

# **TRAIL MARKERS:**

identity and utility along the pacific crest trail

Katelyn Reef

a thesis

submitted in partial fulfillment of the  
requirements for the degree of

Master of Architecture

Univeristy of Washington

2014

Committee:

Rick Mohler

AnnMarie Borys

Gundula Proksch

Program Authorized to Offer Degree:

Department of Architecture



© Copyright 2014  
Katelyn Reef



Univeristy of Washington

**Abstract**

**TRAIL MARKERS:**  
identity and utility along the pacific crest trail

Katelyn Reef

Chairs of the Supervisory Committee:

Associate Professor, Rick Mohler

Associate Professor, AnnMarie Borys

Assistant Professor, Gundula Proksch

The hiking trail is an essential element of landscape architecture that is positioned between the human and natural construct. This thesis proposes a series of built interventions along the Pacific Crest Trail that mediate between the natural and human infrastructure by creating an identity for the trail, protecting the natural landscape, and supporting its future use by hikers. The creation of a *way station* as a marked access point, a *privy* for waste disposal, and *shelters* dispersed along the trail work as a system providing utility and function for hikers.



### Acknowledgements

To my family and friends who supported me along the way without ever fully understanding the idea of "studio."

To Louisa, Rick, AnnMarie, and Gundula for all of their help in turning an idea into a thesis.

To all of my peers who entertained, supported, and encouraged me through the late, stressful nights in studio over the past three years.



## CONTENTS

figures	2
introduction	7
infrastructure of the trail	11
<i>wilderness</i>	
<i>built environment</i>	
a built response	27
<i>crossings</i>	
<i>methods of the trail</i>	
design	45
<i>program</i>	
<i>way station</i>	
<i>privy</i>	
<i>shelters</i>	
conclusion	91
appendix	93
references	98
image references	100

## FIGURES

1	Hiking photo, St. Helens, WA	6
2	Diagram, infrastructures of the trail	8
3	Map, National trail system	10
4	Photo, view from car	12
5	Hiking Photo, PCT	13
6	Hiking Photo, PCT	14
7	Hiking Photo, view from PCT	16
8	Hiking Photo, view from PCT	17
9	Hiking Photo, PCT	18
10	Historical Photo, Nationa trail system	20
11	Hiking Photo, trail sign	21
12	Hiking Photo, trailhead	22
13	Hiking Photo, campsite	23
14	Photo, Appalacian Trail shelter	24
15	Hiking Photo, trail sign	25
16	Hiking Photo, PCT	26
17	Diagram, cross-section of trail	29
18	Map, Washington	30
19	Map, Site	31
20	Photo, Bridge of the Gods	33
21	Hiking Photo, PCT	34
22	Photo, hikers	34
23	Logo, Pacific Crest Trail Association	35
24	Hiking Photo, St. Helens, WA	36
25	Photo, precedent	37
26	Photo, precedent	37
27	Photo, precedent	38

28	Photo, precedent	39
29	Photo, precedent	40
30	Photo, precedent	40
31	Photo, precedent	41
32	Photo, precedent	41
33	Photo, precedent	42
34	Photo, precedent	42
35	Site map	43
36	Photo, Bridge of the Gods	44
37	Photo, hikers	47
38	Photo, hikers	47
39	Photo, hikers	47
40	Diagram, cross section of trail	48
41	Site map	49
42	Diagram, program	50
43	Diagram	51
44	Diagram	51
45	Diagram	51
46	Photo, trail	52
47	Diagram, relation to trail	53
48	Photo, site	54
49	Photo, site	54
50	Section, site	55
51	Collage, site experience	56
52	Photo, hiker on Bridge of the Gods	57
53	Perspective rendering	58
54	Site plan	59
55	Plan	60
56	Diagram	61

## FIGURES CONT.

57	Structural diagram	61
58	Perspective rendering	62
59	Section	63
60	Perspective rendering	64
61	Section	65
62	Perspective rendering	66
63	Perspective rendering	67
64	Perspective rendering	68
65	Hiking photo, PCT	70
66	Section	71
67	Plan	72
68	Section	73
69	Perspective rendering	74
70	Perspective rendering	75
71	Perspective rendering	75
72	Structural diagram	76
73	Section	77
74	Section	77
75	Site plan	77
76	Perspective rendering	78
77	Hiking photo, PCT	80
78	Section	81
79	Perspective rendering	82
80	Plan	83
81	Perspective Rendering	84
82	Section	85
83	Structural diagram	86

84	Site plan	87
85	Perspective rendering	88
86	Hiking photo, PCT	90

#### Appendix

87	Hiking photo, PCT	92
88	Hiking photo, PCT	94
89	Hiking photo, PCT	94
90	Hiking photo, PCT	95
91	Hiking photo, PCT	95
92	Hiking photo, PCT	96
93	Hiking photo, PCT	96
94	Hiking photo, PCT	97
95	Hiking photo, PCT	97



1 Hiking at St. Helens, WA

## *introduction:*

Hiking provides the experience of total immersion in nature while contributing to health and well-being. Unlike many other forms outdoor recreation, it allows for the exploration of nature and immerses the participant within the surrounding landscape. The wilderness that is traversed in an outdoor trek is typically outside the realm of our everyday experience creating a sense of the unknown and discovery. The mountains, deserts, valleys, and rivers of the terrain provide directional cues for the hiker. In addition, while providing a physical connection to nature, hiking can also create a spiritual connection with the landscape offering moments of repose and reflection. Hiking is a walk, a journey, and a pilgrimage that goes beyond a simple means to get somewhere; it is a way to engage with nature.

The trail is an essential part of the hiking experience as it forms the frame through which the hiker experiences and views their environment. Each walk through the landscape leaves traces behind that act as tangible evidence of the movement within the landscape. The layering of these traces is what forms the trails. A trail can be marked by the worn earth from past travellers or can be a more formalized path with mile markers and stops along the way. The Pacific Crest Trail was created along with eleven others across the United States with the development of the National Scenic Trail System. The network was built on a vision to provide extended trails that would maximize the potential for outdoor recreation in the scenic landscape. Establishing a formal path through the wilderness, this trail network encourages hiking as a way to both discover and become fully engaged with the landscape. The marked network of paths enables the hiker to move fluidly through the landscape in a planned and orchestrated way that



provides access to the most significant features, daily stopping points and unfolding views of the natural surroundings.

While the trail obviously creates the opportunity to explore the untamed wilderness it is important to recognize that it is a product of the built environment. While bringing us closer to wilderness, hiking also creates a built infrastructure constructed of purpose---built trailheads, markers, and signs. The challenge arises in finding balance between the natural environment of the trail and the human intervention of a built path. The impact of the occupation of landscape with the creation of the trail system cannot be ignored in the waste and wear from human use that is left behind. This thesis aims to understand the hiking trail as an essential element of landscape infrastructure that is positioned between the natural and built environments. The design will propose a series of built interventions along the Pacific Crest Trail that will support hikers and create an identity for the trail while protecting the natural landscape.

In order to create a path that mediates between the trail and the landscape, initial research will take a broader look into the role of the hiking trail in the United States, examining the existing relationship between built and natural infrastructures. The history of the trail system will inform an overview of the built infrastructure of the trail while the theoretical construct of the nature of hiking will help understand the surrounding landscape. After establishing a framework for the hiking trail as a typology, analysis will focus on the Pacific Crest Trail at the macro and micro scale. Research on the natural terrain and built infrastructure of this long distance trail will be used to make the specific site selection and determine the program for a series of design interventions. An analysis of the trail and its users, and relevant case studies will work towards creating a methodology on how these built interventions will relate to the site and program.

2 Emphasizing the the built and natural construction of the trail



3 National Trail System

## *infrastructures of the trail:*

When travelling along an outdoor trail, a hiker interacts with the built infrastructure of the trail and the surrounding natural landscape. The trail is a part of the larger infrastructure of pathways with mile markers and trail stops that carve a route through surrounding wilderness. The trail serves as the gateway to escape into nature and the main attraction for hiking. In the book, Landscapes of Movement, the authors describe different methodologies for studying trails, paths, and roads. One is a phenomenological approach that focuses on the spatial relationships of landscapes; the other, which they call, “structuration theory,” understands trails, paths, and roads as results of the physical alterations of landscape through everyday life.<sup>1</sup> Using both these approaches, the trail can be studied in order to understand the factors that influence the hiking experience and how they can then be used as a framework for built interventions along the trail.

---

<sup>1</sup> Snead, James E., Clark L. Erickson, and J. Andrew Darling. Landscapes of Movement. University of Pennsylvania Museum of Archaeology and Anthropology. Philadelphia. 2009.

## WILDERNESS

Roderick Nash, environmentalist and historian, describes the wilderness as a “quality that produces a certain mood or feeling in a given individual...heavily meaning of a personal, symbolic, and changing kind as to resist definition.”<sup>2</sup> Through the trail hikers gain access to this symbolic landscape that offers the potential of a personal connection to natural surroundings. Using the phenomenological approach as described in Landscapes of Movement, the landscape can be understood as both a spatial and spiritual experience. As argued by Snead, Erickson, and Darling, the spatial influence of the wilderness is built on the idea that the “human body is the principal, shared element in our experience of our surroundings.”<sup>3</sup> A hiking trail introduces an environment of a vastly different type and scale in which our bodies perceive space as we move through the landscape rather than observing it from afar.

The perception of space is influenced by the speed, scale, and surroundings in which we travel. Studies of how travel along the road influences the perception of space are applicable in analyzing how walking a trail influences the hiker’s perception of space. In the book Routes, Roads and Landscapes, author Gernot Bohme notes that for many the general interaction with landscape is that of a static framed image, at the scale of a photograph or a painting.<sup>4</sup> A closer interaction with the landscape comes from travelling by car via road or in the case of hiking, through the trail. In a car the road dominates the visual experience, as our gaze tends to stay straight ahead with the windshield serving as a frame of the surroundings. The speed of the car allows these “framed” views to pass quickly, creating a film of blurred images that provides an overall perception of the environment but not a clear picture.<sup>5</sup>



4 Landscape view from car window

---

2 Backhaus, Gary and John Murungi. Symbolic Landscapes. Springer Science+Business Media. Baltimore. 2009

3 Snead, James E., Clark L. Erickson, and J. Andrew Darling. Landscapes of Movement. University of Pennsylvania Museum of Archaeology and Anthropology. Philadelphia. 2009. pp. 14

4 Hvattum, Mari, Brita Brenna, Beate Elvebakk and Janike Kampevold Larsen. Routes, Roads and Landscapes. Ashgate Publishing Limited. England. 2011

5 *ibid.*



5 Hiker on the Pacific Crest Trail at Kendall Catwalk

Hiking, in comparison, slows down this film of the landscape, allowing the hiker to fully engage with their surroundings. Unlike travelling in a car, walking gives a hiker the flexibility to stop and reflect, turn around, or even backtrack in order to take in a view.

In nature, the diminutive character of human scale becomes very apparent when comparing to the vast expanse of the wilderness. Bohme expands on this idea of the scale of landscape, noting that in the city and in nature, a person is nothing but a pixel in the overall view. A natural landscape can go on for miles in the distance, disappearing along a horizon that seems infinite.<sup>6</sup> The landscape creates a sense of being part of something bigger than us, a natural environment that is unaltered by humans. Hiking is a way to reconnect with the landscape and rediscover the tremendous scale of nature that is often lost in everyday urban life.

Just as the hiking trail enables and shapes our experience of the natural surroundings of the wilderness in its physical scale and extent, it also draws upon humanity's spiritual connection to nature. As discussed in [Symbolic Landscapes](#), a retreat into the wilderness along a pathway has religious and symbolic origins.<sup>7</sup> While contemporary wilderness hikers are not usually setting out on a religious trek, many connections can be drawn between the spiritual journey of the hike and the journey of the pilgrim; it places one out of ordinary life patterns, it focuses consciousness on bodily experience, and it is expected to be difficult.

The wilderness is not a place of permanent human habitation, so the hiker's presence is only temporal, as they move from one place to another. Just as the sojourner searches for transcendence in the landscape, the hiker is a contemporary version who is now seeking spiritual meaning in the wilderness. Noel Grove writes, "In their search for retreat, hikers and monastics have more in common

---

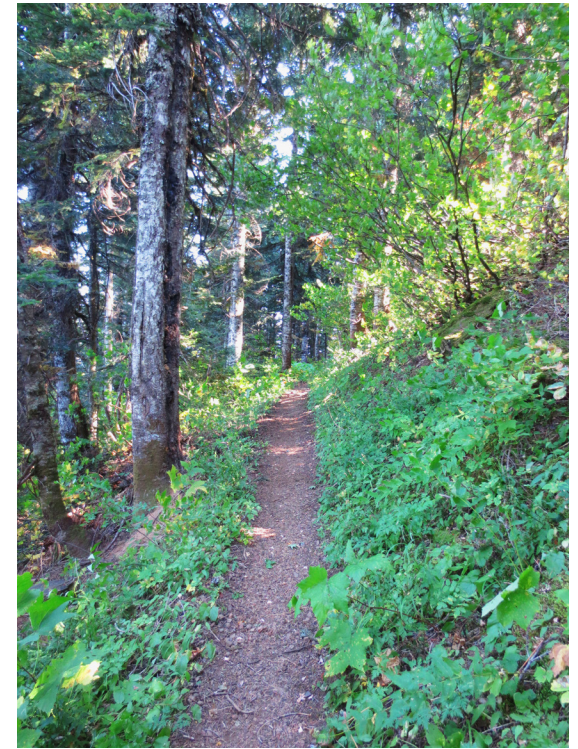
6 Hvattum, Mari, Brita Brenna, Beate Elvebakk and Janike Kampevold Larsen. [Routes, Roads and Landscapes](#). Ashgate Publishing Limited. England. 2011

7 Backhaus, Gary and John Murungi. [Symbolic Landscapes](#). Springer Science+Business Media. Baltimore. 2009

than they realize. On the trail, hikers revert to lives of simplicity, denying themselves modern comfort, seeking purification in an uncorrupted world.”<sup>8</sup> Trails offer a guided path that hikers can follow into the wilderness, retreating into a world void of human habitation that provides solitude and reflection that can serve as a welcome contrast to urban life.

Long distance trails such as the Appalachian Trail and Pacific Crest Trail offer the opportunity for hikers to attempt a journey that from beginning to end measures over 2,000 miles. Thru-hiking or hiking a long-distance trail from end to end, is a long, strenuous trip through the wilderness that is related to pilgrimages of the past. In his essay in Symbolic Landscapes, Kip Redick describes the “modern pilgrimage” noting how like the nomadic shepherd of the past, a hiker must wander a landscape void of human habitation while carrying all of their belongings with them. A shared sense of community can be found in both medieval pilgrims in Europe and long-distance hikers as they meet along the trail and share shelter, goods and stories.<sup>9</sup> The experience of hiking can be isolating, as the individual confronts the large scale of the wilderness and at the same time, is shared with wildlife and fellow hikers, bonding through their common experience of the wilderness. The act of hiking the trail has the potential of becoming a spiritual that in many ways becomes just as transcendent as a pilgrimage.

In addition to evoking an emotional journey for the hiker, trails also have the ability to take on the story of the landscape. Elliott West focuses on the narrative that lies within the hiking paths of America in his article, “American Pathways.” He describes how with trails, “you can walk where earlier travelers walked and vicariously share their experiences.”<sup>10</sup> Like the pioneers searching for new land, the contemporary hiker discovers the rich history of the land and the people who walked before them,



6 Hiking along the Pacific Crest Trail

---

8 Backhaus, Gary and John Murungi. Symbolic Landscapes. Springer Science+Business Media. Baltimore. 2009

9 ibid.

10 West, Elliott. “American Pathways.” *Montana: The Magazine of Western History*. Vol. 51, No. 3 (Autumn, 2001). pp. 20-31

making a physical connection to the past. A trail, as West describes, can be considered a physical artifact because of its marking in the land and also due to the memories associated with these markers.<sup>11</sup> The history of the country can be traced through the storylines of historic trails. The Oregon Trail, for example, represents not only a narrative of the people who travelled along it but also the history and significance of their journey.

Like the concept of the frontier in America, hiking trails serve as a boundary and a horizon that represents conquest and exploration. Those who carved the first trails out of the wilderness made both conscious and unconscious decisions determining their route. In choosing whether to cross a river or climb up a mountain, the founders of the nation's hiking trails created their own narrative for the trail. As Elliot West observes, with each movement, a hiker can read the story of the surroundings through the eyes of those who walked the trail before.<sup>12</sup> While never able to fully know the identity and motivations of these first pioneers, one can take in the same views, and share the experiences of this previously occupied wilderness. As West suggests, the power of speculation is essential to the experience of hiking as the trail marks a story that can be re-enacted again and again.

Alongside this historical recreation, the experience of walking the trail recreates nature. Hiking allows for a spatial and spiritual exploration of the wilderness that is framed by the path that is taken. By slowing down the speed at which we travel, opening up our views of space, and expanding the scale of our environment, the hiking trail creates a distinct perception of the surrounding natural landscape. The trails also make use of the romanticization of nature in the hiker's attempt at discovering an "untouched wilderness." Beyond just passing through the landscape, hiking promotes moments of reflection and repose along the way. Building within this natural setting of the trail will encompass both the spatial

---

11 West, Elliott. "American Pathways." *Montana: The Magazine of Western History*. Vol. 51, No. 3 (Autumn, 2001). pp. 20-31

12 *ibid.*, pp. 20-31

and spiritual complexities of this mobile experience. Understanding how a built intervention frames the landscape, fits into the terrain, and adds to the narrative of the trail will influence both its placement and design along the trail.



7 View of Columbia River from the Pacific Crest Trail

8 Hiker stopping for a break on the PCT



## BUILT ENVIRONMENT

While bringing the hiker into the wilderness, the trail is part of a built infrastructure created to get humans from one place to another. Roads, railroads, trails and paths are all a part of an infrastructure of human transport that defines the role of the hiking trail as a constructed system of movement. In Landscapes of Movement, Timothy Earle defines the trail as a “regional and long-distance route marked by repeated use.”<sup>13</sup> This distinction is important when compared to other paths which he defines as local trodden ways, unmarked and unmodified, that provide routes of general movement. While often considered as the same type, informal paths are not distinguished by recurring use or physical marks in the earth. Trails require markings to aid direction because they involve moving people through unfamiliar terrain. A distinct set of typologies of signs, markings, and structures have come to define the built infrastructure of the trail. While also having a distinct built typology, roads are a much more regulated infrastructure governed by labor, capital, and state and local entities. Vittoria Di Palma defines roads as physical entities within the landscape that are a part of an existing network, pointing out a distinct historical difference with the trail. Hiking trails existed all over the country, making wilderness accessible but up until the 1960s, had no governing entity maintaining their conditions.<sup>14</sup>

One of the major players in establishing a national trail system was Benton Mackaye, whose 1921 article in the *Journal of the American Institute of Architects* outlined his vision for a backwoods highland footpath in the Appalachian mountain range.<sup>15</sup> His idea, while specific to this region, became a catalyst in passing national legislation on the development of recreation trails. MacKaye proposed a trail whose,



9 Pacific Crest Trail marker

13 Snead, James E., Clark L. Erickson, and J. Andrew Darling. Landscapes of Movement. University of Pennsylvania Museum of Archaeology and Anthropology. Philadelphia. 2009. pp. 14

14 Hvattum, Mari, Brita Brenna, Beate Elvebakk and Janike Kampevold Larsen. Routes, Roads and Landscapes. Ashgate Publishing Limited. England. 2011

15 Elkinton, Steven. The National Trails System: A Grand Experiment. National Park Service, Department of Interior. Washington D.C. November 8, 2008.

...ultimate purpose is to conserve, use and enjoy mountain hinterland...The Trail (or system of trails) is a means for making the land accessible. The Appalachian Trail is to this Appalachian region what the Pacific Railway was to the Far West---a means of "opening up" the country. But a very different kind of "opening up." Instead of a railway we want a "trail way."<sup>16</sup>

Mackaye used the existing infrastructure of the railway and highway system as a model for the potential of trails to form a regulated system that encompassed construction, maintenance, and protection. His vision combined recreation and conservation in a national trail that could also serve as a wilderness escape. Mackaye's idealistic approach to welcoming hikers into the landscape required pragmatic planning in order to move forward.

In May of 1965 President Johnson delivered the "Beautification Speech" at a White House Conference on Natural Beauty, outlining his views on environmental and conservation concerns related to the natural landscape. Johnson spoke specifically about usage of existing trails on Federal lands for a national trail system, referencing the "inspiring model" of the Appalachian Trail.<sup>17</sup> His speech sparked a nationwide study called Trails for America, dealing with the recreational opportunities that trails provide to the public that served as the foundation for legislation to create a national system. The resulting National Trails System Act of 1968, designated three types of national trails: National Recreation Trails, National Scenic Trails, and connecting-and-side-trails.<sup>18</sup> The establishment of this nationwide network is important to understanding the trail as part of a greater infrastructure. While often seen as informal paths into the wilderness, national trails are governed by the National Park Service and the USDA Forest Service in order to preserve and protect their unique qualities.

---

16 Elkinton, Steven. [The National Trails System: A Grand Experiment](#). National Park Service, Department of Interior. Washington D.C. November 8, 2008.

17 *ibid.*

18 *ibid.*



10 President Johnson presenting the new National Trail System, 1965



11 Sign on the Pacific Crest Trail

While part of this greater infrastructure of national and state networks, hiking trails also consist of their own unique infrastructure of built elements. As mentioned earlier the physical definitions of a trail is tied to the distinct markers that are placed along it in order to provide direction and facilitate recreation. Thus the hiker's experience of nature on the trail is defined by both human and non-human interventions.<sup>19</sup> The latter includes the natural elements of the wilderness such as the character of the topography, vegetation, and wildlife encountered along the trail. Human interventions further define the built infrastructure of the trail: signs and markers, trailheads, and shelters. The existing architecture of the trail influences the experience of the hiker by marking its boundaries, choreographing the route, and creating a sequential chronology.

Nature as a place for exploration, discovery, solitude and reflection is made accessible by the trail. The book, Constructing the Nature Experience: A Semiotic Examination of Signs on the Trail, analyzes how signs along the trail are a part of the hiker's individual experience in nature. In their most basic function trails provide a route so that visitors can find their way, stay safe, and stay within prescribed boundaries, not damaging sensitive environments. As Lekies and Whitworth argue, signs along the trail also consciously and unconsciously influence the behavior and movement of the hiker.<sup>20</sup> Mile markers and signs labeling the trail define the direction the hiker will travel and also help in establishing points of reference. Hikers can use mile markers to coordinate with maps in understanding distance travelled. Signs also have an unconscious influence on the hiker as they "indicate the natural setting is well-managed and that there is a human presence."<sup>21</sup> The hiker follows signs and markers because they provide reassurance they are on the correct path and choreograph the hike by calling attention to

---

19 Lekies, Kristi S. and Bernadette Whitworth. *Constructing the Nature Experience: A Semiotic Examination of Signs on the Trail*. *The American Sociologist*, Vol. 42, No. 2-3. September 2011. pp. 249-260

20 *ibid.*

21 *ibid.*



12 Pacific Crest Trail Trailhead, Snoqualmie Pass, WA

certain parts of the landscape and highlighting views.

Another important part of the built infrastructure of the trail is the trailhead. The trailhead serves to mark the entry to a trail acting as a “gateway” to the wilderness. A typical trailhead consists of a kiosk listing vital information from the National Parks and Forest Services including trail maps, regulations of use, weather conditions, forest ranger station locations, and safety issues.<sup>22</sup> Trailheads differ in the size and amount of the provided amenities ranging from a simple kiosk to a wilderness center. Parking and restroom facilities are sometimes provided in order to encourage users to travel to the trail.<sup>23</sup> As the entry point, trailheads serve as the first sign of built infrastructure in the wilderness and are a crucial part of the hiking experience.

Many hikers use backcountry supplies like tents, tarps, and hammocks for sleeping in the open on the trail. However there are some long distance trails that provide built overnight shelters for hikers to use instead of making their own campsite. These structures go by different names around the world and have many variations of structure, placement, and amenities but are all part of a basic typology hiking shelters. A small historic example of hiking shelters is the bothies in Scotland. Part of a system of rural recreation facilities, bothies are built throughout the mountainside as a place for backcountry campers and hikers to take shelter overnight. These simple buildings with a single room and basic amenities; their name is Gaelic for ‘dwelling place.’<sup>24</sup> These overnight shelters provide protection while also striving to maintain a primitive quality that reflects their environment.

Hiking shelters in their simplest form are built to provide protection from the outdoors for overnight stays. But they also become social centers along the route allowing for hikers to interact with one another. The Appalachian Trail has over 250 backcountry shelters that are located throughout the



13 Tent Camping

22 “Trailheads.” *USDA Forest Service*. Web. May 12, 2014.

23 Lekies, Kristi S. and Bernadette Whitworth. *Constructing the Nature Experience: A Semiotic Examination of Signs on the Trail*. *The American Sociologist*, Vol. 42, No. 2-3. September 2011. pp. 249-260

24 Crowe, Lynn and Paul Reid. “*The increasing commercialization of countryside recreation facilities: the case of Scottish mountain bothies.*” *Managing Leisure* 2. 1998. pp. 204-212

trail, usually around nine to fifteen miles apart.<sup>25</sup> Shelters along the Appalachian Trail range in size and occupancy, the most basic being a typical “lean-to” with a shingled or metal roof, a wooden floor and an opening to the elements on one side, similar to the bothy. There are also larger shelters with bunks for hikers to stay in more conditioned spaces.<sup>26</sup> No matter the size, shelters become a place of human interaction along the sometimes isolating trail where hikers can exchange stories and supplies, while also providing rest for the next day’s hike.

Signs, markers, trailheads, and shelters all make up the existing built infrastructure of the trail. They represent tangible evidence of man’s presence in the wilderness. The hiking trail is representative of both the built infrastructure of this man-made system and the natural construct of the surrounding wilderness. The National Trail System establishes a formal infrastructure of trails in order to conserve and protect the wilderness while also allowing for its exploration by hikers. This thesis will address both the natural and built infrastructures of the trail in order to provide a better experience for the hiker and preserve the beauty of the wilderness they seek.



14 “Lean-to” on the Appalachian Trail

---

25 “Appalachian Trail Conservancy - Camping and Shelters” *Appalachian Trail Conservancy*. Web. June 12, 2014

26 *ibid.*



15 Sign on the Pacific Crest Trail



16 Alpine Lakes Wilderness, Pacific Crest Trail

## *a built response:*

This thesis seeks to create an identity for the Pacific Crest Trail (PCT) through a series of built interventions that mark and preserve the trail while also providing amenities to serve the needs of hikers. The understanding of the natural and built infrastructures of this wilderness path can now be applied to the Pacific Crest Trail in order to establish the specific site and program for the built interventions. This section will use the theoretical framework of built and natural infrastructures to analyze the PCT as a system of diverse terrain and natural conditions that intersect with existing built infrastructures. The intent is to locate the proposed series of interventions along the trail that respond to both the natural and human conditions of the trail. The analysis will not take on the entirety of the PCT but will focus specifically on Washington as a way to narrow down possible site locations. While this thesis only presents one series of site-specific interventions, the methodology used in determining site and program will show the potential of interventions in other parts of the PCT.

## CROSSINGS

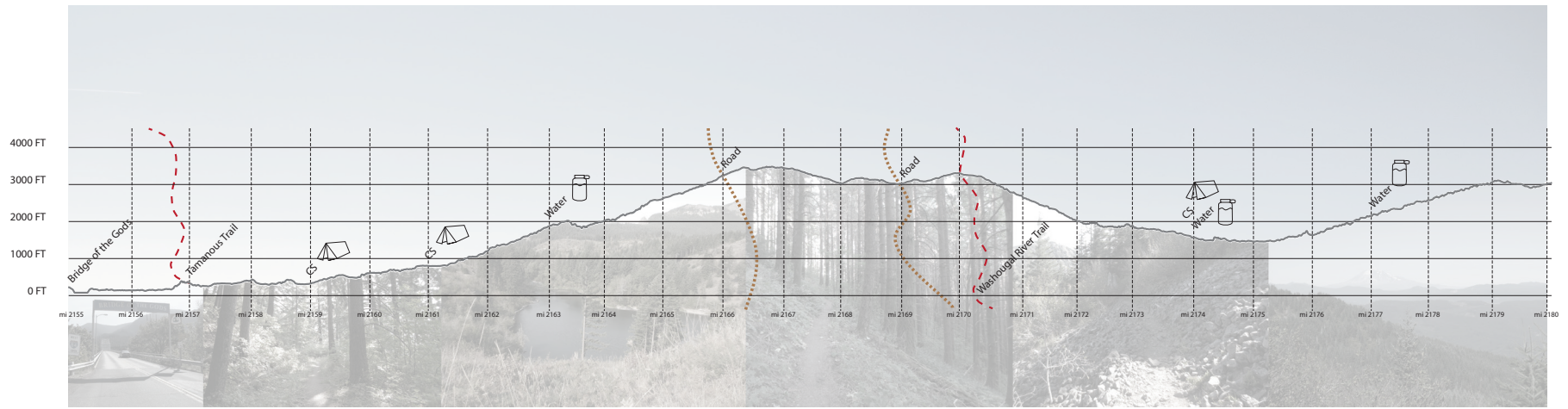
The Pacific Crest Trail (PCT) is one of the original National Scenic Trails established in the National Trails System Act. The PCT travels north along the West Coast from the Mexican to Canadian border, covering over 2,650 miles and as the name suggests, runs along the high crests of the Sierra and Cascades mountain ranges in California, Oregon, and Washington. Officially completed in 1993, the PCT is administered by the US Forest Service in partnership with the Bureau of Land Management, National Park Service, California State Parks, and the Pacific Crest Trail Association in order to manage and protect the trail.<sup>27</sup> The PCT travels across a long stretch of land crossing existing infrastructures, both natural and built. It travels near towns, across roads and highways and through many different climatic and terrain conditions. Each of these crossings represents an opportunity for interaction between built and natural construction with the proposed system of interventions.

Washington State marks the final leg of the PCT and in almost 400 miles provides some of the most beautiful yet challenging terrain of the entire trail. The Washington section of the trail begins at the Bridge of the Gods crossing the Columbia River Gorge at the Oregon border. In addition to the over 4000 feet increase in elevation, the different terrains of the trail include national forests, wilderness areas, rivers, lakes, and mountain ranges, each introducing a variety of elements that the hiker must traverse (see Fig. 17). The Cascade Mountain Range takes over this region of trail and is scattered with prominent mountains including Mt. Adams, Mt. St. Helens, Mt. Rainier, and Mt. Baker.<sup>28</sup> The mountain peaks along the route offer spectacular, expansive views but also come with snowy and wet conditions that are a challenge for hikers. As it travels through the North Cascades the trail goes through cycles of climbing up a deep canyon to a high mountain pass and descending back down again.

---

27 "Pacific Crest Trail." *USDA Forest Service*. Web. May 12, 2014.

28 "Washington." *Pacific Crest Trail Association*. Web. May 14, 2014.

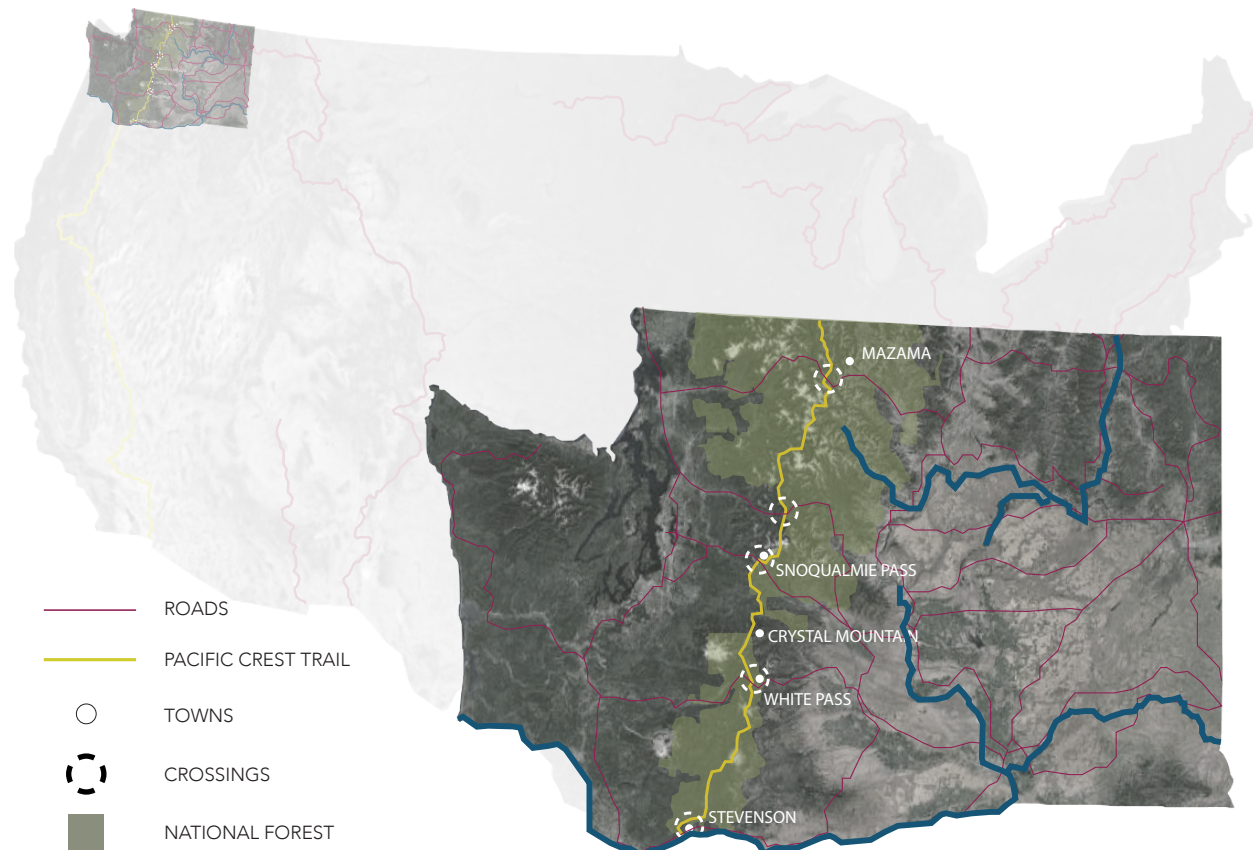


17 Cross Section of PCT, 25 miles from Bridge of the Gods

While mainly traversing through the natural landscape, the trail also crosses the built infrastructure of towns and roads. Five towns near the PCT that range in size and population provide amenities for hikers. Stevenson and White Pass are both listed as re-supply points for thru-hikers in the Pacific Crest Trail Data book.<sup>29</sup> They are located close to the trail, providing a post office and stores for stocking up on supplies. Snoqualmie Pass is the largest of the east-west mountain passes carrying I-90 through the Cascades with its heavy car traffic and also providing parking and a trailhead for PCT hikers.<sup>30</sup> Locating a site for a series of built interventions near one of these towns is potentially advantageous because of the links it provides to places for supplies, communication, and orientation.

Numerous local roads and major highways cross paths with the trail as it moves north through Washington. Road access is an obvious advantage of site placement because it allows for car access to the PCT and can help in attracting more users to the trail. The roads range from major access ways like I-90 to smaller highways of I-12 and even more remote, local roads. Many of these junctions with smaller roads already act as existing trailheads that serve as access points to the PCT while others do

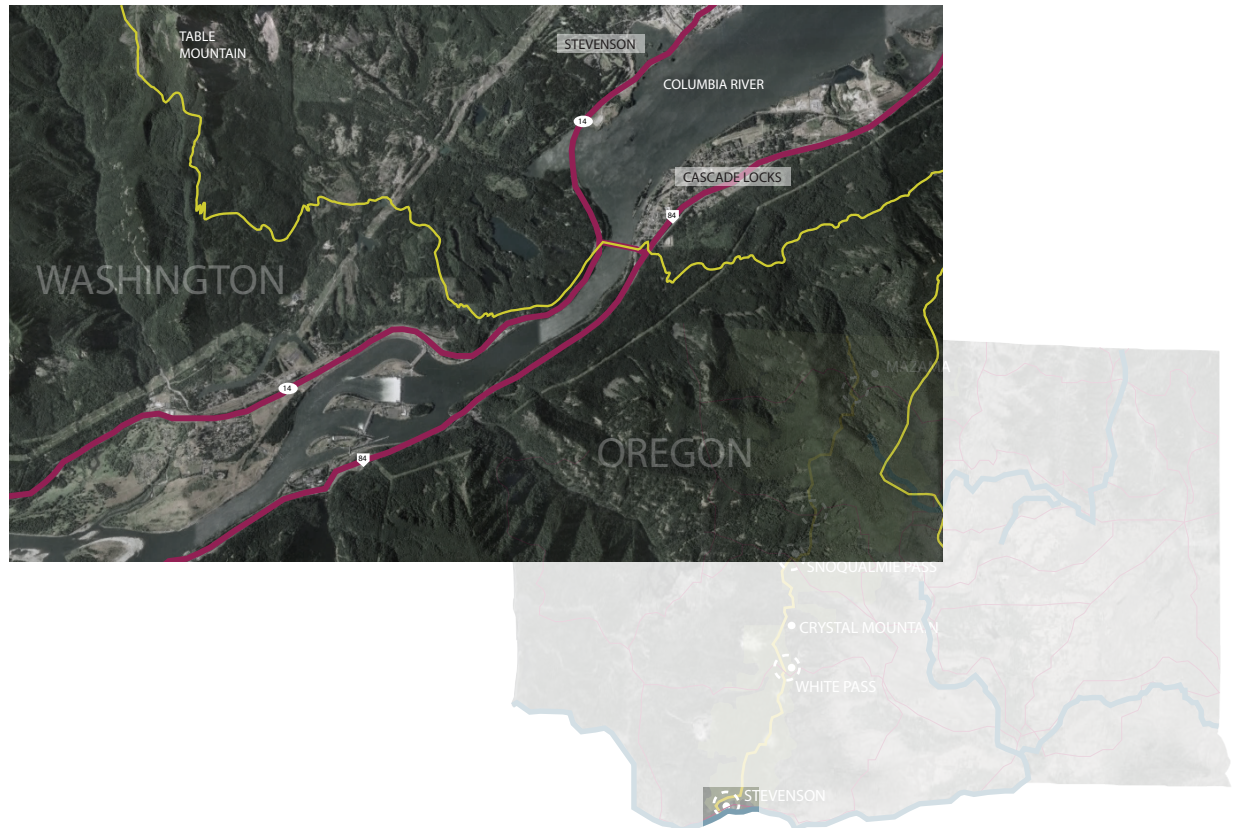
29 Wilderness Press. *Pacific Crest Trail Data Book*. Birmingham. 5th Edition. 2013  
 30 "Pacific Crest - Snoqualmie Pass Trailhead." *USDA Forest Service*. Web. June 12, 2014.



18 Built and natural infrastructures of the PCT in Washington

not acknowledge the trail at all. Using an existing trailhead as an entry to the site takes advantage of an existing stop for those visiting the trail and can build off of this existing infrastructure. However, creating a new entry to the PCT with one of the interventions can potentially attract more hikers and serve a new population of visitors.

Locating the site for a series of interventions at the overlaps of the natural and built infrastructure along the PCT will take advantage of existing views, destinations, and access points. The dramatic



19 Overall site area

connections of natural and built conditions on the border between Oregon and Washington where the PCT crosses the Columbia River was therefore selected. The trail crosses the Columbia River on the Bridge of the Gods and then enters the state of Washington. This site has access to Highway 14 and the town of Stevenson, Washington. Even though it is close to many existing built infrastructures, this area has no trailhead for the PCT. The series of interventions would create a new access point for the trail and also a place of rest for the hiker as the trail moves on into Washington.

The massive and iconic Columbia River dominates the scenery but is equally challenged by the Bridge of the Gods, a long spanning steel bridge that stands out in the natural backdrop. Further in, the trail enters the Gifford Pinchot National Forest and passes along Table Mountain. In addition, this section of the trail entails 3000 feet of elevation change (Fig. 17). This cross section of the terrain reveals the different landscapes of the trail the hiker must traverse and also the existing built infrastructures of the trail. It is informative in determining the best program and placement for successful interventions along the trail in order to design structures that will support hikers needs but also take advantage of the views that the trail currently provides. The site of the Bridge of the Gods is a prime example of the interaction between built and natural infrastructures of the PCT with the steel bridge and large river in contrast.

20 Bridge of the Gods crossing the Columbia River



## METHODS OF THE TRAIL

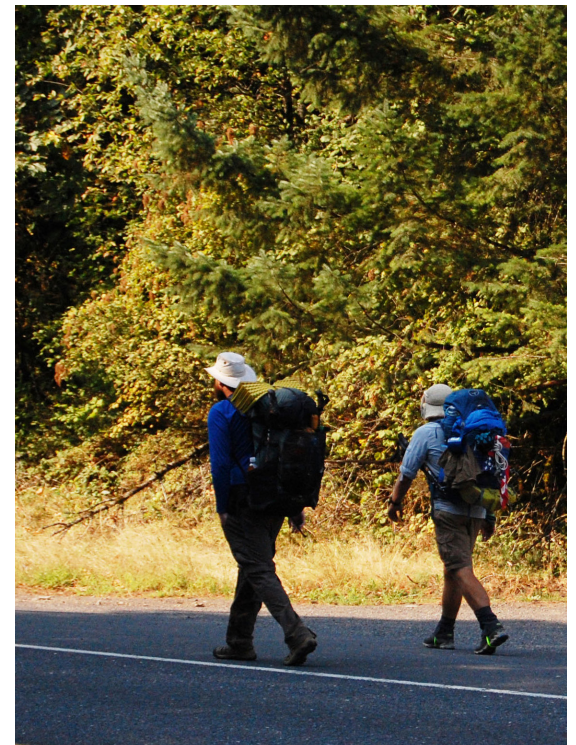
The Pacific Crest Trail is one of the most popular recreational trails on the West coast drawing hundreds of thousands of visitors each year.<sup>31</sup> The high populations of users that occupy the trail have unique needs that the built interventions can provide. The needs of these users must be considered in conjunction with their impact on the natural condition of the trail. This thesis will assess both the types of users of the PCT as well as their needs for amenities along the trail to create a program that promotes recreation while also preserving the surrounding wilderness. A network of built interventions will be proposed that respond to the distinct natural conditions while promoting human use of the trail.

A “visit” to the trail can span from a few hours to months of long distance hiking. Along with hiking, the PCT is also an equestrian trail. In addition to hikers and horseback riders, forest rangers and volunteers provide protection and stewardship for the trail.<sup>32</sup> Hikers, riders, rangers, and volunteers all carry a unique perspective of the trail so it is vital to understand how each uses the trail and assess their needs. Many of the amenities and necessities required of each overlap to create a framework for determining program for the interventions along the trail.

While the trail has multiple kinds of users, hikers are the predominant force of the PCT and fill the trail in the summer months travelling as little as two or three miles or conquering all 2,655 miles of terrain. Thru hiking is as the name implies, an attempt to hike the entire trail from beginning to end in one uninterrupted journey.<sup>33</sup> Thru-hiking the Pacific Crest Trail is no easy task as it requires a commitment of both time and energy. It takes hikers an average of five months to complete the trail filled with long days of up to or over twenty mile hikes. An estimated 600-700 hikers per year attempt this exhausting but rewarding journey with fewer than half actually completing the entire route.<sup>34</sup> The challenging thru-hike



21 Backpacking on the Pacific Crest Trail



22 Thru-hikers on the Pacific Crest Trail

31 "About the Trail." *Pacific Crest Trail Association*. Web. May 24, 2014.

32 "Pacific Crest Trail Association." *Pacific Crest Trail Association*. Web. May 24, 2014.

33 "Appalachian Trail Conservancy - Hiking" *Appalachian Trail Conservancy*. Web. May 12, 2014

34 "Pacific Crest Trail Association." *Pacific Crest Trail Association*. Web. May 24, 2014.



23 Pacific Crest Trail Association

requires planning and preparation, from acquiring permits to coordinating resupply stops and planning each day's hike. Because it is separated into smaller trails for many sections, the PCT can also be tackled two to three miles at a time, allowing for hikers of all levels of experience. Those that choose to take on just sections of the trail---from day to week long hikes must still cope with the challenging conditions but require less of a time commitment. A section-hiker has the advantage of setting their own pace allowing for a more open schedule and strategic choosing certain parts of the trail. The built interventions must address the different needs of hikers that reflect the flexibility of the trail in terms of time commitment and the nature of the user.

The PCT is managed by many different agencies as it passes through federal, state, and private owned land. However, much of the land is National Forest so it is overseen by the U.S. Forest Service and Forest Rangers. Forest Rangers Stations are placed throughout the trail and staffed for safety of the trail and its users. The Pacific Crest Trail Association is the most prominent of several volunteer organizations that populate the trail working to keep it clean and safe. In their mission to "protect, preserve, and promote," this volunteer organization handles trail maintenance and repair, stewardship training and restoration. Volunteers are a major user of the trail as stewards that clean and maintain the trail and its surrounding wilderness. The proposed interventions aim to provide amenities for the trail and also protect the wilderness reflecting the mission of those who work to maintain and preserve it.

The next step is to determine what programs will be applied to each intervention in order to serve these primary users. As a means to explore the wilderness through recreation, the trail requires places that serve the basic, utilitarian needs of the hikers, provide places of rest, and locate markers along the trail. Precedent studies will help in determining the programs for each built intervention and their placement on the PCT.

UTILITY: The many users that occupy the trail mark it in the waste they leave behind. The Center for Outdoor Ethics created “Leave No Trace” principles to promote protection of the wilderness by outlining ways to limit the negative impacts of humans on nature. These seven principles encourage hikers to plan ahead and prepare, travel and camp on durable surfaces, dispose of waste properly, leave what they find, minimize campfire impacts, respect wildlife, and considerate of other visitors.<sup>35</sup> Even with “Leave No Trace” promoted along the trail it is inevitable that there will be traces of human use. Human waste constitutes much of what is left behind on the trail including not only bodily waste but also food and trash. Providing facilities for the collection and disposal of waste will help in encouraging “Leave No Trace” principles and preserve the wilderness landscape

The PCT encourages a pack it in, pack it out policy which requires hikers to carry out any human waste they create either by burying it, using a WAG Bag (Waste Alleviation and Gelling), or a privy.<sup>36</sup> Digging and burying waste is the most common choice but any other non-human waste like toilet paper must still be kept and discarded elsewhere. With nowhere to dispose of WAG bags, hikers must carry waste on long sections of the trail. Inserting privies along the trail can help with waste management by providing a place to discard of waste. A privy is an outhouse structure that is placed along the trail. Consisting of a hole in the ground emptying to a larger storage tank a privy collects the waste and has the ability to compost and ventilate.<sup>37</sup> While typically a simple a utilitarian structure, the outdoor restroom has been interpreted more aesthetically in a project in Austin, Texas by Miro Rivera Architects. Located along the Lady Bird Lake Bike and Hike Trail the trailside restroom requires little maintenance with non-mechanical ventilation, no need for artificial light, and heavy duty plumbing fixtures. The facility

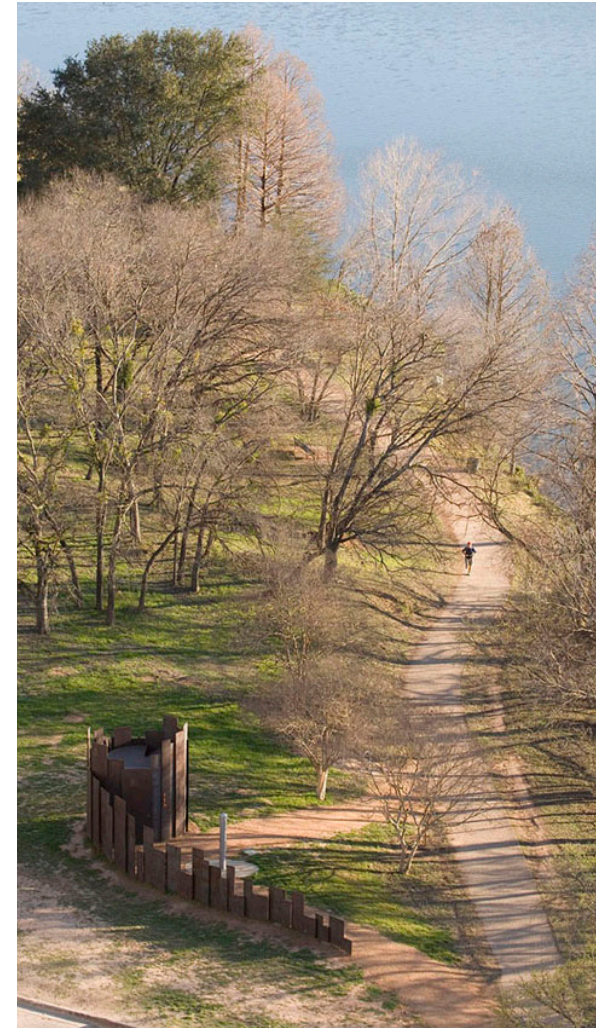


24 Trailside Restroom, Mt. St. Helens, WA

35 “Leave No Trace.” *Center for Outdoor Ethics*. Web. June 10, 2014

36 Maiers, Bobbi. “Human Waste Disposal in the Backcountry: How to pee and poop in the Woods.” Blog. *Trailspace Outdoor Gear Reviews*. April 2, 2010.

37 *ibid.*



25 Lady Bird Lake Trail Restroom, Entrance  
26 Lady Bird Lake Trail Restroom, Aerial

takes on a dynamic form with the steel plate structure staggered to allow for light and fresh air.<sup>38</sup> The privy can help with managing waste on the PCT by helping to manage the waste problem but can also serve as an aesthetically pleasing structure that frames the views of the wilderness.

38 "Lady Bird Lake Trail Restroom" *Miro Rivera*. Web. June 3, 2014. [www.mirorivera.com](http://www.mirorivera.com)



REST: Overnight hiking on the PCT can sometimes be difficult with wet conditions and rugged terrain, making tent and tarp camping less than ideal. Unlike the Appalachian Trail that has numerous overnight shelters, the PCT does not provide any facilities for hikers to use during these harsh conditions. Small shelters can provide refuge from the elements for hikers needing to rest overnight or refuel for a difficult part of the trail. A similar typology of small shelters can be found on the world's longest naturally frozen trail on the Assiniboine River in Winnipeg, Canada. Patkau Architects designed a cluster of shelters to protect people from the wind while they are on the trail.<sup>39</sup> The design uses a dome-like structure to retain heat and is placed to strategically block winds of temperatures reaching as low as -30 degrees Celsius. Similar shelters can be implemented along the PCT in sections that are prone to harsh weather

27 Skating shelters illuminated at night  
28 Skating shelters blocking wind

39 Moskow, Keith and Robert Linn. *Contemporary Follies*. The Monacelli Press. New York. 2012. pp. 120-124



conditions or with rough terrain that make tents difficult to tie down. Hiking shelters can also help to reduce hiker impact on the trail and promote “Leave No Trace” practice. By minimalizing the scale of these structures, the shelters can limit the loss of vegetation and the impact of hikers allowing nearby areas to stay more pristine.<sup>40</sup> The shelters can help alleviate the search for natural coverage on overnight stays and encourage section hikes while protecting the wilderness.

**MARKERS:** Trailheads and rest stops along the trail can serve as markers for the PCT providing an identity for the trail and functions for the hiker. As a major access point for hikers, trailheads can take on a larger program to accommodate the needs of users while also marking the entry. Traditional trailheads consist of a kiosk with maps and information about weather and trail conditions. Fucello Architects redefines the typology of trailheads with their design of Tom’s Thumb Trailhead in Scottsdale, Arizona. The facility serves as an entryway to a multi-use trail network, providing interpretive displays, restrooms, and a gathering place. Due to its remote location, the trailhead is self-sufficient, cut off from the municipal systems of water, sewer, and electricity. Proposed sites along the Pacific Crest Trail are also isolated with limited resources and must employ similar strategies. Using this new typology of trailhead as a model, a new program specific to the PCT can accommodate all levels of hiking. For example, in addition to a restroom and information center, the trailhead can become a resupply point for thru-hikers serving as storage for food caches. This new program of trailhead becomes a refueling station for thru-hikers and a PCT welcome center for section hikers.

Markers along the trail are not limited to the entry access points at trailheads. Throughout the PCT there are opportune moments for lookouts in the landscape, places to stop and take in the view of the wilderness. Many of these moments form naturally within the landscape with mountain ridges overlooking the horizon or the trail opening up to a valley. Stops along the trail will be strategically placed for lookout points that frame these views while also providing a place of rest along the trail but without

---

40 “Appalachian Trail Conservancy - Camping and Shelters.” *Appalachian Trail Conservancy*. Web. June 8, 2014



- 29 Tom's Thumb Trailhead, exterior
- 30 Tom's Thumb Trailhead, under roof structure

- 31 Reindeer Center Pavilion, interior view looking out
- 32 Reindeer Center Pavilion, exterior



cluttering the trail or imposing on the wilderness. A larger scale example can be found in Snøhetta's Wild Reindeer Centre Pavilion in Norway. A 1.5-kilometer hiking trail leads up to the observation pavilion that rests in the middle of Europe's last natural habitat for wild reindeer, enhancing views of the animals while sheltering visitors.<sup>41</sup> While providing lookouts along the PCT will similarly create destinations along the trail that must be placed strategically not to infringe on views but frame and enhance them.

While each responding to their specific site and program, together the interventions will work as a series of built structures. The Norwegian Tourist Route project is a particularly appropriate example of how to incorporate a system of built structures into a natural setting. Launched in 2005, this project is a government-sponsored campaign to provide a network of routes that highlight the spectacular countryside of Norway.<sup>42</sup> The intention was to reinforce the existing narrative of a place without overpowering it with a man-made landscape. In Routes, Roads and Landscapes, the authors describe the way the Norwegian Tourist Route Project creates installations that are about the mediation of scenery,

41 "Wild Reindeer Centre Pavilion." *Snøhetta*. Web. April 24, 2014.

42 Hvattum, Mari, Brita Brenna, Beate Elvebakk and Janike Kampevold Larsen. Routes, Roads and Landscapes. Ashgate Publishing Limited. England. 2011

architecture, and roads. Each installation is unique to its site and accentuates existing features mostly focused on views.<sup>43</sup> As the authors observe, the built projects are not trying to blend into the landscape but are using architecture to heighten the awareness of nature.

Similarly, the built interventions along the trail will be perceived as an object within the landscape. By standing out in the natural backdrop, the structures will create a consistent identity on the trail with materials that do not blend in. These sculptural objects will stand out in the landscape in their effort to use sustainable practices and small footprints but also accentuate the natural surroundings by framing notable views. Blurring the line between architecture and landscape, this series of interventions will mark the trail, provide function, and create an architectural identity for the Pacific Crest Trail mediating between the natural and built environment.



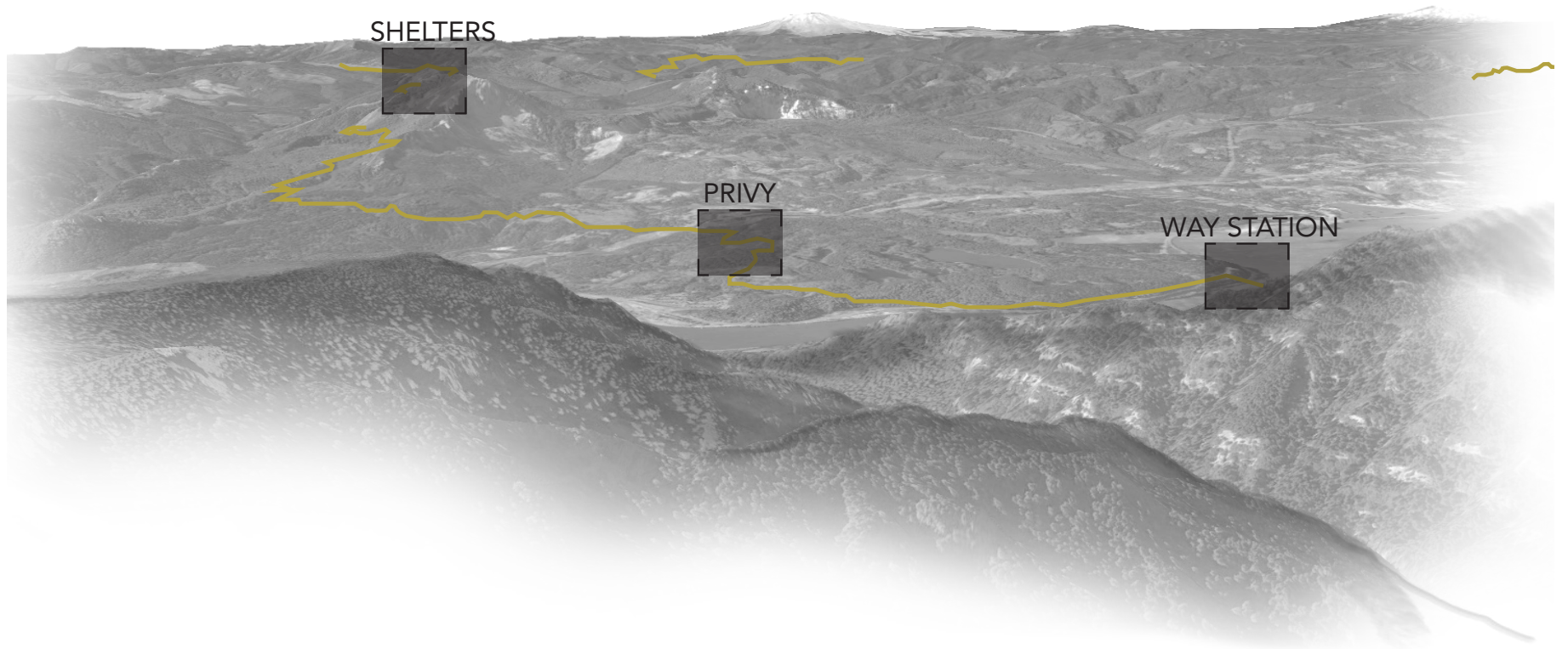
33 Aurland Lookout on the Norwegian Tourist Route



34 Public Toilet on the Norwegian Tourist Route

---

43 Hvattum, Mari, Brita Brenna, Beate Elvebakk and Janike Kampevold Larsen. Routes, Roads and Landscapes. Ashgate Publishing Limited. England. 2011



35 Site placement along the trail showing topography



## *design:*

The crossing of the Columbia River by way of the Bridge of the Gods provides an example of a successful relationship between existing built and natural environments. At this intersection, thru-hikers move from Oregon's trees of Mt. Hood National Forest onto the road where they cross the Bridge of the Gods over the Columbia River and thence into the Gifford Pinchot National Forest. This visual contrast between the steel tectonics of the bridge with the natural landscape of the river and forests sets a precedent for new built structures placed in wilderness. The bridge, while distinct from the landscape, does not impose or intrude but first and foremost provides function and by doing so, fits into the landscape. Each of the interventions along the trail seeks to do the same by providing a function and then taking the design even further to become a structure that frames views and becomes a part of the landscape.

Using the programs described for utility, rest, and markers, this thesis proposes a sequence of multiple interventions along the Pacific Crest Trail that will accommodate all users of the trail and their needs. The proposed programs will be placed in a way that is appropriate to the specific conditions along the trail. The way station serves as the entryway to the trail and will serve as the first intervention of the sequence providing storage and waste removal, restrooms and information center. Further into the wilderness, a privy provides a much-needed place for waste disposal. In addition to providing the function of a trailside restroom, the privy will also serve as a trail marker---a destination on the trail that provides function while also serving as a lookout that frames existing views. Overnight shelters will be placed furthest from the entry in more remote parts of the trail where hikers need shelter.

## PROGRAM:

Many different visitors with differing skills and agendas experience the PCT in this area. Thru-hikers are travelling upwards of thirty miles per day, hoping to finish the entire PCT in an average of five months. As the “tough guys” of the trail, thru-hikers are roughing it in the wilderness for weeks at a time. Intersections with civilization like that at the Bridge of the Gods are vital to their survival as they serve as stops for refueling on supplies. Stevenson, Washington is currently listed as a food cache stop where hikers can send ahead their food packages to be picked up upon arrival.<sup>44</sup> However in order to get their packages, hikers must exit the trail and hike into town three miles away and are limited by the hours of the post office. One of the amenities that would best serve thru-hikers through one of the built interventions is a storage space that can be accessed while on the trail where packages can be sent directly. In addition, bathrooms and showers will provide a much needed clean and refreshing stop before the last section of the trail. Thru-hikers can also take advantage of shelters along the trail that provide a break from tent camping overnight while still being protected from the weather.

While thru-hikers can make the most use out of amenities along the trail, there are other users of the PCT who are visiting for shorter periods of time. Less dedicated, but just as adventurous, the section hiker attempts the PCT sections at a time with shorter weeklong or weekend trips. Section hikers travel distances similar to a day or two of a thru-hiker but eventually turn back or exit the trail at another stop further on the path. They too can take advantage of overnight shelters along the trail as well as a trailside restroom that can provide a place to dispose of waste. A day visitor may only be looking for a short hike for a picnic sport or a longer loop for the day. A trailhead center with maps and information as well as a trailside restroom would provide necessary amenities on the trail for their short trip.

---

44 Wilderness Press. [Pacific Crest Trail Data Book](#). Birmingham. 5th Edition. 2013

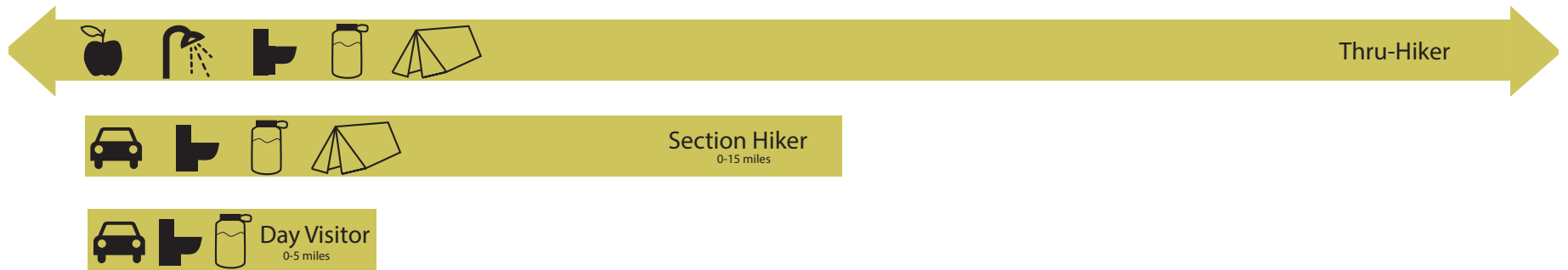
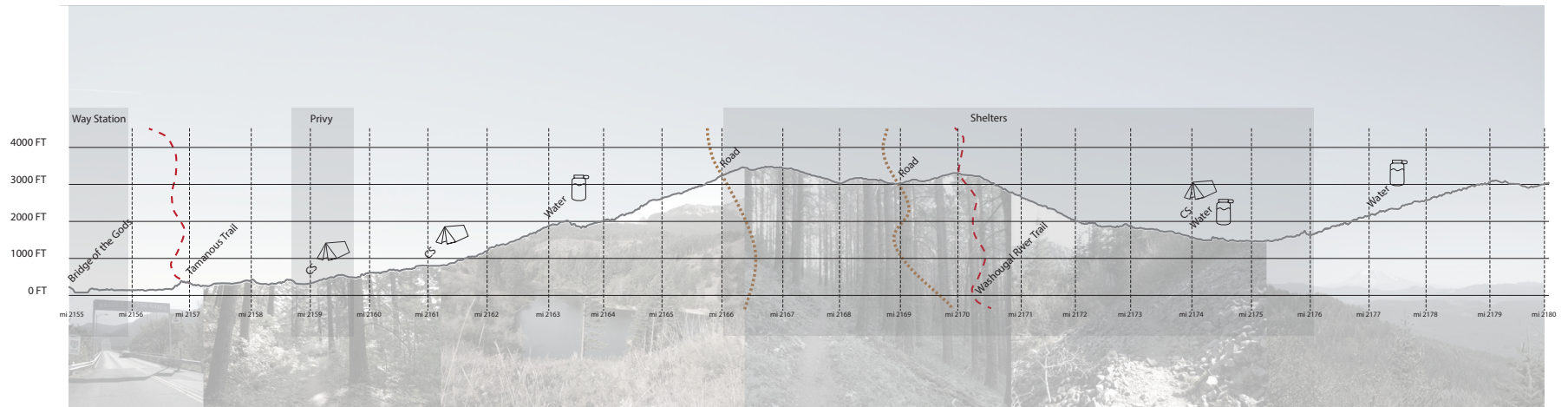


37 Thru-Hikers in Stevenson, WA  
38 Weekend Hikers at Mt. St. Helens, WA



39 Day hiker at Kendal Katwalk on PCT

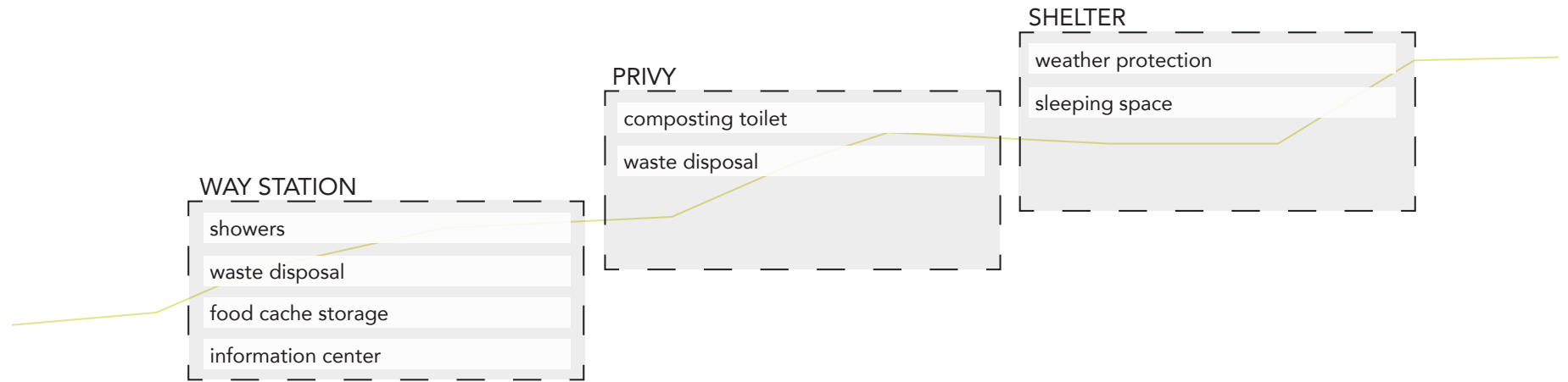




Using the trail cross section of this area, existing amenities, terrain, and the needs of the different users, this thesis proposes a series of interventions including a way station, privy, and shelters that support all users. The way station acts as an entry to the Washington section of the PCT providing showers and bathrooms, a supply stop for hikers to send food packages and pickup any new supplies and an outdoor recreation information center that will provide maps, passes, and information for the area. Further into the trail, a privy with a composting toilet provides a much-needed restroom for hikers. Overnight shelters are placed furthest in from the entry point to provide weather protection. Figure X shows the placement of each intervention with the way station at the Bridge of the Gods, the privy four miles in and the shelters located fifteen miles deep into wilderness.

40 Cross section diagram used for program and placement of interventions





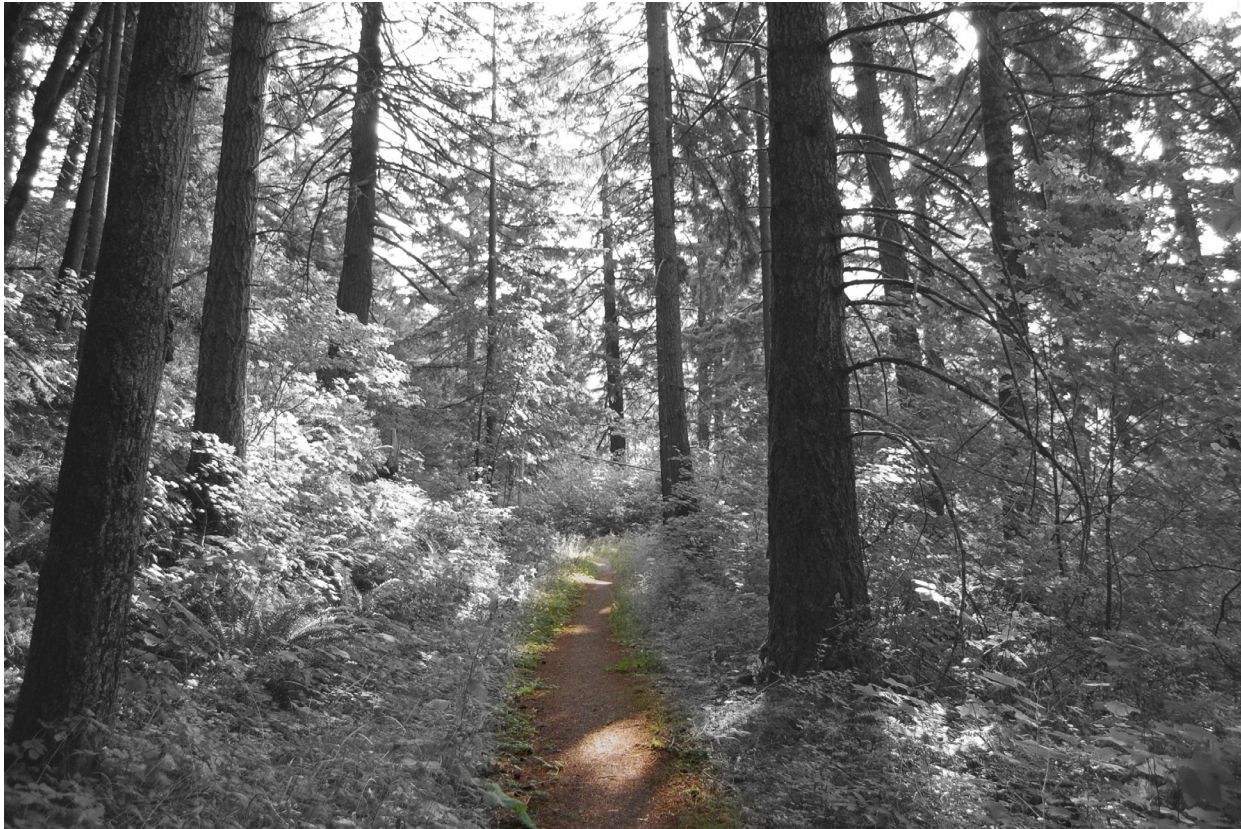
While providing utility along the trail is the driving force in the program and placement of the buildings, this thesis also aims to create an architectural identity for the trail through a common design language. Drawing from the same principles that the Bridge of the Gods has with its natural context, the interventions will first provide their function of providing trailside amenities. In addition, each structure will take a similar attitude with relation to the site. In order to limit impact on the vegetation of the landscape the structures will be light on the ground. Especially with the privy and shelters located deep into the wilderness, they can use temporary siting and deconstructable structures in order to limit their impact. Similar materials and structure will be used in all of the building to provide visual connection and strengthen the identity that these structures will create for the trail.



- 43 Overall Design Diagram- Limited Impact
- 44 Overall Design Diagram- Objects in Nature

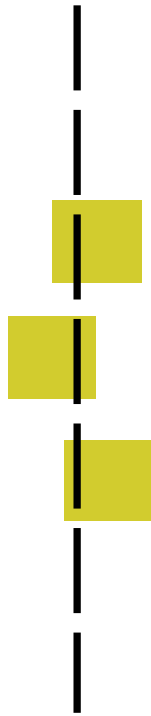


- 45 Overall Design Diagram- Translucent Materials



46 The trail is the organizing element of design

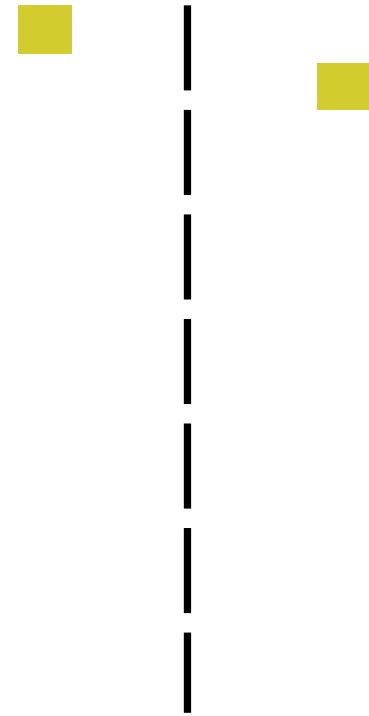
way station



privy



shelters



47 Diagram showing placement of interventions in relation to the trail

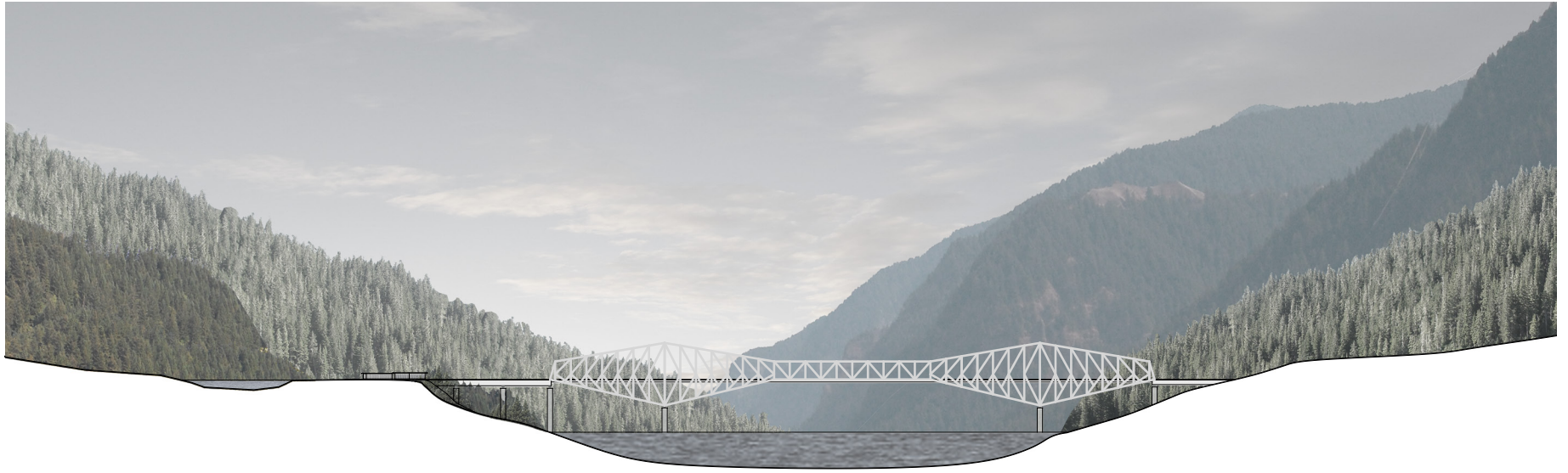
The unifying element with each of these interventions is the trail. Each will relate to the trail in a unique way. The way station will be placed adjacent to the trail allowing hikers to experience the building and trail simultaneously. The privy will provide a sense of privacy creating an extension from the trail. The shelters are placed furthest from the trail providing seclusion and removal so as to truly experience the site. Each intervention will relate to its own site and program parameters but a common language of tectonic order, materiality, and utility will give them a cohesive presence on the PCT.



48 Bridge of the Gods



49 Way station site



50 Site Section through the Columbia River

## WAY STATION

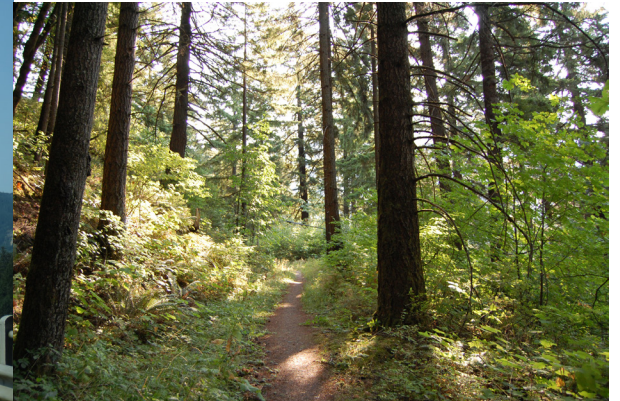
The way station is located at the Bridge of the Gods on the Columbia River. This site marks the entrance into Washington creating an opportunity for the way station to highlight this entrance not only to the state but the last leg of the PCT. As the most heavily used and visited site of the series, the way station is also the most programmed including a hiker rest stop, outdoor recreation information center, and restrooms.



OREGON



BRIDGE OF THE GODS



WASHINGTON

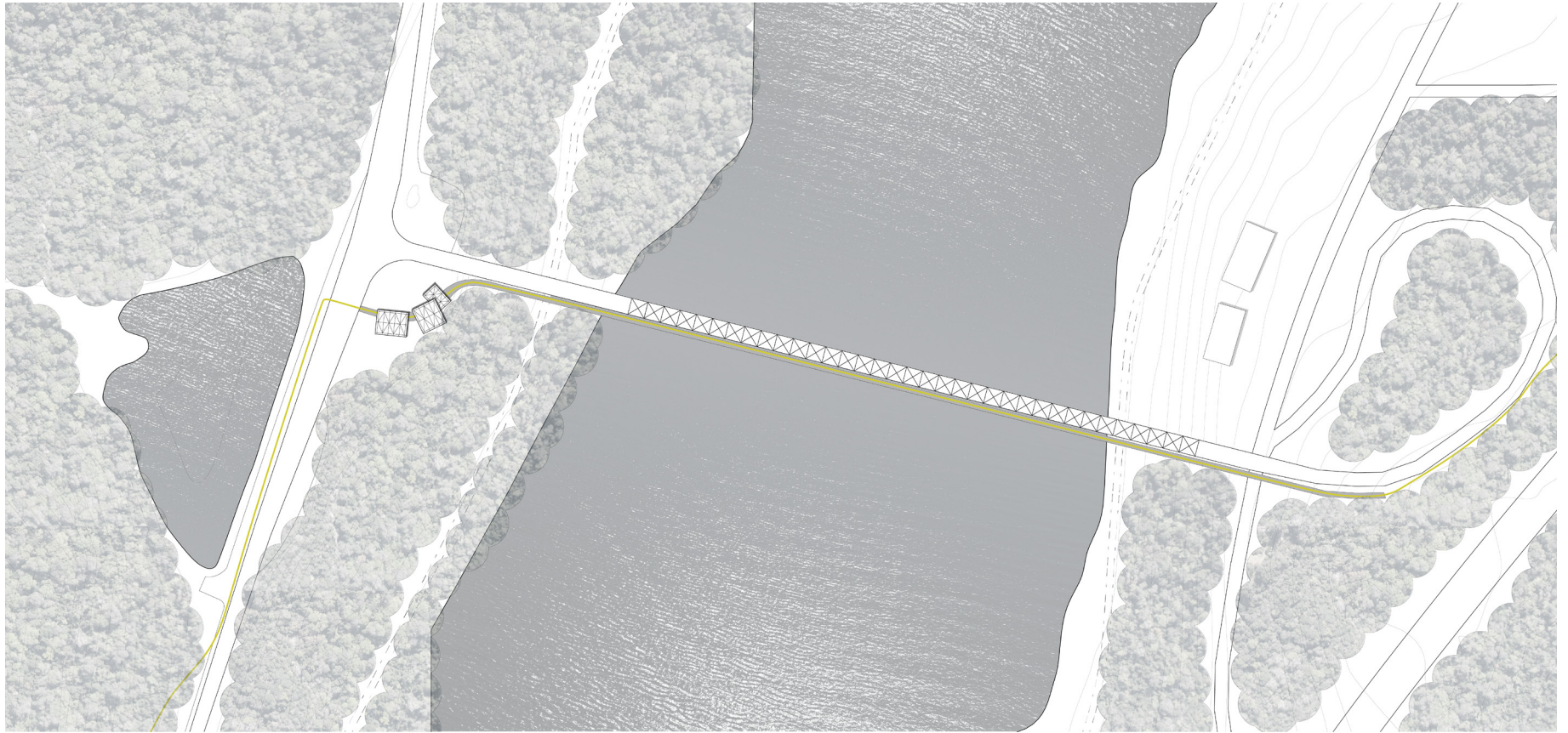
51 Transition from nature to built to nature at the site



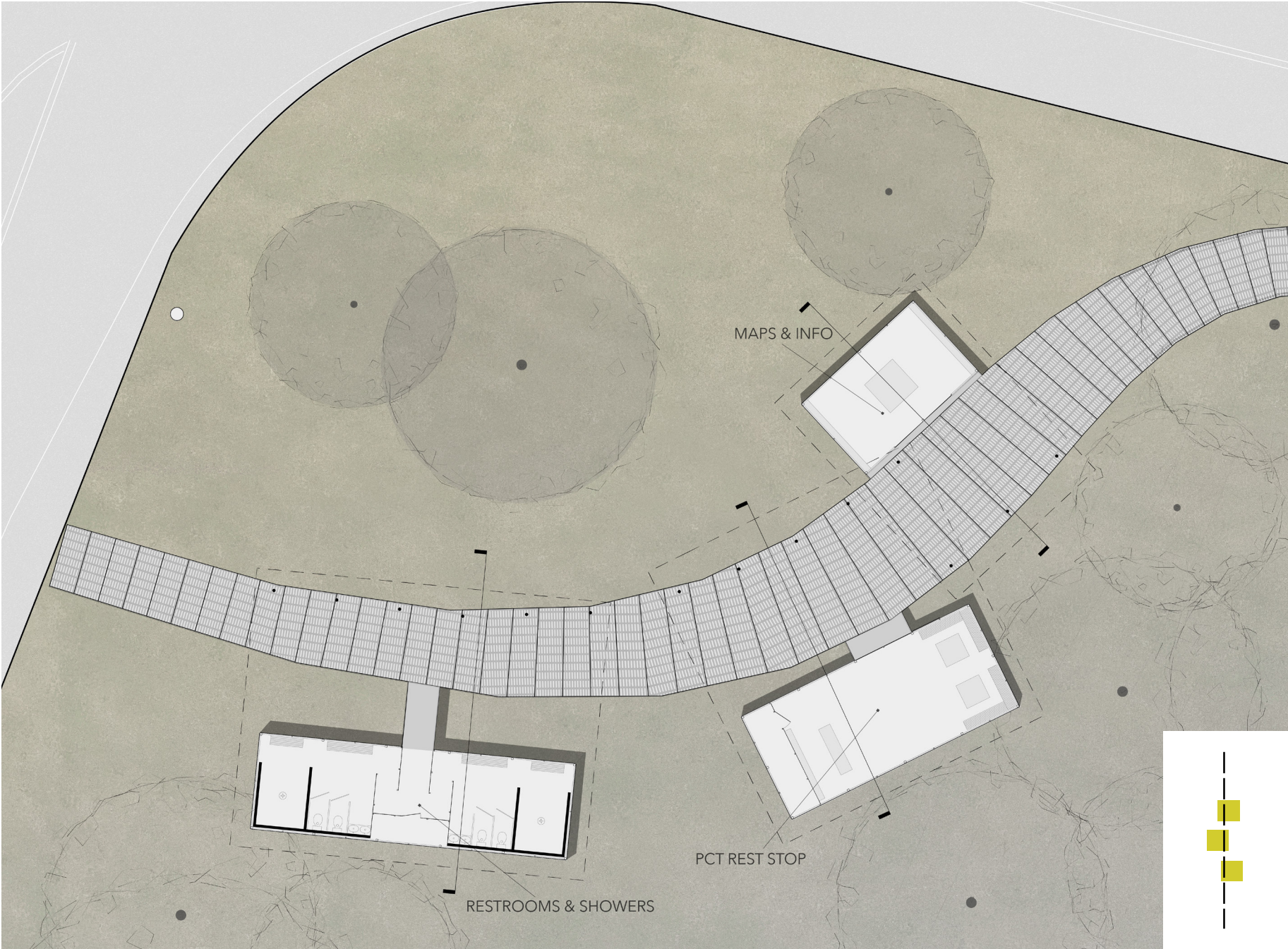
52 Current conditions at the Bridge of the Gods where hikers must walk with traffic

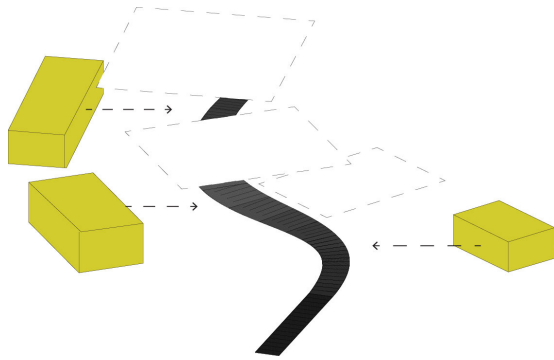
At the site of the Bridge of the Gods, the trail disappears on the road and hikers must walk with car traffic on the bridge eventually finding their way back onto the trail as it enters the forest. The first design move is to re-establish the trail by providing a pedestrian bridge to connect Oregon and Washington and allow for safe crossing by hikers.



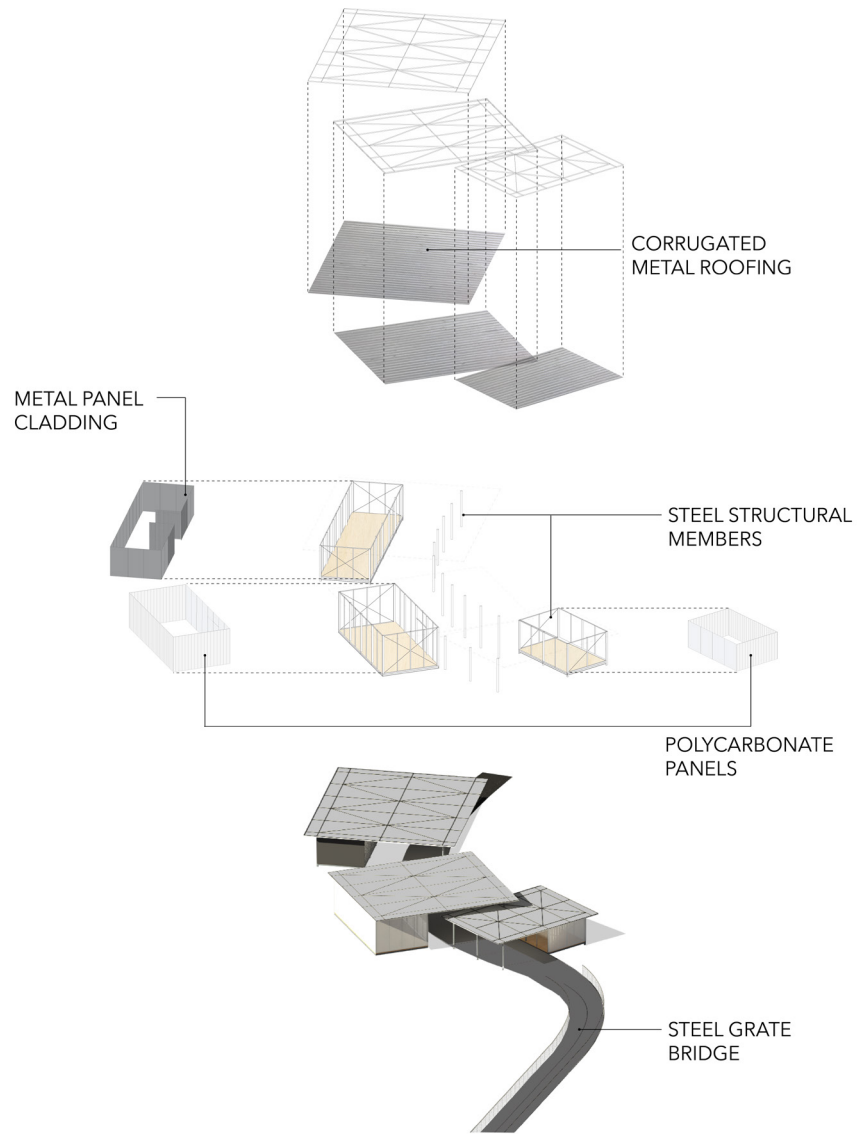


- 53 Hiker crossing new pedestrian bridge
- 54 Way station site plan



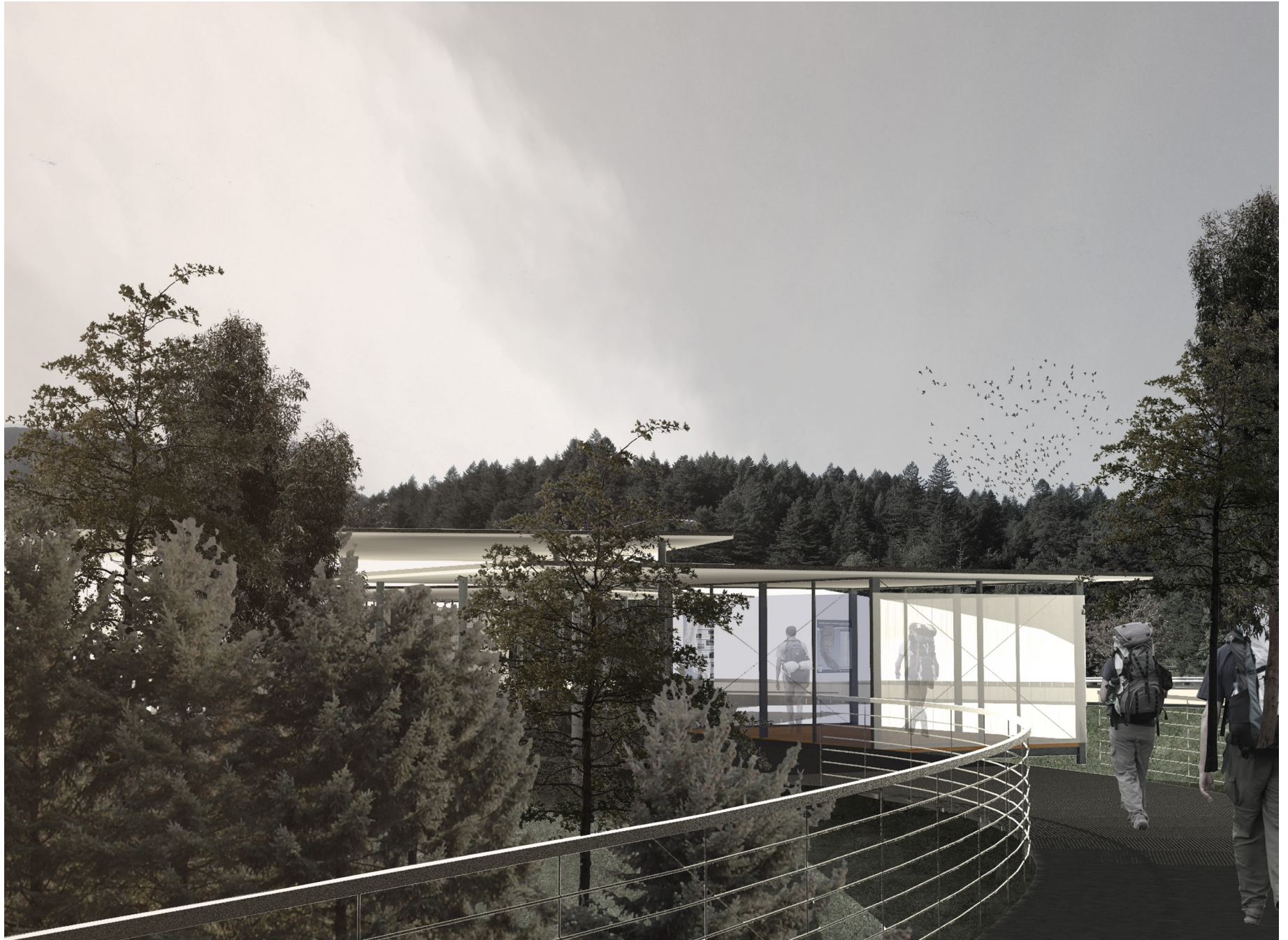


56 Way station diagram  
 57 Exploded structural diagram of way station



55 Way station plan

The way station then becomes an extension of the pedestrian bridge as the steel grate structure connects back to the ground. A new, built up trail becomes the center of the design with a large, thin roof overhead and then buildings tucked in underneath.





- 58 Walking towards way station
- 59 Information center section

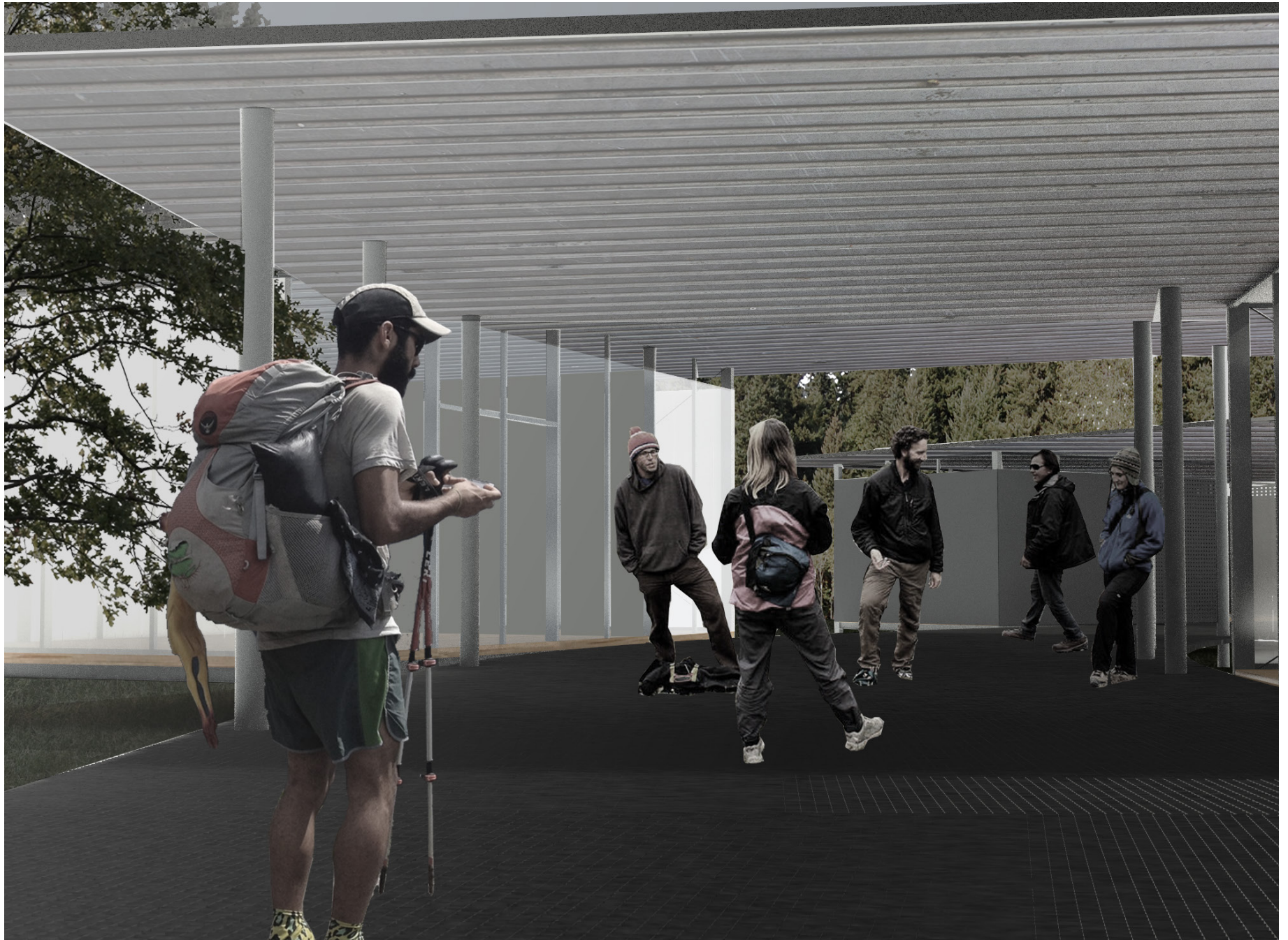
An outdoor visitor center serves both hikers and visitors as a way to encourage use of the PCT with maps, books, resources and access to purchase any outdoors passes.

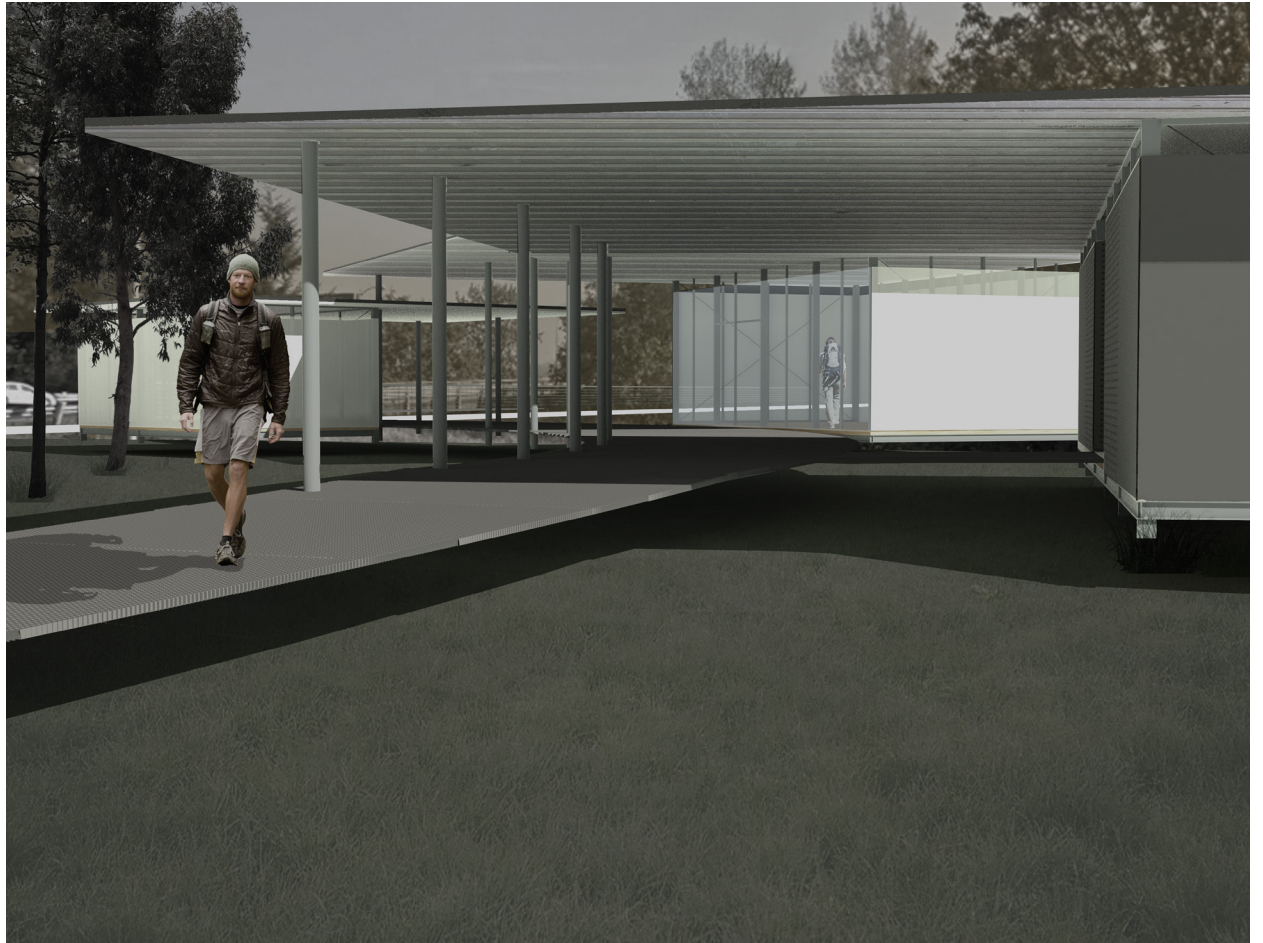




- 60 Hikers conversing in the hiker rest stop
- 61 Hiker rest stop section

A hiker rest stop will provide supplies for hikers to purchase as well as a place to send ahead their food packages for pickup on arrival. Providing a place to refuel, the hiker rest stop also becomes a place for hikers to socialize and share the stories of the trail. Public showers and restrooms are available to serve all users as they prepare for the hike ahead.





- 62 Hikers and visitors socializing on the trail
- 63 Looking back towards the way station

The trail becomes the center of the design, as each of the buildings is oriented towards the trail creating a place for interaction between all users where PCT hikers can share their stories with visitors to the area.



A variation of translucent materials allows for the buildings to reveal their function and also serve as beacons at night for late night hikers and cars passing by. The beacons will draw attention to the PCT at this heavily visited intersection drawing in new users. Serving as a gateway to the rest of the PCT, the way station sets a precedent for the interventions further along the trail. Materials and structure of the way station will be repeated in the design of the privy and shelters drawing visual connection between all three as destinations on the trail creating a trail identity.



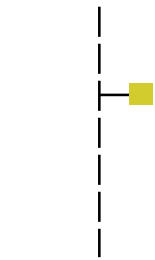
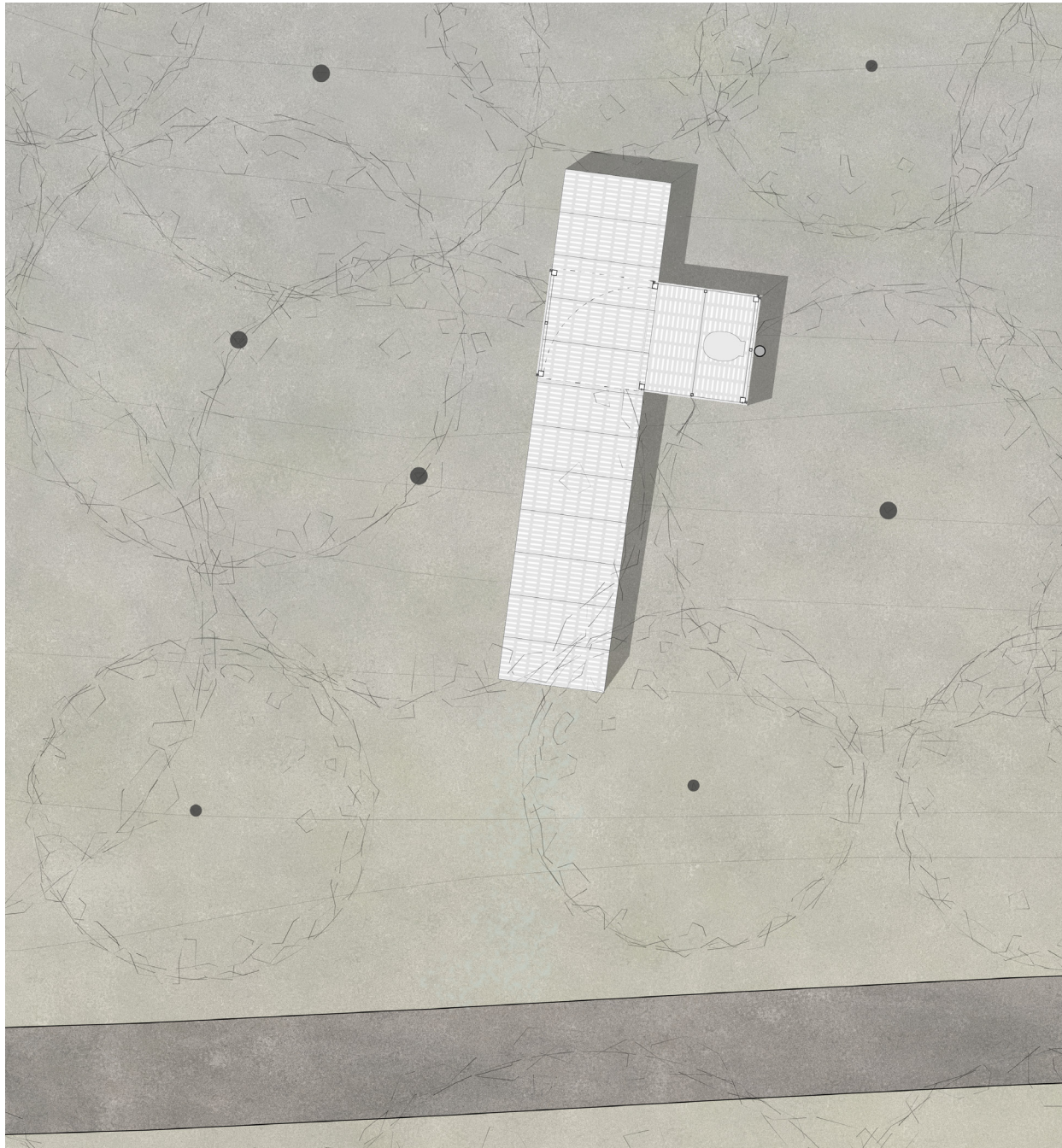
65 Privy site



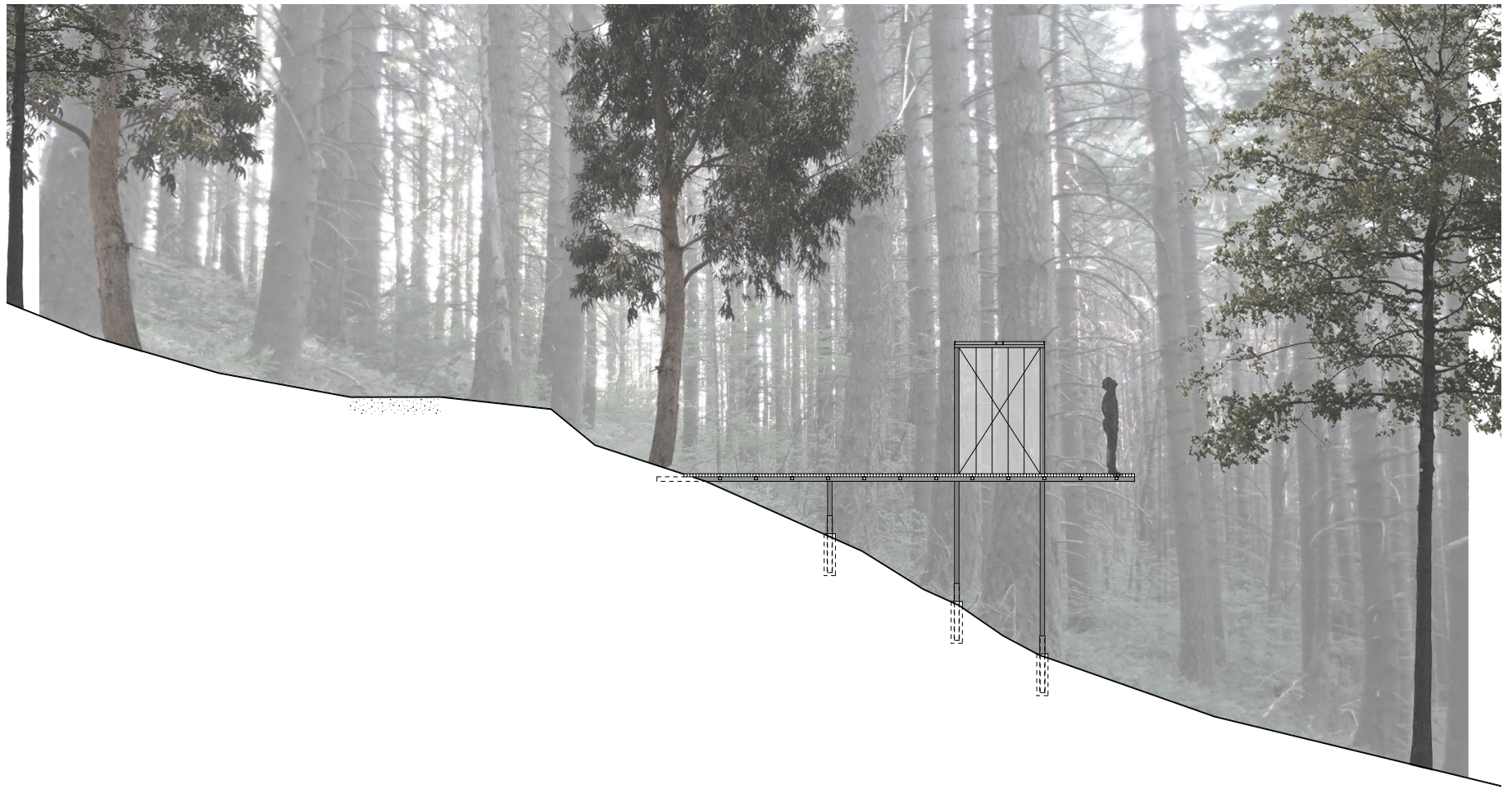
66 Privy section

## PRIVY

Located four miles into the trail, the privy provides a place for hikers to dispose of waste with a composting toilet. Here, day hikers and thru-hikers alike can use the facilities in order to help enforce the “leave not trace” principles of the trail.



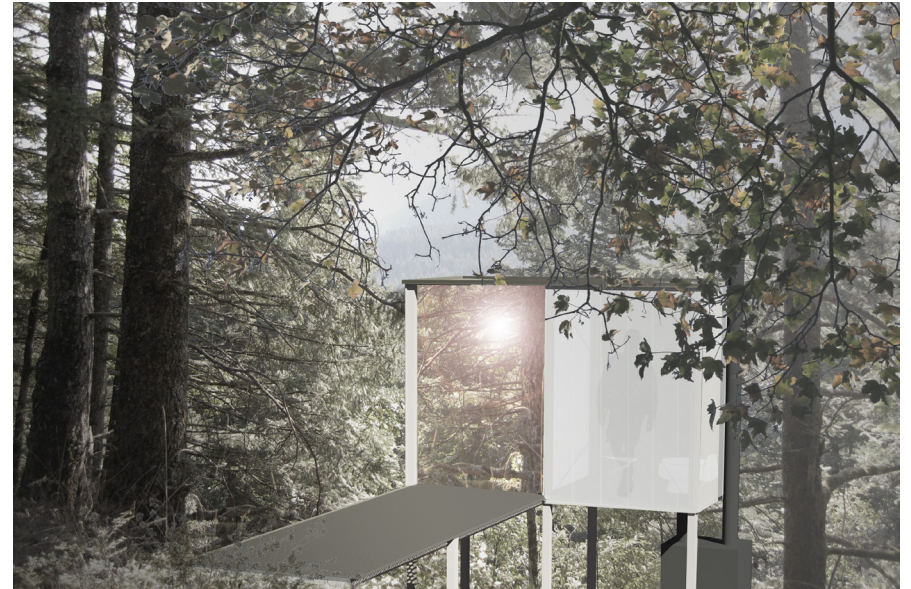
67 Privy plan



68 Privy section

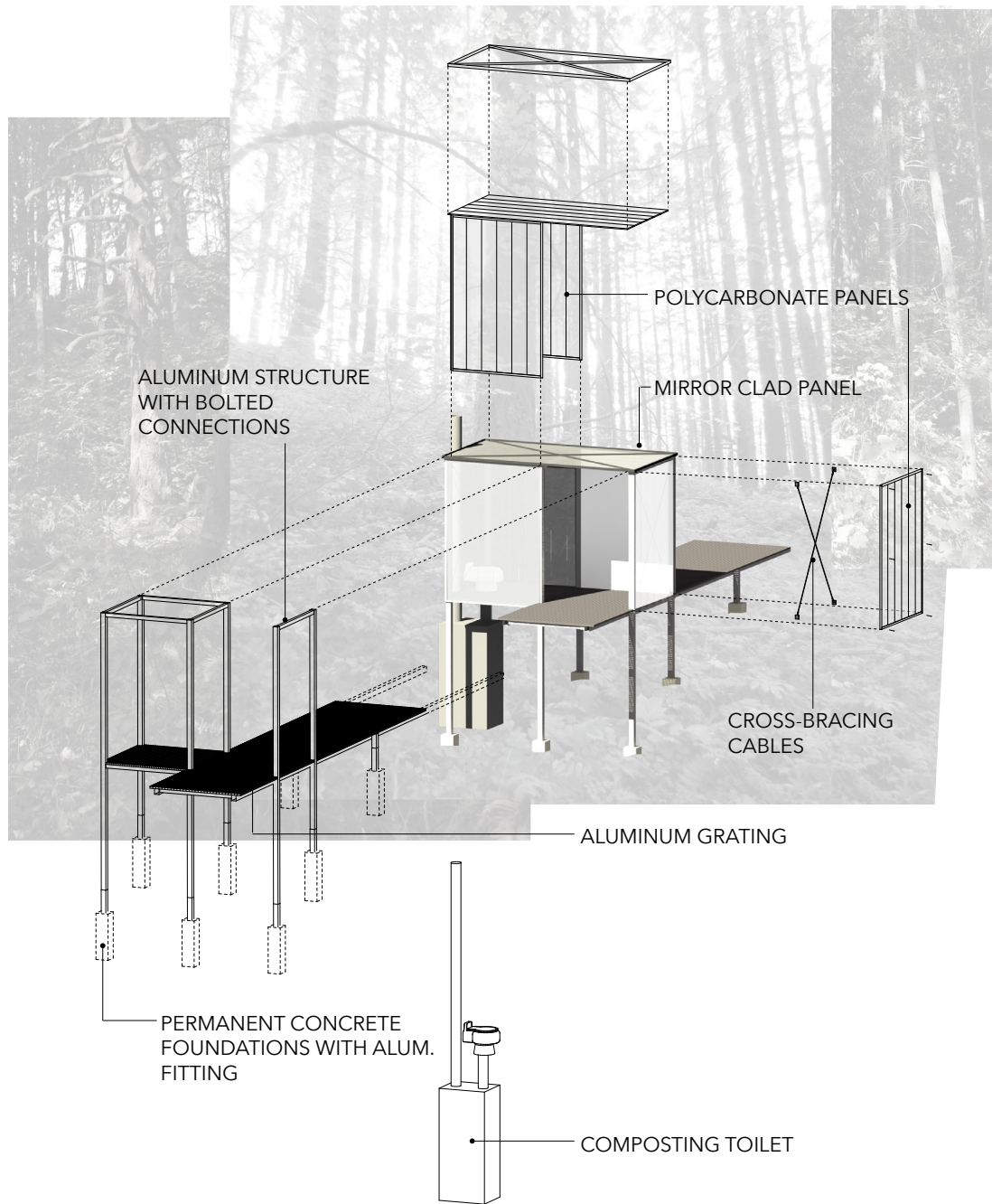
This section of the trail deals with a large elevation change perpendicular to the trail. The privy design takes advantage of the terrain by using an aluminum grate to bridge out to the toilet structure placed on the lower elevation side of the trail.



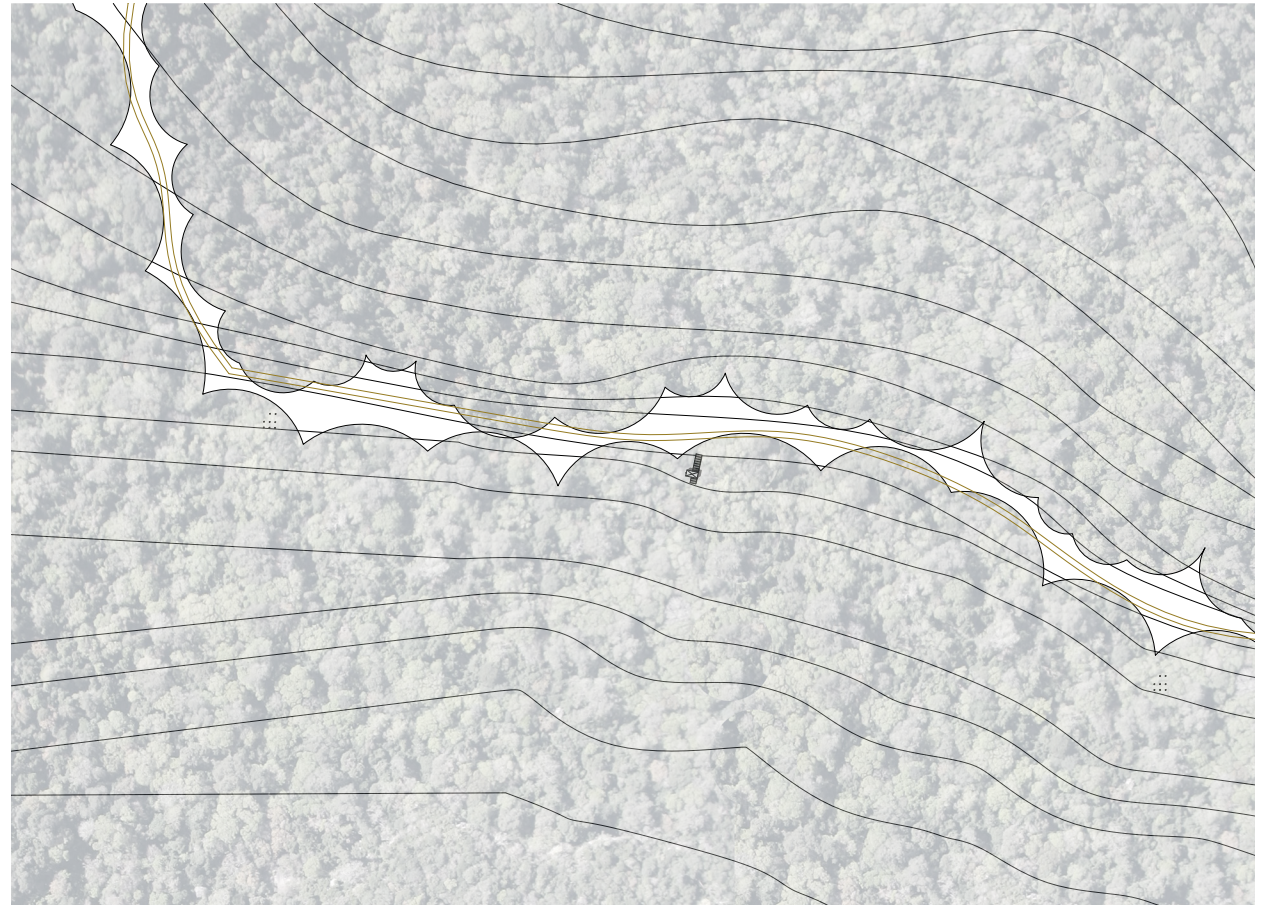
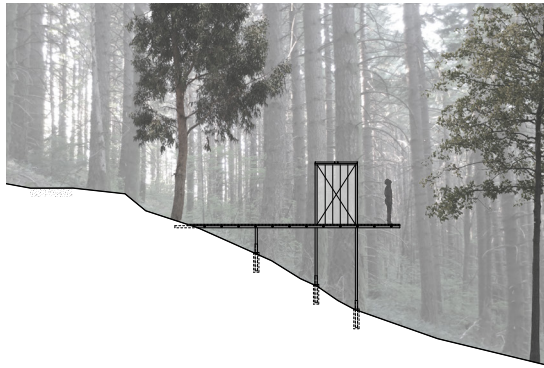


- 69 Hiker's approach towards the privy
- 70 Privy with door closed
- 71 Privy with door open

Similar to the way station, the privy uses translucent polycarbonate panels to contrast with the landscape and draw the eyes of the hiker as they approach. The translucency is accented by a reflective surface on the door of the privy. When occupied door closes and blends into the landscape and when open, the roof frames the view.



72 Privy structural diagram



- 73 Privy section
- 74 Privy site section after structure is removed
- 75 Privy site plan

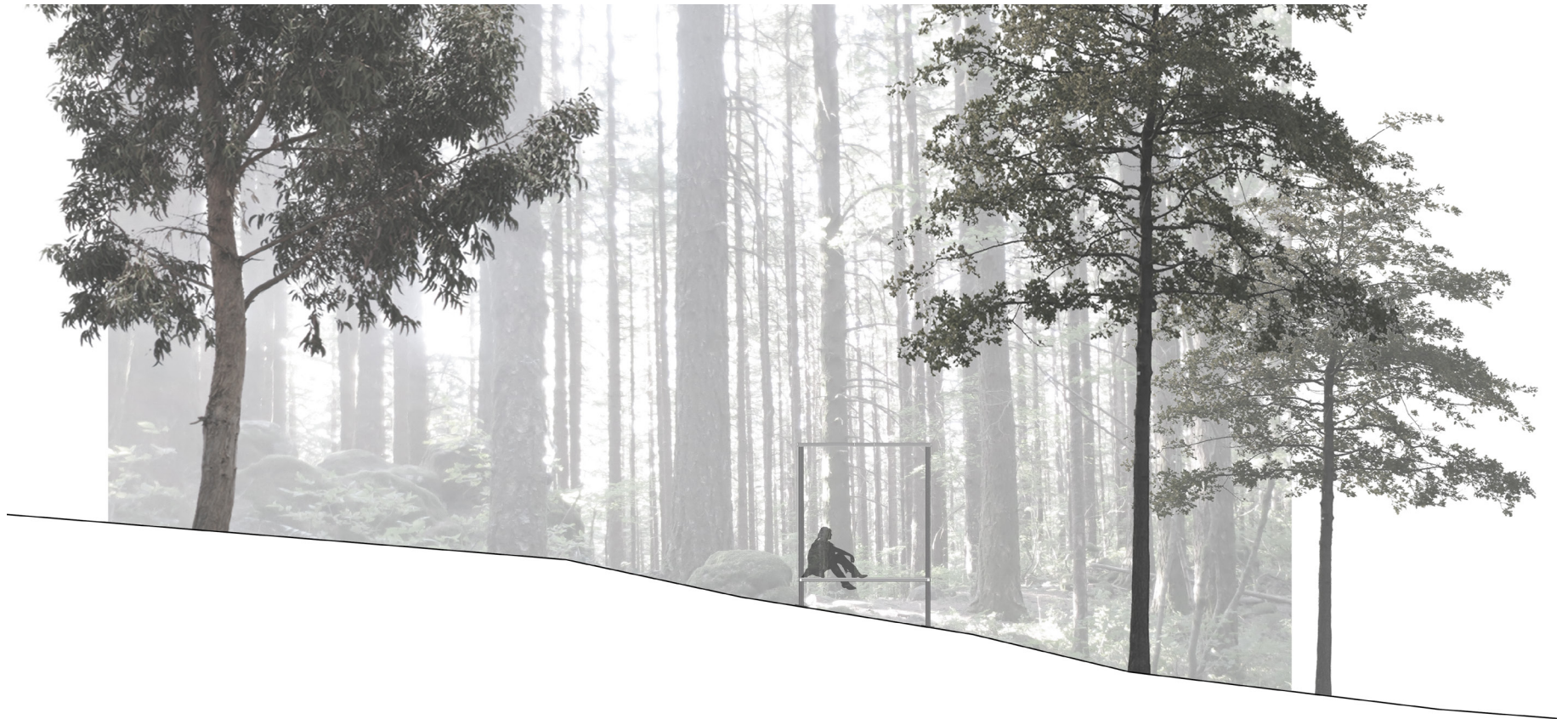
One of the goals of the privy is to limit impact on the land. While the way station is a permanent structure, the privy is designed so that small foundation can be placed at multiple places along the trail so that the structure can be easily assembled, disassembled, and moved over time. This allows for vegetation to regrow when the structure is moved limiting any damage to the land. The aluminum and polycarbonate materials are lightweight and allow for easy disassembly and travel and can be brought in via hikers or horses. The compostable toilet tank can be assembled and restocked by volunteers who currently maintenance the trail.



The privy, while providing a simple function of waste disposal, uses simple tectonic order and materials to elevate the design to one that frames the existing views and creates a better and more engaging experience for the hiker.



77 Tent campsite on PCT



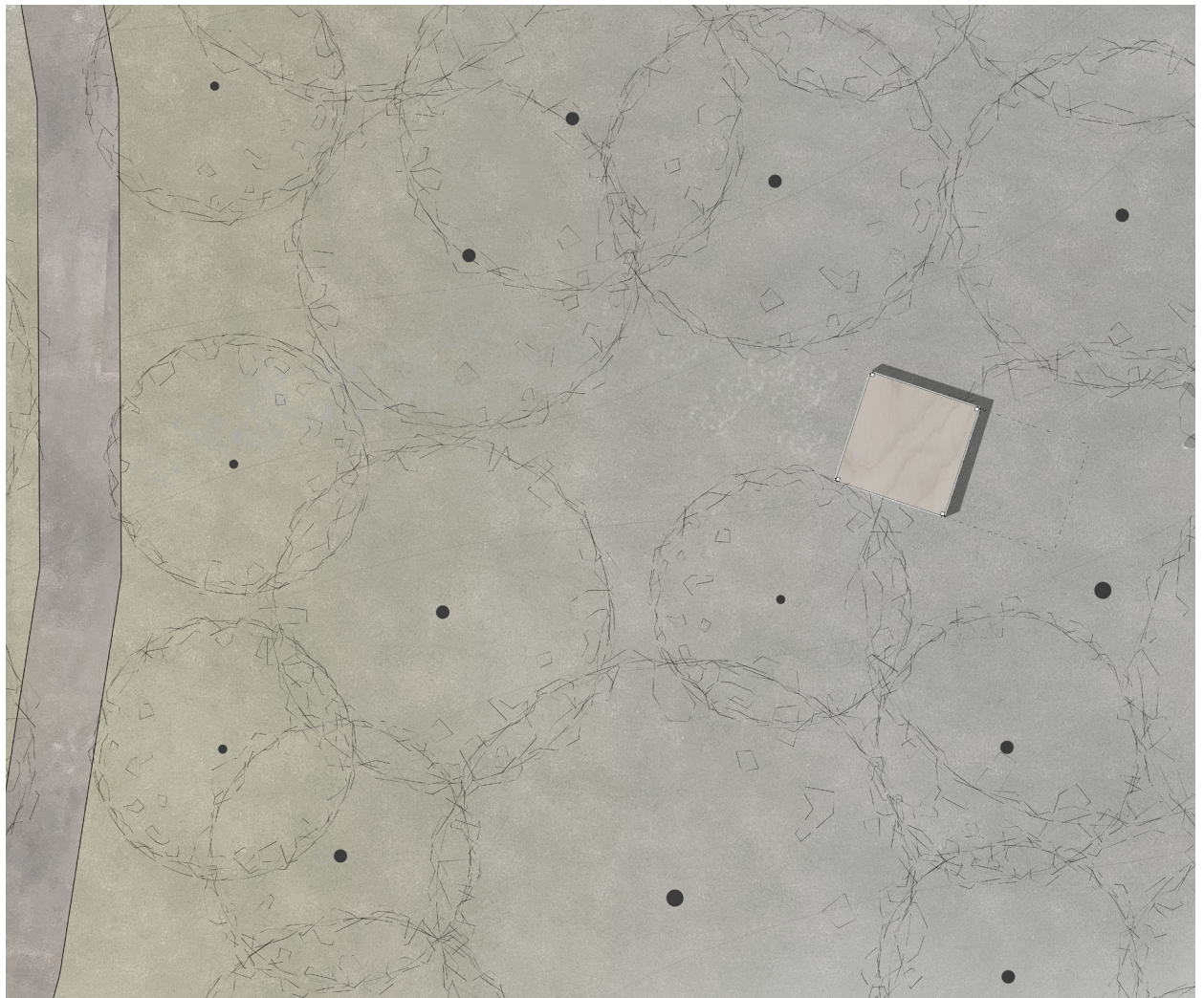
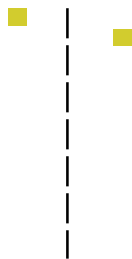
78 Shelter section

## SHELTERS

The final intervention along the trail is small overnight shelters. Located along the trail starting at fifteen miles in, the shelters allow hikers to rest overnight in a protected space. Especially at the altitude that this section of the trail reaches, protection from wind and rain is very helpful. In addition, the shelters also allow for thru-hikers to take a break from setting up their tent as they have been doing for the past four months earlier on the trail.

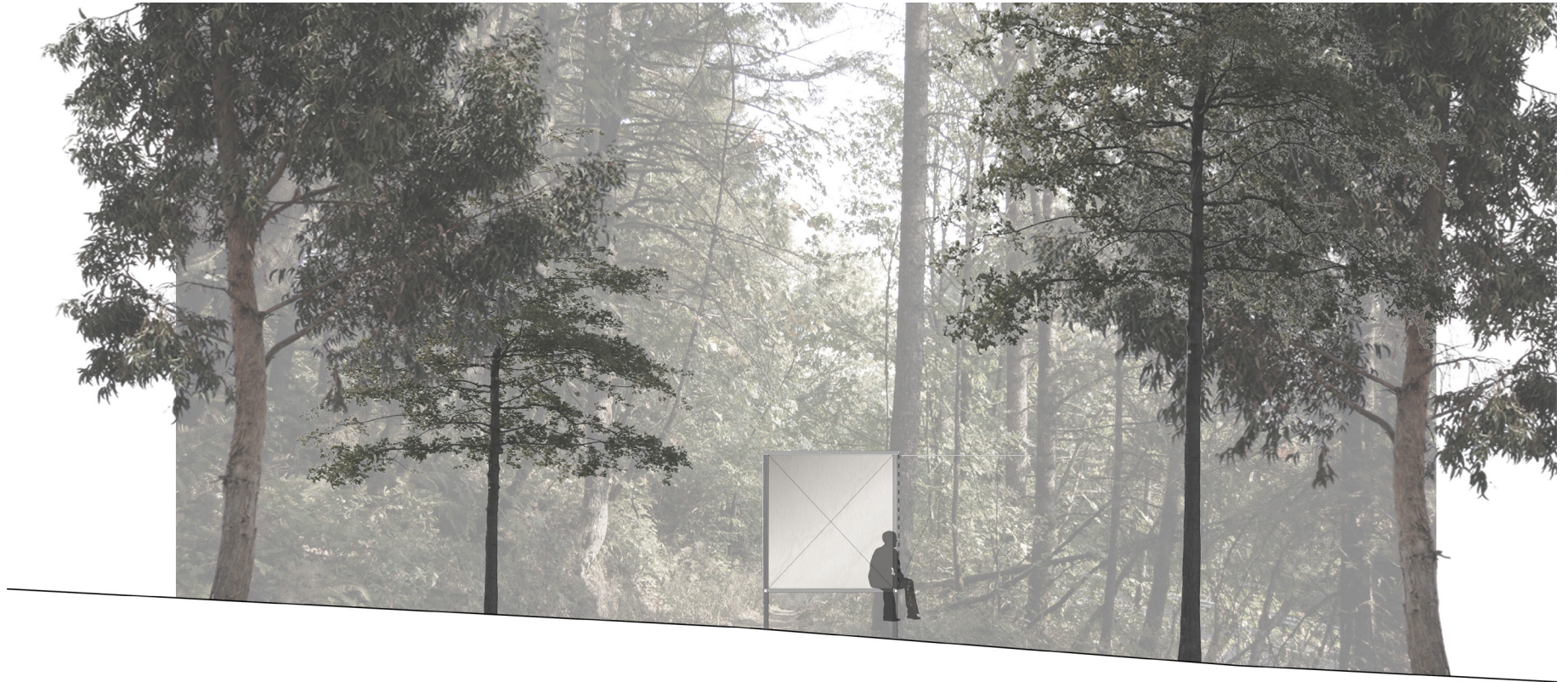


- 79 Shelter view from afar
- 80 Shelter plan



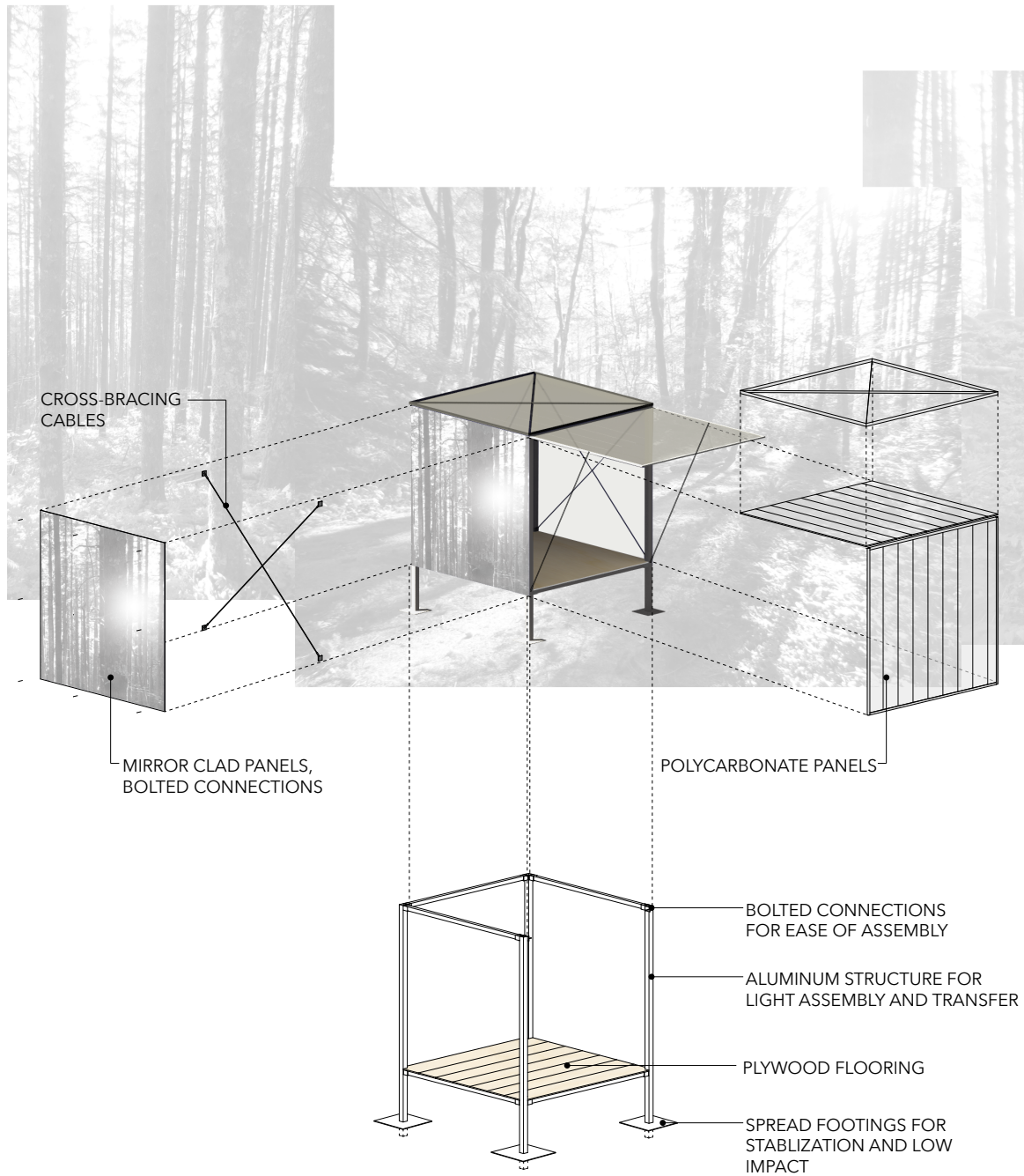
The shelters are placed further from the trail to create private spaces for hikers to rest at night and feel much more immersed in the landscape. Reflective surfaces, as seen in the privy, allow for the shelter to blend in with the landscape to further visualize the seclusion of hikers with their surroundings.



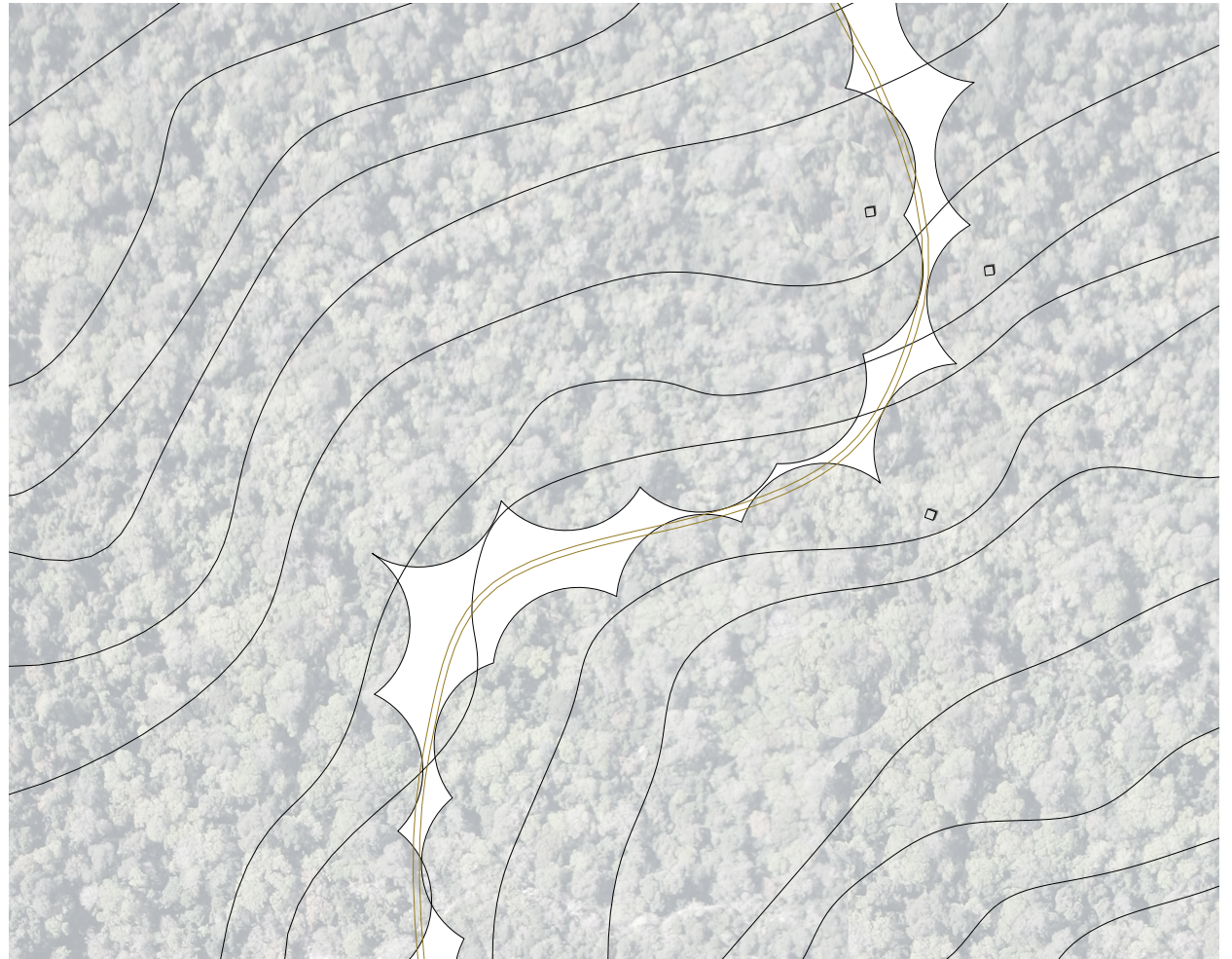


- 81 View of reflective surface on shelter
- 82 Shelter section

A polycarbonate roof and door allow for light to enter the shelter when closed. The door can also be propped open to allow for airflow and to frame the view of the site.



83 Exploded structural diagram of shelter



Similar to the privy, the shelters respond to the site with minimal insertion into the ground so as to easily be disassembled and moved along the trail. Raised above the ground, the shelters use a spread footing to lightly puncture the soil with a plate to disperse the weight of the structure. This design allows for the flexibility in placement on the terrain and the ability to be placed in different spots so as to not permanently damage the sites, as tent camping tends to do.



The shelters create a built structure in the wilderness that does not detract from the solitude of hiking but enhances the hikers ability to rest and appreciate their surroundings.



86 PCT at Snoqualmie Pass, WA

## *conclusion:*

The trail experience is one of solitude and discovery that inserts humans into the wilderness. This thesis aimed to enhance the trail experience and encourage hiker's use of the trail by inserting built structures that support their needs. Using the trail as the driving force in the design, each structure was able to provide a utility need for the hiker and limiting its environmental impact on the site while simultaneously immersing hikers in nature. Materials and tectonics created a strong presence on the path and identity for the Pacific Crest Trail in Washington.

The small interventions placed on the trail added a new sequence for hikers on the PCT. The way station, privy and shelters each further developed the trail experience by adding amenities for the hikers and creating places to experience the wilderness in a different way. Further exploration of the privy and shelter's presence on the trail with materials and structure has the potential to create an even stronger presence on the trail. This thesis discovered that architecture's presence in nature relies on simple, poetic moves that do not detract from the existing beauty. It further concluded that architecture that supports woodland and wilderness experience need not follow the US Park Service standard that invokes rustic or even primitive construction. It counter-proposes the use of lighter materials and means can both respect the context and enhance the wilderness experience.

The hiking trail is the catalyst into the wilderness, choreographing the path through the landscape and highlighting the views. Architecture in the wilderness can heighten the hiker's experience not only by the function of the buildings, but also the beauty of the structure within the landscape; a contrast in elements that stands out in the surroundings, but somehow fits into the experience.



87

## *appendix:*

In order to understand the site and the experience of the hiker on the Pacific Crest Trail I visited the site multiple times and did a weekend hike on the section of the trail at the Bridge of the Gods along with other hikes on the PCT throughout Washington. Hiking the trail and camping overnight helped bring perspective to what hikers need on the trail and how the project could encourage more hiking in the area. The following photos give a glimpse into the differing terrain of the site and can help bring context to the project.



88



89



90



91



92



93



94



95

## REFERENCES:

"Appalachian Trail Conservancy - Camping and Shelters." Appalachian Trail Conservancy. Web. June 8, 2014

Backhaus, Gary and John Murungi. *Symbolic Landscapes*. Springer Science+Business Media. Baltimore. 2009

Crowe, Lynn and Paul Reid. "The increasing commercialization of countryside recreation facilities: the case of Scottish mountain bothies." *Managing Leisure* 2. 1998. pp. 204-212

Elkinton, Steven. *The National Trails System: A Grand Experiment*. National Park Service, Department of Interior. Washington D.C. November 8, 2008.

Hvattum, Mari, Brita Brenna, Beate Elvebakk and Janike Kampevold Larsen. *Routes, Roads and Landscapes*. Ashgate Publishing Limited. England. 2011

"Lady Bird Lake Trail Restroom." Miro Rivera. Web. June 3, 2014.

"Leave No Trace." Center for Outdoor Ethics. Web. June 10, 2014

Lekies, Kristi S. and Bernadette Whitworth. *Constructing the Nature Experience: A Semiotic Examination of Signs on the Trail*. *The American Sociologist*, Vol. 42, No. 2-3. September 2011. pp. 249-260

Maiers, Bobbi. "Human Waste Disposal in the Backcountry: How to pee and poop in the Woods." Blog. *Trailspace Outdoor Gear Reviews*. April 2, 2010.

Moskow, Keith and Robert Linn. *Contemporary Follies*. The Monacelli Press. New York. 2012. pp. 120-124

Snead, James E., Clark L. Erickson, and J. Andrew Darling. *Landscapes of Movement*. University of Pennsylvania Museum of Archaeology and Anthropology. Philadelphia. 2009.

"Volunteer Groups." Pacific Crest Trail Association. Web. May 25, 2014.

"Washington." Pacific Crest Trail Association. Web. May 14, 2014.

Wilderness Press. *Pacific Crest Trail Data Book*. Birmingham. 5th Edition. 2013

"Wild Reindeer Centre Pavilion." Snohetta. Web. April 24, 2014.

West, Elliott. "American Pathways." *Montana: The Magazine of Western History*. Vol. 51, No. 3 (Autumn, 2001). pp. 20-31

## FIGURE REFERENCES

All images by author unless noted otherwise.  
All aerial images compiled using Google Earth.

10	<i>American Trails</i> . Web. 2014. <a href="http://www.americantrails.org/resources/feds/40yearexperiment.html">http://www.americantrails.org/resources/feds/40yearexperiment.html</a>	20
14	<i>Trail Journals</i> . Web. 2014. <a href="http://www.trailjournals.com/entry.cfm?id=157912">http://www.trailjournals.com/entry.cfm?id=157912</a>	24
23	<i>Pacific Crest Trail Association</i> . Web. 2014. <a href="http://www.pcta.org">http://www.pcta.org</a>	35
25	<i>Lady Bird Lake Trail Restroom</i> . Web. 2014. <a href="http://www.mirrorivera.com">http://www.mirrorivera.com</a>	37
26	<i>Lady Bird Lake Trail Restroom</i> . Web. 2014. <a href="http://www.mirrorivera.com">http://www.mirrorivera.com</a>	37
27	<i>Skating Shelters</i> . Web. 2014. <a href="http://www.patkau.ca">http://www.patkau.ca</a>	38
28	<i>Skating Shelters</i> . Web. 2014. <a href="http://www.patkau.ca">http://www.patkau.ca</a>	38
29	Tom's Thumb Trailhead. Web. 2014. <a href="http://www.fucelloarchitects.com">http://www.fucelloarchitects.com</a>	40
30	Tom's Thumb Trailhead. Web. 2014. <a href="http://www.fucelloarchitects.com">http://www.fucelloarchitects.com</a>	40
31	<i>Wild Reindeer Centre Pavilion</i> . Web. 2014. <a href="http://www.snohetta.com">http://www.snohetta.com</a>	41
32	<i>Wild Reindeer Centre Pavilion</i> . Web. 2014. <a href="http://www.snohetta.com">http://www.snohetta.com</a>	41
33	<i>Aurland Lookout</i> . Web. 2014. <a href="http://www.saunders.no">http://www.saunders.no</a>	42
34	<i>Public Toilet</i> . Web. 2014. <a href="http://www.mantheykula.no">http://www.mantheykula.no</a>	42
52	<i>PCT Hiker on Bridge of the Gods</i> . Web. 2014. <a href="http://www.backpacker.com">http://www.backpacker.com</a>	57

