

SECTION 1

Project Description

1.1 Introduction

Through its California Public Utilities Commission (CPUC) application (A.07-07-018) filed on July 20, 2007, pursuant to CPUC General Order (GO) 131-D, PacifiCorp seeks a Permit to Construct (PTC) the proposed Morrison Creek Substation and remove the existing Simonson Substation (Proposed Project). The existing Simonson Substation, which currently steps voltage down from 69 kilovolt (kV) to 12.5 kV for distribution, would be replaced with the proposed Morrison Creek Substation which would have the same distribution capabilities. The application includes the Proponent's Environmental Assessment (PEA) (PacifiCorp, 2007a) prepared pursuant to Rule 2.4 of CPUC's Rules of Practice and Procedure. Under GO 131-D, approval of the Proposed Project must comply with the California Environmental Quality Act (CEQA).

Under CEQA, the CPUC must prepare an Initial Study for discretionary projects such as the Proposed Project to determine whether the project may have a significant adverse effect on the environment. If an Initial Study prepared for a project indicates that such an impact could occur, the CPUC would be required to prepare an Environmental Impact Report (EIR). If an Initial Study does not reveal substantial evidence of such an effect, or if the potential effect would be reduced to a level of insignificance through project revisions, a Negative Declaration could be adopted (Public Resources Code, Division 13, Section 21080(c)(1)-(2)).

A Mitigated Negative Declaration (MND) may be adopted when "the initial study has identified potentially significant effects on the environment, but (1) revisions in the project plans or proposals made by, or agreed to by, the applicant before the proposed negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effect on the environment would occur, and (2) there is no substantial evidence in light of the whole record before the public agency that the project, as revised, may have a significant effect on the environment" (Public Resources Code, Section 21064.5). This Initial Study/Mitigated Negative Declaration (IS/MND) considers the potential environmental impacts from the Proposed Project.

1.2 Project Objectives

PacifiCorp's Simonson Substation serves the Smith River area of Northern California. The substation was constructed in 1957 using a box configuration of wood poles with wood pole cross arms. Structural testing of the poles by PacifiCorp has confirmed that the poles are deteriorating

to the point where making any structural replacement/reinforcement would be difficult and reliability is becoming an issue. The transformers, regulators, breakers, switches, connectors, and bus work at the existing substation are also deteriorating due to age and severe corrosion. Furthermore, PacifiCorp has concerns regarding safe working conditions for employees or contractors that could be working at the substation. Therefore, the objectives of the Proposed Project are to:

- increase system reliability;
- ensure the safety of PacifiCorp's maintenance crews;
- construct a new substation meeting PacifiCorp's current design standards;
- locate the new substation near the existing Simonson Substation and the local load center; and
- locate the new substation near the existing 69 kV transmission line to minimize construction of new transmission facilities.

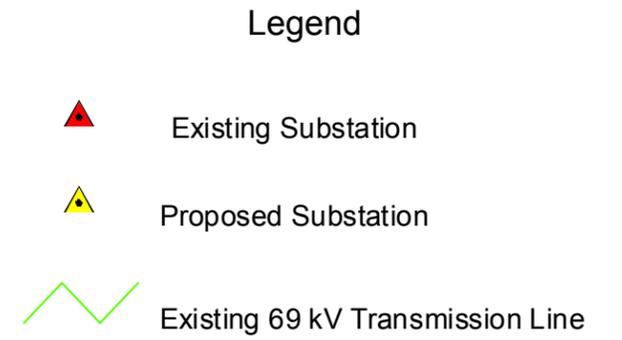
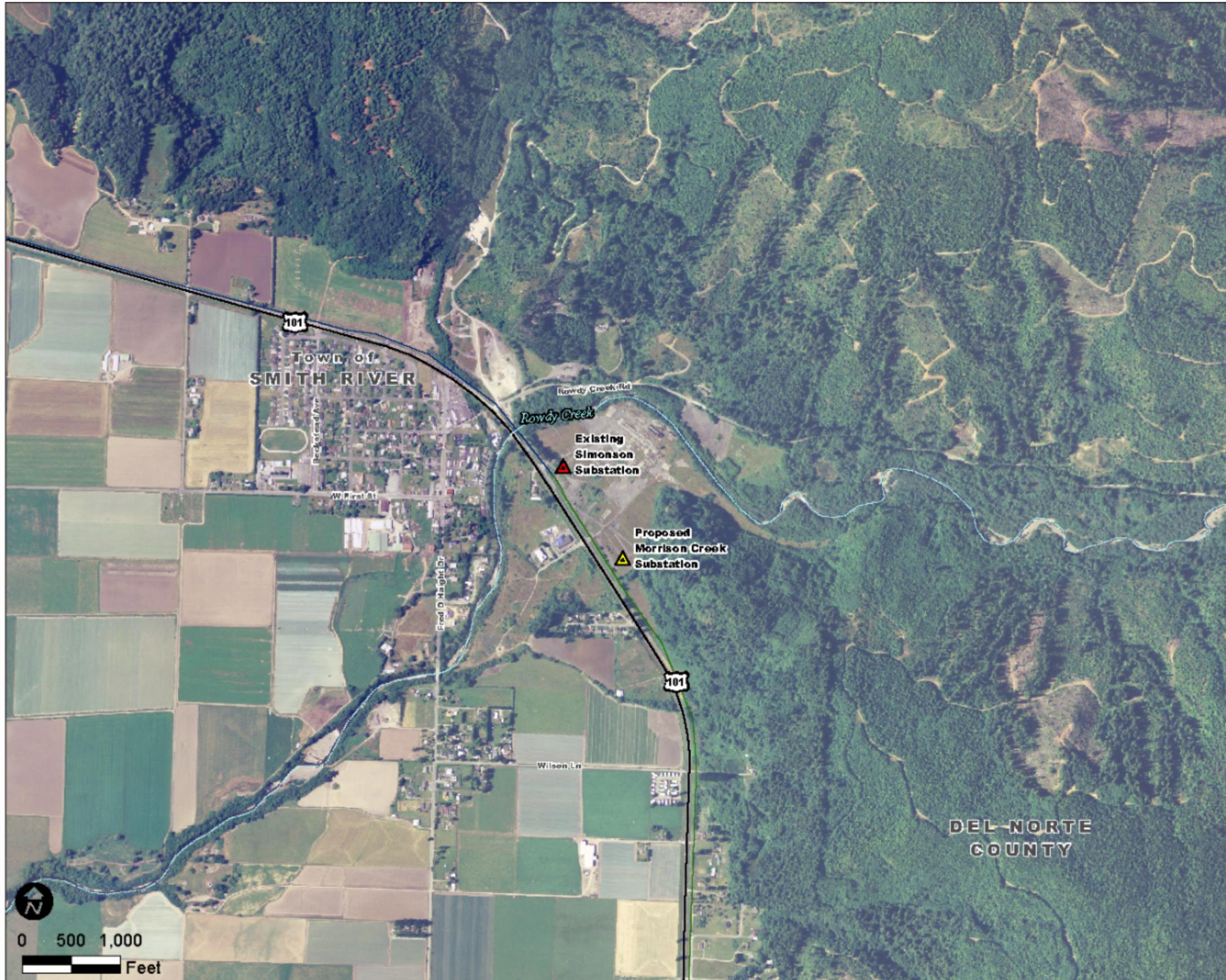
1.3 Project Site

The Proposed Project site is in northwest Del Norte County approximately one quarter mile southeast of the community of Smith River, California, and approximately five miles south of the Oregon/California border (see Figure 1-1). The site is south of Rowdy Creek and adjacent to the eastern side of U.S. Highway 101 (U.S. 101) and an existing 69 kV transmission line with 12.5 kV distribution underbuild. The site was previously used by a lumber mill operation and the mill foundations and paved areas are still present. The proposed Morrison Creek Substation site is approximately 1,000 feet southeast of the existing Simonson Substation site. The site is zoned by Del Norte County as General Industrial. Existing driveways provide access from U.S. 101 to the existing and proposed substation sites, located on private property.

The relatively flat proposed Morrison Creek Substation site was previously disturbed by industrial operations related to the lumber mill. It is partly paved with low-growing grasses between the paved areas. Coniferous trees surround the southeast perimeter of the proposed Morrison Creek Substation site with hills covered in deciduous and coniferous trees located to the east.

1.4 Existing System

PacifiCorp provides electric service to approximately 46,500 customers in the extreme northern portion of California, including customers in Smith River. Power to serve customers in and around the area of Smith River is currently transmitted by PacifiCorp's Line 85, which is a 69 kV transmission line that extends from PacifiCorp's Simonson Substation south to the Del Norte Substation. Line 85 runs generally along the east side of U.S. 101. In the Proposed Project area, the transmission line poles, which additionally support 12.5 kV distribution lines, range in height from 55 to 75 feet above the ground surface (ags). At PacifiCorp's existing Simonson Substation, power from the 69 kV line is transformed to 12.5 kV and then transmitted over the local distribution system to serve the surrounding area.



This page left intentionally blank

1.5 PacifiCorp's Proposed Project

PacifiCorp's Proposed Project includes construction of the proposed Morrison Creek Substation and removal of the existing Simonson Substation. According to PacifiCorp, the approximately 0.25 acre site of the Simonson Substation is too small to accommodate PacifiCorp's standard substation design (which requires approximately 1.74 acres); therefore, the proposed Morrison Creek Substation would be built first and then the existing Simonson Substation would be removed.

As described and analyzed in this IS/MND, the proposed Morrison Creek Substation would be constructed and operated at 69/12.5 kV. However, the proposed substation would be sized to accommodate a possible future conversion to 115 kV, with room for 115 kV circuit breakers and a control building. Such a conversion could take place only if Coos-Curry Electric Cooperative and the Bonneville Power Administration agree to build a 115 kV transmission tie line between Southern Oregon and Northern California. Since construction of such a tie line is highly speculative, both with respect to timing as well as exact location, construction and operation of the proposed Morrison Creek Substation at 115 kV is not included as part of the Proposed Project analyzed within this IS/MND. However, where useful for clarity, some drawings and figures show the location within the substation where the future equipment could be placed. A separate PTC application and CEQA review of such a future conversion and tie line would be required.

Below are descriptions of the components of the Proposed Project.

1.5.1 Morrison Creek Substation

The proposed Morrison Creek Substation would be a low-profile design 69 kV/12.5 kV distribution substation with a 12.47 kV/7.2 kV Wye and a capacity of 11.2/14 megavolt amperes (MVA). The 69 kV circuit tap would come from a new steel pole that would be installed adjacent to the southwest side of the proposed site. The steel pole would be directly embedded in a 20-foot hole to be excavated within the existing transmission line right-of-way (ROW). The new pole would extend approximately 70 feet ags, would be self supporting (i.e., require no guy wires), and would not require a concrete foundation. All substation equipment such as the transformer, regulator, and recloser would be installed on new concrete footings. There would also be two 12.47 kV circuit breakers.

Underground distribution feeder circuits would connect from the substation to the base of two existing power poles (poles 5/5 and 6/5) along the Line 85 ROW. These poles would be referred to as riser poles. Pole 5/5 would be south of the 69 kV tap pole and pole 6/5 would be north of the 69 kV tap pole. The distribution circuits would rise up the side of the poles in a pipe to the cross arms and insulation hardware near the top of the poles. There would not be a 12.5 kV circuit between the two riser poles, and between the new steel pole and riser pole 6/5 there would be no 69 kV circuit. See Figure 1-4 for an illustration of the proposed layout of the Morrison Creek



Figure 1-2
Existing Simonson Substation, looking northeast



Figure 1-3
Existing Simonson Substation, looking southwest



This page left intentionally blank

Substation. The tallest portions of the substation would be approximately 30 feet tall, while the majority of the equipment would be less than 16 feet in height. See Figures 1-5a through 1-5d for vertical illustrations of the proposed substation equipment.

The entire ground surface of the substation would be covered by gravel except for an oil containment system that would consist of an approximately 50-foot by 40-foot concrete slab. The oil containment system would be constructed at grade and would surround the transformer and the regulators. Rainfall runoff and any spilled oil in the slab area would be drained to an underground sump pit. The sump pit would be equipped with a pump that would contain a built-in oil monitoring system. If oil is not detected by the pump, runoff would be pumped out of the sump pit into a nearby ditch. If any oil is detected by the pump, it would shut off and an alarm would notify PacifiCorp. The oil/water mix would be retained within the sump pit, which would have an 8,000 gallon capacity, until it would be emptied into a tanker truck for proper disposal.

Approximately 2,905 gallons of non-toxic mineral oil would be used for the transformer (2,450 gallons), radiators (80 gallons), and regulators (375 gallons). The 8,000 gallon capacity of the sump pit would allow for storage of all the transformer oil and runoff from a 100-year, 6-hour storm event.

An 8-foot-high chain-link fence would surround the 275-foot by 275-foot footprint of the proposed substation. The area inside the substation footprint would be sized to accommodate a mobile substation for planned transformer maintenance and for unplanned substation outages as well as to accommodate a potential future conversion to 115 kV, with room for 115 kV circuit breakers and a control building.

PacifiCorp has developed a *Conceptual Landscape Plan* for the proposed Morrison Creek Substation (see Figure 1-6). The plan utilizes existing mature Douglas fir and willow trees with new perimeter landscaping to partially screen the proposed substation from travelers along U.S. 101.

1.5.2 Removal of Simonson Substation

Once the proposed Morrison Creek Substation has been constructed, the existing Simonson Substation would be removed. The transformer and other oil filled equipment would be hauled from the site to PacifiCorp's Medford, Oregon Service Center for storage. The existing transmission and distribution taps to Simonson Substation would also be removed. Upon removal of the substation components, re-grading of the Simonson Substation site would be conducted.

1.5.3 Construction

Morrison Creek Substation

Construction of the proposed Morrison Creek Substation would begin with the grading and removal of topsoil from the site. Approximately two to five cubic yards of soil would need to be cut from a slope at the east corner of the proposed site. It is estimated that approximately

5,600 cubic yards of topsoil and excavated soil would be stockpiled on Green Diamond Lumber property at a location agreed to by the property owner as part of the land purchase agreement. There are no plans to export soil off-site. A grader would be used to contour the substation footprint, and then the area would be compacted to provide a constant slope across the site in the direction of the natural drainage and at approximately the same slope as the surrounding terrain. The graded area would be backfilled with the excavated material that is re-usable and blended with granular imported fill. Up to 3,000 cubic yards of clean fill would be required. The surface would be topped with approximately 1,000 cubic yards of yard finish rock to complete the site grading requirements (PacifiCorp, 2007b).

PacifiCorp conducted a Level I Environmental Site Assessment for the proposed Morrison Creek Substation site to assess the potential for contaminants to be present at the site (SHN, 2007). The assessment concluded that there were no contaminants of concern likely present. However, during construction, if obvious or suspected contamination of any nature is encountered, construction would stop and samples of the contaminated soil would be obtained. The soil samples would be analyzed by a State certified laboratory for those contaminants associated with the historic lumber mill operations. The analytical results would be compared to both State and federal environmental cleanup standards, as appropriate, and the determination of the manner in which the soil would be handled and disposed would be made at that time (PacifiCorp, 2007b). All soil not suspected of being contaminated that is excavated during construction activities would be stored on the partially asphalted area located between the current Simonson Substation and the proposed location for the Morrison Creek Substation.

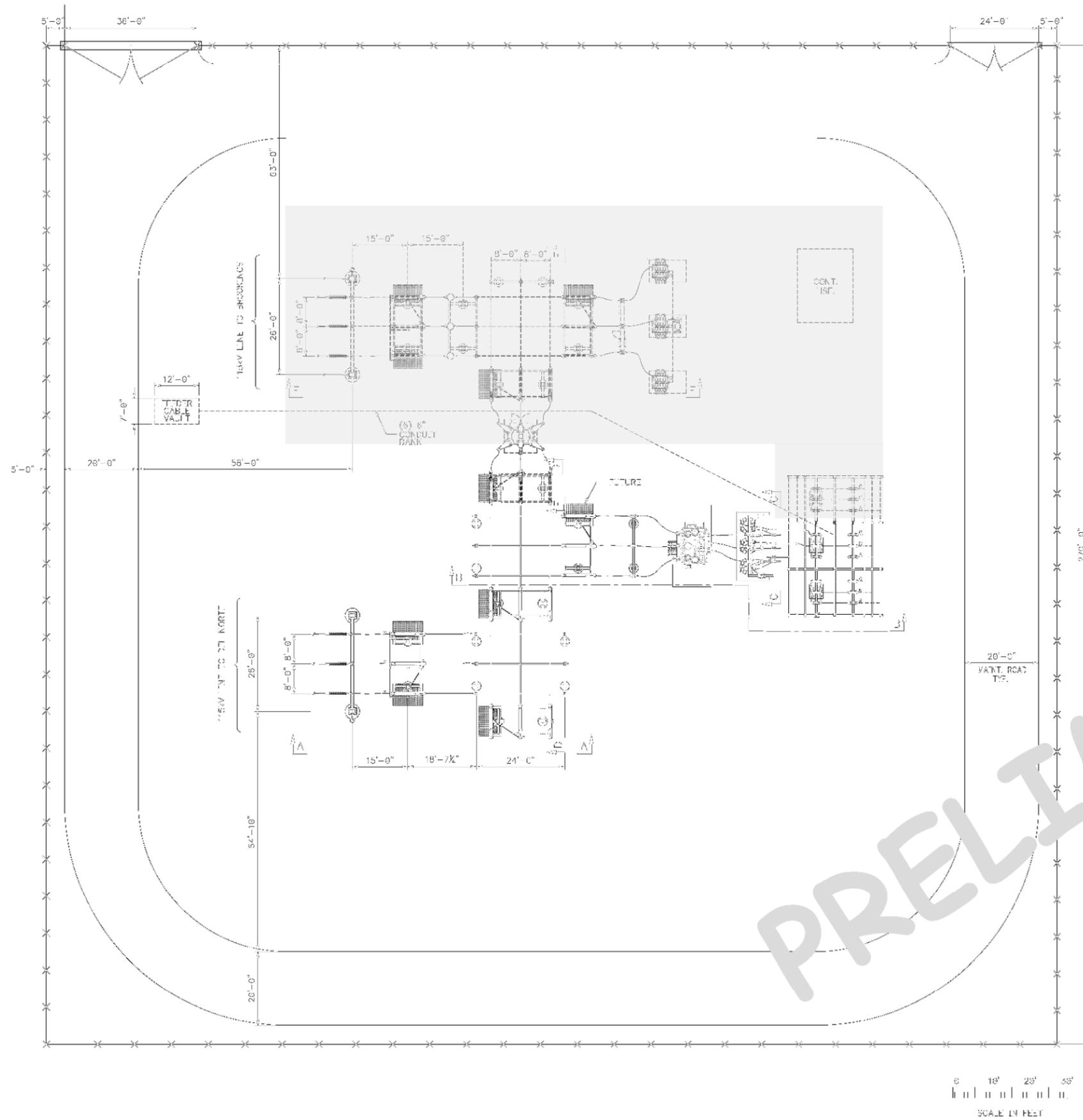
Once the site has been graded and the ground surface prepared, a fence would be installed to secure the site. After the fence has been installed, new concrete foundations, underground conduits, and the ground grid would be installed followed by construction of the oil containment system and the steel structures, framing, and the electrical equipment.

Vegetation, including Himalayan blackberry bushes, a big-leaf maple tree, and several small alder trees, would be required to be removed in the eastern corner of the proposed site. The trunk of the big-leaf maple to be removed is approximately 18 inches diameter at breast height (dbh) while the smaller alder tree trunks range from 0.5 to 2.0 inches dbh.

Construction of the proposed Morrison Creek Substation would be performed entirely on the property site that would be acquired from Green Diamond Lumber Company. Access to the site is currently achieved from an existing driveway and gate off of U.S. 101.

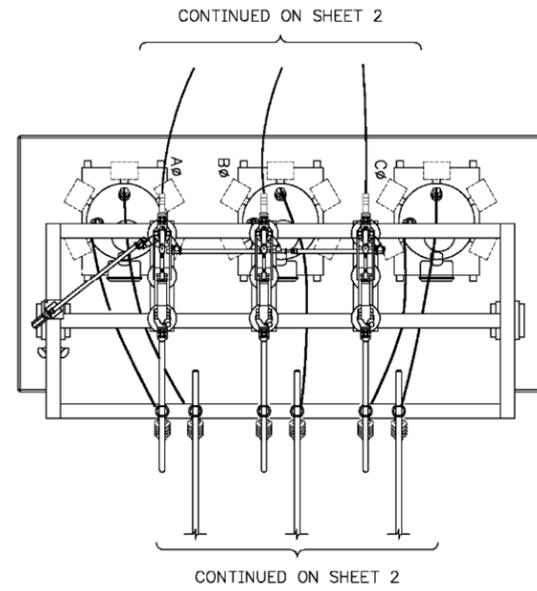
Removal of Simonson Substation

The transformer and other oil filled equipment would be hauled from the Simonson Substation site to PacifiCorp's Service Center in Medford, Oregon for storage. The two existing wood poles that tap the 69 kV power line and the 12.5 kV distribution circuit to the Simonson Substation would be removed, including all subsurface portions of the poles. The poles would be cut off near

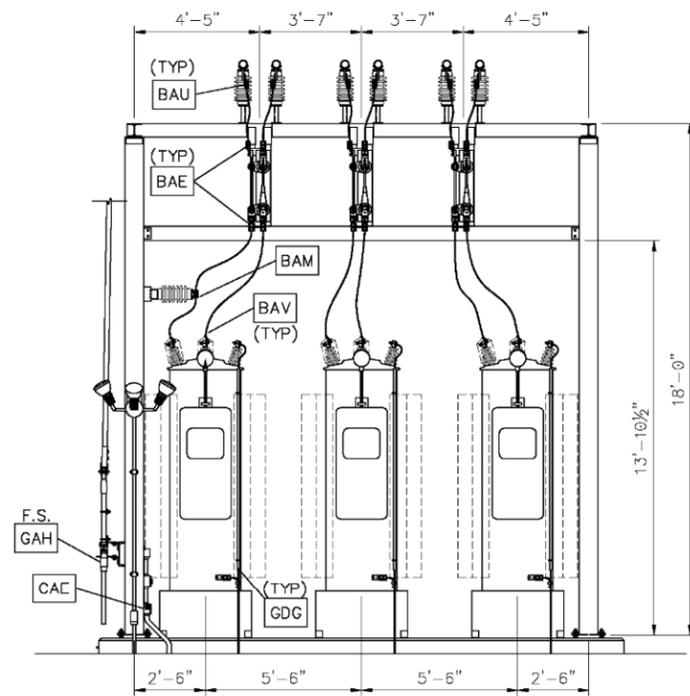


PRELIMINARY



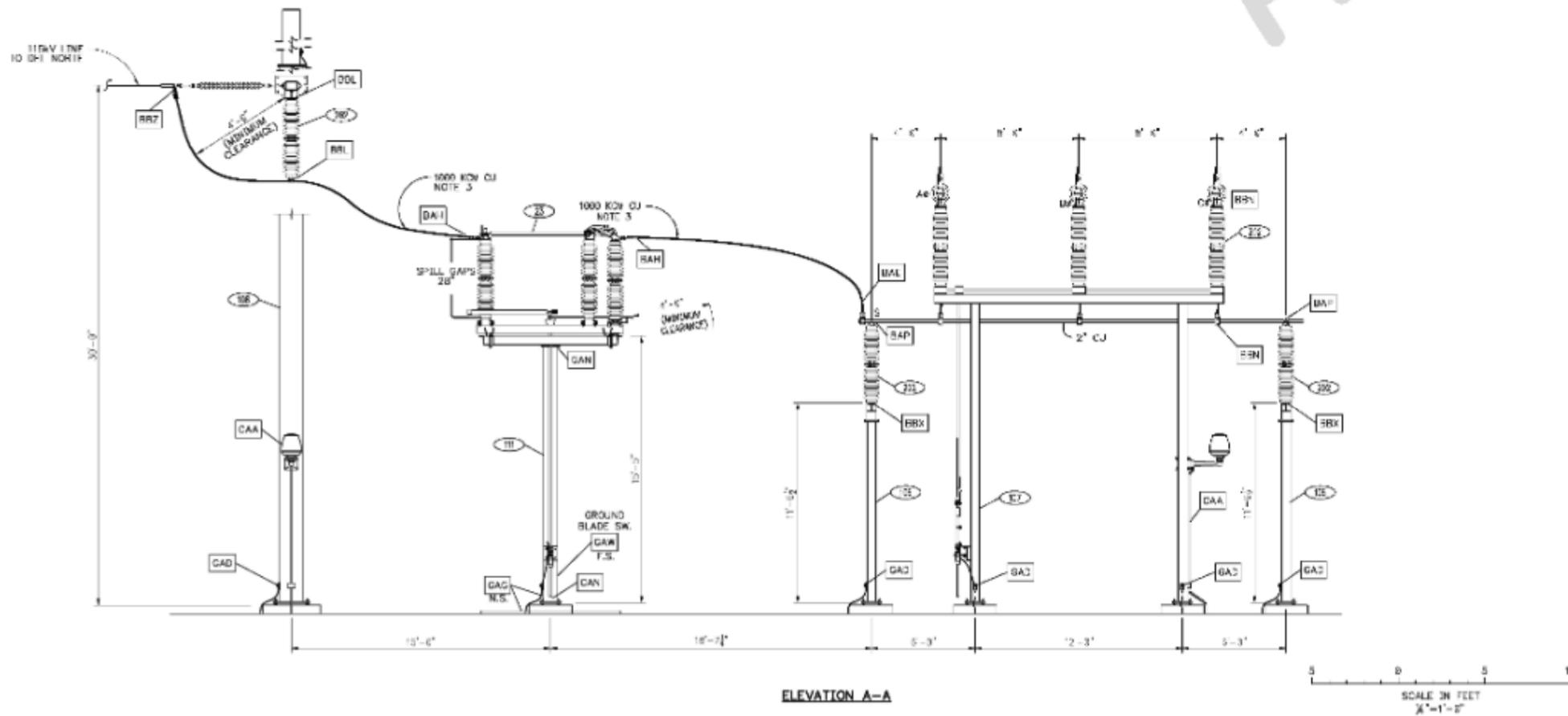
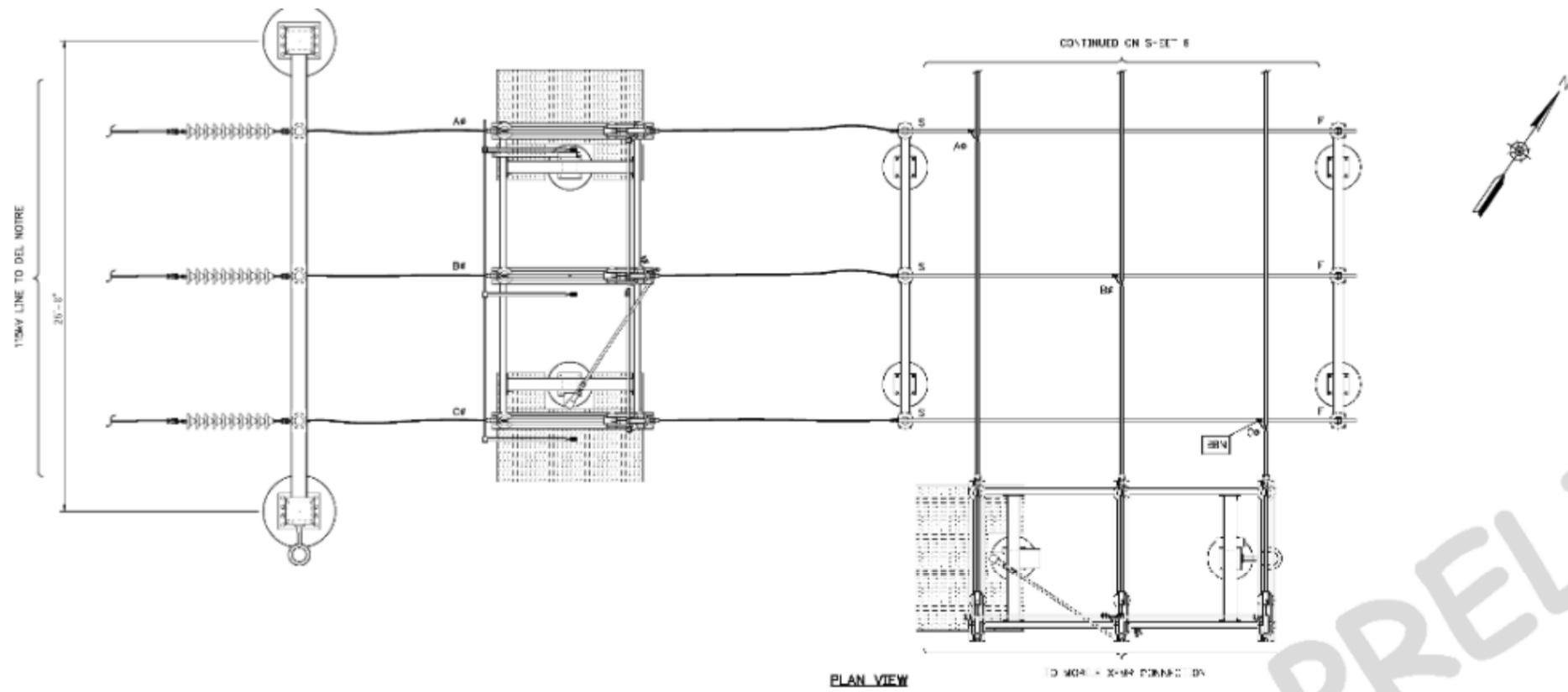


PLAN



ELEVATION C-C

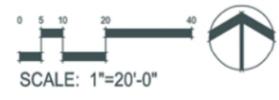
PRELIMINARY





PLANT LIST

-  EXISTING DOUGLAS FIR
Pseudotsuga menziesii
-  EXISTING WILLOW
Salix sp.
-  LARGE EVERGREEN TREE
Pseudotsuga menziesii- Douglas fir
-  LARGE DECIDUOUS TREE
Acer macrophyllum- Bigleaf maple
-  LARGE SHRUBS
Holodiscus discolor- Ocean spray
Rhamnus californica spp. *californica*- California coffeeberry
Rhododendron macrophyllum- Pacific rhododendron
Vaccinium membranaceum- Big huckleberry
-  SMALL SHRUBS & GROUNDCOVER
Rubus parviflorus var. *velutinus*- Velvet thimbleberry
Vaccinium ovatum- Black huckleberry
Lupinus- Lupine
Polystichum munitum- Sword fern
Xerophyllum tenax- Bear grass
-  NATIVE SEED MIX



This page left intentionally blank

the ground surface, and then the buried portion of the poles would be removed with a backhoe, bulldozer, or trackhoe. The remaining holes would be backfilled with clean fill material. The removed poles would be characterized for contamination potential and disposed of at an appropriate solid waste facility in accordance with State and federal solid and hazardous waste regulations. The four poles between the existing tap to Simonson Substation and the proposed tap to Morrison Creek Substation would continue to support the existing 12.5 kV distribution circuit; however, the 69 kV circuit and associated hardware would be removed from these poles.

PacifiCorp would adhere to the following process after the demolition and removal of the Simonson Substation to identify and determine the extent of, and dispose or treat any existing polychlorinated biphenyls (PCBs)-contaminated soil at the Simonson Substation site (PacifiCorp, 2007c):

1. Once all equipment and concrete footings have been removed and transported offsite, the property would be sampled in accordance with the U.S. Environmental Protection Agency (USEPA) grid sampling method developed for releases of oil potentially containing PCBs.
2. All samples would be analyzed for PCB contamination by an independent certified laboratory.
3. The analytical results would be compared to State and federal guidance documents for acceptable concentrations of PCBs in industrial and residential sites.
4. If necessary, a remediation plan would be developed based on the analytical results received. The remediation plan would be limited to excavation and removal of soil identified as contaminated for disposal offsite either at an incinerator or at a hazardous waste landfill.
5. Confirmation sampling would be conducted by PacifiCorp or its environmental consultant after excavation of all known contaminated soil has occurred to verify that no remaining contamination, if any, is above acceptable construction onsite.
6. Once all contaminated soil above acceptable concentrations has been removed, the site would be backfilled with clean soil and grading to match the existing topography.

Staging Area

PacifiCorp anticipates that it and Green Diamond Lumber would enter into an agreement allowing PacifiCorp to use Green Diamond Lumber's land that surrounds the proposed substation site for a staging area. It is likely that existing paved areas could be used for the staging area. PacifiCorp estimates that an area of approximately two acres would be required for the proposed staging area. Materials, equipment, a mobile office, and a tool van would be located at this staging area. A temporary pole with a transformer may be installed at the site to provide temporary power for the mobile office and power tools. PacifiCorp has not proposed to install security lighting at the staging area because the entire site is currently secured by fencing.

Construction Workforce and Equipment

Outside contractors would complete most of the proposed construction activities. PacifiCorp employees from Grants Pass and Medford, Oregon would perform final control wire terminations,

dress-out of the transformer, and final test and start-up. Company crew sizes would be two to four persons. Contract civil construction crews, substation electrical crews, and line construction crews would consist of approximately four people. The greatest number of workers on site at any one time would be ten, and that would likely occur only a few days during overlap of tasks.

A variety of heavy construction equipment types would be required to implement the Proposed Project. Refer to Table 1-1 for an estimation of the types of construction equipment that would be required at the site as well as the estimated duration of use for each piece of equipment. In addition to the equipment listed in Table 1-1, off-site equipment such as semi-tractor trucks and several light duty trucks would be required.

**TABLE 1-1
ON SITE SUBSTATION CONSTRUCTION EQUIPMENT ESTIMATES**

Equipment	Days of Use	Horsepower
Crane	2 – 4 days	430 – 450 hp
Pickup Trucks	25 days	325 hp
Backhoe	5 days	97 – 101 hp
Bulldozer	5 days	232 – 498 hp
Vibratory Roller	3 days	133 hp
Bucket Truck	4 days	210 hp
Dump Truck	3 days	395 hp

SOURCE: PacifiCorp, 2007b

Construction Schedule

PacifiCorp anticipates that construction activities associated with the Proposed Project would begin in July 2008. The construction period for the Proposed Project is expected to last approximately three months and would be finished in October 2008. PacifiCorp seeks to have the Proposed Project in operation by November 2008. Clean-up and landscaping activities would be completed by December 2008.

1.5.4 Operation and Maintenance

The proposed Morrison Creek Substation would be an unmanned facility that would operate 24 hours a day, 7 days a week, and would receive routine maintenance comparable to what the existing Simonson Substation receives. Table 1-2 presents the anticipated maintenance schedule for the proposed Morrison Creek Substation.

**TABLE 1-2
MORRISON CREEK SUBSTATION MAINTENANCE SCHEDULE**

Maintenance Task	Interval
Substation Inspection	Monthly
Infrared Scan	24 Months
Circuit Breaker Overhaul	96 Months
Circuit Breaker Relay Test and Calibrate	144 Months
Circuit Breaker Relay Diagnostic	48 Months
Circuit Breaker Uninterruptible Power Supply (UPS) Battery Test	36 Months
Transformer Test and Calibrate Relays	96 Months
Transformer Dissolved-Gas Analysis (DGA) and Oil Quality	36 Months
Transformer Spare Power Fuse Testing	60 Months

SOURCE: PacifiCorp, 2007b

1.5.5 General System Monitoring and Control

PacifiCorp uses industry standard monitoring and protection equipment on its transmission system, which would include the proposed Morrison Creek Substation. The substation would include distribution circuit breakers and related line relay protection equipment. If conductor failure were to occur, then power automatically would be removed from the distribution line. Failure of the 69 kV circuit would result in breakers opening at the Del Norte Substation. There would not be any 69 kV line relay protection equipment installed at the proposed Morrison Creek Substation. All faults downstream of the 69 kV transformer fuse at the proposed Morrison Creek Substation would be cleared by local protection.

1.6 Electric and Magnetic Fields Summary

1.6.1 Electric and Magnetic Fields

This IS/MND does not consider electric and magnetic fields (EMF) in the context of the CEQA analysis of potential environmental impacts because [1] there is no agreement among scientists that EMF creates a potential health risk, and [2] there are no defined or adopted CEQA standards for defining health risk from EMF. However, recognizing that there is a great deal of public interest and concern regarding potential health effects from human exposure to EMF from transmission lines and substations, this document does provide information regarding EMF associated with electric utility facilities and human health and safety. Thus, the EMF information in this IS/MND is presented for the benefit of the public and decision makers.

Potential health effects from exposure to *electric fields* from transmission lines and substations (i.e., the effect produced by the existence of an electric charge, such as an electron, ion, or proton, in the volume of space or medium that surrounds it) typically do not present a human health risk

since electric fields are effectively shielded by materials such as trees, walls, etc. Therefore, the majority of the following information related to EMF focuses primarily on exposure to *magnetic fields* (i.e., the invisible fields created by moving charges) from transmission lines and substations. Additional information on electric and magnetic fields generated by transmission lines and substations is presented in Appendix A.

After several decades of study regarding potential public health risks from exposure to power line EMF, research results remains inconclusive. Several national and international panels have conducted reviews of data from multiple studies and state that there is not sufficient evidence to conclude that EMF causes cancer. Most recently the International Agency for Research on Cancer (IARC) and the California Department of Health Services (DHS) both classified EMF as a *possible* carcinogen.

Presently, there are no applicable federal, State, or local regulations related to EMF levels from power lines or related facilities, such as substations. However, the CPUC has implemented a decision (D.06-01-042) requiring utilities to incorporate “low-cost” or “no-cost” measures for managing EMF from power lines up to approximately four percent of total project cost. PacifiCorp has incorporated low-cost and no-cost measures to reduce magnetic field levels in the vicinity of the proposed substation, as described below.

1.6.2 EMF and the Proposed Project

PacifiCorp’s EMF design guidelines include the following measures as options for reducing the magnetic field strength levels from electric power lines: (1) increase the height of overhead lines to reduce EMF strength at ground level; (2) reduce conductor spacing to increase cancellation of the magnetic field and decrease the resultant field strength; (3) minimize current through energy efficiency measures; and (4) optimize phase configuration by cross-phasing individual circuits to cancel magnetic fields. Use of any of these measures by PacifiCorp is dependent on the configuration of the particular project.

The EMF Decision and PacifiCorp’s Guidelines require PacifiCorp to prepare an EMF Field Management Plan (FMP) that specifically delineates the no-cost and low-cost EMF measures that would be installed as part of the final engineering design for the Proposed Project. The area with the highest calculated electric field increase that would be associated with the Proposed Project would occur where the 69 kV circuit would be tapped and dropped into the substation. However, the presence of the substation fence and other nearby objects would shield the electric field within the immediate vicinity. Outside of the substation, calculated electric field levels would remain virtually unchanged (except underneath the 69 kV circuit drop into the substation). A no-cost/low-cost mitigation option, which PacifiCorp proposes to implement, is to extend the proposed fence line on the southwest side of the substation to the edge of the proposed property line, which would restrict public access from the area where the 69 kV circuit would drop into the substation.

With respect to magnetic fields, the primary source in the area near the proposed substation is due to the presence of the 12.47 kV distribution circuit. To reduce the magnetic field, the height of the pole supporting the existing 69 kV and 12.47 kV circuits would need to be increased. However, this would be mitigating an existing condition rather than a new condition resulting from the proposed substation. In addition, a significant increase in pole height would have to be implemented to achieve a moderate field reduction. Increasing the pole height would potentially create a visual impact. Given these offsetting factors, PacifiCorp does not intend to raise existing pole heights to mitigate the level of magnetic fields.

1.7 Required Permits and Approvals

The CPUC is the CEQA lead agency for the Proposed Project. In addition to the CEQA review, PacifiCorp would obtain permits, approvals, and/or licenses as needed from a number of other State and local agencies. The agency requirements anticipated for the Proposed Project are listed in Table 1-3.

**TABLE 1-3
SUMMARY OF PERMIT REQUIREMENTS**

Agency	Permits and Other Requirements	Jurisdiction/Purpose
State Agencies		
California Public Utilities Commission	Permit to Construct	Project approval and CEQA review
State Water Resources Control Board	NPDES General Permit for Storm water	Construction impacting 1 or more acres
California Department of Transportation	Oversized Load Permit	All oversized truck trips on State highways, such as U.S. 101
Local Agencies		
Del Norte County	Conditional Use Permit	Change in use of property

References – Project Description

PacifiCorp, 2007a. *Proponent's Environmental Assessment for the Morrison Creek 69 kV Substation Project*, July 10, 2007.

PacifiCorp, 2007b. *PacifiCorp's Response to Energy Division's Data Request 1*, August 28, 2007.

PacifiCorp, 2007c. *PacifiCorp's Response to Energy Division's Data Requests 2*, September 28, 2007.

SHN Consulting Engineers and Geologists, Inc., (SHN). 2007. *Phase 1 Environmental Site Assessment, Morrison Creek Substation, Smith River, Del Norte County, California*, June.