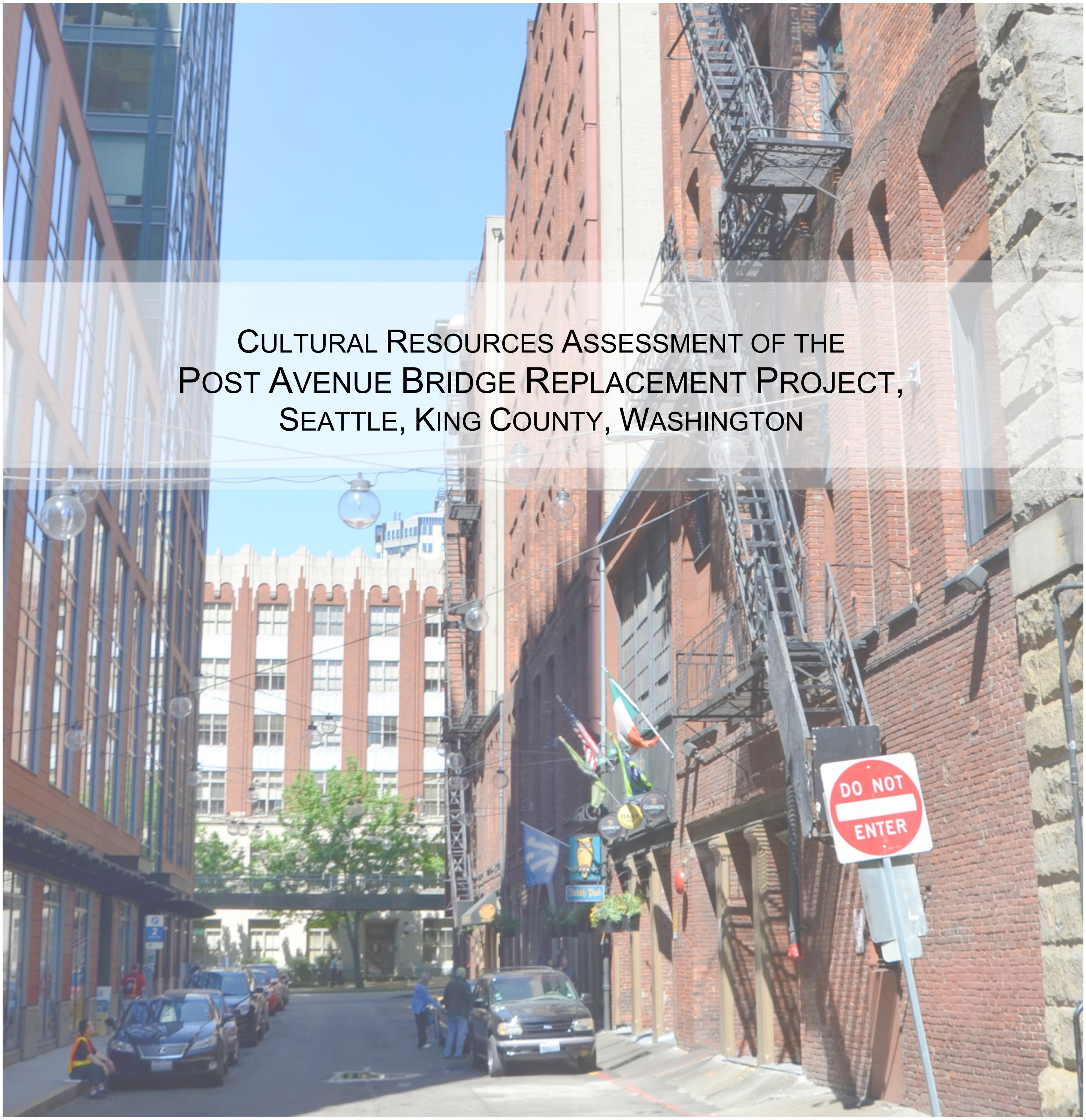

Cultural Resources Assessment of the Post Avenue Bridge Replacement Project, Seattle, King County, Washington

August 5, 2016

SWCA Environmental Consultants
Seattle, Washington

CULTURAL RESOURCES ASSESSMENT OF THE POST AVENUE BRIDGE REPLACEMENT PROJECT, SEATTLE, KING COUNTY, WASHINGTON

Report Prepared for

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ABSTRACT

SWCA Environmental Consultants (SWCA) conducted a cultural resources assessment as part of the Post Avenue Bridge Replacement Project, Agreement 15-139, for the Seattle Department of Transportation in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended. The Post Avenue Bridge is a timber trestle that supports Post Avenue between Marion and Columbia Streets in the city of Seattle. The project's area of potential effects (APE) extends one-half block on either side of the Post Avenue right-of-way as well as to the center lines of Marion and Columbia Streets on the north and south ends of this road segment. This cultural resources assessment contains information about known archaeological and historic resources in the project vicinity, a historical context for Post Avenue and the adjacent properties, a summary and analysis of previous geotechnical borings in the area, the results of a field survey of the bridge structure, an assessment of project effects and recommendations.

The proposed project will have no adverse effect on historic resources. SWCA recommends archaeological monitoring of ground-disturbing activities because of [redacted] the bridge, which was initially constructed in 1890 [redacted]. SWCA reviewed built-environment resources within and adjacent to the project area and prepared Historic Property Inventory forms (HPI) for two resources: the Post Avenue Bridge and the Marion Street Overpass. Most of the Post Avenue Bridge is not visible from the road or other accessible vantage points, but the preponderance of evidence suggests that its integrity has been compromised by changes in the decking and other alterations over time. As a result, SWCA recommends that the bridge is not eligible for listing in the National Register of Historic Places (NRHP), but suggests that an architectural historian monitor the demolition of a portion of the bridge to record and photograph what remains of the structure, which is a rare extant example of early road and infrastructure construction in the city of Seattle. SWCA also recommends that the Marion Street Pedestrian Overpass, which extends into the project area, is not eligible for the NRHP due to lack of significance and loss of integrity. Design specifications ensure that the project will have no adverse effect on the Colman Building, which is listed in the NRHP and is within the APE.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

INTRODUCTION

The Seattle Department of Transportation (SDOT) plans to remove the Post Avenue Bridge, which currently supports Post Avenue between Marion and Columbia Streets, and replace it with a standard roadway to address ground settlement and safety considerations. SDOT retained SWCA Environmental Consultants (SWCA) to undertake a cultural resources assessment of the bridge replacement project. This assessment includes an introduction to the project and its natural, cultural, and historical setting as well as a section on methods and results of the cultural resources assessment. Project effects on both archaeological and built-environment cultural resources within and adjacent to the project are assessed and recommendations made at the conclusion of this report. A monitoring and discovery plan (MDP) to guide recommended archaeological monitoring of project construction is appended.

Project Location and Description

The Post Avenue Bridge supports Post Avenue between Marion and Columbia Streets (Figure 1). The project's area of potential effects (APE) extends one-half block on either side of the Post Avenue right-of-way, as well as to the center lines of Marion and Columbia Streets on the north and south ends of this segment of the roadway. Adjacent and immediately to the east of the Post Avenue Bridge is the Colman Building at 801 1st Avenue. The Colman Building is listed in the National Register of Historic Places (NRHP). The Marion Street Pedestrian Overpass crosses the APE at the north end of Post Avenue, over the south sidewalk on Marion Street. The Pioneer Square Historic District boundary terminates at the middle of Columbia Street, which is approximately 25 feet (7.63 m) south of the bridge.

The Post Avenue Bridge consists of a deep timber pile foundation with timber cap beams supporting an unreinforced concrete slab that is covered by an asphalt overlay. The bridge is about 240 feet (73.1 m) long and 36 feet (11 m) wide. There is a 2- to 3-foot-wide (61-cm- to 1-m-wide) open space between the soffit of the bridge and the existing ground line along the length of most of the bridge. There is no readily available access to the underside of the bridge, and the bridge structure is not visible from the roadway surface.

The soil beneath the bridge will be removed to 3 feet (1 m) below the existing soil surface and the support pillars will be cut off up to 6 feet (1.8 m) below the road surface (Figure 2). On the south side of the project SDOT may install a new drainage connection.

Regulatory Context

The Post Avenue Bridge Replacement Project will receive funding support from the Federal Highway Administration (FHWA); therefore, is subject to the National Historic Preservation Act of 1966 (NHPA), as amended. Section 106 of the NHPA and its implementing regulations 36CFR800.4(a)(4) require the agency to take into account the effect of an undertaking on any district, site, building, structure, or object that is eligible for or included in the NRHP and provide guidance on this process. Eligible properties must be at least 50 years old, possess integrity of physical characteristics, and meet at least one of four criteria of significance, that properties:

A. are associated with events that have made a significant contribution to the broad patterns of our history;
B. are associated with the lives of persons significant in our past;
C. embody the distinctive characteristics of a type, period, or method of construction, represent the work of a master, possess high artistic values, represent a significant and distinguishable entity whose components may lack individual distinction; or
D. have yielded, or may be likely to yield, information important in prehistory or history.

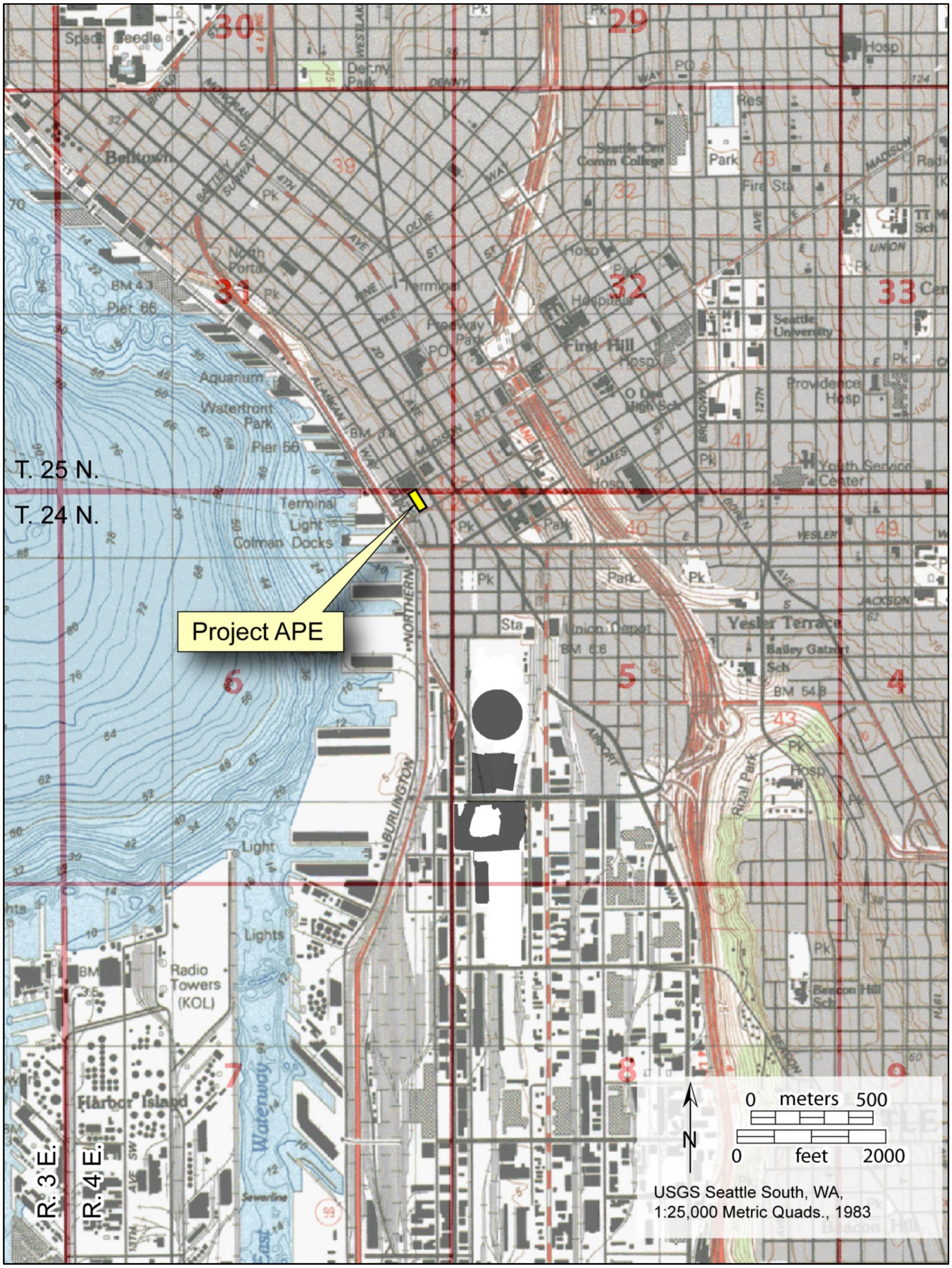

Figure 1. Project location.

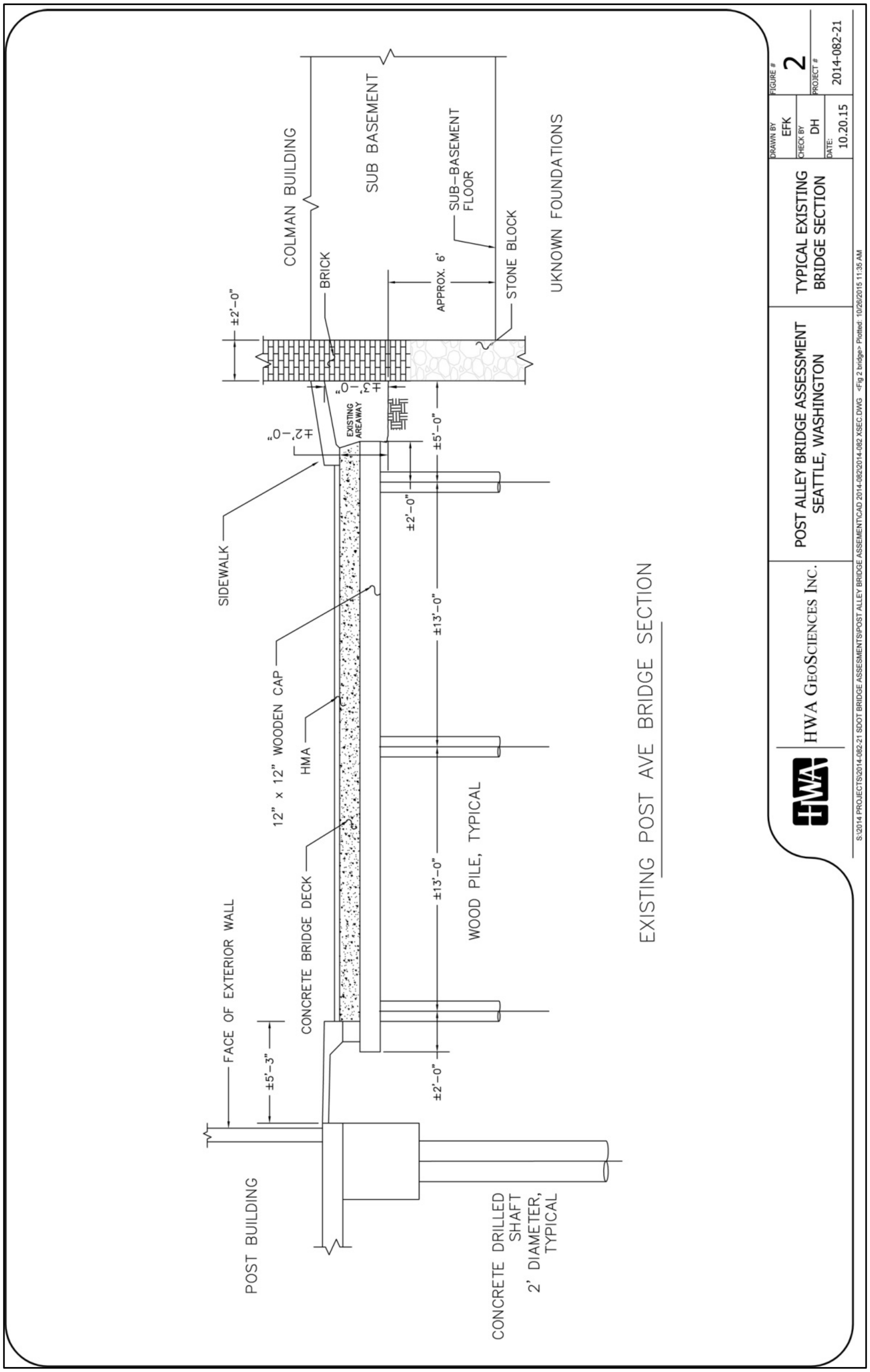

Figure 2. Bridge schematic.

The Washington State Environmental Policy Act (RCW 43 21C) and the rules for its implementation contained in the Washington Administrative Code (WAC 197-11) stipulate that the project proponent, in this case the City of Seattle, must identify any places or objects in or adjacent to the study area that are listed in, or eligible for, national, state, or local preservation registers, as well as any sites of archaeological, scientific, or cultural importance in or adjacent to the study area. Proposed measures to reduce or control impacts to those places, objects, and sites must also be addressed.

Several Washington state laws specifically address archaeological sites and Native American burials. The Archaeological Sites and Resources Act (RCW 27.53) prohibits anyone from knowingly excavating or disturbing prehistoric or historical archaeological sites on public or private land without a permit from the Washington State Department of Archaeology and Historic Preservation (DAHP). The Indian Graves and Records Act (RCW 27.44) prohibits destruction of American Indian graves and requires reinterment under supervision of the appropriate Indian Tribe following inadvertent disturbance by construction or other activity. RCW 42.56.300 states that records, maps, or other information identifying the location of archaeological sites are exempt from public disclosure laws in order to avoid the looting or depredation of such sites.

On the local level, the City of Seattle's Historic Landmark Preservation Ordinance (Seattle Municipal Code 25.12) protects properties of historic and architectural significance. An object, site, or improvement that is more than 25 years old may be designated for preservation as a landmark if it has significant character, interest, or value as part of the development, heritage, or cultural characteristics of the city, state, or nation; if it has integrity or the ability to convey its significance; and if it falls into one of six criteria of eligibility. Under the City of Seattle's SEPA regulations, properties that are likely to meet City Landmark criteria must be formally reviewed for designation before demolition. This determination and other review decisions concerning landmarks and districts are made by the Seattle Landmarks Preservation Board.

Tribal Coordination

Formal consultation for this project is under the jurisdiction of FHWA’s designee, the Washington State Department of Transportation. SWCA contacted the Duwamish Tribe, the Muckleshoot Indian Tribe, the Suquamish Tribe, and the Tulalip Tribes about this project to gather information and concerns about traditional cultural places. This correspondence was an inquiry for informational purposes only, and does not replace any additional government-to-government consultation that may be required for the project. One response was received from the Suquamish Tribe, which did not have any concerns about the site. Copies of this correspondence are in Appendix A.

NATURAL SETTING

The Post Avenue Bridge Replacement Project is within the Puget Lowland, a geographic province that separates the Olympic Mountains from the Western Cascades (Orr and Orr 1996). The present topography of the Puget Lowland is primarily the result of continental glaciers that extended south from what is now Canada during the Pleistocene Epoch that spanned the period from 1.8 million year ago to about 10,000 years ago (Booth et al. 2004; Easterbrook 1993). The end of the Pleistocene marked the beginning of modern landscape evolution in the region (Thorson 1989). Changing environmental conditions throughout the subsequent Holocene Epoch have affected the kinds and distribution of resources, as well as the suitability of particular landforms for human occupation over time (Carlson 1990; Carlson and Dalla Bona 1996). Environmental changes, such as sea-level rise, climate variation, erosion, and tectonic activity have affected the evidence of past occupation in terms of archaeological site visibility and preservation.

Geology

The modern topography of the project vicinity is characterized by rolling hills that are interrupted by north-south-oriented troughs carved by the ice sheet and subsequently occupied by large freshwater lakes and rivers (Galster and Laprade 1991; Liesch et al. 1963; Troost and Stein 1995; Yount et al. 1993). The project is along the shoreline of Elliott Bay on the Puget Sound, which occupies one of the glacially-carved troughs in the Puget Lowland. The most recent Pleistocene ice sheet advance occurred during the Vashon Stade of the Fraser glaciation. The Puget Lobe of the Cordilleran ice sheet reached its maximum southern extent near Tenino, about 75 miles (120 km) southwest of the project, around 17,600 radiocarbon years before the present (BP) (Booth et al. 2004; Dethier et al. 1995; Heusser 1973). Over 3,000 feet (900 m) of glacial ice covered the APE during the last glacial maximum, retreating from the Puget Lowland by about 16,850 BP (Armstrong et al. 1965; Booth et al. 2004).

Proglacial lakes formed at various elevations behind the ice front during glacial retreat (Haugerud 2006; Mullineaux et al. 1965; Thorson 1980, 1989; Troost and Booth 2008). The glacial lakes connected glacially-carved meltwater channels in the Puget Lowland, and linked the Duwamish, Green, Puyallup, and Sammamish River troughs to drain into the ancestral Chehalis River prior to 13,650 BP (Thorson 1989; Waitt and Thorson 1983). The APE would have been inundated in the glacial lakes until the Admiralty Inlet between Whidbey Island and the Olympic Peninsula was breached to allow the glacial lakes to drain.

Hundreds of meters of unconsolidated sediment from both the glacial ice (till) and the meltwater (outwash) were exposed after the ice retreated far enough north for the glacial lakes to drain into the Strait of Juan de Fuca (Alt and Hyndman 1994; Borden and Troost 2001; Dethier et al. 1995; Mosher and Hewitt 2004; Porter and Swanson 1998; Waitt and Thorson 1983). As a result, the geomorphology of the Seattle area is dominated by north-south-trending glacial outwash ridges topped with till and blanketed by glaciolacustrine sediment. The surfaces of the uplands are characterized by numerous surface depressions occupied by small lakes and peat bogs (Mullineaux 1970). These surfaces were the first available to Native Americans after glaciation.

Sea level in the newly formed Puget Sound was lower than the modern shoreline because of the amount of water still locked up in continental ice sheets around the world at the end of the Pleistocene. The elevation of the Puget Lowland was also lower than its modern one at the end of the Pleistocene due to the previous weight of the Vashon glacier (Dragovich et al. 1994). Global sea level began to rise when worldwide continental ice sheet retreat was at its height. The marine incursion resulted in formation of deep, fjord-like embayments at Elliott and Commencement Bays (Thorson 1989). Inundation reached a maximum of about 200 feet (60 m) in the Seattle vicinity. The APE would have been inundated by the marine incursion.

Soon after inundation, the elevation of the land began to rise as the Puget Lowland rebounded from the former weight of ice and meltwater. The local rate of rebound of the Puget Lowland was faster than global sea-level rise, resulting in a relative sea-level decline in Puget Sound between about 12,000 and 11,000 years ago. The APE would have been exposed and available for human use during this period of lower relative sea level. During rebound, rivers established new courses and carved valleys and channels deep into the glacial drift in an effort to reach their lowered base level. Rebound was mostly complete in the Seattle area by about 11,000 years ago, after which continued global sea-level rise drowned the earliest Holocene shorelines, including the APE (Dethier et al. 1995; Dragovich et al. 1994). Global sea level continued to rise very rapidly until about 7,000 years ago, and then the rate slowed and the level approached modern positions by about 5,000 years ago.

Rising Holocene sea level resulted in formation of a delta at the head of the Duwamish embayment, at what is now Auburn (Crandell 1963; Dragovich et al. 1994). The Duwamish delta grew rapidly after a lahar from Mount Rainier called the Osceola Mudflow flowed down the White River drainage, spilling into the Green and Puyallup drainages. The lahar itself did not reach Elliott Bay; however, subsequent incision into and erosion of the lahar sediment by the rivers caused progradation of the delta at the river mouth as the sediment was redeposited. The Duwamish delta arrived at what is now the south end of Harbor Island at Elliott Bay between 1,520 and 2,120 years ago (Collins and Sheikh 2005a; Zehfuss et al. 2003). Approximately 1,400 acres of tide flats were historically present at the mouth of the Duwamish River (Collins and Shiekh 2005b) (Figure 3). The Duwamish delta likely provided resources to the Native Americans occupying the project vicinity throughout the mid- to late-Holocene, conditioning settlement along Elliott Bay.

Other important resources were available in the protected tidal marshes that existed around the Elliott Bay shoreline at West Point, Smith Cove, and Occidental Square. These marshes, like the rest of the shoreline, were historically drained and filled (Booth and Goldstein 1994; Collins and Shiekh 2005a; Pringle 2000). Deeply incised ravines were also present where streams cut into the upland, and the beaches widened at the mouths of the ravines where those streams entered Elliott Bay. Where marshes and creeks were absent, the shoreline consisted of high and steep, wave-cut bluffs backing narrow beaches (Collins and Sheikh 2005b; Troost and Stein 1995). Denny Island, a tombolo landform and important Native American camping location, [redacted] which was part of the intertidal zone of Elliott Bay at the time the first historic maps of the project vicinity were drawn (see Figure 3). The intertidal zone included the beaches and tide flats that once extended along the entire Seattle waterfront (Downing 1983). These intertidal sediments, and any archaeology they may contain, are now deeply buried below thick historical fill deposits.

Ongoing north-south compression of the Puget Lowland is a result of plate tectonics in the region. Although plate boundary movement does not usually result in fault ruptures at the surface in the Pacific Northwest, deep earthquakes can cause localized uplift, subsidence, landslides, and delta liquefaction (Johnson et al. 2004). The APE is on the north edge of the Seattle Fault Zone (SFZ) (Nelson et al. 2003; Sherrod 2001). Holocene earthquake activity on the SFZ around 1,100 years ago resulted in uplift of about 16 feet (5 m) south of the SFZ and about 3 feet (1 m) of subsidence north of the fault (Atwater and Moore 1992; Blakely et al. 2009; Brocher et al. 2001; Bucknam et al. 1992; Johnson et al. 1994; Thorson 1993). At the time of the earthquake, the Duwamish delta would have been about 5 miles (8 km) south of the fault (Sherrod 2001; Zehfuss et al. 2003). Cultural materials in the APE may have been affected by subsidence or shaking as a result of the tectonic setting.

Paleoenvironment

Vegetation and animal distributions varied during the Holocene based on climate changes. Initially, newly deglaciated land surfaces were colonized by lodgepole pine, followed by Douglas-fir, white pine, spruce, and alder. The climate warmed and dried out as glacial conditions waned, allowing grasses, oak, and hazel to grow alongside the Douglas-fir (Whitlock 1992). Conditions were warmer and drier than today until about 7,000 years ago (Whitlock 1992). After about 7,000 years ago, conditions became maritime and similar to the modern climate regime. By about 5,000 years ago, the climate approached modern-day conditions, prompting closed forests of hemlock, western redcedar, and Douglas-fir to grow due to the return of cooler and wetter conditions (Tsukada et al. 1981; Whitlock 1992).

This image has been redacted.

Figure 3. Early historical map of the APE vicinity, 1875, showing the extensive tide flats in Elliott Bay, shoreline features such as Denny Island, and ethnographic period Native American camps.

Flora and Fauna

Before Seattle urbanized and the area's forests were logged, the native vegetation was typical western hemlock forest, dominated by coniferous Douglas-fir, western hemlock, and western redcedar. Alder and big-leaf maples were the most common deciduous trees and the forest understory generally consisted of sword fern, bracken fern, salal, Oregon grape, oceanspray, blackberry, red huckleberry, red elderberry, snowberry, salmonberry, wild rose, red osier dogwood, and other dense shrubbery (Franklin and Dyrness 1973). Other vegetation found along waterways included black cottonwood, big-leaf maple, red alder, willow, crabapple, hardhack, and Oregon ash. Marshes and wetlands supported willow, alder, cattail, reeds, cranberries, skunk cabbage, and wapato that would have provided food or useful resources for humans, as well as food and cover for game they hunted (Deur and Turner 2005; Franklin and Dyrness 1973).

Large mammals in western Washington that occupied the forests surrounding Elliott Bay included elk, black-tailed deer, bear, and mountain lion, as well as smaller animals such as rabbit, raccoon, red fox, porcupine, squirrel, coyote, weasel, and river otter (Kruckeberg 1991; Larrison 1967). Marshes and wetlands provided habitat for beaver, muskrats, ducks, geese, and other waterfowl. Harbor seal, sea lions, porpoises, and other marine mammals were plentiful in Puget Sound. Native Americans relied predominately on fish for food, catching many species of salmon, as well as freshwater fish such as bulltrout, suckers, Dolly Varden, sculpin, and others (Williams et al. 1975). The intertidal zone of Elliott Bay also offered a variety of shellfish and other marine resources.

CULTURAL SETTING

Archaeological evidence indicates that humans moved into the Pacific Northwest at the end of the Pleistocene, occupying western Washington by 12,500 cal BP (Gustafson and Manis 1984; Jenkins et al. 2012; Kirk and Daugherty 1978). Little is known about the earliest inhabitants of the region because archaeological sites dating to the late Pleistocene and early Holocene are rare. Archaeological sites dating to the past 5,000 years are more common, and these shed light on past lifeways. Ethnographic and historical accounts of settlement and subsistence further inform on the project's cultural setting.

Prehistory

The earliest well-established cultural period in North America, designated the Paleoindian period, is based on a small number of isolated fluted projectile points (Avey n.d.; Carlson 1990; Meltzer and Dunnell 1987). The closest was found [redacted] Inferences about Paleoindian lifeways have been limited to presumptions of tool function based on the isolated stone tools and their rare association with large extinct mammals (Gustafson and Manis 1984; Kirk and Daugherty 1978). The projectile point styles of the Paleoindian period did not persist past 10,000 years ago (Carlson and Dalla Bona 1996). Although it is possible that cultural materials dating to the Paleoindian period are in the project vicinity, it is very unlikely that the context of any Paleoindian artifacts would be preserved in the project's shoreline setting. It is also unlikely this project would encounter cultural materials dating to the Paleoindian period because, if present, they would be encountered at depths greater than project ground disturbance is planned.

Human occupation during the early and middle Holocene is better understood than the Paleoindian period because of several archaeological sites that represent the period from 8,000 to 5,000 years ago, locally termed "Olcott" (Butler 1961; Fladmark 1982; Kidd 1964; Mattson 1985). Typical Olcott artifacts are large stemmed or leaf-shaped points, scrapers, flake tools, and blade cores formed of basalt toolstone. Olcott sites, which are often located [redacted], usually do not contain features, such as hearths and storage pits (Blukis Onat et al. 2000; Carlson 1990; Morgan 1999; Wessen and Welch 1991). Age estimates of Olcott sites have been inferred based on their similarity to dated components of assemblages from archaeological sites in British Columbia, as well as by using projectile point cross-dating, obsidian hydration analysis, and luminescence dating (Carlson and Dalla Bona 1996; Chatters et al. 2011). Encountering Olcott artifacts during project construction is unlikely.

Archaeological evidence of Native Americans living around the Puget Sound between about 5,000 and 2,500 years ago is most commonly found [redacted]. Population was rising during the middle Holocene, and subsistence gradually transitioned toward a marine resource base with seasonal economic strategies (Ames and Maschner 1999; Matson and Coupland 1995). Native American culture shows further differentiation based on subsistence strategy between 2,500 years ago and Euroamerican contact, during the late Holocene. It is possible that archaeological materials dating to the middle Holocene are [redacted]. If present, these cultural materials would likely be related to past temporary camping, hunting, or gathering activities rather than habitation, due to the intertidal setting of the pre-fill project area. However, it is unlikely that this project would encounter middle Holocene–aged cultural materials [redacted].

Archaeological sites dating to the late Holocene are characterized by a marine-oriented culture on the Pacific Coast, a mixed marine and terrestrial economy on the Puget Sound, and a terrestrial mammal and riverine fishing culture inland (Ames and Maschner 1999; Blukis Onat 1987). Large semisedentary populations of Native Americans occupied cedar plank houses [redacted]. Seasonal camps were used for hunting, fishing, or resource gathering during the spring, summer, and fall (Ames and Maschner 1999; Blukis Onat 1987; Fladmark 1982; Matson and Coupland 1995). It is possible that archaeological materials dating to the late Holocene [redacted]

Ethnohistory

The project is in the traditional territory of the Duwamish, a Lushootseed-speaking group that lived on the shores of Elliott Bay, Lake Washington, Lake Union, Salmon Bay, and on the banks of the Duwamish, Black, and Cedar Rivers. Today, many Duwamish descendants have chosen to become members of federally recognized tribes including the Muckleshoot Tribe, Snoqualmie Tribe, Suquamish Tribe, and Tulalip Tribes, while other continue to seek independent Duwamish Tribal status. The Duwamish traditionally followed a seasonal round that was tied to available resources. In spring and summer, people dispersed from winter villages of cedar plank houses to live in temporary camps to fish, hunt land and sea mammals, and collect roots, berries, and other plants. In winter, preserved forms of these foods supported the village while people focused on important ceremonial work and social networking (Miller 1999).

Permanent Native American settlements and temporary camps existed [redacted] Evidence of Native American use and occupation [redacted] comes from historic accounts [redacted]. A Native encampment, called “Curley’s Camp”, was [redacted] Another encampment was recorded on historical maps [redacted]

[redacted] In addition to these mapped camp sites, several places around the APE were named by Native Americans. The promontory near [redacted], for example, was known as *Djidjilä’l*^{3}*ltc* (d^{z}d^{z}əlaič). This means “a little place where one crosses over,” and refers to the trail that led [redacted]

When the group of settlers known as the Denny Party landed at Alki in 1851, hundreds of Native Americans who camped or lived in the area joined them. Some members of the party moved across Elliott Bay to Denny Island (now Pioneer Square) a year later, and the city of Seattle was platted. Native Americans provided important labor for domestic and industrial activities, and supplied food for the growing community. In the 1880s, Native American families who worked in nearby hops fields occupied the tide flats south of Jackson Street. They moored their canoes [redacted] and camped at the mouth of a ravine [redacted]

With the influx of Euroamerican settlers came changes for Native peoples, including decimating disease. With the Point Elliott Treaty of 1855, the federal government focused Native American settlement on reservations. By the twentieth century, Native American communities within the city of Seattle were gone, and although some individuals and families continued to live within the city, Native American culture was forever changed (Costello 1895; Denny-Lindsley 1906; Kellogg 1912).

History

Seattle’s founders chose the town’s site on Elliott Bay because of the deep and protected moorage it offered, and their livelihood was initially dependent on shipping the region’s raw materials to consumers around Puget Sound and eventually the world. The waterfront was their most important link to the outside world, although very quickly residents also worked to bring in transcontinental rail connections that would provide overland access to markets across the country. Within the city itself, the establishment of roads and other transportation systems was part of the development of an infrastructure that would make Seattle the commercial and residential center for the region.

Steep hillsides and surrounding tidelands provided challenges for this type of urban development, but by filling, dredging, and leveling, the city created more useable land for expansion. Many of Seattle’s early roadways, like Post Avenue, initially required extensive grading and filling, and often were built on trestles over the tidal areas. At first, sawdust and mill ends served as fill material, but over time ambitious projects to dig canals for ocean-going vessels and to regrade the city’s main thoroughfares provided millions of cubic yards of earth and sand, which, in turn, were used for fill. Industrial, commercial, and residential development took place on these newly created lands side by side with the improvement of wharf and railroad facilities. Historical maps of early Seattle are included in Appendix B.

Early Road-Building

Much of what became the heart of Seattle was originally heavily forested, and Henry Yesler’s skid road, which extended along the narrow panhandle of his claim down the hill to his waterfront mill, was the city’s first important thoroughfare. Once the area was logged by early residents, little was done to improve the other dirt tracks that crisscrossed the landscape. During the rainy season, the mud was so deep that horses and wagons often had to be pulled out of holes with ropes. Slowly over the next two decades, the city began to develop a street system, using cobblestones in some areas but planking more frequently (Buerge 1986:100; Finger 1968:44, 155).

The early attempts to make it easier for wagons and other traffic to travel up and down Seattle’s steep hillsides began in 1876 as the city passed ordinances establishing street grades and authorizing work that would provide easier access to the central business district. The city spent nearly $12,000 to fill, widen, and flatten the grade on First Avenue from Mill Street to Pike Street, and then on Mill Street from First Avenue to Eighth Avenue. During this period, Mill Street (now Yesler Way), which extended east from the Yesler mill, and Commercial Street (now First Avenue South) were at the center of the town's business activity (Bagley 1929:373–374; Ward 1876:20).

The grading of Front Street (later First Avenue) provided the initial impetus for new development to the north. The work was difficult and earth slides on Mill Street caused the contractor to halt the grading efforts midway through the project. Front Street was completed, but not without additional cribwork in places to shore up the road and large amounts of fill. Photographs taken by the Peterson Brothers studio in 1878 show an extensive log wall or bulkhead extending from at least Columbia Street northward toward Union Street (Figure 4). Property owners were charged for the cost of grading in front of their property, although a few like pioneer resident Henry Yesler refused to pay (Bagley 1929:373–374; Dorpat 2006:32; Finger 1968:315–317).

Grading of other city streets continued into the 1880s and Chinese workers contracted through the Wa Chong Company provided much of the labor for these projects. Spoils from the earth-moving operations were used in a variety of ways: some of the fill was dumped into the steep ravines dropping down to the shoreline, while more was shoveled around the pilings of the city's wharves to prevent damage by shipworms. Regrading also eventually helped to extend the shoreline and by 1880 resulted in filling over 100 acres of tideland (Andrews 2005:31–32; Buerge 1986:106; Chin 1977:51).

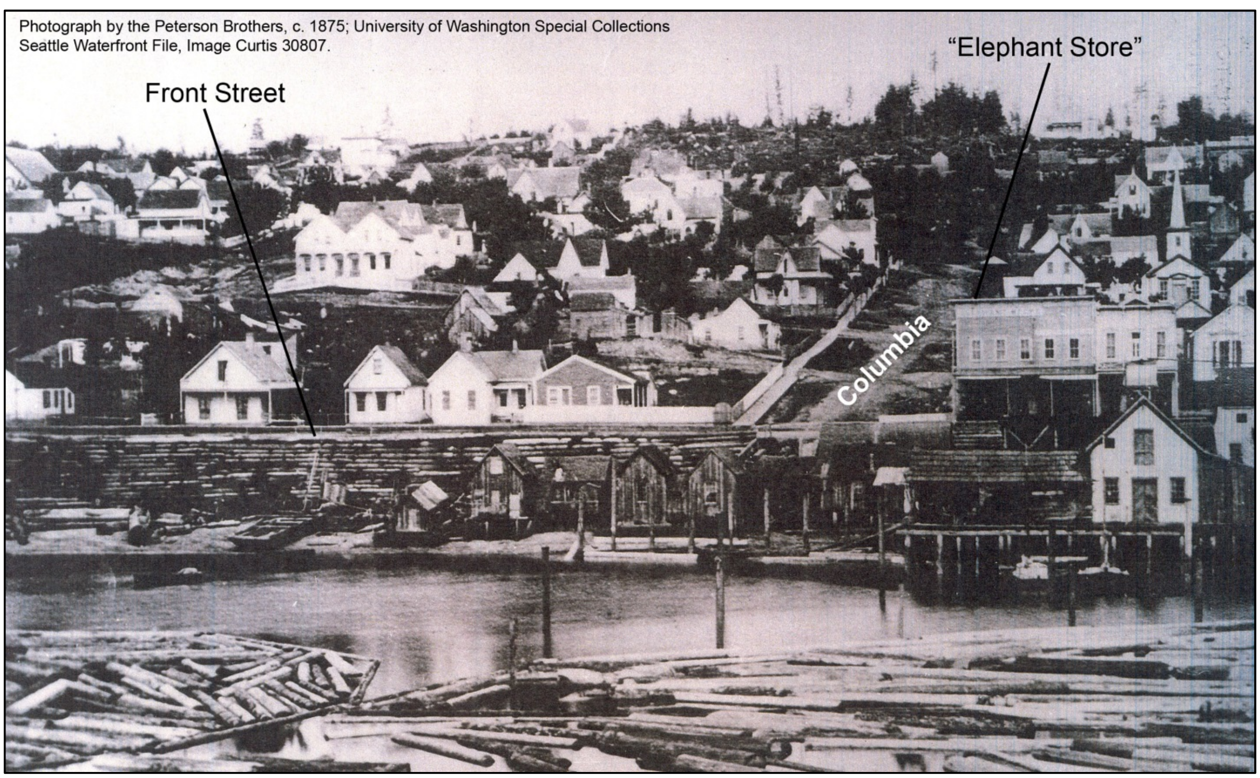

Figure 4. Log cribbing supported the regrading of Front Street, and a few cabins hugged the shoreline that later became part of the Colman Block to the east of Post Street.

Streets were also widened during the early 1880s, including Front Street, which was expanded 9 feet on each side. Henry Yesler donated the land for Post Street, which initially ran from Mill Streeet to the northern-most end of his donation claim boundary, located at the southern edge of what became Columbia Street. Yesler also gave portions of his property for an addition to the right-of-way to make Mill Street 75 feet in width. Mill Street was renamed Yesler Avenue by the Seattle City Council in December 1888 (Finger 1968:317–318).

Colman Enterprises

Another property owner along the waterfront was James M. Colman, who was among what might be called the “second wave” of pioneers to come to the Puget Sound area. Colman, who was a native of Scotland with training as an engineer, had immigrated to the United States in 1854 and settled in Milwaukee before heading west to California. By 1861 he had taken a job in Washington Territory as the manager of the Port Madison sawmill and used that experience to build his career in the lumber industry. He subsequently purchased and rebuilt a mill in Port Orchard, but when it burned down in 1869, he moved on to Tacoma and finally in 1872 to Seattle. He took over management of the Henry Yesler sawmill, which at that time was leased to the San Francisco lumber firm of Preston and McKinnon (Bagley 1929:II-52–II-53; Finger 1968:160; *Seattle Post-Intelligencer [PI]*, Dec. 13, 1906).

When Colman arrived in Seattle, the city had only recently rebounded from the effects of an economic downturn. The population had reached approximately 2,000 residents, and an 1872 Seattle business directory of Seattle listed 154 businesses in operation during that year. In addition to the Yesler sawmill, which had been the town’s first and most important industry, there was also a tannery, two boilermakers, two sash and door factories, two wagon makers, and a cooper. The waterfront was also expanding with two shipyards and a wharf builder. A couple of breweries and a soda factory as well as an ice company also supplied local restaurants and taverns and undoubtedly shipped their products to smaller settlements throughout the region (Murphy and Harned 1872). Yesler had built a new mill in 1869, but when Colman became the manager, he further updated it and took advantage of an upswing in the economic climate to make it a thriving business. In 1874 he bought out the contract from Preston and McKinnon and negotiated his own 3-year lease with Yesler in the following year. During this period, the plant was frequently referred to in business directories and local newspapers as Colman’s mill, and Colman was credited by many with making significant improvements in equipment and efficiency that increased daily output (Finger 1968:160–162).

Throughout the period that Colman was leasing the Yesler mill, Henry Yesler tried to better his precarious financial situation with a variety of schemes, including a lottery that offered the sawmill as the main prize. The lottery collapsed, however, and finally in September 1876, Yesler signed a contract that transferred the sawmill, as well as a portion of the adjacent wharf, to Colman. The relationship between the two men was extremely contentious, however, and disagreements over the terms of the contract and Yesler’s title to the property led to a protracted lawsuit that Colman eventually lost (Finger 1968:154–155, 158–167, 170–171).

Before the case was settled, Colman evidently decided that he needed to protect his interests and also purchased a nearby waterfront block that he could use for a new sawmill or other enterprises. Charles Terry, one of Seattle’s early settlers, had bought some land to the north of Yesler’s claim, and after his death, his estate had pledged a portion of it to the Seattle and Walla Walla Railroad in exchange for $5,000 worth of stock. The executors of the Terry estate, with the assent of the railroad, platted the property in February 1876 as Terry’s Third Addition to the City of Seattle. The block between Marion and Columbia streets west of Front Street (later First Avenue) was listed as Block L and according to an article in the *Seattle Post-Intelligencer*, was auctioned by the railroad in 1878 when it needed to raise cash. Colman was said to have bought the property for $8,600 during a spirited bidding war (Plat Map, Terry's Third Addition to the City of Seattle, Office of the Recorder, Seattle; *Seattle PI*, Nov. 9, 1887).

Colman benefited from the regrading and filling that extended his property westward and his purchase eventually proved to be valuable real estate. More than half of Block L was essentially in the tidal area, although several businesses, including the Melhorn Brewery, the cooperage of George Sidney, and a flour mill, were built on piers over water near the foot of Columbia and Marion. Colman's finances likely prevented him from developing his property very quickly. In late July of 1879 while he was still embroiled in the lawsuit with Yesler, the sawmill burned down and Colman also lost all of the lumber that was stored in the yard. With a judgment against him of more than $50,000 for the mill, Colman sold some of his assets but transferred others to his wife and friends. He retained Block L along the waterfront, although he never carried through with his original plan to build a sawmill on the site (Finger 1968:178–181).

Colman's funds and also his attention were also drained by his active involvement in the construction of the Seattle and Walla Walla Railroad. When the Northern Pacific Railroad in 1873 chose Tacoma as its transcontinental railroad terminus rather than Seattle, local residents banded together to build their own railroad. The proposed line, the Seattle and Walla Walla, would cross Snoqualmie Pass and link Seattle with the mineral resources of the Cascades and the wheat lands of the interior. The city council granted all the tideflats south of King Street to the new venture as long as 15 miles of line were completed within 3 years. The railroad had the backing of many of the city's most prominent citizens and construction began in 1874, primarily with volunteer labor (Armbruster 1999:51, 84–85).

The initial enthusiasm began to wane when outside capital proved difficult to raise. Construction slowed to a halt, but finally in 1876 James Colman took over management of the railroad. Colman put in a large sum of his own money and attracted enough additional backing to restart construction. Colman hired a labor contractor to provide a crew of Chinese workers to assist in building the line. By February 1877, the line was completed to Renton and early in 1878 was extended to Newcastle, making these coal mining areas much more accessible and increasing the ease with which products could be shipped to the Seattle waterfront. A large wharf and coal bunkers were also built at the foot of King Street in conjunction with railroad construction, and soon regular shipments to San Francisco caused coal to outpace lumber as Seattle's major export. New industries also got their start in the city to supply mining and transportation companies with everything from boilers to rail cars and the Yesler mill profited as the main supplier of lumber for the Seattle and Walla Walla Railroad projects (Andrews 2005:29–30; Armbruster 1999:55–56; Hanford 1923:85) (Figures B-6 and B-7).

Despite the successful completion of this portion of the line, connections eastward did not immediately materialize. Colman's significant investment in the Seattle and Walla Railroad finally paid off in 1881 when Henry Villard, owner of the Oregon Transportation Company, bought out the Seattle line and renamed it the Columbia and Puget Sound Railroad. Villard also purchased control of the Seattle Coal and Transportation Company, which owned the Newcastle coal mines (Armbruster 1999:66–67; Crowley and MacIntosh 1999:7).

Railroad Access and Waterfront Development

Villard's arrival in Seattle began to turn the tide of Seattle's fortunes and also those of James Colman. Seattle had its long-anticipated transcontinental connection and investors like Colman earned a significant return on their Seattle and Walla Walla Railroad stock. Colman used the funds to take advantage of new business opportunities, including the development of his waterfront property (Figure 5). He built his first dock, which was said to be a 40 by 60–foot structure, near the foot of Columbia Street in 1882 and rented space to businesses for about $25 per month. A Sanborn Fire Insurance map from 1884 shows that by that year a blacksmith, plumber, and fish market all had facilities on the dock, which Colman had extended over a portion of what became Post Street. The plumbing and gas-fitting business was likely owned by John Spencer and just to the east was the fish market, run by Nicholas Brown, Frank Dupont, and Peter Valentine, all of whom lived on or near the dock along the waterfront. To the north a Chinese washhouse also sat on pilings over the remaining tidal areas. In addition, Colman had constructed a two-story building along Front Street that housed a variety of businesses including an undertaker, two grocers, a tailor, a saddlery and a restaurant. The YMCA had its offices in a portion of the second floor (Hershman et al 1981:39; McIsaac 1885–1886; Sanborn Fire Insurance Map, Seattle 1883) (Figures B-1, B-6, and B-7).

Railroad tracks were also constructed across portions of the Colman dock during this period. Henry Villard assumed control of the Northern Pacific Railroad through his famous blind pool in the summer of 1881 and agreed to build a spur line connecting Seattle to the main Northern Pacific Railroad line. A Villard subsidiary, the Columbia and Puget Sound Railway Company, asked the city to grant them the right-of-way for a track along what eventually became West Street (later Western Avenue) to provide access to the waterfront. The City Council agreed to a 30-foot right-of-way from King Street to Clay Street on the north end of the waterfront in March 1882 with a proviso that the connection to the Northern Pacific Railroad main lines be made within 2 years (Armbruster 1999:70–71).

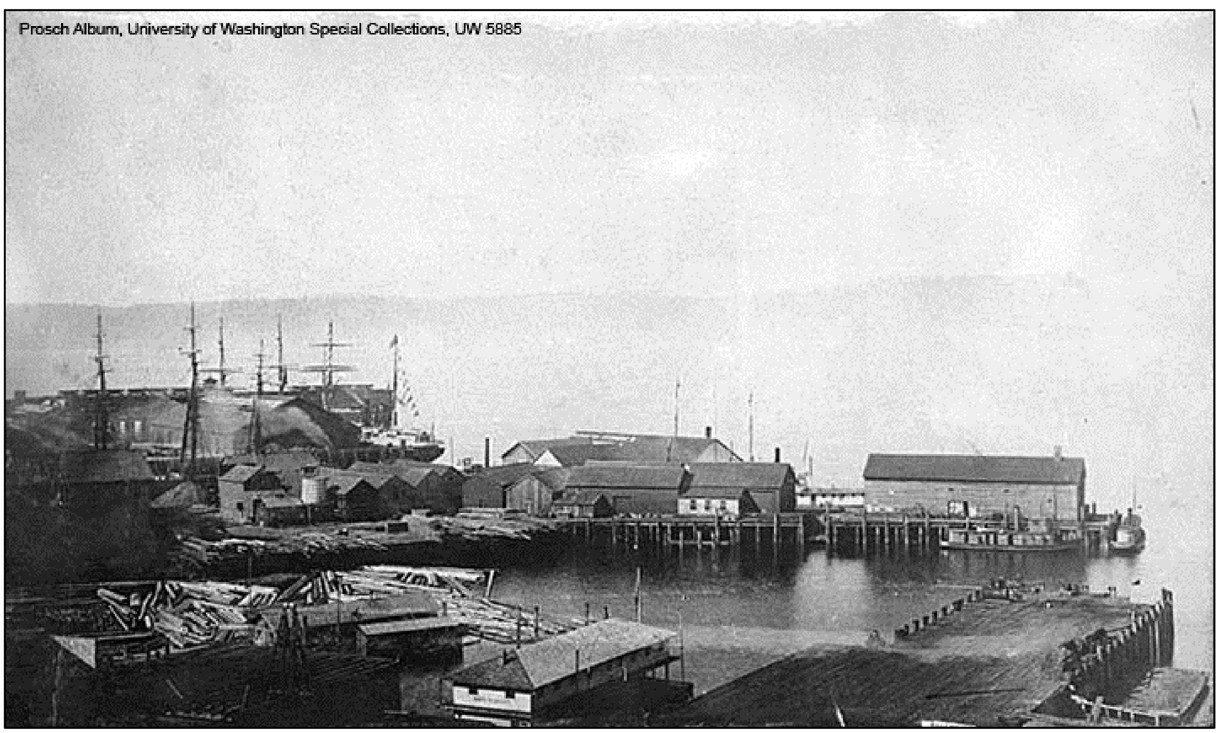

Figure 5. Colman's first dock at the foot of Columbia Street, shown ca. 1885, was dwarfed by Yesler's Wharf to the south, but was later expanded to become a major point of embarkation for cross-Sound ferry traffic.

Many waterfront property owners were not pleased with the company's methods, and negotiations over the exact route of the tracks became difficult. Some of the land was owned by the city, but the company also had to negotiate with individual landowners and was forced to weave the right-of-way through a maze of parcels. The completed line followed a winding course along the meander line of Elliott Bay and soon got the nickname of the Ram's Horn (Armbruster 1999: 70–71; Hanford 1923:90; Jacobs 1908:182) (Figure B-1).

Colman was one of the landowners affected, and by 1884, maps show the initial trestle extending across a portion of the Colman Dock. By 1888, however, a coal bunker and spur were located on Colman's property and the main Columbia and Puget Sound Railway line extended from Columbia Street northeastward over a portion of what became Post Street before it crossed Marion Street to head directly north. Additional filling had taken place by this time, although portions of the block were still tidal and the buildings were constructed on pilings like most others in the area. Several new warehouses and manufacturing plants took advantage of the railroad access, but two painting businesses, Cochran and Wallace and M.D. Crocker, also had shops on the Colman property, as well as a couple of stores, a stable, and O.C. Shorey, the undertaker (McIsaac 1885–86; Polk 1888; Sanborn Fire Insurance Map, Seattle, 1884, 1888) (Figure B-2).

Villard fulfilled his agreement to finish the link to the Northern Pacific Railroad line before the city's deadline, but his methods of financing soon collapsed, and he was forced from his position as head of the Northern Pacific Railroad early in that year. The railroad company then virtually abandoned the Tacoma spur and Seattle essentially lost its "transcontinental" connection (Armbruster 1999:80–82; Bagley 1916:247–248; Dorpat 2006:12).

Seattleites responded to the problems with the Northern Pacific Railroad by developing new plans for another cross-country link. In 1885 the Seattle, Lake Shore and Eastern Railway (SLS&E), was incorporated by a number of other prominent local businessmen. The planned route headed from the waterfront around the north ends of Lake Union and Lake Washington and then on to Snoqualmie Pass, where the line would then continue on to the eastern part of the state. Local backers were able to raise enough interest among Eastern capitalists to finance the survey work for the SLS&E in late 1886 and to begin actual construction in 1887. The railroad tracks started at the foot of Columbia Street and proceeded across the Seattle waterfront on a trestle to the west of the Ram's Horn, essentially sealing off the Northern Pacific Railroad from the Elliott Bay wharves (Armbruster 1999:51, 100–101; 122–123; Dorpat 2006:12).

The SLS&E provided an important economic boost to the entire area. It hired local contractors to build segments of the line and spawned a number of businesses to supply construction materials and provide needed services for workers and eventually passengers and shippers. The first depot was built at the foot of Columbia Street on what became Western Avenue, just to the southwest of Colman's property. Land for additional tracks and storage was limited, so SLS&E principals, led by noted Seattle attorney Thomas Burke, appeared before the City Council and asked for an ordinance to create Railroad Avenue. This new right-of-way was to be 125 feet in width and designed for use by all transcontinental lines entering Seattle. Ordinance 804, passed by the council in January 1887, contained a "common user clause," which gave other railroads coming into Seattle equal access to the Railroad Avenue right-of-way. The SLS&E took the prime 30 feet on the eastern side of the portion allotted for railroad tracks. The 2-mile Railroad Avenue trestle, which extended along the entire waterfront, was completed in the fall of 1887 (Armbruster 1999: 126-129; Bagley 1916:251; Beaton 1914:46; Hanford 1923:96).

The Great Fire of 1889

The progress along the Seattle waterfront was abruptly halted by a destructive fire, which broke out on June 6, 1889. The fire started in a small basement workshop of the Pontius building on the southwest corner of Front Street and Madison Street, just a block from the Colman property. The flames quickly spread to adjacent wood buildings, engulfing whole blocks and soon spreading under the elevated wood plank streets to the piers and wharves. Most of the ships docked along the harbor were quickly pulled out into the bay, loaded with passengers and whatever goods could be hastily thrown aboard. As the docks collapsed, huge stacks of cargo and personal effects disappeared into the water along with the contents of all the warehouses and other businesses along the waterfront. By the next day, only one wharf remained along the entire central waterfront area, and in the heart of the city, the smoking ruins of 30 blocks covered nearly 116 acres (Beaton 1914:10; Klingle 2001:44; Warren 1989: 18–28) (Figure 6).

Many factors contributed to this scene of destruction, including insufficient water pressure and limited equipment to fight the flames. Some blame was placed on the fire department, which had the limited equipment and a faulty alarm system and on the privately owned water company that could not provide the firefighters with enough water to combat the blaze. An extremely low tide had also kept at least one of the city's small firefighting steamers marooned in the bay at the end of Columbia Street (Klingle 2001:44-45; Warren 1989:10-11). In addition, coal bunkers owned by the SLS&E, including those on the Colman property, also became "volcanic crater[s] stoking the flames" (Klingle 2001:45).

Rebuilding After the Fire

The important task of rebuilding the city required an active and accessible port, and wharf owners immediately began the task of resurrecting the city's waterfront so that trade could resume as soon as possible. Henry Yesler started to rebuild his dock almost immediately and within a week was able to

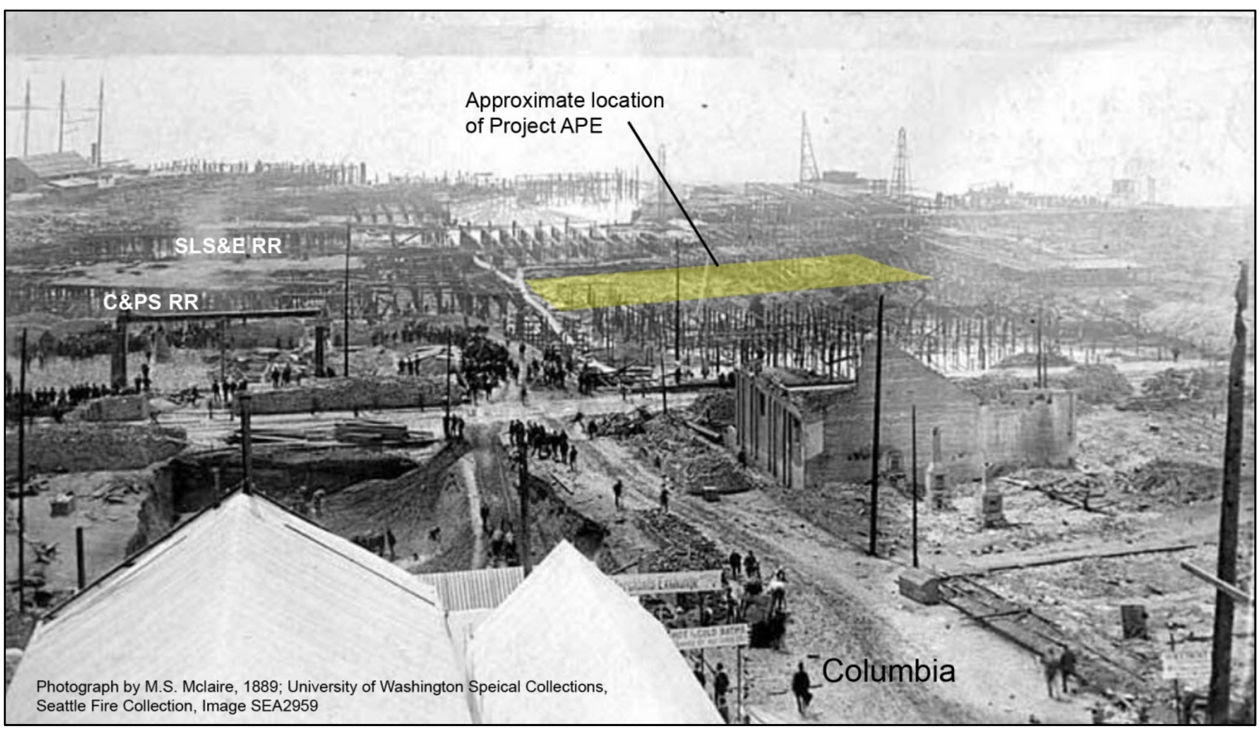

Figure 6. The Great Fire of 1889 destroyed all of the buildings along Post Street, including both of the Colman buildings.

accommodate some passenger vessels and unload light freight. Other waterfront improvements quickly followed, including a new wharf constructed by James Colman at the end of Marion Street. Colman's dock became the location of various businesses as well as a loading station for the West Seattle Ferry, which had begun regular service across Elliott Bay just a few months before the fire (*Daily Times*, June 12, 1889:1; Finger 1968:312, 314; *Seattle PI,* July 3, 1889:4; Warren 1989:50–51).

There was money to be made as the reconstruction of the city continued, and over the next year, in addition to his wharf, Colman also constructed new buildings on his First Avenue and Western Avenue blocks. He had already planned a more substantial business building on First Avenue before the fire, so he was ready to proceed quickly. Colman's new two-story block was built of stone on the First Avenue and Marion Street sides, with the rest constructed of brick (Figure 7). Colman vowed to add more floors when business conditions merited expansion. Perhaps because of haste or the projected $250,000 cost of the Colman Building, Colman chose to replace the charred remains along West Street (Western Avenue) with a series of less expensive corrugated iron and frame buildings. Ten stores occupied the first floor of these new iron buildings and the second floor housed the West Street House, a hotel that likely catered to local workers as well as SLS&E passengers (Polk 1889, 1890; Sanborn Fire Insurance Map 1893; *Seattle PI*, Feb. 17, 1894) (Figure 8; Figure A-12).

Colman Building, ca. 1898. Anders Wilse, University of Washington Special Collections, UW 1730

Figure 7. The Colman Block on First Avenue, rebuilt after the 1889 fire, was an important centerpiece of Seattle's downtown core for a number of years.

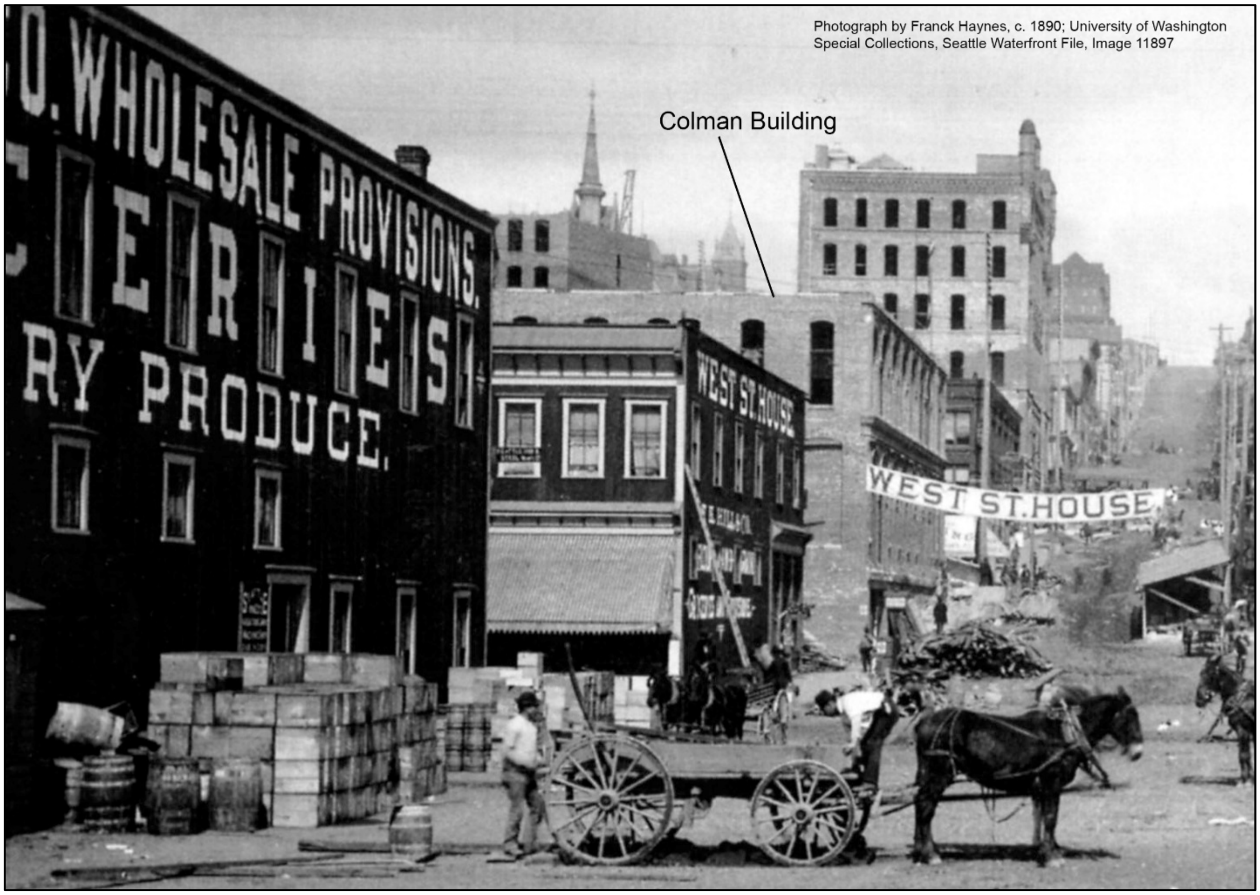

Figure 8. This view to the east from the bottom of Columbia Street ca. 1890 shows the reconstruction after the 1889 fire. Colman's new iron building, which included the West Street House, appears to be nearing completion, while the Colman Building is still under construction. Pilings are stacked in the roadway at the Post Street crossing.

A number of warehouses and cold storage facilities competed for space with industrial plants nearer the waterfront as the business of the port grew. Western Avenue and parts of Railroad Avenue were the primary locations of the warehouses used to store lumber, pipes, machinery and other parts for local industries or to be shipped abroad. The businesses that occupied Colman's block showed the diversity of the city's growing trade. Side by side along West Street were J.C Masel and Sons, wholesale meat merchants, J.H. Kunzie, an oil dealer, and Gordon, Bowen and Thurlow, who were candy manufacturers. The block also included C.G. Sanborn, a hay, grain, and feed dealer and Risdon, Cahn and Company, wholesale grocers. At least three commission merchants, John Agen, Samuel Frank, and G.G. Sanborn, also had offices in Colman's West Street building (Polk 1892–1893; Sanborn Fire Insurance Map, 1893, Seattle) (Figure B-3).

Early Development of Post Street

The new buildings and other improvements made during the reconstruction period after the fire increased the value of holdings throughout the downtown area, and real estate sales were brisk. Within 2 years at least 350 new buildings had already been constructed in the fire zone. Immediately after the fire, the city also began to deal with a number of infrastructure issues as well as the development of fire and health regulations, to prevent future disasters. Because so many new buildings were under construction, Seattle used the opportunity to standardize its street systems and to establish the more comprehensive water, lighting, and sewage services the growing business district required (Jacobs 1908:190; Buerge 1986:113, 115).

The rebuilding period also provided the city with an opportunity to take back control of some of the land that the competing railroads had acquired near the Seattle waterfront during the early years of the city's growth. Railroad Avenue was set aside as the main thoroughfare for major rail lines to pass through the city, but a few companies continued to hold rights-of-way through some of the other business blocks. Among these companies was the Columbia and Puget Sound Railroad and the Puget Sound Shore Road, controlled by Henry Villard's interests, which held a right-of-way that extended from Spring Street through the Colman block and northward before heading back toward the waterfront.

On October 18, 1889, the Seattle City Council asked the City Attorney to develop an ordinance that would create a 36-foot-wide alley west of Front Street, extending from the southern border of Columbia Street northward to University Street. Much of the route of the alley followed the railroad right of way formerly known as the Ram's Horn. Ordinance 1223, which was passed on October 22, 1889, provided that the city would condemn this property and that its surveyor would determine all of the private holdings needed to complete the roadway. A panel of three people would assess the value of damages for the loss of the property in order to compensate owners (Ordinance 1223, Oct. 23, 1889, SMA; *Seattle PI*, Oct. 19, 22, 23, 1889).

The measure provoked opposition from several sources. According to local newspapers, this ordinance was part of the ongoing battle between the city and the railroad companies that claimed rights-of-way outside of the Railroad Avenue thoroughfare. Representatives of the rail lines protested bitterly against the measure, claiming that the city had no authority to condemn a right-of-way. They also filed an injunction against another ordinance, proposed by the City Council at the same time, which would require the railroads to install gates at every street crossing and maintain a flagman on both sides at all times to control the passage of trains along the lines and protect public safety (Ordinance 1223, Oct. 23, 1889; *Seattle PI*, Oct. 22, 1889).

Other adjacent property owners also had issues with the ordinance. A group sent the City Council a letter requesting that the amount of land condemned to widen the road be equally apportioned on both sides along its entire length. Also, Henry Yesler, who was involved in a number of disputes with the city, filed suit for additional damages that he felt were due him as a result of the land condemnation (*Seattle PI*, Oct 22, 1889; March 8, 1890).

Despite this opposition, construction work began in the summer of 1890. During the initial laying out of the roadway, steam pipes and other utilities were planned along the proposed route to reach some of the new brick buildings that were under construction in the area. The Post Street power house of the Seattle Steam Heat and Power Company was located just a few blocks to the north, and a 10-inch water main and a 15-inch return pipe were installed along Post Street, linked to standpipes and hose connections for fire protection on every floor of the buildings that were served by the company. Steam pipes were also laid parallel to the water mains providing what the *Seattle PI* called "the most compact and best arranged power plant system in the country" (*Seattle PI*, July 10, 1890).

Post Street was essentially built on pilings along much of its length, as a substantial portion of the area still remained tidal. Fill was likely added in many areas, possibly composed of burned refuse from the fire (Figures B-8 and B-9). The city assessed property owners for the cost of the construction work, although it was not until several years later that an ordinance was passed (Ordinance 2085) to standardize the process of financing improvements through the establishment of Local Improvement Districts (Ordinance 2085, April 25, 1892).

Tideland Development

Up until this period, the city had not yet initiated a comprehensive plan for systematically filling the tidelands. Despite all the construction that had already occurred along the waterfront, ownership of the tidelands was still a point of contention. As long as Washington was a territory, the tidelands remained under the control of the federal government and technically could not be sold. Despite these legalities, filling and developing these tidal areas had been a major priority of settlers from Seattle's very beginning and in earlier decades, the city itself used the tidelands as an enticement for railroad development (Klingle 2001:39–42).

When Washington finally became a state in 1889, only a few months after Seattle's fire, a provision in the new constitution gave the state ownership of all shore land, but no real mechanism to distribute rights to the property or deal with prior claims. In 1890 the first state legislature passed measures to set up a Harbor Line Commission that would draw boundaries, protect established ports, and oversee use of the waterfront along the entire Washington coast. The new law allowed counties to appoint appraisers for their harbors, but it also solidified the right of private landowners to purchase those tidelands if their holdings were adjacent to the tidelands or they had made genuine improvements (Benoit 1979:25–26; Klingle 2001:46–47.)

In Seattle, local businessmen and the railroads were particularly concerned about the boundaries drawn along the waterfront by the Harbor Line Commission. When property owners found out that the Seattle harbor reservation initially included all of its wharves as well as Railroad Avenue, the city's main shoreline transportation corridor, they sued the state. These lawsuits delayed action until a new governor, who was more amenable to private development, was elected. The terms of the original Harbor Line commissioners expired, and newly appointed members subsequently reduced the extent of state tideland ownership so that most of the Seattle harbor development could remain privately owned (Bagley 1916:355-357; Berner 1991:17; Dorpat and McCoy 1998:40–41; Finger 1968:313; Hynding 1973:144; Warren 1981:96).

As a result of these actions, waterfront property owners like James Colman were able to purchase adjacent tidal lands that, to a great extent, had already been filled and developed. Much of this waterfront area was replatted as the Seattle Tidelands in 1895, and Colman retained control of Block 191, the Colman Block on Front Street, but also Block 192, which was directly to the west, separated by Post Street. Block 192 stretched along West Street (later Western Avenue), which was built on fill and decking between Columbia and Marion Streets to the east of Railroad Avenue.

Another byproduct of the development of the tidelands was the need to straighten out the haphazard placement of the wharves along the waterfront. The first replat of the tidelands retained the pier alignments just as they had developed over time, but problems surfaced quickly. The Seattle city engineer, Reginald Thomson, realized the necessity of realigning all the piers so that they would be parallel and follow the same east-west axis. The proposal met with resistance from property owners, but the State legislature adopted another replat with these changes in 1897. Wharf owners were only required to conform to the plan when they rebuilt, but soon after the turn of the century two of the major waterfront landowners, the Northern Pacific Railroad and the Pacific Coast Company, between them built seven large piers and established the new alignments and the modern shape of the Seattle waterfront. The Colman Dock became the sole privately-held wharf in the central harbor area (Hershman et al 1981:52, 62; Dorpat 2006:117).

Klondike Rush

The discovery of gold along the Yukon River in 1897 helped Seattle to continue its post-fire growth after a downturn caused by a nationwide financial panic in 1893. The famous "Ship of Gold," the *Portland*, docked in Seattle's harbor on July 17 of that year, bringing what the miners onboard claimed was a ton of gold. Their stories prompted an exodus to the north in which as many as 10,000 men, including the Seattle mayor, left for the Klondike during that first summer, while just as many outsiders arrived in Seattle to "mine the miners." Seattle became the outfitting center for the Gold Rush and also the main point of embarkation (Boswell and McConaghy 1996a:107–110, 1996b:1).

The effects of the Klondike Gold Rush on the Seattle economy as well as on the prosperity of other towns around the Sound were enormous. Seattle reaped the most benefits because it had a diversified economy that suited the role of Alaskan supply capital. For decades it had provisioned logging camps and small towns throughout the Sound with a variety of essential goods, and this experience was exactly what was needed for the Alaska trade (Boswell and McConaghy 1996a:109–110; Chasen 1981:34).

Colman Improvements

Wholesale dealers, brokers, transfer companies, and warehouses proliferated along both Railroad Avenue and Western Avenue, where there was easy access to shipping and the railroads. The Colman family's timing was excellent as they had decided to replace the iron buildings they had hastily erected after the fire with a new stone building only months before news of the gold discoveries launched Seattle's new period of frenzied growth. A local business publication, the *Trade Register*, noted that construction began about April 1, 1897, and that old tenants had found new locations or temporary quarters while the building was under construction (*Trade Register*, Feb. 27, 1897:26).

The "New Colman Building," as it was dubbed on some maps, was 100 by 240 feet with three stories and a deep concrete basement 8 feet 6 inches in height. The cut-stone building had metal and stone cornices and stone trim, and the construction price was estimated at $80,000. The building offered 24,000 square feet of office and commercial space with storefronts on Marion and Columbia Streets as well as Western Avenue. A well-established wholesale grocery firm, Fischer Brothers, and the wholesale glass and mirror company, Nelle and Engelbrecht, were major tenants as were John B. Agen, a wholesale dairy products dealer, and the Polson-Wilton Hardware Company (City of Seattle Building Permit No. 1937, Department of Planning and Development, Seattle; King County Assessor, Property Card, Washington State Archives, Bellevue; *Trade Register* March 1897).

The building was in the heart of what had become known as the Commission District of Seattle, as brokers and wholesalers dealing in a variety of commercial goods enabled the city to supply all the needs of the Klondike miners as well as the residents of small towns throughout the Puget Sound region. At least one historian of Seattle's waterfront has suggested that by this time, the corner of Marion Street and Western Avenue (the name had changed from West Street by this time) was among the busiest in all of Seattle. Sidewalks were crowded with goods of all kinds, wagons jostled for space to load and unload crates and passengers bound for the West Seattle Ferry dock struggled to cross Railroad Avenue, "its planked surfaces a maze of railroad tracks, spurs, freight wagons and horse droppings" (Faber 1985:158)(Figure 9).

In 1897, the city vacated the portion of Marion Street between Western and Railroad Avenue for use by the Northern Pacific Railroad, but reserved the right to build an overhead walkway at Marion Street for pedestrians to cross over the busy and dangerous Railroad Avenue and safely access the waterfront. Funding for the walkway ultimately came from the Great Northern Railway Company rather than the

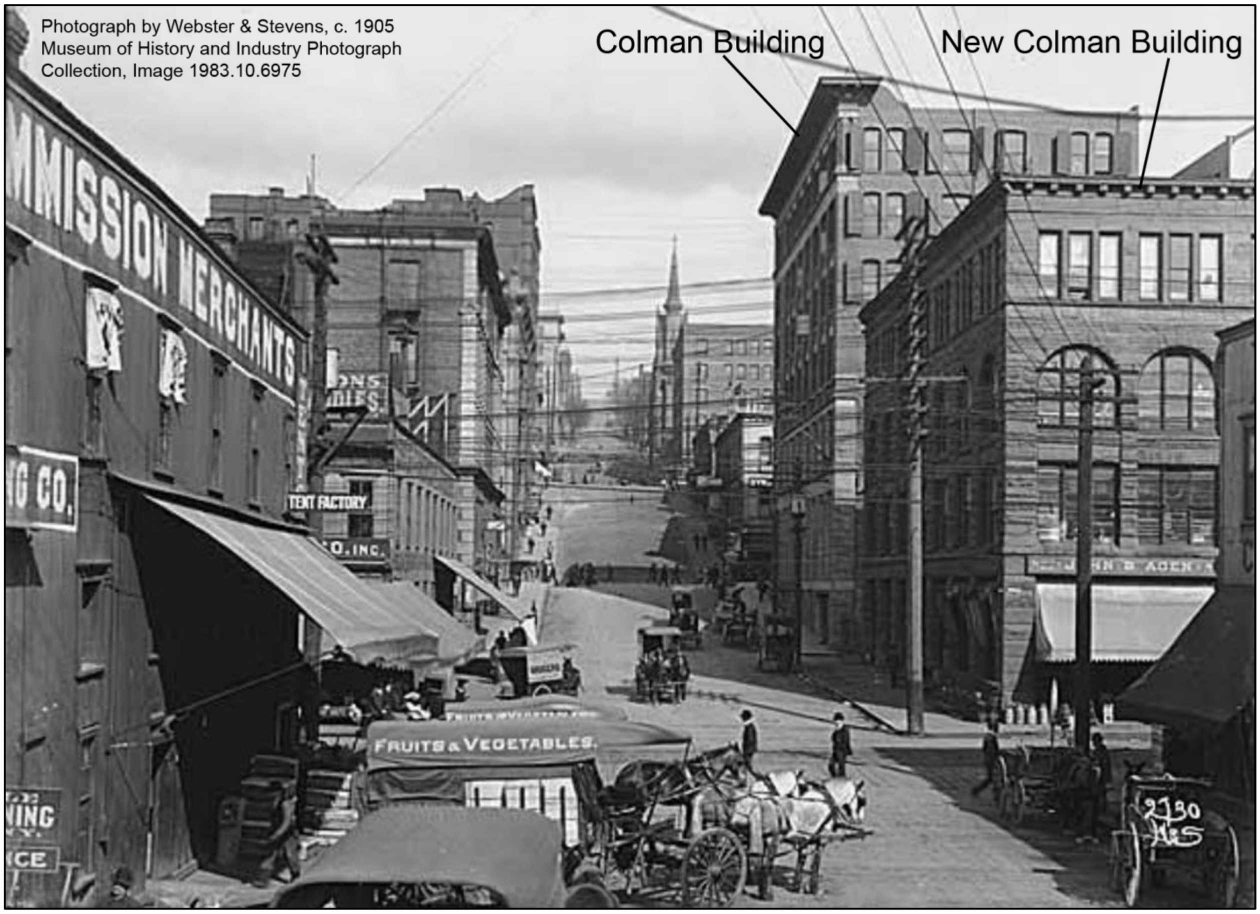

Figure 9. Freight wagons lined Marion looking east from Railroad Avenue in 1905; the Colman Buildings are to the right.

city. In 1908 the Board of Public Works granted the railroad a permit to construct what was then called the Marion Street Viaduct. The footbridge linked to the Colman Dock, which was located at the foot of Marion Street and was one of the primary facilities serving Seattle's so-called Mosquito Fleet. During this period as many as 2,500 different steamers were part of the commercial fleet of boats that were given that name because they "buzzed around" the inland waterways, carrying passengers as well as food, construction materials, and other products to outlying communities. Wooden boats, most often stern-or side-wheelers, made up the bulk of the Mosquito Fleet, but they were later replaced by propeller-driven vessels, which ranged from 30 to more than 200 feet in length (Hershman et al. 1981:38).

Colman had expanded his wharf to accommodate these larger boats soon after Seattle's Great Fire, and his sons, who took over the business after his death, added onto the wharf again in 1908. They made the dock a waterfront landmark by erecting a 72-foot Italianate clock tower, designed by noted architect Arthur Loveless, at the end of the 705-foot span. The dock was damaged in 1912 when a steamer hit it before plowing into the stern-wheeler *Telegraph*, which sank in the harbor. The clock tower, which was knocked into the water during the accident, was replaced with an even more elaborate version, and Colman Dock continued as the centerpiece of cross–Puget Sound service (Neal and Janus 2001:70).

A Changing Neighborhood

As transportation and commercial needs changed, so did the neighborhood around the Colman dock and nearby buildings. The development of Railroad Avenue had initially focused new rail construction along the central waterfront, but the south end of Seattle below King Street had grown with terminal and supply facilities. A project to fill the south tidelands and dredge a canal to Lake Washington initiated by the Seattle and Lake Washington Waterways Company in 1894 soon created hundreds of acres of new land for urban development. Several major railroads competed to establish new rail connections in Seattle and began to buy up lands in the south tidelands so that they could build large stations and other freight and maintenance buildings close to the city center. Many of the city's manufacturing and warehousing facilities also moved to the area as the land was initially cheaper and yet offered convenient transportation access (Bagley 1916:I-355–I-357; Berner 1991:17–18; Dorpat and McCoy 1998:40–41, 171; Hynding 1973:144–145).

City Engineer Reginald Thomson initiated another important phase in the shaping of Seattle and its waterfront with his elaborate projects to change the topography of the city and to remove Railroad Avenue as an impediment to harbor development. The Seattle Engineering Department began nearly sixty regrading projects between 1898 and 1931. In addition, Thomson persuaded the Great Northern Railroad in partnership with the Northern Pacific Railroad to build a tunnel under the city rather than add to the Railroad Avenue congestion. The completion of this project in 1905 and the subsequent construction of two large depots near its south end further solidified the railroads' move away from the central waterfront. The development of the Port of Seattle provided the city with a stronger means of dealing with the railroads and developing a diversified plan for harbor development. The construction of a new concrete seawall eventually led to the redevelopment of Railroad Avenue (Dorpat and McCoy 1998: 160; Makers 1979:4; Port of Seattle 1981:16, 19).

Street Paving and Post Street Improvements

The city also continued to improve streets throughout the central business district, although often in a piecemeal fashion that was influenced by limitations on funding as well as political pressures. Seattle's huge growth spurred by the Klondike rush forced the engineering department to act quickly, and in the 5 years between 1900 and the end of 1905, they more than doubled the extent of city streets from 105 miles to over 214 miles. The question of what types of surfacing to use was hotly debated. City Engineer Thomson wrote in 1910 that his response to the question of how to build a good road cheaply was "the most difficult answer I have ever been called upon to make." Concrete, asphalt, stone, brick, macadam and wood were all available to the city, but until automobile traffic became more prevalent, the less expensive paving methods or those that were more suited to horse-drawn vehicles were generally employed (Wilson 2009:128).

Planking had been the early and most cost-effective road surface in Seattle's early years, and it continued in use, although by the 1890s engineers began to encourage consideration of other, more long-lasting materials. Marion Street was planked beginning in March of 1900, helping to prevent mud flowing down the roadway during the rainy winter months. By order of the City Council, the planking of Post Street from Marion Street northward to Madison Street followed in 1901 (Ordinance 6574, Feb. 19, 1901; Phelps 1978:99; Wilson 2009:127).

Gravel was one alternative to planking, but the expense of hauling this material by horse-drawn wagon in the large quantities needed was very high. After the turn of the century, two favored alternatives for surfacing were brick and wood blocks. The Denny Clay Company of Seattle had laid a block-long demonstration section of brick paving at its own expense along First Avenue between Yesler Way and

Washington Street in 1893 and soon had a contract to install brick paving along some other heavily traveled thoroughfares. Brick was expensive at more than 2 ½ cents per square yard, but also more durable than most other materials. The city authorized brick paving on Post Street between Yesler Way and Columbia Street in the spring of 1902 and work was completed by the end of that year (Ordinance 6312, April 26, 1902; Phelps 1978:100).

Cedar paving blocks were another alternative used for local roadways, and they were manufactured by Stetson and Post and other local mills. Stetson and Post had experimented with both cedar and fir blocks on Seattle streets as early as 1894 and began to supply them locally as well as to a few other cities across country. Longevity was an issue, but many businessmen and residents preferred wood block paving because the sound of wagons and horses' hooves was not as loud as it was on a brick surface. When the city decided to remove the planking and repave Post Street north of Marion Street in 1912, hotels and residents lobbied for wood pavers because of the noise issue, and the city authorized the use of brick only at intersections along this section of Post (Phelps 1978:100; *Seattle Times*, Oct. 18, 1912).

In addition to durability, another rationale for replacing the planking as well as the wood trestles that carried many city streets was the problem of rodents and disease. The Health Commissioner for the city urged the street committee of the City Council to consider bricks or wood pavers along Post Street, in particular, because of health and sanitation issues. According to the local newspaper, the commissioner argued that his department had been "hampered in its campaign against rats by the fact that Post Street is unpaved, is planked in numerous places, and in that condition makes a district in which it is found impossible to eradicate rodents" (*Seattle Times*, Oct. 15, 1911).

Local residents and business owners would often petition the city to improve a street to provide better access to their homes or commercial buildings. In the early years, the cost of the improvements was apportioned among land owners whose property abutted the roadway. This system was soon replaced by the use of Local Improvement Districts (LIDs), in which the city would prepare plans, solicit bids, and assess costs based on taxpayer rolls in the district. On occasion, local property owners who wanted more immediate action would undertake street improvements themselves. As early as July of 1889, James Colman had petitioned the city for permission to plank Western Avenue from Columbia to Marion to provide better access to his dock on the waterfront. In 1910, the J.M. Colman Company offered to finance the paving of Post Street, between Columbia and Marion Streets, and the proposal was accepted by the city council through Ordinance 25254 (Ordinance 25254, May 6, 1910; Petition, July 1, 1889, File 990415, Box 4, Folder 5, Seattle Municipal Archives; Wilson 2009:95).

It is not known why the section of Post Street that divided Colman's lots was not included when the planking was replaced on Post Street north of Marion Street in 1901 or when the segment south of Columbia Street to Yesler Way was paved with brick in 1902. During this period, the Colman family continued to develop their properties on either side of Post Street as well as along the waterfront. They had updated and expanded the Western Avenue building in 1902, adding an additional floor and increasing available office space. A variety of businesses occupied the building, although as the rail terminal facilities moved south, the focus of activity shifted from commission merchants to manufacturing and light industry. Sanborn Fire Insurance maps show that by 1904 an assay and smelting company, a meatpacker, and a series of candy manufacturers, including Imperial Candy Company and Societé Candy, occupied the New Colman Building along Western Avenue (Property History Card, Department of Planning and Development, Seattle; Sanborn 1904) (Figures B-9 and B-12).

Colman Building, looking southwest from Marion Street, 1909. Asahel Curtis, University of Washington Special Collections, No. 13391

Figure 10. The Colman Building on First Avenue underwent a major renovation in 1904, with the addition of four floors.

A major expansion of the Colman Block on First Avenue followed in 1904. As James Colman had originally planned, his company added four more floors to the building and resurfaced portions of the main façade with stone. The design by architect August Tideman also included a complete remodeling of the original two floors (Figure 10). At the same time, a pedestrian bridge was also constructed across Post Street to allow tenants to cross between Colman's two buildings. The city's commercial core had moved to the north, but the Colman Building remained an important business center, with the Northwest Trust and Safe Deposit Company along First Avenue as well as a number of restaurants and stores. The western side of the building along Post Street also accommodated entrances to a few businesses, including an assay office and a hardware store (Corley 1969a; Hergert 1978; Property History Cards, Department of Planning and Development, Seattle; Sanborn 1904) (Figure B-4).

The Colmans may not have wanted improvements on Post Street while they were remodeling their own buildings or there were may have been other factors involved, but the block between Marion and Columbia Streets was not included in street upgrades previously performed by the city. The Colman Company's request to repave Post Street in 1910 did coincide with a few new measures that addressed the growing traffic in this busy section of the city. One ordinance required all commercial vehicles to load and unload merchandise in alleys or on Post Street so as not to block main thoroughfares. Faced with complaints by businesses in the area, the city also banned vehicles for hire from lining up along Columbia Street from Post Street to Fourth Avenue and adding to the congestion. It is likely that this traffic also moved to Post Street and other alleyways (*Seattle Times*, May 1, 1910, Oct. 30, 1910).

The plans for paving the section of Post Street between Columbia and Marion Streets are dated January 1911 and were likely drawn by Robert McDonell, who was a draftsman for the city. City Engineer R.H. Thomson's name is also on the plan, although likely he only oversaw the project as specified by the ordinance. Throughout his tenure as head of the engineering department, however, Thomson did take on other private contracting work in addition to his responsibilities at the city, so it is possible that he played a greater role in the design. A cross section of the drawing shows the road supported by pilings on 13-foot centers with a 12 by 12–inch creosoted wood cap, a layer of concrete poured directly over fill, covered by a 2-inch cushion of sand, and then 4-inch wood blocks. Granite curbs were also installed along both sides of the street (Drawing No. 12272, Jan. 1911, Engineering Vault, City of Seattle; Wilson 2009:136) (Figure 11).

Later Improvements

In subsequent years, the city improved portions of Post Street, but the section between Marion and Columbia Streets was apparently not included in these upgrades. The J.M Colman Company, which was controlled by Laurence and George Colman after their father's death in 1906, continued to own Blocks 191 and 192 of the Seattle Tidelands Plat on either side of this section of Post Street. In 1912, the company built a second pedestrian bridge linking the two buildings on their property. The pedestrian overpass, built and maintained by the Great Northern Railway Company, also crossed over Railroad Avenue, connecting Colman Dock to Marion Street (Figure 12). The Colmans remodeled the Colman Building on First Avenue in the early 1920s and during this period used Post Street for storage of materials and made repairs to the sewer as well as the sidewalks along the roadway (Ordinance 30098, Sept. 30, 1912; SDOT 1999).

Ordinance 74057, which was passed in 1945, authorized the city to pave a number of streets in the downtown area, including Post Street. City crews evidently applied 2 inches of asphalt over the original surface of the roadway at that time. The street was renamed Post Avenue in October of 1954 and a second resurfacing with asphalt occurred in 1960. It was not until the 1990s that substantial settlement was reported, and because of the timber pier construction, the city began to inspect this segment of Post Avenue as a structure (SDOT 1999).

PREVIOUS INVESTIGATIONS

Nearly 30 cultural resources studies have been conducted in the immediate project vicinity, most in compliance with Section 106 of NHPA and other federal, state, and local cultural resources regulations (Table 1). Among the most important of these investigations are studies employing both archival and geotechnical data to assess the potential for intact, buried cultural deposits in this highly urbanized environment. For example, early studies of the State Route (SR) 99: Alaskan Way Viaduct Project defined areas where high potential exists for encountering historical and pre-contact archaeological resources. Later investigations for SR 99 assessed project effects on cultural resources identified in those high probability areas.

Other previous cultural resources investigations completed near the APE were also conducted for important Seattle transportation projects, such as the Transit Tunnel, the Link Light Rail, and the Monorail Green Line. The Seawall Replacement Project generated several cultural resources reports as well, and additional investigations at archaeological sites identified during survey for the Seawall were

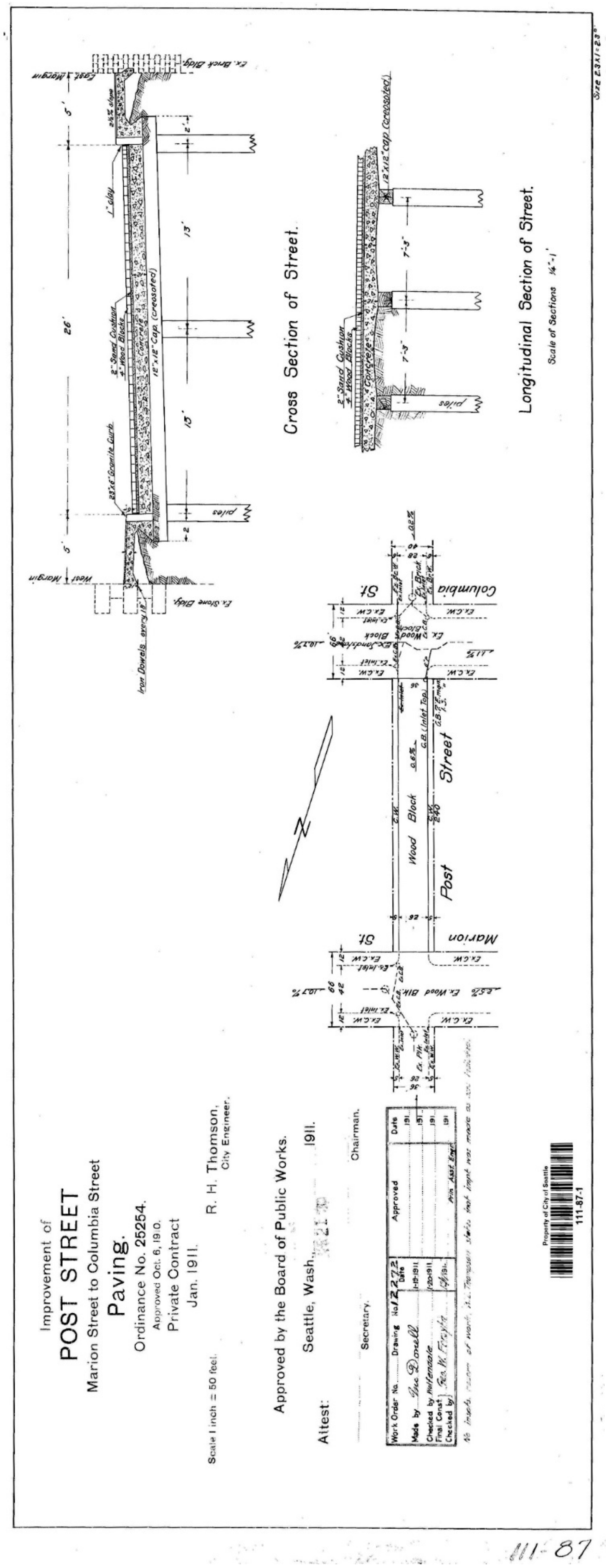

Figure 11. Paving plan, 1911.

Marion Street Pedestrian Overpass, 1932. Seattle Photograph Collection, University of Washington Special Collections, SMR227

Figure 12. The Marion Street Pedestrian Overpass, shown ca.1932, provided a safe means to cross busy Railroad Avenue from the Colman Dock.

Table 1. Previous Cultural Resource Investigations Within Approximately 0.25 Mile of the APE

AUTHOR	**DATE**	**PROJECT**	**RELATION TO APE**	**RESULTS***
Community Services Collaborative	1984	Historic Structure Report for Federal Office Building Seattle, Washington	Adjacent	Historic structure report
Earth Technology Corporation	1984a	Archaeological Resources Assessment for the Downtown Seattle Transit Tunnel	0.1 mi E	None
Earth Technology Corporation	1984b	Archaeological Resources Assessment for the Downtown Seattle Transit Tunnel Project Task 2: Archival Research	0.2 mi E	Overview
Metro	1985	106 Documentation: Downtown Seattle Transit Project	0.2 mi E	None
Courtois et al.	1999	Central Link Light Rail Transit Project Final Environmental Impact Statement: Historic and Prehistoric Archaeological Sites, Historic Resources, Native American Traditional Cultural Properties, Paleontological Sites	0.2 mi NE	None
Darby	2002	Cultural Resources Assessment of the Proposed Dexter Horton Rooftop Antenna Installation, Seattle, King County, Washington	0.1 mi NE	None
Rooke	2002	Letter Report: WA-0793 (King County Administration Building)	0.1 mi E	None
Demuth at el.	2004	Part 2 Historical Resources (Section 106) Technical Report for the Green Line EIS	0.1 mi E	35 historic buildings
Larson Anthropological Archaeological Services	2004	SR 99: Alaskan Way Viaduct & Seawall Replacement Project, Draft EIS Appendix M, Archaeological Resources and Traditional Cultural Places Technical Memorandum	0.1 mi W	Overview
Lewarch et al.	2004	Part 1: Seattle Monorail Project Green Line, King County, Washington Archaeological Resources and Traditional Cultural Places Assessment	[redacted]	[redacted]

Table 1. Previous Cultural Resource Investigations Within Approximately 0.25 Mile of the APE

AUTHOR	DATE	PROJECT	RELATION TO APE	RESULTS*
Gillis et al.	2005	SR 99: Alaskan Way Viaduct & Seawall Replacement Project: Archaeological Resources Monitoring and Review of Geotechnical Borings from South Spokane Street to the Battery Street Tunnel	0.1 mi W	Archaeological probability areas
NWAA	2006	SR 99 Alaskan Way Viaduct & Seawall Replacement Project: Geoarchaeological Examination of Solid-Core Geoprobes	0.1 mi W	Depths of archaeological potential
Hodges et al.	2007	SR 99 Alaskan Way Viaduct & Seawall Replacement Project: Archaeological Assessment: Bents 93 and 94 Emergency Repair	0.1 mi S	Depths of archaeological potential
Valentino et al.	2008	SR 99: Alaskan Way Viaduct Moving Forward Program Cultural Resources Investigations: Yesler Way Stabilization Project Emergency Repair Archaeological Assessment Technical Memorandum	0.1 mi S	None
Boswell et al.	2010	Archaeological Assessment for the Colman Apartment Project, Seattle, Washington	Adjacent	Depths of archaeological potential
Bartoy	2011	Letter Report: SR 99: S. Hudson Street to Ward Street Automated Viaduct Closure Gates Project, Results of Monitoring Program – No Adverse Effect	0.1 mi E	None
Roberts	2011a	Elliott Bay Seawall Project : Underwater Archaeological Reconnaissance Survey	[redacted]	[redacted]
Wilt	2012b	Monitoring and Recording of [redacted] in the Seattle Central Waterfront District	[redacted]	[redacted]
Askin	2013b	Historic Properties Survey of Pioneer Square (Colman Building) Telecom Installation 811 1st Ave, Seattle, King County, Washington	Adjacent	3 historic buildings evaluated
Elder at al.	2013	Cultural Resources Discipline Report, Seattle Multimodal Terminal at Colman Dock Project	[redacted]	[redacted]
Hudson et al.	2013	Elliott Bay Seawall Project Cultural Resources Assessment	[redacted]	[redacted]
Johnson et al.	2013	Technical Memorandum: Results of Additional Data Collection Required to Evaluate [redacted] SR 519 Seattle Multimodal Terminal at Colman Dock Project (Seattle Multimodal Project)	[redacted]	[redacted]
Elder and Cascella	2014	Memorandum: Archaeological Testing for the Alaskan Way Viaduct Replacement Project Tunnel Boring Machine Repair Shaft	[redacted]	[redacted]
Castronuevo	2015	Archaeological Survey Report, Site Name: SEA Pioneer Square, Seattle, King County, Washington	0.2 mi SE	None
Elder and Hofkamp	2015	Revised Final Supplemental Section 106 Technical Report Volume 2: Archaeological Resources, SR 99: Alaskan Way Viaduct Replacement Project.	Encompasses	None
Elder et al.	2015	Tunnel Boring Machine Repair Shaft [redacted] Testing, Alaskan Way Viaduct Replacement Project, Seattle, Washington	[redacted]	[redacted]
Finley	2015	Letter Report: Results of a cultural resources study of the WA-SEA0675E14.1 cell site (Trileaf #617165), Seattle, King County, Washington	0.25 mi NE	None
Gray	2015	Alaskan Way Viaduct Replacement Project Supplemental Section 106 Technical Report Volume 1: Historic Built Environment Resources	Encompasses	29 historic buildings with visual assessments
McReynolds	2015	Cultural Resource Report, Site Name: SEA Pioneer Square, Seattle, King County, Washington	0.15 mi SE	None

*Newly-recorded cultural material identified within search area only.

undertaken for multimodal improvements at the nearby Colman Dock. Several previous cultural resources investigations focused on recording standing historical buildings and structures to assemble an inventory. Other smaller cultural resources investigations were completed for new buildings or enhancements, like rooftop antenna installation. One previous cultural resources assessment was completed for the Colman Apartment building (now known as the Post), which was constructed on the block adjacent to the current project. Significant cultural resources were not identified during cultural resources work before construction of the building, but the authors did note the potential for encountering cultural resources [redacted]. The results of the many previously completed cultural resources investigations were used to formulate expectations concerning cultural resources in the APE.

The previously completed cultural resources investigations also identified several archaeological sites [redacted]. Although no archaeological sites have been identified within the APE, [redacted] these sites include an areaway with a mosaic tile floor, a buried wood wall, and two artifact concentrations, one of which is associated with historical foundations. Other sites are submerged in Elliott Bay, including an inundated pier, two concentrations of debris beneath historical piers, and a pile of ship ballast that was historically used as a man-made island. The original location of a cemetery that was historically relocated is also recorded [redacted]

Table 2. Previously Recorded Sites Within Approximately 0.25 Mile of the APE

SITE NO.	COMPILER/DATE	AGE	DESCRIPTION	RELATION TO APE
Table Redacted				

Eight historical buildings have been recorded within one block of the APE (Table 3). The Colman Building, which stands immediately adjacent to the east side of the bridge, is listed on the NRHP and is a City of Seattle Landmark (Askin 2013a; Corley 1969a; Hergert 1978). The APE is adjacent to the northern boundary of two historic districts: the NRHP-listed Pioneer Square-Skid Road Historic District (PSSR) and the local Pioneer Square Preservation District (PSPD). Both district boundaries end at the midline of Columbia Street, so neither district is within the APE.

Table 3. Previously Recorded Buildings and Districts Within 1 Block of the APE.

COMPILER/DATE	AGE	DESCRIPTION	RELATION TO APE	ELIGIBILITY
Corley 1969a; Hergert 1978; Askin 2013a	1904	Colman Building (811 1st Ave)	Adjacent to E	National Register listed, City of Seattle Landmark
Link 2004a; City of Seattle 2016	ca. 1890	Old Post Station, Steam Plant (619 Post Ave)	To S	Not determined
Link 2004b; City of Seattle 2016	1901	New Post Station, Seattle Steam Company (633 Post Ave)	To S	Not determined
Link 2004c; City of Seattle 2016	1893	Journal Building (83 Columbia St)	To S	Not determined

Table 3. Previously Recorded Buildings and Districts Within 1 Block of the APE.

COMPILER/DATE	AGE	DESCRIPTION	RELATION TO APE	ELIGIBILITY
Kvapil ca. 1979	1932–1933	Federal Office Building (909 1st Ave)	To N	National Register listed
Corley 1969b	1889	Start of Seattle Fire Site (1st Avenue Between Madison and Marion, West Side)	To N	Washington Heritage Register
Link 2005	1889–1931	Pioneer Square–Skid Road National Historic District	Adjacent to S	National Register listed
Atly 1979	n.d.	Marion Street Overpass	Inside	Not determined
City of Seattle 2016	1889-1931	Pioneer Square Preservation District	Adjacent to S	Local Register listed

EXPECTATIONS FOR ARCHAEOLOGY

Various buried shoreline features around Elliott Bay carry different potential for archaeological resources. The APE was once part of the intertidal zone of Elliott Bay, and it probably varied from beach-dominated to tide flat–dominated over time.

Moderate to high potential for encountering pre-contact archaeological resources exists on [redacted] were preferred locations for Native American camping and resource processing. Structural remains of buildings, hearths, or smoking racks as well as midden with associated artifacts may be found [redacted] Potential for encountering preserved archaeological materials is highest along the [redacted] and preservation potential is lowest beyond the beach berm where the foreshore is subject to erosion and reworking by waves. Native Americans almost certainly utilized [redacted] prior to historical shoreline development. Although the probability of encountering archaeological materials associated with Native Americans remains difficult to estimate [redacted], any pre-contact period artifacts and features encountered [redacted] would carry high scientific value. In addition, such a discovery would be very important to descendants of these Native Americans.

The [redacted] have low to moderate sensitivity for pre-contact archaeology because [redacted] were used for resource procurement rather than processing and camping. The [redacted] would have been highly productive for pre-contact period people by providing saltwater and freshwater fish, shellfish, waterfowl, and a range of other plant species useful for tools, shelter, food, medicine, and other purposes. But procurement activities often left behind only ephemeral traces that do not preserve well in a [redacted] depositional environment.

High potential for encountering historical archaeological materials exists [redacted] This potential includes risk for encountering intact historical structural remains and artifacts on buried surfaces from the late nineteenth and early twentieth centuries, as well as buried fire debris. Early settlers built docks and wharves on pilings along the shoreline [redacted] The areas under the wharves were partially filled to increase structural soundness by the 1880s. Evidence of pilings or wood decking within massive sandy or gravelly sedimentary fill [redacted]. These sedimentary fill deposits may be mixed with mill waste that washed in [redacted] The fill may also contain debris dropped [redacted] from the commercial businesses, including a Chinese washhouse, a blacksmith, and paint, plumbing, and fish stores. Remnants of the coal storage facilities or other features associated with the early rail lines [redacted] may also be observed (Figures B-6 and B-7). The Great Seattle Fire occurred in 1889 and thick deposits of burned soot and ashes would have resulted. [redacted]

[redacted]

The Post Avenue Bridge trestle is located within the area of ground disturbance. The extent of potentially significant historical remains in the APE is dependent on the methods used to prepare the ground for construction of the Post Avenue Bridge around 1890. Installation of the historical bridge likely caused the most ground disturbance in the APE, tempering the likelihood of encountering intact historical archaeological materials. Disturbed fill and rubble associated with demolition of the New Colman Building in 1975 was previously identified between 0 and 10 feet below the surface (fbs) (0 and 3 meters below the surface [mbs]) adjacent to the APE (Boswell et al. 2010). The rubble was observed directly on top of fire deposits. At various periods, utilities were installed underneath the section of Post Avenue within the APE, but are located beneath the bridge surface and above grade. Because project ground disturbance will be limited to 7.2 fbs (2.2 mbs), potential for encountering intact significant cultural materials in the APE was judged to be moderate.

METHODS

SWCA conducted a review of records at DAHP to locate cultural resources reports and previously recorded archaeological sites within a 0.25-mile radius of the APE (see Tables 1 and 2). Information from these reports was used to produce a work plan for undertaking additional contextual research about the Post Avenue Bridge, conducting field assessment of the structure, and identifying the potential for the bridge replacement project to affect any other pre-contact or historical archaeological resources. Initial background research focused on previous reports for the Colman Building, Alaskan Way Viaduct, and Elliott Bay Seawall Projects (EBSP), in particular, due to the proximity of those projects to the APE.

Geotechnical borehole data were reviewed for evidence of early pre-contact and historical occupations, as well as for information on age and configuration of natural and historical fill deposits. Historical maps and photographs were examined in conjunction with the borehole data to relate the logged deposits to the formation history of the APE.

The historical context was based on previous research conducted for the Colman Apartment Cultural Resources Assessment as well as an additional review of records, documents, and other historical sources that focused on the establishment of Post Street, the process of historical fill and infrastructure development, and the construction of the Post Avenue Bridge and changes over time. SWCA researcher Sharon Boswell visited the Seattle Municipal Archives, the University of Washington libraries, and the Seattle Public Library, and also used the collections of the Museum of History and Industry and other repositories to develop the historical context for the project. A better understanding of the construction of piers, bridges, and the Post Avenue roadway helped to formulate expectations on the potential for encountering significant archaeological resources in the APE.

Architectural historian Eileen Heideman conducted a field survey on April 19, 2016, to photograph and take notes on the Post Avenue Bridge. An additional field visit to photograph and record the Marion Street Pedestrian Overpass took place on July 27, 2016. Information on these structures as well as historic buildings and districts within or adjacent to the APE was obtained from the City of Seattle Department of Neighborhoods' Historic Preservation Program, the Seattle Department of Construction and Inspections Microfilm Library, the Seattle Municipal Archives, the University of Washington Library, and several other repositories. This information was used to prepare a Washington State Historic Property Inventory (HPI) form for the Post Avenue Bridge that includes a description of the resource based on limited visual observations and historical plans. An HPI form for the Marion Street Pedestrian

Overpass was developed, and Ms. Heideman also examined the project's potential impacts on other recorded built environment resources within or adjacent to the project area.

RESULTS

Results of cultural resources assessment of the Post Avenue Bridge Replacement Project are divided between Archaeology and the Built Environment Sections. Seventeen geotechnical borelogs were reviewed to assess the project's potential effects on archaeological resources. Two built-environment resources, the Post Avenue Bridge and the Marion Street Pedestrian Overpass, were recorded and evaluated during the field survey, and an assessment was also made of potential project impacts on the NRHP-listed Colman Building (Figure 13). Based on the archaeological and built-environment investigations, the project may affect potential archaeological resources in the APE, but will have no adverse effect on historic built-environment resources.

Archaeology

Eight geotechnical reports containing the logs of seventeen boreholes previously drilled in the project vicinity were used to explore subsurface deposits and potential for encountering archaeological resources in the APE (Blyton and Guenzler 2007; Dames & Moore 1976; Huling and Ramos 2015; Jacobs 1992; Lamont 1968; Rice 1992; Seattle Engineering Department 1959; Unknown 1978). The boreholes were drilled using hollow stem auger or mud rotary coring methods and sediment samples were generally retrieved using Standard Penetration Tests (SPTs). Coring was not archaeologically monitored. During SPT sampling, boreholes were usually sampled at intervals of 2.5 feet (76 cm) between 0 and 20 fbs (0 and 6 mbs) and at 5-foot (1.5 m) intervals below 20 fbs (6 mbs). Samples were generally collected using an 18-inch-long (46-cm-long) sampler with a 2-inch (5-cm) outer diameter and an 11/8-inch (3.5-cm) opening that was driven into the ground with a 140-pound hammer falling 30 feet (9.1 m).

Observations about the sampled sediment were recorded by geotechnicians on logs that depict the vertical depositional sequence of the borehole. The nature and amount of detail recorded by a geotechnician is highly variable, and depends on the purpose of the boring. Structural engineers concentrate on grain size, while environmental geologists look for inclusions. Often, geotechnicians will lump up to 10 feet (3 m) of sediment into one depositional unit even though they were only able to physically observe 1.5 feet (46 cm) of that interval. Geotechnicians sometimes note the presence of cultural materials within the sediments logged, but not always. The resulting geotechnical data set is incomplete and exists at a larger scale than can be used to formulate specific recommendations for treatment of cultural materials in the APE. But the data is useful for interpretation of the stratigraphic boundaries between Pleistocene, Holocene, and Fill strata. A copy of this data set is included in this assessment as Appendix C.

In order to combine the results from several different geotechnical reports, each depositional unit recorded by the geotechnicians was transposed by the SWCA geoarchaeologist and entered into a master database according to a classification scheme developed for the Alaskan Way Viaduct Coring Program (Miss et al. 2008). In this descriptive system, the modal grain size of a Holocene-aged deposit is indicated with a capital letter. For example, a layer dominated by sand-sized sediment would be designated with the letter "S." Secondary properties of the Holocene deposits are designated by lowercase letters, representing either secondary constituents of the depositional unit or additional descriptor terms for modal grain size. For example, fSz (silty fine sand) is broken down into "f," "S" and "z." The "S" indicates that sand is the primary constituent; the "f" indicates the grain size of that sand is fine; and "z" (silt) is a secondary component of the deposit. Table 4 details the lithology nomenclature.

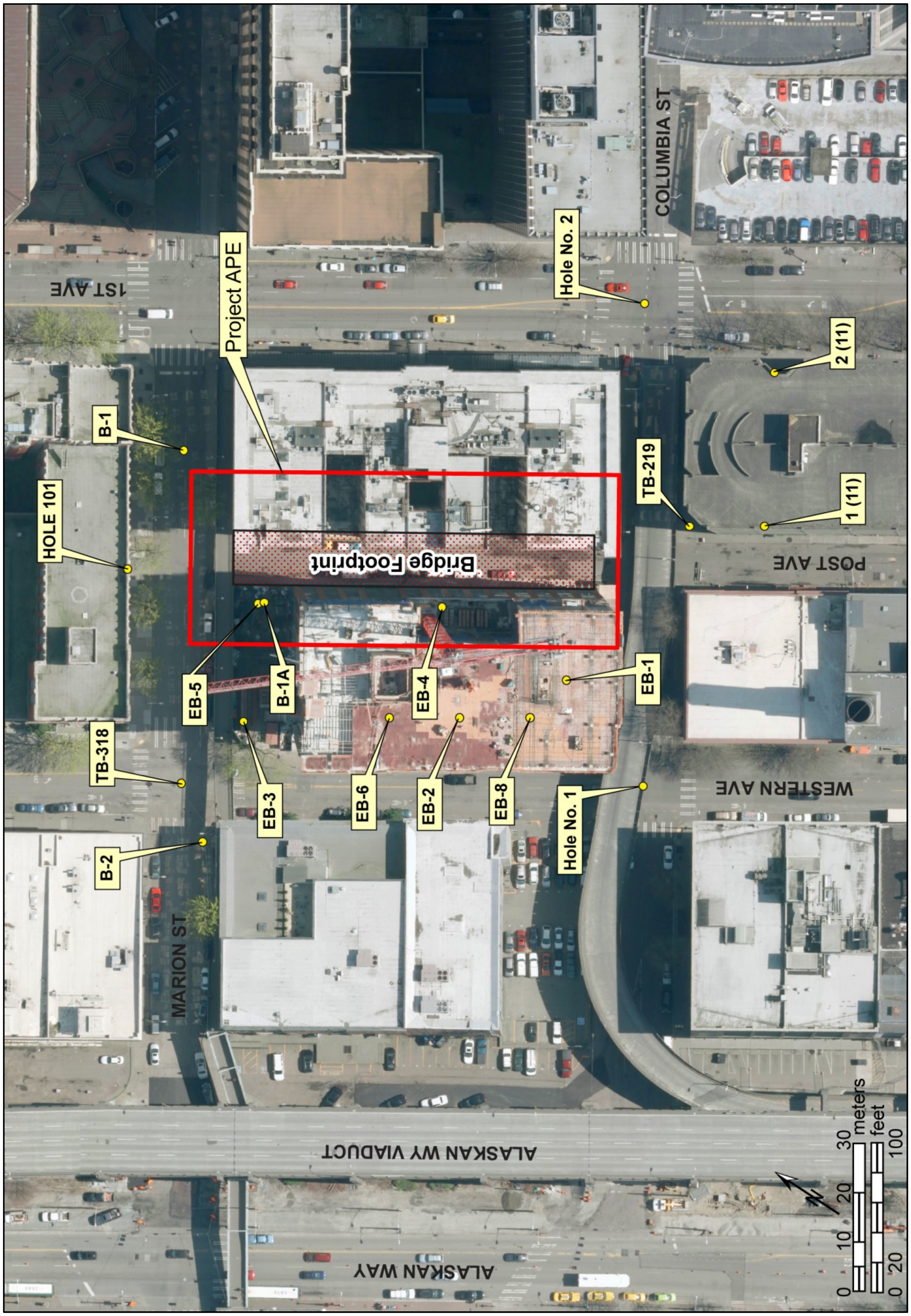

Figure 13. Aerial image of the project vicinity, showing the APE, 17 geotechnical boreholes, the Post Avenue Bridge, the adjacent Colman Building.

Table 4. Primary Lithologic Constituents and Secondary Properties Used During the Analysis of Sediment in the APE Vicinity

FILL	HOLOCENE
Asphalt	G - Gravel
Brick	S – Sand
Building Stone Rubble	Z - Silt
Concrete	
Wood	**MODIFIERS AND SECONDARY PROPERTIES**
Lumber	f – fine
Gravel	g – gravelly
Sand	s – sandy
Silt	z - silty
Clay	
Undifferentiated Fill	

The name for each depositional layer within the historic fill was derived from the reported abundance of archaeological materials or grain size. For example, if “abundant brick” was noted on a borelog, then the layer was deemed a Brick unit. Many of the depositional units within the fill in the project area are associated with building materials or building demolition, such as Asphalt, Concrete, Building Stone Rubble, and Brick. Other units, including Gravel, Sand, Silt, and Clay tend to have little to no admixture of archaeological objects. They may represent deposition from a street regrade project, or, at greater depths, may represent wave reworking during early stages in the accumulation of fill. If flat-lying lumber, decking, pilings, milled wood, or sidewalk planking was specified on the borelog when wood was identified in the sampler, then the layer was defined as Lumber. The layer was classified as Wood when details concerning the nature of sampled wood were not available on the borelogs. Finally, the unit Undifferentiated Fill was used to characterize deposits lacking a dominant archaeological constituent or striking characteristics to allow them to be definitively assigned to one of the other units. Layers of Undifferentiated Fill tend to be poorly sorted with scattered fragments of brick, cinders, and wood.

Three stratigraphic units were identified from the borelogs. They are, from bottom to top, Pleistocene till and outwash, Holocene intertidal sediment, and Historical Fill (Figures 14 and 15). Pleistocene-aged outwash or till were identified at the base of the stratigraphic sequence below an average of 28.25 fbs (8.6 mbs). The glacial deposits generally consist of compact, gray to brown, sometimes clayey, silty, fine to coarse sand and gravel. Pleistocene-aged deposits predate the arrival of humans to the region and they will not be discussed further. Holocene-aged intertidal sediment in the APE mainly consists of fine sand (fS), silty fine sand (fSz), and sandy silt (Zs) deposits between an average of 23.25 and 28.25 fbs (7 and 8.6 mbs). In general, the Holocene stratum fines west of the APE, away from the beach, with sand at Post Avenue and silt near Western Avenue. Fill was encountered at the top of the sequence between an average of 0 and 23.25 fbs (0 and 7 mbs) in the APE. Fill in the project vicinity consists of Asphalt, Brick, Building Stone Rubble, Concrete, Wood, Lumber, Gravel, Sand, Silt, Clay, and Undifferentiated Fill deposits. In general, the fill includes distinguishable upper and lower components.

The upper fill extends from the surface to approximately 10 fbs (3 mbs) and consists of asphalt, concrete, brick, rubble, steel, and woody debris in a loose matrix of silty sand with some gravels. Individual pieces of building stone rubble are as thick as 3 feet, and intact foundation elements may extend up to 13 fbs (4 mbs). The rubble was probably deposited during demolition of the formerly adjacent Colman Building, but it is also possible that some of the more deeply buried rubble between

This image has been redacted.

Figure 14. Cross-sections of the APE vicinity along Post Avenue and Western Avenue, showing the stratigraphy and lithology of the sediment below the paved surfaces.

This image has been redacted.

Figure 15. Cross-sections of the APE vicinity along Columbia Street and Marion Street, showing the stratigraphy and lithology of the sediment below the paved surfaces.

about 10 and 13 fbs (3 and 4 mbs) may be associated with demolition of other older buildings or factories that were constructed on the wharves in the APE between 1884 and 1889. Vertical pilings are below the existing bridge foundation as support and these pilings extend down from the upper fill through the lower fill.

The lower fill consists of massive deposits of sand and silt with increasing frequency of logs and wood waste with depth. The Sand units that compose the lower fill vary in lithology from loose, gray to brown, sometimes gravelly, fine to coarse sand with wood fragments, to dark gray, silty fine sand with a trace of organic matter. The lower fill Sand units usually decrease in grain size with depth. Wood in the lower fill is most common between 14 and 20 fbs (4.3 and 6 mbs) in the form of logs, wood chips, or pilings related to the wharves that were once in the project area. Woody deposits below about 20 fbs (6 mbs) can also be associated with mill waste that was dumped off the wharves and onto the tide flats prior to the late 1880s. Wood waste associated with Yesler's mill, which dates from as early as 1853, and the Seattle and Commercial Lumber Company's mills from the 1880s, is common at the base of the fill. Other wood deposits between 14 and 20 fbs (4.3 and 6 mbs) are Lumber units that may be related to decking built in the APE after the Seattle Fire in 1889. The Lumber may also be pieces of milled wood included in the fill as secondary deposits.

No significant archaeological materials were identified in the APE based on the geotechnical borelogs, but scattered historical cultural debris was encountered [redacted]. For example, stone rubble related to construction of [redacted] Older intact foundations or structural remains of the buildings [redacted] may also be present. Other nearby boreholes not affected by excavation of adjacent basements include materials likely associated with the Great Seattle Fire, such as soot, cinders, brick fragments, ashes, and charred wood in [redacted]. [redacted] also contains scattered debris, as well as potential for preserved decking or early historical structural remains.

The following chronology summarizes the events that occurred in the APE since historic occupation and relates these events to the stratigraphy and lithology recorded in the previously completed geotechnical cores:

- The APE was intertidal prior to historical development. Sediments in the project area older than 1853 are fine-grained intertidal silt and sand, now buried up to 24 fbs (7.3 mbs).
- Euroamericans arrived in the project vicinity and immediately started to discard waste, such as mill cuttings and sawdust, into the intertidal zone. Wood waste is now buried between [redacted]
- Entrepreneurs built wharves out from the existing bluffs. By 1884, pilings supported small ramps, docks with small businesses, and railroad tracks all around the project area. By 1888, the project area under the docks was partially filled. Decking and wharf-related deposits may be buried between [redacted]
- The Great Seattle Fire occurred in 1889 and thick deposits of burned soot and ash were deposited in the project vicinity. Portions of the project area were filled during fire cleanup and the grade of what became Post Street was leveled. Fire deposits could be mixed with rubble between [redacted]
- Larger commercial buildings were constructed on either side of Post Avenue immediately after the fire. The original Colman Block on First Avenue was destroyed by the fire, and construction began on a new, two-story building within a few weeks. The Post Avenue Bridge was

constructed in 1890. Bridge foundations likely extend to about 10 fbs, and construction of the bridge may have disturbed historical archaeological materials.

- The New Colman Building, which fronted on Western Avenue, was constructed by 1897, and it included a 10-foot-deep (3-m-deep) basement. Excavations for the basement removed evidence of earlier structures and the Great Seattle Fire within the footprint of the building, but this evidence may still remain [redacted]
- The New Colman Building was demolished in 1975 and the basement was filled with construction rubble from 0 to 10 fbs (0 to 3 mbs). A new building was constructed in its place in 2011.
- The Post Avenue Bridge was paved in 1911 and many utilities have since been installed along Post Avenue below the deck that carries the roadway.

Built Environment

Three built-environment resources, the Post Avenue Bridge, the Marion Street Pedestrian Overpass, and the Colman Building, are located within the project area (Figure 16). The Colman Building is currently listed in the NRHP and the other two resources were recorded and evaluated as part of this assessment.

Post Avenue Bridge

The Post Avenue Bridge was built in 1890 during reconstruction of the city after the fire. Research and inspection by an engineering team in 2015 indicates that this structure is a timber trestle that carries the roadway from the north edge of Columbia Street to the south edge of Marion Street (Figures 17 and 18). The only historical element of the bridge that is visible from street level is a small section of granite curb located at the southeast end of the bridge. The underside of the bridge is accessible through a grate in the east sidewalk, and the void under the superstructure has been mostly filled with sand and other material, which over time has settled, leaving between 2 and 6 feet between the underside of the bridge and the ground surface.

Paving plans for the street in 1911 show that each trestle bent consists of three creosoted wood piles 13 feet apart (on center) with a 12 × 12–foot wood pile bent cap that extends 2 feet beyond the outside piles. Each bent stands 7 feet 3 inches apart (on center). The road bed was constructed of concrete with granite curb sections measuring 23 x 6 inches. These paving plans call for a 20-inch sand cushion with 4-inch wood blocks as a wear surface. Concrete sidewalks with a 2.5% slope were built from each curb to the buildings on either side. Plans show that the original sidewalk on the west side of the bridge rested on the bent caps and iron dowels that protruded every 18 inches from mortar joints in the adjacent building (see Figure 11). This sidewalk was replaced as part of the construction of the Post Apartments. Plans for the east sidewalk do not specify exactly how this portion of the structure is attached to the Colman Building, but indicate that the poured concrete ties directly into the brick wall in some manner (Thompson 2011).

Like many other roadways near the Seattle waterfront, Post Avenue was originally graded, filled in some places, and then planked, with large segments built on trestles to cross over remaining tidal areas. While the city repaved most of Post Avenue with brick or wood blocks in the first years of the twentieth century, the portion between Marion and Columbia Streets that intersected the two blocks owned by the J.M. Colman Company was apparently not included in these projects. The Colmans paid for new paving of this part of Post Avenue in 1911, based on plans developed by R.H. Thomson and other employees of the Seattle Engineering Department. The company chose to use creosoted wood blocks as the paving surface. Likely because private funds paid for these improvements, the city did not make

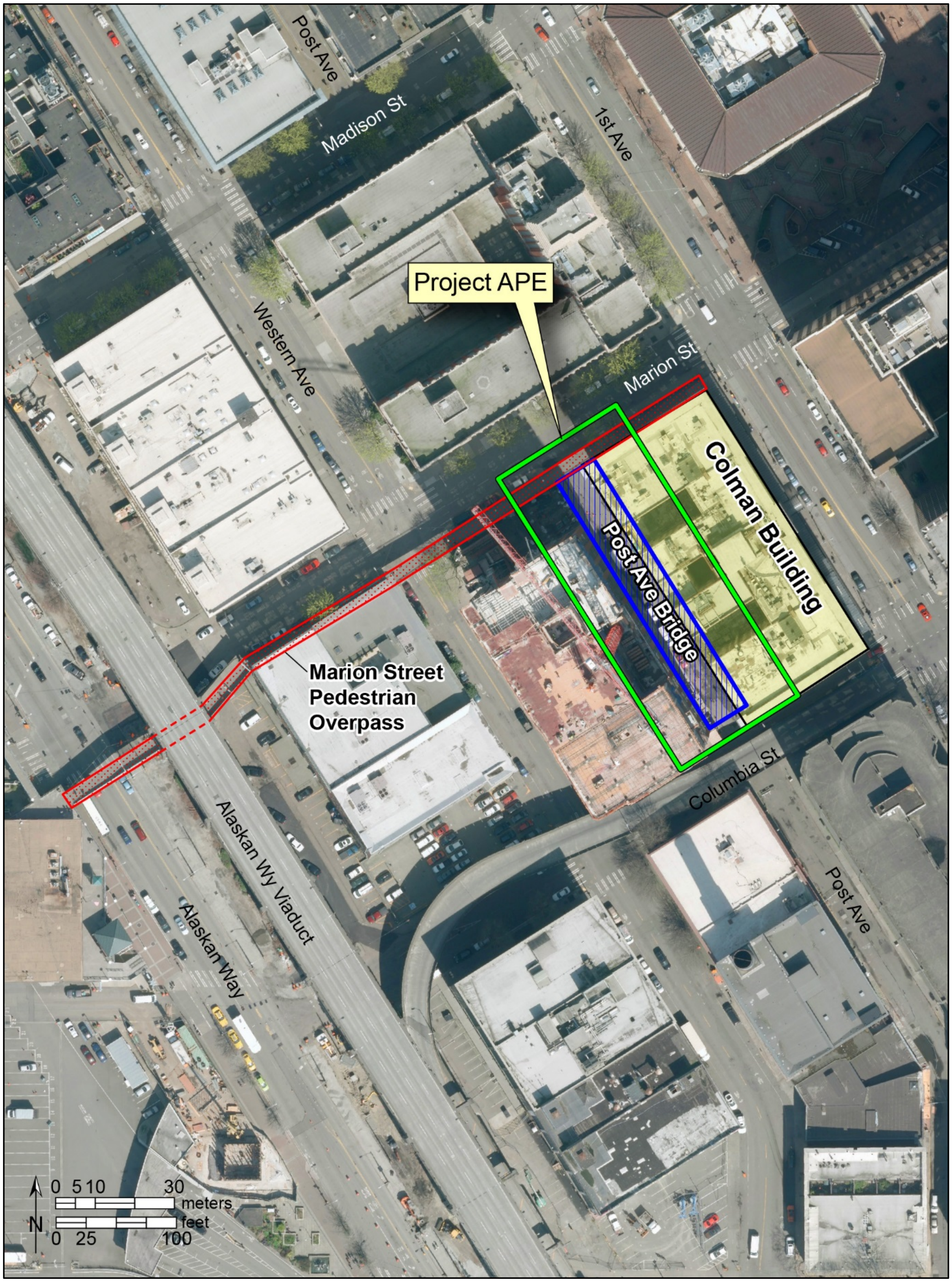

Figure 16. Built environment resources within the project APE.

Figure 17. Post Avenue Bridge, view to the north.

Figure 18. Post Avenue Bridge, view to the south; note Marion Street Overpass in foreground.

further changes to this segment of Post until 1945, when a layer of asphalt was added, followed by another asphalt treatment in 1960. It was not until the 1990s that investigations by city engineers suggested that the roadway continues to be supported on an early wood trestle, a remnant of early road-building infrastructure that has been removed from almost all other city streets.

The bridge substructure is not visible from publicly-accessible areas, but research indicates that several alterations have been made to the bridge during installation and maintenance of utilities beneath the bridge deck. For example, substantial sections of the bridge deck were removed during utility work on March 13, 2013, and these areas were subsequently filled with concrete or asphalt (Kit Loo, personal communication, July 25, 2016). Although this structure is one of the few remaining examples of the early post-fire reconstruction of the city infrastructure, archival research did not yield sufficient information to support an argument for NRHP eligibility. Additionally, from the evidence currently available, the integrity of design, materials, workmanship, and feeling of the bridge has been compromised due to alterations that include removal of portions of the bridge deck, replacement of the west sidewalk, and loss of most of the visible historic material as a result of replacement, repaving, or removal. The Post Avenue Bridge is considered not eligible for the NRHP because of lack of significance and apparent loss of integrity. Due to lack of access to the bridge substructure at the time of the site visit, monitoring and photographing of bridge deconstruction is recommended in order to document construction methods and materials and identify previous wear-surface material underneath the current asphalt surfacing.

Marion Street Pedestrian Overpass

The Marion Street Pedestrian Overpass consists of three sections. A riveted steel girder span constructed in 1951 crosses Alaskan Way underneath the Alaskan Way Viaduct. The precast concrete section, built in 1979, extends to the northwest from the Alaskan Way Viaduct to First Avenue. A third section is a modern prefabricated steel truss connecting the 1951 steel girder to the Washington State Ferries terminal building at Colman Dock. The entire structure extends more than 600 feet between First Avenue and the terminal building.

Paired cylindrical posts support the 1979 precast concrete section of the overpass, while steel I-beams which extend from the building southeast of the overpass provide the underpinnings for the precast concrete sections southwest of Western Avenue. Steel trestles embedded in poured concrete footings support the steel girder. The prefabricated truss rests on the west end of the girder as well as a steel post and I-beam support on the east side of the ferry terminal building.

History and Significance

Alternative names used for this structure include: Marion Street Ferry Walkway, Marion Street Overhead, Marion Street Viaduct, Marion Street Footbridge, Bridge Number 40, and Marion Street Pedestrian Trestle.

City records show that in 1896, the Committee on Corporations and the City Engineer recommended that under Council Bill No 170, Marion Street be vacated between Western Avenue and Railroad Avenue, but that the city should reserve the right to construct an overhead roadway on that portion of Marion Street in the future to ensure that the public would retain waterfront access. The new Railroad Avenue corridor was so busy that it was difficult for pedestrians to cross from the city's business district to the wharfs (City of Seattle 1896).

The Great Northern Railway Company constructed the Marion Street Viaduct, as it was then called, possibly so there would be easier access to its own docks. The railroad received authorization for the pedestrian overpass from the Board of Public Works under Permit No. 554, issued on November 30, 1908. The permit also stipulated that the railroad would be responsible for all future maintenance of the walkway (Robt. J. Gulino to A.L. Newbould, Aug. 24 1973, in Records 2602-02, File 1145, Seattle Municipal Archives [SMA]). The viaduct was evidently used quite heavily, and by 1910, a city councilman proposed the construction of a second pedestrian overpass at University Street. A newspaper article at that time noted that the new bridge would be similar in construction to the Marion Street structure, with a width of 12 feet. The article also suggests that approximately half of the patrons of steamships and ferries on the Puget Sound waterfront crossed the Marion Street footbridge (*Seattle Times*, July 24, 1910).

A 1916 newspaper article discussed plans to “rebuild the front structure of the Colman Dock.” The reporter noted that “the series of steps at the west end of the Marion Street Viaduct will be eliminated. The western end of the viaduct will be rebuilt so that it will slope at a gradual incline to an overhead walkway running even with the second floor of the new building. The walkway will connect with the walkway running along the front of the Grand Trunk Dock” (*Seattle Times*, January 23, 1916). A stairway from the viaduct to street level at Western Avenue and Marion Street was also built during this period by the J.M. Colman Company at their own expense, with provisions that they would also be responsible for its maintenance (Roy Morse to Streets and Sewers Committee, March 27, 1962, in Records 2606-02, File 1145, SMA).

In addition to a pedestrian crossing, the overpass at various times also included some access to businesses in adjacent buildings. As an example, a 1920 article in the *Seattle Times* about a fire in one of these buildings indicates that at least one store opened onto the Marion Street Viaduct (*Seattle Times*, April 23, 1920). A number of railway companies that owned docks along the waterfront were also interested in the ongoing availability of the walkway for pedestrian and business access. After significant repairs were made to the structure in the 1930s, they shared the maintenance costs of the overpass with the Great Northern Railway in proportion to the width of their respective rights of way over which it passed (E.A. Matson to O.A. Piper, Sept. 26, 1936, in Records 2606-02, File 1145, SMA).

The construction of the Alaskan Way Viaduct did not cause immediate alterations to the pedestrian walkway. A 1948 newspaper article noted that proposed construction of the Alaskan Way Viaduct, which was scheduled to begin in early 1949, would not interfere with use of the pedestrian overpass, which would be retained (*Seattle Times*, November 28, 1948). During construction, plans were developed to move the Marion Street crossing 12 feet to the south, and a local paper explained: “The 180-foot span will be removed and altered in a steel fabricating plant here, then replaced as a permanent part of the Alaskan Way viaduct now under construction” (*Seattle Times*, July 18, 1951).

The possible demolition of the aging stairway from the Marion Street Overpass to Western Avenue caused controversy in 1962, as both pedestrians and nearby businesses complained that it was an important access point and should not be removed. The Colman Company no longer owned the adjacent buildings, however, so by an ordinance passed on October 1, 1962, the city authorized repair and maintenance of the pedestrian stairway (City of Seattle 1962).

Portions of the Marion Street Overpass also needed repairs and in the early 1970s, and the city began negotiations with the Burlington Northern Railroad Company, the successor of the Great Northern, to make upgrades. Work initially stalled because portions of Marion Street and the adjacent sidewalk were considered too unstable for installation of necessary overpass supports. Finally an ordinance was passed by the Seattle City Council in 1976 to construct the “Marion St. Pedestrian Trestle” and an engineering study for a stairway or pedestrian ramp on the north side of the Washington State Ferries terminal. This work was partially reimbursable with an appropriation from the 1960 fund of the Seattle General Street Improvement Bonds, and notes indicate that the city was also pursuing federal funding through the Washington State Department of Highways (now the Washington State Department of Transportation) for this work (City of Seattle 1976; Records 2606-02, File 1145, SMA).

The Marion Street Pedestrian Overpass was included in the citywide windshield survey of historic resources in 1979 and was also recorded in a reconnaissance survey of city-owned bridges in that same year, and was recommended not eligible at that time (Soderberg 1979). The structure has undergone several major alterations since it was constructed, resulting in loss of integrity of design, materials, location, and workmanship, and it is recommended not eligible for the NRHP.

Colman Building

The NRHP-listed Colman Building stands within the APE and is adjacent to the east side of the Post Avenue Bridge (Askin 2013a; Corley 1969a; Hergert 1978). No significant alterations have taken place since this building was last recorded in 2013. The SWCA architectural historian reviewed plans, permits, and other records at the Seattle Department of Construction and Inspections Microfilm Library to identify any structural connection between the bridge and the building foundation, but located no information that provides additional insights on any connection . A site visit did reveal that the building has an inverted arch foundation, which was used in early pre-reinforced concrete masonry construction to reduce the depth of foundations in soft or waterlogged soils (Colliery Engineer Company 1899; Pasley 1817; Rabun 2000).

RECOMMENDATIONS AND CONCLUSIONS

The proposed project will have no adverse effect on historic resources. One NRHP-listed historic resource, the Colman Building, is located within the APE. The proposed roadway was designed to avoid placing a lateral load on the Colman Building foundation. Lightweight and low-density, self-standing cellular concrete will be poured to form fill between the ground surface and the roadway and sidewalks, and a polyethylene foam bond breaker will provide a barrier between the building and the cellular concrete. Six inches of compacted aggregate will be placed on top of the cellular concrete, and a concrete wear surface will be poured on top, with construction geotextile providing a barrier between the Colman Building and the sidewalk (Kit Loo, personal communication, July 28, 2016). These design measures ensure that the project will have no adverse effect on the Colman Building.

The Post Avenue Bridge and the Marion Street Pedestrian Overpass are recommended not eligible for the NRHP, but monitoring of Post Avenue Bridge deconstruction is recommended in order to gather information about early construction methods. Previous engineering inspections of the bridge indicate that it is a timber trestle structure, but few historical elements of the structure are visible at the surface; therefore, documentation of the bridge will need to take place as the bridge is removed in order to fully record and describe this rare surviving element of Seattle’s early post-fire transportation infrastructure. The bridge wear-surface beneath the asphalt overlay should be documented, and representative sections of the trestle should be photographed, measured, and described.

The possibility exists for encountering potentially significant buried historical cultural resources [redacted]. Potential for encountering pre-contact cultural resources exists [redacted]

[redacted] Planned project ground disturbance is limited to 7.2 fbs (2.2 mbs), so the project will not have a negative impact on any pre-contact archaeological resources.

SWCA recommends that, wherever possible, project ground disturbance during Post Avenue Bridge replacement be confined to fill deposits that were previously disturbed by historical bridge installation. SWCA expects that previous disturbance could extend up to 10 fbs (3.3 mbs), and even deeper where pilings are present. SWCA recommends archaeological monitoring of ground disturbing construction in areas of undisturbed fill due to the potential for encountering [redacted]

If project plans change to include ground disturbance beyond 7.2 fbs (2.2 mbs), such as adding pilings or utility vaults, then SWCA recommends archaeological monitoring up to the base of the Holocene stratum that extends up to [redacted] or to the base of proposed ground disturbance, whichever is shallower. An MDP to guide archaeological monitoring of construction is appended to this assessment as Appendix D.

This assessment is based on information provided in April 2016. Additional cultural resources assessment may be required if construction plans change significantly or the footprint is expanded to include areas beyond the current Post Avenue Bridge APE.

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Image Repositories

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Photograph Reference Collection, Central Library, *Seattle Public Library* System, Seattle, Washington.

Seattle Municipal Archives, Office of the City Clerk, Legislative Department, Seattle, Washington.

APPENDIX A: CORRESPONDENCE

SWCA®
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Seattle, Washington 98119
Tel 206.781.1909 Fax 206.781.0154
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May 11, 2016

Cecile Hansen, Chairwoman
Duwamish Tribe
4705 W. Marginal Way S.W.
Seattle, WA 98106

RE: The Post Avenue Bridge Replacement Project, Seattle, King County, Washington.

Dear Ms. Hansen,

SDOT has retained SWCA to complete a cultural resources assessment for the Post Avenue Bridge Replacement Project in Seattle, Washington. SDOT plans to remove the Post Avenue Bridge roadway and support slab, and replace it with a standard roadway due to safety. The Post Avenue Bridge supports Post Avenue between Marion and Columbia Streets (Figure 1). The project's area of potential effect (APE) has formally been defined as one-half block on either side of the Post Avenue right-of-way, as well as to the center lines of Marion and Columbia Streets on the north and south ends of the Post Avenue roadway. Adjacent and immediately to the east of the Post Avenue Bridge is the Colman Building, a Historic Landmark at 801 1st Avenue. The Pioneer Square Historic District boundary terminates at the middle of Columbia Street, which is approximately 25 feet (ft) (7.63 meters [m]) south of the bridge.

The Post Avenue Bridge consists of a deep timber pile foundation with timber cap beams supporting a reinforced concrete slab that is covered by an asphalt overlay. The bridge is about 240 ft (73.1 m) long and 36 ft (11 m) wide. There is a 2 to 3 ft (61 centimeter [cm] to 1 m) wide open space between the soffit of the bridge and the existing ground line along the length of most of the bridge. Because there is no readily available access to the underside of the bridge, the bridge structure is not visible from the roadway surface. The soil beneath the bridge will be removed to 3 ft (1 m) below the existing soil surface and the support pillars will be cut off up to 6 ft (1.8 m) below the road surface (Figure 2). SDOT may install a new drainage connection on the south side of the project. The connection of the to the existing sanitary sewer would require and excavation to a depth of 7.2 ft (2.2 m) below the road surface between the south end of the bridge and the center line of Columbia Street. SWCA has recommended archaeological monitoring of excavation and we prepared a monitoring and discovery plan .

At this time, we are interested to know if the Duwamish Tribe has any concerns for cultural resources in or near the project area. If so, please contact us at your earliest convenience so these locations can be taken into account during planning. We look forward to hearing from you regarding this project. We respect any concerns the Tribe may have about sharing sensitive information with us, and we will be happy to work with you regarding these concerns. This letter is a technical inquiry and is not intended to replace government-to-government consultation. You can contact me by phone at 206-781-1909 x 6703 or email at brinck@swca.com if you have questions or comments about this project.

Respectfully,

Brandy A. Rinck
Geoarchaeologist, M.A., RPA

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SWCA ENVIRONMENTAL CONSULTANTS
Sound Science. Creative Solutions.®

May 11, 2016

Laura Murphy
Muckleshoot Indian Tribe
39015 172nd Avenue SE
Auburn, WA 98092

Submitted via email to laura.murphy@muckleshoot.nsn.us

RE: The Post Avenue Bridge Replacement Project, Seattle, King County, Washington.

Dear Ms. Murphy,

SDOT has retained SWCA to complete a cultural resources assessment for the Post Avenue Bridge Replacement Project in Seattle, Washington. SDOT plans to remove the Post Avenue Bridge roadway and support slab, and replace it with a standard roadway due to safety. The Post Avenue Bridge supports Post Avenue between Marion and Columbia Streets (Figure 1). The project's area of potential effect (APE) has formally been defined as one-half block on either side of the Post Avenue right-of-way, as well as to the center lines of Marion and Columbia Streets on the north and south ends of the Post Avenue roadway. Adjacent and immediately to the east of the Post Avenue Bridge is the Colman Building, a Historic Landmark at 801 1st Avenue. The Pioneer Square Historic District boundary terminates at the middle of Columbia Street, which is approximately 25 feet (ft) (7.63 meters [m]) south of the bridge.

The Post Avenue Bridge consists of a deep timber pile foundation with timber cap beams supporting a reinforced concrete slab that is covered by an asphalt overlay. The bridge is about 240 ft (73.1 m) long and 36 ft (11 m) wide. There is a 2 to 3 ft (61 centimeter [cm] to 1 m) wide open space between the soffit of the bridge and the existing ground line along the length of most of the bridge. Because there is no readily available access to the underside of the bridge, the bridge structure is not visible from the roadway surface. The soil beneath the bridge will be removed to 3 ft (1 m) below the existing soil surface and the support pillars will be cut off up to 6 ft (1.8 m) below the road surface (Figure 2). SDOT may install a new drainage connection on the south side of the project. The connection of the to the existing sanitary sewer would require and excavation to a depth of 7.2 ft (2.2 m) below the road surface between the south end of the bridge and the center line of Columbia Street. SWCA has recommended archaeological monitoring of excavation and we prepared a monitoring and discovery plan .

At this time, we are interested to know if the Muckleshoot Indian Tribe has any concerns for cultural resources in or near the project area. If so, please contact us at your earliest convenience so these locations can be taken into account during planning. We look forward to hearing from you regarding this project. We respect any concerns the Tribe may have about sharing sensitive information with us, and we will be happy to work with you regarding these concerns. This letter is a technical inquiry and is not intended to replace government-to-government consultation. You can contact me by phone at 206-781-1909 x 6703 or email at brinck@swca.com if you have questions or comments about this project.

Respectfully,

Brandy A. Rinck
Geoarchaeologist, M.A., RPA

Tel: 206-781-1909 x6703
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May 11, 2016

Dennis Lewarch, THPO
Suquamish Tribe
PO Box 498
Suquamish, WA 98392

Submitted via e-mail to dlewarch@Suquamish.nsn.us

RE: The Post Avenue Bridge Replacement Project, Seattle, King County, Washington.

Dear Dennis,

SDOT has retained SWCA to complete a cultural resources assessment for the Post Avenue Bridge Replacement Project in Seattle, Washington. SDOT plans to remove the Post Avenue Bridge roadway and support slab, and replace it with a standard roadway due to safety. The Post Avenue Bridge supports Post Avenue between Marion and Columbia Streets (Figure 1). The project's area of potential effect (APE) has formally been defined as one-half block on either side of the Post Avenue right-of-way, as well as to the center lines of Marion and Columbia Streets on the north and south ends of the Post Avenue roadway. Adjacent and immediately to the east of the Post Avenue Bridge is the Colman Building, a Historic Landmark at 801 1st Avenue. The Pioneer Square Historic District boundary terminates at the middle of Columbia Street, which is approximately 25 feet (ft) (7.63 meters [m]) south of the bridge.

The Post Avenue Bridge consists of a deep timber pile foundation with timber cap beams supporting a reinforced concrete slab that is covered by an asphalt overlay. The bridge is about 240 ft (73.1 m) long and 36 ft (11 m) wide. There is a 2 to 3 ft (61 centimeter [cm] to 1 m) wide open space between the soffit of the bridge and the existing ground line along the length of most of the bridge. Because there is no readily available access to the underside of the bridge, the bridge structure is not visible from the roadway surface. The soil beneath the bridge will be removed to 3 ft (1 m) below the existing soil surface and the support pillars will be cut off up to 6 ft (1.8 m) below the road surface (Figure 2). SDOT may install a new drainage connection on the south side of the project. The connection of the to the existing sanitary sewer would require and excavation to a depth of 7.2 ft (2.2 m) below the road surface between the south end of the bridge and the center line of Columbia Street. SWCA has recommended archaeological monitoring of excavation and we prepared a monitoring and discovery plan .

At this time, we are interested to know if the Suquamish Tribe has any concerns for cultural resources in or near the project area. If so, please contact us at your earliest convenience so these locations can be taken into account during planning. We look forward to hearing from you regarding this project. We respect any concerns the Tribe may have about sharing sensitive information with us, and we will be happy to work with you regarding these concerns. This letter is a technical inquiry and is not intended to replace government-to-government consultation. You can contact me by phone at 206-781-1909 x 6703 or email at brinck@swca.com if you have questions or comments about this project.

Respectfully,

Brandy A. Rinck

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May 11, 2016

Richard Young, Cultural Resources
Tulalip Tribes Hibulb Cultural Center & Natural History Preserve
6410 23rd Avenue NE
Tulalip, WA 98271

Submitted via e-mail to ryoung@tulaliptribes-nsn.gov and Cc Tim Brewer tbrewer@tulaliptribes-nsn.gov

RE: The Post Avenue Bridge Replacement Project, Seattle, King County, Washington.

Dear Mr. Young,

SDOT has retained SWCA to complete a cultural resources assessment for the Post Avenue Bridge Replacement Project in Seattle, Washington. SDOT plans to remove the Post Avenue Bridge roadway and support slab, and replace it with a standard roadway due to safety. The Post Avenue Bridge supports Post Avenue between Marion and Columbia Streets (Figure 1). The project's area of potential effect (APE) has formally been defined as one-half block on either side of the Post Avenue right-of-way, as well as to the center lines of Marion and Columbia Streets on the north and south ends of the Post Avenue roadway. Adjacent and immediately to the east of the Post Avenue Bridge is the Colman Building, a Historic Landmark at 801 1st Avenue. The Pioneer Square Historic District boundary terminates at the middle of Columbia Street, which is approximately 25 feet (ft) (7.63 meters [m]) south of the bridge.

The Post Avenue Bridge consists of a deep timber pile foundation with timber cap beams supporting a reinforced concrete slab that is covered by an asphalt overlay. The bridge is about 240 ft (73.1 m) long and 36 ft (11 m) wide. There is a 2 to 3 ft (61 centimeter [cm] to 1 m) wide open space between the soffit of the bridge and the existing ground line along the length of most of the bridge. Because there is no readily available access to the underside of the bridge, the bridge structure is not visible from the roadway surface. The soil beneath the bridge will be removed to 3 ft (1 m) below the existing soil surface and the support pillars will be cut off up to 6 ft (1.8 m) below the road surface (Figure 2). SDOT may install a new drainage connection on the south side of the project. The connection of the to the existing sanitary sewer would require and excavation to a depth of 7.2 ft (2.2 m) below the road surface between the south end of the bridge and the center line of Columbia Street. SWCA has recommended archaeological monitoring of excavation and we prepared a monitoring and discovery plan .

At this time, we are interested to know if the Tulalip Tribes have any concerns for cultural resources in or near the project area. If so, please contact us at your earliest convenience so these locations can be taken into account during planning. We look forward to hearing from you regarding this project. We respect any concerns the Tribes may have about sharing sensitive information with us, and we will be happy to work with you regarding these concerns. This letter is a technical inquiry and is not intended to replace government-to-government consultation. You can contact me by phone at 206-781-1909 x 6703 or email at brinck@swca.com if you have questions or comments about this project.

Respectfully,

Brandy A. Rinck
Geoarchaeologist, M.A., RPA

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APPENDIX B: HISTORICAL MAPS

Appendix has been redacted.

APPENDIX C: BORE LOG SUMMARY

Table C-1. Bore Log Summary

BOREHOLE	NORTHING (State Plane)	EASTING	TOP (fbs)	BOTTOM	STRATUM	LITHOLOGY	DESCRIPTION
1 (11)	223524	1269909	0	1.5	Fill	Asphalt	Redacted
			1.5	16.5		Sand	
			16.5	23		Sand	
			23	45	Holocene	S	
			45	51	Pleistocene	Pleistocene	
			51	61		Pleistocene	
2 (11)	223571	1270000	0	0.7	Fill	Concrete	
			0.7	1.5		Brick	
			1.5	13		NR	
			13	13.5		Wood	
			13.5	14		Gravel	
			14	15		Concrete	
			15	21		Sand	
			21	33.5	Holocene	Sg	
			33.5	41		Sg	
			41	65	Pleistocene	Pleistocene	
B-1	223881	1269753	0	2	Fill	Asphalt	
			2	27		Sand	
			27	36	Holocene	Gs	
			36	53		Sg	
			53	58	Pleistocene	Pleistocene	
			58	60		Pleistocene	
B-1A	223786	1269691	0	23	Fill	Sand	
			23	29	Holocene	fS	
			29	54		fSgz	
			54	65	Pleistocene	Pleistocene	
B-2	223736	1269536	0	2	Fill	Asphalt	
			2	12		Sand	
			12	22		Wood	
			22	24		Sand	
			24	24.5		Wood	
			24.5	33	Holocene	Z	
			33	38.5		Gs	
			38.5	53		Sg	
			53	59	Pleistocene	Pleistocene	
EB-1	223584	1269753	0	0.2	Fill	Asphalt	

Table C-1. Bore Log Summary

BOREHOLE	NORTHING (State Plane)	EASTING (State Plane)	TOP (fbs)	BOTTOM (fbs)	STRATUM	LITHOLOGY	DESCRIPTION
			0.2	6.5		Sand	
			6.5	8		Sand	
			8	13		Sand	
			13	18		Wood	
			18	23	Holocene	fSz	
			23	29		Zs	
			29	56.5	Pleistocene	Pleistocene	
EB-2	223632	1269695	0	0.3	Fill	Asphalt	
			0.3	4		Sand	
			4	5		Sand	
			5	8		Sand	
			8	10		Sand	
			10	11		Building Stone Rubble	
			11	13		Wood	
			13	22.5		Sand	
EB-3	223754	1269619	0	0.3	Fill	Asphalt	
			0.3	10		Sand	
			10	15		Sand	
			15	17.5		Wood	
			17.5	23		Wood	
			23	29	Holocene	fSz	
			29	56.5	Pleistocene	Pleistocene	
EB-4	223680	1269752	0	0.3	Fill	Asphalt	
			0.3	15		Sand	
			15	17		Sand	
			17	23	Holocene	fSz	
			23	28		Zs	
			28	56	Pleistocene	Pleistocene	
EB-5	223783	1269694	0	0.3	Fill	Asphalt	
			0.3	4.5		Sand	
			4.5	8		Sand	

Table C-1. Bore Log Summary

BOREHOLE	NORTHING (State Plane)	EASTING	TOP (fbs)	BOTTOM	STRATUM	LITHOLOGY	DESCRIPTION
			8	13.5		Building Stone Rubble	
			13.5	16		Wood	
			16	24		Wood	
			24	28	Holocene	Zs	
			28	55.5	Pleistocene	Pleistocene	
EB-6	223672	1269671	0	0.3	Fill	Asphalt	
			0.3	4.5		Sand	
			4.5	8		Sand	
			8	13		Sand	
			13	18		Sand	
			18	23	Holocene	fSz	
			23	28		fSz	
			28	32.5		fSz	
			32.5	55.5	Pleistocene	Pleistocene	
EB-8	223592	1269719	0	0.3	Fill	Asphalt	
			0.3	8		Building Stone Rubble	
			8	13		Sand	
			13	18		Sand	
			18	23		Sand	
			23	29	Holocene	Zs	
			29	55.5	Pleistocene	Pleistocene	
HOLE 101	223872	1269666	0	5.7	Fill	Sand	
			5.7	10.7		Sand	
			10.7	16.3		Wood	
Hole No. 1	223504	1269719	0	0.1	Fill	Asphalt	
			0.1	0.5		Brick	
			0.5	1		Concrete	
			1	6		Silt	
			6	10		Sand	
			10	13		Sand	
			13	21.5		Sand	
			21.5	22.5		Sand	
			22.5	27		Clay	
			27	30		Sand	
			30	42.5	Pleistocene	Pleistocene	
			42.5	44		Pleistocene	
Hole No. 2	223669	1269995	0	0.2	Fill	Asphalt	

Table C-1. Bore Log Summary

BOREHOLE	NORTHING (State Plane)	EASTING (State Plane)	TOP (fbs)	BOTTOM (fbs)	STRATUM	LITHOLOGY	DESCRIPTION
			0.2	0.6		Building Stone Rubble	
			0.6	1.3		Concrete	
			1.3	19.5		Sand	
			19.5	24		Wood	
			24	42	Holocene	Sg	
			42	46.5		Gs	
			46.5	52		Sg	
			52	52.5	Pleistocene	Pleistocene	
			52.5	59		Pleistocene	
TB-219	223567	1269883	0	0.5	Fill	Concrete	
			0.5	1.2		Sand	
			1.2	1.5		Concrete	
			1.5	2		Undiff.	
			2	7.4		Sand	
			7.4	11.5		Sand	
			11.5	12		Sand	
			12	14		Sand	
			14	21		Sand	
			21	24		Sand	
			24	24.5		Sand	
			25	25.5		Gravel	
			25.5	28		Gravel	
			28	29.5	Holocene	S	
			29.5	30.5	Pleistocene	Pleistocene	
			30.5	31		Pleistocene	
			31	37		Pleistocene	
TB-318	223768	1269562	0	0.9	Fill	Asphalt	
			0.9	1.3		Brick	
			1.3	1.5		Sand	
			1.5	1.9		Concrete	
			1.9	3		Undiff.	
			3	3.5		Undiff.	
			3.5	9.5		Sand	
			9.5	10.4		Sand	
			10.4	26		Wood	

Table C-1. Bore Log Summary

BOREHOLE	NORTHING (State Plane)	EASTING	TOP (fbs)	BOTTOM	STRATUM	LITHOLOGY	DESCRIPTION
			26	30.4	Holocene	Zs	
			30.4	47	Pleistocene	Pleistocene	

APPENDIX D: MONITORING AND DISCOVERY PLAN

Appendix has been redacted