The North Cascades Highway: Redefining the Rest Area as a Cultural Landscape

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A thesis submitted in partial fulfillment of the requirements for the degree of
Master of Architecture

University of Washington
2012

Committee:
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Program Authorized to Offer Degree:
Department of Architecture

THE NORTH CASCADES HIGHWAY:

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INTRODUCTION

Over the last century our highway infrastructure has expanded immensely, in great part due to the personal automobile. With so many Americans exploring the roads using this new means of travel, came a new culture of Roadside America. Among the eclectic landmarks that sprung up along the roadway were Safety Rest Areas (SRAs) that provided off-road emergency resting places. SRAs were built in conjunction with the Interstate Highway System during the 1950s to provide the basic amenities for tired motorists travelling long distances on the road.

Today, SRAs are overwhelmed with the numbers of visitors they receive in a year and are under capacity to serve them. In the 1950s it was had to imagine the impact automobiles would have on our future. The funding and budgets for improving and building new SRAs has not matched the growth of automobile traffic. With the expansion of the highway system comes the need for new SRAs to serve long stretches of highway without a stopping place. Even with the increase in automobile speed and with other options for travel, SRAs continue to play a vital role in the safety of the roadway.

While SRAs were developed for a utilitarian function, they operate in the realm of roadside architecture in their role as a place marker. They occupy the zone between the highway infrastructure and the landscape in which they are located, reflecting the local region and acting as a signal for the passing driver. Each of these stopping points can be depended upon to provide the basic

"You can travel on the Interstate from one coast to the other and never see America."

– Doug Hecox

amenities of a toilet building and a picnic area, but they also offer an identifiable landmark that represents their region. Offering a break in the otherwise repetitive and monotonous road trip, SRAs serve as a stand-in for the regional context drivers would otherwise miss as they bypass cities and towns.

This thesis will explore Safety Rest Areas as markers within the highway infrastructure as well as distinctive regional complexes linked to their local context. The analysis of this typology within Washington State will show that many were built in a short time span with a similar architectural aesthetic that lacks a distinctive local identity. Although improvements have been made to SRAs, they have been insufficient to support the growing infrastructure making them obsolete and undesirable. This thesis seeks to recover the role of the Safety Rest Area as shelter and icon that provides a necessary place of rest and marks a specific location on the highway journey. The design will explore how the architecture of the roadside is a cultural landscape that exists between infrastructure and region, utility and place.

A variety of case studies were explored to highlight topics that are relevant to the issues addressed in this thesis. The case studies include projects that serve as both shelter and icon, ones that express regional architectural character, others that occupy the border between infrastructure and local community, and others still that challenge traditional architectural and social boundaries.

INFRASTRUCTURE AND UTILITY

ROADSIDE ARCHITECTURE

The development of roadways has significantly influenced how people travel over the past century. Prior to the twentieth century travel was an exclusive experience known to few who could afford the luxury. Railways and steamships moved large groups of passengers in relative comfort, all trusting their safe arrival to their destinations. In the early twentieth century came the advent of the gas-powered automobile. With this, came the redefinition of personal travel and the expansion of road building. Advances in automobile engineering allowed travelers to go farther more comfortably, which meant roads were needed to keep up with the new form of travel. As Karl Raitz describes, roads became sites of mass consumption[1] as people escaped the confines of the city to explore the countryside in a new way (Figure 1). Americans embraced this new mode of leisure travel and the experience of the freedom of driving.

FIGURE 1 Exploring the open road, a US Highway circa the 1950s

It did not take long to discover that more travelers meant a new generation of business associated with the road. Signs emerged as the first markers of the roadside to attract and provide goods and

services for travelers. Raitz observes that while Government legislation brought discipline to the building of new roads, roadside structures developed out of a local vernacular that was undisciplined.[2] With their long-term connection to the road's edge, farmers were among the first to introduce commerce to the road in the form of fruit stands to sell their products. Merchants realized that visibility from the road was important to attracting customers. Contrary to the regulation of the road, roadside structures were free to take on eccentric forms and decorations to draw the attention of those passing by. Travelers were moving more quickly than they ever had in the past, so these roadside structures became larger and more unique to quickly grab attention. A few businessmen opened branch operations along the road in hopes to attract customers by recognition, and the beginnings of the franchise emerged. Motorists seemed to prefer the easy and accessible roadside accommodations over entering the towns they were passing by. Raitz notes that the roadside was making a place for itself as integral to motor travel, and the two quickly became dependent on the other.[3]

Through the twentieth century, roadside America increasingly became a distinctive landscape of its own. Raitz describes the roadside as "a spatial contradiction," a kind of space that resides between the control of the road and the casualness of the countryside.[4] The organic landscape of the countryside and the hardscape of the road impose on each other to create a space that is in-between. Spatially, the roadside can

be seen as belonging neither to the natural or industrial realms, existing somewhere between where public use and private value come together.[5]

The increased speed associated with the automobile and highway system, has changed the perception of the roadside's built structures. In his book Zoomscape, Mitchell Schwarzer explores how our appreciation of buildings or landscapes depends on the mechanical means by which we see them. He states, "We see architecture through abrupt shifts of viewpoint and via unexpected juxtapositions. Vehicles zoom our sight across great distances at tremendous velocities."[6] Schwarzer argues that before modern times, cities were experienced as vertical compositions marked by clusters of towers, walls, and roofs, while today, the visual direction of the automobile is more of a vast horizontal network.[7] This horizontality reflects not only the mobility of the times, but also the experience of the view from the car. The driver or passenger is confined to the views that are framed by the windows, almost like watching a film. Schwarzer describes automobiles as encouraging an understanding of architecture as a landscape rather than as a landmark.[8] Our experience in an automobile is one more associated with movement, as in a vast landscape, than stasis, as in a monument.

INTRODUCING THE GAS STATION

The qualities created by the development of automobile are evident in the architecture of roadside gas stations. The Teapot Gas Station was built in 1922 by Jack Ainsworth

as a symbol of the Teapot Dome oil reserves in Wyoming (Figure 2). With its unique and iconic design, the Teapot is an example of how roadside architecture can read primarily as a landmark. The eccentric and fantastical building acts as the sign while still serving a utilitarian function. The Teapot was placed on the National Historic Register in 1985, and has been out of service for many years.

The typology of the chain gas station from the 1960s to the present day provides a good example of roadside architecture that is expressive of its utility. This typology consists of a roof as shelter and a box as service (Figure 3). Their elongated forms and spanning roofs give the sense of horizontality and industry. Brightly colored signs, detached from the architecture of the building, give recognition to the building's purpose.

FIGURE 2 Zillah Teapot Gas Station on I-82 in WA. Building designed to look like a teapot and function as a gas station, now a historic landmark.

FIGURE 3 Typical Chevron Gas Station with service box and horizontal shelter.

SAFETY REST AREAS

The development of the roadside as a built environment in the twentieth century established a new type of architecture that Americans learned to expect along their travels. As roads developed, roadside parks emerged out of necessity in rural areas to provide a place to stop and rest. These parks became more associated with scenic interest points as the development of roadside beautification flourished. State highway departments were charged with the construction and maintenance of these recreational facilities for motorists.

In an effort to expand roadways and decrease traffic in cities, the government drafted the Federal-Aid Highway Act of 1956. The legislation proposed 41,000 miles of highway, linking 42 state capitals, 90 percent of all urban centers, 65 percent of urban inhabitants, and 50 percent of rural inhabitants (Figure 4). As John Jakle observes, the Interstate symbolized American prosperity and growth, as well as fulfilling an ever-growing practical function.[9] It transformed the way Americans lived, inspired suburban neighborhoods and led to new building types.

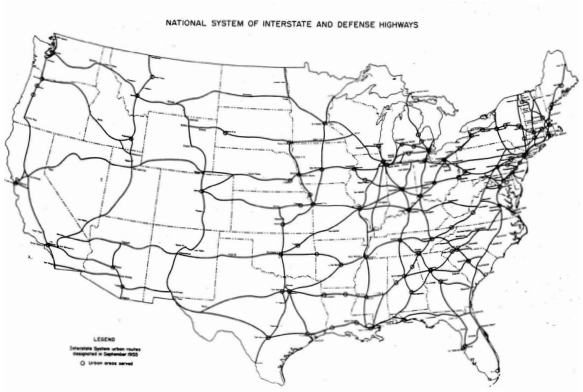


FIGURE 4 Federal Interstate Highway Plan, 1956. Courtesy of the U.S. Department of Transportation.

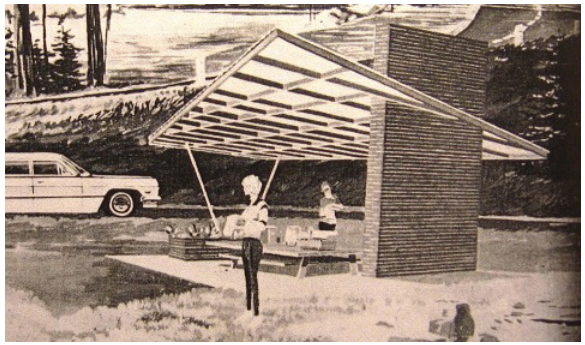


FIGURE 5 Ideal elements of a Safety Rest Area. Courtesy of Better Roads Magazine, 1960.

The 1956 legislation had implications beyond the new network of roads being created, as it also mandated the standardization of Safety Rest Areas (SRAs) in name and services. The new Highway System had planned to bypass existing commercial strips in a controlled access road design. Jakle notes that the perception of the freedom of the open road was actually a contradiction to the reality of the limited access highway it actually was.[10] The Highway System was expanding in its Interstate connections, but at the same time the space of the road itself was being constricted to a linear design without much roadside support. SRAs were thought to be the places that would provide the basic needs to travelers for this controlled, cut-off space of the road (Figure 5). SRAs were designed as regulated stopping points to supplant the unplanned pull offs travelers were used to. The American Association of State Highway Officials defined Safety Rest Areas in the following terms:

> *Rest areas are to be provided on Interstate highways as a safety measure. Safety rest areas are off-road spaces with provisions for emergency stopping and resting by motorists for short periods. They have freeway type entrances and exit connections, parking areas, benches and tables, and may have toilets and water supply where proper maintenance and supervision are assured. They may be designed for short-time picnic use in addition to parking of vehicles for short periods.*[11]

The sites were thus defined by their proximity to the highway and their provision of basic amenities, both in terms of their location and function.

The main function of SRAs was initially linked to its exterior and interior spaces, including the toilet building and picnic shelter over tables and seating. The early design of SRAs reflected their dual role as service buildings and park pavilions, but they also developed distinctive characteristics as place markers. SRAs quickly grew to be representations of the local sites and regions in which they were located (Figure 6). They were seen as a reflection of the accomplishments and image of the state government and its citizens. The expansion of the Highway System with limited access to local communities made it increasingly possible that SRAs would be the only encounter a traveler might have with the state.

The first SRAs opened in the late 1950s, and continued to be built through the 1970s. Federal funding was significantly reduced in 1959, so states had to provide the majority of funds for completing the planned sites. In 1965, the Highway Beautification Act reinstated federal funding and called for each state to develop a master plan for

FIGURE 6 Picnic area in the form of a Teepee, I-10 in Texas.

FIGURE 7 Basic Traditional, Modern, Regional, Rustic, Combined Forms, Free Form, and 1970's Revival Safety Rest Areas (from top to bottom). Categories based on classification by Joanna Dowling. Images courtesy of The Journal of the National Trust for Historic Preservation.

SRA development. This spurred innovation and creativity in designing buildings that reflected the architectural heritage of their place. The scale of the buildings grew as the character increasingly took on nontraditional forms. Built in a wide variety of contexts by different state authorities the SRAs have varied greatly in their architectural style.

Joanna Dowling has categorized the architectural characteristics of these first generation SRAs built between the 1950s and 1970s according to a classification system based on their stylistic and formal characteristics. Dowling describes how "architectural design became the conceptual link between the perception of place and the function of place."[12] The seven categories are based on general time period, as in traditional versus modern, and on their locale, as in regional versus rustic, with the remaining categories as hybrids (Figure 7).[13] Dowling's basic argument is that the SRAs are defined more by their basic function and do not reflect broader architectural trends. If her classification system attempts to better define the typology of SRAs, it lacks the essential component of place. The siting and landscape of these sites is an essential component of their design.

NORWAY NATIONAL TOURIST ROUTES

In the United States, roadside architecture is sometimes overlooked as a significant spatial environment. In other countries, it has been used as an opportunity to promote tourism and a way to experience nature. Norway has been exploring the idea of what kind of environment the roadside

FIGURE 8 Map of Norway National Tourist Routes. Courtesy of Norway National Tourist Routes.

can offer through the National Tourist Routes project. In 1994, the Norwegian Public Roads Administration proposed the development of 18 road sections through remote and challenging landscapes of Norway (Figure 8). The challenge produced functional and yet innovative architecture that has stimulated economic growth through tourism and industry, and forged a distinctive identity for the country.

> *Enhancing the experience of nature and the atmosphere in each location is of key importance in our planning and implementation.*[14]

Norway's Tourist Route projects are similar to that of our Safety Rest Areas along interstates and highways in that they are government sponsored and developed projects. The projects, designed as a

comprehensive system, are linked from place to place and spaced out to provide stopping points where they are needed along the highway. Where SRAs fall short of the Norway Tourist Route projects is in their innovative design that provides a strong sense of regional character. The Tourist Routes have promoted tourism and local pride by being distinctly varied across the country. Each project is clearly rooted in its place, responding to the particulars in its form and function. The Tourist Route projects have become so popular that they are seen as more than just 'pit stops' along a journey, but destinations in themselves.

The Toilet Facility at Akkarvikodden by Manthey Kula Architects provides a relevant example of roadside architecture from the Norway Tourist Routes system. This project

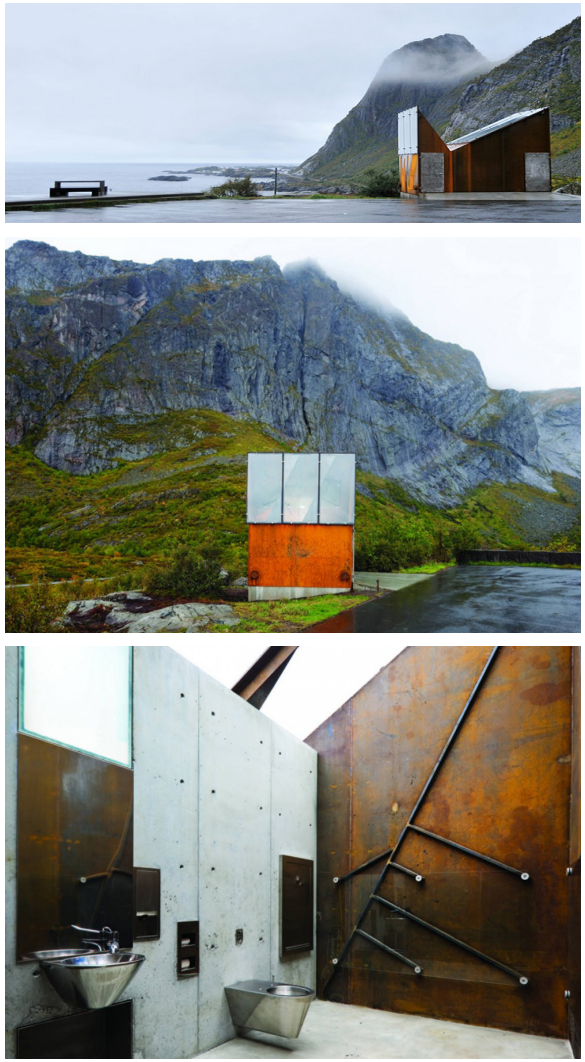


FIGURE 9 The toilet facility of Akkarvikodden sits iconically in the landscape. Made of steel plate and concrete. Photos courtesy of Norway National Tourist Routes.

represents how a utilitarian building can be both icon and shelter as it exists between infrastructure and landscape (Figure 9). The site for the rest stop is very dramatic, as it sits on a plateau that opens up between the mountains and the sea. The project had to replace a toilet facility that had been destroyed by the harsh climate in this area. The building was designed to be heavy so that it could not be blown away and to enclose an interior space that visually shut out the surrounding scenery. The steel plates used in the construction give the building a contrasting color that makes it stand out as a beacon in the landscape. The completely solid enclosure is meant to give the user a sense of security and refuge from the harsh surroundings.[15]

Even before the Tourist Route Project at Eggum, the site, with a radar station, was already a popular landmark to visitors (Figure 10). The design by Snøhetta Architects had to provide a multipurpose facility and resolve a lack of parking at the site. The architects focused on preserving and extending existing landscape forms as the main attraction rather than creating an architectural attraction. Even the building materials are drawn from the site, the walls are filled with excavated stone and the exterior of the wooden volume is clad in driftwood from the surrounding beaches. This project shows how a building can accentuate a regional identity by deriving its character from natural surroundings while serving to mark a place of historic significance.

Norway's National Tourist Routes are relevant to this thesis because they represent how infrastructure can support and promote a series of public places. These interventions express the idea that the design can express the local character and promote tourism of place. Each rest stop is unique and acts as an icon and shelter in the landscape, existing in the space between hardscape and nature.

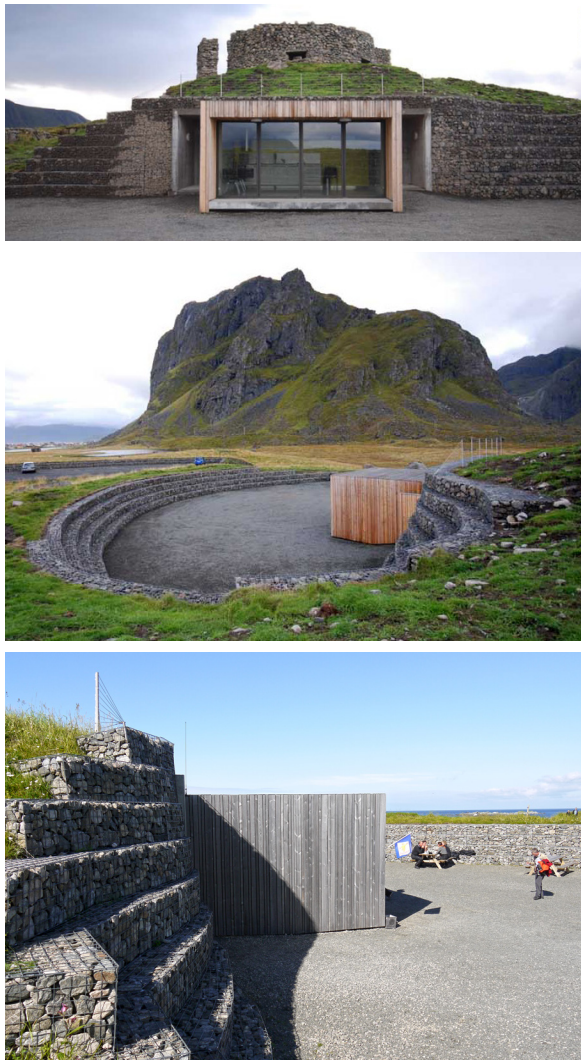


FIGURE 10 Facility at Eggum set into the historic landscape of the site. Photos courtesy of Norway National Tourist Routes.

NOTES

1 Karl Raitz, *American Roads, Roadside America* (Geographical Review: 88, 1998), 368.

2 Ibid., 381.

3 Ibid., 382.

4 Ibid., 385.

5 Ibid., 386.

6 Mitchell Schwarzer, *Zoomscape: Architecture in Motion and Media* (New York: Princeton Architectural, 2004), 14.

7 Ibid., 77.

8 Ibid., 72.

9 John A. Jakle and Keith A. Sculle, *Motoring: The Highway Experience in America* (Athens: University of Georgia Press, 2008), 155.

10 Ibid., 160.

11 Joanna Dowling, "Interstate Safety Rest Areas: Enhancing the American Travel Experience," *Forum Journal: The Journal of the National Trust for Historic Preservation* 23.1 (2008): 5.

12 Ibid., 8.

13 Ibid., 8.

14 Nina Berre and Hege Lysholm, eds., *National Tourist Routes in Norway, 4th Edition*. (Statens Vegvesen, 2010), accessed March 6, 2012, http://www.nasjonaleturistveger.no/en, 8.

15 Kristiana Ross, "Reststop Akkarvikodden/Manthey Kula Architects," *ArchDaily,* March 13, 2012, accessed May 20, 2012, http://www.archdaily.com/216077.

DESIGN FRAMEWORK

This chapter will analyze the typology of the Safety Rest Area in Washington State as it relates to the road, geographical location, and service quality. It will then explore a variety of sites to determine a feasible location for the design proposal.

INTERSTATES AND HIGHWAYS

Washington State currently has 48 Safety Rest Areas, 28 on the interstate system and 20 on state highways. In establishing the typology of SRAs it is important to distinguish between locations on the interstate system versus the state highway system. The interstate system consists of three routes in Washington State, I-5, I-90, and I-82 (Figure 11), with higher traffic volumes than the state highway system. The interstate and the state highway serve the same users, but the latter tends to offer more to the tourist or recreationalist by having a broader network of travel while the interstate is known for trucking and longer distance travel.

Another general distinction between SRAs on the interstate and state highway systems is their connection to the direction of travel. All but one SRA on the interstate system serve single directional travelers. This strengthens the notion of the interstate being a linear method of travel serving those on long and singularly focused trips. All but two SRAs on the state highway system serve multidirectional travelers. This combining of directional users is suggestive of the method of travel being more recreational and at a slower pace. It

FIGURE 11 Washington State Interstate and Highway systems

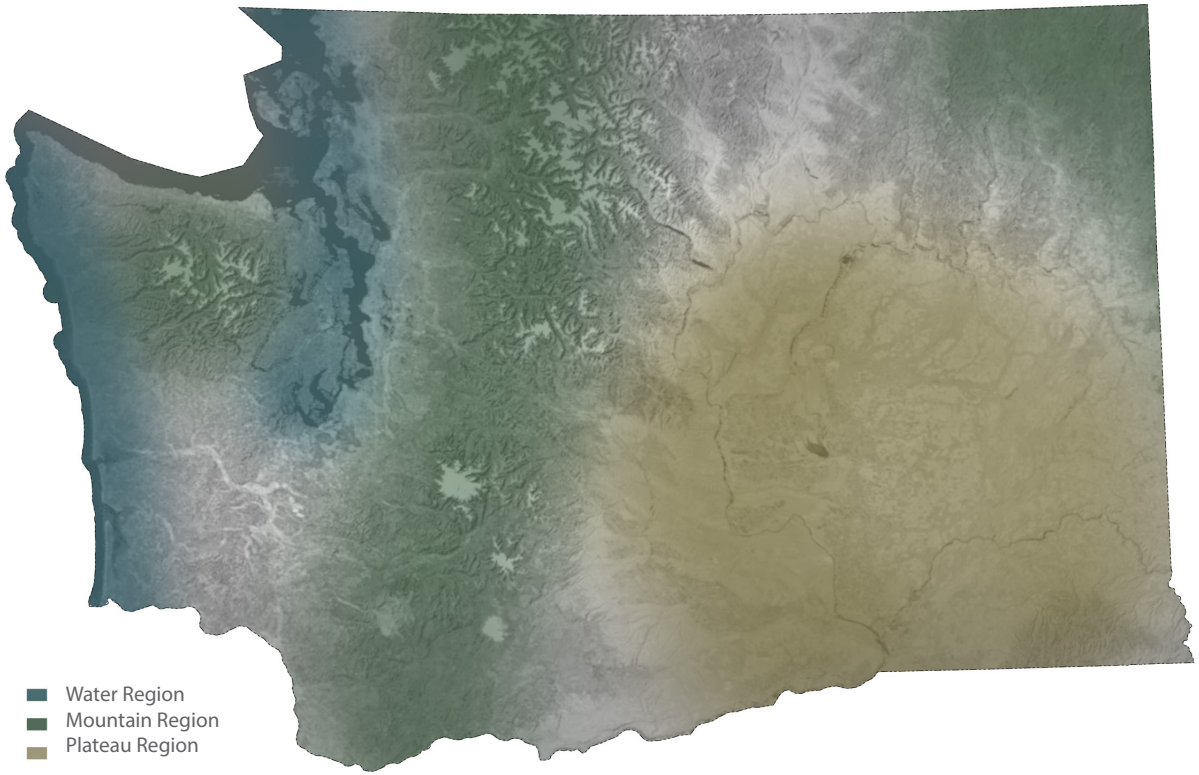


FIGURE 12 Washington State Topography

shows the scale of the state highway system is smaller and that there is no need to have two separate SRAs to serve the function that one can. It also gives the users more opportunity to mix with other travelers doing vastly different things.

TOPOGRAPHY

The distinctive topography of Washington State strongly influences how Safety Rest Areas are situated in the landscape. The three major landscape areas of mountains, plateau, and water (Figure 12) affect how one approaches, views, experiences, and departs from each SRA. Washington has many mountain ranges which cover approximately 60% of the state, while the remaining 40% consists of the plains or plateau and hills. Washington is also a very water based state in that it touches the Pacific Ocean and has many rivers and lakes.

The SRA in mountainous regions can be described as a self-contained element situated within this rugged landscape. Typically having the heaviest tree coverage, these complexes are often sited farther back from the road concealed by foliage (Figure 13). The signage for this type of SRA is very important because it is difficult to see from passing cars. These complexes also tend to be inwardly focused because the tree coverage can mask all views of the surrounding landscape.

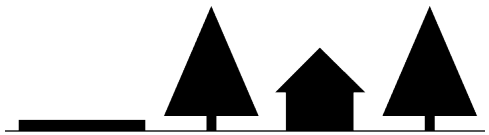


FIGURE 13 Sectional diagram of Mountain Region SRA.

The plateau SRA can be described as an element situated on the landscape which tends to be very exposed and located close to the road (Figure 14). These SRAs are the most obvious and well known of the typology since everyone sees them when driving. Views from these sites can be vast and expansive, as many are located in remote regions far from towns. Green space is often added to help give shade and provide a place to walk, but it does not conceal the building from the road. The experience of views in these locations is very similar whether on the road, approaching, stopped, or leaving the SRA.

The water SRA can be described as an element that opens up to the landscape. The SRAs situated next to water tend to be oriented towards the view and closed off from the road (Figure 15). They are most often visible from the roadway but reveal a distinctly different view upon entering, making it essential for someone to stop to appreciate the setting. These water located complexes can also have green space and foliage planted to accentuate places of shade or walking.

FIGURE 14 Sectional diagram of Plateau Region SRA.

FIGURE 15 Sectional diagram of Water Region SRA.

EXISTING SAFETY REST AREAS

According to the WSDOT Design Manual,[1] all SRAs are required to be shelter, sign and park, which includes a restroom building, a display of historical or area info and an open space. The additional amenities of garbage receptacles are required but others like potable water, electrical power, pet areas, vending machines, telephone service, and travel information are optional. SRA services are displayed on signs visible to the user as they approach a rest area, indicating what to expect. The SRAs with the most services offered tend to be on the highly traveled interstates. While the state highway SRAs may not have as many services, they traditionally have more historical significance and recreation activities associated with their locations.

In order to more fully understand the elements of Washington State's SRAs, three existing sites have been chosen to be analyzed that represent a variety of scales, geographic regions, users, and amenities.

SMOKEY POINT SAFETY REST AREA

Smokey Point SRA, located on I-5 in the northwestern region of Washington State, is a single directional SRA set in a mountain region (Figure 16). As one exits the interstate, the building is set far back and concealed from view by foliage. The driver can choose long term or short term parking with the short term parking offered on both sides of the building and long term parking located across the large green space where picnic tables are located. Architecturally, Smokey Point is a good example of the bulk of the SRAs that were built between 1966-

1974. The buildings are monotone colors, with some brick cladding, concrete block, and large overhangs while providing such standard amenities as tourist information, telephones, picnic areas, potable water, vending machines, RV dumping station. This state has the unique distinction of being home to a historic 25ft wide giant arborvitae. In 2011, Smokey Point received almost a million and a half visitors making it one of the more popular SRAs in Washington State.[2]

HORN SCHOOL REST AREA

Horn School SRA, located on SR 195, is a multidirectional SRA set in the plains of southeastern Washington (Figure 17). It is a prime example of a plateau region SRA

FIGURE 16 Aerial view of Smokey Point SRA located on I-5, mountain region.

with surrounding agricultural fields and no large towns within 25 miles in all directions. The SRA is completely exposed to the interstate, making it very easy to spot upon approach. The parking for trucks and cars is condensed into one area set next to the toilet building. The green area is small and is sited next to the building for easy access. Architecturally, the toilet building is similar to Smokey Point in its color pallet, but it is made of stone pillars and concrete block. It provides basic amenities like telephones, picnic areas, potable water, but is also a historic marker of WSDOT's oldest original SRA, built in 1967. In 2011, Horn School received 266,480 visitors.[3]

FIGURE 17 Aerial view of Horn School SRA, located on SR 195, plateau region.

DISMAL NITCH SAFETY REST AREA

Dismal Nitch SRA, located on SR 401 in the southwestern region of Washington State, is a multidirectional SRA set in a water region (Figure 18). Seen as a historic marker, it also offers tourist information, telephones, picnic tables, and potable water. The site gets its name from its importance to the Lewis and Clark voyage of discovery of 1804-1806. The site can be approached from two sides, which allows for more flexibility for drivers. The elongated parking area is combined for trucks and cars, with the building located centrally. The building sits between the parking lot and the water, and provides the base for recreation activities to its users in

FIGURE 18 Aerial view of Dismal Nitch SRA, located on SR 401, water region.

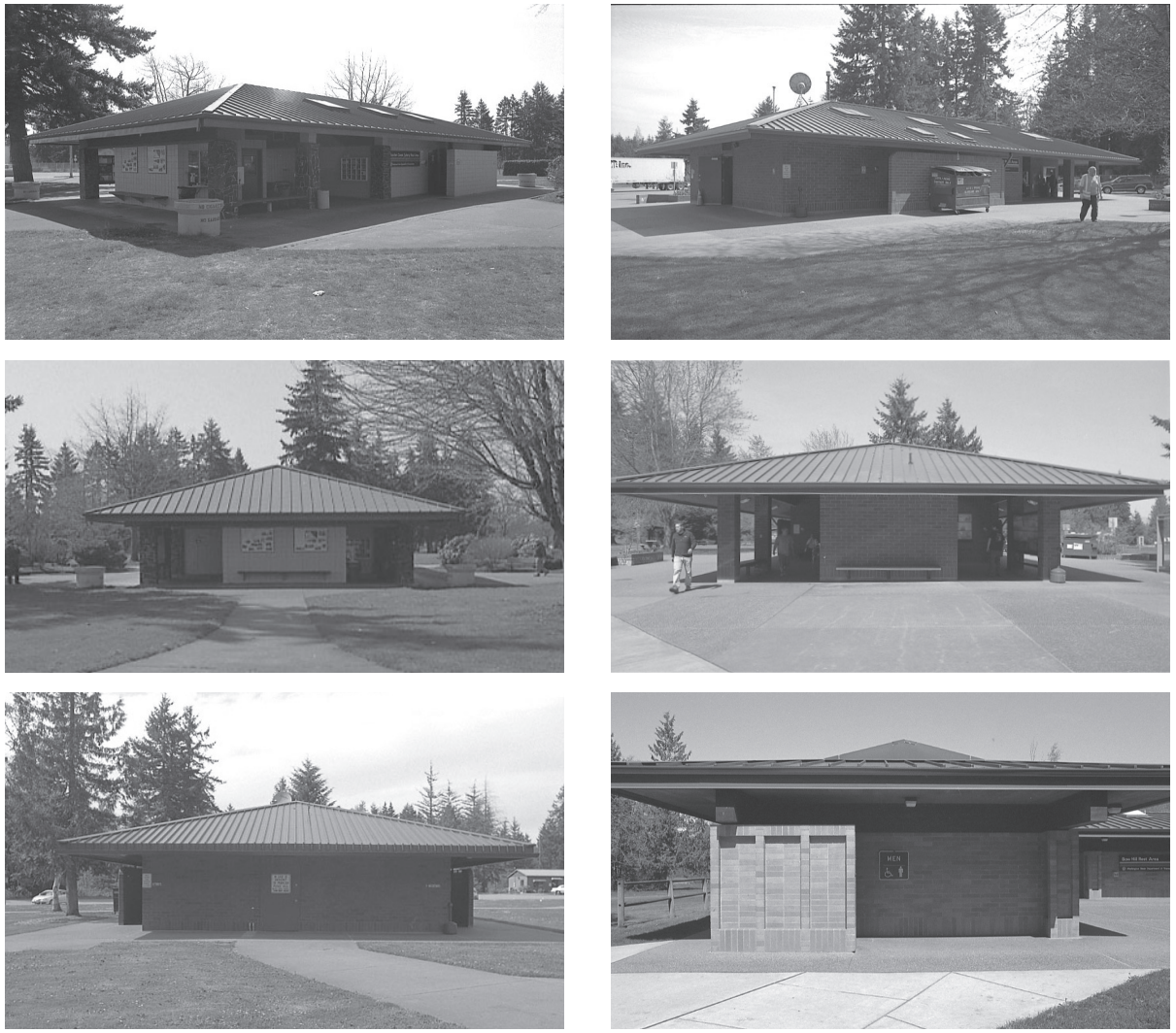


FIGURE 19 Washington State Rest Areas: Scatter Creek Northbound, Scatter Creek Southbound, Silver Lake, Smokey Point Northbound, Smokey Point Southbound, Bow Hill (from top to bottom)

the form of trails and water access. Dismal Nitch is an example of a contemporary SRA, yet architecturally it follows the same form of large stone pillars, concrete block and massive roof that SRAs of the 70s exhibit. The site was developed in 2005, and in 2011 saw 76,466 visitors.[4]

The architecture described above is consistent with the SRAs located on I-5 (Figure 19). The construction and form of each building are similar with large low-pitched roofs and concrete block or brick cladding. Each building is seemingly interchangeable, lacking the regional identity and context described in the Safety Rest Area program guidelines. The analysis of these SRAs also indicates that site selection and program layout are significant in how users engage with the building.

SITE SELECTION AND ANALYSIS

The Washington State Safety Rest Area Program has adopted the American Association of State Highway and Transportation Officials guidelines for the location of SRAs. The goal of the program is to provide effective stopping opportunities every 60 miles along Interstates and State Routes. While this is the primary criterion in determining potential areas for program expansion, other reasons include a consideration of traffic volume, collision data, utilities availability, and societal costs. In 2011, WSDOT defined 21 locations as potential areas of need to serve the 20.5 million people who visited SRAs last year (Figure 20).[5] Within this list, the site for this thesis project was selected based on location, topography, and the annual

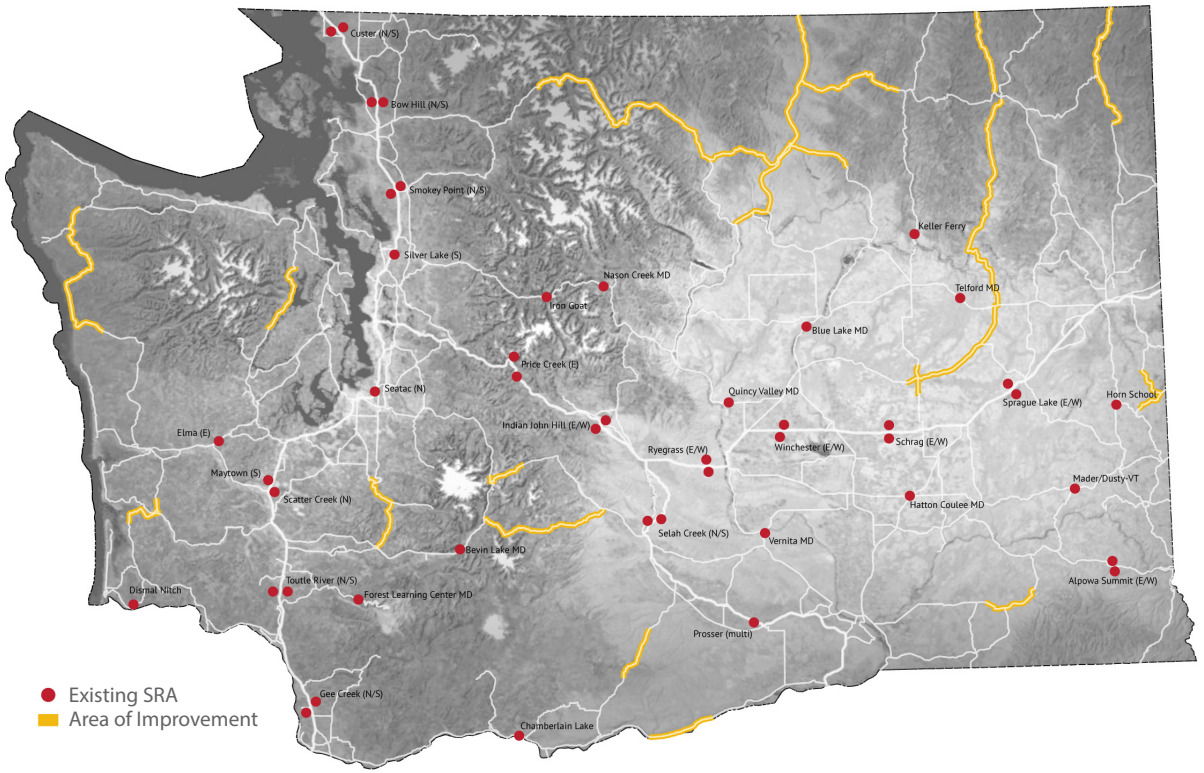


FIGURE 20 Washington State areas of need.

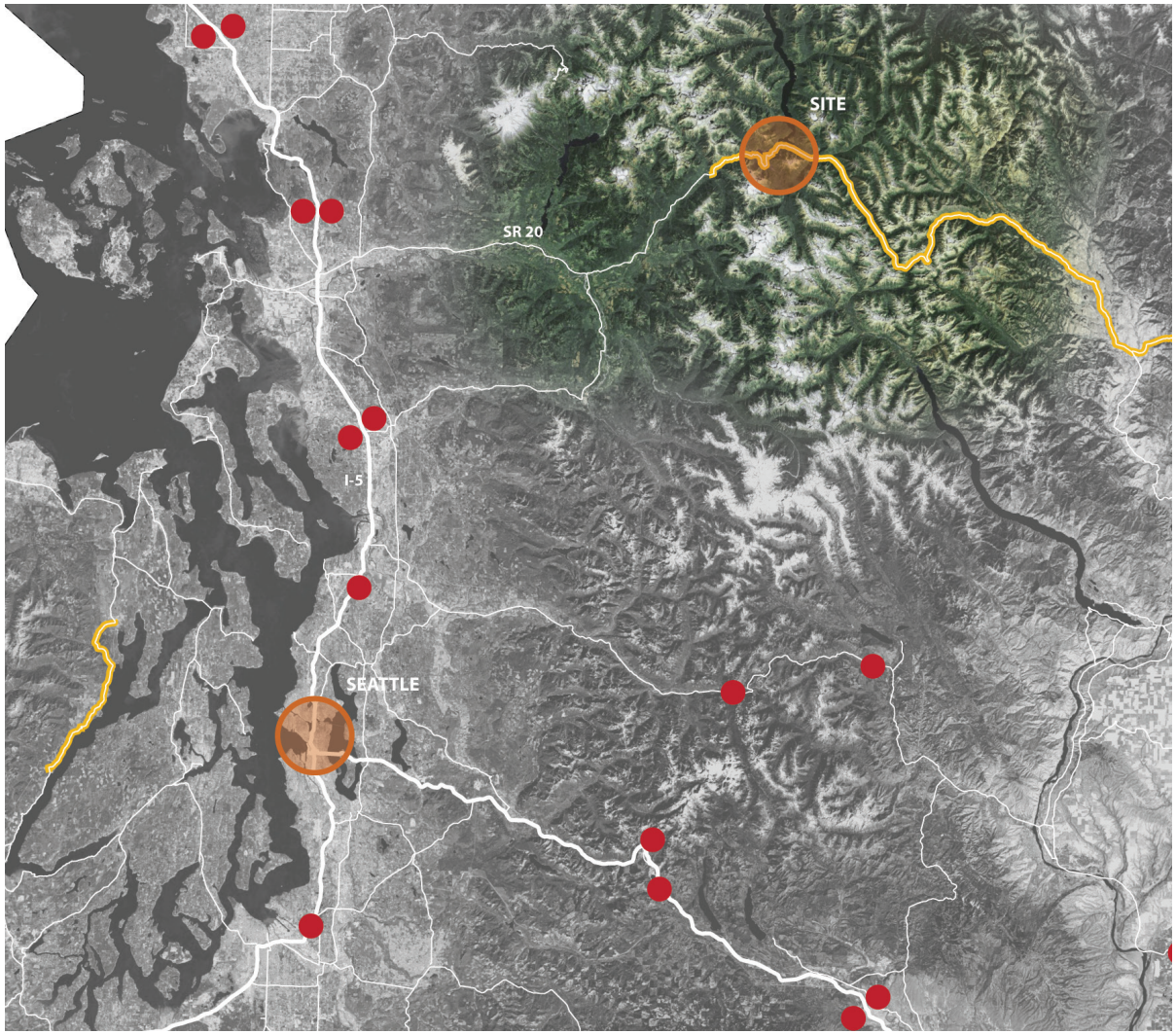


FIGURE 21 North Cascades Highway in proximity to Seattle

traffic volume, as well as considerations of the character of the region, proximity to Seattle, and the type of amenities needed to serve the infrastructure.

The site is located in the North Cascades National Park, about a three-hour drive from Seattle (Figure 21). State Route 20, more commonly known as the North Cascades Highway, runs through the National Park as the northernmost east-west route across the state. It is considered a State Scenic Byway, and in the summer, many tourists drive this portion of the highway as part of the North Cascades Loop. Recently, the park has been in the news because advocates want to expand the park by acquiring more land. The people that oppose the purchase have listed the park as the second least visited National Park in the country.[6]

The stretch of highway surrounding the site is considered a mountainous area and is known for its three hydroelectric dams, beautiful lakes, and winter weather conditions (Figure 22). According to WSDOT, the estimated average annual traffic volume is 400,000, although it should be noted that the highway closes each year in late November to early December and reopens sometime from late March to early May. The nearest Safety Rest Area to the west is located on I-5 at Bow Hill, approximately 65 miles away. To the east, the nearest SRA is Blue Lake, located about 200 miles away on SR 17.

The specific site sits at milepost 134 of State Route 20, approximately 1600 feet southeast of Ross Dam (Figure 23). Currently, it has parking for about 15 cars and a trailhead,

FIGURE 22 11 mile stretch of State Route 20, near Newhalem, WA.

FIGURE 23 State Route 20 at milepost 134.

used by both recreational hikers and Ross Lake Resort. The Resort is located on the lake, northeast of the dam. It is a floating resort that has no access by car, so guests park in the lot and hike down to the dam where a water shuttle picks them up. The site is also the location of the west gate closure for the highway during the winter months. No motorized vehicles are allowed access to the closed portion of the highway, although recreational users can still use it for snowshoeing and cross country skiing.

HISTORY OF THE SITE

The Skagit River flows from the Cascade Mountains of British Columbia to the Puget Sound in western Washington. Today, three dams obstruct the Upper Skagit River over the 10-mile stretch between Ross Lake and Newhalem. The three dams from west to east are Gorge, Diablo, and Ross. The path to constructing and using the dams as they are today has been a long and arduous one.

The first non-native exploration of the area began in the 1870s, when rumors of gold led explorers upriver. The area, still in relative isolation was tough on miners and lead to little or no profits. In 1907, the Forest Service arrived and constructed trails, bridges, lookouts and ranger stations, making the area seem more desirable to settlers and engineers.[8] The area was surveyed for its potential for hydroelectric development, and proved very promising. In 1915, Seattle's demand for electricity outgrew its capacity, and alternative forms of power were needed more than ever.

FIGURE 24 Gorge Dam (left top)

FIGURE 25 Diablo Dam (left bottom)

FIGURE 26 Ross Dam (right)

J.D. Ross, then superintendent of Seattle's Lighting Department, petitioned the Forest Service for use of the Skagit, and by 1917 had begun the Skagit River Hydroelectric Project.

The first development of the Skagit River project was at Gorge. The dam was designed to be temporary at first as a rock-filled timber crib diversion dam, later to be replaced with a diversion dam of concrete (Figure 24).[9] In 1924, the Powerhouse at Gorge transmitted its first power to the City of Seattle. The next dam to be built was Diablo, just six miles upriver. Diablo's construction was to be a constant-angle thin arch dam, using far less material and costing less than Gorge (Figure 25). When completed in 1930, Diablo was the highest thin arch dam in the world. Ruby, now known as Ross, was the final dam to be built even farther upriver. It was a constant-angle thin arch dam with a distinctive look from that of Diablo (Figure 26). Although three phases of construction were planned, the dam has only ever been completed to the second phase, which was in 1949.

Today, Seattle City Light owns and operates the dams, which generate 25 percent of the electrical power consumed in Seattle.[10]

EXPERIENCE OF THE SITE

Inspired by a reading called Emotional Cartography[11] in which the author mapped peoples' physical responses to walking around a city they were familiar with, I began to map the experiences of the site

(Figure 27). This experience is very different for a passenger in a car versus a pedestrian who has stepped out of their car. In the car, the road is always the orienting figure with views being framed by the constraints of the car windows. As a pedestrian, outside of the car, there is a freedom to explore and the ability to have expansive views. There is also an element of how you can mark a place that is worthy of pause. How does a driver know when to stop and get out of their car?

The landscape and topography of the region are significant visual elements of the site. When any part of that landscape is contradicted by a manmade object it automatically stands out. The dams are the first of these elements to contradict nature at the site (Figure 28). They are very striking features in the landscape. Ross Dam is a constant angle arch dam, meaning that it holds back the flow of water and transfers the pressure of that water to the surrounding landscape like a buttress. It is literally wedged into the landscape.

Associated with the dams are the power towers that carry the energy created by the dams to the surrounding areas. The metal towers, which start just below the site at Ross Dam, weave over the road as you drive towards Seattle, making their own path of travel where trees have been cleared (Figure 29). They are a constant reminder that nature is working to serve us as you experience the site. The towers are light in construction and stick up above the tree canopy.

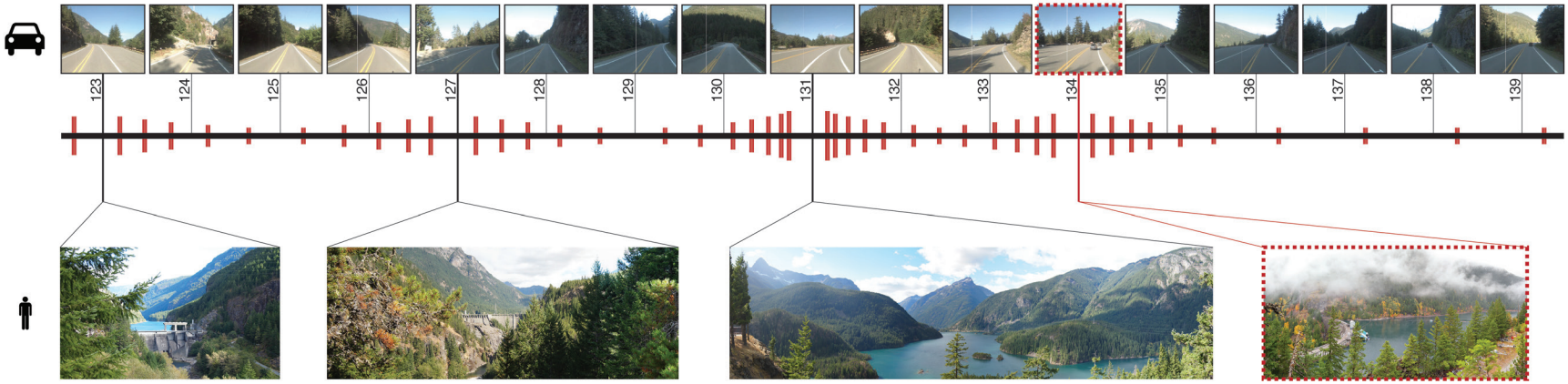
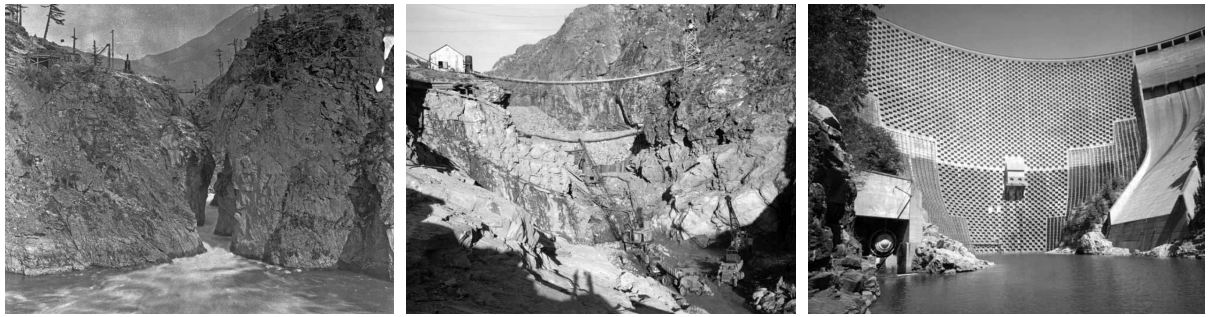


FIGURE 27 Experiential mapping of the site



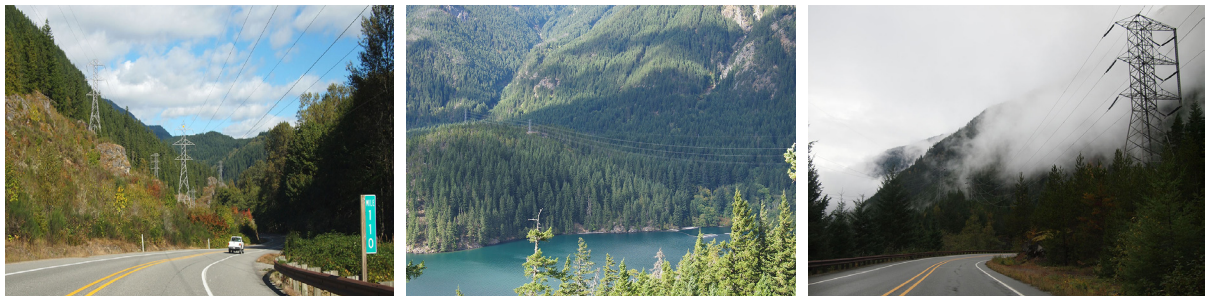


FIGURE 28 The construction of Ross Dam, before, during, and after construction (top).

FIGURE 29 Power towers along State Route 20 (middle).

FIGURE 30 Fire lookout towers of the park (bottom).

Other structures that exist in the region are the fire lookout towers. At one point there were more than 300 of these in the North Cascades National Park. Now, there are fewer towers, but they have become popular destinations for overnight hikers and campers. These towers are constructed of wood and tend to be found perched in places with good visibility to the surrounding area (Figure 30).

NOTES

1 Washington State Department of Transportation, *Environmental and Engineering Programs. Design Manual,* (Olympia: WSDOT Publication Services, 2011).

2 Washington State Department of Transportation, *The Gray Notebook. Safety Rest Areas: Annual Safety Report*, (Olympia: WSDOT Publication Services, 2012).

3 Ibid., 10.

4 Ibid., 10.

5 *WSDOT Design Manual*, 38.

6 John B. Saul, "North Cascades National Park: Make It Bigger?" *The Seattle Times*, September 5, 2012, accessed September 24, 2012, http://seattletimes.com/html/edcetera/2019066976_north_cascades_national_park_m.html.

7 *WSDOT Design Manual*, 31.

8 HAER Report No. WA-24, *Skagit Power Development: A Record of the Skagit River Hydroelectric Project*, (Seattle, WA: National Park Service: Seattle Support Office, 1998), 2.

9 Ibid, 10.

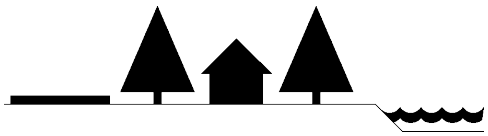
10 David Wilma, "Upper Skagit River Hydroelectric Project" *HistoryLink.org*, March 3, 2003, accessed September 19, 2012, http://www.historylink.org/index.cfm?DisplayPage=output.cfm&file_id=5347.

11 Christian Nold, ed., *Emotional Cartography - Technologies of the Self,* (Creative Commons License, 2009).

DESIGN

SITE STRATEGY

Topography, relationship to the road, and cultural conditions were major considerations in the site planning process. Looking back to the typologies of SRAs in Washington State, this site is considered a hybrid mountain and water region SRA (Figure 31). Traditional of mountain SRAs, there is heavy tree coverage of the site, with a slight buffer of landscaping along the road. The site also has the opportunity to draw from elements of water region SRAs in that it opens itself away from the road, focusing towards a view of the water, or in this case, Ross Dam and the Skagit River.



In order to fully engage in both of these typologies, the program on the site stretches further from the road than a traditional SRA. By doing this, the proposal also begins to engage the cultural conditions of the site. It is important to acknowledge the presence of the dams in the region, as well as the closure of the highway during the winter months. The result is three interventions, the entrance, the clearing and the view, each engaging in a distinct way with the landscape and offering users the ability to explore the site beyond the road's edge.

PROGRAM

Standard Safety Rest Area program elements are outlined by the ASSHTO Guide for Development of Rest Areas on Major

FIGURE 31 Hybrid Mountain and Water Region SRA.

Arterials and Freeways.[1] These guidelines are taken into consideration when planning the program, but are also challenged by the addition of new program elements that respond directly to the site and location needs.

Currently, the site has a parking area to the north of the highway and a trailhead for the Ross Dam Trail (Figure 32). Using the existing parking area provides the opportunity for a multidirectional SRA in which cars travelling both directions access the same side of the highway. The standard SRA program elements proposed for the site are parking, restrooms, picnic area and pet area. The site responsive program elements are a ranger office, winter closure gate, additional trailheads, winter recreation, sleeping and warming huts, and wildlife

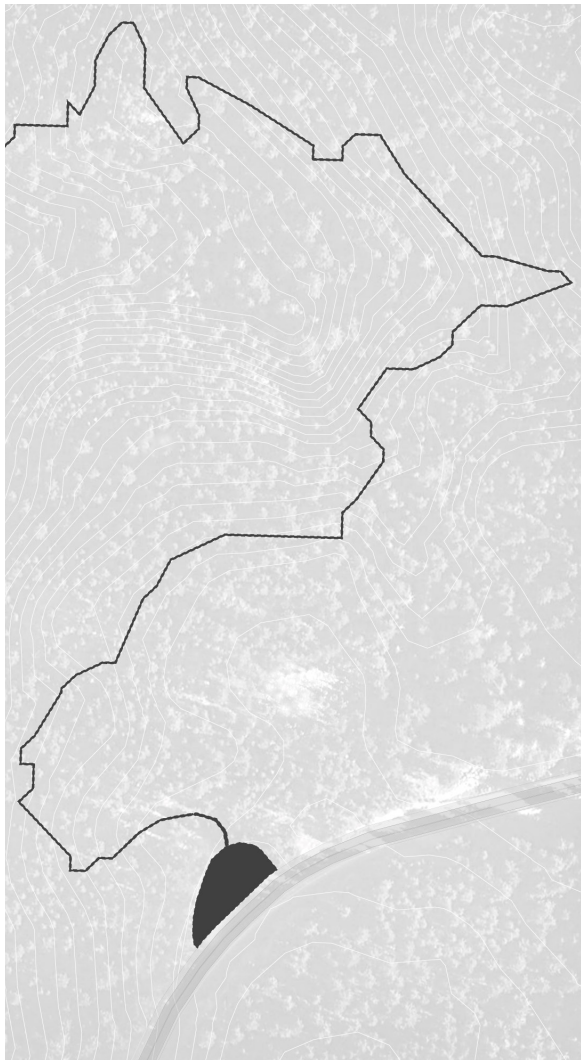
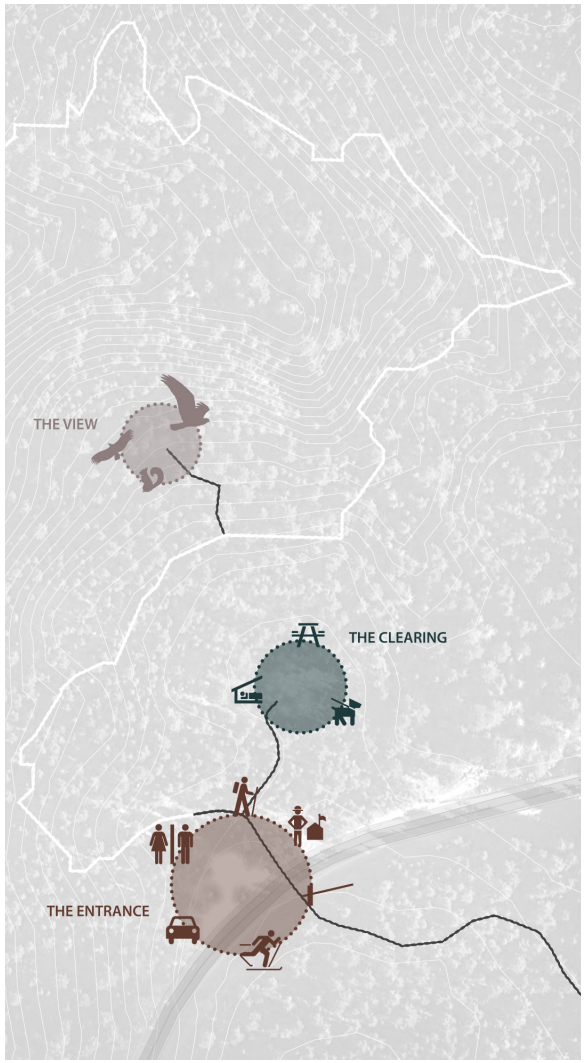


FIGURE 32 Existing site conditions.



EXISTING SRA USES

Parking

Restrooms

Picnic

Pet Area

SITE SPECIFIC USES

Ranger Station

Closure Gate

Trailhead

Winter Recreation

Sleeping Huts

Wildlife Observation

FIGURE 33 Added program elements, including how they are laid out on the site.

observation. While some of these additional elements still sit at the road's edge, others begin to engage more with the culture and landscape of the site (Figure 33).

INTERVENTION

Together, the three interventions allow the user to explore the site fully from the hardscape of the road to the organic landscape of the North Cascades. The elements disengage from the road and step down as the path winds toward Ross Dam. The overall elevation drop is 550 feet from the road to the dam. Each intervention reveals more of the landscape and regional characteristics to its users through its relationship with the ground plane and materials. Some buildings sit lightly above the ground as elements placed in the landscape, while others are grounded in the landscape as more permanent elements.

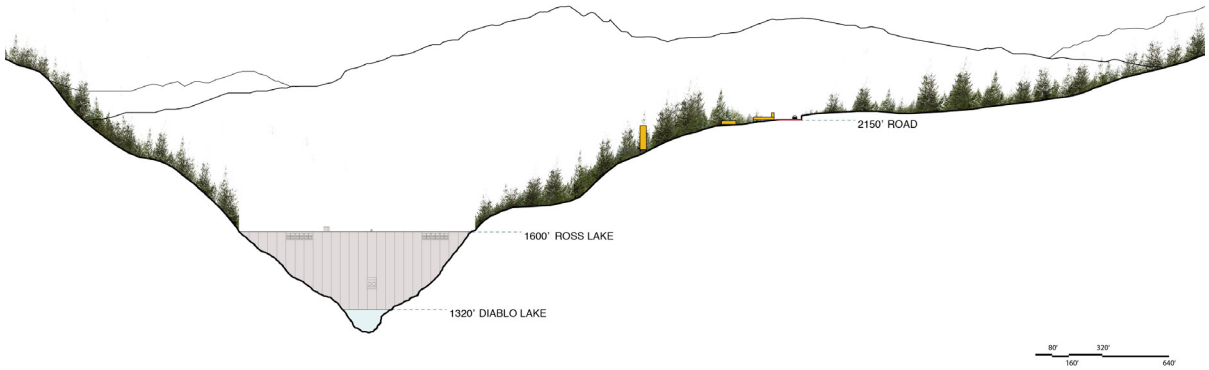


FIGURE 34 Site Section showing relationship to Highway 20 and Ross Dam.

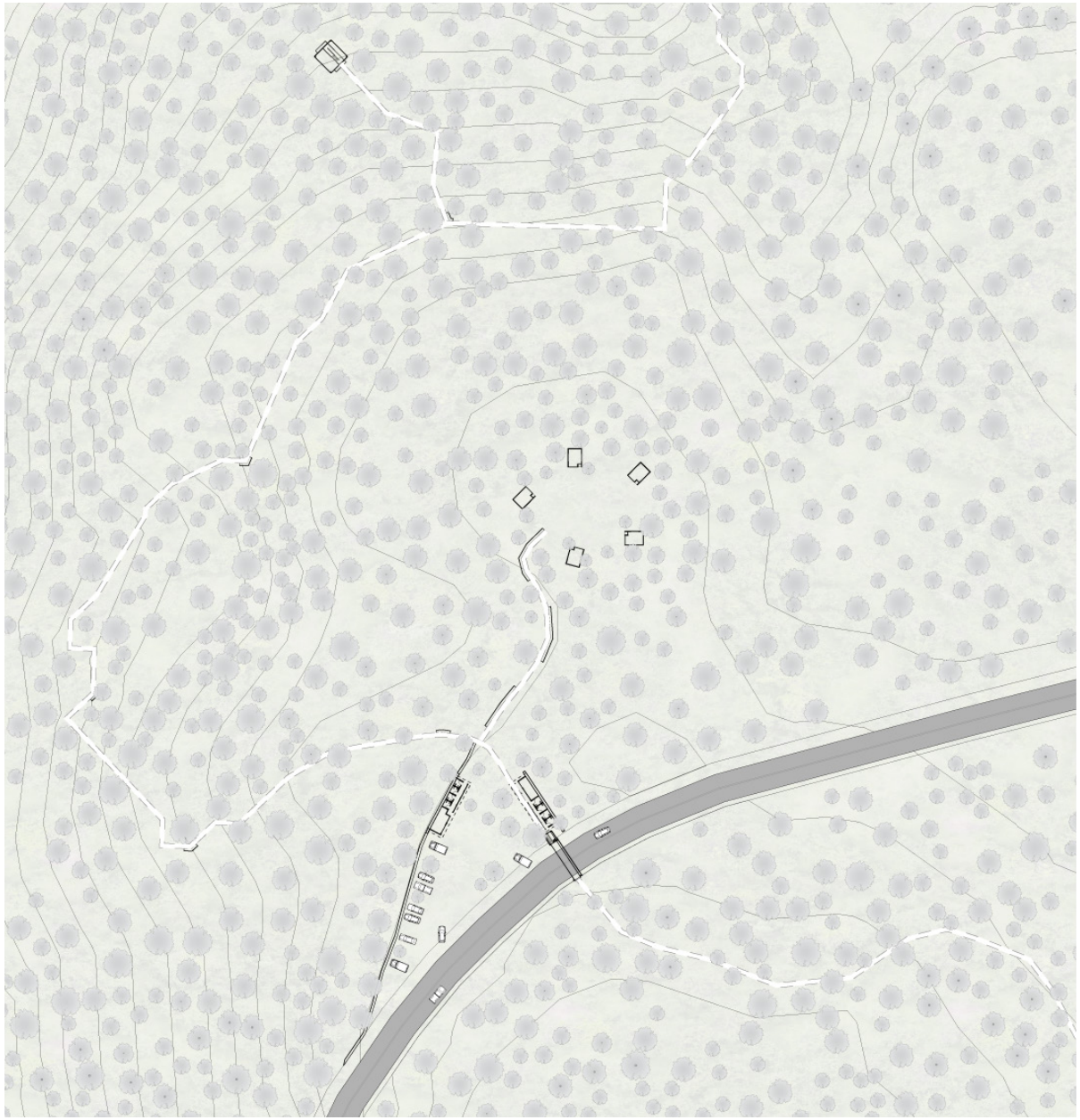


FIGURE 35 Site Plan: The Entrance, The Clearing, and The View

FIGURE 36 Approach from the East, view of winter closure gate and bridge across road.

THE ENTRANCE

The entrance to the site consists of the parking area, restrooms, ranger's office, winter closure gate, storage, and a new trailhead for recreational users. The form of the parking area is somewhat predetermined by the existing conditions of the site. A gabion wall is added at the edge of the parking area, breaking away from the road. The wall creates a barrier for the cars as an indication that they should not move beyond the edge created. One of the buildings is anchored to this wall. This building houses restrooms and a large storage room for equipment and supplies. A second building and gate tower create the other edge to the entrance. These elements are anchored to the new trail, which crosses over the road and continues to the southeast. This building houses more restrooms and the ranger office. The ranger office is intended to give a short term resting or stopping place, as there is no ranger presence on the highway in this area. The wall and building elements act as a threshold to the site beyond. They offer a gateway that, once passed through, indicates you are leaving the in-between zone of the roadside and entering the landscape (Figure 37).

The built elements at the road are each anchored to the ground as more permanent features in the landscape. As you drive the road, it is evident how rocky the area is. The gabion wall is made of the granite from the region and references the solid and grounded boundaries of the surrounding landscape. It is a low maintenance material due to it being in its natural environment.

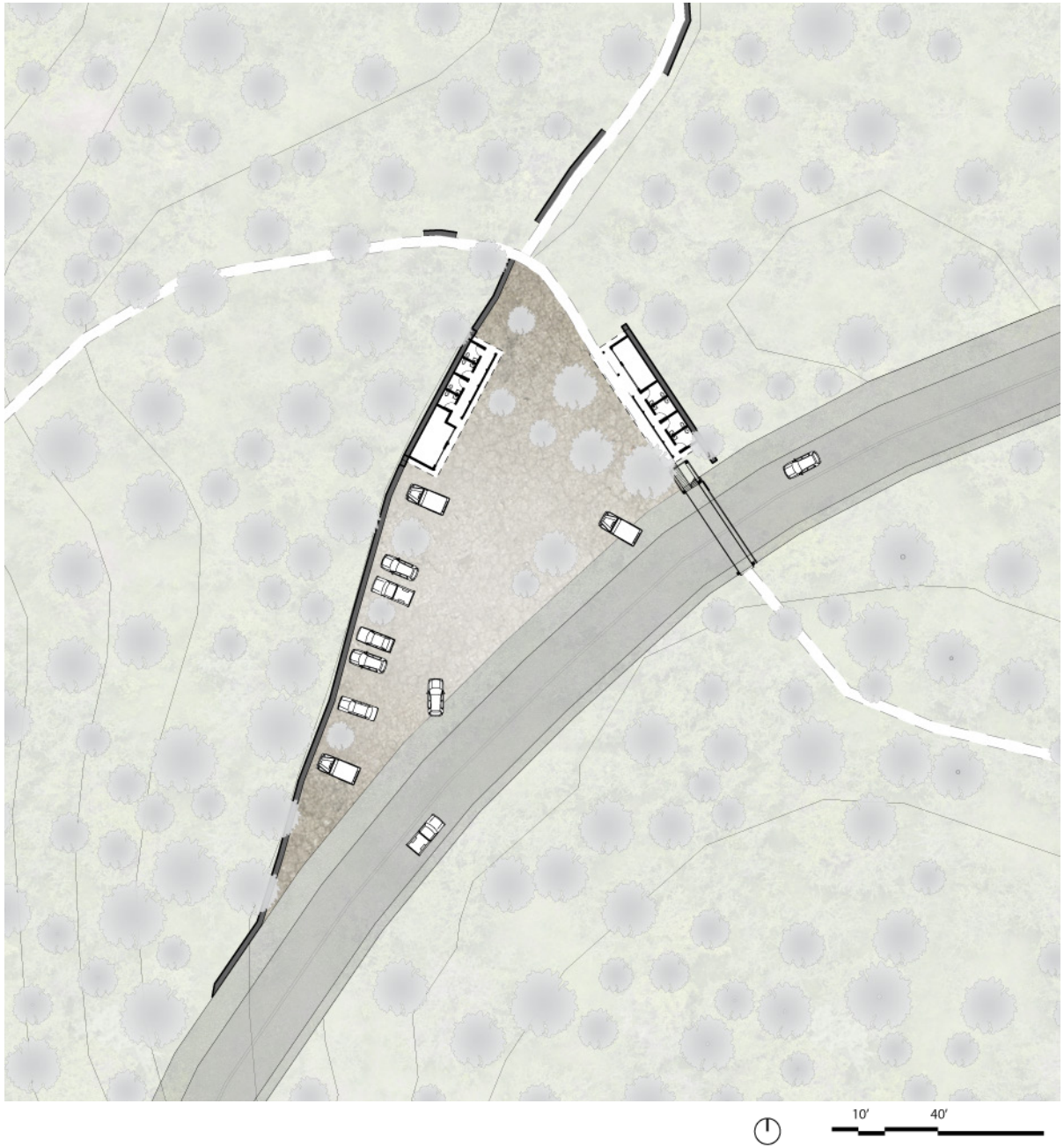


FIGURE 37 The Entrance Plan

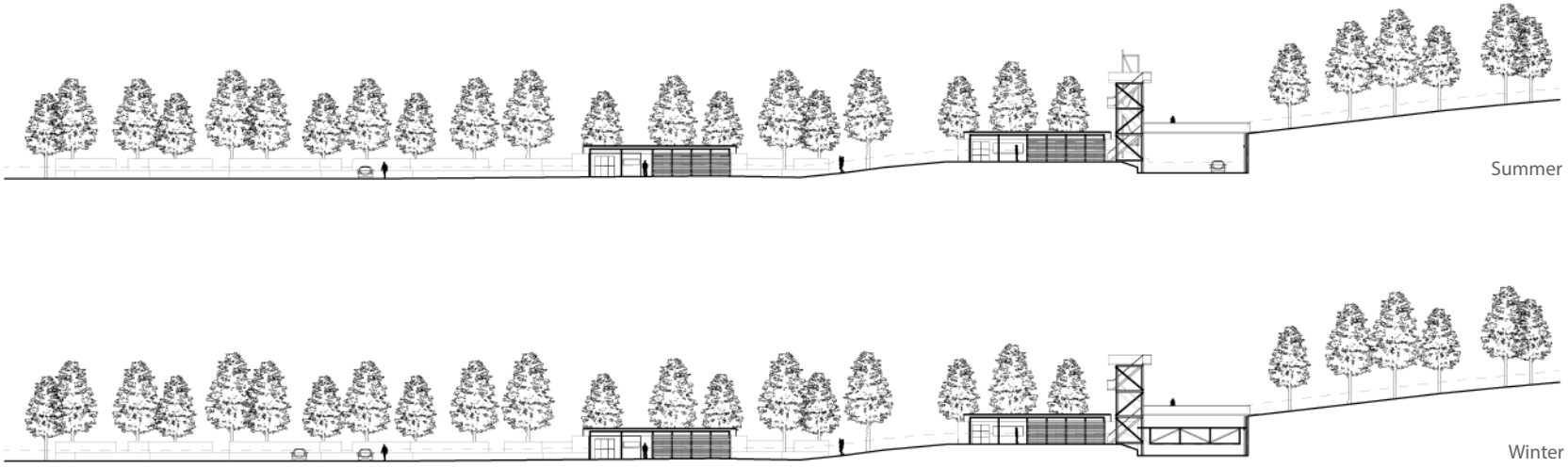
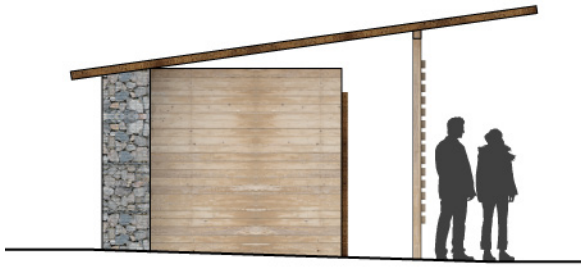


FIGURE 38 The Entrance Elevations

FIGURE 39 Ranger office and restroom building, looking towards SR 20 and winter closure gate.



The metal elements are meant to indicate enclosure or shelter. Metal is also an incredibly durable material that can withstand hard climates and shed snow in the winter. At the entrance, the large metal roof sits on the gabion wall and columns, which allow the conditioned space below to be completely free of it. The box below is a simple wood frame element. Wood is traditional of most buildings built in the region, as was seen in the fire lookout towers, and is used in places where people come into contact with the built elements.

The service box with a large roof plane for shelter references traditional roadside architecture and the symbol of utility (Figure 40).

The tower structure that holds the winter closure gate acts as a landmark at the road's edge. It is also the only place on the highway where an element crosses the road. It is easily visible by drivers coming from both directions to highlight the notion of importance of place. It is a wood frame element that begins to reference the structural characteristics and materiality of the regional lookout towers.

In the winter, the site marks the end of the road. The closure gate comes down and motorized vehicles are no longer allowed to pass this point. The gate is also a wood

FIGURE 40 Entrance building components and relationship to ground plane.

FIGURE 41 Approach from the West, view of parking area and gate tower, summer

FIGURE 42 Approach from the West, view of parking area and gate tower, winter

frame element that allows users on foot to pass through. The entrance still acts as a threshold in the same way that it does all year round, signifying the passage from the road's edge into the landscape.

THE CLEARING

As you follow the gabion wall into the site, it leads you to the clearing. Once you have passed through the threshold of the entrance the wall begins to break down into smaller pieces, allowing nature to be the dominant element. Five small huts are placed in the trees around the edge of the clearing (Figure 44). These huts are available for day or overnight users to get away from the elements and provide shelter. While each of these huts is placed within the trees, they all face towards the center of the clearing to give a sense of community to their users.

The wall that leads you to the clearing is the of the same qualities as the wall from the entrance. The metal piece used as a backing for the wall becomes a more important

FIGURE 43 Gabion and metal wall

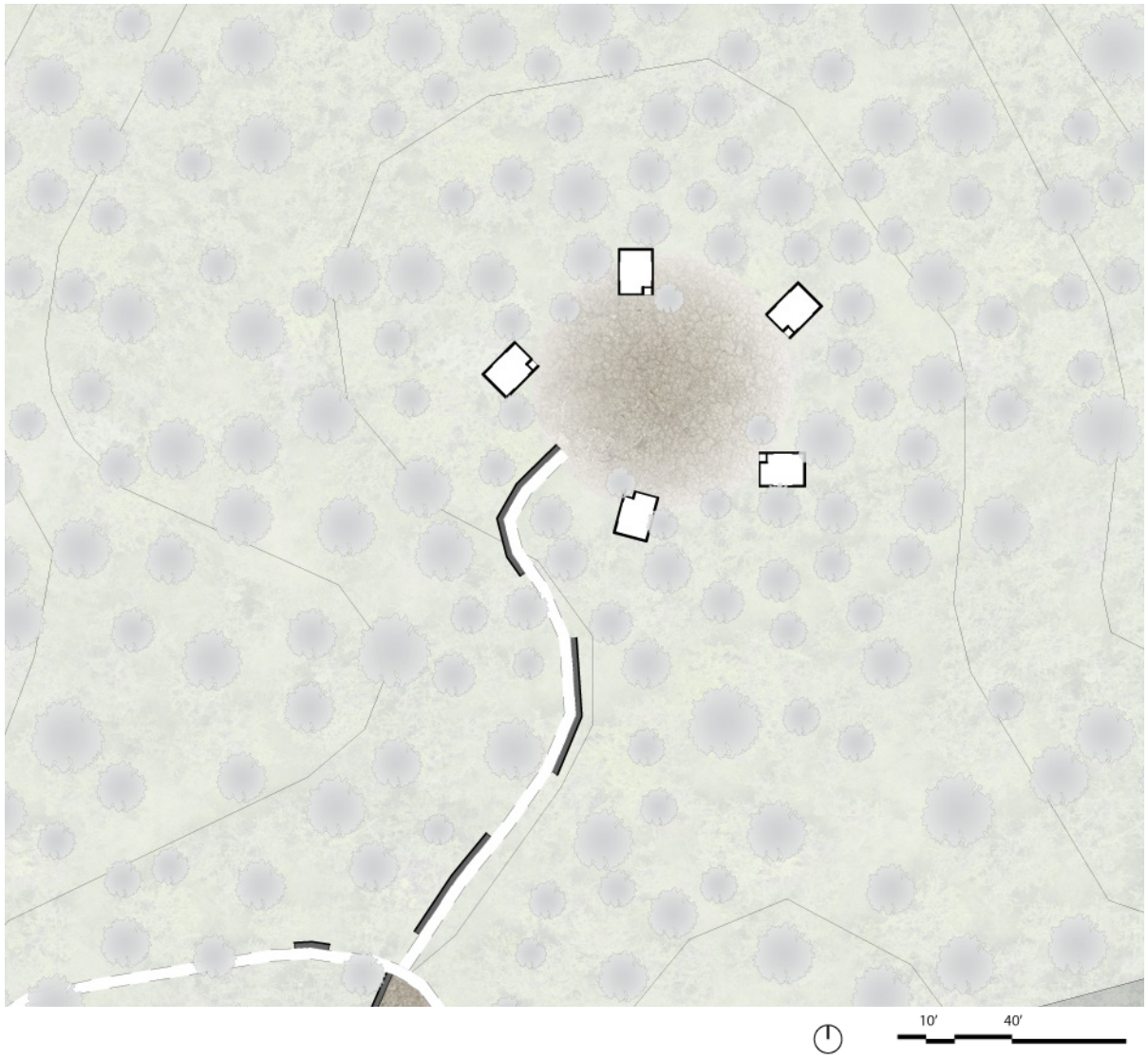


FIGURE 44 The Clearing Plan

FIGURE 45 The Clearing Elevations

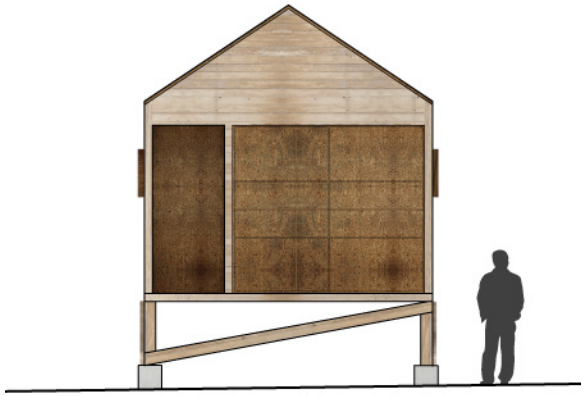


FIGURE 46 A hut in the clearing and its relationship to the ground plane.

element here. It sticks well up above the gabion portion and acts as a marker that contrasts its natural environment. The height of the metal piece is above the average snowfall, so in the winter months it will still mark the path as a guide toward the clearing.

The built components of the clearing begin to separate from the ground plane to indicate a difference between what is added to the site and what exists in the site. Two of the structures are anchored in the site on low gabion supports, while the other three stand on wood frames as less permanent elements in the landscape (Figure 46). Each hut is built as a wood frame structure, with wood siding for warmth and to reference the local vernacular. Metal is used as an indicator for enclosure in the roof, window

FIGURE 47 Interior of hut, looking out toward clearing.

FIGURE 48 Looking across clearing, summer

FIGURE 49 Looking across clearing, winter

FIGURE 50 Approach to tower

and door enclosures. The huts can be completely closed down when not in use.

Two of the huts sit above the ground at the height of the annual snowfall level. These huts express the idea of seasonal changes and act as a way of marking the winter's significance to the site.

THE VIEW

As you follow the path away from the entrance to the north, it leads you to the observation tower. This path engages more of the landscape, taking you farther from the road. Elements of the wall are still present along this path acting as a visual connector leading you to the tower. The observation tower is placed on a ridge, just off the existing path down a steep slope (Figure 51). As you ascend the tower, there are two moments of pause. One offers a view within the tree canopy, the second offers a view at the top of the tree canopy and orients you back towards the road, and the final resting place is at the top, looking down on the trees. The building orients you to Ross Dam and the Skagit River valley, allowing you to see it for the first time since leaving the road.

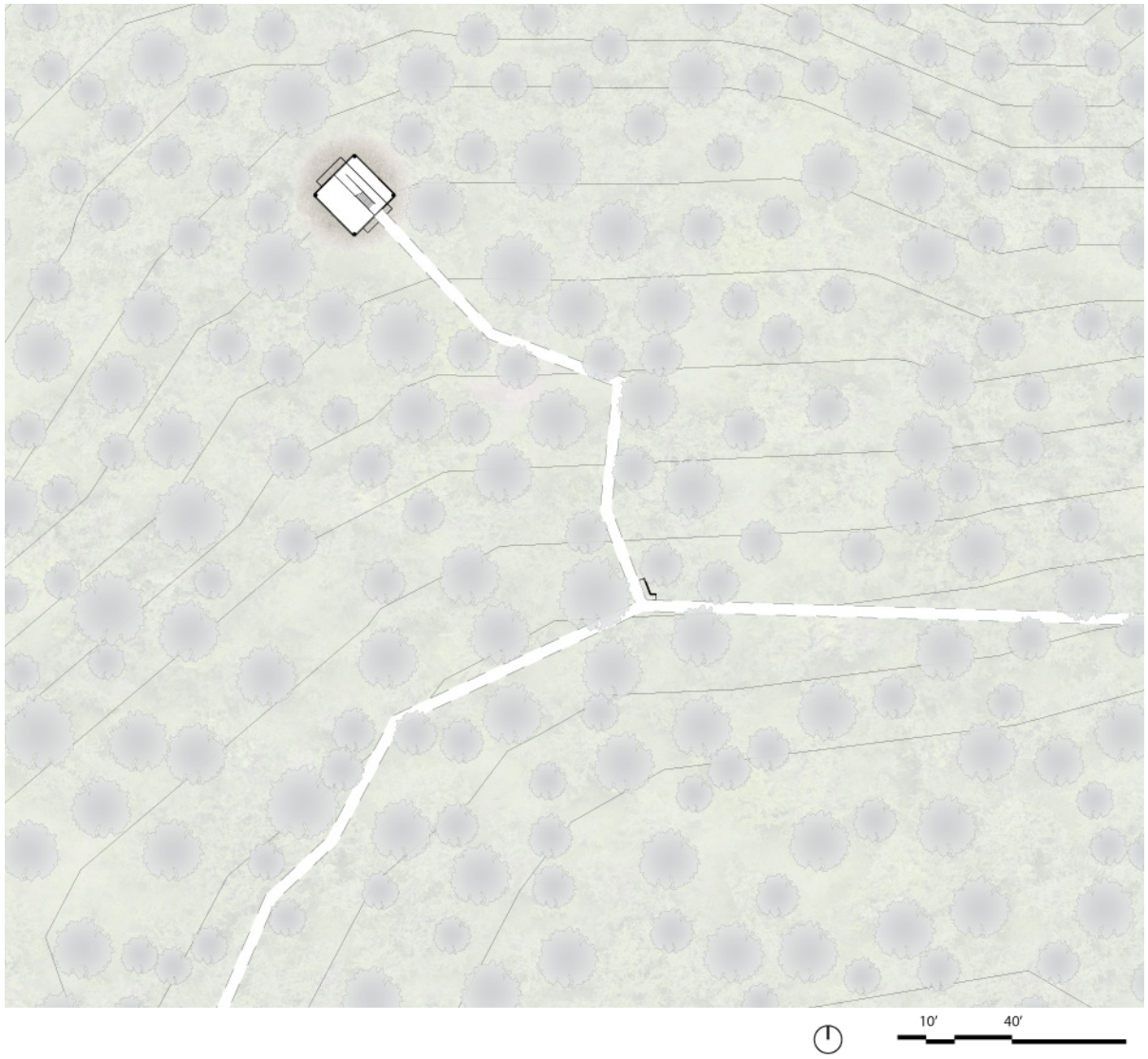


FIGURE 51 The View Plan

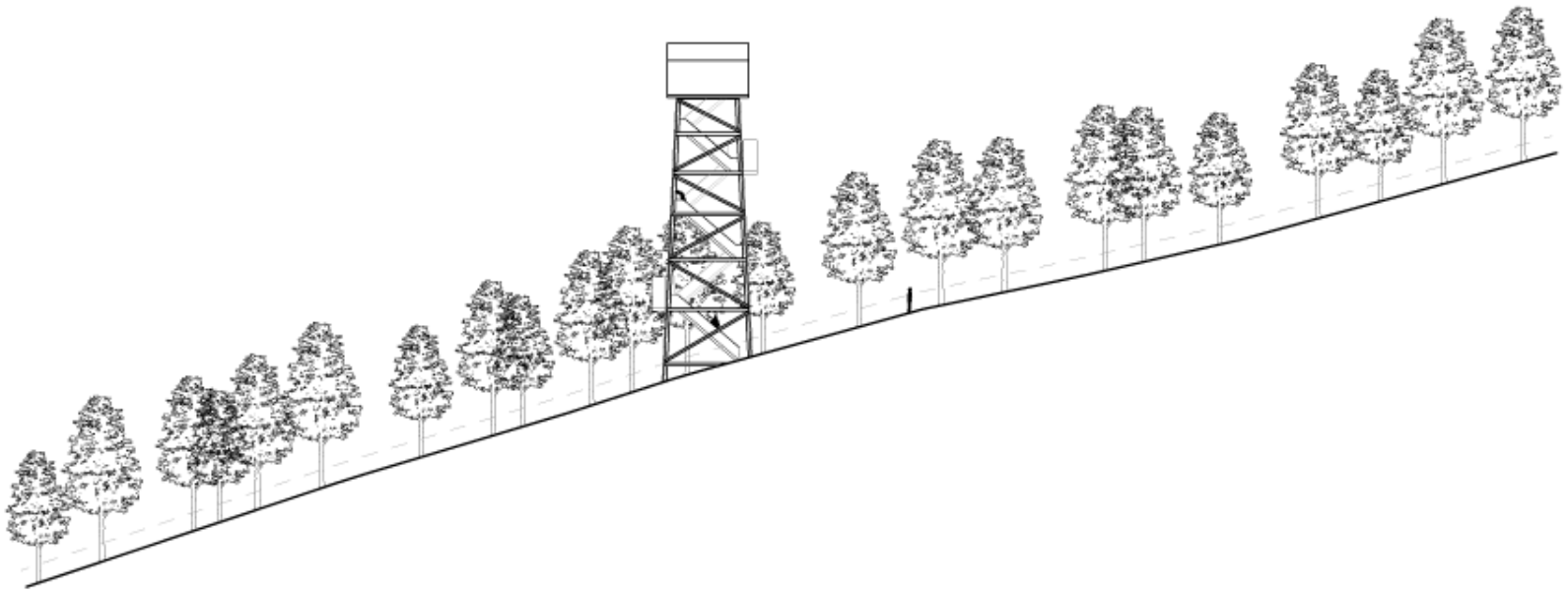


FIGURE 52 The View Elevation

FIGURE 53 Place of rest in tower.

FIGURE 54 View from top of tower.

FIGURE 55 Path to tower, summer.

FIGURE 56 Path to tower, winter.

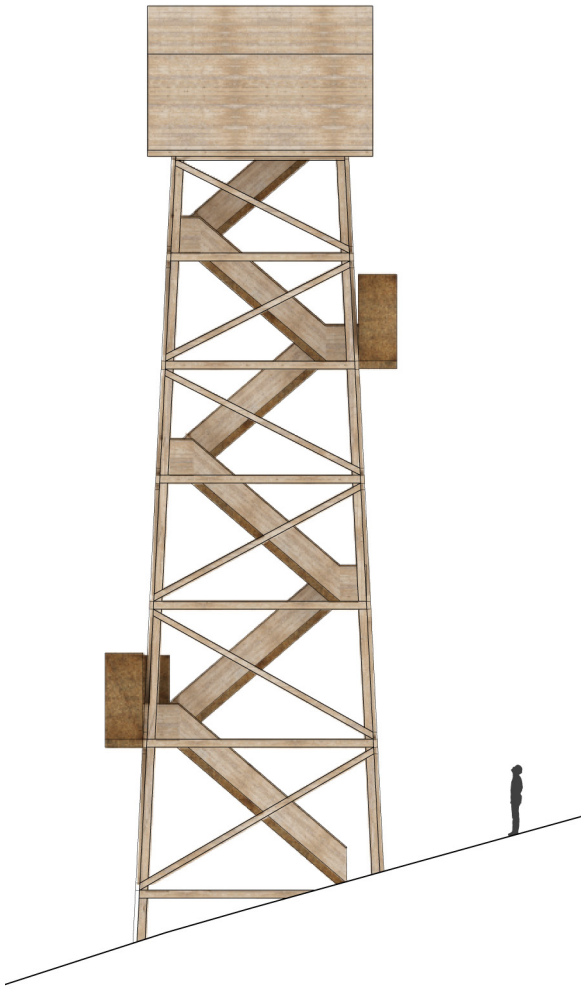


FIGURE 57 The tower and its relationship to the ground plane.

The tower is the last intervention on the site. The built structure and form directly relate to the lookout towers of the region. The entire tower is a wood frame element that sits 65 feet above the ground plane (Figure 57). As with the fire lookout towers, the stairs ascend the center of the tower until they reach the platform at the top. The landing is completely enclosed with one large opening directing your view to the dam. This differs from the traditional fire lookout towers in that they would normally have 360° views at the top. Offering a view in one direction allows the viewer to know that there is something special in that direction. In winter, the observation tower provides similar qualities to that of its summer uses. There is a large population of winter balding eagles on site that draw many bird watchers to the area.

NOTES

1 *Guide for Development of Rest Areas on Major Arterials and Freeways*, (Washington, D.C: American Association of State Highway and Transportation Officials, 2001), 27.

CONCLUSION

This thesis began as an exploration of the rest area as a typology of roadside architecture. It focused on the potential of the rest area system in Washington State as a product of the national program linked to the development of the interstate highway system in the 1950s. Within the field of architecture and design, this typology is widely viewed as a mundane subject matter, and in the real world of our highway system it is often overlooked when it comes to architectural improvements. Despite this lack of attention, the rest area is an essential part of our transportation infrastructure, particularly as the dependence on the automobile continues to increase.

As this thesis unfolded, the typological study expanded to an exploration of the cultural context of the regions these buildings represent. The Safety Rest Area program was created with the intention to portray the identity of the cities and towns people were bypassing in their cars. This idea is lost in many of the Rest Areas today, particularly in Washington State. With this exploration came a few important questions dealing with the broader implications of this study, such as: How can architecture convey a regional identity? How can a building become a roadside icon? With many choices of places to pull over, why would someone stop here?

The result of this exploration was a rest area proposal in the North Cascades National Park. Choosing a site that was representative of the region was a critical and challenging component of the design process. As the thesis progressed, the site became larger

than anticipated and diverged from the traditional roadside rest area. While the automobile was still an important agent in the design, the response became less about the means of transportation, and more about finding a solution to enhance the qualities of the site as a marker of a specific site and its regional identity.

Deciding how many interventions to undertake and how to incorporate them into the site became significant factors in shaping the design. By broadening the scope of the rest area, the project offers more to its users with site specific program elements and the consideration of seasonal changes. The various buildings' relationship to the ground plane and use of locally available materials were major considerations and are generally indicative of the importance of creating an architecture of the regional context. While many issues related to the utility of these structures and, more generally, the future of roadside architecture remain unanswered, through these explorations of site and context and a focus on local materials, this thesis explores the potential role of architecture in redefining the safety rest area as a cultural landscape.

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