervisor's Office located in Hamilton, Montana

The forest consists of five range districts with Magruder the only district in Idaho

Area Separation

Selway-Bitterroot Wilderness Area

Northern portion of district

Largest Wilderness in the United States

Large portions devastated by 1910 and 1919 fires

Bitterroot Mountain Range on the west

Selway River running south to north

Clearwater Mountains on the east

Salmon River Breaks Primitive Area

Southern portion of district

Headwaters of Selway River

Salmon River forms the southern boundary

Highest point on the district, Stripe Mountain, 9011 feet

Magruder Corridor

Area between Wilderness and Primitive Area

Approximately ten miles wide

Contains all the roads, campgrounds, fire stations and district headquarter

Location

District station is 50 air miles SW of Hamilton

Roads in the district

Elk City-Darby Road (through road)

Side road to Paradise Guard Station

Side road to Hell's Half Acre Lookout

Nearest town is Darby, Montana, 55 miles to the east on a dirt road

Natural Features

Three quarters of district has above 30% slope

Many rugged outcroppings of rock

Wide variety of wildlife, including: black bear, elk, deer, moose, mountain goat and bighorn sheep

Virgin forest over entire district, trees include: fir, pine, cedar, spruce and cottonwood on sections of the Selway River

Climate	summer	winter	annual
Precipitation	7 inches	13 inches	20 inches
Temperature	100° to 40°	40° to -30°	
Sunshine	75%	40%	

History

Southern Nezperce Indian Trail to buffalo grounds in Montana
 One of the main trading routes between the gold fields of
 Montana and the trading towns of Idaho
 Lloyd Magruder (trader-packer for the gold fields) was massacred
 five miles west of station site
 Nezperce National Forest (to the west) turned over the Magruder
 Ranger District to Bitterroot National Forest since it was too
 difficult to administer because of distance and terrain

MAGRUDER RANGER STATION

Description of Site

Selway River

Widest portion - 95 feet

Narrowest portion - 30 feet

Creeks to or near site

Haystack Creek enters into west of site, small amount of water

Deep Creek separates Elk City-Darby Road from station site,
 large volume of water

Hell's Half acre Creek, south of site by half a mile,
 moderate volume of water

Land description

Total area of buildable land - 30 acres

Flat bottom land that may get swampy in the early
 spring before summer work starts - 30%

Gentle slope - 55%

Moderate slope (10° - 20°) - 15%

Land utilized by present station - 70%

Steep sloped mountains on all sides

Sunlight

Spring	10:00a.m. - 4:00p.m.	6 hours
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Summer	9:00a.m. - 6:00p.m.	9 hours
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Autumn	10:00a.m. - 4:00p.m.	6 hours
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Winter	11:00a.m. - 2:00p.m.	3 hours
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Vegetation

75% of the site presently used has no trees or bushes
 Ponderosa pine and Douglas fir are in relative dense
 growth on remainder of site

Good growth of pine and fir surrounds site on mountains

Flat and gentle sloped land should support a dense under-
 growth of vegetation

Views

The Selway River and surrounding plant life are very
 picturesque

The only opening in the site is to the south which gives
 a good view of Horsejaw Mountain

Access to the Site

Elk City-Darby Road

Only through road in district

Elk City, Idaho, 65 miles to west, pass closed from
 September to July

Darby, Montana, 55 miles to east, pass closed from
December to May

Road winds through steep valleys from either direction
before entering station turn-off

Road crosses Deep Creek and goes for another half a mile
then enters station from north

Trails

Upper Selway Trail enters station from south, closed
to motorized vehicles

Hell's Half Acre Trail enters station with Upper Selway
Trail, closed to vehicles

Kim Creek Saddle Trail enters from west, follows Haystack
Creek part way

Helicopter Travel

Mainly used for fire control, lookout maintenance, and
emergency traffic

During periods of large forest fires or special studies,
more than one copter

Access within the Site

Bridges

Deep Creek Bridge made of rock by the CCC in 1937

Station Bridge is only access to western section of site,
built in 1952

Road

Only necessary road is from Deep Creek Bridge for half
half a mile. This road follows the steep slope between
river and ridge

Utilities

Water

The main spring for water is located in the upper portion
of the moderate sloped section. NE section of the site

The present holding tank is located just below the spring

Power - Electricity

Station produces its own power

This is presently done with a diesel generator

Disposal

Presently there are about 12 small septic tanks scattered
around the site

Material waste is trucked to the West Fork Ranger Station,
32 miles to the east, to be up by garbage disposal trucks

Winter Closure

Because of the snows during winter the station is closed from
December through May

Periodic checks every three weeks must be made at the station
and salmon hatchery channel, 12 miles north on the road. This
is done with snowmobiles ✓

PRESENT CONDITIONS

The first two buildings built that are still standing are the
office and fire house. Both of these were built around 1920 of log
construction. The office when first constructed combined both
office and residence but now is even too small for just the office.
One of the largest problems that is caused by this too small of
building is circulation. Although the first floor has been remodeled
recently the problem with circulation was not remedied because of the
✓

small area that had to be worked with. The fire house was originally used for storage and a commissary but is now very inadequate for present fire equipment storage needs. The building consists of one room of 300 square feet and offers little protection from wind because of the open log construction.

Some other buildings of log construction are the winter residence, barn, and freezer shed. The residence seems to be adequate but is rather old. Both the barn and freezer shed were built about the same time, 1935, and are probably some of the best examples of open log construction in that part of Montana and Idaho. Although both buildings are in sound condition and work well for present needs they do have bad relationships with other areas or buildings they deal with. The barn and corral are built on the south side of the station while the pasture is on the north. This means that while moving the stock (up to 50 head sometimes) they go through the middle of the station. This is not only dangerous for any of the small children but is extremely inconvenient. The freezer shed contains all the freezers, some refrigerators and surplus utensils. The building should be connected to the cook house because of frequent use but is not. Although the buildings are only fifty feet apart it does become a nuisance during inclement weather.

The other primary buildings are the cook house, bunk house and shop. Both the cook house and the bunk house were built for the CCC camp that was seven miles down the road but were moved to the station in 1938 when the camp folded. Both are in extremely poor condition, hard to keep clean and do not offer enough protection from the weather. The bunk house is too close to the main station road and, hence, receives excess dust and noise. The shop was built around 1940 and although it had a recent addition it is still inadequate. This building, being the largest and tallest, dominates the station, which gives the visitor a feeling of a work station. After coming from the office this is usually the first building the person will visit while at Magruder.

The residential situation is very poor at present. Besides the winter residence and bunk house all other residences are the movable type. A few years ago the district acquired four Job Corp constructed buildings for use in expanding the bunk house facilities. These buildings can be moved around and are about 10 by 20 feet. One was converted into the bath unit and the other three into 4-bed sleeping units grouped around the bath unit. Last year another building was added a little distance away from this new addition for the copter pilots. This new bunk house complex was placed across the river from the administration portion of the station. This new site is planned for all future residences as well as moving all the present mobile homes to this area. During the last two years three mobile homes have moved to this site and border the new bunk house on two sides. Employees with families can bring their own trailer and move into this site also, but the only water and sewage hook-ups are located on the remaining two sides. So during the summer the bunk house is completely surrounded by families. In addition to this new residential site there are also four trailers on the administration side of the river. As well as these trailers there is also another Job Corp building converted into a residence, the cook's sleeping quarters connected to the cook house and usually one or two 10 X 12 foot tents to accommodate the overflow from the bunk house.

There are also numerous small buildings located around the station site, these include; the gas house, generator and paint storage buildings, wash house (washing machines), cellar, walk-in cooler, weather station, hay shed, grease rack and helicopter pad.

All the buildings at the station are in rather poor condition except for the barn, freezer shed, and the Job Corp buildings. The barn, 23' X 30', should remain but be used for another purpose. The freezer shed is small enough that it could be moved if necessary. The Job Corp buildings can be moved and converted to other uses or even be moved to the Paradise Guard Station or other ranger districts that could use them. Both the office and winter residence could be remodeled and used but will have to be replaced in the near future. The bunk house, copter pad, fire house, shop, and cook house are all in very bad condition and should be replaced. All other permanent buildings are small enough that there is no problem in replacing them.

FUNCTION OF THE STATION

Administration - this deals with the coordination of the district, a areas for gathering facts, and studying, reporting, and filling of those facts. It must also be accessible to the public since it is through this area that the district communicates with them. The functions of the administration area are:

Resources

Wilderness management, water shed, timber, soil and wildlife all deal with gathering information from field studies, analysing them and filling for future use. There are no timber sales on this district. The salmon hatchery goes through the same management as above but also requires daily observation in the spring and early summer as well as periodic checks during winter closure. The personnel related directly with these activities are the Resource Officer, Resource Assistant, and Wilderness Guard.

Recreation

Much of the administration process is the same for recreation as resource but more actual district planning and upkeep is required. This deals with maintaining campgrounds, hunting and fishing control, and maintaining roads, trails, cabins, guard stations and station site. The same personnel that work in resources work in this area with additional help from the Prevention Guard (man caused fires), trail foreman, and packers. The largest number of summer employees are hired for recreation during a normal season.

Fire Control

This has to do with surveillance, reporting, preparation, and coordination of actual forest fire suppression. During an average summer the station can handle all fire traffic but approximately one out of every four summers is a fire season which means additional employees and equipment are brought in. For this reason the station must have in readiness support facilities for this expansion as well as coordinating the activities. In times like this entire station is geared toward fire control. The regular personnel for this activity the Fire Control Officer,

Dispatcher, Headquarter Guard (helps dispatcher), Prevention Guard, Wilderness Guard, five lookouts, three firemen, and usually two copter pilots.

Coordination

This brings together all the activities and also informs the public and other governmental agencies. Meetings must be arranged that would include all the employees (up to 60) down to the person to person conference. At present a district personnel meeting is held once a week which includes the Ranger, Fire Control Officer, Resource Officer, Dispatcher, and Clerk with up to three additional people some of times.

Maintenance of District - all areas of labor which are not executed in the administration section come under this category.

Resources

Field studies are the basic work of resources, so the only function of the station would be to supply storage space for equipment that would be used. The largest of these would be the catching cages for the hatchery.

The area for these cages would be about 50 cubic feet.

Recreation

Half, if not more, of the station buildings deal with recreation. One of the major jobs of this is maintaining present or even bettering the conditions of the activities and areas that come under it. Much of this work is done at the station in the shop and then transported to the work site. Because of the long distance to a town a wide variety of surplus material must be kept on hand.

Fire Control

Except for the early summer training of new employees the only work is maintaining and storing of fire fighting equipment until a fire breaks out. When this happens time is what really counts. So circulation, both in the fire house and in the station area, plays a major role. In addition to the above, a fast means of communication must be set up in the station area.

Stock

Because the district has around 500 miles of trails, horses and mules become an important factor at Magruder. Usually twelve horses and from 30 to 40 mules are in the district until winter starts. Many times all of the stock is at the station at one time, so large areas have to be set aside for the pasture and corral. There are usually three packers employed during the summer months.

Residential Requirements - The station is located 70 miles from Hamilton where most of the families and summer employees live. This means that the station must function as a small community in itself. This would also include support facilities for a fire camp of up to 500 men, although this is rare.

Bunk House

The summer employees who would use the bunk house average about 22. It should include the sleeping quarters, bathing area, and social area. These functions do not have to occur in the same building but are preferred to be located in the same general area.

Winter Residence

The station is closed during the winter but checks must be made on the station and salmon hatchery during this time. Groups of up to eight will sometimes come in to do work or take studies and stay for more than the regular two days. Usually only one building is used during these stays and that is the largest of the permanent houses. This house should be spacious because of the possibility of being of the men being caught in a storm and spending more than the anticipated amount of the time in the house. There should also be the typical out house because the water is shut off during the winter. There must also be a small building for a gas generator for electricity during longer stays. The source of heat should be from some other fuel in case the generator doesn't work.

Residences

Because the station is located so far from any town it is preferable to furnish low rent homes for the permanent and higher paid employees. This is especially true for the families. This would enable the person to stay at the station on his days off and therefore be on stand-by during a fire situation. This would mean eleven residences, which include: the winter residence that would sleep eight, four homes that sleep six, four that sleep four, and two smaller homes that would sleep one or two for employees with no families. A play area would be located in this area for smaller children. This residential area should have privacy from the general work area.

Cook's Residence

Since the cook's working time is very irregular and is split between two shifts he also sleeps at irregular times; sometimes even taking short naps between shifts. For this reason his residence should be close to the cooking area. This would also enable him to prepare meals for persons working a late or early shift.

Trailer and Camper Spaces

Space should be set up in the station site to enable married employees who are not entitled to a home to bring in a small trailer or camper. These spaces can also be used by other government agencies with trailers for example the Fish and Game and road crews.

Tent Spaces

Special areas must be planned to accomodate temporary overflow from normal conditions. This would occur during a large fire season when additional employees must be hired. The station might also become the base camp or fire camp for a large forest fire on the district. The site should also provide camp space for special groups like wilderness trips, Boy Scouts, or study and research groups.

Cook House

This area doubles as a dinning space and meeting hall. It should be located as near as possible to the bunkhouse and station activities. Many times a party or station feed is put on by the families. An outside gathering place connected to the dinning area is desirable.

Recreation

Because of the isolation many forms of recreation should be furnished for the employees and families. Football, horse shoes, baseball, ping pong, volleyball, swimming, basketball, badminton, ect.

BUILDING PROGRAM

OFFICE

1630 sq. ft.

The office has control over all work activities. For this reason it should be centrally located with a short walking distance to the other buildings. It is also through this area that the district communicates with the public. Hence, it should have some sort of physical attraction to the visitor.

-Room-	-Equipment-	-Description-	-sq. ft.-
Ranger	Desk 1 Files 2 Chairs 2 Stacking chairs 6 Wall map 1 4x4 Conference table to seat 8	Staff meetings Near receptionist	300
Fire Control Officer	Desk 1 Files 3 Chairs 1 Folding chairs 3 Wall maps 3	Near Dispatcher	200
Ressource & Resource Asstistant	Desks 2 Files 4 Chairs 3 Wall maps 3	Connected to drafting room	250
Dispatcher	Desks 2 Files 2 Radios 3 Telephones 2 Layout table 5 x 3 Storage 60 cu. ft. Chairs 3 Folding chairs 3 Typewriter 1 Wall maps, charts, tackboard 7	easy access to fire house near FCO eye sight of copter landing out of main ciculation path of office	200
Drafting- Printing	Drafting tables 2 Copy machines 2 Files 3 Map File 1 Storage 60 cu. ft. 24 in, carriage typewriter		300

cont.

OFFICE cont.

-Room-	-Equipment-	-Description-	-sq. ft.-
Clerk	Desks 2	Near radio-telephone	175
Receptionist	Chairs 3	Next to entry	
	Files 5	Combine with waiting	
	Storage 20 cu. ft.	area	
	Wall map 1		
	Typewriters 2		
Waiting Area	Hand-outs 3 x 3	Next to entry	60
	Seating	Near restroom	
Men's	Toilet 1		30
Restroom	Urinal 1		
	Sink 1		
Women's	Toilet 2		30
Restroom	Sink 1		
Radio-	Telephone 1		20
Telephone	Battery storage 36 cu. ft.		
	Writing area 1 x 2		
Utility Room	Janitorial facilities		40
Mechanical	Water heater		25
	Heating and air conditioning		

TOTAL SQ. FT. 1630

BUILDING PROGRAM

COOK HOUSE

1330 sq. ft.

The cook house will double as a dinning facility for up to 40 people and as a meeting hall for 60. Because it serves two different activities it must be located near the work area and bunk house. It should also be located near the area for the tent camp. This will also be the area for station get-togethers, including the families.

-Room-	-Equipment-	-Description-	-sq. ft.-
Kitchen	Cooking Area	Well ventilated	250
	Range		
	Broiler		
	Fryer		
	Salamander		
	Steamer		
	Pot Rack		
	Cook's table 3 x 6		
	Ventilator		
	Shelves		
	Food Preparation	Connected to walk-in	
	Slicer	cooler & freezer	
	Table 2'-6" wide		
	Chopping Block 2'-6" x 2'-6"		
	Sink w/ drain board		
	Refrigerator		
	Appliances		
	Dry Storage		
	Washing	Near exit	
	Sinks 2		
	Drain boards 2		
	Disposal		
	Garbage can		
Dining	Lunch Preparation	Easy access to dinningroom	500
	Counter		
	Storage		
	Refrigerator (small)		
	Seattng 40	This area will double as	
	Tables	a meeting hall for 50 to 60	
	Utensil storage	to 60	
	Milk dispenser		
	Water tap		
	Dish collector		
	Coat rack		
	Meal chart		
	Station telephone		

cont.

COOK HOUSE cont.

-Room-	-Equipment-	-Description-	-sq. ft.-
Walk- in Cooler	Storage		80
Cellar	Storage of surplus food insulated to prevent freezing in winter		200
Walk-in Freezer	Cook house food storage Station family food storage	Near exit	100
Tin Room	Storage of utensils for cook house, trail, lookouts, and fire camp		200

TOTAL SQ. FT. 1330

BUILDING PROGRAM

FIRE HOUSE

1100 sq. ft.

The close relationship between fire control personnel and preparing and storage of fire fighting equipment means that the fire house has to be in close proximity to the office. Similar equipment and areas are used by both fire house and shop, hence; these two areas should be close together if not connected.

-Room-	-Equipment-	-Description-	-sq. ft.-
Packing	Work tables 4 x 7 3 x 5 Storage 120 cu. ft.	Easy circulation	250
Storage	Pacific pumps 100 cu. ft. Back Pumps 50 cu. ft. Hand tools 75 cu. ft. Smoke chaser packs 125 cu. ft. Food 75 cu. ft. Water containers 75 cu. ft. Fire camp Canvas & Sleeping bags 150 cu. ft. Tools 100 cu. ft. Utensils 150 cu. ft.	Near loading Near packing Easy access	300
Cleaning & Maintenance	Work tables 2 x 4 3 x 7 Tool sharpener 36 sq. ft. Dull tool storage 50 cu. ft. Hosing and washing Sink 1	Cleaning and repairing used fire equipment Near loading	250
Waiting Area	Radio 1 Seating 8 Wall maps 2 Drinking fountain 1 Station telephone	Could be combined with storage area	100
Loading	Truck loading - mainly pick-up trucks Weighing - largest item- 10 cu. ft. Water filling 2 quart canteens to 10 gal. containers		200

TOTAL SQ. FT. 1100

BUILDING PROGRAM

SHOP

2680 sq. ft.

The shop is the center of work activities. It should be located near all other work buildings: fire house, barn and gas house. Much work is completed here then transported to other parts of the district. There should be easy truck loading as well as short distance to the copter pad. The shop should have an outside work area near the carpentry and maintenance shops.

-Room-	-Equipment-	-Description-	-sq. ft.-
Carpentry	Table saw Power drill Router Jointer Bench 3 x 10 Tool storage 2075 cu. ft. Lumber storage 2000 cu. ft. Hardware storage 75 cu. ft. Construction area	Combine with outside work area	1200
Paint Shop	Spray area 12 Mixing Paint storage 100 cu. ft.	Dust free Ventilation	100
Maintenance	Bench 3 x 12 Welding bench (portable) 3 x 3 Oxygen-Acetylene welder Arc welder Light Construction Area Tool storage 30 cu. ft. Private tool storage 30 cu. ft. Tire repair 300 sq. ft. Vehicle repair 300 sq.ft. Air pressure	Combine with outside work area near grease rack	500
Telephone Room	Work bench 2 x 6 storage of wire, telephones, & parts 75 cu. ft.		150
Plumbing	Small parts storage 75 cu. ft. Long pipe storage 700 cu. ft. Work bench 2 x 12		150

cont.

SHOP cont.

-Room-	-Equipment-	-Description-	-sq. ft.-
Clean-up Area	Sink 1 Table 2 x 5 Hosing & steam Air pressure Heating	Near maintenance	100
Saw Shop	Saw storage 15 saws Repair bench 3 x 6 Tool & parts storage	Outside Sawing area 20 cu. ft.	100
Storage	Sign storage 75 cu. ft. Hand tools & small motor equipment Campground maintenance 200 cu. ft. Trail equipment 200 cu. ft. Road equipment 75 cu. ft. Cabin maintenance 100 cu. ft. Surplus storage for other areas 150 sq. ft.	Access to outside	350
Restroom	Sink 1 Toilet 1		30

TOTAL SQ. FT. 2680

BUILDING PROGRAM

BARN

750 sq. ft.

The barn should be in close proximity to the corral, hay shed, pasture, loading stock into the trucks, and stock loading. There should be some sort of physical separation between the corral and residential section. This could be accomplished by distance and some greenery barriers. There should be both shaded and sunny areas in the pasture and corral.

-Rooms-	-Equipment-	-Description-	-sq. ft.-
Tack Room	Saddle storage 35 cu. ft. Pack storage 90 cu. ft. Rope storage 20 cu. ft. Blankets & Pads 100 cu. ft. Halters 20 cu. ft. Mantees 15 cu. ft. Leather 20 cu. ft.	should be locked Rodent proof	150
Grain Room	Grain storage Seed storage	Rodent Proof	60
Shoeing Area	Animal movement 200 sq. ft. Horse Shoe storage 40 cu. ft. Anvil Small forge Tool storage	two entrances combine with outside shoeing	240
Stall	Area for doctoring Veterinary supplies	Near outside	80
Mantee Area	Pack box storage 200 cu. ft. Packing boxes 35 sq. ft. Mantee boxes 35 sq. ft. Readied box storage	Preparing boxes to be placed on pack animals Outside but covered Near stock loading	175

TOTAL SQ. FT. 705

Areas related to barn

Approximate sq. ft.

Corral	15,000
Stock loading	2,000
Loading stock into trucks	4,000
Hay shed	700
Pasture	20 Acres

BUILDING PROGRAM

BUNK HOUSE

occupancy 24

2800 sq. ft.

The bunkhouse should be located near the cook house and parking area. This area should be set apart from the rest of the station area to provide privacy. The summer employees, college students, prefer to have their sleeping quarters away from the family residential section.

<u>-Room-</u>	<u>-Equipment-</u>	<u>-Description-</u>	<u>-sq. ft.-</u>
Sleeping Areas	Beds 4	20 to 24 summer	300
	Night stands 4	employees would	each
	Closets 4	sleep in bunk	↓
	Writing table 1	house - 6	
	Chairs 2	sleeping areas	1800
Bathroom	Toilets 3	Near entrance	350
	Urinal 3	possible heavy use	
	Sinks 5	period after fire	
	Showers 3		
	Storage 50 cu. ft.		
	Dirty linen storage	40 cu. ft.	
Social Room	Seating for 15	Near entry	500
	Couch		
	Chairs		
	Tables 2		
	Coat rack		
	Bumper pool table		
	Cooler 1		
	Wall map 1		
	Station telephone		
Storage	Linen 150 cu. ft.		100
	Recreation equipment	50 cu. ft.	
	Personal items		
	Janitorial equipment		
Mechanical	Water heater		50
	Forces air heating with cooling unit		

TOTAL SQ. FT. 2800

BUILDING PROGRAM

WINTER RESIDENCE

occupany 8

1255 sq. ft.

The name applies to the one building occupied during the winter stays. For this reason it must be near an outhouse and small generator shed. During the summer months it becomes one of the homes for a family. It should be located with the rest of the other residences but still have a view of the rest of the station for control in the winter.

-Room-	-Equipment-	-Description-	- sq. ft. -
Kitchen	Refrigerator-Freezer Stove-Oven Sink Garbage disposal Appliances Food storage Utensil storage Storage space Counter space	Should be a wood burning stove of some sort, in the area for cooking and heating during winter trips	150
Dining	Seating for 8 Table Utensil storage	Could combine with kitchen	100
Living Room	Couch 1 Chairs 3 Table 1 Station telephone Forest telephone	During winter trips this area would be used more than any other in the station	300
Bathroom	Shower-bath 1 Toilets 1 Sinks 2 Storage		120
Storage	Personal items		50
Entrance (Mud Room)	Seating 3 Closet Sink 1		60
Mechanical	Water heater Forced air heating with cooling unit		25

cont.

TOTAL SQ. FT. 1255

WINTER RESIDENCE cont.

-Room-	-Equipment-	-Description-	-sq. ft.-
Sleeping	Master Bedroom		150
	Double bed	1	each
	Dresser	1	↓
	Closet		450
	Chair	1	
	Bedroom	2	
	Interchangeable twin beds that can be converted to bunk beds, 6 all together		
	Dressers	4	
	Closets		
	Chairs	4	

TOTAL SQ. FT. 1255

BUILDING PROGRAM

FAMILY RESIDENCE occupancy 6 4 units 965 sq. ft.

-Room-	-Equipment-	-Description-	-sq. ft.-
Kitchen & Dining	Refrigerator-freezer Stove-Oven Sink Garbage disposal Appliances Food storage Utensil storage Storage space Counter space Seating for 6 Table 1		200
Living Room	Couch 1 Chairs 2 Table 1 Station telephone 1		200
Sleeping	Master Bedroom Double dresser 1 Dresser 1 Closet Chair 1 Bedroom Interchangeable beds 4 Dressers 2 Closets Chairs 2		150 120 each ↓ 240
Bathroom	Shower 1 Toilet 1 Sink 1 Storage		100
Storage	Personal items		50
Mechanical	Water heater Forced air heating with cooling units		25

TOTAL SQ. FT. 965

BUILDING PROGRAM

FAMILY RESIDENCE

occupancy 4

4 units

740 sq. ft.

-Room-	-Equipment-	-Description-	-sq. ft.-
Kitchen & Dining	Refrigerator-Freezer Stove-Oven Sink Garbage disposal Appliances Food storage Utensil storage Storage space Counter space Seating for 4 Table 1		175
Living Room	Couch 1 Chair 1 Table 1		150
Sleeping	Master Bedroom Double bed 1 Dresser 1 Closet Chair 1 Bedroom Bunk bed 1 Dresser 1 Closet Chair 1		150 120
Bathroom	Shower 1 Toilet 1 Sink 1 Storage		80
Storage	Personal items		40
Mechanical	Water heater Forced air heating with cooling unit		25

TOTAL SQ. FT. 740

BUILDING PROGRAM

RESIDENCE

occupancy 1-2

435 sq. ft.

-Room-	-Equipment-	-Description-	-sq. ft.-
Kitchen, Dining & Living Room	Refrigerator-Freezer Stove-Oven Sink Garbage disposal Appliances Food storage Utensil storage Counter space Seating for 4 Table 1 Couch 1		175
Sleeping	Double bed 1 Dresser 1 Closet Chair 1		150
Bathroom	Shower 1 Toilet 1 Sink 1 Storage		60
Storage	Personal items		30
Mechanical	Water heating Forced air heating with cooling unit		25

TOTAL SQ. FT. 435

BUILDING PROGRAM

COOK'S RESIDENCE

occupancy 2

365 sq. ft.

-Room-	-Equipment-	-Description-	-sq. ft.-
Living Room	Couch 1		100
	Chair 1		
	Table 1		
Sleeping	Twin beds 2		150
	Dresser 1		
	Closet 1		
	Chair 1		
Bathroom	Shower 1		60
	Toilet 1		
	Sink 1		
	Storage		
Storage	Personal items		30
Mechanical	Water heater		25
	Forced air heating with cooling unit		

TOTAL SQ. FT. 365

BUILDING PROGRAM

TOTAL SQ. FT.

WASH HOUSE

150

Washing machines 2 near residences
Dryers 2
Folding table 3 x 6
Storage 40 cu. ft.
Wall heater 1
Outside clothes line

If the bunk house is a long distance from the residential section then a small washing area should be provided at the bunk house. This would include a washer, dryer, folding table, storage and clothes line.

GAS HOUSE

200

Gas pump with 1000 gallon storage tank. Storage for petroleum products. Mixing area for saw and pump gas. This building must be located over 50 feet from surrounding buildings. Tank truck from Hamilton comes once every three weeks to fill the storage tank.

WEATHER STATION

100

This area must be located in the open and contains instruments for weather analysis.

HELICOPTER PAD

10,000

Level surface clean of all obstructions. Landing platform should be 3 to 4 feet higher than the ground. Wind direction guage.

TRUCK STORAGE

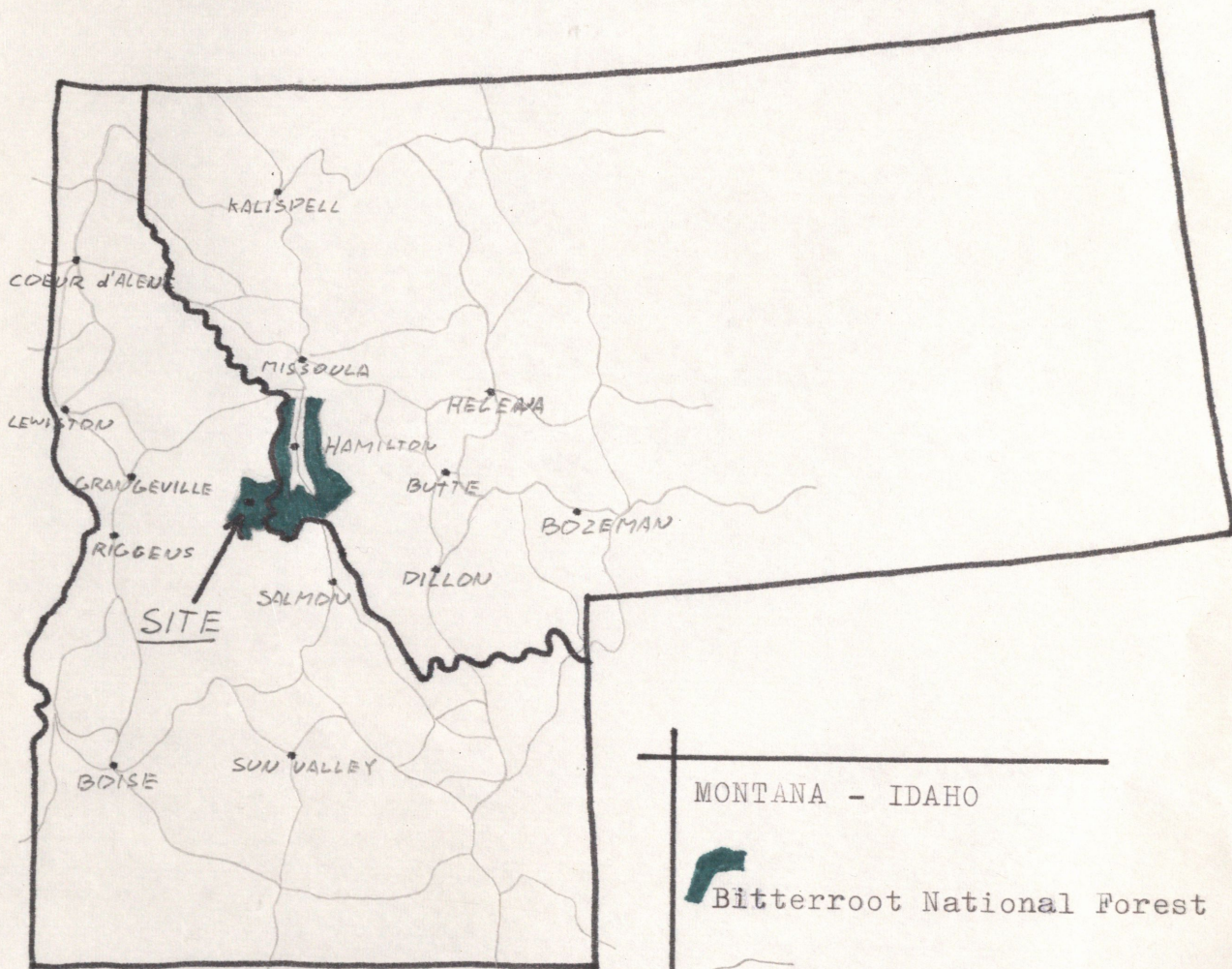
3,000

Space to park 10 district trucks

GREASE RACK

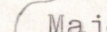
400

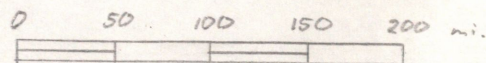
Able to hold a 3 ton stock truck. Open work area underneath.

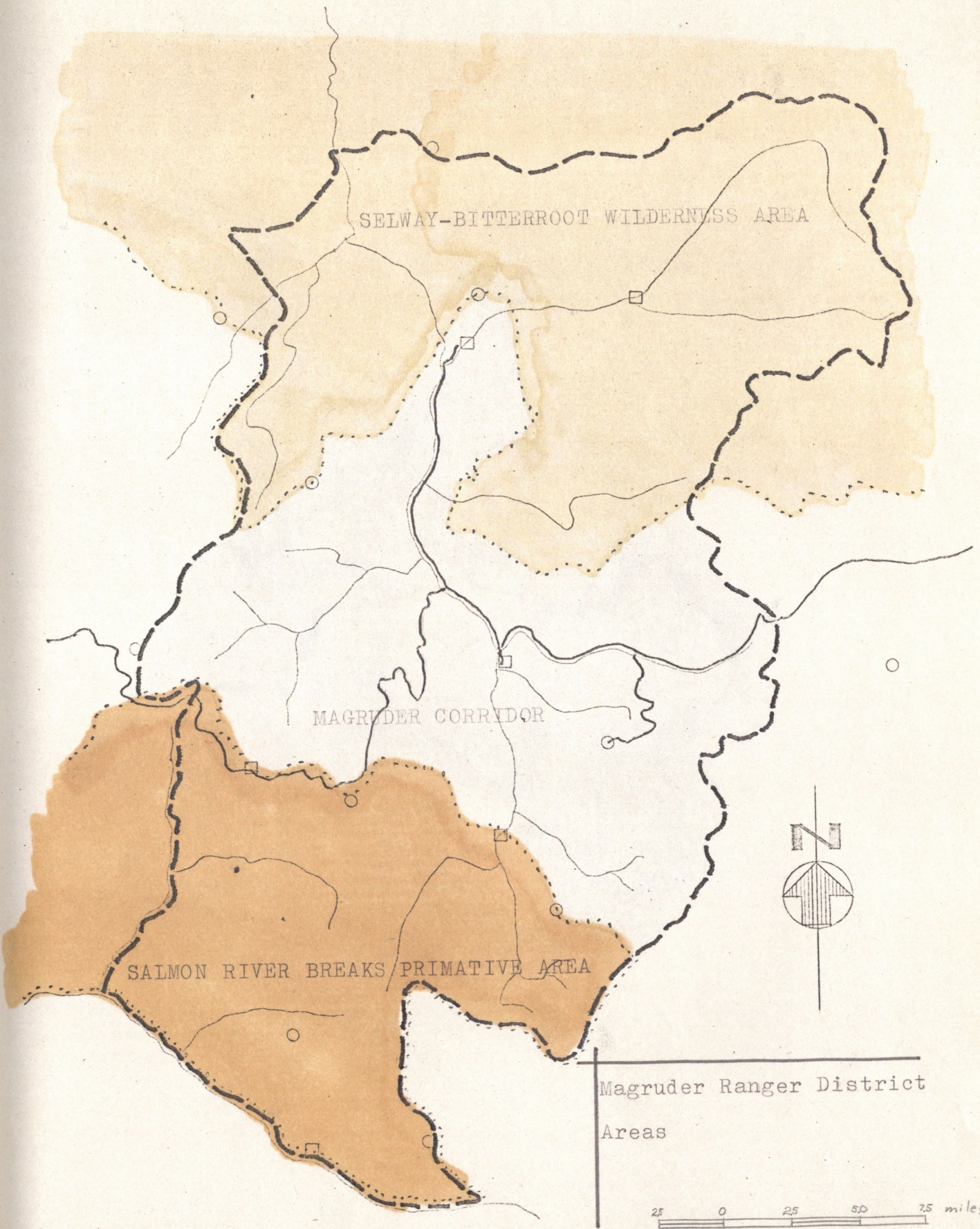


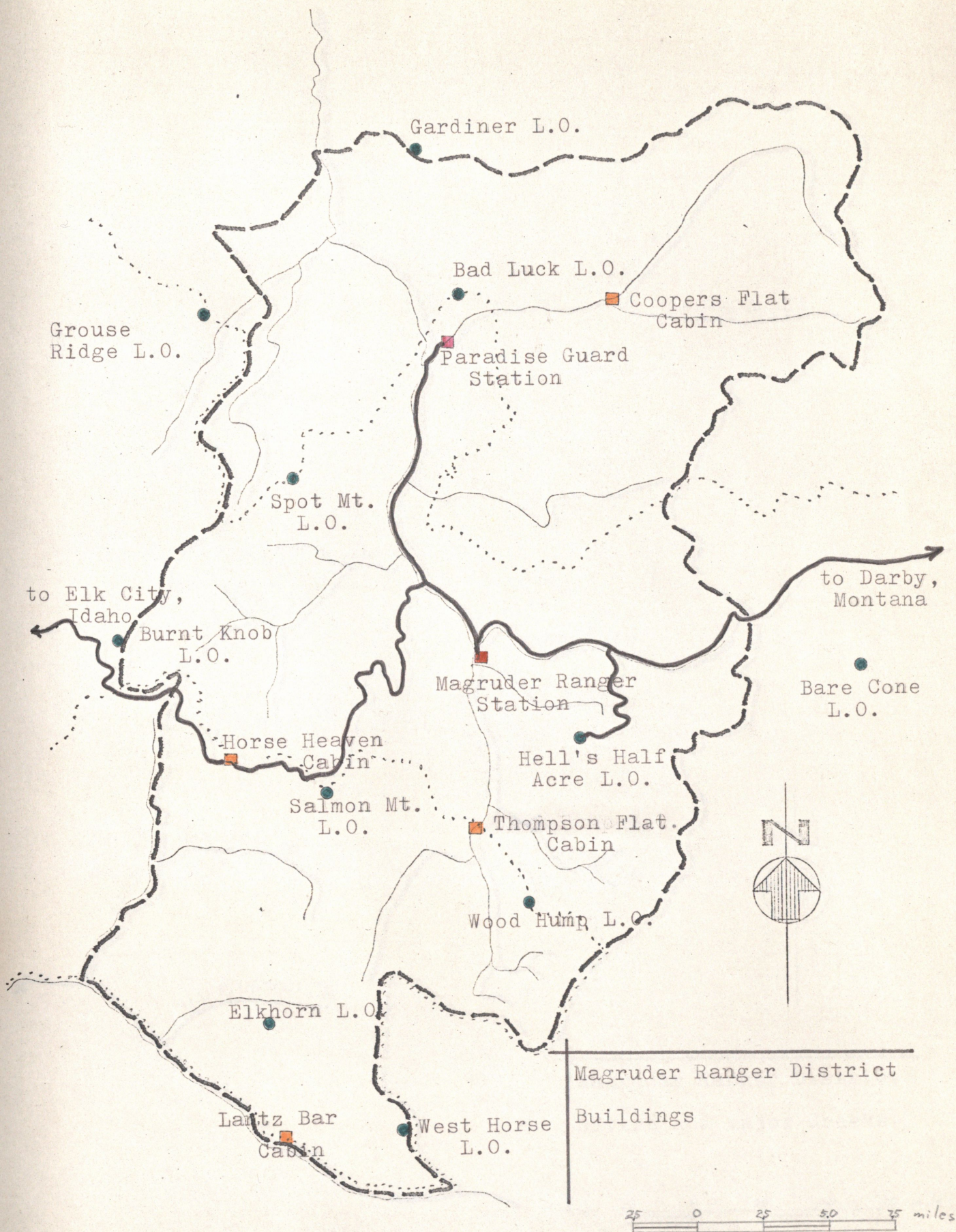
MONTANA - IDAHO

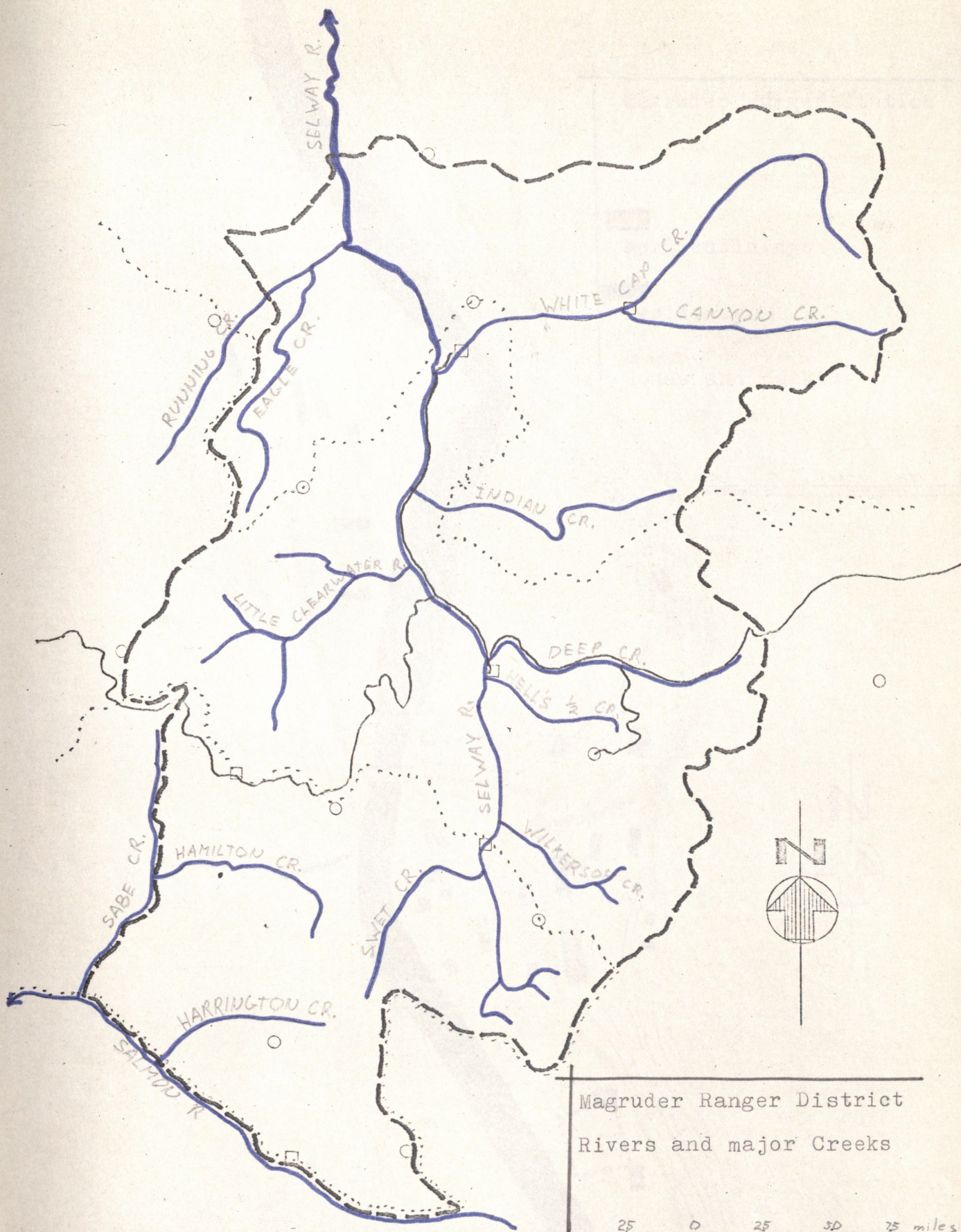
 Bitterroot National Forest

 Major Highways









Magruder Ranger Station



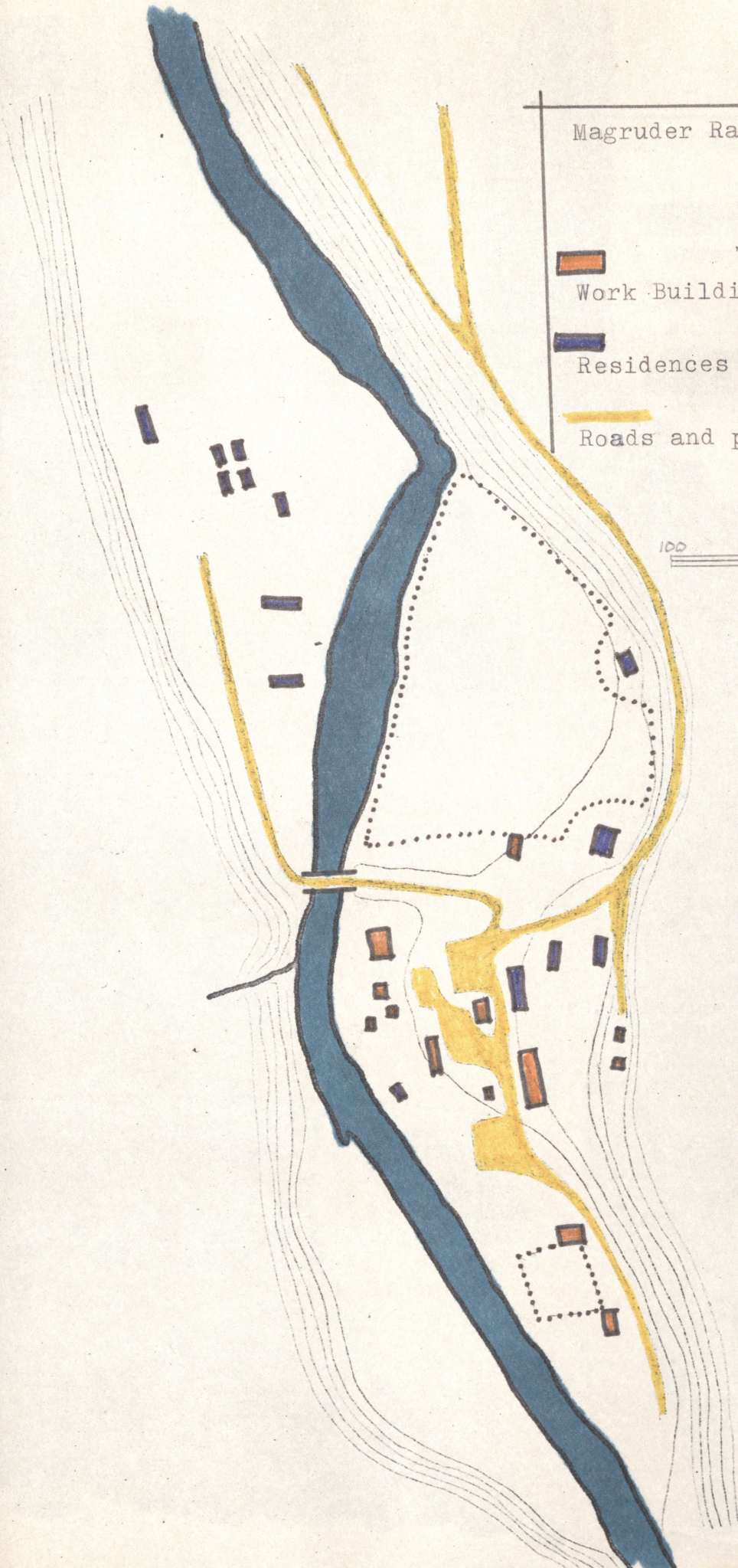
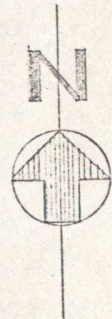
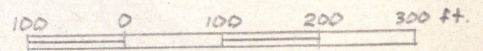
Work Buildings



Residences



Roads and parking



Maruder Ranger Station



Swampy - Early Spring

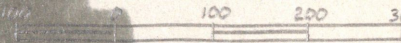


Buildable Land



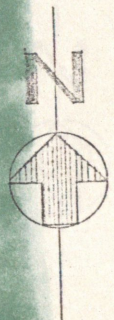
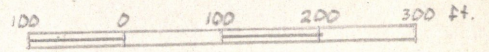
Steep Slope

100 200 300 ft.

A horizontal scale bar with markings at 100, 200, and 300 feet.

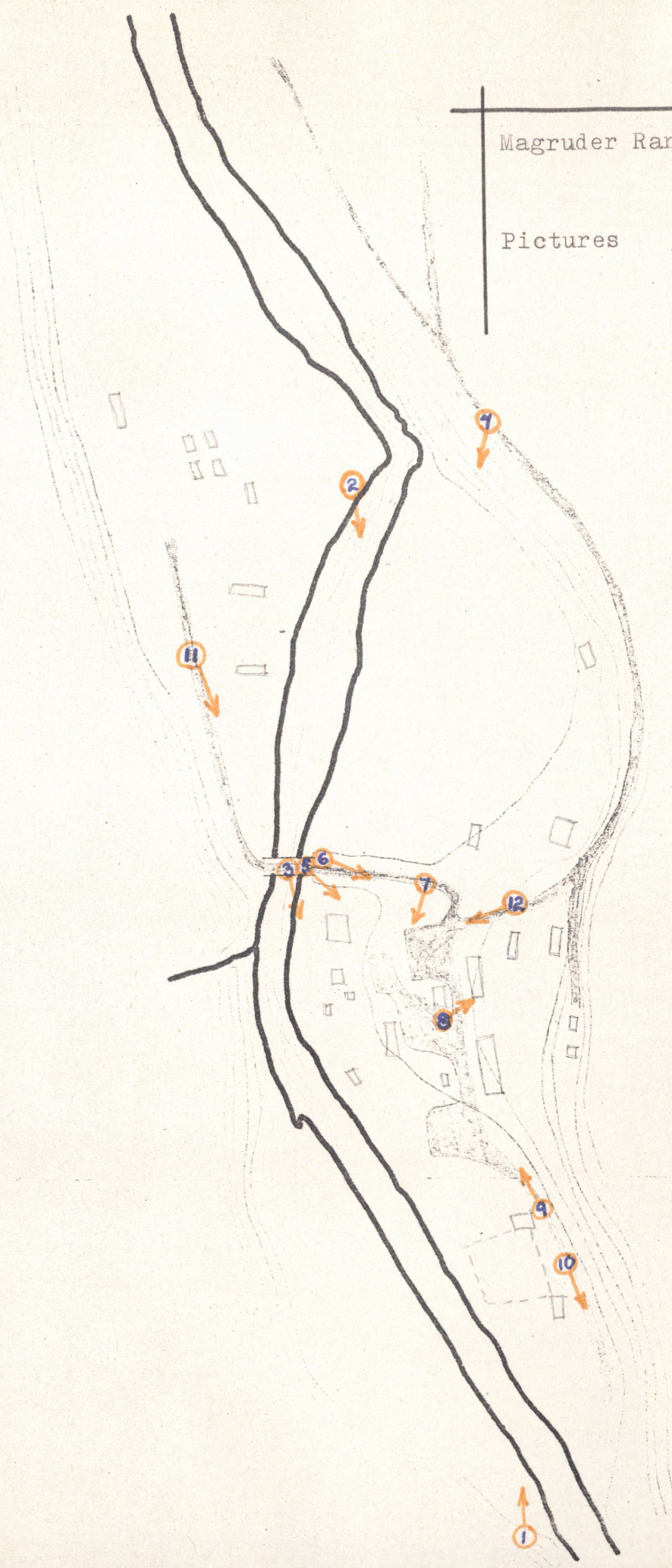
Magruder Ranger Station

Tree Cover



Magruder Ranger Station

Pictures





Station looking North

1



Central Portion of Station

2



Office & Seway River

3



Station from Road

4



Bunk House & Fire House 5



Residential Trailers 6



Cook House & Office

7



Pasture Ridge & Bunk House

8



Grease Rack & Gas Pump

9



Stock Pile behind Barn

10



Residential Area across River //



Before Winter Closer

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