Exhibit I
Soil Protection

Boardman to Hemingway Transmission Line Project

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Preliminary Application for Site Certificate

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ATTACHMENTS

ACRONYMS AND ABBREVIATIONS

Note: Not all acronyms and abbreviations listed will appear in this Exhibit.

°C	degrees Celsius
4WD	4-wheel-drive
A	ampere
A/ph	amperes/phase
AC	alternating current
ACDP	Air Contaminant Discharge Permit
ACEC	Area of Critical Environmental Concern
ACSR	aluminum conductor steel reinforced
AIMP	Agricultural Impact Mitigation Plan
AMS	Analysis of the Management Situation
aMW	average megawatt
ANSI	American National Standards Institute
APE	Area of Potential Effect
APLIC	Avian Power Line Interaction Committee
ARPA	Archaeological Resource Protection Act
ASC	Application for Site Certificate
ASCE	American Society of Civil Engineers
ASP	Archaeological Survey Plan
AST	aboveground storage tank
ASTM	American Society of Testing and Materials
ATC	available transmission capacity
ATV	all-terrain vehicle
AUM	animal unit month
B2H	Boardman to Hemingway Transmission Line Project
BCCP	Baker County Comprehensive Plan
BCZSO	Baker County Zoning and Subdivision Ordinance
BLM	Bureau of Land Management
BMP	best management practice
BPA	Bonneville Power Administration
BOR	Bureau of Reclamation
C and D	construction and demolition
CAA	Clean Air Act
CadnaA	Computer-Aided Noise Abatement
CAFE	Corona and Field Effects
CAP	Community Advisory Process
CBM	capacity benefit margin
CFR	Code of Federal Regulations
CH	critical habitat
CIP	critical infrastructure protection
CL	centerline
cm	centimeter
cmil	circular mil
COA	Conservation Opportunity Area
CO_2e	carbon dioxide equivalent

COM Plan	Construction, Operations, and Maintenance Plan
CPCN	Certificate of Public Convenience and Necessity
cps	cycle per second
CRP	Conservation Reserve Program
CRT	cathode-ray tube
CRUP	Cultural Resource Use Permit
CSZ	Cascadia Subduction Zone
CTUIR	Confederated Tribes of the Umatilla Indian Reservation
CWA	*Clean Water Act of 1972*
CWR	Critical Winter Range
dB	decibel
dBA	A-weighted decibel
DC	direct current
DoD	Department of Defense
DOE	U.S. Department of Energy
DOGAMI	Oregon Department of Geology and Mineral Industries
DPS	Distinct Population Segment
DSL	Oregon Department of State Lands
EA	environmental assessment
EDRR	Early Detection and Rapid Response
EIS	Environmental Impact Statement (DEIS for Draft and FEIS for Final)
EFSC or Council	Energy Facility Siting Council
EFU	Exclusive Farm Use
EHS	extra high strength
EMF	electric and magnetic fields
EPA	Environmental Protection Agency
EPC	Engineer, Procure, Construct
EPM	environmental protection measure
EPRI	Electric Power Research Institute
ERO	Electric Reliability Organization
ERU	Exclusive Range Use
ESA	Endangered Species Act
ESCP	Erosion and Sediment Control Plan
ESU	Evolutionarily Significant Unit
EU	European Union
FAA	Federal Aviation Administration
FCC	Federal Communication Commission
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FFT	find, fix, track, and report
FLPMA	Federal Land Policy and Management Act
Forest Plan	Land and Resource Management Plan
FPA	Forest Practices Act
FSA	Farm Services Agency
FWS	U.S. Fish and Wildlife Service
G	gauss

GeoBOB	Geographic Biotic Observation
GF	Grazing Farm Zone
GHG	greenhouse gas
GHz	gigahertz
GIL	gas insulated transmission line
GIS	geographic information system
GPS	Global Positioning System
GRMW	Grande Ronde Model Watershed
GRP	Grassland Reserve Program
HAC	Historic Archaeological Cultural
HCNRA	Hells Canyon National Recreation Area
HPFF	high pressure fluid-filled
HPMP	Historic Properties Management Plan
HUC	Hydrologic Unit Code
Hz	hertz
I-84	Interstate 84
ICC	International Code Council
ICES	International Committee on Electromagnetic Safety
ICNIRP	International Commission on Non-Ionizing Radiation Protection
IDAPA	Idaho Administrative Procedures Act
IDEQ	Idaho Department of Environmental Quality
IDFG	Idaho Department of Fish and Game
IDWR	Idaho Department of Water Resources
ILS	intensive-level survey
IM	Instructional Memorandum
INHP	Idaho Natural Heritage Program
INRMP	Integrated Natural Resources Management Plan
IPC	Idaho Power Company
IPUC	Idaho Public Utilities Commission
IRP	integrated resource plan
IRPAC	IRP Advisory Council
ISDA	Idaho State Department of Agriculture
JPA	Joint Permit Application
KCM	thousand circular mils
kHz	kilohertz
km	kilometer
KOP	Key Observation Point
kV	kilovolt
kV/m	kilovolt per meter
kWh	kilowatt-hour
L_{dn}	day-night sound level
L_{eq}	equivalent sound level
lb	pound
LCDC	Land Conservation and Development Commission
LDMA	Lost Dutchman's Mining Association
LiDAR	light detection and ranging
LIT	Local Implementation Team

LMP	land management plan
LOLE	Loss of Load Expectation
LRMP	land and resource management plan
LUBA	Land Use Board of Appeals
LWD	large woody debris
m	meter
mA	milliampere
MA	Management Area
MAIFI	Momentary Average Interruption Frequency Index
MCC	Malheur County Code
MCCP	Morrow County Comprehensive Plan
MCE	Maximum Credible Earthquake
MCZO	Morrow County Zoning Ordinance
mG	milligauss
MHz	megahertz
mm	millimeter
MMI	Modified Mercalli Intensity
MP	milepost
MPE	maximum probable earthquake
MRI	magnetic resonance imaging
MVAR	megavolt ampere reactive
Mw	mean magnitude
MW	megawatt
µV/m	microvolt per meter
N_2O	nitrous oxide
NAIP	National Agriculture Imagery Program
NED	National Elevation Dataset
NEMS	National Energy Modeling System
NEPA	*National Environmental Policy Act of 1969*
NERC	North American Electric Reliability Corporation
NESC	National Electrical Safety Code
NF	National Forest
NFPA	National Fire Protection Association
NFS	National Forest System
NGDC	National Geophysical Data Center
NHD	National Hydrography Dataset
NHOTIC	National Historic Oregon Trail Interpretive Center
NHT	National Historic Trail
NIEHS	National Institute of Environmental Health Sciences
NIST	National Institute of Standards and Technology
NOAA	National Oceanic and Atmospheric Administration
NOAA Fisheries	National Oceanic and Atmospheric Administration Fisheries Division
NOI	Notice of Intent to File an Application for Site Certificate
NOV	Notice of Violation
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service

NRHP	National Register of Historic Places
NSR	noise sensitive receptor
NTTG	Northern Tier Transmission Group
NWGAP	Northwest Regional Gap Analysis Landcover Data
NWI	National Wetlands Inventory
NWPP	Northwest Power Pool
NWR	National Wildlife Refuge
NWSRS	National Wild and Scenic Rivers System
NWSTF	Naval Weapons Systems Training Facility
O_3	ozone
O&M	operation and maintenance
OAIN	Oregon Agricultural Information Network
OAR	Oregon Administrative Rules
OATT	Open Access Transmission Tariff
ODA	Oregon Department of Agriculture
ODEQ	Oregon Department of Environmental Quality
ODF	Oregon Department of Forestry
ODFW	Oregon Department of Fish and Wildlife
ODOE	Oregon Department of Energy
ODOT	Oregon Department of Transportation
OHGW	overhead ground wire
OHV	off-highway vehicle
OPGW	optical ground wire
OPRD	Oregon Parks and Recreation Department
OPS	U.S. Department of Transportation, Office of Pipeline Safety
OPUC	Public Utility Commission of Oregon
OR	Oregon (State) Highway
ORBIC	Oregon Biodiversity Information Center
ORS	Oregon Revised Statutes
ORWAP	Oregon Rapid Wetland Assessment Protocol
OS	Open Space
OSDAM	Oregon Streamflow Duration Assessment Methodology
OSHA	Occupational Safety and Health Administration
OSSC	Oregon Structural Specialty Code
OSWB	Oregon State Weed Board
OWC	Oregon Wetland Cover
P	Preservation
PA	Programmatic Agreement
pASC	Preliminary Application for Site Certificate
PAT	Project Advisory Team
PCE	Primary Constituent Element
PEM	palustrine emergent
PFO	palustrine forested
PGA	peak ground acceleration
PGE	Portland General Electric
PGH	Preliminary General Habitats
Pike	Pike Energy Solutions

PNSN	Pacific Northwest Seismic Network
POD	Plan of Development
POMU	Permit to Operate, Maintain and Use a State Highway Approach
PPH	Preliminary Priority Habitats
Project	Boardman to Hemingway Transmission Line Project
PSD	Prevention of Significant Deterioration
PSS	palustrine scrub-shrub
R	Retention
R-F	removal-fill
RCM	Reliability Centered Maintenance
RCRA	Resource Conservation and Recovery Act
ReGAP	Regional Gap Analysis Project
RFP	request for proposal
RLS	reconnaissance-level survey
RMP	resource management plan
ROD	Record of Decision
ROE	right of entry
RNA	research natural area
ROW	right-of-way
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SC	Sensitive Critical
SEORMP	Southeastern Oregon Resource Management Plan
SF6	sulfur hexafluoride
Shaw	Shaw Environmental and Infrastructure, Inc.
SHPO	State Historic Preservation Office
SLIDO	Statewide Landslide Inventory Database for Oregon
SMS	Scenery Management System
SMU	Species Management Unit
SPCC	Spill Prevention, Containment, and Countermeasures
SRMA	Special Recreation Management Area
SRSAM	Salmon Resources and Sensitive Area Mapping
SSURGO	Soil Survey Geographic Database
STATSGO	State Soil Geographic Database
SUP	special-use permit
SV	Sensitive Vulnerable
SWPPP	Stormwater Pollution Prevention Plan
T/A/Y	tons/acre/year
TDG	Total Dissolved Gas
TES	threatened, endangered, and sensitive (species)
TG	Timber Grazing
TMIP	Transmission Maintenance and Inspection Plan
TNC	The Nature Conservancy
tpy	tons per year
TSD	treatment, storage, and disposal
TV	television
TVES	Terrestrial Visual Encounter Surveys

TVMP	Transmission Vegetation Management Program
UBAR	Umatilla Basin Aquifer Restoration
UBWC	Umatilla Basin Water Commission
UCDC	Umatilla County Development Code
UCZPSO	Union County Zoning, Partition and Subdivision Ordinance
UDP	Unanticipated Discovery Plan
U.S.	United States
USACE	U.S. Army Corps of Engineers
U.S.C.	United States Code
USDA	U.S. Department of Agriculture
USFS	U.S. Department of Agriculture, Forest Service
USGS	U.S. Geological Survey
UWIN	Utah Wildlife in Need
V/C	volume to capacity
V	volt
VAHP	Visual Assessment of Historic Properties
VMS	Visual Management System
VQO	Visual Quality Objective
VRM	Visual Resource Management
WAGS	Washington ground squirrel
WCU	Wilderness Characteristic Unit
WECC	Western Electricity Coordinating Council
WHO	World Health Organization
WMA	Wildlife Management Area
WOS	waters of the state
WOUS	waters of the United States
WPCF	Water Pollution Control Facility
WR	winter range
WRCC	Western Regional Climate Center
WRD	(Oregon) Water Resources Division
WRP	Wetland Reserve Program
WWE	West-wide Energy
XLPE	cross-linked polyethylene

Exhibit I
Soil Protection

1.0 INTRODUCTION

Exhibit I demonstrates that the Boardman to Hemingway Transmission Line Project (Project) complies with the approval standard for soil protection, in accordance with Oregon Administrative Rule (OAR) 345-022-0022, based on the information provided pursuant to OAR 345-021-0010(1)(i), paragraphs (A) through (E).

Specifically, Exhibit I demonstrates that construction and operation of the Project, taking into account mitigation, will not result in significant adverse impact to soils. Although construction and operation of the Project may create the potential for impacts to soil due to erosion, Idaho Power Company (IPC) will implement best management practices (BMPs) through its Erosion and Sediment Control Plan (ESCP) to minimize potential adverse impacts to soil. Soil erosion mitigation and the ESCP are further discussed in Section 3.3.4.

2.0 APPLICABLE RULES AND STATUTES

2.1 Energy Facility Siting Council Standard and Rules

The Oregon Energy Facility Siting Council (EFSC or Council) soil protection standard is set forth in OAR 345-022-0022. Under OAR 345-022-0022, the Council must find through appropriate study that:

> *The design, construction and operation of the facility, taking into account mitigation, are not likely to result in a significant adverse impact to soils including, but not limited to, erosion and chemical factors such as salt deposition from cooling towers, land application of liquid effluent, and chemical spills.*

To demonstrate compliance with this standard, and in accordance with OAR 345-021-0010(1)(i), Exhibit I must include the following:

(A) Identification and description of the major soil types in the analysis area.

(B) Identification and description of current land uses in the analysis area, such as growing crops, that require or depend on productive soils.

(C) Identification and assessment of significant potential adverse impact to soils from construction, operation and retirement of the facility, including, but not limited to, erosion and chemical factors such as salt deposition from cooling towers, land application of liquid effluent, and chemical spills.

(D) A description of any measures the applicant proposes to avoid or mitigate adverse impact to soils.

(E) The applicant's proposed monitoring program, if any, for adverse impact to soils during construction and operation.

Additionally, the Project Order specifies that Exhibit I include the following specific information:

- *The applicant should include information describing the impact of construction and operation of the proposed facility on soil productivity in affected farm and forest zones. Describe all measures proposed to maintain soil productivity during construction and operation. The applicant should consult with local farmers, landowners, soil conservation* *districts, and federal land managers regarding mitigation of impacts to farm and forest lands. Specific discussion should include weed encroachment, interference with irrigation equipment, and the potential for restrictions to aerial applications caused by the proximity of transmission towers.*

- *Exhibit I should also include the required evidence related to the federally-delegated National Pollutant Discharge Elimination System (NPDES) 1200-C permit application (alternatively, the NPDES information could be incorporated into Exhibit BB—Other Information). As stated in Section I(c) of this project order, OAR 345-021-0000(7) requires the applicant to submit one copy of all applications for federally-delegated permits, or provide a schedule of the date by which the applicant intends to submit the application. In addition to a copy of the federally delegated permit application, the applicant must also provide a letter or other indication from the ODEQ stating that the agency has received a permit application from the applicant, identifying any additional information the agency is likely to need from the applicant based on the agency's review of the application, and estimating the when the agency will complete its review and issue a permit decision.*
- *The applicant should emphasize discussion of erosion control in Exhibit I, especially for impacted forestland to minimize and mitigate damage to forest soils and streams. A draft erosion and sediment control plan must be provided for review (if not already incorporated into an attached NPDES permit application).*

As documented in Table I-12 (Submittal Requirements Matrix), IPC has drafted Exhibit I to respond to each paragraph of OAR 345-021-0010(1)(i) described above, as well as the additional requirements set forth in the Project Order.

2.2 National Pollutant Discharge Elimination System (NPDES) Stormwater Requirements

IPC will adhere to state and federal stormwater requirements. Stormwater discharges from construction activities that disturb one or more acres are regulated under the Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) stormwater program. Prior to discharging stormwater, construction operators must obtain coverage under an NPDES permit, which is administered by either the State or EPA, depending on where the construction site is located.

Oregon is authorized by the EPA to implement a statewide stormwater program under the NPDES. The Oregon Department of Environmental Quality (ODEQ) Stormwater Program (2010) has permits and requirements modeled after EPA's NPDES program. ODEQ will require adherence to NPDES stormwater requirements, submittal of a 1200-C construction stormwater permit application, and preparation of an Erosion and Sediment Control Plan (ESCP) that describes construction activities and methods proposed to comply with stormwater requirements. Section 3.3.4 contains mitigation proposed to demonstrate compliance with stormwater requirements.

3.0 ANALYSIS

3.1 Analysis Area

Pursuant to the Project Order, the analysis area for Exhibit I is the Site Boundary, which is defined in OAR 345-001-0010(55) as "the perimeter of the site of a proposed energy facility, its related or supporting facilities, all temporary laydown and staging areas, and all corridors and micrositing corridors proposed by the applicant." The Site Boundary for the Project includes the following related and supporting facilities in Oregon:

- Proposed Corridor: 277.2 miles of 500-kilovolt (kV) transmission line corridor, 5.0 miles of double circuit 138/69-kV transmission line corridor, and 0.3 mile of 138-kV transmission line corridor.
- Alternate Corridor Segments: Seven alternate corridor segments consisting of approximately 134.1 miles that could replace certain segments of the Proposed Corridor. IPC has proposed these alternate corridor segments in order to allow flexibility for IPC and EFSC, as well as federal agencies, to reconcile competing resource constraints in several key locations.
- One proposed substation expansion of 3 acres; two alternate substation sites (one 3-acre substation expansion and one new 20-acre substation). IPC ultimately needs to construct and operate only one substation expansion or substation in the Boardman area.
- Eight communication station sites of less than one acre each in size; four alternate communication station sites along alternate corridor segments.
- Temporary and permanent access roads.
- Temporary multi-use areas, pulling and tensioning sites, and fly yards.

The features of the Project are fully described in Exhibit B and the Site Boundary for each Project feature is described in Exhibit C, Table C-21. The location of the Project (Site Boundary) is outlined in Exhibit C.

3.2 Methods

This section provides a summary of the methods used to determine if construction and operations of the facility will result in significant soil impacts. Literature-derived soil properties and land cover types were reviewed. The methods used to evaluate erosion properties are discussed in Section 3.2.1. Section 3.2.2 describes the methods used to evaluate how soil properties will affect the success of Project reclamation. Section 3.2.3 describes the methods used to evaluate how the Project will impact productive soil areas.

To comply with the Project Order, IPC analyzed the properties of soils within the Site Boundary, which is described in Exhibit C, Section 3.5. However, the impacts to soils are limited to areas of soil disturbance, because not all of the Site Boundary will be disturbed. Therefore, the soil analyses were also evaluated for two related disturbance conditions, the temporary disturbance area and the permanent disturbance area.

Both temporary and permanent impacts will occur from the construction, operation, and retirement of the Project. Temporary disturbance during the 2- to 3-year construction period includes ground disturbance to areas that would be restored to preconstruction conditions following completion of the Project; these include temporary access roads, multi-use areas, fly yards, pulling and tensioning sites, and construction areas around tower pads. Temporary impacts during operations would result from the periodic disturbance associated with inspection and maintenance of the line, while temporary impacts associated with retirement of the Project would be similar to those described for construction.

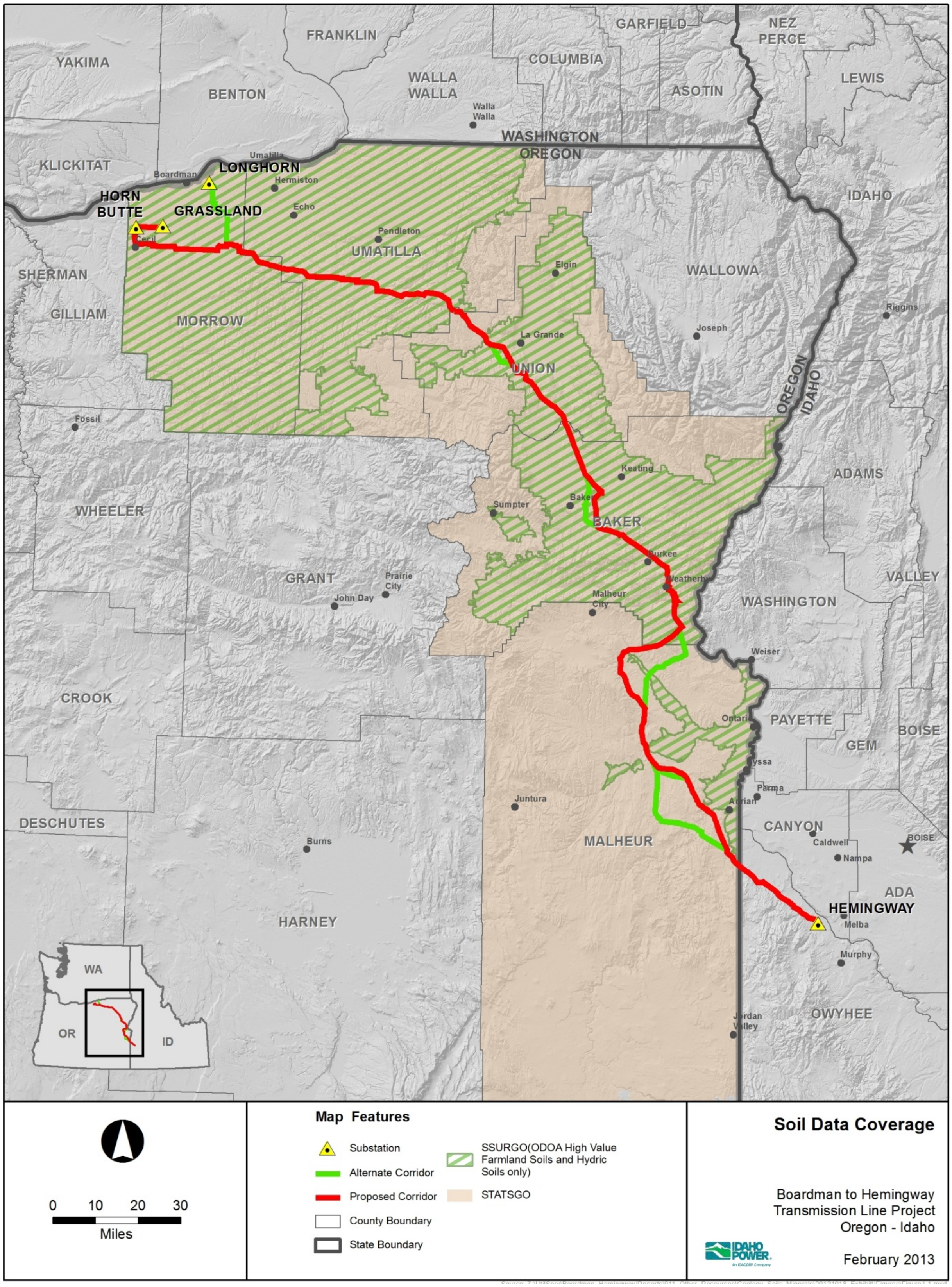
Permanent impacts are associated with areas that are disturbed during construction, but which are not allowed to restore to preconstruction conditions. Permanent impacts would occur along new access roads, communication sites, new or expanded substations, and tower bases, as well as within the permanent right-of-way (ROW) and vegetative maintenance zones along portions of the

Project that cross forested/woodland habitats. Exhibit B describes the Project in detail, as well as the associated construction and operations activities that could result in soil disturbance. The U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) maintains the State Soil Geographic Database (STATSGO; NRCS 2011) which presents general soil properties for the entire United States. In this report, STATSGO data are used to characterize soil erosion and soil reclamation properties. See Attachment I-1 for a mapbook of the STATSGO soil mapping units contained within the Site Boundary. See Attachment I-2 for a table displaying the STATSGO soil properties by soil mapping units contained within the Site Boundary.

The NRCS also maintains the Soil Survey Geographic Database (SSURGO) database, which is a compilation of county soil surveys performed with a mapping resolution scale of approximately 1:24,000. SSURGO data, as compared to STATSGO data, include more detailed soil properties information based on smaller map units. However, SSURGO data does not provide complete coverage of the Site Boundary (see Figure I-1). The SSURGO database was used only if similar data were not available in STATSGO. In addition, the hydric soils were evaluated using SSURGO data as well as data from the Oregon Wetlands Database (Oregon Spatial Data Library, 2013).

The U.S. Geological Survey (USGS) maintains the National Elevation Dataset (NED) with nationwide coverage of detailed elevation information compiled from multiple sources, and updated at two-month intervals. The NED data were used for the slope analysis presented in this Exhibit.

The NRCS soils data were used for preliminary evaluation of soil impacts due to erosion and for soil suitability for Project reclamation. When the final corridor has been selected and prior to construction, additional site-specific soil properties will be surveyed during the site-specific geotechnical investigation. Detailed information relating to the scope of the geotechnical investigation is presented in Exhibit H, Section 3.3.2, and also in Attachment H-1. The investigation will include drilling of exploration borings and collection of soil samples for laboratory analysis of soil properties. Relevant to Exhibit I, the soil analyses performed through geotechnical investigation will also be used to verify the STATSGO and SSURGO data used in the preliminary soil impact analyses presented in this Exhibit.



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2 **Figure I-1.** STATSGO and SSURGO Soil Data Coverage

3.2.1 Methods Used to Assess Erosion Impacts

To assess potential impacts to soil from erosion caused by the Project, IPC analyzed the soil properties affecting soil erosion and slope. Factors that influence soil erosion include soil texture, structure, length and slope steepness, vegetation cover density, and rainfall or wind intensity. Soils most susceptible to erosion by wind and water are typically non-cohesive soils with low infiltration rates, residing on moderate to steep slopes, and soils that are sparsely vegetated. Non-cohesive soils include silty, sandy, or gravelly soils, with little to no clay-sized particles. Wind erosion processes are less affected by slope angles but highly influenced by wind intensity and slope aspect relative to wind direction. The potential for soil erosion within the Site Boundary varies based on the climate, erosion mechanism, and soil characteristics.

In this Exhibit, erosion potential was analyzed through soil K factor, soil wind erodibility, and slope assessment. The soil loss tolerance, or T factor, was considered as a means of determining the amount of soil that is most susceptible to erosion impacts. The detailed geotechnical investigation will provide further evaluation of soil erosion potential, based on both additional review of soil properties and laboratory testing of soil samples collected during geotechnical drilling. STATSGO data were used for the analysis of soil erosion properties, and NED data were used to evaluate slope.

3.2.1.1 Soil K Factor

Soil erosion hazards were mapped throughout the Site Boundary based on the soil's K factor. K is defined as the soil-erodibility factor and based on a standard measurement condition in a unit plot. The unit plot is 72.6 feet (22.1 meters) long on a 9 percent slope, maintained in continuous fallow, tilled up and down hill periodically to control weeds and break crusts that form on the surface of the soil. The plots are plowed, disked, and cultivated the same for a row crop of corn or soybeans except that no crop is grown on the plot.

Soils high in clay have low K values because they are resistant to detachment. Detachment is the term that describes the removal of soil fragments from a soil mass that is caused by falling rain drops, running water, or wind. It is the first stage of erosion. Coarse-textured soils, such as sandy soils, have low K values because of low runoff even though these soils are easily detached. Medium textured soils, such as the silt loam soils, have moderate K values because they are moderately susceptible to detachment and produce moderate runoff. Soils having high silt contents are the most erodible of all soils. They are easily detached, tend to crust, and produce high rates of runoff.

The U.S. Department of Energy (DOE), Pacific Northwest National Laboratory website (DOE 2003) guideline was used to segregate the mapped NRCS STATSGO soils into low, moderate, or high K factor soils. DOE defined low K factor values between 0.05 to 0.15, moderate K factor values were from 0.25 to 0.4, and high K factor values were greater than 0.4. The closest category in the STATSGO data to 0.4 was 0.37. As such, a K factor of 0.37 or greater was used to define soils most likely to erode.

To quantify the potential erosion impacts by K factor, the temporary and permanent disturbance areas identified within the Site Boundary were overlaid on the K factor GIS data, and the area of high K factor soils was reported in acres.

3.2.1.2 Wind Erodibility

The potential for soil erosion by wind was evaluated using NRCS STATSGO wind erodibility group data, which are based on the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion. Project construction activities that could expose soils to wind erosion include any surface disturbance (e.g., road construction and improvements, vegetation clearing). Wind erodibility is defined by the tons of soil that might be lost annually per acre of soils exposed (tons per acre per year [T/A/Y]), with higher values indicating higher potential to be eroded by the wind. The wind erodibility is measured on an average annual basis. There may be some seasonal variability of wind erodibility depending on seasonal winds, or presence or absence of soil moisture or frozen ground.

Soils in wind erodibility groups 1 through 4 (greater than or equal to 86 T/A/Y) were considered highly wind erodible. To quantify the potential impacts to soil due to wind erosion, the temporary and permanent disturbance areas identified within the Site Boundary were overlaid on the wind erodibility GIS data and the acreage for each wind erodibility group was determined. The area of highly wind erodible soils was reported in acres.

3.2.1.3 Slope

In general, steep slopes possess a greater potential for erosion by water or mass movements than flat areas. Ground-disturbing activities may cause greater soil erosion on steep slopes than on gentle slopes.

USGS NED data (30m resolution) were used to assess the potential for erosion on steep slopes. Areas containing greater than 25 percent slope were considered to have greater erosion potential. The area of steep slopes within the temporary and permanent disturbance areas was reported in acres.

3.2.1.4 Soil T Factor

The soil T factor is an indicator of soil loss tolerance, or the amount of soil loss that can be tolerated for soil to remain productive. Soils with a low T factor are more sensitive to the effects of erosion than soils with higher T factors. The U.S. Department of Agriculture, Forest Service (USFS) Soil Management Handbook (USFS 1991) states that soils with a soil loss tolerance less than or equal to 2 T/A/Y are generally considered soils with low soil loss tolerance. This value for soil loss tolerance was used in this analysis, in conformance to the USFS guideline.

STATSGO data were used to evaluate soil T factor. The area of soils containing a low T factor were analyzed for both the temporary and permanent disturbance areas and reported in acres.

3.2.2 Methods Used to Assess Soil Reclamation Potential

Soil properties were also evaluated for suitability for reclamation. Different soil types or properties have different potential for reclamation. Identification of the soil properties in different areas may affect decisions on the types of vegetation to be planted, the timing of reclamation, and the likelihood that follow-up tasks may be required to assure reclamation success. Reclamation is planned as part of the construction phase of the Project, and the effects of soil factors to soil reclamation were evaluated only for the temporary disturbance areas to be disturbed during construction.

IPC looked at several soil properties in evaluating reclamation potential. These properties included soil compaction, the amount of stony-rocky soil, droughty soil, depth to bedrock, and the presence of hydric soils. STATSGO data were used to assess all soil reclamation properties except for reclamation of hydric soils. STATSGO data reported no hydric soils, so the SSURGO database was used in conjunction with hydric soil data from the Oregon Wetlands Database. The methods for evaluation of each property are presented below.

3.2.2.1 Soil Compaction

Compaction could occur during both construction and operation of the Project. Different soil types have different susceptibility to compaction; however, as a conservative measure, it was assumed that if the soil is disturbed by construction equipment or operations vehicles, there is at least some potential for soil compaction. Although all soil is susceptible to compaction to varying degrees, wet soils are more readily compacted than dry soils, and clay loam or finer soils with poor drainage characteristics were assumed to be highly compaction prone. A review of the STATSGO database indicated that no highly compaction-prone soils were found within the Site Boundary. Therefore, the impacts to highly compaction-prone soils are not quantified in this section. However, mitigation of compacted soils is discussed below in Section 3.3.4.

3.2.2.2 Stony-Rocky Soil

Stony-rocky soils are defined by the NRCS as having at least 20 percent coarse fragments, with coarse fragments defined as soil particles with diameters greater than 2 millimeters (mm). Soil particles greater than 2 mm are termed coarse particles and include gravels, cobbles, stones, and boulders (Soil Survey Division Staff 1993). Rocks greater than 75 mm include cobbles, stones, and boulders. Stony-rocky soil containing predominantly gravel could reduce revegetation success because gravel competes with plant roots for space and does not retain moisture as well as fine-grained soils. Soils containing large quantities of cobbles and larger rocks provide the same impediments to revegetation as gravel. They also interfere with mechanical cultivation equipment such as plows, soil augers, and seed drills.

To assess the impacts to revegetation efforts from stony-rocky soils, areas of stony-rocky soil (as defined by soil particles greater than 2 mm in diameter) were presented as acres within the temporary disturbance area.

3.2.2.3 Droughty Soil

Drought-prone soils are termed “droughty soils” due to their low water-holding capacity. Droughty soils may not hold enough water within the root zone to support plant life, making revegetation difficult. A soil was considered droughty if it has sandy loam or coarser texture, and drainage class of moderately to excessively well-drained. The areas of droughty soil were presented in acres within the temporary disturbance area.

3.2.2.4 Shallow Bedrock

According to NRCS soil descriptions, shallow bedrock is defined as bedrock occurring within 20 inches of ground surface. Bedrock is considered as moderately deep between 20 and 40 inches, as deep from 40 to 60 inches, and as very deep if greater than 60 inches. The bedrock classifications from shallow to deep were examined and are referred to as “shallow bedrock” because they occur within 5 feet of ground surface, the area where most Project disturbance would occur. Blasting would be necessary in the footings of transmission line towers and possibly other structures, in areas where shallow bedrock would be encountered. This blasting could result in mixing of topsoil and subsoil, and an increase in the stony-rocky component in these areas, making revegetation difficult. The STATSGO database provided a category for bedrock of 51 inches below ground surface; therefore, the analysis here assumes that bedrock encountered less than 51 inches below ground surface that is disturbed during construction could negatively affect revegetation efforts. It should be noted that the STATSGO depth to bedrock data were not available for some soil mapping units. Those units are noted in the soil map unit descriptions in Table I-2-1, Attachment I-2.

To assess the impacts to revegetation impacts from shallow bedrock, as defined above, the areas containing shallow bedrock were presented as acres within the temporary disturbance area.

3.2.2.5 Hydric Soil

Hydric soils are formed under saturation, flooding, or ponding for a sufficient period to develop anaerobic characteristics in the upper soil horizon. Hydric soils, combined with surface water or shallow groundwater and indicative vegetation species, are necessary indicators of wetlands. Disturbance of hydric soils may result in decreased water storage capacity of soil, decreased soil porosity, and decreased ability to replace hydrophytic vegetation.

Hydric soils are a necessary component of wetlands and wetland information is presented in Exhibit J. All wetlands contain hydric soil. However, many hydric soils lack the vegetation or surface water characteristics to be considered wetlands. Therefore, the extent of hydric soils is greater than the area of wetlands.

Hydric soil was analyzed using SSURGO data and hydric soil data from the Oregon Wetlands Database. The areas of hydric soils were presented in acres within the temporary disturbance area.

3.2.3 Methods Used to Identify Current Land Uses that Require or Depend on Productive Soils and to Evaluate Impacts on Productive Soils

IPC has conservatively identified areas within the analysis area that *may* include current land uses that require or depend on productive soils, through analysis of high value farmland soils data and land cover type data. The high value farmland soils data indicate soils within the analysis area that have *potential* for agricultural land use; the land cover type data indicate how land within the analysis area appears to be *actually* currently used. Neither dataset permits IPC to conclusively identify all current land uses in the analysis area that require or depend on productive soils. Identification of actual current land uses in the analysis area will likely require field survey efforts that IPC has not yet undertaken.[1]

3.2.3.1 High Value Farmland Soils

IPC obtained data from the Oregon Department of Agriculture (ODA) identifying high value farmland soils for Morrow, Umatilla, Union, Baker, and Malheur counties. The high value farmland soils data include soils that are irrigated and classified as prime, unique, Class I, or Class II or that are non-irrigated and classified as prime, unique, Class I, or Class II (*see generally* ORS 215.710).

For purposes of identifying current land uses that require or depend on productive soils for Exhibit I, IPC conservatively assumed that lands with high value farmland soils are actively used for agricultural purposes and therefore depend on the presence of productive soils.

Acres of high value farmland soils within the Site Boundary are presented in this Exhibit, along with impacts within the temporary and permanent disturbance areas.

[1] IPC identified approximately 350 potential agricultural operators near the Proposed Corridor, and sent them each a letter and questionnaire to complete regarding the type of agricultural uses on their land. IPC received survey responses from approximately two-thirds of the recipients. See Exhibit K, Attachment K-1, Agricultural Assessment. The written survey provided IPC with some additional data regarding types of agricultural uses and crops in production, but did not result in detailed site-specific information regarding current use of agricultural lands within the Site Boundary. If required, IPC is prepared to undertake field surveys to determine how agricultural lands within the Site Boundary are currently used.

3.2.3.2 Land Cover Type

Regional Gap Analysis Project (ReGAP) data along with desktop interpretation of 2012 National Agriculture Imagery Program (NAIP) imagery were used to characterize land cover types within the Site Boundary. This dataset includes the following land cover types: Developed, Bare Ground, Conservation Reserve Program (CRP), Dryland Farming, Forest/Woodland, Irrigated Agriculture, Open Water, Pasture/ Hay, Shrub/Grass, and Wetland. For purposes of Exhibit I, IPC assumed that the following land cover types require productive soils: CRP, Dryland Farming, Forest/Woodland, Irrigated Agriculture, and Pasture/Hay.

Acres of each land cover type listed above within the Site Boundary are presented in this Exhibit, along with impacts within the temporary and permanent disturbance areas. Additional information regarding agricultural land uses is presented in Exhibit K, Attachment K-1, Agricultural Assessment. The Agricultural Assessment contains discussion of current agricultural conditions, including the types of agriculture and the specific crops grown in the analysis area.

3.3 Information Required by OAR 345-021-0010(1)(i)

3.3.1 Soil Identification and Description

OAR 345-021-0010(1)(i)(A)

Identification and description of the major soil types in the analysis area.

Soils are placed into orders based on their characteristics. At the highest level; there are 12 different soil orders, with each order further refined into subunits based on additional defining characteristics. The Project crosses several STATSGO soil orders, which are discussed below.

The analysis area in the Boardman area and throughout Morrow County consists predominantly of the soil orders Aridisol and Mollisol. Aridisols are found in dry climates and contain subsurface horizons in which clay, calcium carbonate, silica, salts, and/or gypsum have accumulated due to limited leaching. Aridisols are usually not suitable for agriculture unless irrigation water is provided. Revegetation in these areas may be more difficult due to lack of water. The order Mollisol includes a variety of soils formed mainly under grasslands and is the predominant order in northeastern Oregon. These soils have a strong organic component formed by the decomposition of grass and other vegetation, which results in very productive soils. These soils, if properly preserved or reclaimed, should be favorable for revegetation.

Soils in the Blue Mountains consist primarily of Mollisols. Small portions of northeast Oregon also contain the soil orders Andisol and Entisol. The order Andisol is represented by a variety of soils with a predominantly volcanic or volcaniclastic origin. Andisols in eastern Oregon are predominantly found under coniferous forest vegetation within the Blue Mountains. However, Andisols are sometimes cleared of forest and used for agriculture. Entisols are typically young or recently developed soils, displaying little or no development of differing soil layers or horizons.

Soils south of the Blue Mountains are a mix of Mollisols, Entisols, and Aridisols. Aridisols are found in dry climates, and contain subsurface horizons in which clay, calcium carbonate, silica, salts and/or gypsum have accumulated. Aridisols are usually not suitable for agriculture unless irrigation water is provided. Revegetation in these areas may be more difficult due to lack of water, or revegetation may need to occur during a wetter portion of the year.

Table I-2-1 in Attachment I-2 displays soil factors by individual soil map units (SMUs). For the analyses in Sections 3.3.2 and 3.3.3 below, the soil properties for individual SMUs have been combined to provide summaries for the Proposed Corridor by county, and for the individual alternate corridor segments (see Table I-1). Attachment I-1 comprises a mapbook displaying the soil mapping units for areas within the Site Boundary.

Table I-1. Soil Orders within the Site Boundary

Corridor	County	Soil Order[3] (acres)			
		Aridisols	**Mollisols**	**Andisols**	**Entisols**
Proposed Corridor	Morrow[1]	1,790	1,435	–	535
	Umatilla	2	3,744	187	39
	Union	–	3,047	–	–
	Baker[2]	76	4,476	–	1,661
	Malheur	1,269	4,479	–	–
Total Proposed Corridor		***3,138***	***17,180***	***187***	***2,235***
Alternate Corridor Segments					
Horn Butte [1]	Morrow	1,648	495	–	–
Longhorn [1]	Morrow	680	70	–	–
Glass Hill	Union	–	683	–	–
Flagstaff	Baker	–	1,195	–	–
Willow Creek	Baker/Malheur	1,229	765	–	18
Malheur S	Malheur	529	2,388	–	–
Double Mountain	Malheur	–	791	–	–

[1] Includes associated substation acres.
[2] Includes rebuild segment.
[3] Source: STATSGO data.

3.3.2 Current Land Use

> **OAR 345-021-0010(1)(i)(B)**
>
> Identification and description of current land uses in the analysis area, such as growing crops, that require or depend on productive soils.

IPC has conservatively identified areas within the analysis area that *may* include current land uses that require or depend on productive soils, using high value farmland soils and land cover type. Identification of actual current land uses in the analysis area will likely require field survey efforts that IPC has not yet undertaken.[2]

3.3.2.1 High Value Farmland Soils

As shown in Table I-2, high value farmland soils data were used to identify lands that may include current land uses that require or depend on productive soils within the Site Boundary. The high value farmland soils data do not provide a qualitative description of actual current land use, but may be representative of current agricultural land uses within the Site Boundary.

[2] If required, IPC is prepared to undertake field surveys to determine how agricultural lands within the Site Boundary are currently used.

Table I-2. High Value Farmland Soils within Site Boundary

Corridor	County	Site Boundary (acres)	High Value Farmland Soils (acres)[3]
Proposed Corridor	Morrow[1]	3,760	2,029
	Umatilla	3,972	1,226
	Union	3,047	221
	Baker[2]	6,213	48
	Malheur	5,757	20
Total Proposed Corridor		***22,749***	***3,545***
Alternate Corridor Segments			
Horn Butte[1]	Morrow	2,235	1,183
Longhorn[1]	Morrow	1,595	152
Glass Hill	Union	683	8
Flagstaff	Baker	1,195	4
Willow Creek	Baker/Malheur	2,012	106
Malheur S	Malheur	2,974	–
Double Mountain	Malheur	791	–

[1] Includes associated substation acres.
[2] Includes rebuild segment.
[3] Source: SSURGO data.

3.3.2.2 Land Cover Types

The USDA ReGAP data were also used to identify land cover types that may include current land uses that require or depend on productive soils (see Table I-3). The land cover type data do not provide a qualitative description of actual current land use but, with the exception of developed, open water, and bare ground categories, the remaining land cover types may be representative of current land uses that require or depend on productive soils to support the current use.

Table I-3. Land Cover Types within the Site Boundary

Corridor	County	Site Boundary (acres)	Developed (acres)[3]	Bare Ground (acres)[3]	CRP (acres)[3]	Dryland Farming (acres)[3]	Forest/ Woodland (acres)[3]	Irrigated Agriculture (acres)[3]	Open Water (acres)[3]	Pasture/ Hay (acres)[3]	Shrub/ Grass (acres)[3]	Wetland (acres)[3]
Proposed Corridor	Morrow[1]	3,760	68	–	73	1,671	4	561	5	3	1,370	5
	Umatilla	3,972	43	<1	–	1,052	682	26	–	81	2,029	59
	Union	3,047	15	25	–	10	1,448	–	–	29	1,426	94
	Baker[2]	6,213	62	17	–	24	39	10	<1	82	5,923	57
	Malheur	5,757	22	90	–	47	3	59	1	19	5,468	48
Total		***22,749***	***210***	***132***	***73***	***2,804***	***2,175***	***656***	***7***	***213***	***16,216***	***263***
Alternate Corridor Segments												
Horn Butte[1]	Morrow	2,235	31	–	48	1,078	<1	247	–	5	824	3
Longhorn[1]	Morrow	1,595	69	–	68	90	–	833	14	11	506	5
Glass Hill	Union	683	<1	1	–	–	232	–	–	–	421	29
Flagstaff	Baker	1,195	13	–	–	24	29	95	–	–	1,010	25
Willow Creek	Baker/ Malheur	2,012	17	–	–	16	t	105	–	12	1,842	20
Malheur S	Malheur	2,974	6	18	–	3	t	–	<1	–	2,932	14
Double Mountain	Malheur	791	–	–	–	<1	–	–	–	–	788	3

[1] Includes associated substation acres.
[2] Includes rebuild segment.
[3] Source: USDA Regional Gap Analysis Project (ReGAP) database.

3.3.3 Soil Impact Assessment

> **OAR 345-021-0010(1)(i)(C)**
>
> Identification and assessment of significant potential adverse impact to soils from construction, operation and retirement of the facility, including, but not limited to, erosion and chemical factors such as salt deposition from cooling towers, land application of liquid effluent, and chemical spills.

This section identifies and assesses potential adverse impacts to soils from the Project due to erosion, loss of soil reclamation potential, compaction, and chemical spills. Additionally, as directed by the Project Order, potential impacts to productive soils are discussed. The analysis is organized by temporary and permanent disturbance impacts.

The Project does not contain cooling towers, and no activity associated with the Project will result in salt deposition or land application of liquid effluent.

The impacts to soils are limited to areas of soil disturbance, because not all of the Site Boundary will be disturbed. The soil analyses were evaluated using the temporary disturbance area and the permanent disturbance area. The temporary and permanent disturbance areas are both completely contained within the Site Boundary and occupy only small percentages of the Site Boundary, as shown in Table I-4.

Table I-4. Comparison of Site Boundary and Disturbance Areas (acres)

Corridor	County	Site Boundary (acres)	Temporary Disturbance (acres)	Permanent Disturbance (acres)
Proposed Corridor	Morrow[1]	3,760	788	149
	Umatilla	3,972	910	186
	Union	3,047	716	145
	Baker[2]	6,216	1,218	317
	Malheur	5,757	1,288	294
Total Proposed Corridor		***22,749***	***4,884***	***1,091***
Percent of Site Boundary		***100***	***22***	***5***
Alternate Corridor Segments				
Horn Butte[1]	Morrow	2,235	508	101
Longhorn[1]	Morrow	1,595	411	75
Glass Hill	Union	683	140	44
Flagstaff	Baker	1,195	331	57
Willow Creek	Baker/Malheur	2,012	474	99
Malheur S	Malheur	2,974	689	185
Double Mountain	Malheur	791	145	31

[1] Includes associated substation acres.
[2] Includes rebuild segment.

3.3.3.1 Temporary Impacts

Temporary Soil Erosion Impacts

Project construction activities that will affect soil erosion include clearing, grubbing, grading, backfilling, and excavation along the ROW and at additional temporary workspaces. Ground clearing during construction will increase the potential for erosion, especially on slopes exceeding 25 percent. Removal of protective vegetation will temporarily expose soil to potential wind and water erosion. Migration of Project soils could result in topsoil loss or sedimentation into surface water streams or lakes, which could affect aquatic species and fisheries. Soil disturbances may occur on productive soils on lands with many uses, including agricultural and forested land. Construction-phase temporary disturbances will occur at tower sites, pulling stations, multi-use areas, fly yards, regeneration stations, construction access roads, and substations.

The majority of soil erosion impacts are of limited duration, occurring predominantly during the construction period, approximately 2 to 3 years. The areas used only for construction will be reclaimed as soon as construction is completed in any area. Reclamation activities may include re-grading to original land contours, replacing topsoil, and revegetation.

Table I-5 summarizes the acres within the temporary disturbance area containing highly wind erodible soils, high K factor, slopes greater than 25 percent, and low soil loss tolerance.

Table I-5. Erosion Factors in the Temporary Disturbance Area (acres/percent of Temporary Disturbance Area)

		Erosion Factors							
		Highly Wind Erodible[2,3]		High K Factor[2,4]		Slope Greater Than 25%[6]		Low T Factor[2,5]	
Corridor	**County**	**Acres**	**Percent**	**Acres**	**Percent**	**Acres**	**Percent**	**Acres**	**Percent**
Proposed Corridor	Morrow[1]	440	56	609	77	4	<1	115	15
	Umatilla	39	4	783	86	75	8	526	58
	Union	–	–	581	81	83	12	212	30
	Baker	6	<1	195	17	173	15	782	66
	Malheur	283	22	314	24	103	8	1,005	78
Proposed 138/69-kV Rebuild	Baker	–	–	–	–	12	33	36	100
Total Proposed Corridor		***769***	***16***	***2,482***	***50***	***450***	***9***	***2,676***	***54***
Alternate Corridor Segments									
Horn Butte[1]	Morrow	375	74	471	93	1	<1	–	–
Longhorn[1]	Morrow	362	88	201	49	1	<1	–	–
Glass Hill	Union	–	–	140	100	12	9	97	69
Flagstaff	Baker	–	–	87	26	14	4	102	31
Willow Creek	Baker/ Malheur	158	33	283	60	26	5	202	43
Malheur S	Malheur	127	18	208	30	46	7	562	82
Double Mountain	Malheur	45	31	45	31	<1	<1	100	69

[1] Includes associated substation acres.
[2] Source: STATSGO data.
[3] Highly wind erodible include STATSGO wind erodibility classes 1 through 4 (wind erosion greater than or equal to 86 tons per acre per year (T/A/Y)
[4] High K factor defined as K factor greater than or equal to 0.37.
[5] Lot T factor defined as T factor less than or equal to 2 T/A/Y.
[6] Source: USGS National Elevation Dataset database.

Temporary Soil Compaction Impacts

Project-related soil compaction will occur in temporary disturbance areas. Soil compaction occurs due mainly to the weight of construction equipment and vehicles driving on native soil. Areas under roadways, structures, and high-use areas would be most susceptible to soil compaction.

All soils have at least some potential for soil compaction. However, different soil types have different susceptibility to compaction. Dry, poorly graded, non-cohesive soils, such as loose sand or silt, are not readily compactible. The added weight of vehicles or equipment simply results in the loose soil grains moving to points of less pressure. On the other hand, fine-grained clay or other poorly drained, cohesive soils have the greatest potential for soil compaction. These soils are considered highly compactible.

Overcompaction of soil affects the soil's potential for erosion and reclamation. Soil compaction can increase overland flow of rainwater or snow melt, increasing erosion potential. Over compacted soil reduces the amount of water infiltration necessary to support plant growth. Compacted soil is also less suitable to natural plant regeneration or seeding.

The NRCS STATSGO soil properties were reviewed within the Site Boundary. No soil was detected with the combination of fine grain size, and poor drainage characteristics that would result in classification as highly compactible. Therefore, no areas within the temporary disturbance area were identified as needing special considerations for soil compaction.

Soil Reclamation Potential in Temporary Disturbance Areas

Construction activities will result in the need for reclamation in temporary disturbance areas. Some soil compaction will occur within the disturbed areas due to the movement of heavy equipment over the soil. Areas under roadways, structures, and high-use areas will be most affected. Compaction will be greatest in those areas containing compaction prone soils, such as very fine-grained, poorly drained soils. Although no areas within the temporary disturbance area were identified as needing special considerations for soil compaction, all soil will have some potential for soil compaction, and compacted soil will need to be ripped, loosened, or otherwise treated using BMPs at the end of the Project to restore their productivity.

If extensive construction blasting is necessary, the amount of stony-rocky soils will increase as blasted rock is incorporated into nearby soils. Several soil properties affect the ability to conduct soil reclamation and especially reestablishment of vegetation, including the amount of stony-rocky soil and droughty soil. The amount of shallow bedrock can also affect the success of soil reclamation.

Stony-rocky soils contain high percentages coarse soil fragments, such as sand and gravel. Stony-rocky soil does not retain moisture as well as fine-grained soil, and is poor in providing soil nutrients to new or established vegetation. Droughty soil is similarly coarse textured (sandy loam or coarser) and excessively well-drained. Revegetation in stony-rocky or droughty soils will require selection of drought-resistant species, seasonal planting at times when moisture is likely, and possible mulching, watering, or soil amendments.

The soil properties affecting reclamation are of longer duration than impacts from erosion. Droughty soils are not as favorable for revegetation, and reclamation in droughty soil will be more difficult when compared to non-droughty soil. The impacts from stony-rocky soil, including possible increase in stony-rocky soil from blasting are also a long-term soil condition that could prolong the time to achieve successful reclamation.

Table I-6 summarizes the soil factors that could affect soil reclamation for the Project, including stony-rocky soil, droughty soil, shallow bedrock, and hydric soil.

Table I-6. Soil Reclamation Factors in Temporary Disturbance Area (acres/percent of Temporary Disturbance Area)

Corridor	County	Stony/ Rocky[2,3]		Droughty[2,4]		Shallow Bedrock[2,5]		Hydric Soil[6]	
		Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent
Proposed Corridor	Morrow[1]	115	15	555	70	271	34	–	–
	Umatilla[1]	295	32	334	37	437	48	142	16
	Union	531	74	531	74	141	20	55	8
	Baker	1,122	95	1,128	95	6	<1	19	2
	Malheur	965	75	1,019	79	146	11	8	<1
Proposed 138/69-kV Rebuild	Baker	36	100	36	100	–	–	15	41
Total Proposed Corridor		***3,063***	***62***	***3,603***	***44***	***1,001***	***20***	***238***	***5***
Alternate Corridor Segments									
Horn Butte[1]	Morrow	–	–	375	74	87	17	–	–
Longhorn[1]	Morrow	–	–	362	88	48	12	39	10
Glass Hill	Union	140	100	140	100	97	69	24	17
Flagstaff	Baker	222	67	222	67	–	–	10	3
Willow Creek	Malheur	191	40	333	70	142	30	–	–
Malheur S	Baker/ Malheur	480	70	508	74	32	5	–	–
Double Mountain	Malheur	100	69	100	69	–	–	–	–

[1] Includes associated substation acres.
[2] Source: STATSGO data.
[3] Stony rocky soil is defined as soil with at least 20 percent of soil particles with size greater than 2 mm.
[4] Droughty soils are defined as soil with sandy loam or coarser texture, and drainage class of moderately to excessively well-drained.
[5] Shallow bedrock is defined as bedrock occurring within 51 inches of ground surface.
[6] Source for hydric soil is SSURGO database and Oregon Wetland Database from the Oregon Spatial Data Library.
Note: SSURGO and STATSGO databases did not contain any highly compactable soil within analysis area; therefore, highly compactable soil is not shown on this table.

Temporary Impacts to Productive Soils

The analysis provided in Section 3.3.2 provides an estimate of the amount of land within the analysis area that includes current land uses requiring or depending on productive soils, based on high value farmland soils and land cover types. Temporary soil disturbances will likely occur on productive soils within the temporary disturbance area. Potential soil impacts to productive soils used for agriculture and forested areas include soil erosion, damage to the agricultural land drainage and irrigation systems, mixing of topsoil and subsoil, potential loss of topsoil, and soil compaction. Agricultural land within the temporary disturbance area will be unavailable to agriculture during construction. Construction on soil with low soil loss tolerance may cause erosion on soil not well suited to soil loss. Construction areas not also used for operations will be reclaimed as soon as possible following construction. For seasonal crops, soil could be suitable within a growing season of construction completion. Forested areas may also be suitable for replanting of tree species within a growing season. However, the transmission line ROW will not be suitable for tree growth as long as the Project remains in service. The flight paths of crop dusting aircraft may have to be modified or restricted in agricultural areas adjacent to the transmission line.

A review of the databases used to estimate current land uses that require or depend on productive soils, including high value farmland soils and land cover types, allows for estimates of the acres of productive soils that may be impacted during construction (see Tables I-7 and I-8).

Table I-7. Temporary Impacts to High Value Farmland Soils

Corridor	County	High Value Farmland Soils (acres)[2]	% of Temporary Disturbance Area in High Value Farmland Soils	% of Temporary Impacts to High Value Farmland Soils relative to total countywide High Value Farmland Soils
Proposed Corridor	Morrow[1]	393	50	0.1
	Umatilla	324	36	0.06
	Union	90	13	0.07
	Baker	2	<1	<0.01
	Malheur	20	2	0.02
Proposed 138/69-kV Rebuild	Baker	<1		–
Total Proposed Corridor		***829***	***17***	***0.07***
Alternate Corridor Segments				
Horn Butte[1]	Morrow	255	50	0.09
Longhorn[1]	Morrow	35	9	0.01
Glass Hill	Union	–	–	–
Flagstaff	Baker	<1	<1	–
Willow Creek	Baker/Malheur	45	9	NA[3]
Malheur S	Malheur	–	–	–
Double Mountain	Malheur	–	–	–

[1] Includes associated substation acres.
[2] Source: SSURGO database.
[3] Percentage not calculated as alternate corridor segment is located in both Baker and Malheur counties.

Table I-8. Land Cover Types within the Temporary Disturbance Area

Corridor	County	Temporary Disturbance Area (acres)	Developed (acres)[2]	Bare Ground (acres)[2]	CRP (acres)[2]	Dryland Farming (acres)[2]	Forest/ Woodland (acres)[2]	Irrigated Agriculture (acres)[2]	Open Water (acres)[2]	Pasture/ Hay (acres)[2]	Shrub/ Grass (acres)[2]	Wetland (acres)[2]
Proposed Corridor	Morrow[1]	788	16	–	10	372	–	87	<1	<1	303	<1
	Umatilla	910	10	–	–	268	148	2	–	10	464	8
	Union	716	3	17	–	3	300	–	–	7	375	11
	Baker	1,182	2	1	–	8	6	–	–	11	1,149	3
	Malheur	1,288	10	18	–	38	<1	53	–	2	1,162	5
Proposed 138/69-kV Rebuild	Baker	36	2	–	–	<1	<1	<1	–	4	27	1
Total Proposed Corridor		***4,920***	***43***	***36***	***10***	***689***	***454***	***142***	***<1***	***36***	***3,481***	***30***
Alternate Corridor Segments												
Horn Butte[1]	Morrow	508	6	–	7	245	–	53	–	<1	196	<1
Longhorn[1]	Morrow	411	18	–	15	39	–	158	3	3	175	1
Glass Hill	Union	140	–	<1–	–	–	47	–	–	–	88	5
Flagstaff	Baker	331	2	–	–	9	4	22	–	–	288	7
Willow Creek	Baker/ Malheur	474	9	–	–	12	–	26	–	7	417	3
Malheur S	Malheur	689	<1	5	–	<1	–	–	–	–	681	2
Double Mountain	Malheur	145	–	–	–	–	–	–	–	–	145	–

[1] Includes associated substation acres.
[2] Source: USDA ReGAP database.

Temporary Impacts from Chemical Spills

During construction, a limited amount of hazardous substances will be used on-site, including petroleum fuels, lubricants, cleaners, paints, and other common construction materials. To comply with fuel storage requirements, IPC will require its construction contractor to prepare a Spill Prevention, Containment, and Countermeasures Plan (SPCC Plan). The SPCC Plan will comply with 40 CFR, Part 112, and will include site-specific implementation of cleanup procedures in the event of soil contamination from spills or leaks of fuels, lubricants, coolants, or solvents. The SPCC Plan will identify applicable legal and contractual requirements, Project-specific spill prevention procedures, and other stipulations and methods to address Project spill prevention, response, and cleanup procedures. IPC will fully comply with ODEQ regulations for storage of hazardous materials and cleanup and disposal of hazardous waste on all lands associated with the Project. Due to the procedures that IPC plans to implement during construction, the Project is not expected to result in impacts from chemical spills. For additional discussion regarding IPC's plans regarding spill prevention and management of hazardous materials, see Exhibit G.

3.3.3.2 Permanent Impacts

Permanent Soil Erosion Impacts

The soil erosion impacts during operations of the Project will be minimal. Soil erosion in the permanent disturbance area will predominantly consist of soil disturbances at tower sites, substations, communication stations, and/or access roads necessary to maintain the transmission lines and conduct necessary repairs. Stormwater BMPs, including erosion and sediment control structures as well as new culverts, will require inspection, maintenance, and repair through the operational life of the Project to minimize soil erosion or sedimentation to surface water. Erosion impacts in the permanent disturbance areas will be minor and occur only intermittently over the life of the Project.

The reclamation of soils from construction activities within the temporary disturbance area will result in stable soils. Construction-phase reclamation will therefore reduce the potential for soil erosion during Project operations. For instance, the area around the substation/substation expansion site will be covered with free draining rock, which will isolate native soil from erosive conditions. Access roads retained for operations will be seeded with a grass mix and revegetated thereby minimizing the surface exposed to erosive conditions. For normal maintenance activities, an 8-foot portion of the road will be used and vehicles will drive over the vegetation. For non-routine maintenance requiring access by larger vehicles, the full width of the access road may be used. Access roads will be repaired, as necessary, but will not be routinely graded so as to minimize impact to vegetation.

Table I-9 summarizes the soil areas containing highly wind erodible soils, high K factor, slopes greater than 25 percent, and low T factor soil within the permanent disturbance area. There will be little or no erosional impacts during the operations phase. Stormwater mitigation measures described in Section 3.3.4 will reduce or eliminate erosional impacts during operations.

Due to the small size of the permanent disturbance area, the reclamation that will occur following construction, and the intermittent operations activities that could increase erosion, impacts from erosion during the operations phase will be minimal.

Table I-9. Erosion Factors in the Permanent Disturbance Area

Corridor	County	Erosion Factors							
		Highly Wind[2,3] Erodible		**High K Factor[2,4]**		**Slope Greater Than 25%[6]**		**Low T Factor[2,5]**	
		Acres	**Percent**	**Acres**	**Percent**	**Acres**	**Percent**	**Acres**	**Percent**
Proposed Corridor	Morrow[1]	76	51	94	63	1	<1	47	32
	Umatilla	–	–	167	90	14	8	111	60
	Union	–	–	109	75	18	12	56	38
	Baker	3	1	51	17	33	11	192	64
	Malheur	53	18	61	21	21	7	241	82
Proposed 138/69-kV Rebuild	Baker	–	–	–	–	6	37	16	100
Total Proposed Corridor		***132***	***12***	***482***	***44***	***93***	***8***	***663***	***61***
Alternate Corridor Segments									
Horn Butte[1]	Morrow	87	86	97	96	<1	–	–	–
Longhorn	Morrow	74	98	46	61	<1	–	–	–
Glass Hill	Union	–	–	43	97	6	14	26	59
Flagstaff	Baker	–	–	15	26	3	6	13	23
Willow Creek	Baker/Malheur	37	37	69	70	2	2	41	42
Malheur S	Malheur	35	19	47	25	12	6	151	81
Double Mountain	Malheur	11	36	11	36	–	–	19	62

[1] Includes associated substation acres.
[2] Source: NRCS STATSGO database.
[3] Highly wind erodible include STATSGO wind erodibility classes 1 through 4 (wind erosion greater than or equal to 86 tons per acre per year (T/A/Y).
[4] High K factor defined as K factor greater than or equal to 0.37.
[5] Lot T factor defined as T factor less than or equal to 2 T/A/Y.
[6] Source: USGS National Elevation Dataset database.

Soil Reclamation During Operation of the Project

Maintenance or repair activities during the operations phase may result in small areas of the permanent disturbance area to require reclamation. The impacts requiring reclamation will be similar to those described above for the temporary disturbance areas, only on a much smaller scale. IPC expects only minor reclamation activities during the operations phase.

Permanent Impacts to Productive Soils

There will be some permanent loss of productive soils in the areas of permanent soil disturbance due to replacement of productive land with Project features. The predominant land loss is placement of permanent structures on formerly productive land, including substation/substation expansion, tower foundations, communication stations, and access roads, which will result in a long-term loss of that acreage under these features. Utilization of these areas within the permanent disturbance area was assumed to result in “permanent” soil loss because the Project will likely persist indefinitely. However, it is not irreversible, and in the unlikely event that the Project is decommissioned, those areas will be reclaimed for other beneficial uses.

Table I-10 shows the limited amount of impact the Project will have on high value farmland soils during operation of the Project. The operations phase of the Project will result in an insignificant loss to high value farmland soils, averaging less than 0.01 percent of the acreage of high value farmland soils per county.

Table I-10. Permanent Impacts to High Value Farmland Soils

Corridor	County	Permanent Disturbance Area High Value Farmland Soils[2] (acres)	% of Permanent Disturbance Area in High Value Farmland Soils	% of Permanent Impacts to High Value Farmland Soils relative to total countywide High Value Farmland Soils
Proposed Corridor	Morrow[1]	69	46	<0.01
	Umatilla	52	28	<0.01
	Union	8	6	0.01
	Baker	1	0.3	0.02
	Malheur	–	–	–
Proposed 138/69-kV Rebuild	Baker	1	6	<0.01
Total Proposed Corridor		***130***	***12***	***<0.01***
Alternate Corridor Segments				
Horn Butte	Morrow[1]	63	62	<0.01
Longhorn	Morrow[1]	13	17	<0.01
Glass Hill	Union	1	2	<0.01
Flagstaff	Baker	–	–	–
Willow Creek	Baker/ Malheur	2	2	NA[3]
Malheur S	Malheur	–	–	–
Double Mountain	Malheur	–	–	–

[1] Includes associated substation acres.
[2] Source: SSURGO database.
[3] Percentage not calculated as alternate corridor segment is located in both Baker and Malheur counties.

Table I-11 presents the land cover types within the permanent disturbance area by Project corridor and county. The land cover types that could be impacted are the same in the permanent disturbance area as in the temporary disturbance area. These land uses include dryland farming and shrub/grass (grazing) in Morrow County, dryland farming, grazing and timber in Umatilla County, timber and grazing in Union County, and predominantly grazing in Baker and Malheur counties.

Table I-11. Land Cover Types within the Permanent Disturbance Area

Corridor	County	Developed (acres)[2]	Bare Ground (acres)[2]	CRP (acres)[2]	Dryland Farming (acres)[2]	Forest/ Woodland (acres)[2]	Irrigated Agriculture (acres)[2]	Open Water (acres)[2]	Pasture/ Hay (acres)[2]	Shrub/ Grass (acres)[2]	Wetland (acres)[2]
Proposed Corridor	Morrow[1]	4	–	4	69	–	11	<1	<1	60	<1
	Umatilla	4	–	–	39	45	<1	–	4	88	6
	Union	<1	<1	–	<1	69	–	–	<1	68	6
	Baker	<1	<1	–	–	2	–	–	1	296	1
	Malheur	<1	3	–	1	–	<1	–	<1	285	3
Proposed 138/69-kV Rebuild	Baker	<1	–	–	–	<1	<1	–	2	11	<1
Total Proposed Corridor		***11***	***4***	***4***	***110***	***116***	***12***	***<1***	***10***	***808***	***16***
Alternate Corridor Segments											
Horn Butte	Morrow[1]	2	–	3	41	–	11	–	<1	44	<1
Longhorn	Morrow	6	–	4	12	–	30	<1	2	21	<1
Glass Hill	Union	–	<1	–	–	18	–	–	–	24	2
Flagstaff	Baker	<1	–	–	<1	1	3	–	–	51	<1
Willow Creek	Baker/ Malheur	<1	–	–	<1	–	2	–	<1	95	<1
Malheur S	Malheur	<1	<1	–	<1	–	–	–	–	183	<1
Double Mountain	Malheur	–	–	–	–	–	–	–	–	31	–

[1]Includes associated substation acres.
[2] Source: USDA ReGAP database.

3.3.3.3 Retirement Phase Impacts

The Project is designed to last indefinitely with proper maintenance and replacement of components as needed. However, in the unlikely event that the Project is decommissioned, it will result in temporary soil impacts of approximately the same magnitude as during construction; therefore, the same practices used during construction to minimize impacts to the soil will be used during decommissioning activities. All transmission line structures and associated features will be removed, and disturbed areas will be reclaimed. Decommissioning activities will include excavation to remove structures. This will temporarily expose bare soil to erosional impacts. Grading may be used to restore natural land contours, or to spread stockpiled topsoil onto reclaimed land. Reclaimed roads will be ripped to reduce compaction. During decommissioning, those areas with “permanent” topsoil removal will be reclaimed, and revegetated to preconstruction conditions. These activities will result in temporary exposure of bare soil to increased erosion.

3.3.3.4 Soil Impact Summary

The temporary disturbance may result in increased erosion, soil compaction, loss of soil productivity and/or the need for soil reclamation. Disturbed soils will include productive soils used for agriculture, timber production, and grazing. These soil disturbances will be mitigated through the measures described in Section 3.3.4. The permanent disturbance area will result in a direct loss of productive soil due to placement of permanent project features; however, soil erosion and soil reclamation will be minimal during Project operations as discussed in Section 3.3.3.2. The Project is not expected to be retired. However, the amount of soil disturbance during retirement would be approximately equal to the amount of disturbance required during construction. Retirement disturbance would require similar mitigation measures to those needed during and following construction.

3.3.4 Mitigation Measures

OAR 345-021-0010(1)(i)(D)

A description of any measures the applicant proposes to avoid or mitigate adverse impact to soils.

3.3.4.1 Avoid Sensitive Soils

The Supplemental Siting Study (see Exhibit B, Attachment B-2) evaluated numerous constraints, including soil properties and agricultural land uses throughout selection of the Proposed Corridor. Soil-related constraints included hydric soils, steep terrain, prime farmlands, and landslide information from the Statewide Landslide Inventory Database for Oregon (SLIDO). As part of the siting process, IPC communicated with local, state, and federal entities, landowners, and other stakeholders to obtain input to minimize project impacts to irrigated agricultural lands and other sensitive resources. In response to stakeholder communications, the Proposed Corridor has shifted and several alternate corridor segments have been included for consideration. IPC expects further micrositing will occur to minimize impacts to sensitive resources.

IPC's engineers, Pike Energy Solutions (Pike) and Shannon & Wilson, are conducting engineering design studies. An Engineering Geology and Seismic Hazards Supplement (see Attachment H-1 in Exhibit H) has been prepared, incorporating geologic hazard and soil data from many sources. Pike and Shannon & Wilson have also conducted a reconnaissance review of the entire Proposed Corridor for unstable land conditions, incorporating review of the SLIDO database with aerial imagery review and site visits to landslides and unstable landforms. Results of this reconnaissance are included in the desktop survey. Transmission line corridors, access roads and other Project features have been located and designed to avoid impacts to unstable or landslide-prone soils where possible. The Project will use existing roads to access Project sites to the extent practicable; where needed, existing roads will be improved to reduce sediment generation and minimize impacts to soils.

Results of further engineering evaluations will be used to provide micrositing and design of Project structures that protect the public and minimize construction on unstable soil surfaces. Additional soil data will be collected during the site-specific geotechnical evaluation. The engineers have preliminarily proposed 188 boreholes at regular intervals along the Project corridor to further evaluate soil conditions. A description of proposed geotechnical investigation tasks appears in Exhibit H.

Additional soil analysis will be conducted during the final geotechnical exploration program (see Attachment H-1, Exhibit H) to assist in preparing detailed foundation designs and erosion and sediment control measures. The potential sensitivity of soils will be considered in design and siting.

3.3.4.2 Minimize Soil Impacts with Best Management Practices

Localized impacts to soils at and around tower locations, access roads and facility footprints in the temporary disturbance area will be minimized though the use of BMPs and restoration efforts to restore soil surfaces and vegetation following disturbances.

All Project construction will be regulated by ODEQ stormwater requirements. IPC will obtain an NPDES 1200-C Stormwater Construction Permit, and will prepare and implement an ESCP. IPC proposes a generic set of construction BMPs to be available for use on a majority of the Project where soils are not highly erosive, slopes are not steep, and construction is away from surface water. More specific BMP methods and BMP locations will be designated in areas with higher potential for soil erosion impacts. Where steep slopes cannot be avoided, site-specific BMPs tailored to encountered soil types in those areas will be applied to control and reduce erosion. The ESCP will present appropriate BMPs for minimizing impacts in areas with steep slopes.

No construction will occur until the 1200-C stormwater permit has been obtained and the ESCP has been completed and approved by ODEQ. A draft version of the ESCP is included in Attachment I-3. Attachment I-4 contains a letter from ODEQ acknowledging receipt of the preliminary 1200-C permit application and draft ESCP.

Reclamation will be necessary in disturbed soil areas. As soon as construction conditions allow, IPC will implement reclamation procedures, such as recontouring, scarification, soil replacement, seedbed preparation, fertilization, seed mixtures, seeding timing, seeding methods, supplemental wetland and riparian plantings and supplemental forest plantings to ensure reclamation success. The draft Reclamation and Revegetation Plan (see Exhibit P, Attachment P-4) presents the measures that IPC will use for reclamation and revegetation.

Mitigation of Soil Erosion by Water

Erosion control measures will be designed with attention to the potential soil erosion impacts described in Section 3.3.3, with particular attention to areas containing highly wind erodible soils, high K factor soil, slopes greater than 25 percent, and low T factor soils. Work on access roads will include grading and re-graveling of existing roads and construction of new roads. Soil erosion will be minimized by constraining traffic, heavy equipment, and construction to existing roads where possible. Where new road construction is required, road widths will be limited to the width necessary to accommodate the construction equipment. New roads will be located to avoid steep areas as much as possible.

Areas impacted by construction will be reseeded and landscaped with vegetation to minimize erosion and restore the systems to their natural state. Temporary ditches, sediment fences, and silt traps will be installed as defined by the ESCP. Erosion control measures will remain intact until natural vegetation is sufficient to protect against erosion. Substation areas will be graded and landscaped to prevent soil erosion during operation.

Erosion and sediment control measures will meet local, county, state, and federal guidelines. Detailed information about applicable regulations and guidelines is presented in the Project ESCP. ODEQ guidelines are described in the Erosion and Sediment Control Manual (ODEQ 2005). The manual was prepared primarily to support development of stormwater BMPs for construction sites requiring compliance with the 1200-C General Permit.

General erosion and sediment control measures to be implemented during Project construction include:

- Scheduling to avoid earth disturbing activities during wet weather;
- Work area sediment controls;
- Storm drain inlet protection; and
- Non-storm water pollution controls, such as materials use and waste management BMPs, covering or otherwise protecting stockpiles, and runoff and erosion prevention measures for slopes susceptible to erosion.

Specific erosion and sediment control measures and BMPs to be implemented during Project construction and operations include the following:

- Avoid highly erodible areas: Initial mitigation measures will include avoiding highly erodible areas such as steep slopes where possible and rerouting impacted drainages to natural drainages in order to minimize erosion and sedimentation from runoff. Areas impacted by construction will be reseeded and sediment fences, check dams and other BMPs will remain in place until impacted areas are well vegetated and the risk of erosion has been removed.
- Construct stabilized road entrances/exits: A stabilized construction entrance/exit will be installed at locations where dirt (exposed, disturbed land) or newly constructed roads intersect existing paved roads. Stabilized entrances will also be installed at the construction multiuse areas. The stabilized construction entrance/exits will be inspected and maintained for the duration of the Project life.
- Preserve and restore vegetation: To the extent practicable, existing vegetation will be preserved. In the event that vegetation is destroyed in temporary road locations or laydown areas, soils will be replaced with stockpiled topsoil and recontoured and vegetation will be reseeded to prevent erosion using a seed mixture specified by the ODA, Bureau of Land Management (BLM), USFS, or other appropriate agency as being capable of surviving in local conditions. Native species will be used and, if any non-native species were required for specific problem areas, species will be selected that will not become nuisance species to the surrounding areas.
- Dust Control: Dust will be controlled during construction through water application to the disturbed grounds and access roads where necessary. Application of excess water that could lead to erosion or sedimentation will be avoided. Other methods of dust control will include but not be limited to the use of poly sheeting, vegetation or mulching. Speed limits will be kept to a minimum to prevent pulverization of road substrate.
- Install silt fencing: Silt fencing or an equivalent control measure will be installed at various locations throughout the transmission line. The fencing will be installed on contour downgradient of excavations, fill areas, or graded areas where necessary. Silt fencing or an equivalent control measure will be installed around the perimeters of material stockpiles and construction laydown areas.
- Install straw wattles: Straw wattles will be installed to decrease the velocity of sheet flow from stormwater. The wattles will be used along the downgradient edge of access roads adjacent to slopes or sensitive area.
- Apply gravel and mulching: Gravel will be used where soil becomes wet or muddy to prevent erosion and working of the soil. Mulch will be provided to immediately stabilize soil exposed as a result of land-disturbing activities. The mulch reduces the potential for wind and raindrop erosion.

- Install stabilization matting: Jute mesh, straw matting, or turf reinforcement matting will be used to stabilize slopes that become exposed during installation of access roads, during rainfall events or to stabilize intermittent streams disturbed during construction of road crossings. Erosion control matting will be combined with revegetation techniques.
- Control concrete washout area: Concrete washout will be handled to prevent concrete washout water from impacting soils. Washout procedures will follow the guidelines in Exhibit V.
- Manage soil stockpiles: Soils excavated to create footings and foundations for facilities will be temporarily stockpiled and used as backfill at the completion of the footing or facility. While the material is stockpiled, perimeter controls will be established and the stockpiled material will be covered as necessary with mulch, by plastic sheeting and other methods to prevent erosion and sedimentation.
- Install check dams, sediment traps, and sediment basins: Check dams and sediment traps will be used during construction near tributaries and existing drainages. The check dams and sediment traps will minimize downstream disturbances and sedimentation of creeks. A sediment basin is a constructed temporary pond built to capture eroded soils that wash off from larger construction sites during rain storms. The sediment-laden soil settles in the pond before the runoff is discharged.

For roads, IPC will reduce soil erosion by constructing roads with frequent road drainage structures, maintaining those structures as needed, avoiding locations that generate more road surface and ditch runoff, reducing the frequency of road grading, closing access roads to the public where possible, and using effective erosion control measures. Roads retained for operations will be seeded and revegetated, which will limit surface erosion, and vehicles will drive over the vegetation. Access roads also will be repaired, as necessary, but not routinely graded. The small amount of traffic on permanent access roads during maintenance activities and inspections is not anticipated to result in soil erosion.

Mitigation for Wind Erosion

Wind erodibility is measured in average soil loss per year. However, the wind erodibility likely varies seasonally in response to soil moisture, summer heating, and similar climate factors. To mitigate the risk of accelerating soil erosion by wind in areas rated with wind erodibility groups 1 through 4, IPC will implement reseeding efforts, apply mulch, and water for dust control to minimize potential erosion by wind on the disturbed soils during construction and over the long term. Areas that are susceptible to wind erosion that will be disturbed by construction activities and not permanently covered by aboveground facilities will be vegetated using a seed mixture specified by the ODA, BLM, USFS, or other agencies as being capable of surviving in local conditions and withstanding burial and deflation from wind processes. Native species will be used and, if any non-native species are required for specific problem areas, species will be selected that will not become nuisance species to the surrounding areas.

Disturbed areas susceptible to wind erosion will be hydroseeded when temperatures and moisture levels are conducive to seed germination.

Mitigation for Soil Compaction

STATSGO soil data suggest that highly compactible soils are generally not present in the analysis area. However, IPC will minimize soil compaction, rutting, and structural damage by avoiding activities when soils are wet. To the extent possible, mechanized clearing and maintenance will occur in late summer and early fall months. Regrading, recontouring, scarifying, and final cleanup activities after construction will mitigate potential soil compaction.

However, because all soil has at least some potential for soil compaction, BMPs will be applied following construction to rip, loosen, or otherwise relieve soil compaction to restore the productive potential for soil in temporary disturbance areas.

Soil compaction would not be significant during operations. Travel is infrequent and mostly on already established travelways. Mitigation for soil compaction would typically not be necessary during the operations phase. However, if short-term repair of a particular area were required, local soil loosening may be necessary to facilitate reclamation at the end of the repair interval. Although decommissioning is not planned, impacts from soil compaction during decommissioning will be similar to those in the construction phase.

Soil Revegetation and Reclamation

After completion of construction activities, compacted soils in non-agricultural areas will be mechanically loosened where necessary. Previously stockpiled and salvaged topsoil will be replaced, and vegetation reestablished as appropriate for the location. In cropped agricultural areas, IPC will work in consultation with local landowners and agricultural operators to restore crops or replace productive soil to the extent practicable. Slopes and cut banks will be stabilized with riprap and/or planted or seeded with vegetation, and Project facilities will be monitored and maintained to prevent erosion for the life of the Project. Revegetation actions and activities will be presented as part of the project's draft Vegetation Management Plan (see Exhibit P, Attachment P-5).

- Shallow Bedrock: Restoration of soils with exposed bedrock or shallow bedrock may require adaptive seed mixtures and implementation of revegetation practices (i.e., fertilization, mulching, monitoring) to enhance revegetation success. Revegetation of areas with extensive rock outcrop may not be possible.
- Droughty Soils. Droughty soils may not hold enough water within the root zone to support plant life, making revegetation difficult. In areas of droughty soils, the soil surfaces will be mulched and stabilized to minimize wind erosion and to conserve soil moisture.
- Large Stones. Rocks excavated during foundation work will be kept separate from topsoil during construction and during surface preparation as part of restoration. The rock removed during construction will be moved to designated onsite locations.
- High Water Table. Depending on the specific time of construction, dewatering may be required for foundation installation in areas with shallow saturated soil zones. Water associated with dewatering will be pumped to a discharge structure that is appropriately sized for the discharge volume. Water associated with dewatering will not be directly discharged to water bodies. IPC will minimize the potential for dewatering by scheduling the majority of construction activities during the dry season.
- Hydric Soils. Construction activities will include provisions for construction in areas of saturated soils, such as postponing soil disturbances when soils were excessively wet. The first alternative will be to avoid these areas, similar to avoiding steep slopes. Mitigation measures described in IPC's ESCP will be used during construction to minimize potential impacts to wetlands and hydric soils. With these measures, such as segregating topsoil, leaving root systems intact during vegetation removal, using low ground-weight equipment or prefabricated equipment mats, installing permanent and temporary erosion control near water bodies, using breakers or sealing foundation bottoms to maintain wetland hydrology, constructing during dryer seasons and monitoring, impacts are not anticipated to hydric soils.

The presence of some combination of stony-rocky, droughty, or shallow bedrock soil will be considered when designing a reclamation or revegetation plan for the Project. Project revegetation is further discussed in the draft Reclamation and Revegetation Plan (see Exhibit P, Attachment P-4). Reclamation predominantly occurs immediately following construction; therefore, reclamation potential was not assessed for the permanent disturbance area of the operations phase.

Mitigation of Farmland and Forested Areas

The impacts of the Project on farmland and forested areas will be reduced through cooperation and consultation with agencies and landowners. The impacts will include lower (or no) production for a short period during the construction phase. Following construction, the right-of-way may continue to be used for farming practices, except where aboveground facilities will be located. However, for safety and reliability reasons, trees cannot be restored beneath the transmission lines. IPC will implement minimization and mitigation measures for impacts to forest and farmland, such as topsoil segregation, stockpiling and salvaging, subsoiling for deep soils, scarification, and subsequent testing to ensure that potential compaction was removed. Topsoil salvaging and segregation will occur in these areas to minimize potential impacts to soil and agricultural productivity. Construction in active agricultural areas will be prioritized in the winter, outside of the typical agricultural period, to minimize impacts to agricultural activities. The winter construction schedule also will allow any irrigation canals to be crossed when they are mostly dry and out of operation. The only long-term and permanent impacts to high value farmland soils from the Project will be associated with the permanent infrastructure (towers, roads). Exhibit K presents additional information pertaining to land use, and Attachment K-1 of Exhibit K is an Agricultural Assessment describing current agricultural conditions in the analysis area, including the types of agriculture and the specific crops grown. Appendix B to the Agricultural Assessment, the Agricultural Impacts Mitigation Plan (AIMP), provides additional detail regarding IPC’s proposed measures for mitigating impacts to productive soils and agricultural/forest operations that require or depend on those soils.

3.3.4.3 Adherence to Federal Agency Land Use Plans

Although not required as part of the EFSC process, applicable federal land use plans will inform the development of BMPs to minimize and mitigate impacts to soils. IPC will demonstrate adherence to the goals and directives of the BLM and USFS management plans for soil disturbances on federal lands. Several BLM Resource Management Plans (RMPs) and the Wallowa-Whitman National Forest Land and Resource Management Plan (LRMP; USFS 1990) contain requirements for minimizing erosion and maintaining productive use of soils within their jurisdictions. BLM or USFS soil directives include the following:

Baker RMP, Record of Decision (1989)*:* The Baker RMP (BLM 1989) contains a management directive that soils will be managed to maintain productivity and minimize erosion. To implement that management directive, the plan states:

- *Actions should be planned to coordinate soil, water, and air concerns and activities with other resources in all phases of management actions, from the planning stage to final monitoring of the results.*
- *Review all proposed resource projects and surface-disturbing activities to ensure that soils and watersheds are protected, rehabilitated, or improved.*
- *Projects shall be monitored to ensure that stipulations and specifications for soil and water protection achieve the desired results.*

- *Standard design features normally incorporated as needed into specific surface disturbing activity plans and authorizations include: scalping, saving, and respreading available top soil; regrading to natural contours; reestablish appropriate stabilizing vegetation; and water erosion and runoff prevention measures, such as waterbars, benches, and drainage systems.*
- *Management activities in riparian areas will be designed to maintain or improve riparian values; roads and utility corridors will avoid riparian zones to the extent practical.*

Southeastern Oregon RMP (2001): The Southeastern Oregon RMP (BLM 2001) contains the following BMPs for soil erosion protection:

- *Surface-Disturbing Activities: 1) Special design and reclamation measures may be required to protect scenic and natural landscape values. This may include transplanting trees and shrubs, mulching and fertilizing disturbed areas, using low profile permanent facilities, and painting to minimize visual contrasts. Surface-disturbing activities may be moved to avoid sensitive areas or to reduce the visual effects of the proposal. 2) Reclamation should be implemented concurrent with construction and site operations to the fullest extent possible. Final reclamation actions shall be initiated within 6 months of the termination of operations unless otherwise approved in writing by the authorized officer. 3) Fill material should be pushed into cut areas and up over back slopes. Depressions should not be left that would trap water or form ponds.*
- *Rights-of-way and Utility Corridors: 1) ROWs and utility corridors should use areas adjoining or adjacent to previously disturbed areas whenever possible, rather than traverse undisturbed communities. 2) Waterbars or dikes should be constructed on all of the ROWs and utility corridors, and across the full width of the disturbed area, as directed by the authorized officer. 3) Disturbed areas within road ROWs and utility corridors should be stabilized by vegetation practices designed to hold soil in place and minimize erosion. Vegetation cover should be reestablished to increase infiltration and provide additional protection from erosion. 4) Sediment barriers should be constructed when needed to slow runoff, allow deposition of sediment, and prevent transport from the site. Straining or filtration mechanisms may also be employed for the removal of sediment from runoff.*

Wallowa-Whitman National Forest Land and Resource Management Plan (1990): The soil goal in the Wallowa-Whitman LRMP (USFS 1990) is to maintain or enhance soil productivity. The LRMP's standard and guidelines include the following:

- *Conflicts with Other Uses. Give maintenance of soil productivity and stability priority over uses described or implied in all other management direction, standards, or guidelines.*
- *Protection. Give special consideration to scablands or other lands having shallow soils during Project analysis. Such analysis will especially consider the fragile nature of the soils involved and, as necessary, provide protection and other mitigation measures.*

3.3.4.4 Soil Mitigation Summary

Soil-disturbing activities comply with state and federal planning directives. Project activities on federal lands, including stormwater management implementation and reclamation, comply with the BLM goals and directives found in the Baker RMP, Record of Decision (BLM 1989) and the Southeastern Oregon RMP (BLM 2001). Project activities on National Forest land are consistent with the Wallowa-Whitman LRMP (1990). Soil-disturbing activities on state or private land are covered by the 1200-C stormwater permit that will be obtained prior to construction activities.

Soil in temporary disturbance areas will be temporarily exposed to soil erosion. However, the impacts of soil erosion should be minimized by implementation of the ODEQ-approved 1200-C stormwater permit including stormwater BMPs described in the ESCP. Soil reclamation will occur as soon as feasible after construction ends in any particular area. Reclamation efforts will continue in accordance with the Vegetation Management Plan (Exhibit P, Attachment P-5).

The potential soil erosion impacts during operations are negligible. Although Project retirement is not anticipated, if retirement is conducted, it would be undertaken as a new construction project, and a valid stormwater permit and ESCP would be in effect to reduce soil erosion. The stormwater mitigation measures and reclamation efforts will result in a Project that does not cause adverse impact to soil from soil erosion.

3.3.5 Soil Monitoring

> **OAR 345-021-0010(1)(i)(E)**
>
> The applicant's proposed monitoring program, if any, for adverse impact to soils during construction and operation.

Monitoring will occur during Project construction in accordance with the requirements of the 1200-C stormwater permit. Operations phase operation and maintenance activities will include site observations of Project features during bi-annual maintenance inspections. If Project-installed structures are resulting in erosion, corrective action and additional mitigation measures will be taken.

4.0 CONCLUSION

In compliance with OAR 345-022-0022, Exhibit I demonstrates that the design, construction and operation of the Project, taking into account mitigation, are not likely to result in a significant adverse impact to soils. With regard to erosion and stormwater impacts, construction and operation of the Project will follow BMPs in compliance with the 1200-C permit issued by ODEQ.

5.0 SUBMITTAL AND APPROVAL REQUIREMENTS MATRICES

Tables I-12 and I-13 provide cross references between Exhibit submittal requirements of OAR 345-021-0010 and the Council's Approval standards of OAR 345-022-0022 and where discussion can be found in the Exhibit.

Table I-12. Submittal Requirements Matrix

Requirement	Location
OAR 345-021-0010(1)(i)	
(i) **Exhibit I. I**nformation from reasonably available sources regarding soil conditions and uses in the analysis area, providing evidence to support findings by the Council as required by OAR 345-022-0022, including:	
(A) Identification and description of the major soil types in the analysis area.	Section 3.3.1
(B) Identification and description of current land uses in the analysis area, such as growing crops, that require or depend on productive soils.	Section 3.3.2
(C) Identification and assessment of significant potential adverse impact to soils from construction, operation and retirement of the facility, including, but not limited to, erosion and chemical factors such as salt deposition from cooling towers, land application of liquid effluent, and chemical spills.	Section 3.3.3

Table I-12. Submittal Requirements Matrix (continued)

Requirement	Location
(D) A description of any measures the applicant proposes to avoid or mitigate adverse impact to soils.	Section 3.3.4
(E) The applicant's proposed monitoring program, if any, for adverse impact to soils during construction and operation.	Section 3.3.5
Project Order Comments	
The applicant should include information describing the impact of construction and operation of the proposed facility on soil productivity in affected farm and forest zones. Describe all measures proposed to maintain soil productivity during construction and operation. The applicant should consult with local farmers, landowners, soil conservation districts, and federal land managers regarding mitigation of impacts to farm and forest lands. Specific discussion should include weed encroachment, interference with irrigation equipment, and the potential for restrictions to aerial applications caused by the proximity of transmission towers.	Sections 3.3.2, 3.3.3, and 3.3.4
Exhibit I should also include the required evidence related to the federally-delegated National Pollutant Discharge Elimination System (NPDES) 1200-C permit application (alternatively, the NPDES information could be incorporated into Exhibit BB—Other Information). As stated in Section I(c) of this project order, OAR 345-021-0000(7) requires the applicant to submit one copy of all applications for federally-delegated permits, or provide a schedule of the date by which the applicant intends to submit the application. In addition to a copy of the federally delegated permit application, the applicant must also provide a letter or other indication from the ODEQ stating that the agency has received a permit application from the applicant, identifying any additional information the agency is likely to need from the applicant based on the agency's review of the application, and estimating the when the agency will complete its review and issue a permit decision.	Section 3.3.4.2, Attachment I-3
The applicant should emphasize discussion of erosion control in Exhibit I, especially for impacted forestland to minimize and mitigate damage to forest soils and streams. A draft erosion and sediment control plan must be provided for review (if not already incorporated into an attached NPDES permit application).	Sections 3.3.3 and 3.3.4, and Attachment I-3

Table I-13. Approval Standard

Requirement	Location
OAR 345-022-0022	
To issue a site certificate, the Council must find that the design, construction and operation of the facility, taking into account mitigation, are not likely to result in a significant adverse impact to soils including, but not limited to, erosion and chemical factors such as salt deposition from cooling towers, land application of liquid effluent, and chemical spills.	Section 4.0

6.0 RESPONSE TO COMMENTS FROM REVIEWING AGENCIES AND THE PUBLIC

Table I-14 provides a cross reference between comments cited in the Project Order from reviewing agencies and the public and where discussion can be found in the Exhibit.

Table I-14. Reviewing Agency and Public Comments

Reviewing Agency and Public Comments	
Road construction and facility operation impacts that could affect soils should be addressed. Ensure that Exhibit I addresses impacts from road construction and facility operation, sedimentation and runoff to water bodies, soil compaction, potential impacts to farming or fish, revegetation of disturbed sites, and weed control.	Sections 3.3.3 and 3.3.4
Discuss how road use would be limited during wet weather.	Section 3.3.4
Concern for adverse impacts to soil conservation activities in upper Kitchen Creek Valley. Address impacts to active soil conservation projects and proposed mitigation measures.	No Project features are located in the Kitchen Creek Valley.

7.0 REFERENCES

BLM (Bureau of Land Management). 1989. Baker Resource Management Plan Record of Decision. Rangeland Program Summary. BLM-OR-PT-89-10-1792. Available online at: http://www.blm.gov/or/plans/files/Baker_RMP.pdf

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Soil Survey Division Staff. 1993. Soil Survey Manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. Available online at: http://soils.usda.gov/technical/manual/

USFS (U.S. Department of Agriculture, Forest Service). 1990. Land and Resource Management Plan. Wallowa-Whitman National Forest. Pacific Northwest Region. Available online at:

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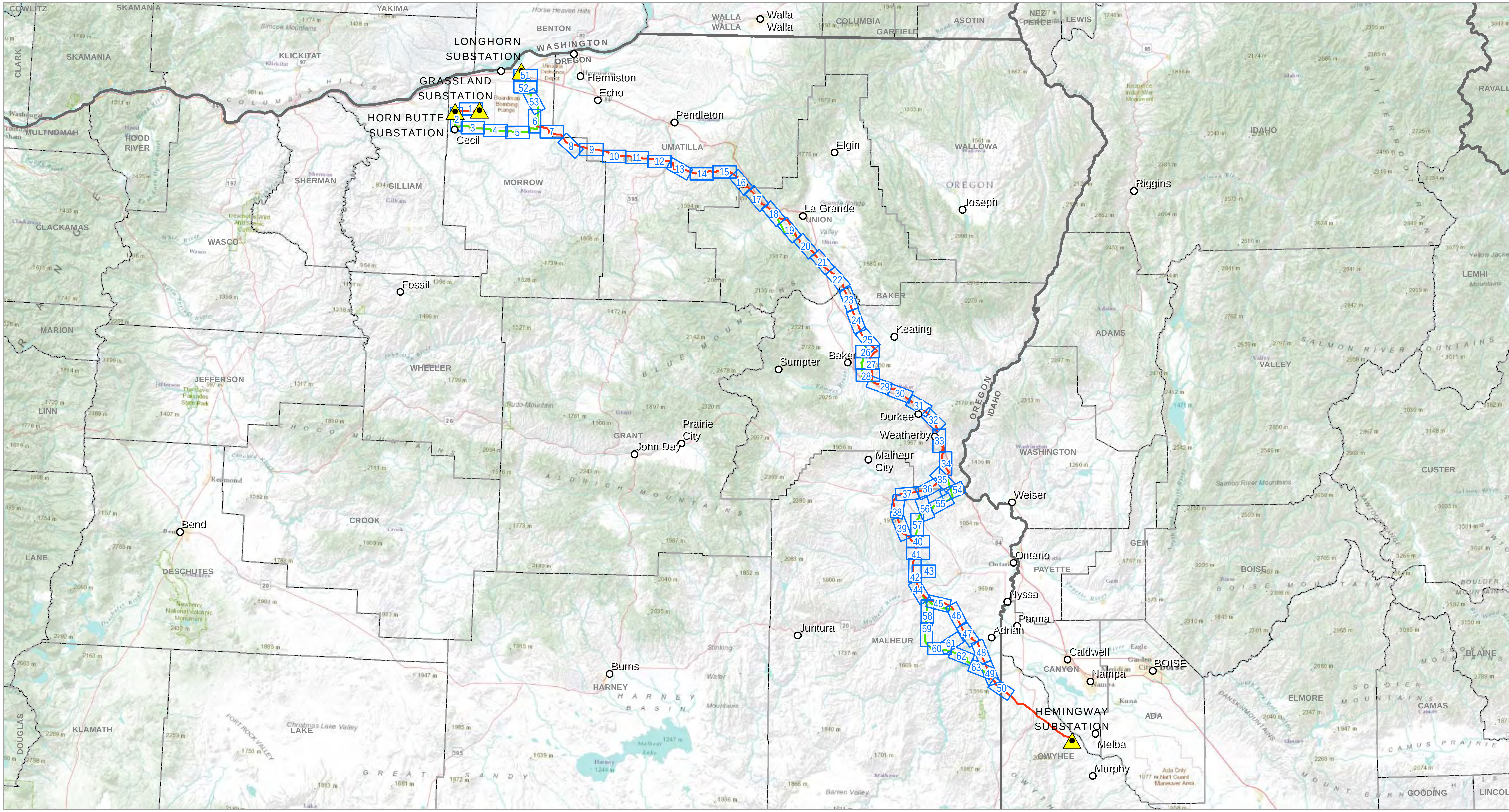
ATTACHMENT I-1
MAPBOOK OF SOIL MAPPING UNITS



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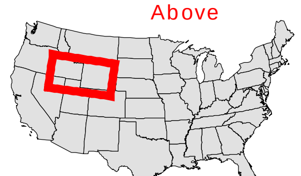

Map Features

- City
- Substation
- Proposed Corridor
- Alternate Corridor
- Figure Index
- County
- State

Attachment I-1

Soil Mapping Units

Index Map

Boardman to Hemingway Transmission Line Project
Oregon - Idaho

February 2013

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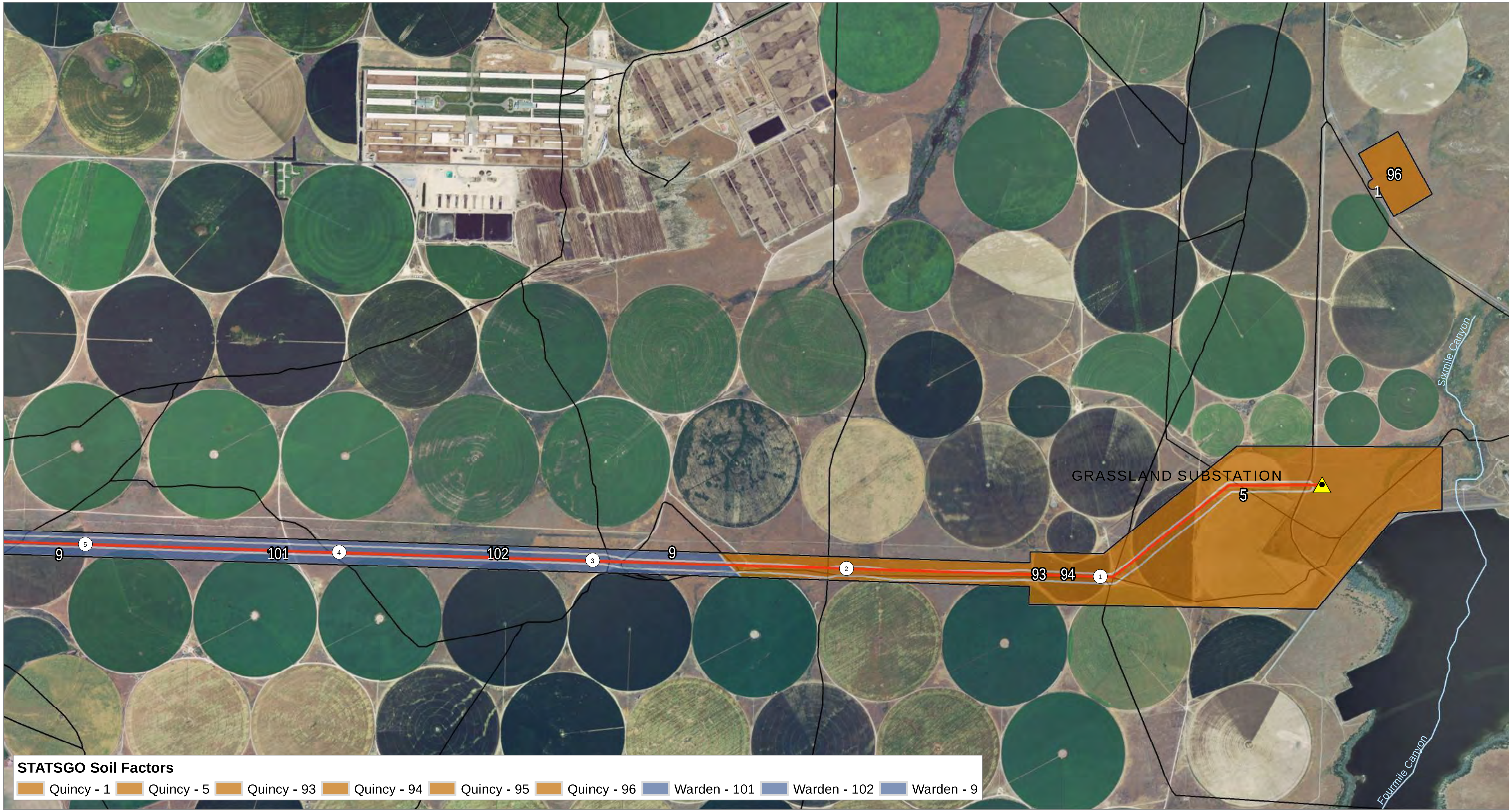

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Project Features

- Proposed Corridor
- Alternate Corridor
- Substation
- Milepost
- Site Boundary

Map Features

- City
- Counties
- River
- State
- Road

Attachment I-1

Soil Mapping Units

Map Sheet 1

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

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Project Features

- Proposed Corridor
- Alternate Corridor
- Substation
- Milepost
- Site Boundary

Map Features

- City
- Counties
- River
- State
- Road

Attachment I-1

Soil Mapping Units

Map Sheet 2

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

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Project Features

- Proposed Corridor
- Alternate Corridor
- Milepost
- Site Boundary

Map Features

- City
- Counties
- River
- State
- Road

Attachment I-1

Soil Mapping Units

Map Sheet 3

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

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Project Features

Proposed Corridor

Alternate Corridor

Milepost

Site Boundary

Map Features

City

Counties

River

State

Road

Attachment I-1

Soil Mapping Units

Map Sheet 4

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

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Project Features

Proposed Corridor
Alternate Corridor
② Milepost
Site Boundary

Map Features

City
Counties
River
State
Road

Attachment I-1

Soil Mapping Units

Map Sheet 5

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

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Project Features

- Proposed Corridor
- Alternate Corridor
- Milepost
- Site Boundary

Map Features

- City
- Counties
- River
- State
- Road

Attachment I-1

Soil Mapping Units

Map Sheet 6

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

IDAHO POWER.
An IDACORP Company

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Project Features

- Proposed Corridor
- Alternate Corridor
- Milepost
- Site Boundary

Map Features

- City
- Counties
- River
- State
- Road

Attachment I-1

Soil Mapping Units

Map Sheet 7

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

IDAHO POWER

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Project Features

- Proposed Corridor
- Alternate Corridor
- Milepost
- Site Boundary

Map Features

- City
- Counties
- River
- State
- Road

Attachment I-1

Soil Mapping Units

Map Sheet 8

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

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Project Features

Proposed Corridor
Alternate Corridor
Milepost
Site Boundary

Map Features

City
Counties
River
State
Road

Attachment I-1

Soil Mapping Units

Map Sheet 9

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

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Project Features

Proposed Corridor

Alternate Corridor

Milepost

Site Boundary

Map Features

City

Counties

River

State

Road

Attachment I-1

Soil Mapping Units

Map Sheet 10

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

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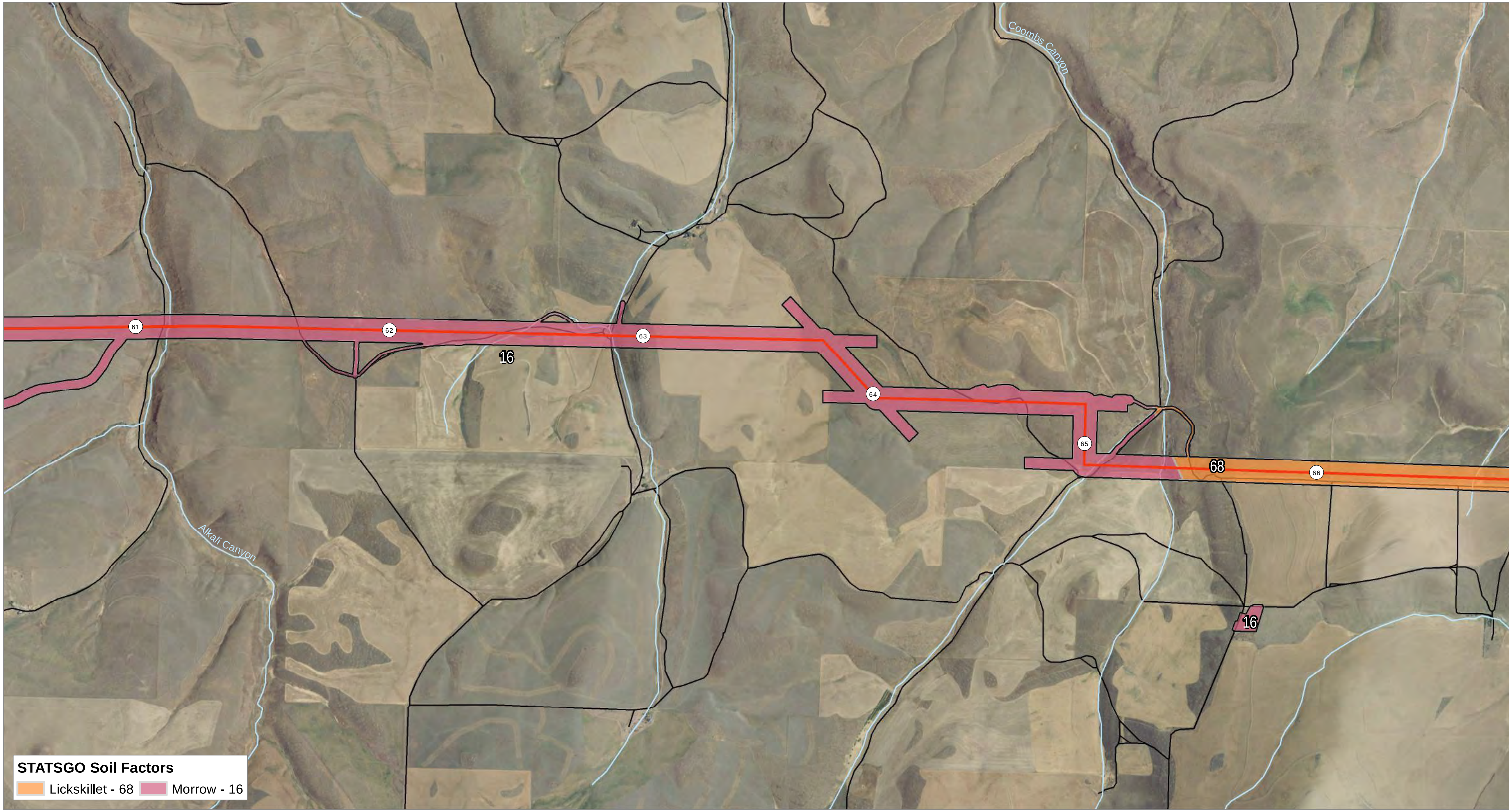

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Project Features

Proposed Corridor
Alternate Corridor
Milepost
Site Boundary

Map Features

City
Counties
River
State
Road

Attachment I-1

Soil Mapping Units

Map Sheet 11

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

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Project Features

- Proposed Corridor
- Alternate Corridor
- Milepost
- Site Boundary

Map Features

- City
- River
- US and State Highway
- Road
- Counties
- State

Attachment I-1

Soil Mapping Units

Map Sheet 12

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

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Project Features

- Proposed Corridor
- Alternate Corridor
- Milepost
- Site Boundary

Map Features

- City
- River
- US and State Highway
- Road
- Counties
- State

Attachment I-1

Soil Mapping Units

Map Sheet 13

Boardman to Hemingway Transmission Line Project
Oregon - Idaho

February 2013

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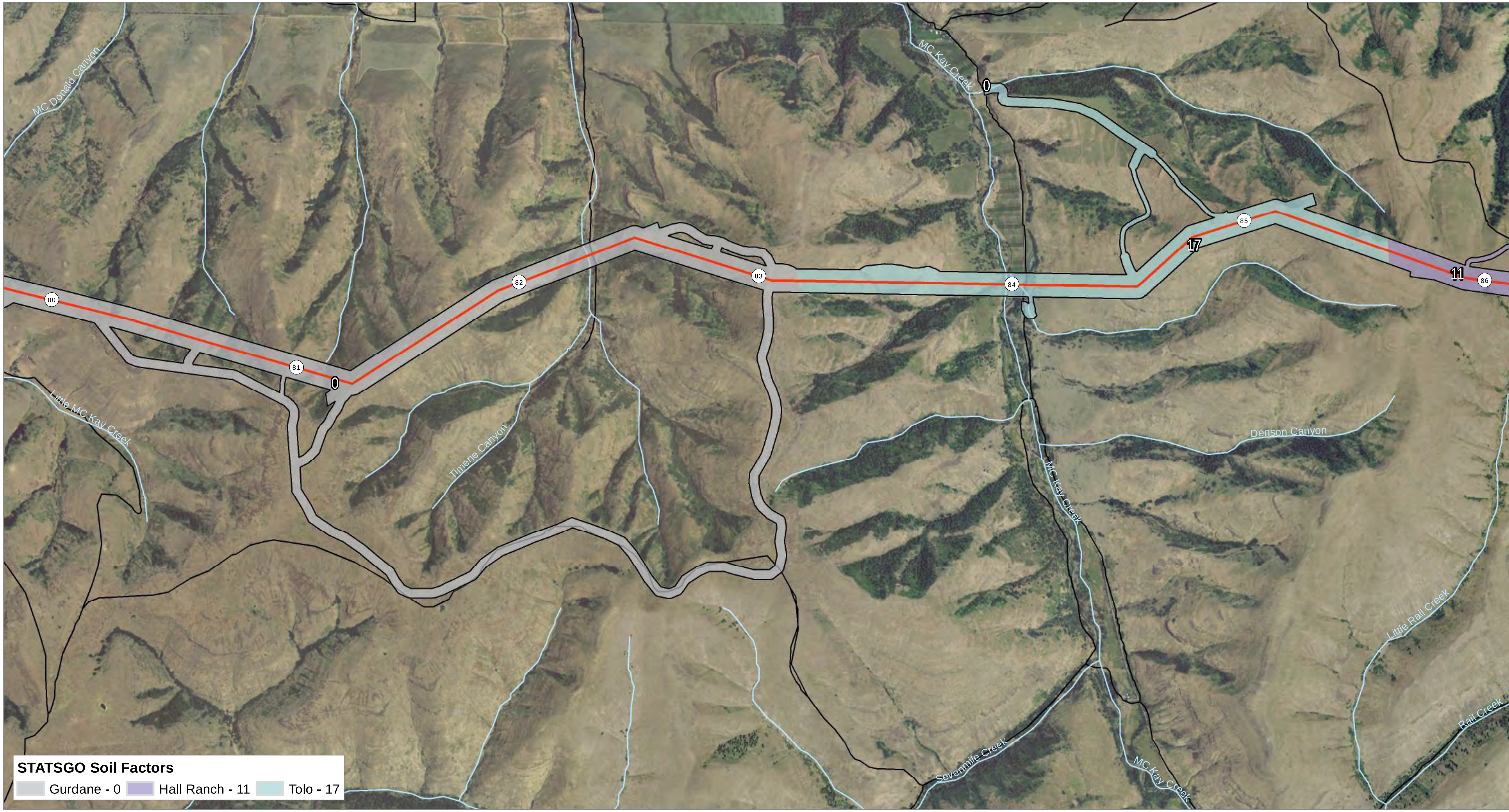

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Project Features

Proposed Corridor
Alternate Corridor
Milepost
Site Boundary

Map Features

City
River
Road
Counties
State

Attachment I-1

Soil Mapping Units

Map Sheet 14

Boardman to Hemingway Transmission Line Project
Oregon - Idaho

February 2013

IDAHO POWER.

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Project Features

Proposed Corridor
Alternate Corridor
Milepost
Site Boundary

Map Features

City
Counties
River
State
Road

Attachment I-1

Soil Mapping Units

Map Sheet 15

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

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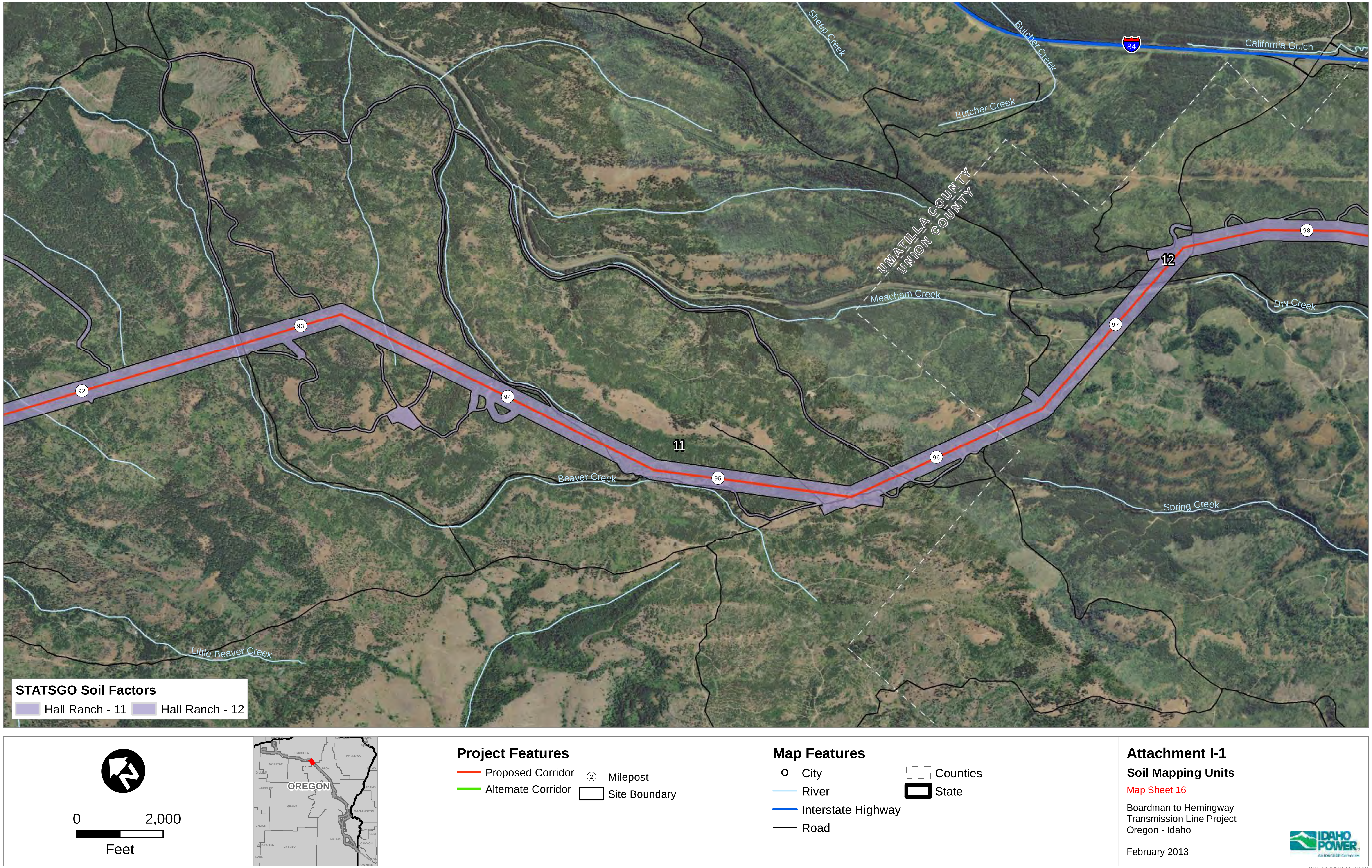

Project Features

Proposed Corridor

Alternate Corridor

Milepost

Site Boundary

Map Features

City

River

Interstate Highway

Road

Counties

State

Attachment I-1

Soil Mapping Units

Map Sheet 16

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

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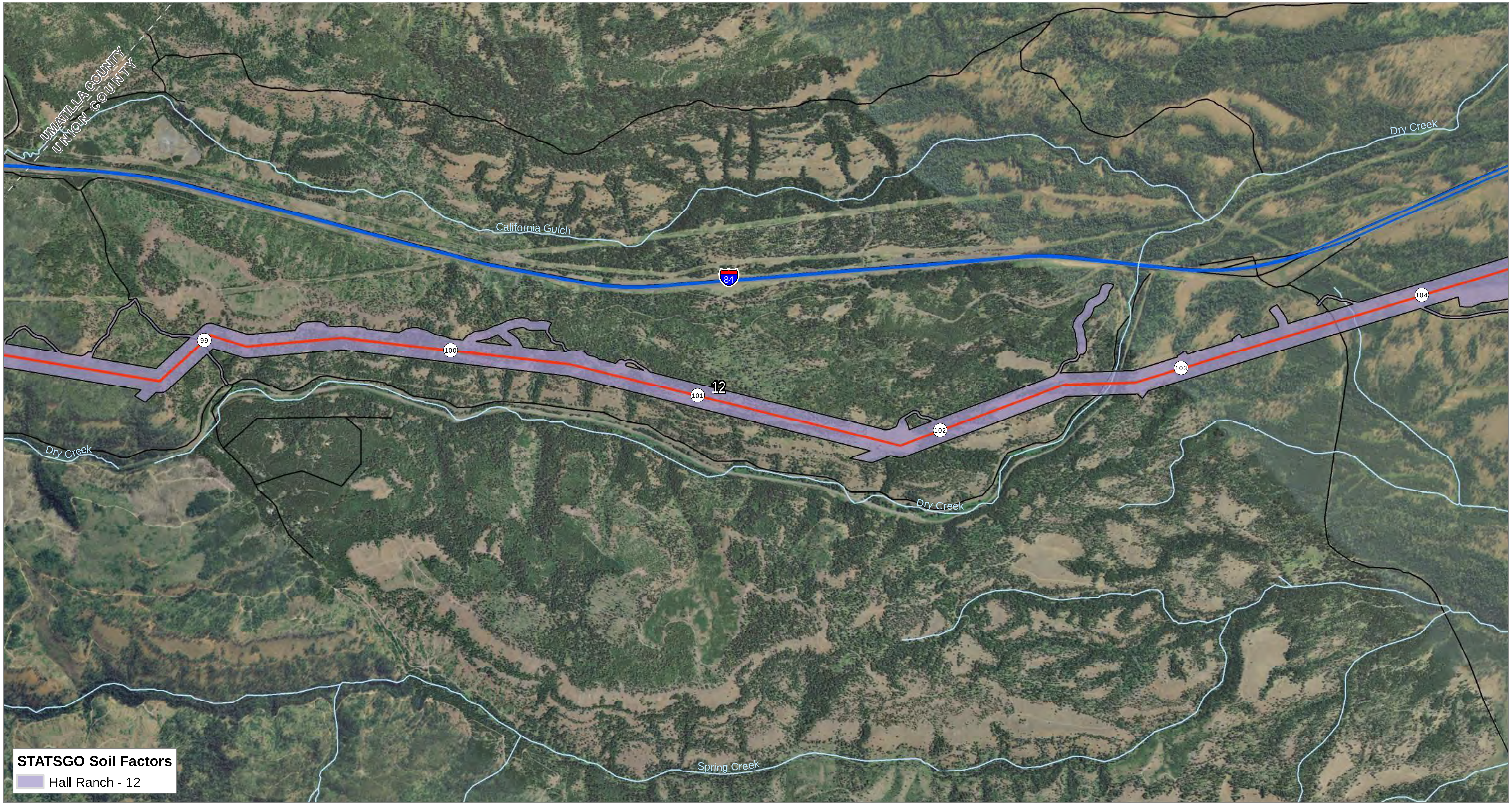

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Project Features
Proposed Corridor
Alternate Corridor
Milepost
Site Boundary

Map Features
City
River
Interstate Highway
Road
Counties
State

Attachment I-1
Soil Mapping Units
Map Sheet 17
Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

Date: 1/17/2013 8:17:22 AM
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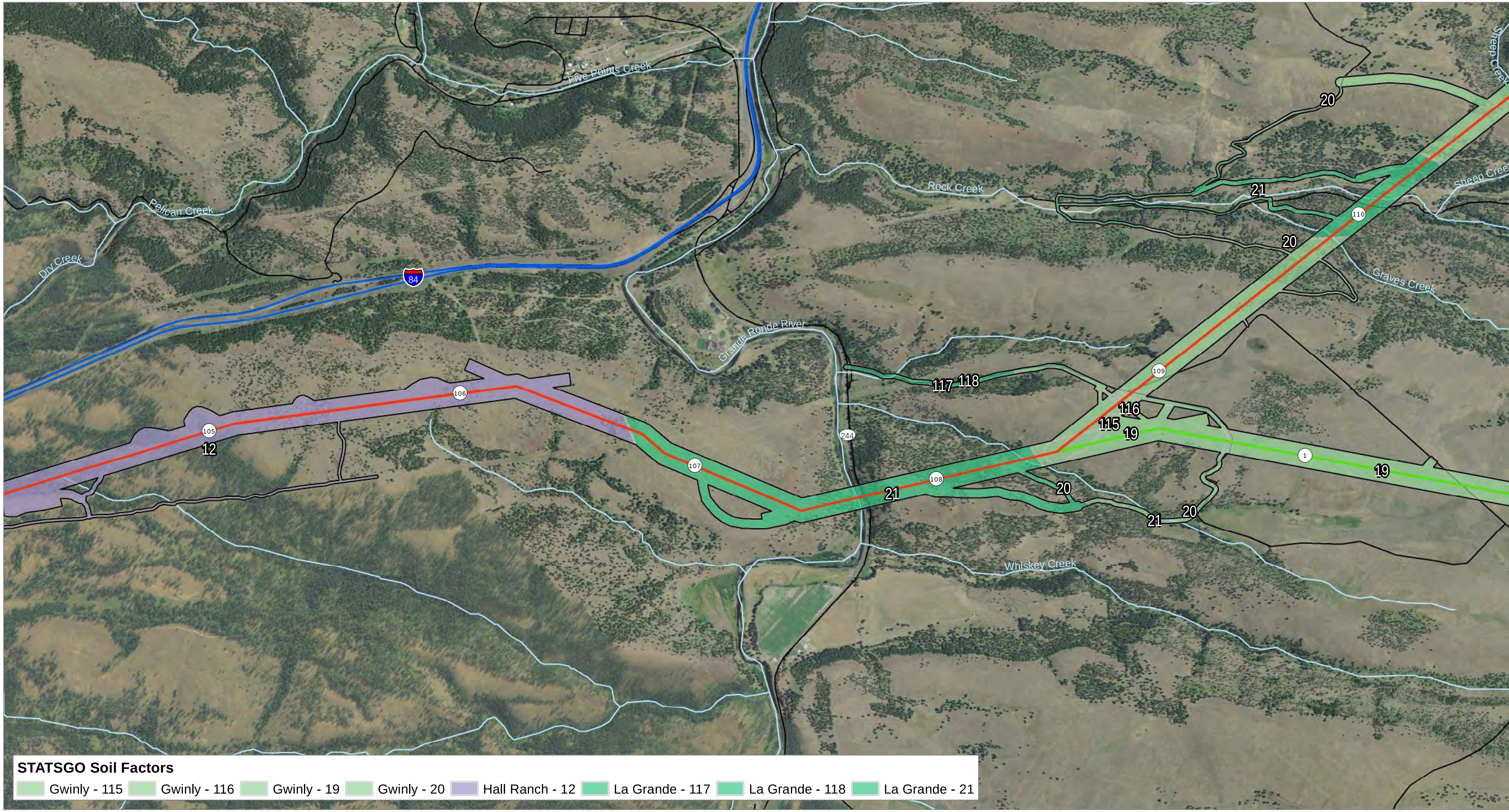

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Project Features

- Proposed Corridor
- Alternate Corridor
- Milepost
- Site Boundary

Map Features

- City
- River
- Interstate Highway
- Road
- Counties
- State

Attachment I-1

Soil Mapping Units

Map Sheet 18

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

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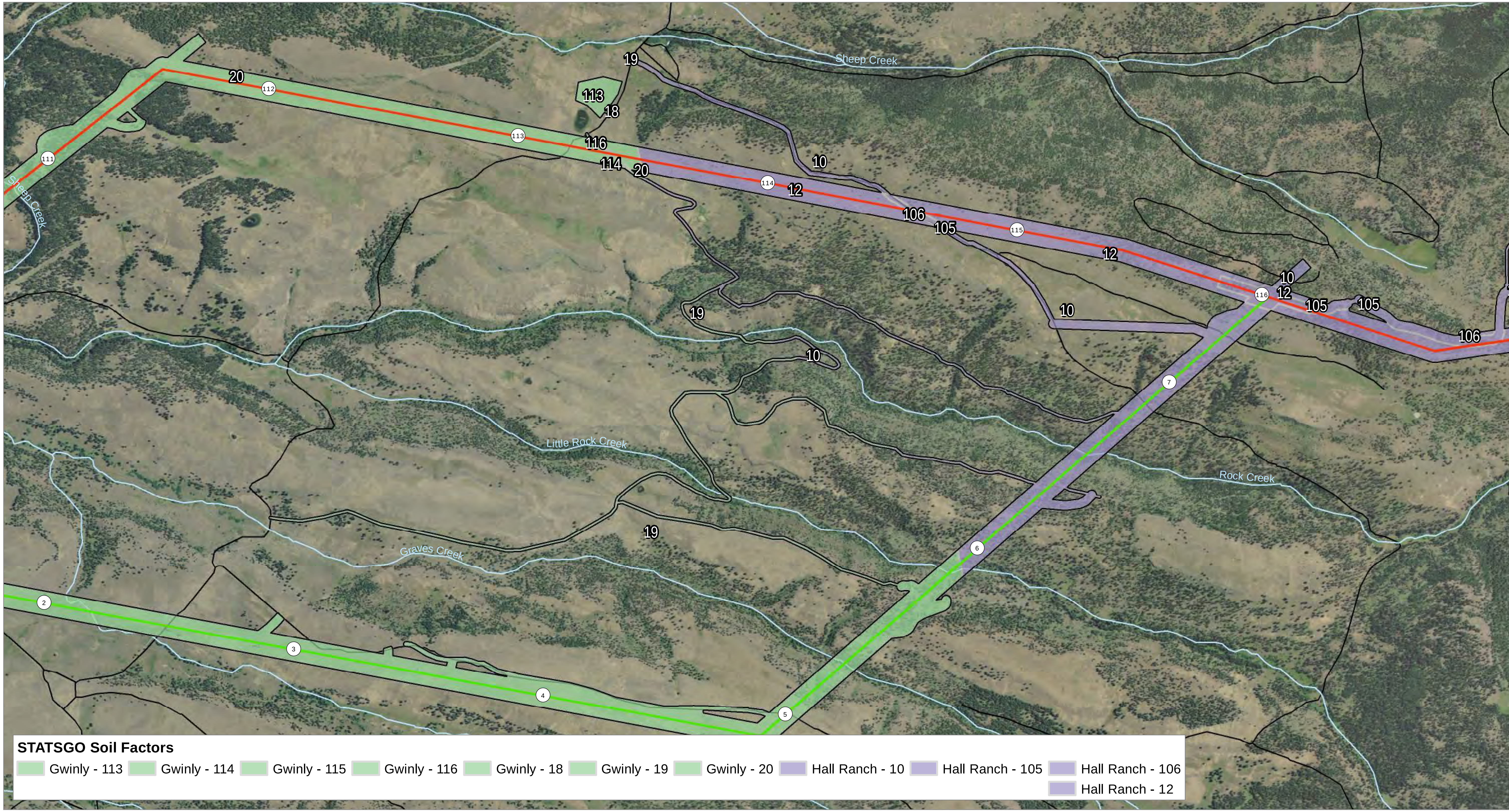

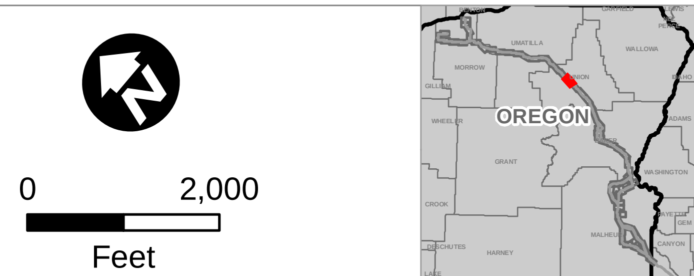

Project Features

- Proposed Corridor
- Alternate Corridor
- Milepost
- Site Boundary

Map Features

- City
- Counties
- River
- State
- Road

Attachment I-1

Soil Mapping Units

Map Sheet 19

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

Date: 1/17/2013 8:17:22 AM
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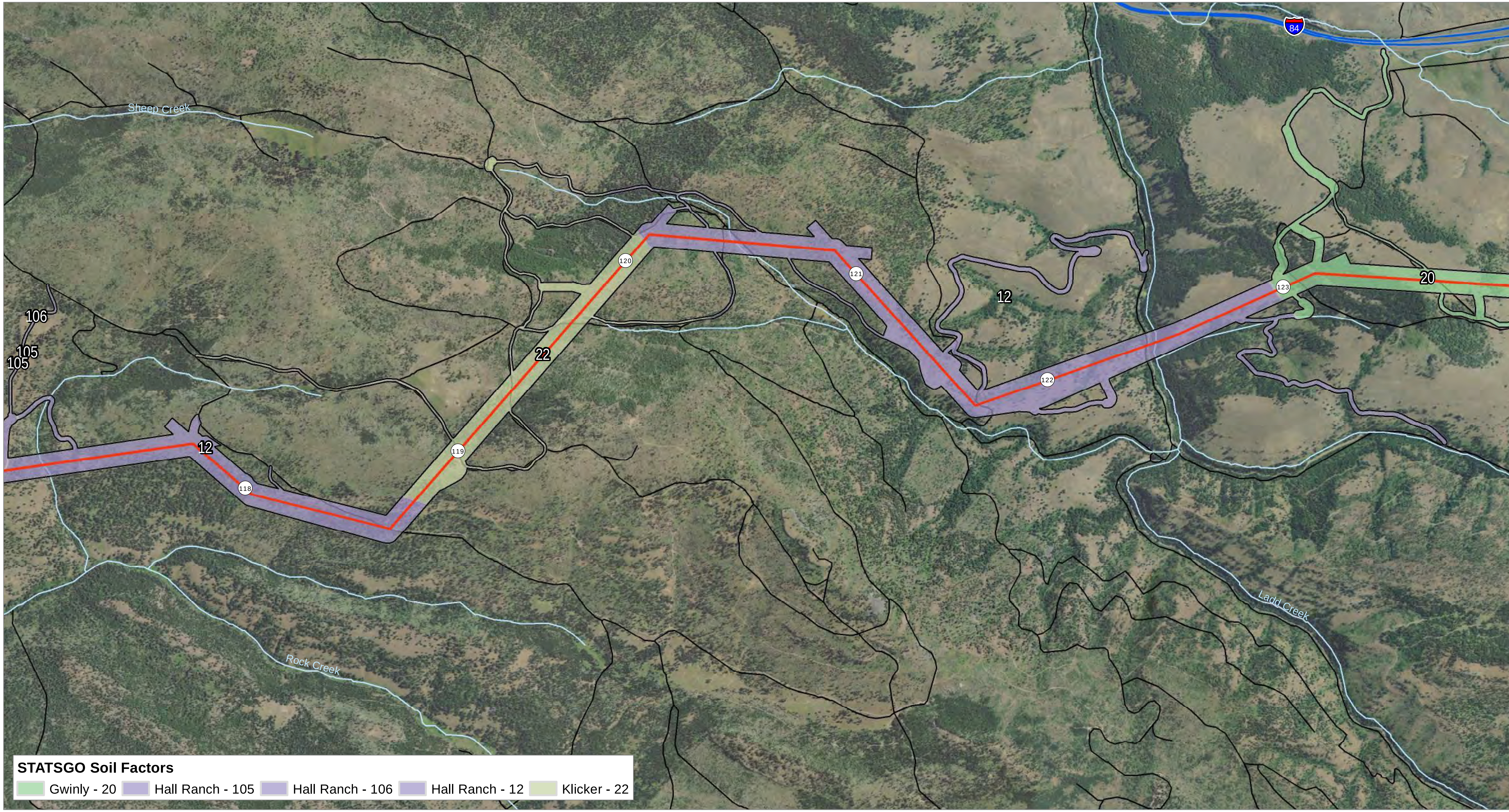

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Project Features

Proposed Corridor

Alternate Corridor

Milepost

Site Boundary

Map Features

City

River

Interstate Highway

Road

Counties

State

Attachment I-1

Soil Mapping Units

Map Sheet 20

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

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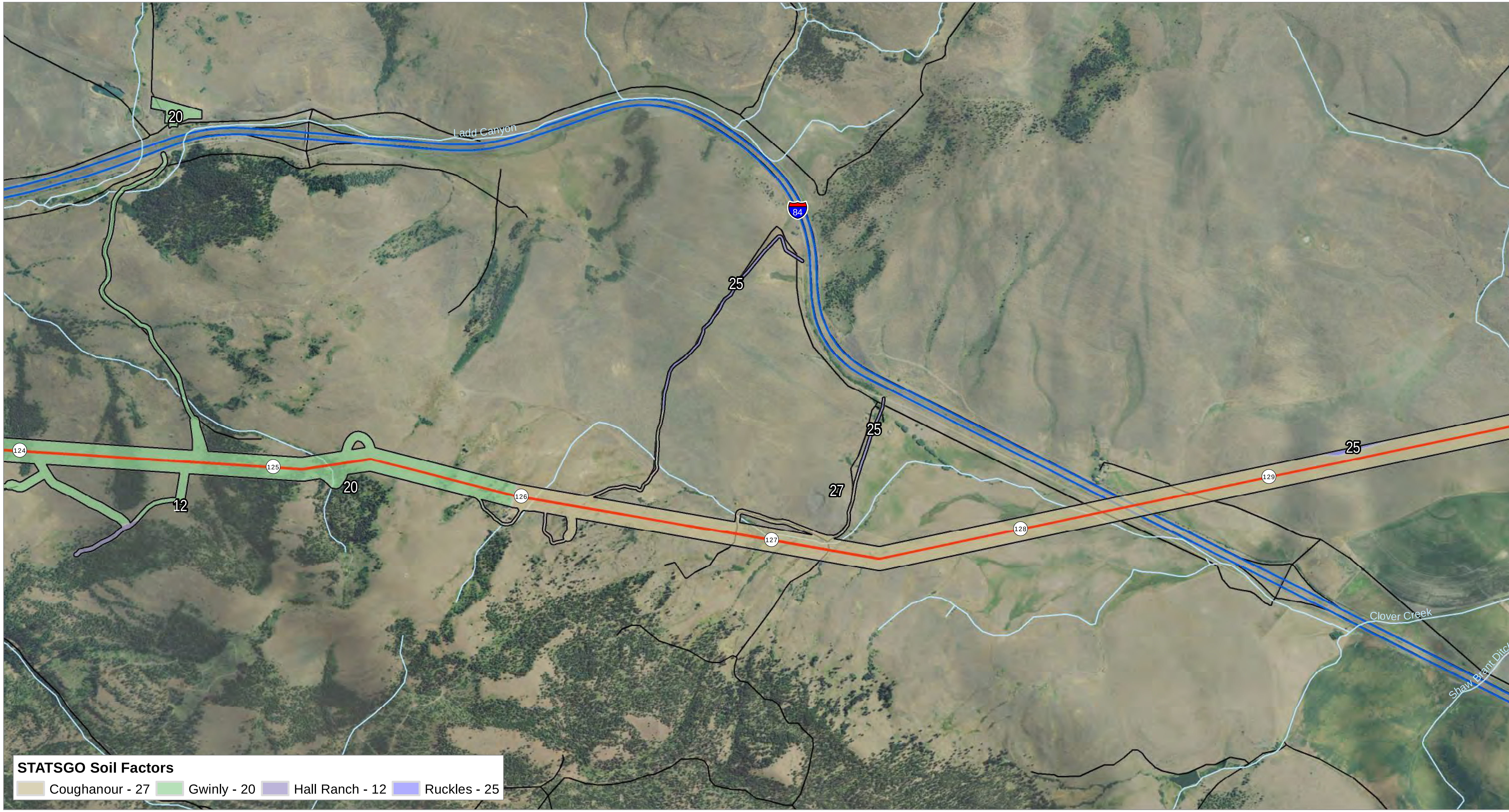

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Project Features

- Proposed Corridor
- Alternate Corridor
- Milepost
- Site Boundary

Map Features

- City
- River
- Interstate Highway
- Road
- Counties
- State

Attachment I-1

Soil Mapping Units

Map Sheet 21

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

IDAHO POWER. An IDACORP Company

Date: 1/17/2013 8:17:22 AM
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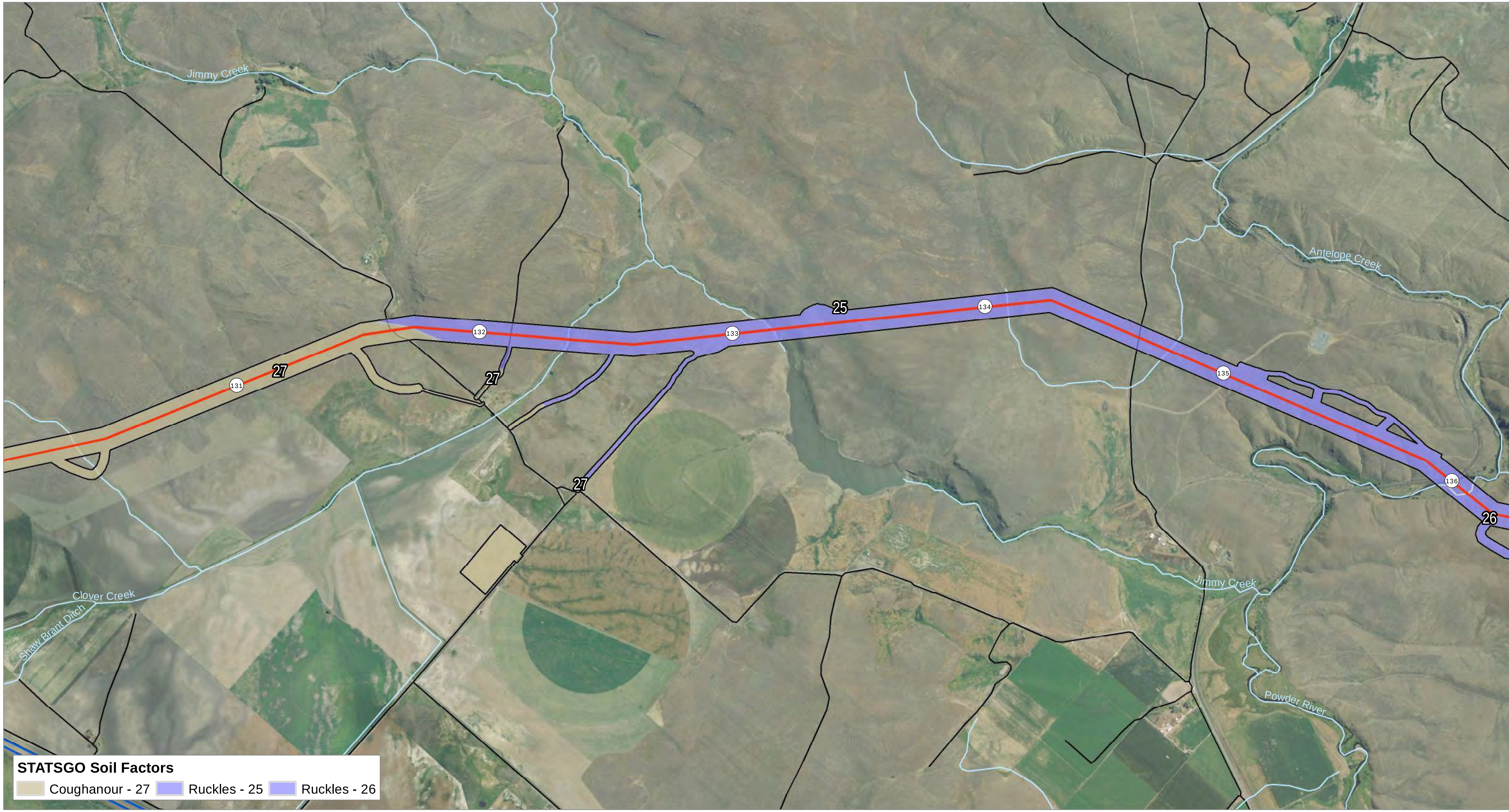

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Project Features

Proposed Corridor
Alternate Corridor
Milepost
Site Boundary

Map Features

City
River
Interstate Highway
Road
Counties
State

Attachment I-1

Soil Mapping Units

Map Sheet 22

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

Date: 1/17/2013 8:17:22 AM
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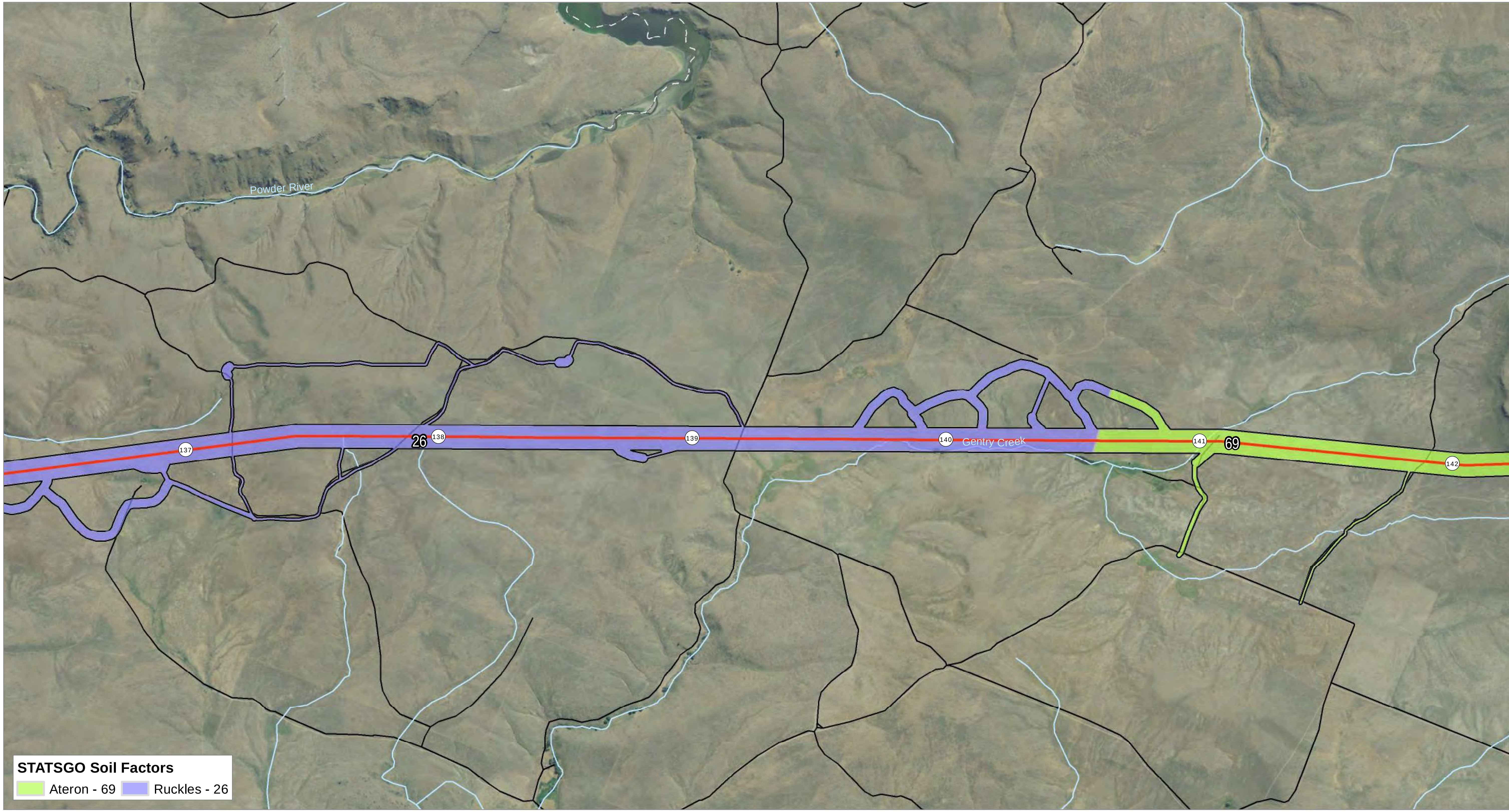

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Project Features

Proposed Corridor
Alternate Corridor
Milepost
Site Boundary

Map Features

City
Counties
River
State
Road

Attachment I-1

Soil Mapping Units

Map Sheet 23

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

Date: 1/17/2013 8:17:22 AM
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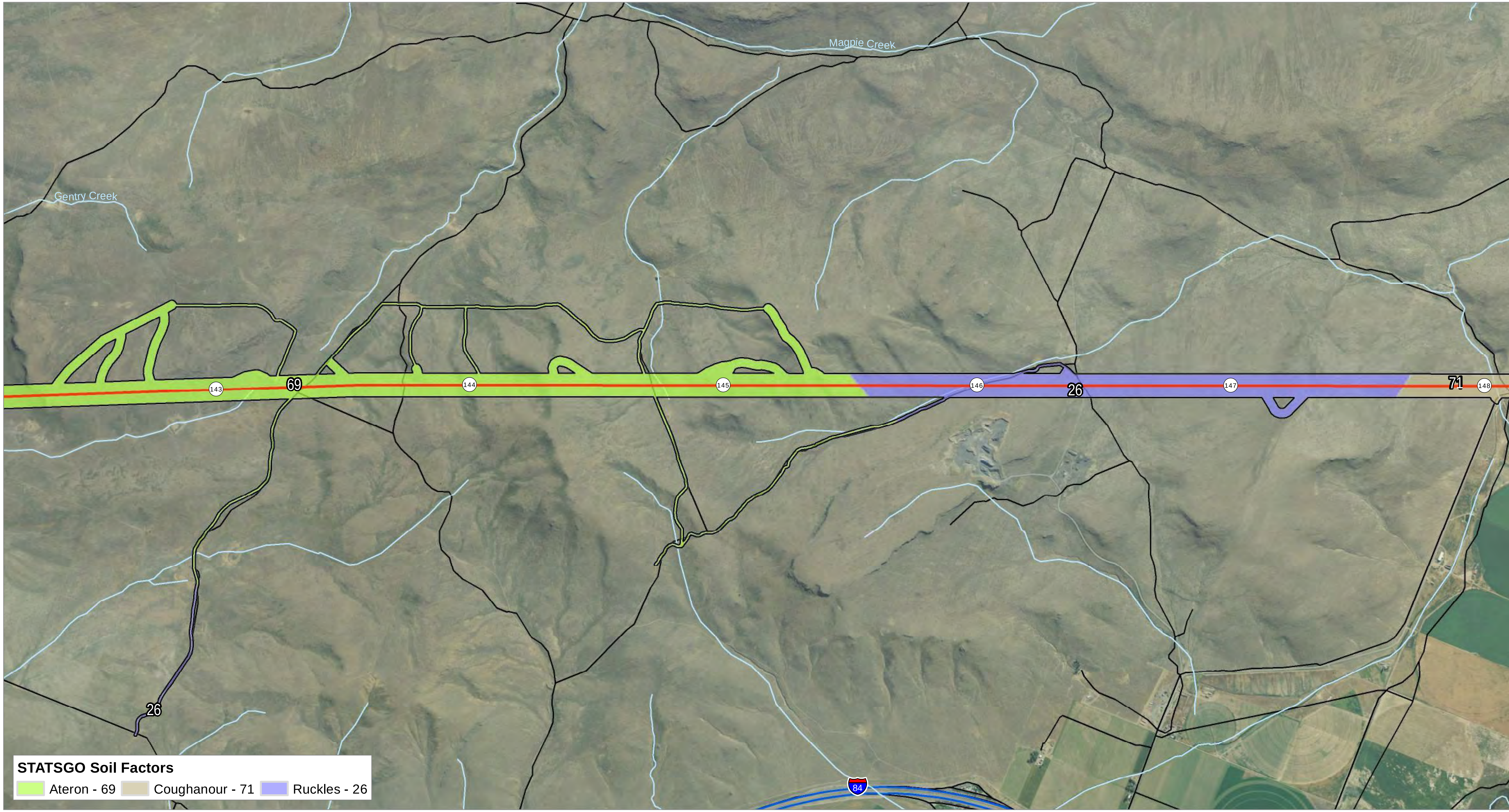

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Project Features

- Proposed Corridor
- Alternate Corridor
- Milepost
- Site Boundary

Map Features

- City
- River
- Interstate Highway
- Road
- Counties
- State

Attachment I-1

Soil Mapping Units

Map Sheet 24

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

Date: 1/17/2013 8:17:22 AM
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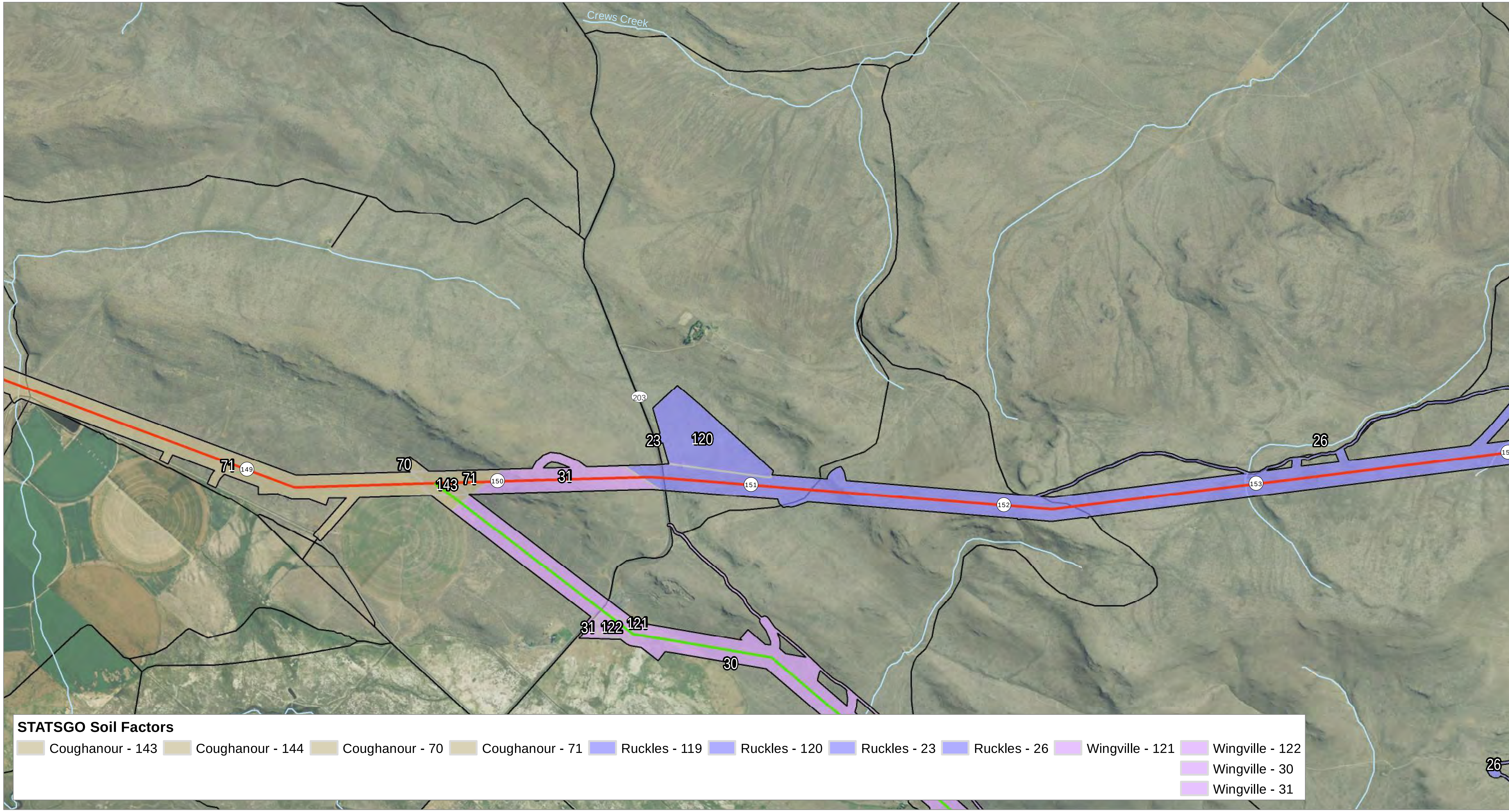

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Feet

Project Features

Proposed Corridor

Alternate Corridor

Milepost

Site Boundary

Map Features

City

Counties

River

State

Road

Attachment I-1

Soil Mapping Units

Map Sheet 25

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

Date: 1/17/2013 8:17:22 AM

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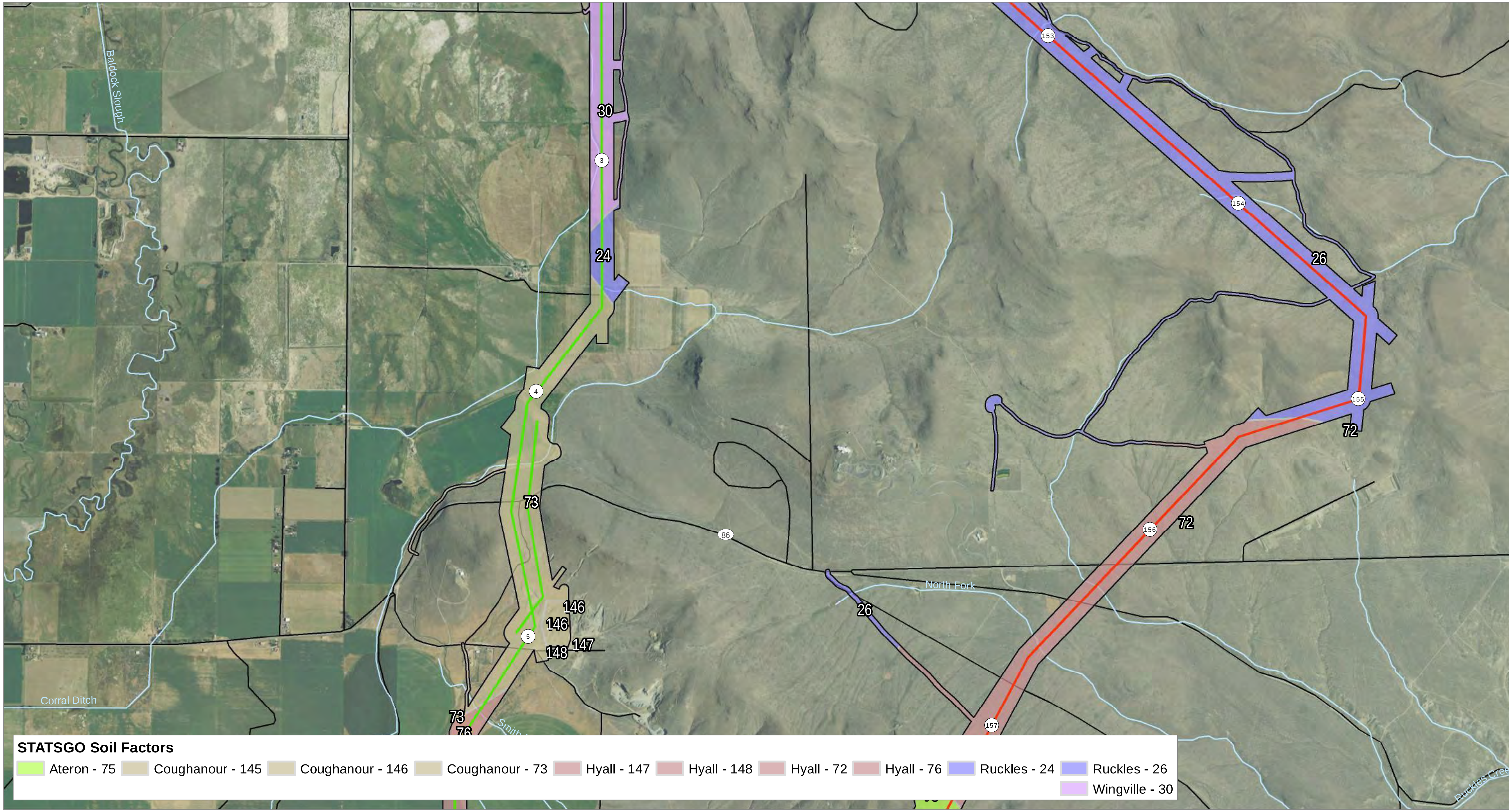

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Project Features
- Proposed Corridor
- Alternate Corridor
- Milepost
- Site Boundary

Map Features
- City
- Counties
- River
- State
- Road

Attachment I-1
Soil Mapping Units
Map Sheet 26

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

Date: 1/17/2013 8:17:22 AM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\011_Other_Resources\Geology_Soils_Minerals\20121018_Exhibit\Figures\SoilFactors.mxd

0 2,000

Feet

Project Features

Proposed Corridor

Alternate Corridor

Milepost

Site Boundary

Map Features

City

Counties

River

State

Road

Attachment I-1

Soil Mapping Units

Map Sheet 27

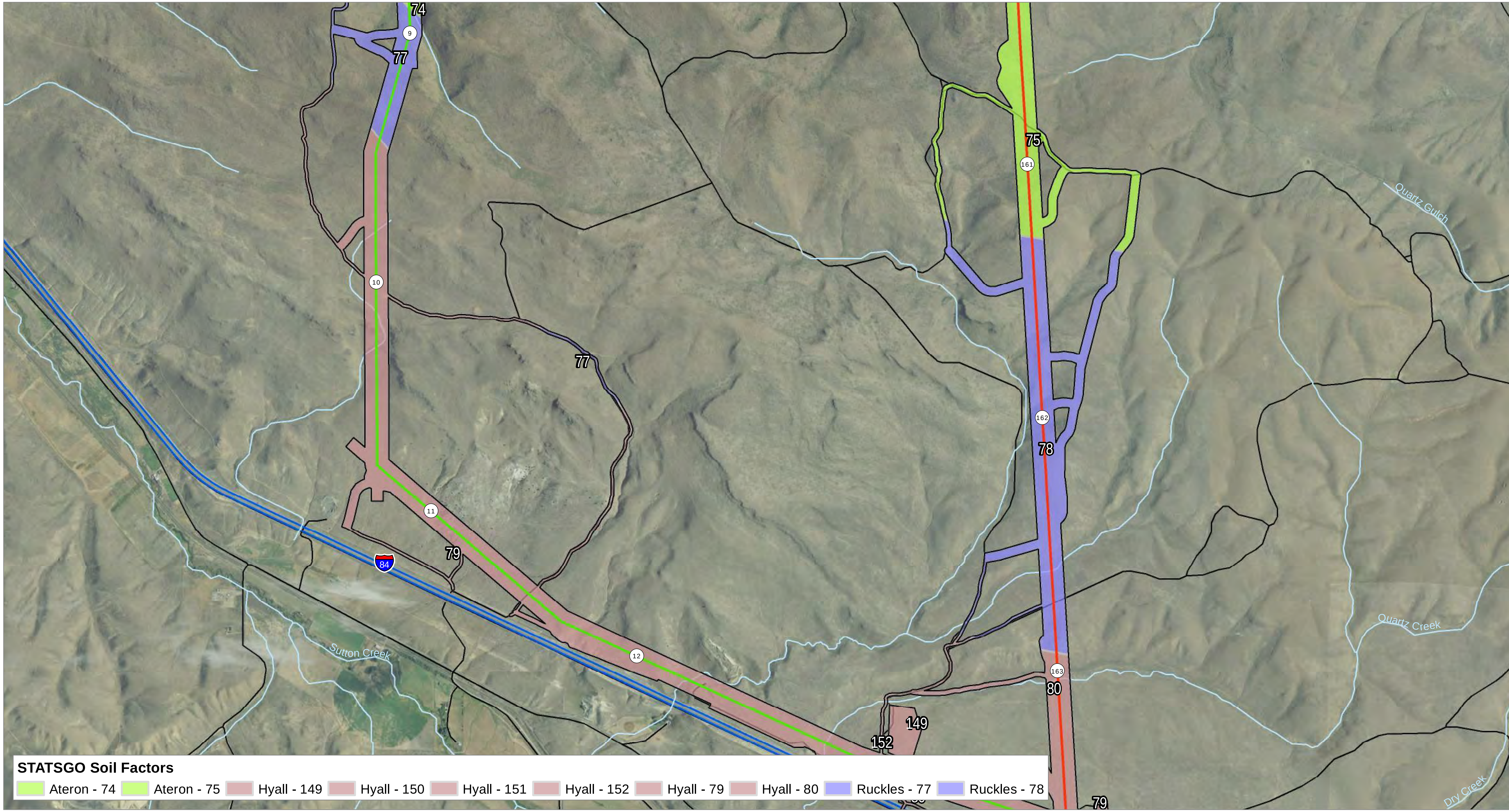
Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

IDAHO POWER

Date: 1/17/2013 8:17:22 AM

Source: Z:\UtilServ\Boardman_Hemingway\Reports\011_Other_Resources\Geology_Soils_Minerals\20121018_Exhibit\Figures\SoilFactors.mxd



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Feet

Project Features

- Proposed Corridor
- Alternate Corridor
- Milepost
- Site Boundary

Map Features

- City
- River
- Interstate Highway
- Road
- Counties
- State

Attachment I-1

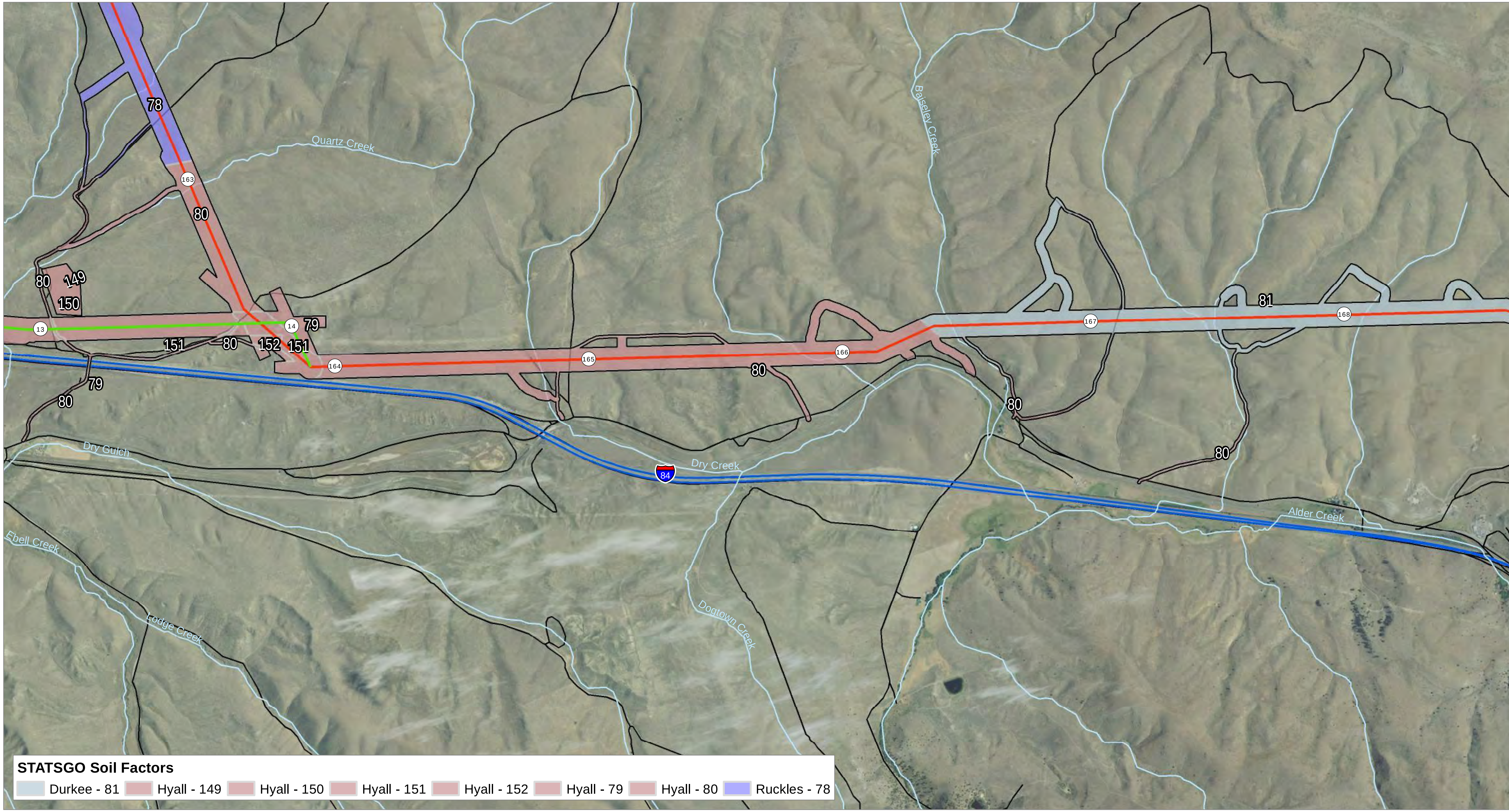
Soil Mapping Units

Map Sheet 28

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

Date: 1/17/2013 8:17:22 AM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\011_Other_Resources\Geology_Soils_Minerals\20121018_ExhibitI\Figures\SoilFactors.mxd



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Feet

Project Features

- Proposed Corridor
- Alternate Corridor
- Milepost
- Site Boundary

Map Features

- City
- River
- Interstate Highway
- Road
- Counties
- State

Attachment I-1

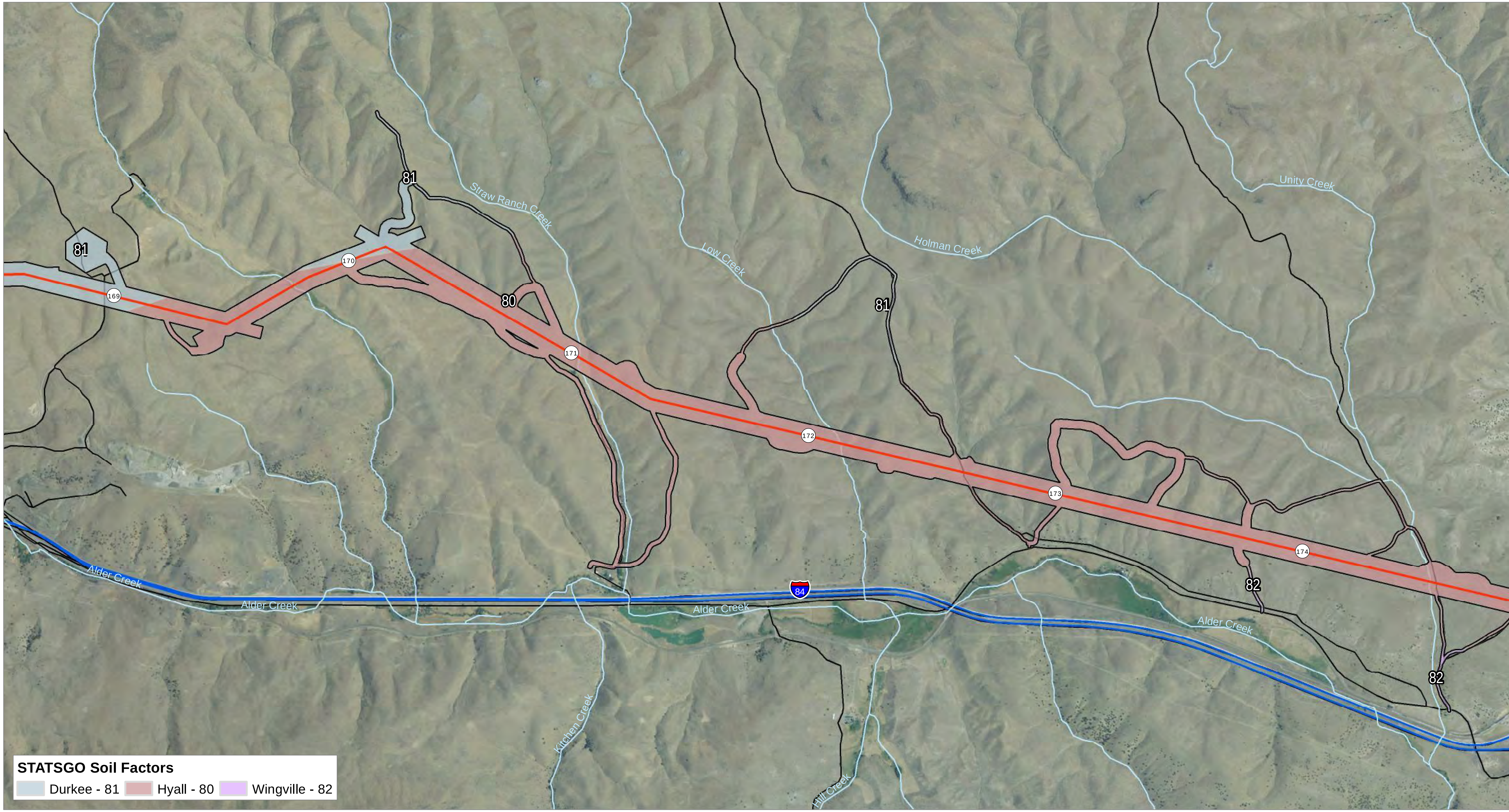
Soil Mapping Units

Map Sheet 29

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

Date: 1/17/2013 8:17:22 AM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\011_Other_Resources\Geology_Soils_Minerals\20121018_ExhibitI\Figures\SoilFactors.mxd



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Feet

Project Features
- Proposed Corridor
- Alternate Corridor
- Milepost
- Site Boundary

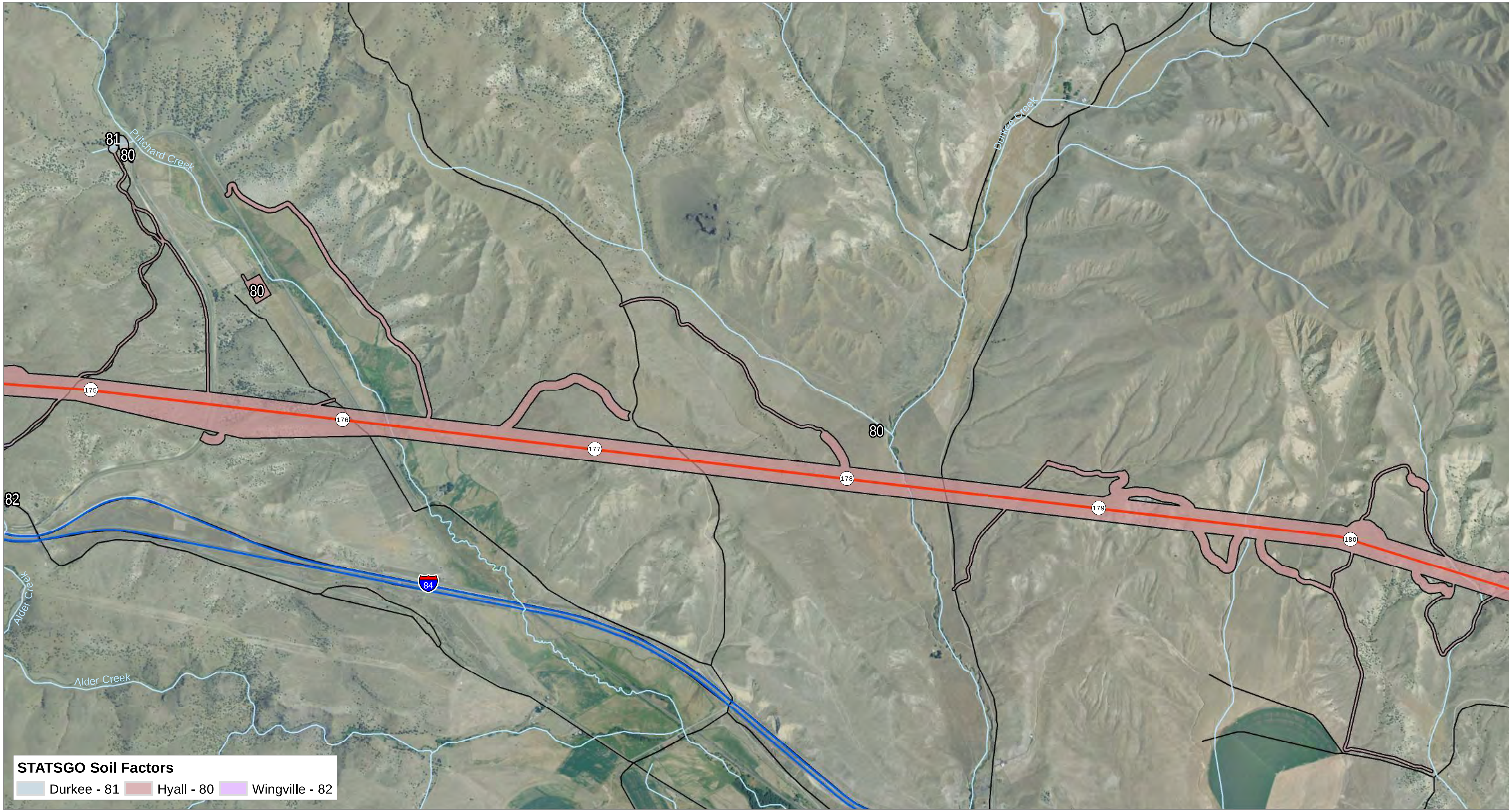
Map Features
- City
- River
- Interstate Highway
- Road
- Counties
- State

Attachment I-1
Soil Mapping Units
Map Sheet 30

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

Date: 1/17/2013 8:17:22 AM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\011_Other_Resources\Geology_Soils_Minerals\20121018_ExhibitI\Figures\SoilFactors.mxd



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Feet

Project Features

Proposed Corridor
Alternate Corridor
Milepost
Site Boundary

Map Features

City
River
Interstate Highway
Road
Counties
State

Attachment I-1

Soil Mapping Units

Map Sheet 31

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

Date: 1/17/2013 8:17:22 AM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\011_Other_Resources\Geology_Soils_Minerals\20121018_ExhibitI\Figures\SoilFactors.mxd

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Feet

Project Features

Proposed Corridor

Alternate Corridor

Milepost

Site Boundary

Map Features

City

River

Interstate Highway

Road

Counties

State

Attachment I-1

Soil Mapping Units

Map Sheet 32

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

Date: 1/17/2013 8:17:22 AM
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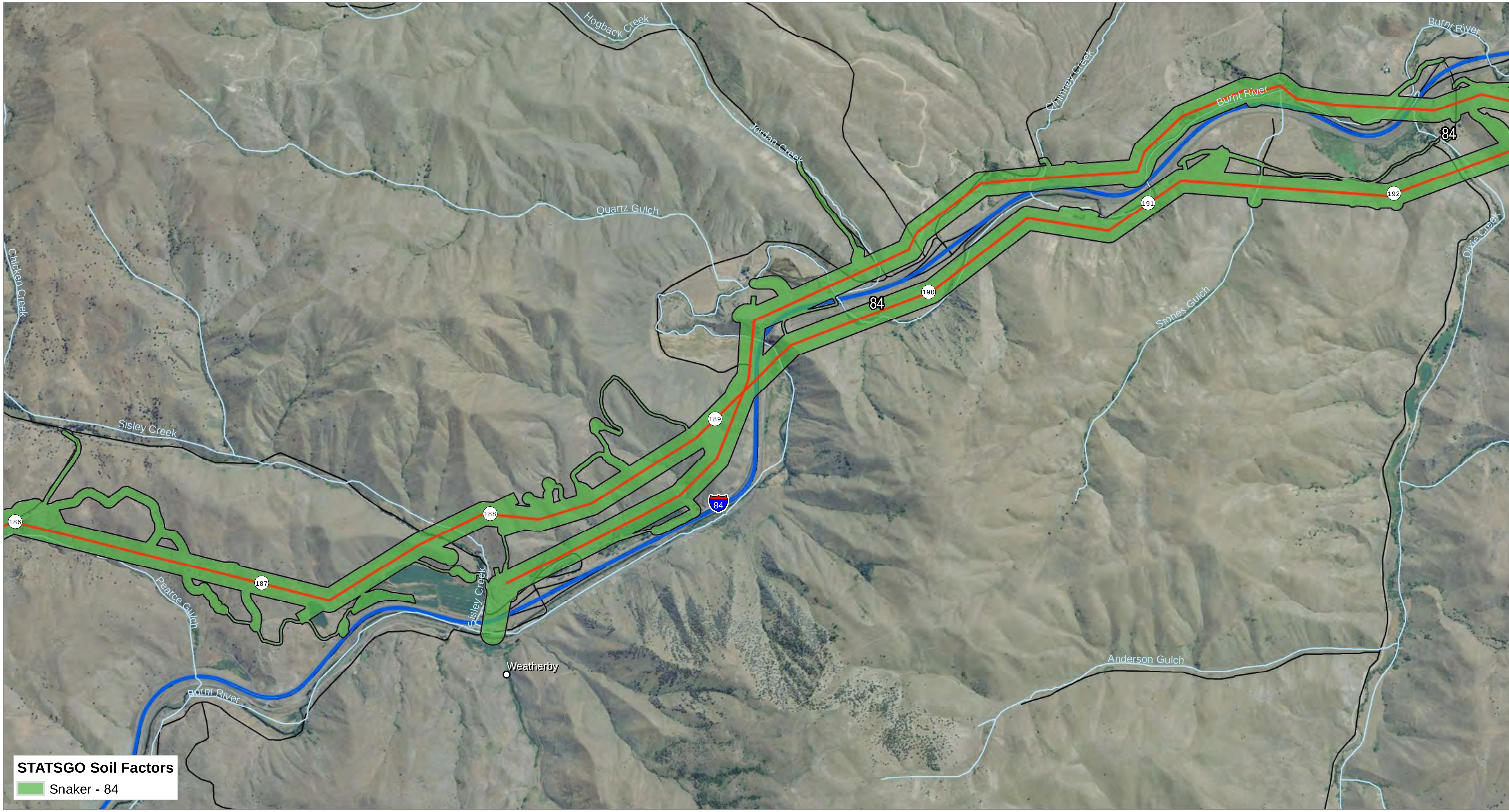

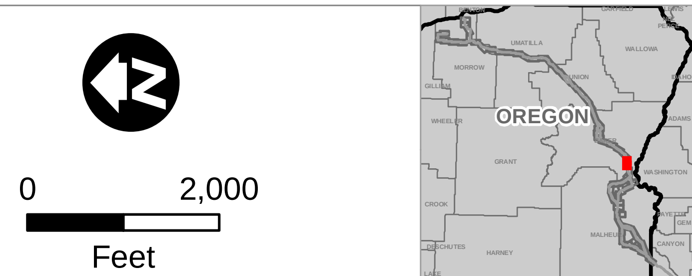

Project Features

- Proposed Corridor
- Alternate Corridor
- Milepost
- Site Boundary

Map Features

- City
- River
- Interstate Highway
- Road
- Counties
- State

Attachment I-1

Soil Mapping Units

Map Sheet 33

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

Date: 1/17/2013 8:17:22 AM
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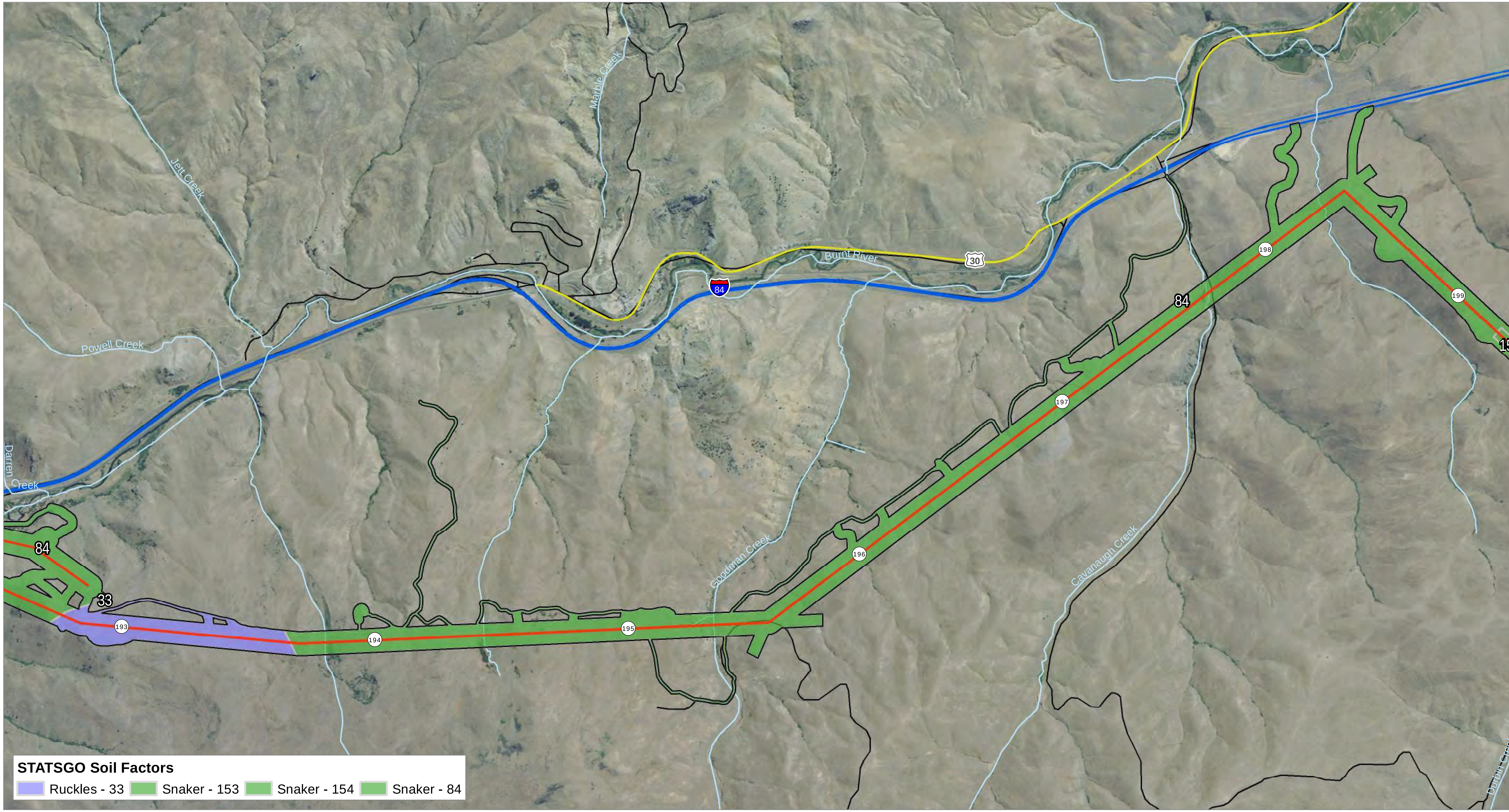

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Feet

Project Features

- Proposed Corridor
- Alternate Corridor
- ② Milepost
- Site Boundary

Map Features

- City
- River
- Interstate Highway
- US and State Highway
- Road
- Counties
- State

Attachment I-1

Soil Mapping Units

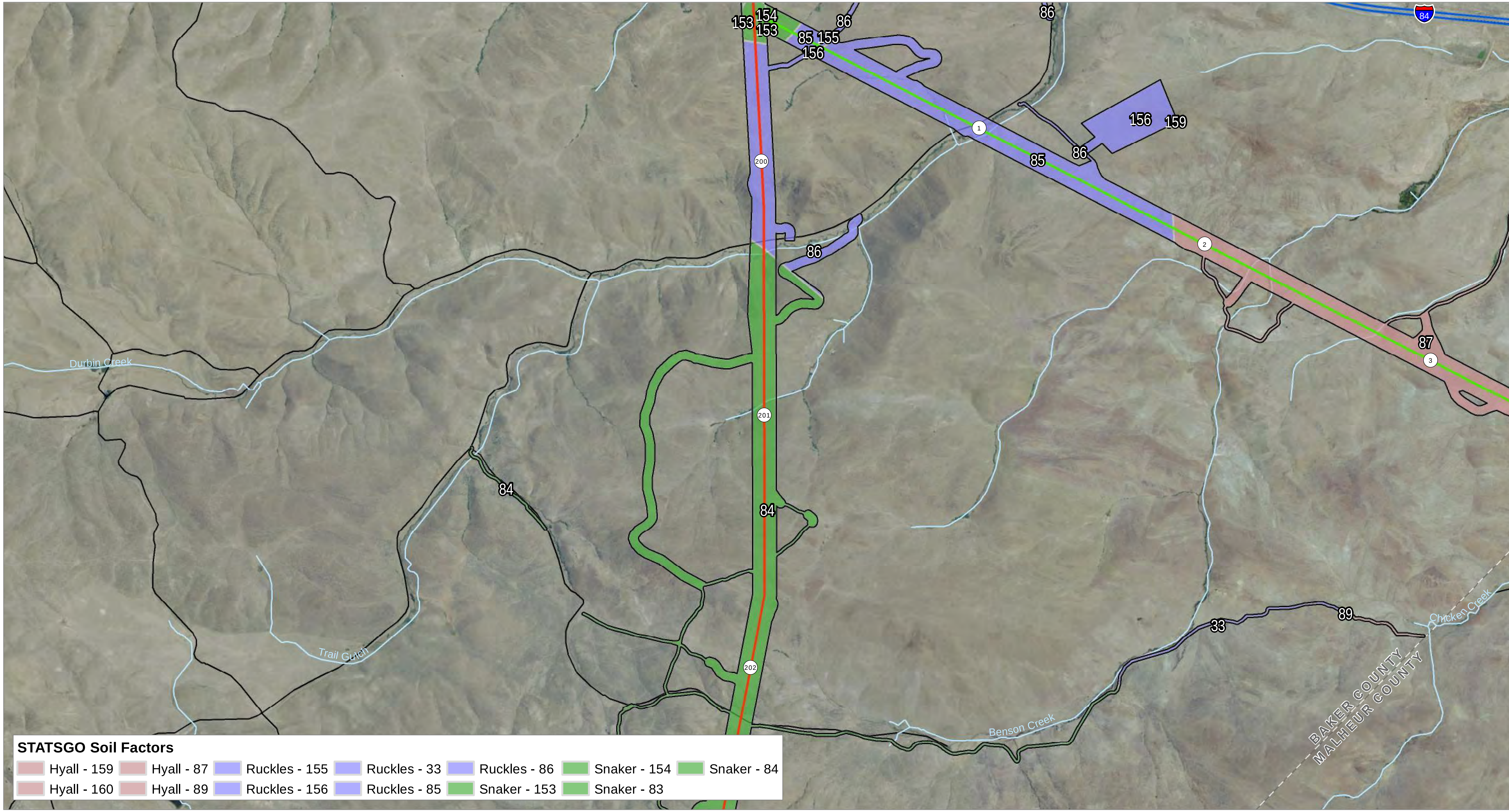
Map Sheet 34

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

IDAHO POWER
An IDACORP Company

Date: 1/17/2013 8:17:22 AM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\011_Other_Resources\Geology_Soils_Minerals\20121018_Exhibit\Figures\SoilFactors.mxd



STATSGO Soil Factors

Hyall - 159	Hyall - 87	Ruckles - 155	Ruckles - 33	Ruckles - 86	Snaker - 154	Snaker - 84
Hyall - 160	Hyall - 89	Ruckles - 156	Ruckles - 85	Snaker - 153	Snaker - 83	

0 2,000
Feet

Project Features

- Proposed Corridor
- Alternate Corridor
- Milepost
- Site Boundary

Map Features

- City
- River
- Interstate Highway
- Road
- Counties
- State

Attachment I-1

Soil Mapping Units

Map Sheet 35

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

Date: 1/17/2013 8:17:22 AM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\011_Other_Resources\Geology_Soils_Minerals\20121018_Exhibit\Figures\SoilFactors.mxd

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Feet

Project Features

Proposed Corridor
Alternate Corridor
Milepost
Site Boundary

Map Features

City
River
Road
Counties
State

Attachment I-1

Soil Mapping Units

Map Sheet 36

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

IDAHO POWER
An IDACORP Company

Date: 1/17/2013 8:17:22 AM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\011_Other_Resources\Geology_Soils_Minerals\20121018_Exhibit\Figures\SoilFactors.mxd

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Feet

OREGON

Project Features

- Proposed Corridor
- Alternate Corridor
- Milepost
- Site Boundary

Map Features

- City
- River
- US and State Highway
- Road
- Counties
- State

Attachment I-1

Soil Mapping Units

Map Sheet 37

Boardman to Hemingway Transmission Line Project
Oregon - Idaho

February 2013

Date: 1/17/2013 8:17:22 AM
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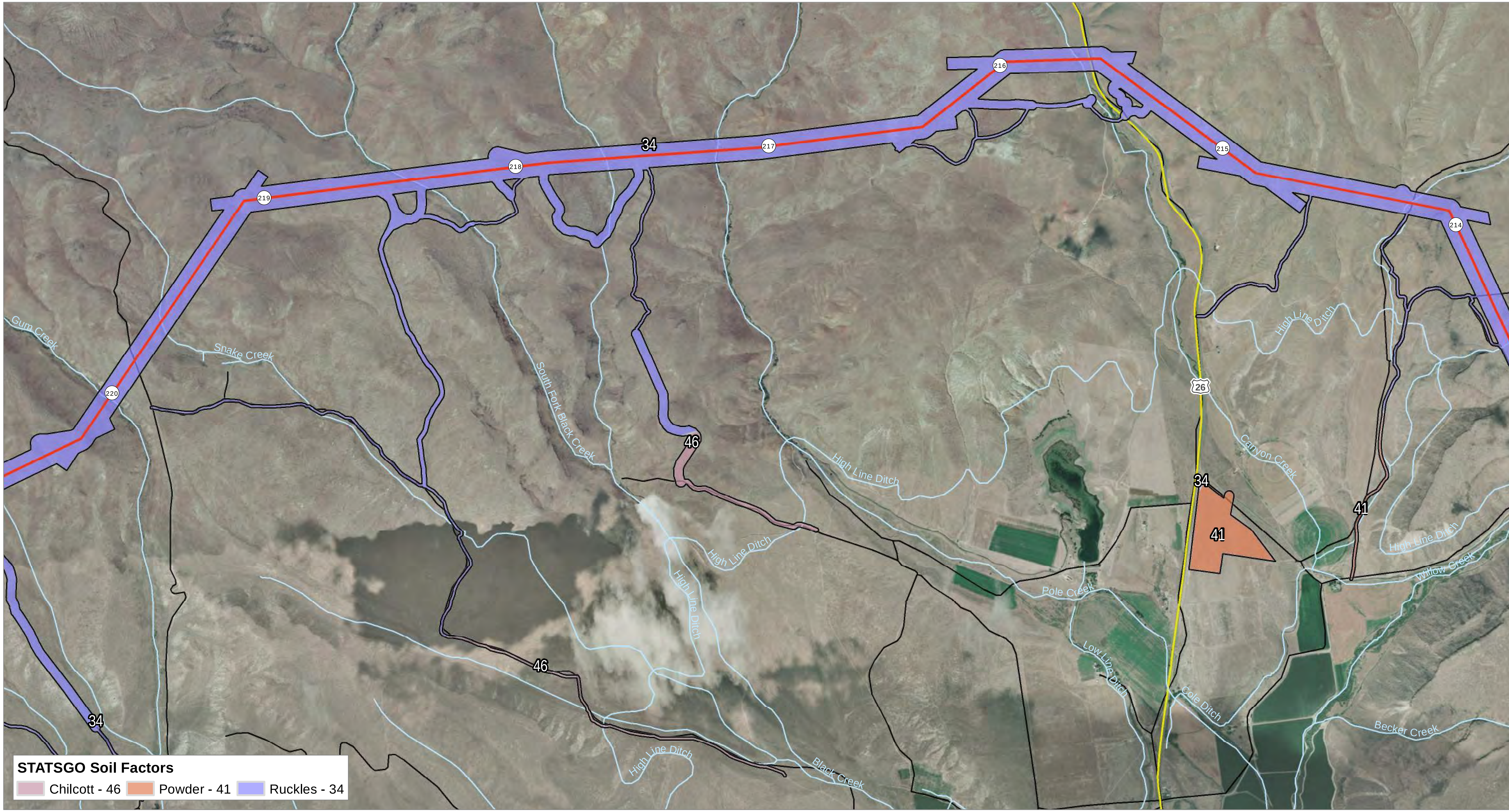

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Feet

Project Features

Proposed Corridor
Alternate Corridor
Milepost
Site Boundary

Map Features

City
River
US and State Highway
Road
Counties
State

Attachment I-1

Soil Mapping Units

Map Sheet 38

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

Date: 1/17/2013 8:17:22 AM
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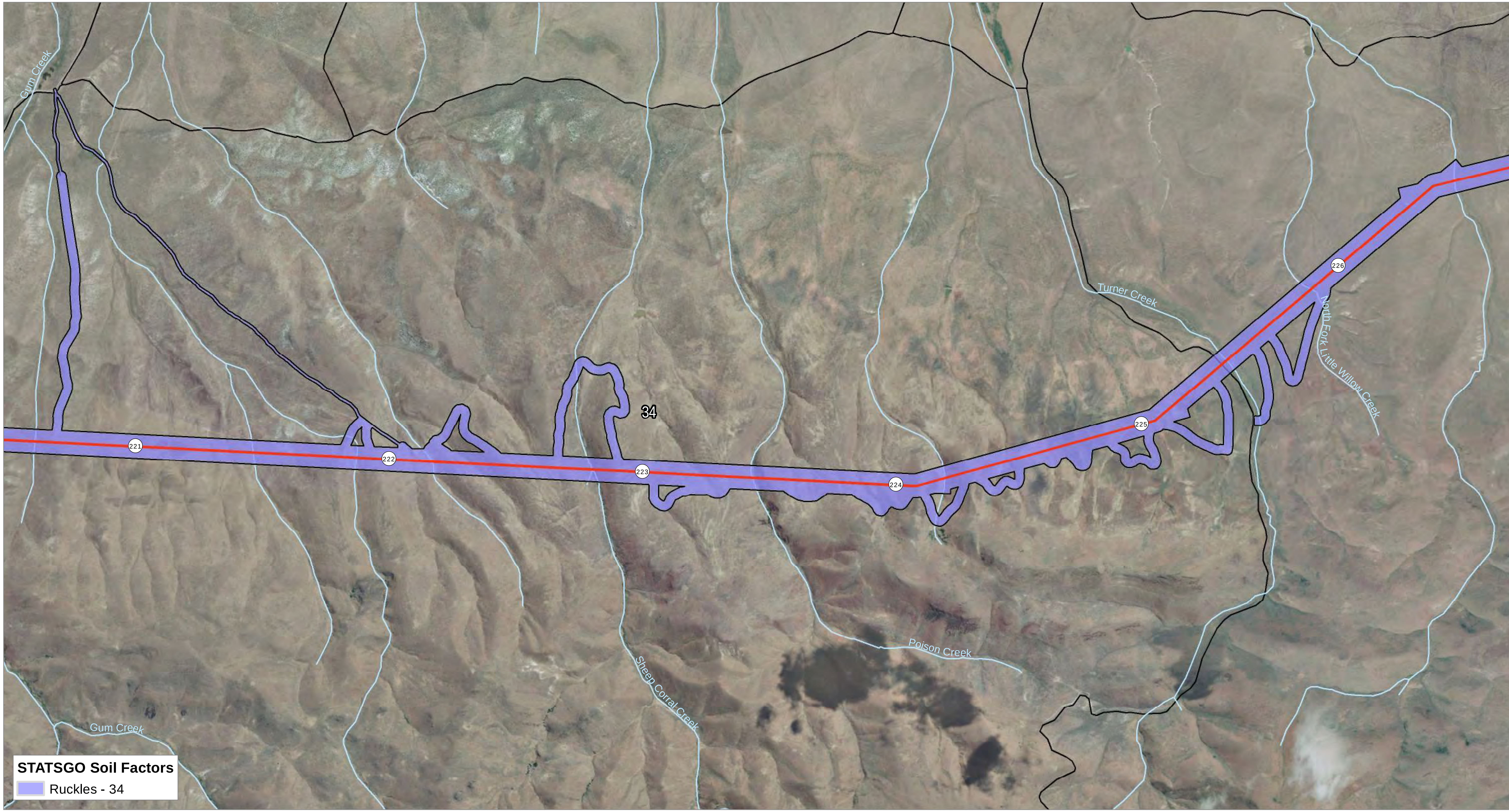

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Feet

Project Features

- Proposed Corridor
- Alternate Corridor
- Milepost
- Site Boundary

Map Features

- City
- Counties
- River
- State
- Road

Attachment I-1

Soil Mapping Units

Map Sheet 39

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

Date: 1/17/2013 8:17:22 AM
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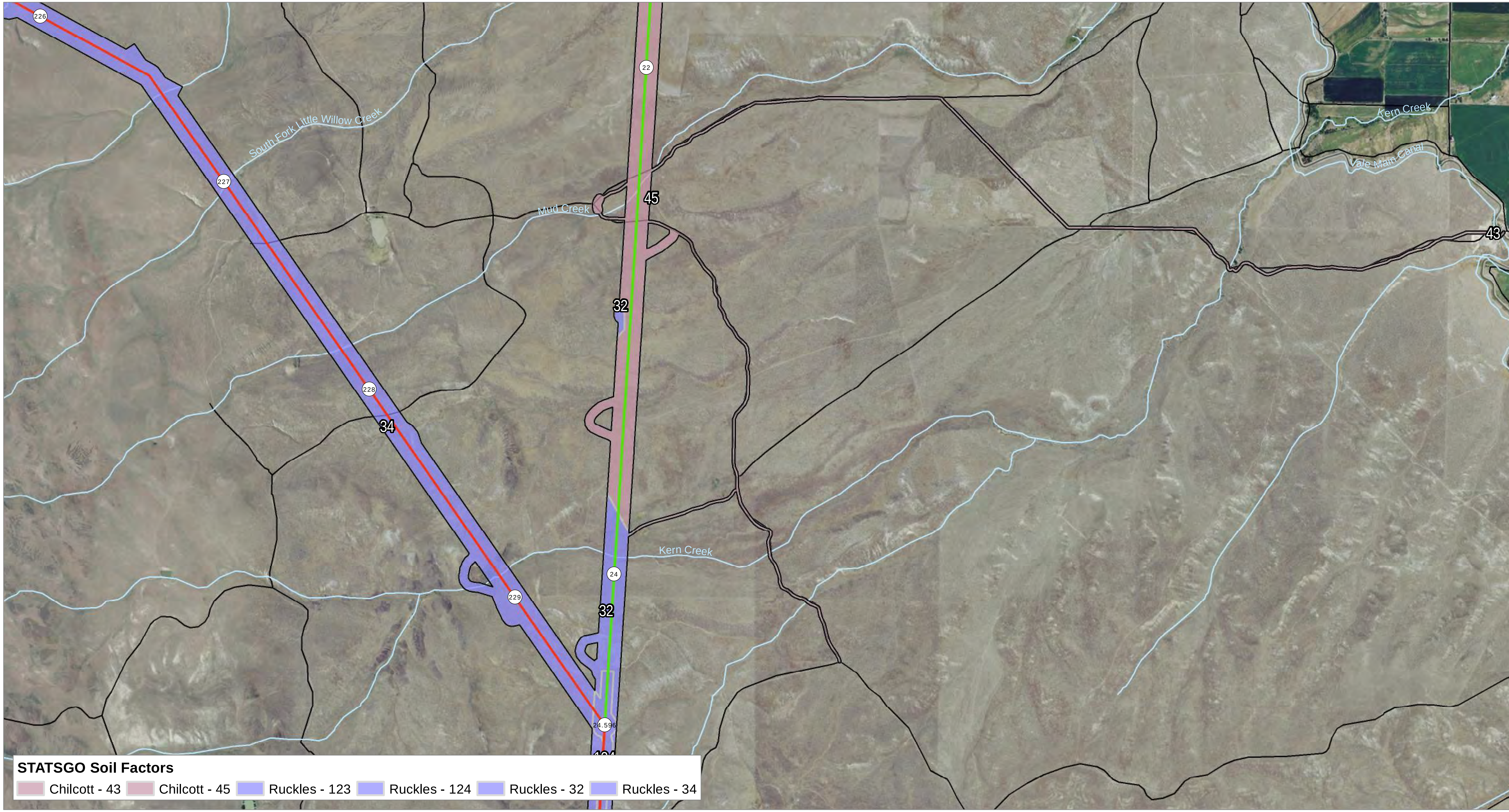

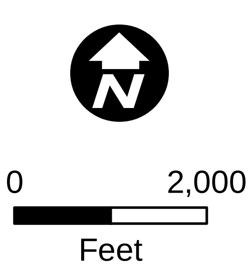

Project Features

- Proposed Corridor
- Alternate Corridor
- Milepost
- Site Boundary

Map Features

- City
- Counties
- River
- State
- Road

Attachment I-1

Soil Mapping Units

Map Sheet 40

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

Date: 1/17/2013 8:17:22 AM
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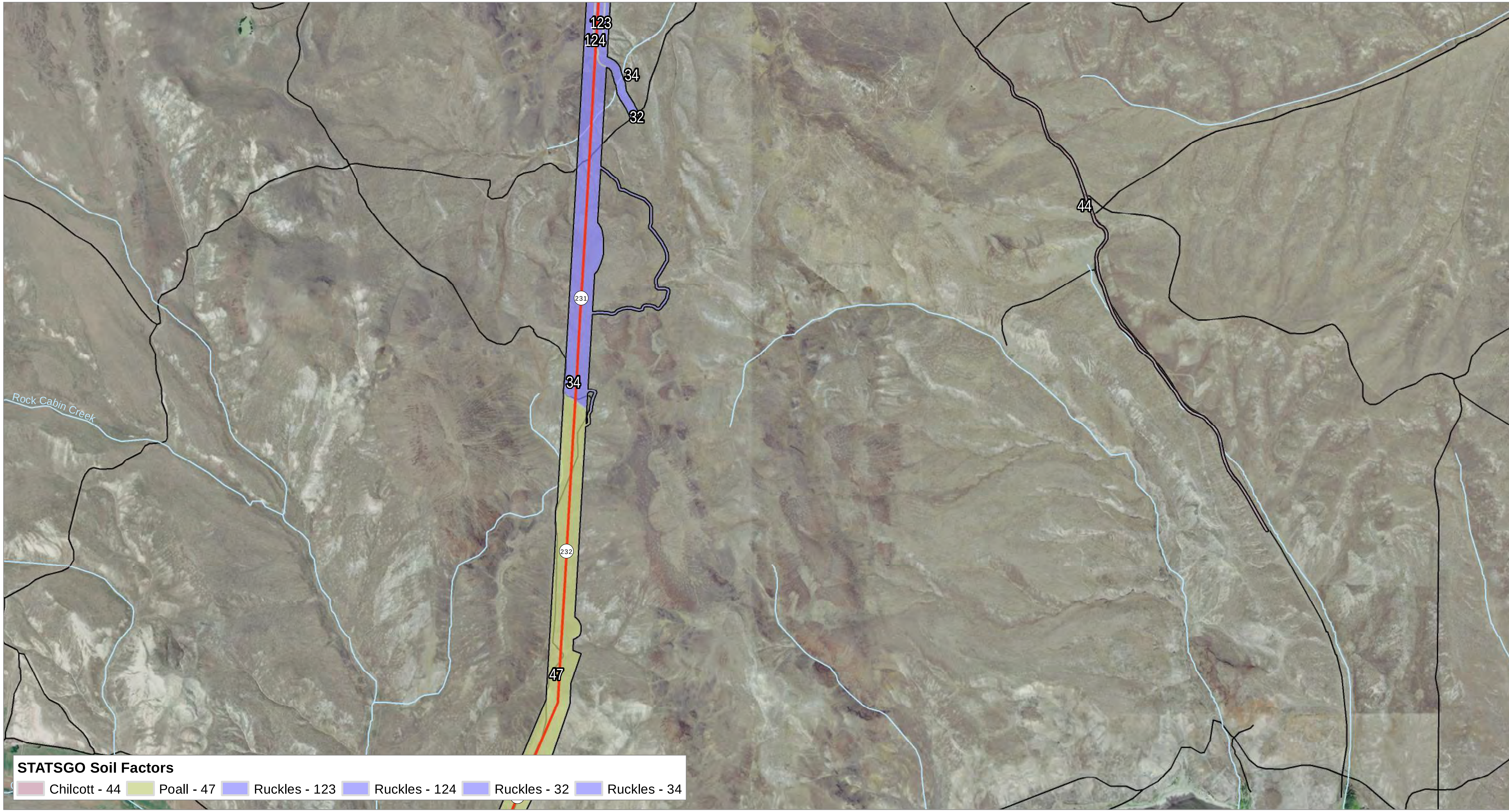
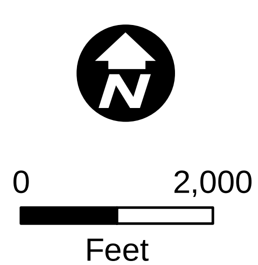




Project Features

- Proposed Corridor
- Alternate Corridor
- Milepost
- Site Boundary

Map Features

- City
- Counties
- River
- State
- Road

Attachment I-1

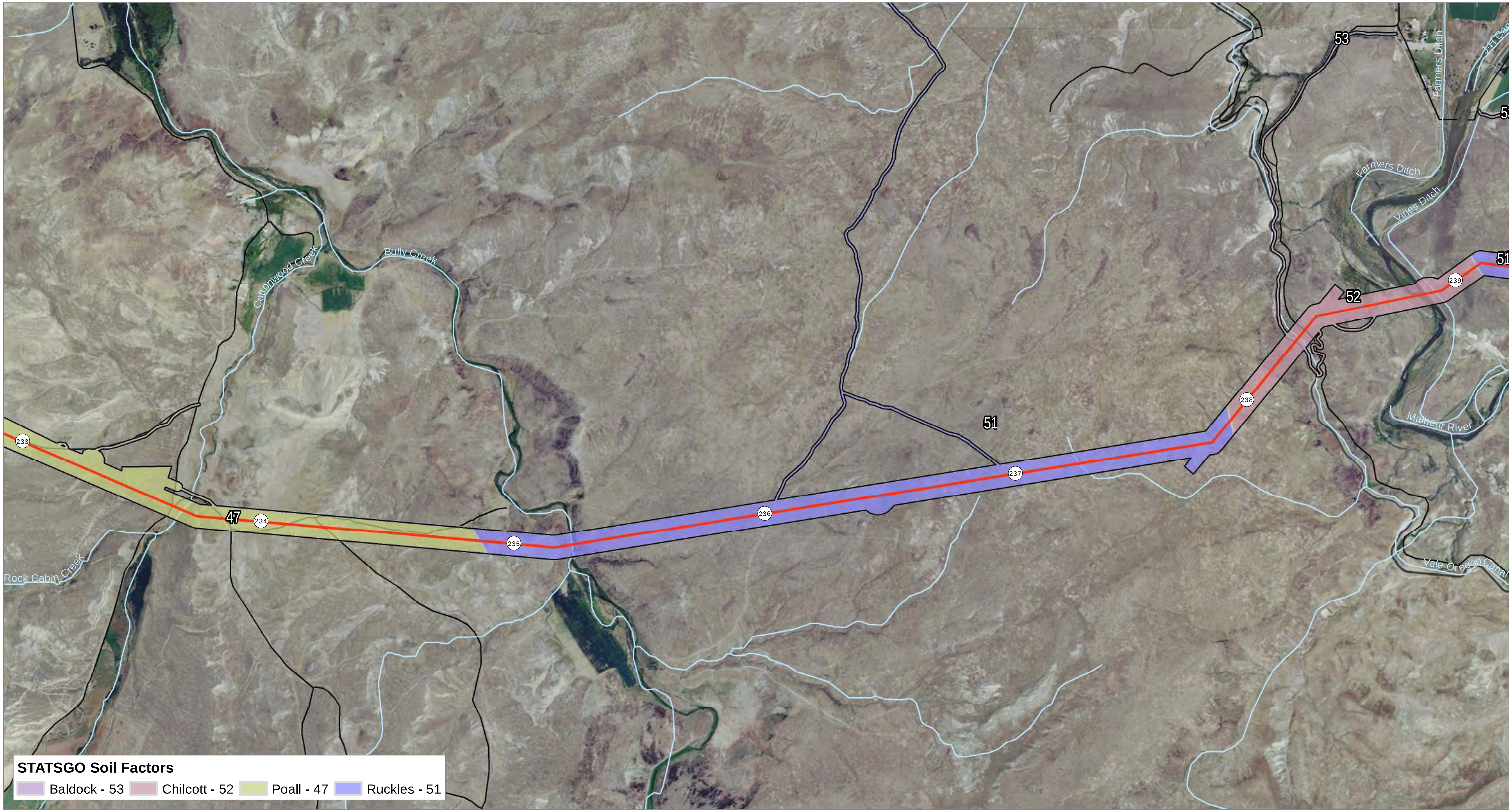
Soil Mapping Units

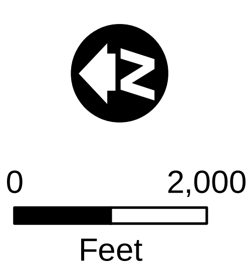
Map Sheet 41

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

Date: 1/17/2013 8:17:22 AM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\011_Other_Resources\Geology_Soils_Minerals\20121018_ExhibitI\Figures\SoilFactors.mxd





Project Features

- Proposed Corridor
- Alternate Corridor
- Milepost
- Site Boundary

Map Features

- City
- Counties
- River
- State
- Road

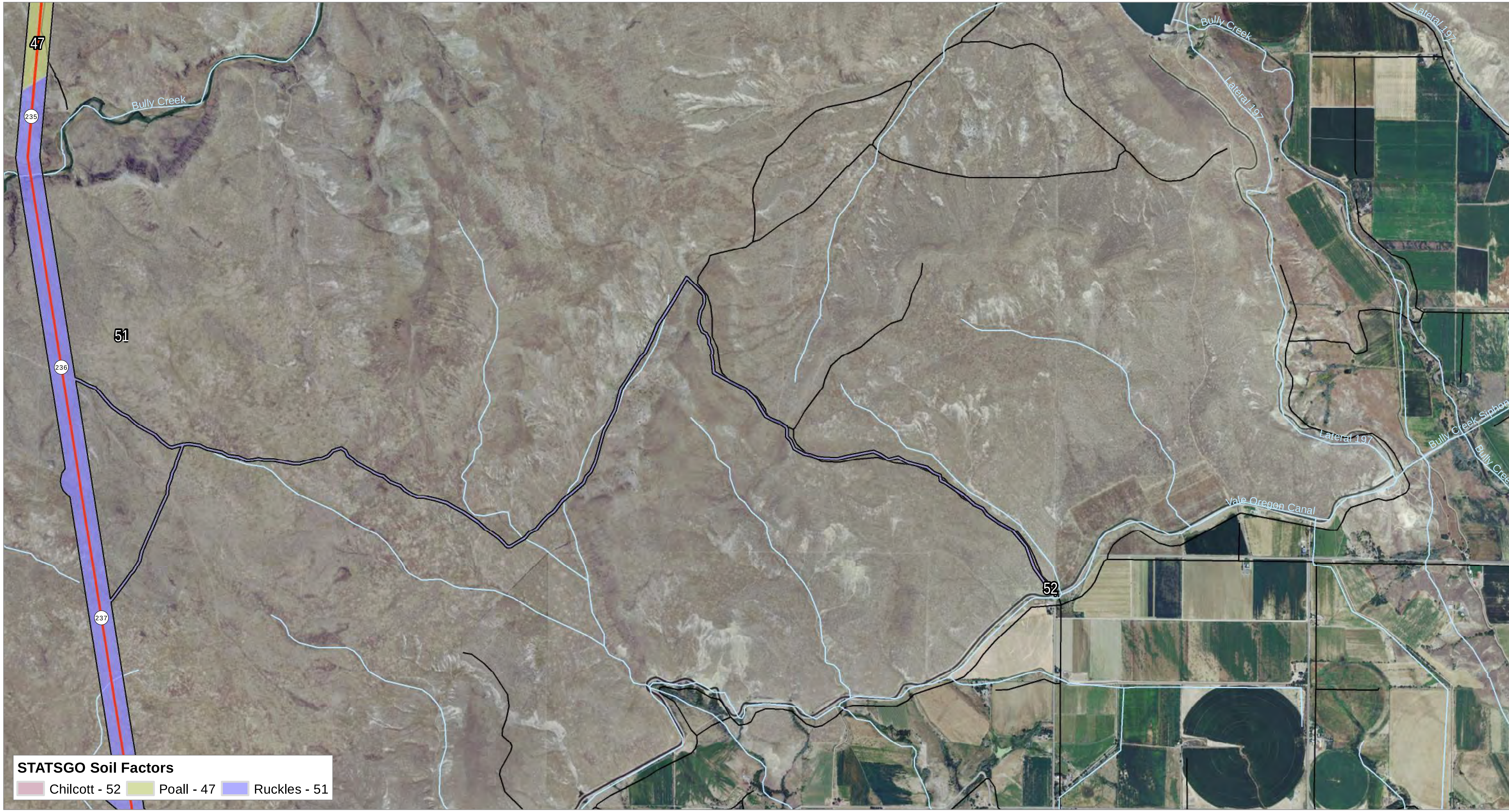
Attachment I-1

Soil Mapping Units

Map Sheet 42

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013



0 2,000
Feet

Project Features

- Proposed Corridor
- Alternate Corridor
- ② Milepost
- Site Boundary

Map Features

- City
- Counties
- River
- State
- Road

Attachment I-1

Soil Mapping Units

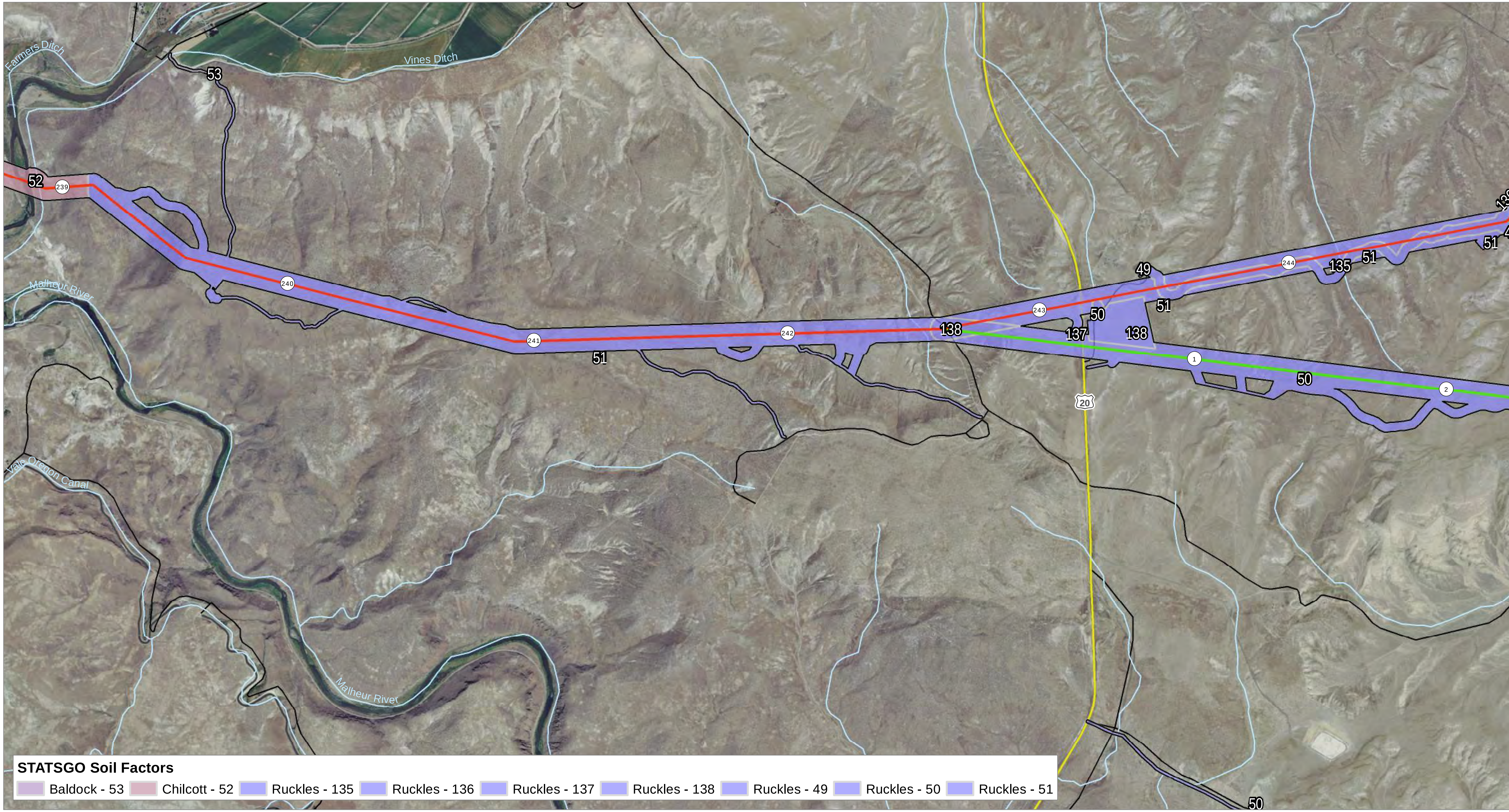
Map Sheet 43

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

IDAHO POWER.

Date: 1/17/2013 8:17:22 AM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\011_Other_Resources\Geology_Soils_Minerals\20121018_Exhibit\Figures\SoilFactors.mxd



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Feet

Project Features

- Proposed Corridor
- Alternate Corridor
- Milepost
- Site Boundary

Map Features

- City
- River
- US and State Highway
- Road
- Counties
- State

Attachment I-1

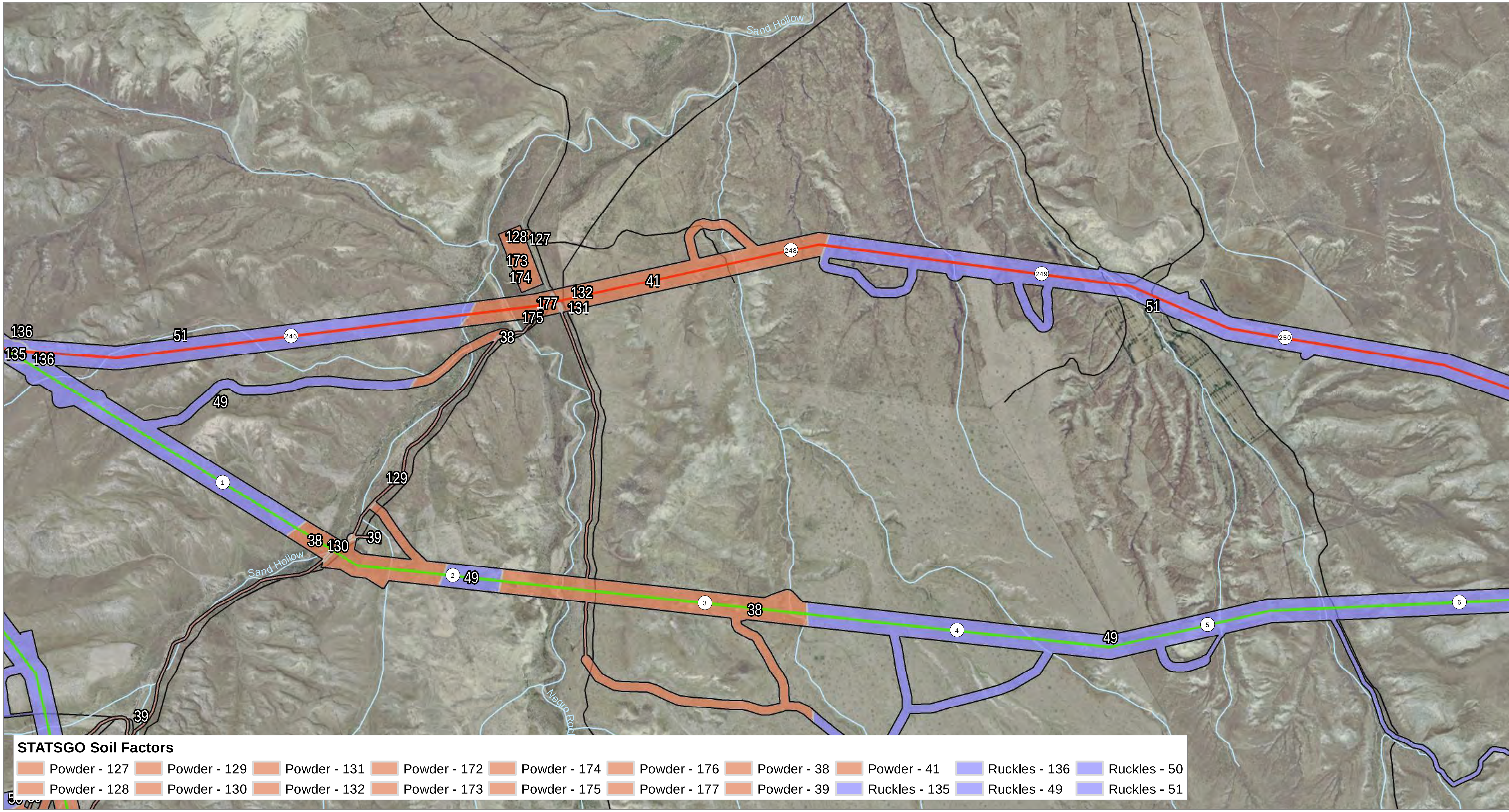
Soil Mapping Units

Map Sheet 44

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

Date: 1/17/2013 8:17:22 AM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\011_Other_Resources\Geology_Soils_Minerals\20121018_Exhibit\Figures\SoilFactors.mxd



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Feet

Project Features

Proposed Corridor
Alternate Corridor
Milepost
Site Boundary

Map Features

City
Counties
River
State
Road

Attachment I-1

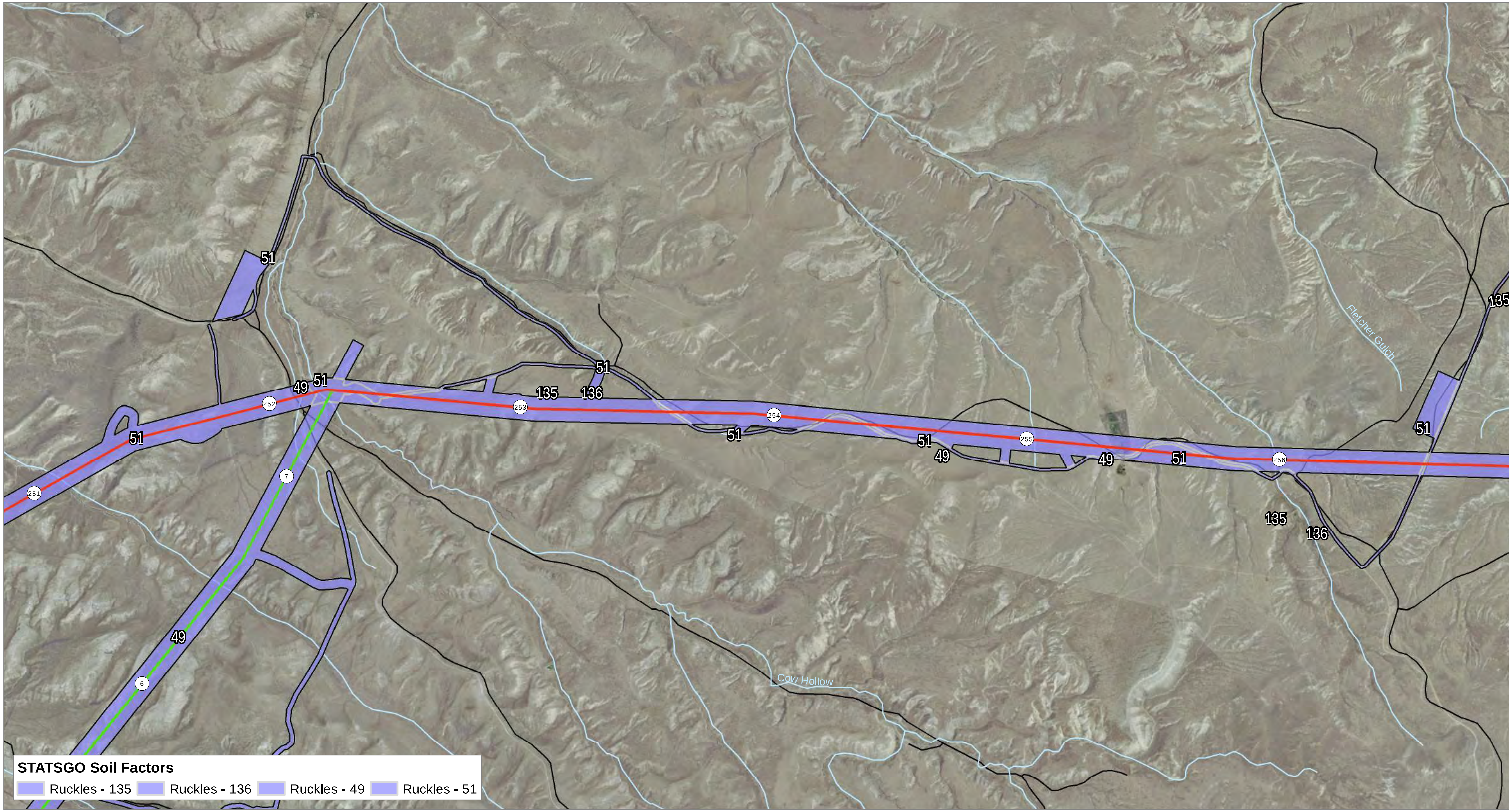
Soil Mapping Units

Map Sheet 45

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

Date: 1/17/2013 8:17:22 AM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\011_Other_Resources\Geology_Soils_Minerals\20121018_ExhibitI\Figures\SoilFactors.mxd



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Feet

Project Features

- Proposed Corridor
- Alternate Corridor
- Milepost
- Site Boundary

Map Features

- City
- Counties
- River
- State
- Road

Attachment I-1

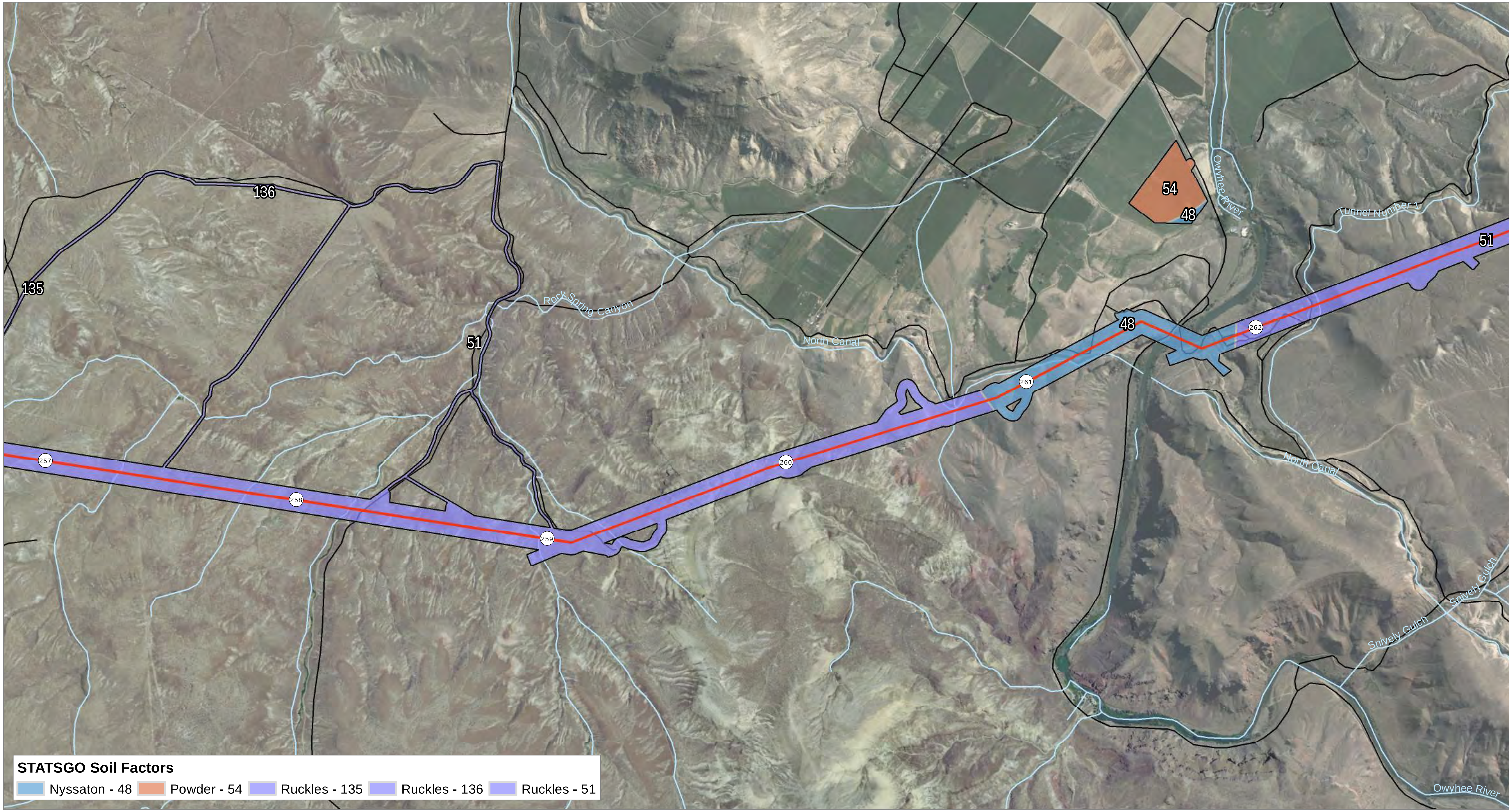
Soil Mapping Units

Map Sheet 46

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

Date: 1/17/2013 8:17:22 AM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\011_Other_Resources\Geology_Soils_Minerals\20121018_ExhibitI\Figures\SoilFactors.mxd



0 2,000
Feet

Project Features

Proposed Corridor
Alternate Corridor
Milepost
Site Boundary

Map Features

City
Counties
River
State
Road

Attachment I-1

Soil Mapping Units

Map Sheet 47

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

Date: 1/17/2013 8:17:22 AM
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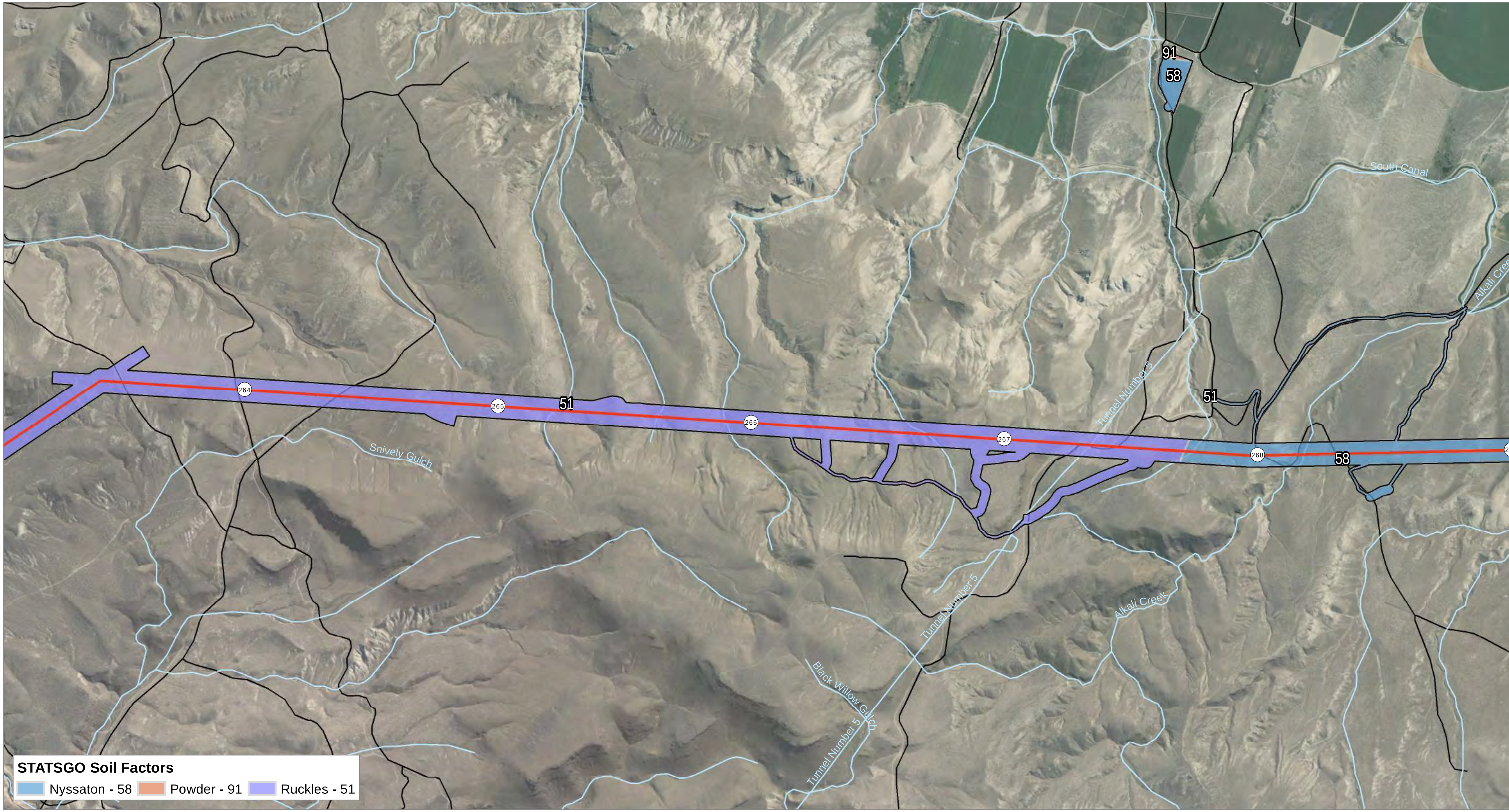


0 2,000
Feet

Project Features

- Proposed Corridor
- Alternate Corridor
- Milepost
- Site Boundary

Map Features

- City
- Counties
- River
- State
- Road

Attachment I-1

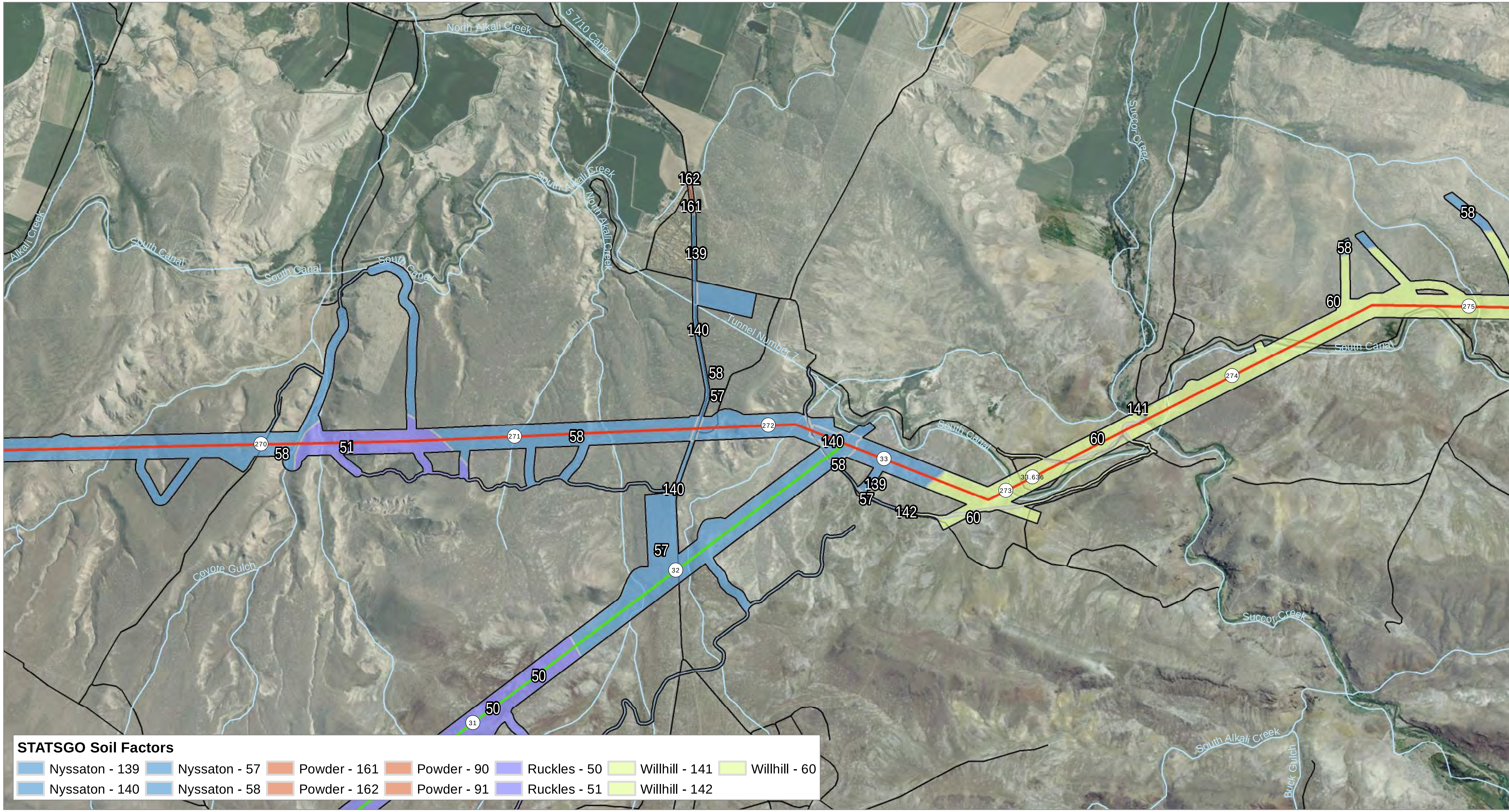
Soil Mapping Units

Map Sheet 48

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

Date: 1/17/2013 8:17:22 AM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\011_Other_Resources\Geology_Soils_Minerals\20121018_Exhibit\Figures\SoilFactors.mxd



STATSGO Soil Factors

Nyssaton - 139	Nyssaton - 57	Powder - 161	Powder - 90	Ruckles - 50	Willhill - 141	Willhill - 60
Nyssaton - 140	Nyssaton - 58	Powder - 162	Powder - 91	Ruckles - 51	Willhill - 142	

0 2,000

Feet

Project Features

- Proposed Corridor
- Alternate Corridor
- Milepost
- Site Boundary

Map Features

- City
- Counties
- River
- State
- Road

Attachment I-1

Soil Mapping Units

Map Sheet 49

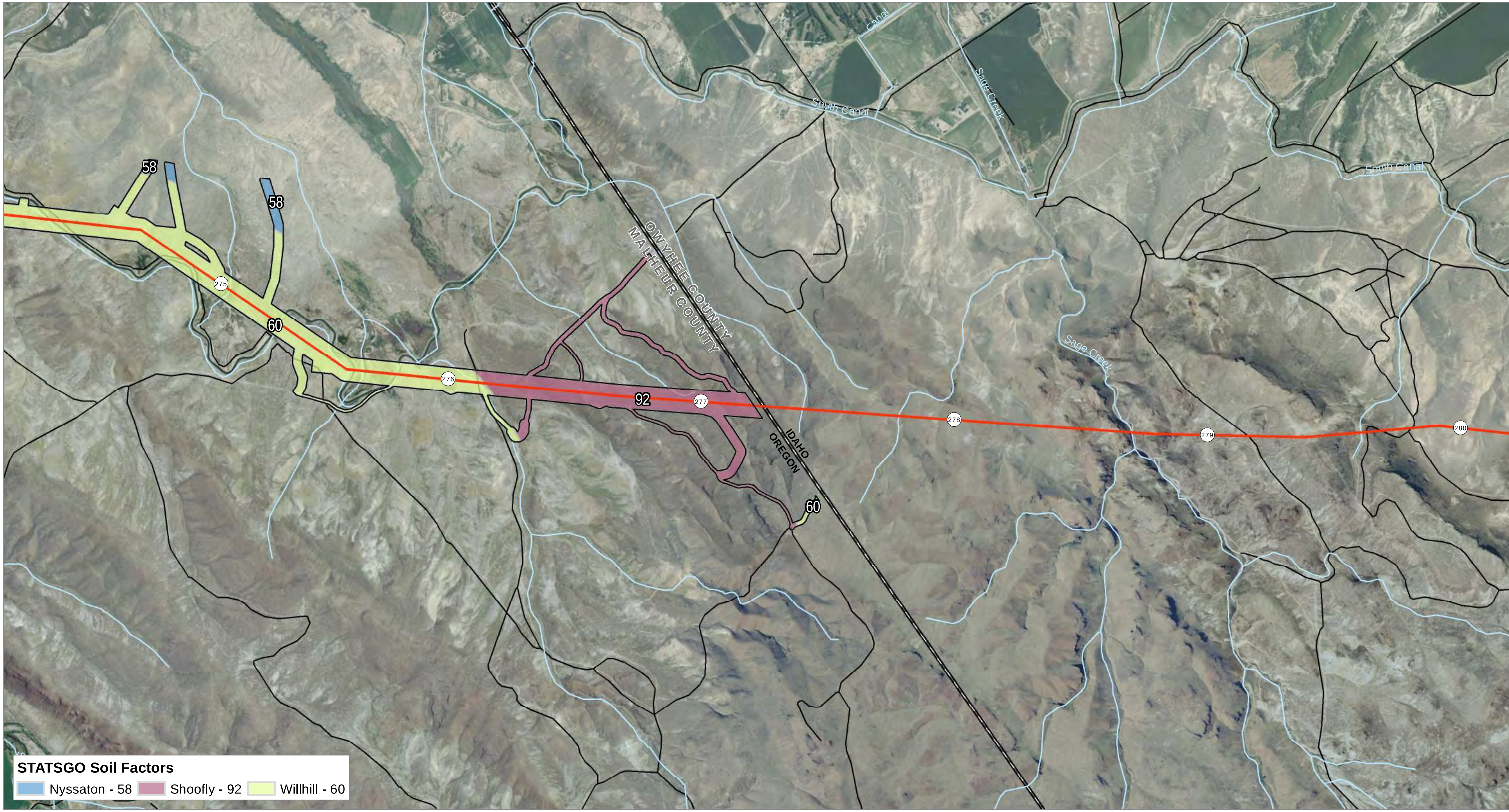
Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

IDAHO POWER. An IDACORP Company

Date: 1/17/2013 8:17:22 AM

Source: Z:\UtilServ\Boardman_Hemingway\Reports\011_Other_Resources\Geology_Soils_Minerals\20121018_Exhibit\Figures\SoilFactors.mxd



0 2,000
Feet

Project Features
- Proposed Corridor
- Alternate Corridor
- Milepost
- Site Boundary

Map Features
- City
- Counties
- River
- State
- Road

Attachment I-1
Soil Mapping Units

Map Sheet 50

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

Date: 1/17/2013 8:17:22 AM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\011_Other_Resources\Geology_Soils_Minerals\20121018_Exhibit\Figures\SoilFactors.mxd

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Feet

Project Features

- Proposed Corridor
- Alternate Corridor
- Substation
- Milepost
- Site Boundary

Map Features

- City
- River
- Interstate Highway
- US and State Highway
- Road
- Counties
- State

Attachment I-1

Soil Mapping Units

Map Sheet 51

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

Date: 1/17/2013 8:17:22 AM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\011_Other_Resources\Geology_Soils_Minerals\20121018_ExhibitI\Figures\SoilFactors.mxd

0 2,000
Feet

Project Features
Proposed Corridor
Alternate Corridor
Milepost
Site Boundary

Map Features
City
Counties
Road
State

Attachment I-1
Soil Mapping Units
Map Sheet 52
Boardman to Hemingway
Transmission Line Project
Oregon - Idaho
February 2013

Date: 1/17/2013 8:17:22 AM
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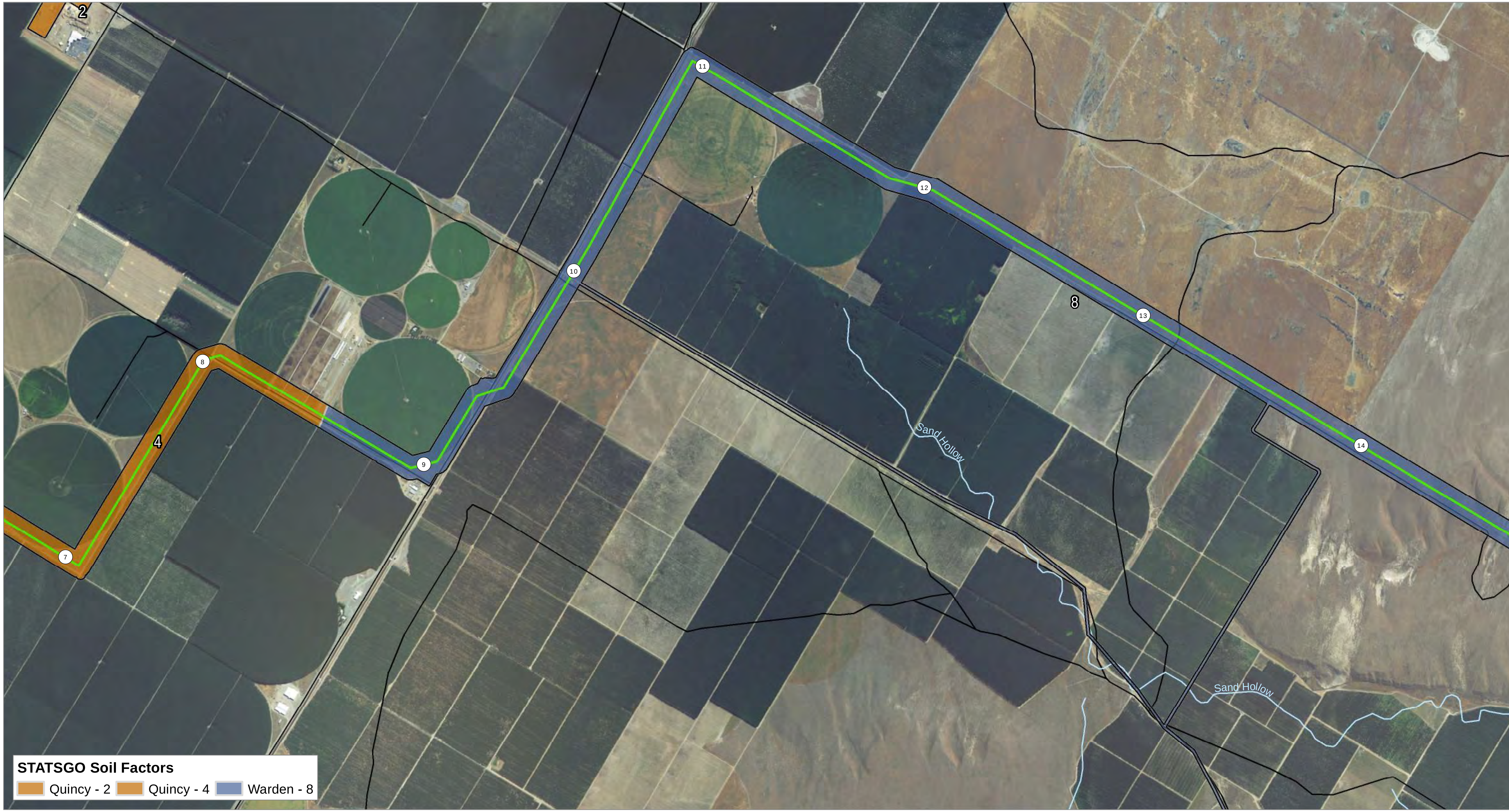

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Feet

Project Features

Proposed Corridor

Alternate Corridor

(2) Milepost

Site Boundary

Map Features

City

Counties

River

State

Road

Attachment I-1

Soil Mapping Units

Map Sheet 53

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

Date: 1/17/2013 8:17:22 AM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\011_Other_Resources\Geology_Soils_Minerals\20121018_ExhibitI\Figures\SoilFactors.mxd

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Feet

Project Features

- Proposed Corridor
- Alternate Corridor
- Milepost
- Site Boundary

Map Features

- City
- River
- Interstate Highway
- US and State Highway
- Road
- Counties
- State

Attachment I-1

Soil Mapping Units

Map Sheet 54

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

Date: 1/17/2013 8:17:22 AM

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0 2,000
Feet

Project Features

Proposed Corridor
Alternate Corridor
Milepost
Site Boundary

Map Features

City
Counties
River
State
Road

Attachment I-1

Soil Mapping Units

Map Sheet 55

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

Date: 1/17/2013 8:17:22 AM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\011_Other_Resources\Geology_Soils_Minerals\20121018_Exhibit\Figures\SoilFactors.mxd

0 2,000

Feet

Project Features

Proposed Corridor

Alternate Corridor

2 Milepost

Site Boundary

Map Features

City

Counties

River

State

Road

Attachment I-1

Soil Mapping Units

Map Sheet 56

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

Date: 1/17/2013 8:17:22 AM

Source: Z:\UtilServ\Boardman_Hemingway\Reports\011_Other_Resources\Geology_Soils_Minerals\20121018_Exhibit\Figures\SoilFactors.mxd

0 2,000
Feet

Project Features

Proposed Corridor
Alternate Corridor
Milepost
Site Boundary

Map Features

City
River
US and State Highway
Road
Counties
State

Attachment I-1

Soil Mapping Units

Map Sheet 57

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

Date: 1/17/2013 8:17:22 AM
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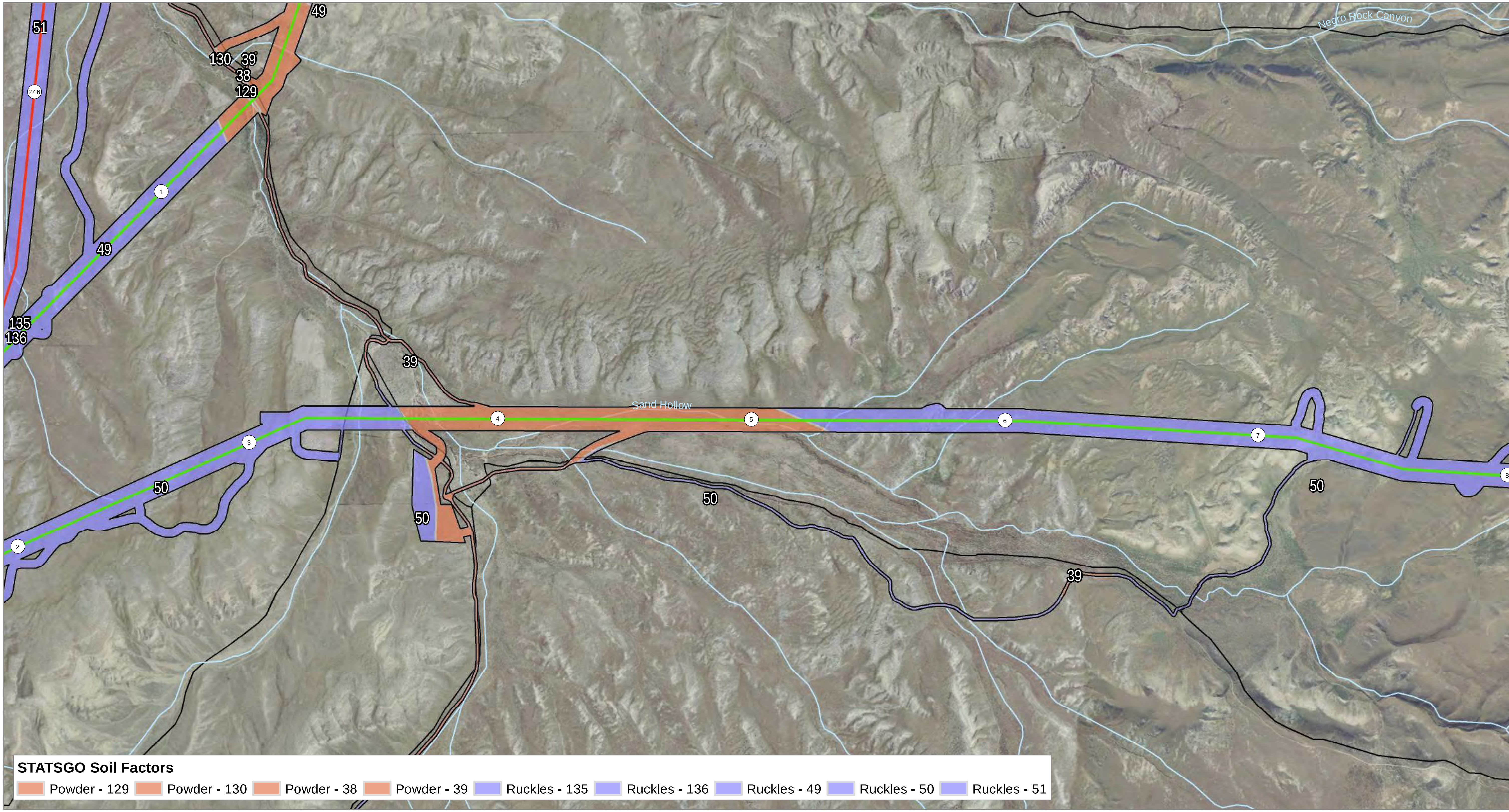

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Feet

Project Features

Proposed Corridor
Alternate Corridor
Milepost
Site Boundary

Map Features

City
Counties
River
State
Road

Attachment I-1

Soil Mapping Units

Map Sheet 58

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

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Feet

Project Features

Proposed Corridor
Alternate Corridor
Milepost
Site Boundary

Map Features

City
Counties
River
State
Road

Attachment I-1

Soil Mapping Units

Map Sheet 59

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

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Feet

Project Features

Proposed Corridor
Alternate Corridor
Milepost
Site Boundary

Map Features

City
Counties
River
State
Road

Attachment I-1

Soil Mapping Units

Map Sheet 60

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

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Feet

Project Features

- Proposed Corridor
- Alternate Corridor
- Milepost
- Site Boundary

Map Features

- City
- Counties
- River
- State
- Road

Attachment I-1

Soil Mapping Units

Map Sheet 61

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

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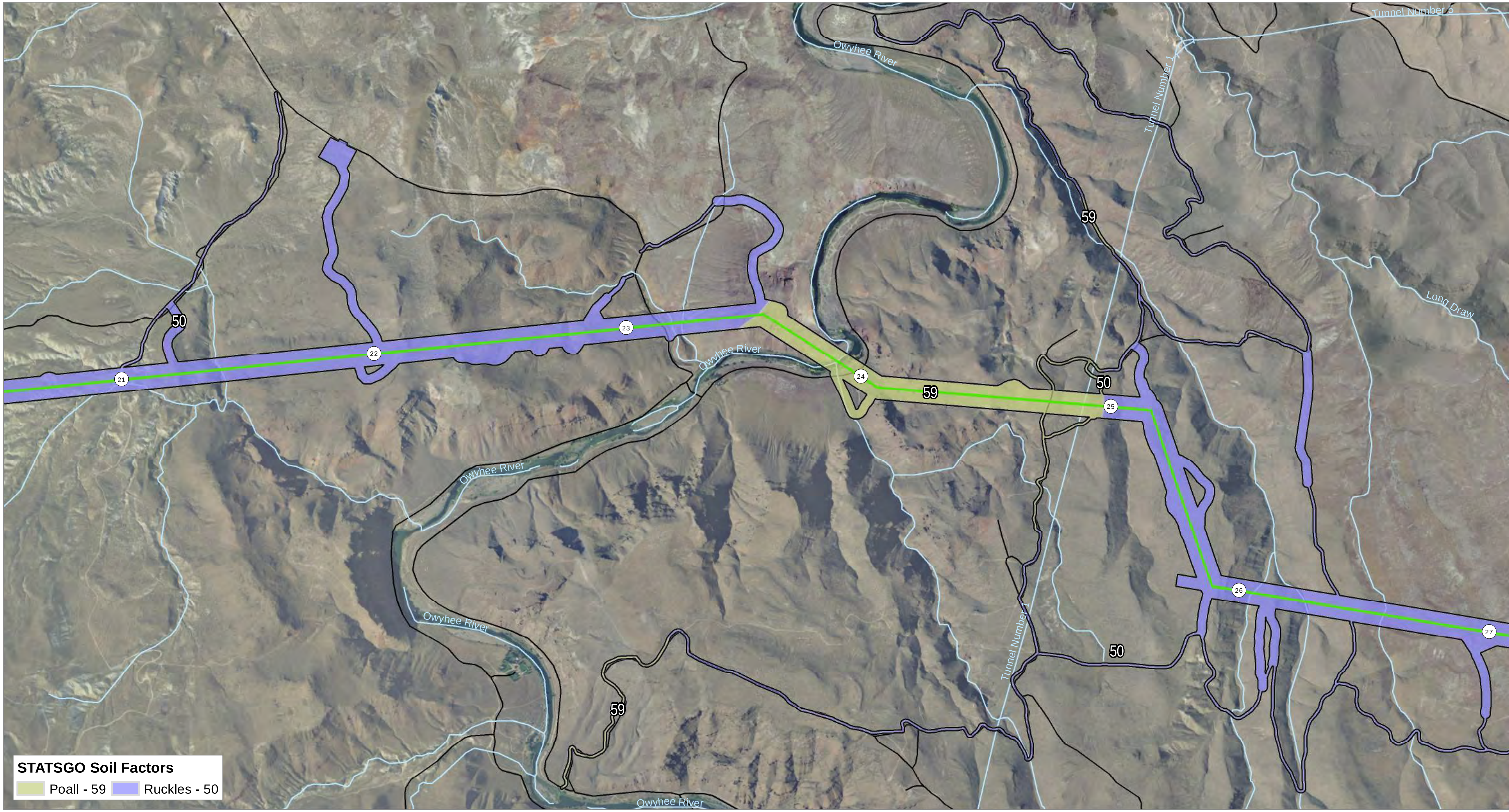

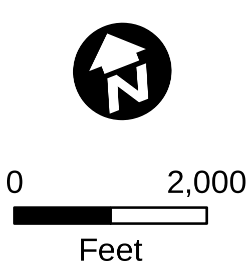

Project Features

Proposed Corridor
Alternate Corridor
Milepost
Site Boundary

Map Features

City
Counties
River
State
Road

Attachment I-1

Soil Mapping Units

Map Sheet 62

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

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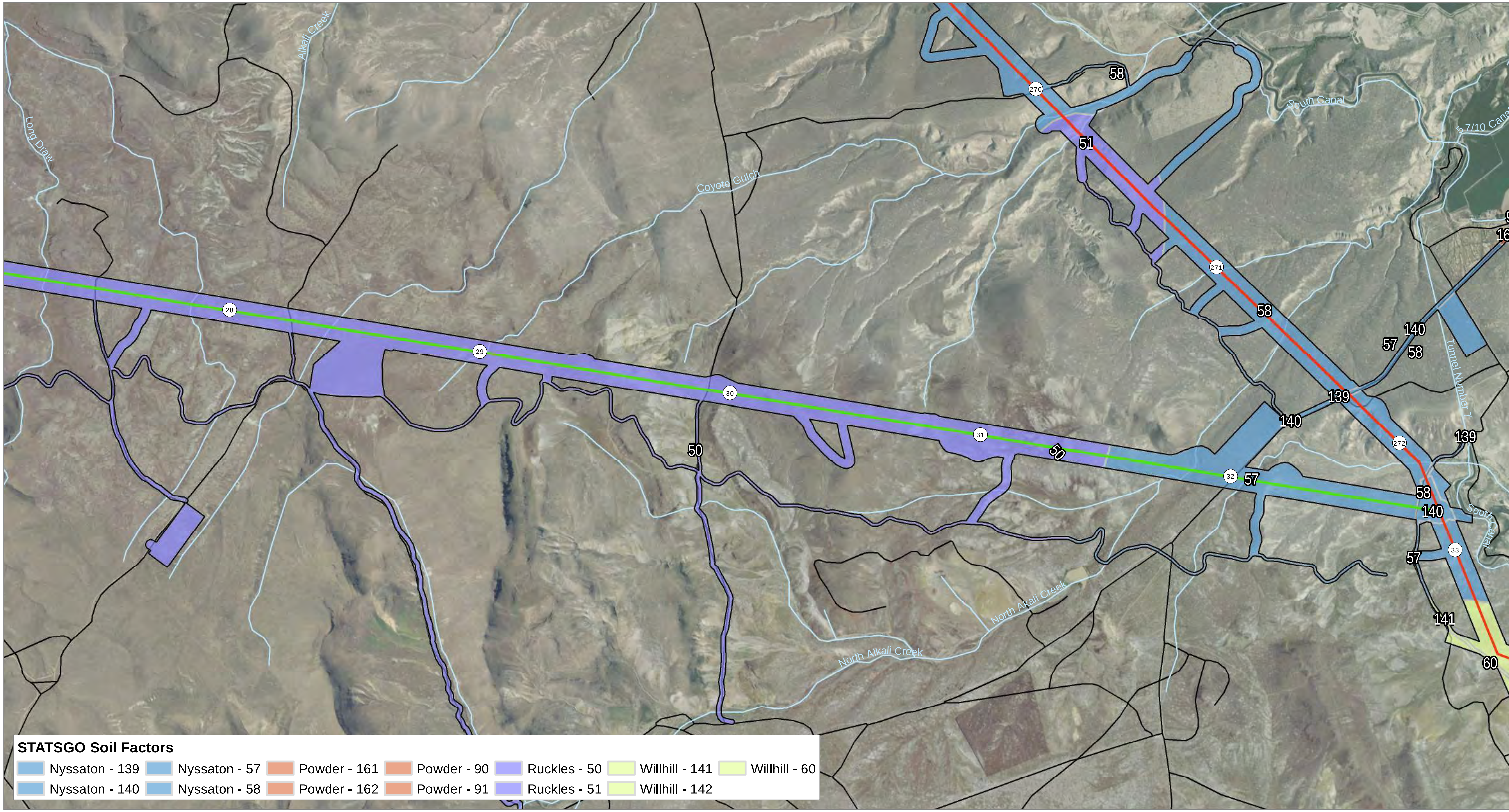

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Feet

Project Features

- Proposed Corridor
- Alternate Corridor
- Milepost
- Site Boundary

Map Features

- City
- Counties
- River
- State
- Road

Attachment I-1

Soil Mapping Units

Map Sheet 63

Boardman to Hemingway
Transmission Line Project
Oregon - Idaho

February 2013

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ATTACHMENT I-2
TABLE OF SOIL MAPPING UNITS

Table I-2-1. Soil Properties by Soil Map Unit

County	Soil ID	Proposed or Alternative Corridor	Extent (% of survey area)	Acres in Boundary	Wind Erodibility	K Factor	Slope %	T Factor	Stony/ Rocky	Droughty	Depth to Bedrock (inches)
Morrow	**Proposed Total Length - Morrow County**										
	5	Quincy	11.81%	444.02	2	0.32	3	5	N	Yes	74
	9	Warden	6.55%	246.23	3	0.55	4	5	N	Yes	58
	15	Ritzville	6.01%	225.84	5	0.49	19	5	N	No	38
	61	Hermiston	1.62%	61.09	5	0.37	2	5	N	No	NA
	64	Ritzville	0.21%	7.79	5	0.49	19	5	N	No	38
	67	Lickskillet	17.15%	645.00	8	0.32	23	1	Y	Yes	25
	94	Quincy	1.56%	58.66	2	0.32	3	5	N	Yes	74
	96	Quincy	0.87%	32.72	2	0.32	3	5	N	Yes	74
	100	Warden	0.56%	21.10	3	0.55	4	5	N	Yes	58
	102	Warden	39.90%	1500.17	3	0.55	4	5	N	Yes	58
	104	Warden	0.00%	0.18	3	0.55	4	5	N	Yes	58
	108	Ritzville	0.00%	0.00	5	0.49	19	5	N	No	38
	110	Ritzville	7.72%	290.40	5	0.49	19	5	N	No	38
	112	Hermiston	4.48%	168.56	5	0.37	2	5	N	No	NA
	165	Warden	0.03%	1.02	3	0.55	4	5	N	Yes	58
	168	Warden	0.57%	21.45	3	0.55	4	5	N	Yes	58
	171	Ritzville	0.96%	35.95	5	0.49	19	5	N	No	38
	Proposed Corridor Total Acres		***100.00%***	***3760.17***							

Table I-2-1. Soil Properties by Soil Map Unit

County	Soil ID	Proposed or Alternative Corridor	Extent (% of survey area)	Acres in Boundary	Wind Erodibility	K Factor	Slope %	T Factor	Stony/ Rocky	Droughty	Depth to Bedrock (inches)
Umatilla	**Proposed Total Length - Umatilla County**										
	0	Gurdane	13.70%	544.39	6	0.43	16	2	N	No	15
	6	Quincy	0.00%	0.00	2	0.32	3	5	N	Yes	74
	11	Hall Ranch	21.28%	845.11	7	0.37	24	3	Y	Yes	41
	16	Morrow	23.00%	913.56	6	0.37	4	2	N	No	25
	17	Tolo	4.72%	187.35	5	0.43	53	5	N	No	38
	62	Hermiston	3.59%	142.71	5	0.37	2	5	N	No	NA
	63	Shano	0.05%	2.13	3	0.630217	5	5	N	Yes	NA
	65	Ritzville	4.59%	182.13	5	0.49	19	5	N	No	38
	66	Pilot Rock	17.18%	682.37	5	0.43	4	2	N	No	NA
	68	Lickskillet	10.91%	433.52	8	0.32	23	1	Y	Yes	25
	98	Quincy	0.98%	39.01	2	0.32	3	5	N	Yes	74
	Proposed Corridor Total Acres		***100.00%***	***3972.28***							
Union	**Proposed Total Length - Union County**										
	12	Hall Ranch	42.67%	1300.00	7	0.37	24	3	Y	Yes	41
	20	Gwinly	19.40%	591.03	8	0.37	24	1	Y	Yes	38
	21	La Grande	6.39%	194.84	6	0.28	1	5	N	No	NA
	22	Klicker	4.01%	122.10	6	0.32	24	2	Y	Yes	43
	25	Ruckles	10.00%	304.59	8	0.332791	7	1	Y	Yes	41
	27	Coughanour	13.72%	417.92	6	0.37	5	3	N	No	NA
	28	Wingville	0.83%	25.37	6	0.28	1	5	N	No	NA
	106	Hall Ranch	1.48%	45.18	7	0.37	24	3	Y	Yes	41
	114	Gwinly	0.40%	12.05	8	0.37	24	1	Y	Yes	38
	116	Gwinly	0.84%	25.52	8	0.37	24	1	Y	Yes	38
	118	La Grande	0.27%	8.37	6	0.28	1	5	N	No	NA
	Proposed Corridor Total Acres		***100.00%***	***3046.97***							

Table I-2-1. Soil Properties by Soil Map Unit

County	Soil ID	Proposed or Alternative Corridor	Extent (% of survey area)	Acres in Boundary	Wind Erodibility	K Factor	Slope %	T Factor	Stony/ Rocky	Droughty	Depth to Bedrock (inches)
Baker	**Proposed Total Length - Baker County**										
	26	Ruckles	14.08%	874.99	8	0.332791	7	1	Y	Yes	41
	31	Wingville	0.71%	44.41	6	0.28	1	5	N	No	NA
	33	Ruckles	2.59%	161.07	8	0.332791	7	1	Y	Yes	41
	36	Poall	1.23%	76.28	3	0.43	7	3	N	Yes	4
	69	Ateron	6.62%	411.08	8	0.43	7	1	Y	Yes	43
	71	Coughanour	2.25%	139.69	6	0.37	5	3	N	No	NA
	72	Hyall	2.33%	144.83	8	0.32	48	5	Y	Yes	74
	75	Ateron	5.91%	367.21	8	0.43	7	1	Y	Yes	43
	78	Ruckles	2.41%	149.72	8	0.332791	7	1	Y	Yes	41
	80	Hyall	26.15%	1624.43	8	0.32	48	5	Y	Yes	74
	81	Durkee	4.33%	268.92	7	0.28	7	2	Y	Yes	43
	82	Wingville	0.07%	4.22	6	0.28	1	5	N	No	NA
	84	Snaker	26.56%	1650.15	8	0.32	40	1	Y	Yes	41
	86	Ruckles	1.28%	79.26	8	0.332791	7	1	Y	Yes	41
	89	Hyall	0.04%	2.53	8	0.32	48	5	Y	Yes	74
	120	Ruckles	0.88%	54.60	8	0.332791	7	1	Y	Yes	41
	122	Wingville	0.11%	6.90	6	0.28	1	5	N	No	NA
	144	Coughanour	0.12%	7.74	6	0.37	5	3	N	No	NA
	146	Coughanour	0.19%	11.76	6	0.37	5	3	N	No	NA
	148	Hyall	0.00%	0.02	8	0.32	48	5	Y	Yes	74
	150	Hyall	0.23%	14.57	8	0.32	48	5	Y	Yes	74
	152	Hyall	0.56%	34.58	8	0.32	48	5	Y	Yes	74
	154	Snaker	0.17%	10.48	8	0.32	40	1	Y	Yes	41
	156	Ruckles	0.65%	40.59	8	0.332791	7	1	Y	Yes	41
	158	Hyall	0.53%	33.08	8	0.32	48	5	Y	Yes	74
	160	Hyall	0.00%	0.04	8	0.32	48	5	Y	Yes	74
	Proposed Corridor Total Acres		***100.00%***	***6213.17***							

Table I-2-1. Soil Properties by Soil Map Unit

County	Soil ID	Proposed or Alternative Corridor	Extent (% of survey area)	Acres in Boundary	Wind Erodibility	K Factor	Slope %	T Factor	Stony/ Rocky	Droughty	Depth to Bedrock (inches)
Malheur	**Proposed Total Length - Malheur County**										
	29	Water	0.15%	8.55	-	0	0	0	N	No	NA
	34	Ruckles	35.57%	2047.40	8	0.332791	7	1	Y	Yes	41
	37	Poall	1.25%	72.16	3	0.43	7	3	N	Yes	4
	41	Powder	2.43%	139.83	4L	0.37	1	5	N	No	77
	46	Chilcott	0.42%	23.95	5	0.49	4	2	N	No	NA
	47	Poall	3.99%	229.89	3	0.43	7	3	N	Yes	4
	48	Nyssaton	1.35%	77.96	4L	0.49	1	5	N	No	77
	51	Ruckles	35.08%	2019.30	8	0.332791	7	1	Y	Yes	41
	52	Chilcott	1.55%	89.29	5	0.49	4	2	N	No	NA
	53	Baldock	0.08%	4.35	4L	0.32	1	5	N	No	77
	54	Powder	0.60%	34.42	4L	0.37	1	5	N	No	77
	58	Nyssaton	6.61%	380.79	4L	0.49	1	5	N	No	77
	60	Willhill	4.33%	249.44	6	0.3072	14	2	Y	Yes	30
	91	Powder	0.02%	0.99	4L	0.37	1	5	N	No	77
	92	Shoofly	1.74%	99.89	6	0.333333	2	1	Y	No	35
	124	Ruckles	0.47%	27.31	8	0.332791	7	1	Y	Yes	41
	126	Poall	0.10%	5.85	3	0.43	7	3	N	Yes	4
	128	Powder	0.00%	0.25	4L	0.37	1	5	N	No	77
	132	Powder	0.01%	0.33	4L	0.37	1	5	N	No	77
	134	Powder	0.01%	0.79	4L	0.37	1	5	N	No	77
	136	Ruckles	2.57%	148.23	8	0.332791	7	1	Y	Yes	41
	138	Ruckles	0.65%	37.58	8	0.332791	7	1	Y	Yes	41
	140	Nyssaton	0.45%	26.13	4L	0.49	1	5	N	No	77
	142	Willhill	0.25%	14.11	6	0.3072	14	2	Y	Yes	30
	162	Powder	0.03%	1.83	4L	0.37	1	5	N	No	77
	174	Powder	0.27%	15.27	4L	0.37	1	5	N	No	77
	177	Powder	0.02%	0.88	4L	0.37	1	5	N	No	77
	Proposed Corridor Total Acres		***100.00%***	***5756.76***							

Table I-2-1. Soil Properties by Soil Map Unit

County	Soil ID	Proposed or Alternative Corridor	Extent (% of survey area)	Acres in Boundary	Wind Erodibility	K Factor	Slope %	T Factor	Stony/ Rocky	Droughty	Depth to Bedrock (inches)
	Horn Butte Alternate - Malheur County										
Morrow	99	Warden	0.94%	21.10	3	0.55	4	5	N	Yes	58
	1	Quincy	0.00%	0.01	2	0.32	3	5	N	Yes	74
	95	Quincy	1.46%	32.72	2	0.32	3	5	N	Yes	74
	107	Ritzville	0.00%	0.00	5	0.49	19	5	N	No	38
	163	Warden	0.05%	1.02	3	0.55	4	5	N	Yes	58
	169	Ritzville	1.61%	35.95	5	0.49	19	5	N	No	38
	7	Warden	4.68%	104.66	3	0.55	4	5	N	Yes	58
	93	Quincy	2.63%	58.66	2	0.32	3	5	N	Yes	74
	101	Warden	67.13%	1500.17	3	0.55	4	5	N	Yes	58
	109	Ritzville	12.99%	290.40	5	0.49	19	5	N	No	38
	111	Hermiston	7.54%	168.56	5	0.37	2	5	N	No	NA
	166	Warden	0.96%	21.45	3	0.55	4	5	N	Yes	58
	Horn Butte Alternate Total Acres		***100.00%***	***2234.69***							
	Longhorn Alternate - Morrow County										
Morrow	2	Quincy	0.97%	15.11	2	0.32	3	5	N	Yes	74
	13	Ritzville	0.00%	0.00	5	0.49	19	5	N	No	38
	164	Warden	0.07%	1.02	3	0.55	4	5	N	Yes	58
	170	Ritzville	2.31%	35.95	5	0.49	19	5	N	No	38
	4	Quincy	50.77%	789.85	2	0.32	3	5	N	Yes	74
	8	Warden	42.29%	657.78	3	0.55	4	5	N	Yes	58
	14	Ritzville	2.20%	34.25	5	0.49	19	5	N	No	38
	103	Warden	0.01%	0.18	3	0.55	4	5	N	Yes	58
	167	Warden	1.38%	21.45	3	0.55	4	5	N	Yes	58
	Longhorn Alternate Total Acres		***100.00%***	***1555.60***							

Table I-2-1. Soil Properties by Soil Map Unit

County	Soil ID	Proposed or Alternative Corridor	Extent (% of survey area)	Acres in Boundary	Wind Erodibility	K Factor	Slope %	T Factor	Stony/ Rocky	Droughty	Depth to Bedrock (inches)
Umatilla	**Longhorn Alternate - Umatilla County**										
	3	Quincy	0.00%	0.00	2	0.32	3	5	N	Yes	74
	97	Quincy	100.00%	39.01	2	0.32	3	5	N	Yes	74
	Longhorn Alternate Total Acres		***100.00%***	***39.01***							
Union	**Glass Hill Alternate - Union County**										
	18	Gwinly	0.04%	0.31	8	0.37	24	1	Y	Yes	38
	113	Gwinly	1.76%	12.05	8	0.37	24	1	Y	Yes	38
	10	Hall Ranch	24.77%	169.29	7	0.37	24	3	Y	Yes	41
	19	Gwinly	61.85%	422.75	8	0.37	24	1	Y	Yes	38
	105	Hall Ranch	6.61%	45.18	7	0.37	24	3	Y	Yes	41
	115	Gwinly	3.73%	25.52	8	0.37	24	1	Y	Yes	38
	117	La Grande	1.22%	8.37	6	0.28	1	5	N	No	NA
	Glass Hill Alternate Total Acres		***100.00%***	***683.46***							
Baker	**Flagstaff Alternate including 230-kV Rebuild - Baker County**										
	149	Hyall	1.22%	14.57	8	0.32	48	5	Y	Yes	74
	23	Ruckles	0.01%	0.17	8	0.332791	7	1	Y	Yes	41
	119	Ruckles	4.57%	54.60	8	0.332791	7	1	Y	Yes	41
	24	Ruckles	1.61%	19.23	8	0.332791	7	1	Y	Yes	41
	30	Wingville	17.83%	213.10	6	0.28	1	5	N	No	NA
	70	Coughanour	0.44%	5.25	6	0.37	5	3	N	No	NA
	73	Coughanour	13.25%	158.43	6	0.37	5	3	N	No	NA
	74	Ateron	13.26%	158.57	8	0.43	7	1	Y	Yes	43
	76	Hyall	10.69%	127.76	8	0.32	48	5	Y	Yes	74
	77	Ruckles	4.70%	56.19	8	0.332791	7	1	Y	Yes	41
	79	Hyall	27.32%	326.58	8	0.32	48	5	Y	Yes	74
	121	Wingville	0.58%	6.90	6	0.28	1	5	N	Yes	NA
	143	Coughanour	0.65%	7.74	6	0.37	5	3	N	No	NA
	145	Coughanour	0.98%	11.76	6	0.37	5	3	N	No	NA
	147	Hyall	0.00%	0.02	8	0.32	48	5	Y	Yes	74
	151	Hyall	2.89%	34.58	8	0.32	48	5	Y	Yes	74
	Flagstaff Alternate Total Acres		***100.00%***	***1195.45***							

Table I-2-1. Soil Properties by Soil Map Unit

County	Soil ID	Proposed or Alternative Corridor	Extent (% of survey area)	Acres in Boundary	Wind Erodibility	K Factor	Slope %	T Factor	Stony/ Rocky	Droughty	Depth to Bedrock (inches)
Baker	**Willow Creek Alternate - Baker County**										
	157	Hyall	9.14%	33.08	8	0.32	48	5	Y	Yes	74
	83	Snaker	2.09%	7.57	8	0.32	40	1	Y	Yes	41
	85	Ruckles	32.68%	118.31	8	0.332791	7	1	Y	Yes	41
	87	Hyall	41.97%	151.92	8	0.32	48	5	Y	Yes	74
	153	Snaker	2.89%	10.48	8	0.32	40	1	Y	Yes	41
	155	Ruckles	11.21%	40.59	8	0.332791	7	1	Y	Yes	41
	159	Hyall	0.01%	0.04	8	0.32	48	5	Y	Yes	74
	Willow Creek Alternate Total Acres		***100.00%***	***361.99***							
Malheur	**Willow Creek Alternate - Malheur County**										
	44	Chilcott	1.03%	17.07	5	0.49	4	2	N	No	NA
	42	Chilcott	1.04%	17.14	5	0.49	4	2	N	No	NA
	32	Ruckles	3.02%	49.78	8	0.332791	7	1	Y	Yes	41
	35	Poall	40.95%	675.53	3	0.43	7	3	N	Yes	4
	40	Powder	4.48%	73.86	4L	0.37	1	5	N	No	77
	43	Chilcott	8.39%	138.35	5	0.49	4	2	N	No	NA
	45	Chilcott	22.72%	374.76	5	0.49	4	2	N	No	NA
	88	Hyall	16.32%	269.26	8	0.32	48	5	Y	Yes	74
	123	Ruckles	1.66%	27.31	8	0.332791	7	1	Y	Yes	41
	125	Poall	0.35%	5.85	3	0.43	7	3	N	Yes	4
	133	Powder	0.05%	0.79	4L	0.37	1	5	N	No	77
	Willow Creek Alternate Total Acres		***100.00%***	***1649.69***							

Table I-2-1. Soil Properties by Soil Map Unit

County	Soil ID	Proposed or Alternative Corridor	Extent (% of survey area)	Acres in Boundary	Wind Erodibility	K Factor	Slope %	T Factor	Stony/ Rocky	Droughty	Depth to Bedrock (inches)
	Malheur S Alternate - Malheur County										
Malheur	173	Powder	0.51%	15.27	4L	0.37	1	5	N	No	77
	55	Chilcott	0.96%	28.52	5	0.49	4	2	N	No	NA
	39	Powder	5.00%	148.53	4L	0.37	1	5	N	No	77
	50	Ruckles	73.13%	2174.56	8	0.332791	7	1	Y	Yes	41
	56	Chilcott	9.23%	274.32	5	0.49	4	2	N	No	NA
	57	Nyssaton	4.23%	125.68	4L	0.49	1	5	N	No	77
	59	Poall	3.92%	116.50	3	0.43	7	3	N	Yes	4
	90	Powder	0.00%	0.00	4L	0.37	1	5	N	No	77
	130	Powder	0.32%	9.65	4L	0.37	1	5	N	No	77
	137	Ruckles	1.26%	37.58	8	0.332791	7	1	Y	Yes	41
	139	Nyssaton	0.88%	26.13	4L	0.49	1	5	N	No	77
	141	Willhill	0.47%	14.11	6	0.3072	14	2	Y	Yes	30
	161	Powder	0.06%	1.83	4L	0.37	1	5	N	No	77
	176	Powder	0.03%	0.88	4L	0.37	1	5	N	No	77
	Malheur S Alternate Total Acres		***100.00%***	***2973.57***							
	Double Mountain Alternate - Malheur County										
Malheur	127	Powder	0.03%	0.25	4L	0.37	1	5	N	No	77
	172	Powder	1.93%	15.27	4L	0.37	1	5	N	No	77
	38	Powder	22.22%	175.82	4L	0.37	1	5	N	No	77
	49	Ruckles	55.71%	440.76	8	0.332791	7	1	Y	Yes	41
	129	Powder	1.22%	9.65	4L	0.37	1	5	N	No	77
	131	Powder	0.04%	0.33	4L	0.37	1	5	N	No	77
	135	Ruckles	18.73%	148.23	8	0.332791	7	1	Y	Yes	41
	175	Powder	0.11%	0.88	4L	0.37	1	5	N	No	77
	Double Mountain Alternate Total Acres		***100.00%***	***791.18***							

ATTACHMENT I-3
1200-C PERMIT APPLICATION

May 3, 2012

Ms. Jackie Ray
Oregon Department of Environmental Quality
700 SE Emigrant, Suite 330
Pendleton, OR 97801

Dear Ms. Ray:

Idaho Power Company (IPC) proposes to construct an overhead, high-voltage transmission line, known as the Boardman to Hemingway Transmission Line Project (Project), from near Boardman, Oregon through Morrow, Umatilla, Union, Baker and Malheur counties and into southwest Idaho. We are currently in the permitting phase of the Project that is occurring on two parallel paths. Idaho Power is pursuing a site certificate from the Oregon Energy Facility Siting Council (EFSC) as administered by the Oregon Department of Energy (Department). A federal Environmental Impact Statement (EIS) is also under development. The US Department of Interior, Bureau of Land Management (BLM) is the lead federal agency for the EIS process.

The requirements of the EFSC certificate are found in Oregon Administrative Rules OAR 345, division 021. As part of the required soils analysis (OAR 345-021-0010(i), Exhibit I) the EFSC relies, in part, on meeting soil protection standards by a determination that the Project can be expected to receive a National Pollutant Discharge Elimination System (NPDES) 1200-C permit for stormwater discharge. OAR 345-021-0000(7) allows the applicant to submit the application for the site certificate prior to applying for the federally delegated permit, but requires a copy of the federally delegated permit be submitted to the department to support their completeness finding. An initial corridor alignment has been studied and forms the basis for the preliminary Application for Site Certificate, 1200-C permit, and other ancillary permits, however, the final alignment may be modified as the EIS and EFSC processes proceed. The final 1200-C permit cannot be completed until the two decision bodies concur on the final alignment.

The purpose of this letter is to transmit the preliminary application for a 1200-C stormwater permit for the construction of the Project. IPC is submitting this preliminary application including a preliminary Erosion and Sediment Control Plan (ESCP) to facilitate ODOE and ODEQ review of the preliminary Application for Site certification which is scheduled for submittal to ODOE later this year. In absence of a complete ESCP, based on the final alignment, IPC has included an example of the plan format, content, and details that would comprise the plan when submitted.

The basis for this approach was established at a January 12, 2012 project meeting attended by Ms. Krista Ratliff, of DEQ's Bend, Oregon office. In that meeting Pike Energy, LLC, IPC's engineer, had completed preliminary erosion and sediment control

1221 W. Idaho St. (83702)
P.O. Box 70
Boise, ID 83707

plan (ESCP) drawings that comply with many of the requirements of the 1200-C permit. The result of that meeting was that IPC would present a preliminary 1200-C permit application, including the preliminary ESCP as a means of furthering the EFSC process. During the meeting, it was stated that the EFSC process can proceed without a final 1200-C permit if DEQ prepares a letter to EFSC that both acknowledges the initiation of the permit application process and states the estimated date when DEQ will complete its review and issue a permit decision. IPC understands that the project cannot proceed until the final 1200-C permit is obtained.

Enclosed are two copies of the preliminary 1200-C permit, including the preliminary ESCP, and the permit fee. We would appreciate your review and comments, with the understanding that later tasks may include DEQ production of the letter to EFSC, after this preliminary permit has been reviewed approved by your office.

We appreciate your consideration in this matter.

Sincerely,

Todd Adams

Todd Adams
Project Manager

Cc: Z Funkhouser, IPC
M Bracke, IPC
D Dockter, IPC

DEQ USE ONLY
File #:
Application #:
LLID/RM:
River Mile:
Legal Name Confirmed: ☐
Notes:

APPLICATION FOR NEW NPDES GENERAL PERMIT #1200-C

For stormwater discharges to surface waters from construction activities disturbing one acre or more that do not meet automatic coverage requirements.*

State of Oregon Department of Environmental Quality

Oregon Department of Environmental Quality

DEQ USE ONLY
Date Received:
Amount: $
Check Name:
Check #:
Deposit #:
Receipt #:
Notes:

* A project *may* be eligible for "automatic coverage" under NPDES general permit 1200-CN if stormwater *does not* discharge to a water body with a TMDL or 303(d) listing for sediment or turbidity *and* it meets one of the following criteria (see 1200-CN at http://www.deq.state.or.us/wq/wqpermit/docs/general/npdes1200cn/1200CNPermit.pdf):

1) Disturbs less than one acre and is located in Gresham, Troutdale, or Wood Village.
2) Disturbs less than five acres and is located in Albany, Corvallis, Eugene, Milwaukie, Multnomah Co. (unincorporated areas), Springfield, West Linn, or Wilsonville.
3) Disturbs less than five acres and is within the jurisdictions of Clackamas Co. Water Environment Services [Gladstone, areas within Clackamas Co. Service Dist. #1 (excluding Happy Valley), and areas within the Surface Water Management Agency of Clackamas Co. (including Rivergrove)], Clean Water Services (Banks, Beaverton, Cornelius, Durham, Forest Grove, Hillsboro, King City, North Plains, Sherwood, Tigard, Tualatin, and Washington Co. within Urban Growth Boundary), or Rogue Valley Sewer Services (Central Point, Phoenix, Talent, and portions of Jackson Co. in NPDES MS4 permit area).

Please answer all questions.

A. PROJECT INFORMATION

1. Idaho Power Company
Applicant (entity legally responsible for permit)
Zach Funkhouser
Contact Name (if different from applicant)
1221 West Idaho Street
Address
Boise | ID | 83702
City | State | Zip
(208) 388-5375 | zfunkhouser@idaho power.com
Telephone | E-Mail Address

2. Zach Funkhouser
Invoice Contact Name (if different from applicant)
(same as contact address)
Address
City | State | Zip
Telephone | E-Mail Address

3. Pike Energy Solutions, LLC
Architect/Engineering Firm (Erosion & Sediment Control Plan)
Aaron Storo
Project Manager
(503) 937-2000 | astoro@pike.com
Telephone | E-Mail Address

4. To Be Determined
Applicant's Designated Erosion and Sediment Control Inspector
Company Name
Telephone | E-Mail Address

5. Name of Project
Boardman to Hemingway Transmission Line
Address or Cross Street
City | State | Zip
County

6. Nature of Construction Activity
- ☐ Single Family (SIC Code 1521)
- ☐ Multi-Family Residential (SIC Code 1522)
- ☐ Commercial (SIC Code 1542)
- ☐ Industrial (SIC Code 1541)
- ☐ Highway (SIC Code 1611)
- ☒ Utilities (SIC Code 1623): Transmission Line
- ☐ Other (include SIC Code):

A. PROJECT INFORMATION (continued)

7. Approximate location of center of site:

Latitude: 45.012

Longitude: -117.838

For assistance: DEQ Location Tool at http://deqgisweb.deq.state.or.us/llid/llid.html

8. Project Size:

Total Site Acreage (acres): To Be Determined

Total Disturbed Area (acres): 5,228.9

9. Stormwater runoff during construction will flow to:

- ☐ Infiltration device(s)
- ☐ Creek/Stream (provide name):
- ☐ Ditch (provide name of receiving stream for ditch):
- ☐ Municipal storm sewer or drainage system (provide name of receiving stream for system):
- ☒ Other: See Attached Table A-9

10. Stormwater runoff during construction discharges directly to or through a storm sewer or drainage system that discharges to a water body with a Total Maximum Daily Load (TMDL) or 303(d) listing for turbidity or sedimentation? ☐ YES ☒ NO

For assistance: DEQ Lookup Tool at http://deq12.deq.state.or.us/tmdl/default.aspx or DEQ Map/Table at http://deq12.deq.state.or.us/tmdl/default.aspx

B. LAND USE COMPATIBILITY STATEMENT

Submit a DEQ Land Use Compatibility Statement (LUCS) form that has been completed by the local land use authority with this application. Attach the *original* LUCS and, if applicable, written findings by the local authority. DEQ will not process the application unless the local land use authority indicates on the LUCS form that the project is compatible with the local acknowledged comprehensive plan and land use regulations. See Attached Insert B-1

A copy of this form may be found at http://www.deq.state.or.us/pubs/permithandbook/generallucs.pdf

C. SIGNATURE OF LEGALLY AUTHORIZED REPRESENTATIVE

The legally authorized representative *must* sign the application.

I hereby certify that the information contained in this application is true and correct to the best of my knowledge and belief. In addition, I agree to pay all permit fees required by Oregon Administrative Rules 340-045. This includes a compliance determination fee invoiced annually by DEQ to maintain the permit.

Vern Porter	VP, Delivery, Engineering and Operations
Name of Legally Authorized Representative (Type or Print)	**Title**
Signature of Legally Authorized Representative	**Date**

APPLICATION AND FEE SUBMITTAL

To authorize permit registration, the following must be completed and submitted to the appropriate DEQ regional office or DEQ Agent (see list of offices in application instructions, pp. 3-4):

- ☒ DEQ application form signed by the Legally Authorized Representative and meeting the signature requirements below.
- ☐ DEQ LUCS by local land use authority indicating the activity is compatible with local acknowledged comprehensive plan and land use regulations. Include the Findings if so stated on the LUCS.
- ☐ Stormwater Erosion and Sediment Control Plan Narrative, if applicable.
- ☒ Stormwater Erosion and Sediment Control Plan Drawings; full-sized hard copy and electronic PDF files.
- ☐ The fee for a new application is $1,586 payable to Oregon DEQ and you must submit it with this application. Please note that DEQ will also invoice you for an annual fee of $804 if your project needs permit coverage for more than a year. These fees are subject to change; please visit http://www.deq.state.or.us/wq/rules/div045/tables.pdf for current fees. If you are sending your application to a DEQ Agent, check with the DEQ Agent for appropriate fees and make check payable to the DEQ Agent.

NPDES General Permit 1200-C for Construction Activities
Application Instructions

A. PROJECT INFORMATION

1. Enter the legal name of the applicant. Permit coverage will be issued to this entity. This is the person, business, public organization, or other entity responsible for ensuring that erosion and sediment controls are in place and in working order through the life of the project.
   - The name must be a legal, active name registered with the Oregon Department of Commerce, Corporation Division in Salem at 503-378-4752 or http://egov.sos.state.or.us/br/pkg_web_name_srch_inq.login, unless otherwise exempted by their rules. If the name of the applicant is not registered with the Corporation Division and the applicant is a business entity, attach legal documents that verify the entity's existence with the application. The applicant may not use an assumed business name.
   - Permit coverage may be transferred from one party to another. For example, a developer may apply for a permit and then transfer the permit to a contractor. Transfer forms are available from DEQ or at http://www.deq.state.or.us/wq/stormwater/constappl.htm.
2. Provide invoice contact information for billing of DEQ annual permit fee if different from the applicant in #1 above.
3. Provide contact information for the Architect or Consulting Engineer who designed the Erosion and Sediment Control Plan (ESCP).
4. Provide information on the Erosion and Sediment Control Inspector. This is not a DEQ or DEQ Agent inspector; this is an inspector employed by the applicant. If the inspector has not been selected yet, please provide the name of consultant who prepared the ESCP and their ESC certification. When the inspector is selected, submit to DEQ or to the DEQ Agent, the name, contact information, training and experience (see condition A.12.b.iii of the 1200-C).
5. Provide the common name of the project (for example, the name of the subdivision), the location of the site with respect to crossroads in the area, and, if available, a street address.
6. Check the box that best describes the nature of the construction activity. If "other" is selected, describe the use and include a Standard Industrial Classification Code (visit http://www.osha.gov/pls/imis/sicsearch.html for codes).
7. Enter latitude and longitude for the approximate center of the site (DEQ Location Tool at http://deqgisweb.deq.state.or.us/llid/llid.html or at http://deqapp1/website/lit/data.asp).
8. Provide information on the project size as indicated (based on the total project and not just a single phase).
9. Indicate where stormwater runoff during construction will flow. Use your best judgment to determine the name of the receiving water body.
10. Indicate whether stormwater runoff during construction will discharge directly to or through a storm sewer or drainage system that discharges to a Total Maximum Daily Load (TMDL) or 303(d) listed water body for turbidity or sedimentation. To make this determination, the following tools are available on DEQ's website:
    - Map and table: http://www.deq.state.or.us/WQ/TMDLs/basinmap.htm
    - Lookup tool: http://deq12.deq.state.or.us/tmdl/default.aspx

B. LAND USE COMPATIBILITY STATEMENT

Complete as indicated.

C. SIGNATURE OF LEGALLY AUTHORIZED REPRESENTATIVE

DEFINITION OF LEGALLY AUTHORIZED REPRESENTATIVE:

Please also provide the information requested in brackets *[ ]*

- **Corporation** - president, secretary, treasurer, vice-president, or any person who performs principal business functions; or a manager of one or more facilities that is authorized in accordance to corporate procedure to sign such documents.
- **Partnership** - General partner *[list of general partners, their addresses, and telephone numbers].*
- **Sole Proprietorship** - Owner(s) *[each owner must sign the application].*
- **City, County, State, Federal, or other Public Facility** - Principal executive officer or ranking elected official.
- **Limited Liability Company** - Member *[articles of organization].*
- **Trusts –** Acting trustee *[list of trustees, their addresses, and telephone numbers].*

(please see 40 CFR §122.22 for more detail, if needed)

NPDES General Permit 1200-C for Construction Activities
Application Instructions

APPLICATION AND FEE SUBMITTAL

Submit this application, Narrative Parts I, II & III (if applicable), LUCS, Erosion and Sediment Control Plan(2 full-sized hard copies and 1 PDF copy), and the applicable fee to the appropriate DEQ regional office or DEQ Agent listed below. Contact the appropriate DEQ regional office or DEQ Agent for the best way to submit the electronic version of the ESCP.

- If you are in an area serviced by a DEQ Agent, check with the DEQ Agent for appropriate fees and make check payable to the DEQ Agent.
- If you are sending your application to DEQ, the fee for a new application is $1,586 payable to the Oregon DEQ. Please note that DEQ will also invoice you for an annual fee of $804 if your project needs permit coverage for more than a year. These fees are subject to change; visit http://www.deq.state.or.us/wq/rules/div045/tables.pdf for current fees.

DEQ Northwest Region 2020 SW 4th Avenue, Suite 400 Portland, OR 97201-4987 503-229-5438 or 1-800-452-4011	**DEQ Western Region** 165 East 7th Avenue, Suite 100 Eugene, OR 97401 541-687-7326 or 1-800-452-4011	**DEQ Eastern Region** 700 SE Emigrant Avenue, Suite 330 Pendleton, OR 97801 541-278-4605 or 1-800-452-4011
City of Eugene 99 W. 10th Avenue Eugene, OR 97401 541-722-5519	**City of Hermiston** 215 Gladys Avenue Hermiston, OR 97838 541-667-5025	**City of Troutdale** 342 SW 4th Street Troutdale, OR 97060 503-674-7270
Clean Water Services 2550 SW Hillsboro Highway Hillsboro, OR 97123 503-681-5101 *Includes Banks, Beaverton, Cornelius, Durham, Forest Grove, Gaston, Hillsboro, King City, North Plains, Sherwood, Tigard, Tualatin, and portions of Washington Co.*	**Rogue Valley Sewer Services** 138 West Vilas Road, PO Box 3130 Central Point, OR 97502 541-353-4594 *Includes Central Point, Phoenix, Talent, White City and portions of Jackson Co.*	**Clack Co. Water Environmental Services** 150 Beavercreek Road, Suite 430 Oregon City, OR 97045 503-742-4567 *Unincorporated Clackamas County and areas within the Cities of Rivergrove and Gladstone*

Insert B-1

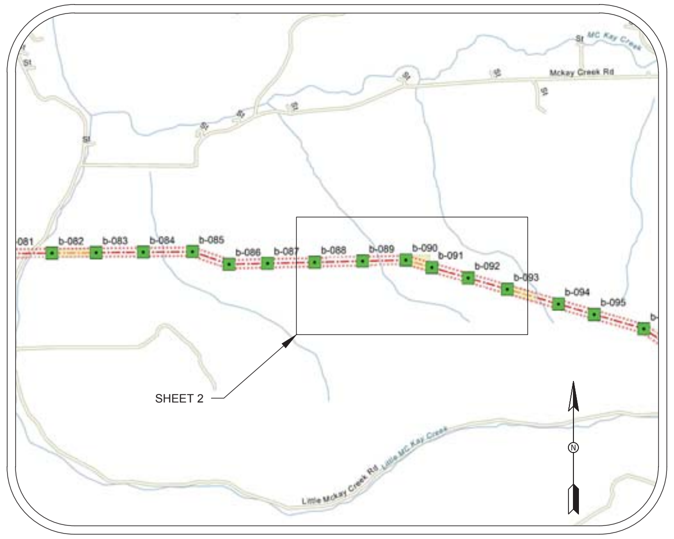
Idaho Power Company (IPC) is applying for a Site Certification from the Energy Facility Siting Council (EFSC). IPC has elected to follow “Path B” under ORS 504 (1)(b), which means that the site certificate binds state and local jurisdictions to the EFSC’s action and requires them to issue permits, licenses, and certificates for construction and operations of the facility. The substantive criteria identified by each county from their county comprehensive plans and land use ordinances are taken into account as part of the site certification process.

Table A-9. Stormwater Runoff to Streams

Route Name	County	Corridor Length (miles)	Total Disturbed Area (Acres)[1]	Subbasin Name[2]	Subbasin HUC	Intermittent (within 500 feet)[3] Disturbed Area (acres)	Intermittent (within 500 feet)[3] % of Total Disturbance Area	Perennial (within 500 feet) Disturbed Area (acres)	Perennial (within 500 feet) % of Total Disturbance Area	303(d) Listed Sediment (within 500 feet) Disturbed Area (acres)	303(d) Listed Sediment (within 500 feet) % of Total Disturbance Area
Proposed Corridor and Grassland Substation	Morrow County, OR	45.8	348.0	Middle Columbia-Lake Wallula	17070101	78.4	22.5	0.0	0.0	0.0	0.0
			256.3	Umatilla	17070103	126.7	49.4	0.0	0.0	0.0	0.0
			95.1	Willow	17070104	7.3	7.7	7.4	7.8	0.0	0.0
Proposed Corridor	Umatilla County, OR	49.5	810.9	Umatilla	17070103	219.5	27.1	18.8	2.3	9.5	1.2
			4.4	Upper Grande Ronde	17060104	0.0	0.0	0.0	0.0	0.0	0.0
	Union County, OR	39.4	191.5	Powder	17050203	60.0	31.3	11.8	6.2	0.0	0.0
			4.6	Umatilla	17070103	0.0	0.0	0.0	0.0	0.0	0.0
			542.6	Upper Grande Ronde	17060104	128.9	23.7	47.1	8.7	0.0	0.0
	Baker County, OR	69.1	41.0	Brownlee Reservoir	17050201	9.9	24.1	0.0	0.0	0.0	0.0
			650.6	Burnt	17050202	112.7	17.3	108.9	16.7	0.0	0.0
			520.4	Powder	17050203	103.5	19.9	37.6	7.2	0.0	0.0
	Malheur County, OR	72.1	15.2	Brownlee Reservoir	17050201	3.7	24.6	0.0	0.0	0.0	0.0
			90.0	Bully	17050118	40.8	45.3	3.2	3.6	0.0	0.0
			264.6	Lower Malheur	17050117	69.5	26.2	5.4	2.0	0.0	0.0
			260.8	Lower Owyhee	17050110	76.1	29.2	3.6	1.4	0.0	0.0
			210.4	Middle Snake-Succor	17050103	60.5	28.7	1.5	0.7	0.0	0.0
			400.3	Willow	17050119	202.8	50.7	11.3	2.8	0.0	0.0
Proposed – 138/69-kV Relocate/Rebuild	Baker County, OR	5.3	41.1	Burnt	17050202	2.2	5.4	21.6	52.5	0.0	0.0
	Total Proposed Corridor	***305.0***	***5,228.9***			***1,439.2***		***281.1***		***56.9***	
Alternative Substations and Corridor Segments											
Horn Butte Substation Alternative	Morrow County, OR	26.9	258.5	Middle Columbia-Lake Wallula	17070101	78.4	30.3	0.0	0.0	0.0	0.0
			65.7	Umatilla	17070103	48.7	74.2	0.0	0.0	0.0	0.0
			102.1	Willow	17070104	7.3	7.2	7.4	7.3	0.0	0.0
Longhorn Substation Alternative	Morrow County, OR	19.0	166.7	Middle Columbia-Lake Wallula	17070101	0.0	0.0	0.0	0.0	0.0	0.0
			132.6	Umatilla	17070103	35.1	26.5	0.0	0.0	0.0	0.0
Glass Hill Alternative	Union County, OR	7.6	155.0	Upper Grande Ronde	17060104	13.9	8.9	7.1	4.6	0.0	0.0
Flagstaff Alternative including 230-kV Rebuild	Baker County, OR	15.3	299.4	Powder	17050203	73.0	24.4	21.3	7.1	0.0	0.0
Malheur S Alternative	Malheur County, OR	33.6	299.2	Lower Malheur	17050117	121.8	40.7	17.8	6.0	0.0	0.0
			121.0	Lower Owyhee	17050110	40.3	33.3	2.5	2.1	0.0	0.0
			117.8	Middle Snake-Succor	17050103	50.1	42.5	0.0	0.0	0.0	0.0
Double Mountain Alternative	Malheur County, OR	7.4	110.9	Lower Malheur	17050117	37.4	33.7	2.2	2.0	0.0	0.0
			31.4	Lower Owyhee	17050110	23.0	73.4	0.0	0.0	0.0	0.0
Willow Creek Alternative	Malheur County, OR										

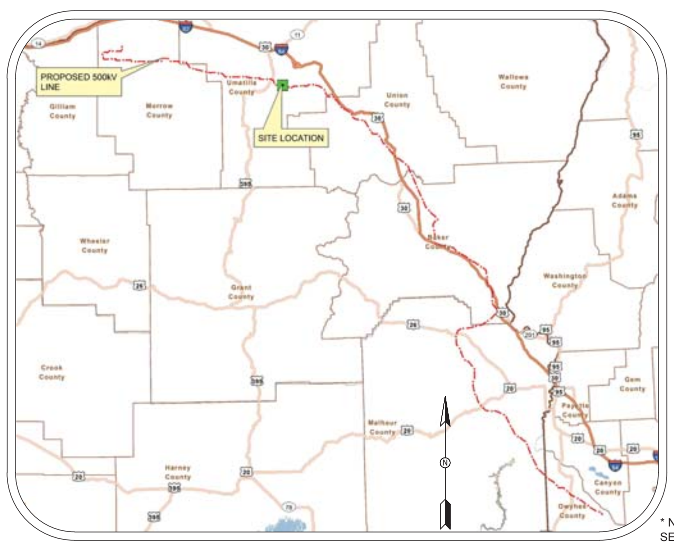
[1] Total disturbed area is for all project affected areas, not just areas near streams.
[2] Subbasins with EPA-approved TMDLs involving sediment include Middle-Snake Succor, Upper Grande Ronde, and Umatilla.
[3] Includes all intermittent and ephemeral streams crossed. (Two or fewer stream crossings are ephemeral).
HUC – hydrologic unit code

BOARDMAN TO HEMINGWAY 500 kV PROJECT
EROSION AND SEDIMENT CONTROL PLANS



SITE MAP

NOT TO SCALE



NOT TO SCALE

VICINITY MAP

PROJECT LOCATION:

THE PROJECT CORRIDOR BEGINS NEAR BOARDMAN IN MORROW COUNTY, OREGON AND ENDS AT HEMINGWAY SUBSTATION, LOCATED IN OWYHEE COUNTY, IDAHO.

ATTENTION EXCAVATORS:

OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. YOU MAY OBTAIN COPIES OF THESE RULES FROM THE CENTER BY CALLING 503-232-1987. IF YOU HAVE ANY QUESTIONS ABOUT THE RULES, YOU MAY CONTACT THE CENTER. YOU MUST NOTIFY THE CENTER AT LEAST TWO BUSINESS DAYS, BEFORE COMMENCING AN EXCAVATION. CALL 503-246-6699.

OWNER

IDAHO POWER COMPANY
1221 WEST IDAHO STREET
BOISE, ID 83702

OWNER'S ENGINEER

PIKE ENERGY SOLUTIONS, LLC
700 NE MULTNOMAH ST. SUITE 500
PORTLAND, OR 97232
503-937-2000

CONTRACTOR

TO BE DETERMINED

NARRATIVE

IDAHO POWER IS PROPOSING TO CONSTRUCT AND OPERATE A NEW, APPROXIMATELY 304-MILE-LONG, ELECTRIC TRANSMISSION LINE BETWEEN NORTHEASTERN OREGON AND SOUTHWESTERN IDAHO KNOWN AS THE BOARDMAN TO HEMINGWAY (B2H) PROJECT. THIS OVERHEAD 500-KV LINE WILL CONNECT THE GRASSLAND SUBSTATION LOCATED NEAR BOARDMAN, OREGON TO THE HEMINGWAY SUBSTATION NEAR MELBA, IDAHO. THE LINE WILL CROSS FEDERAL, STATE, AND PRIVATE LANDS IN SIX COUNTIES IN OREGON AND IDAHO.

THIS ESCP (FIVE SHEETS INCLUDING THIS TITLE SHEET) WAS DEVELOPED AS A REPRESENTATIVE SAMPLE OF A 1-MILE SECTION OF THE B2H PROJECT ROUTE. THIS SECTION OF THE PROJECT PORTRAYS A REPRESENTATIVE SAMPLE OF EXISTING CONDITIONS (E.G., TOPOGRAPHIC, SURFACE DRAINAGE, AND SOIL/GEOLOGIC) AND FEATURES OF THE PROPOSED TRANSMISSION LINE PROJECT.

THE PROPOSED TRANSMISSION LINE CORRIDOR RIGHT OF WAY WIDTH IS 250 FEET. THE TRAVELED WIDTH OF ACCESS ROADS WILL RANGE FROM 16 TO 20 FEET (WITH A TOTAL DISTURBANCE WIDTH OF 25 FEET IN MOST AREAS). SHEET 2 SHOWS PROPOSED EXISTING AND NEW ACCESS ROADS WITHIN A 25-FOOT WIDE CORRIDOR OF DISTURBANCE, THE PROPOSED TRANSMISSION LINE WITHIN A 250-FOOT WIDE RIGHT OF WAY, PROPOSED STRUCTURES (I.E., TOWERS) WITHIN 250-FOOT SQUARE CONSTRUCTION WORK AREA, A PROPOSED LINE PULLING AND TENSIONING SITE, AND THE LOCATIONS OF PROPOSED SILT FENCES, ROCK FORD STREAM CROSSINGS, WATERBARS AND OTHER EROSION AND SEDIMENT CONTROL MEASURES. PRESENTED ON SEPARATE SHEETS ARE DETAILS OF EROSION AND SEDIMENT CONTROL MEASURES AS WELL AS EXAMPLES OF STRUCTURE WORK AREAS AND ACCESS ROADS. WORK AREAS ARE TO BE RESTORED TO THEIR ORIGINAL CONDITION AND USE, OR AS AGREED TO BY LANDOWNERS. ROW AREAS WILL BE MAINTAINED AS PER IPC VEGETATION MANAGEMENT PLAN AND ROW MAINTENANCE STANDARDS.

NATURE OF CONSTRUCTION ACTIVITY AND ESTIMATED TIME TABLE

CONSTRUCTION TO BUILD A 500 kV TRANSMISSION LINE
DISTURBED AREA
STRUCTURE LOCATIONS =5.5 ACRES*
ACCESS ROADS =8.3 ACRES*
TOTAL DISTURBED AREA =13.8 ACRES*
PULLING AND TENSIONING SITES =4.9 ACRES*
WORK AREAS = 0.0 ACRES*
TOTAL RIGHT-OF-WAY AREA =38.4 ACRES*

SITE SOIL CLASSIFICATION:

STRUCTURE	DESCRIPTION	AVERAGE SLOPE
b-088	GURDANE SILTY CLAY LOAM	7%-25%
b-089	GURDANE SILTY CLAY LOAM	7%-25%
b-090	GURDANE-ROCKLY COMPLEX	2%-20%
b-091	GURDANE-ROCKLY COMPLEX	2%-20%
b-092	GURDANE SILTY CLAY LOAM	25%-45%
b-093	GURDANE SILTY CLAY LOAM	25%-45%

ON-SITE SOILS HAVE A MODERATE TO HIGH EROSION POTENTIAL.*
ALL FILL MATERIAL SHALL BE GENERATED ON-SITE OR IMPORTED FROM PERMITTED LOCAL QUARRIES.

RECEIVING WATER BODIES:*

UNNAMED TRIBUTARY TO MCKAY CREEK*

* NOTE: INFORMATION IS SPECIFIED ONLY TO THIS EXAMPLE MILE-LONG SEGMENT OF THE BOARDMAN TO HEMINGWAY 500 kV PROJECT. A FULL TABULATION CONDITIONS FOR ALL APPLICABLE SEGMENTS WILL BE PRESENTED AS A SUPPLEMENT TO THIS ESCP.

THE PERMITTEE IS REQUIRED TO MEET ALL THE CONDITIONS OF THE 1200C PERMIT. THIS ESCP AND GENERAL CONDITIONS HAVE BEEN DEVELOPED TO FACILITATE COMPLIANCE WITH THE 1200C PERMIT REQUIREMENTS. IN CASES OF DISCREPANCIES OR OMISSIONS, THE 1200C PERMIT REQUIREMENTS SUPERCEDE REQUIREMENTS OF THIS PLAN.

SHEET INDEX
EROSION AND SEDIMENT CONTROL PLANS

GENERAL NOTES:

1. ONLY CLEAR AND GRUB FOR INSTALLATION OF EROSION CONTROL MEASURES PRIOR TO MASS CLEARING.
2. NO CLEARING SHALL BE ALLOWED WITHOUT THE INSTALLATION OF THE APPROVED EROSION CONTROL MEASURES.
3. THE MINIMUM MEASURES INCLUDE TEMPORARY CONSTRUCTION ENTRANCES, WATERBARS ON NEW (AND IMPROVED EXISTING) ROADS, AND PERIMETER EROSION CONTROL MEASURES (SEEDING OF NEW/ DISTURBED CUT AND FILL SLOPES). ADDITIONAL MEASURES (I.E. STRUCTURAL BMPs) WILL BE APPLIED AS NEEDED AND DETAILED IN THIS ESCP.
4. THE EROSION AND SEDIMENT CONTROL INSPECTOR MUST PERFORM DAILY INSPECTIONS OF THE BMPs AND DISCHARGE OUTFALLS WHEN RAINFALL AND RUNOFF OCCUR.
5. ALL ESCP CONTROLS AND PRACTICES MUST BE INSPECTED VISUALLY ONCE TO ENSURE THAT BMPs ARE IN WORKING ORDER PRIOR TO THE SITE BECOMING INACTIVE OR IN ANTICIPATION OF SITE INACCESSIBILITY AND MUST BE INSPECTED VISUALLY ONCE EVERY TWO (2) WEEKS DURING INACTIVE PERIODS GREATER THAN SEVEN (7) CONSECUTIVE CALENDAR DAYS.
6. DO NOT REMOVE TEMPORARY SEDIMENT CONTROL PRACTICES UNTIL PERMANENT VEGETATION OR OTHER COVER OF EXPOSED AREAS IS ESTABLISHED. SEED MIX MUST BE APPROPRIATE TO SEASON AND SITE CONDITIONS, PREFERABLY NATIVE, AND FREE OF NOXIOUS WEEDS. CONSULT LOCAL AGRONOMIST OR EROSION CONTROL SPECIALISTS FOR SEED MIXES.
7. PROVIDE PERMANENT EROSION CONTROL MEASURES ON ALL EXPOSED AREAS. REMOVE ALL TEMPORARY EROSION CONTROL MEASURES AS EXPOSED AREAS BECOME STABILIZED, UNLESS DOING SO CONFLICTS WITH LOCAL REQUIREMENTS. PROPERLY DISPOSE OF CONSTRUCTION MATERIALS AND WASTE, INCLUDING SEDIMENT RETAINED BY TEMPORARY BMPs.
8. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICAL IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN FOURTEEN (14) DAYS AFTER WORK HAS CEASED.
9. TOPSOIL AND ALL EXCESS SOIL GENERATED BY GRADING ACTIVITIES SHALL BE STOCKPILED SEPARATELY AND CONTAINED WITH AN APPROPRIATE BMP TO PREVENT OFFSITE SEDIMENTATION.
10. CARE SHOULD BE TAKEN TO NOT MIX THE UNDERLYING SOIL AND THE TOPSOIL.
11. ALL DISTURBED AREAS TO RECEIVE LAYER OF TOPSOIL SUFFICIENT IN DEPTH TO PROVIDE ADEQUATE GERMINATION OF PERMANENT SEED.
12. VEGETATIVE BUFFER STRIPS SHALL BE UTILIZED TO REMOVE SEDIMENT AND OTHER POLLUTANTS FROM RUNOFF, WHERE EFFECTIVE.
13. MINIMUM WIDTH OF THE VEGETATIVE BUFFER STRIP SHALL BE [illegible]

[illegible]

[illegible]

16. STRUCTURAL BMPs WILL BE INSTALLED IN ANY LOCATION WITH GROUND DISTURBANCE WITHIN 50 FEET OF A WATER BODY.
17. STRUCTURAL BMPs WILL BE INSTALLED AT GROUND DISTURBANCE LOCATIONS WITHIN 75 FEET OF A WATER BODY IF THE AREA BELOW THE DISTURBANCE IS SLOPED STEEPER THAN 5% OR CONTAINS LESS THAN 50% VEGETATIVE COVER.
18. THE CONSTRUCTION CONTRACTOR SHALL TAKE NECESSARY ACTION TO MINIMIZE THE TRACKING OF MUD ON TO PAVED ROADWAY(S) FROM CONSTRUCTION AREAS AND THE GENERATION OF DUST. THE CONTRACTOR SHALL DAILY REMOVE MUD/SOIL FROM PAVEMENT AS MAY BE REQUIRED.
19. CONCRETE TRUCK WASHOUTS SHALL BE LOCATED PRIOR TO COMMENCEMENT OF ANY CONCRETE WORK.
20. CONCRETE WASHOUTS SHALL BE LOCATED AT EACH STRUCTURE PAD, OR A CENTRAL LOCATION SERVING MULTIPLE STRUCTURE PADS.
21. DISTURBANCES ON SLOPES SHALL BE MANAGED BY THE USE OF VEGETATIVE BUFFER STRIPS. STRUCTURAL BMPs (FIBER ROLLS, COMPOST ROLLS OR EROSION CONTROL MATTING, ETC.) WILL BE APPLIED FOR ADDITIONAL PROTECTION.
22. PULLING AND TENSIONING SITES FOR THE 500-KV TRANSMISSION LINE CONSTRUCTION WILL BE REQUIRED APPROXIMATELY EVERY 1 TO 2 MILES ALONG THE RIGHT-OF-WAY AND WILL REQUIRE APPROXIMATELY 5 ACRES AT EACH END OF THE WIRE SECTION TO ACCOMMODATE REQUIRED EQUIPMENT.
23. A TABLE HAS BEEN DEVELOPED NOTING THE TYPICAL CONSTRUCTION DETAIL FOR THE MAJORITY OF THE STRUCTURE PADS.
24. ACCESS ROADS SHALL MATCH ONE OF THE TYPICAL DETAILS UNLESS SPECIFICALLY NOTED.
25. SEE 2005 DEQ ESC MANUAL FOR BMP RATIONALE STATEMENTS.

REQUIRED EROSION AND SEDIMENT CONTROL PLAN DRAWING STANDARD NOTES:

1. HOLD A PRE-CONSTRUCTION MEETING OF PROJECT CONSTRUCTION PERSONNEL (INCLUDING THE INSPECTOR) TO DISCUSS EROSION AND SEDIMENT CONTROL MEASURES AND CONSTRUCTION LIMITS. (SCHEDULE A.8.C.I.(3))
2. ALL PERMIT REGISTRANTS MUST IMPLEMENT THE ESCP. FAILURE TO IMPLEMENT ANY OF THE CONTROL MEASURES OR PRACTICES DESCRIBED IN THE ESCP IS A VIOLATION OF THE PERMIT. (SCHEDULE A 8.A)
3. RETAIN A COPY OF THE ESCP AND ALL REVISIONS ON SITE AND MAKE IT AVAILABLE ON REQUEST TO DEQ, AGENT, OR THE LOCAL MUNICIPALITY. DURING INACTIVE PERIODS OF GREATER THAN SEVEN (7) CONSECUTIVE CALENDAR DAYS, RETAIN THE ESCP AT THE CONSTRUCTION SITE OR AT ANOTHER LOCATION. (SCHEDULE B.2.A)
4. THE ESCP MEASURES SHOWN ON THIS PLAN ARE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, UPGRADE THESE MEASURES AS NEEDED TO COMPLY WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL EROSION AND SEDIMENT CONTROL REGULATIONS. (SCHEDULE A.8.C.II.(1)(C))
5. SUBMISSION OF ALL ESCP REVISIONS IS NOT REQUIRED. SUBMITTAL OF THE ESCP REVISIONS IS ONLY UNDER SPECIFIC CONDITIONS. (SCHEDULE A.12.C.III)
6. PHASE CLEARING AND GRADING TO THE MAXIMUM EXTENT PRACTICAL TO PREVENT EXPOSED INACTIVE AREAS FROM BECOMING A SOURCE OF EROSION. (SCHEDULE A 8.C.II.(1)(D))
7. IDENTIFY, MARK, AND PROTECT (BY FENCING OFF OR OTHER MEANS) CRITICAL RIPARIAN AREAS AND VEGETATION INCLUDING IMPORTANT TREES AND ASSOCIATED ROOTING ZONES, AND VEGETATION AREAS TO BE PRESERVED. IDENTIFY VEGETATIVE BUFFER ZONES BETWEEN THE SITE AND SENSITIVE AREAS (E.G., WETLANDS), AND OTHER AREAS TO BE PRESERVED, ESPECIALLY IN PERIMETER AREAS. (SCHEDULE A.8.C.I.(1) & (2))
8. PRESERVE EXISTING VEGETATION AND RE-VEGETATE OPEN AREAS WHEN PRACTICABLE BEFORE AND AFTER GRADING OR CONSTRUCTION. (SCHEDULE A.7.B.III.(1))
9. EROSION AND SEDIMENT CONTROL MEASURES INCLUDING PERIMETER SEDIMENT CONTROL MUST BE IN PLACE BEFORE VEGETATION IS DISTURBED AND MUST REMAIN IN PLACE AND BE MAINTAINED, REPAIRED, AND PROMPTLY IMPLEMENTED FOLLOWING PROCEDURES ESTABLISHED FOR THE DURATION OF CONSTRUCTION, INCLUDING PROTECTION FOR ACTIVE STORM DRAIN INLETS AND CATCH BASINS AND APPROPRIATE NON-STORMWATER POLLUTION CONTROLS. (SCHEDULE A.7.D.I AND A.8.C)
10. ESTABLISH CONCRETE TRUCK AND OTHER CONCRETE EQUIPMENT WASHOUT AREAS BEFORE BEGINNING CONCRETE WORK. (SCHEDULE A.8.C.I.(6))
11. APPLY TEMPORARY AND/OR PERMANENT SOIL STABILIZATION MEASURES IMMEDIATELY ON ALL DISTURBED AREAS AS GRADING PROGRESSES AND FOR ALL ROADWAYS INCLUDING GRAVEL ROADWAYS. (SCHEDULE A.8.C.II.(2))
12. ESTABLISH MATERIAL AND WASTE STORAGE AREAS, AND OTHER NON-STORMWATER CONTROLS. (SCHEDULE A.8.C.I.(7))
13. PREVENT TRACKING OF SEDIMENT ONTO PUBLIC OR PRIVATE ROADS USING BMPs SUCH AS: GRAVELED (OR PAVED) EXITS AND PARKING AREAS, GRAVEL ALL UNPAVED ROADS LOCATED ONSITE, OR USE AN EXIT TIRE WASH. THESE BMPs MUST BE IN PLACE PRIOR TO LAND-DISTURBING ACTIVITIES. (SCHEDULE A 7.D.II.(1) AND A.8.C.I(4))
14. WHEN TRUCKING SATURATED SOILS FROM THE SITE, EITHER USE WATER-TIGHT TRUCKS OR DRAIN LOADS ON SITE. (SCHEDULE A.7.D.II.(3))
15. USE BMPs TO PREVENT OR MINIMIZE STORMWATER EXPOSURE TO POLLUTANTS FROM SPILLS; VEHICLE AND EQUIPMENT FUELING, MAINTENANCE, AND STORAGE; OTHER CLEANING AND MAINTENANCE ACTIVITIES; AND WASTE HANDLING ACTIVITIES. THESE POLLUTANTS INCLUDE FUEL, HYDRAULIC FLUID, AND OTHER OILS FROM VEHICLES AND MACHINERY, AS WELL AS DEBRIS, LEFTOVER PAINTS, SOLVENTS, AND GLUES FROM CONSTRUCTION OPERATIONS. (SCHEDULE A.7.E.I.(2))
16. USE WATER OR A SOIL-BINDING AGENT OR OTHER DUST CONTROL TECHNIQUE AS NEEDED TO AVOID WIND-BLOWN SOIL. (SCHEDULE A7.B.III)
17. THE APPLICATION RATE OF FERTILIZERS USED TO REESTABLISH VEGETATION MUST FOLLOW MANUFACTURER'S RECOMMENDATIONS TO MINIMIZE NUTRIENT RELEASES TO SURFACE WATERS. EXERCISE CAUTION WHEN USING TIME-RELEASE FERTILIZERS WITHIN ANY WATERWAY RIPARIAN ZONE. (SCHEDULE A.9.B.III)
18. IF A STORMWATER TREATMENT SYSTEM (FOR EXAMPLE, ELECTRO-COAGULATION, FLOCCULATION, FILTRATION, ETC.) FOR SEDIMENT OR OTHER POLLUTANT REMOVAL IS EMPLOYED, SUBMIT AN OPERATION AND MAINTENANCE PLAN (INCLUDING SYSTEM SCHEMATIC, LOCATION OF SYSTEM, LOCATION OF INLET, LOCATION OF DISCHARGE, DISCHARGE DISPERSION DEVICE DESIGN, AND A SAMPLING PLAN AND FREQUENCY) BEFORE OPERATING THE TREATMENT SYSTEM. OBTAIN PLAN APPROVAL BEFORE OPERATING THE TREATMENT SYSTEM. OPERATE AND MAINTAIN THE TREATMENT SYSTEM ACCORDING TO MANUFACTURER'S SPECIFICATIONS. (SCHEDULE A.9.D)
19. TEMPORARILY STABILIZE SOILS AT THE END OF THE SHIFT BEFORE HOLIDAYS AND WEEKENDS, IF NEEDED. THE REGISTRANT IS RESPONSIBLE FOR ENSURING THAT SOILS ARE STABLE DURING RAIN EVENTS AT ALL TIMES OF THE YEAR. (SCHEDULE A 7.B)
20. CONSTRUCTION ACTIVITIES MUST AVOID OR MINIMIZE EXCAVATION AND CREATION OF BARE GROUND DURING WET WEATHER. (SCHEDULE A.7.A.I)
21. SEDIMENT FENCE: REMOVE TRAPPED SEDIMENT BEFORE IT REACHES ONE THIRD OF THE ABOVE GROUND FENCE HEIGHT AND BEFORE FENCE REMOVAL. (SCHEDULE A.9.C.I)
22. OTHER SEDIMENT BARRIERS (SUCH AS BIOBAGS): REMOVE SEDIMENT BEFORE IT REACHES TWO INCHES DEPTH ABOVE GROUND HEIGHT AND BEFORE BMP REMOVAL. (SCHEDULE A.9.C.II)
23. SEDIMENT BASINS AND SEDIMENT TRAPS: REMOVE TRAPPED SEDIMENTS BEFORE DESIGN CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT AND AT COMPLETION OF PROJECT. (SCHEDULE A.9.C.III & IV)
24. WITHIN 24 HOURS, SIGNIFICANT SEDIMENT THAT HAS LEFT THE CONSTRUCTION SITE, MUST BE REMEDIATED. INVESTIGATE THE CAUSE OF THE SEDIMENT RELEASE AND IMPLEMENT STEPS TO PREVENT A RECURRENCE OF THE DISCHARGE WITHIN THE SAME 24 HOURS. ANY IN-STREAM CLEAN UP OF SEDIMENT SHALL BE PERFORMED ACCORDING TO THE OREGON DIVISION OF STATE LANDS REQUIRED TIMEFRAME. (SCHEDULE A.9.B.I)
25. THE INTENTIONAL WASHING OF SEDIMENT INTO STORM SEWERS OR DRAINAGE WAYS MUST NOT OCCUR. VACUUMING OR DRY SWEEPING AND MATERIAL PICKUP MUST BE USED TO CLEANUP RELEASED SEDIMENTS. (SCHEDULE A.9.B.II)
26. THE ENTIRE SITE MUST BE TEMPORARILY STABILIZED USING VEGETATION OR A HEAVY MULCH LAYER, TEMPORARY SEEDING, OR OTHER METHOD SHOULD ALL CONSTRUCTION ACTIVITIES CEASE FOR 30 DAYS OR MORE. (SCHEDULE A.7.F.I)
27. PROVIDE TEMPORARY STABILIZATION FOR THAT PORTION OF THE SITE WHERE CONSTRUCTION ACTIVITIES CEASE FOR 14 DAYS OR MORE WITH A COVERING OF BLOWN STRAW AND A TACKIFIER, LOOSE STRAW, OR AN ADEQUATE COVERING OF COMPOST MULCH UNTIL WORK RESUMES ON THAT PORTION OF THE SITE. (SCHEDULE A.7.F.II)
28. THE DESIGNATED EROSION AND SEDIMENT CONTROL INSPECTOR MUST PERFORM DAILY INSPECTIONS OF THE BMPs AND DISCHARGE OUTFALLS WHEN RAINFALL AND RUNOFF OCCUR. RECORD THE INSPECTIONS AND OBSERVATIONS IN A LOG THAT IS ON SITE. (SCHEDULE B.1.B(1))
29. ALL ESCP CONTROLS AND PRACTICES MUST BE INSPECTED VISUALLY ONCE TO ENSURE THAT BMPs ARE IN WORKING ORDER PRIOR TO THE SITE BECOMING INACTIVE OR IN ANTICIPATION OF SITE INACCESSIBILITY AND MUST BE INSPECTED VISUALLY ONCE EVERY TWO (2) WEEKS DURING INACTIVE PERIODS GREATER THAN SEVEN (7) CONSECUTIVE CALENDAR DAYS. (SCHEDULE B.1.B.(2) & (3))
30. IF PRACTICAL, INSPECTIONS MUST OCCUR DAILY AT A RELEVANT AND ACCESSIBLE DISCHARGE POINT OR DOWNSTREAM LOCATION DURING PERIODS IN WHICH THE SITE IS INACCESSIBLE DUE TO INCLEMENT WEATHER. (SCHEDULE B.1.B.(4))
31. DO NOT REMOVE TEMPORARY SEDIMENT CONTROL PRACTICES UNTIL PERMANENT VEGETATION OR OTHER COVER OF EXPOSED AREAS IS ESTABLISHED. IDENTIFY THE TYPE OF VEGETATIVE SEED MIX USED. (SCHEDULE A.7.B.III)
32. PROVIDE PERMANENT EROSION CONTROL MEASURES ON ALL EXPOSED AREAS. REMOVE ALL TEMPORARY EROSION CONTROL MEASURES AS EXPOSED AREAS BECOME STABILIZED, UNLESS DOING SO CONFLICTS WITH LOCAL REQUIREMENTS. PROPERLY DISPOSE OF CONSTRUCTION MATERIALS AND WASTE, INCLUDING SEDIMENT RETAINED BY TEMPORARY BMPs. (SCHEDULE A.8.C.II)

BMP MATRIX FOR CONSTRUCTION PHASES

REFER TO DEQ GUIDANCE MANUAL FOR A COMPREHENSIVE LIST OF AVAILABLE BMPs.

BMPs	CLEARING & GRADING	UTILITY INSTALLATION	FINAL STABILIZATION	"WET WEATHER (OCT. 1 - MAY 31st)"	POTENTIAL DISCHARGE TO TMDL and 303(d)
EROSION PREVENTION					
PRESERVE NATURAL VEGETATION	** X	X	X	X	X
GROUND COVER		X	X	X	X
HYDRAULIC APPLICATIONS			X	X	X
PLASTIC SHEETING		X		X	X
MATTING			X	X	X
DUST CONTROL	** X	X	X		X
TEMPORARY/ PERMANENT SEEDING		X	X	X	X
BUFFER ZONE	** X	X	X	X	X
SEDIMENT CONTROL					
SILT FENCE (PERIMETER)	** X		X	X	X
SILT FENCE (INTERIOR)			X	X	X
STRAW WATTLES	X			X	X
FILTER BERM	X	X		X	X
INLET PROTECTION	X	X		X	X
DEWATERING	X	X		X	X
SEDIMENT TRAP	X	X		X	X
RUN OFF CONTROL					
CONSTRUCTION ENTRANCE	** X	X	X	X	X
PIPE SLOPE DRAIN	X	X	X	X	X
OUTLET PROTECTION	X	X	X	X	X
SURFACE ROUGHENING	X	X	X	X	X
CHECK DAMS	X	X	X	X	X
WATERBARS	** X	X	X	X	X
POLLUTION PREVENTION					
PROPER SIGNAGE	** X	X	X	X	X
HAZ WASTE MGMT	** X	X	X	X	X
SPILL KIT ON-SITE	** X	X	X	X	X
CONCRETE WASHOUT AREA		X	X	X	X
** SIGNIFIES BMP THAT WILL BE INSTALLED PRIOR TO ANY GROUND DISTURBING ACTIVITY.					
SCHEDULE:	YEARS 1-2	YEARS 1-3	YEARS 2-3	YEARS 1-3	YEARS 1-3

PRELIMINARY

INITIAL
HAND WRITTEN INITIALS OF EROSION CONTROL PLAN DESIGNER

PERMITTEE'S SITE INSPECTOR:

COMPANY/AGENCY:
PHONE:
FAX:
E-MAIL:
DESCRIPTION OF EXPERIENCE:

(MUST HAVE ADEQUATE CERTIFICATION OR TRAINING IN EROSION CONTROL OR AT LEAST 200HRS ON JOB EXPERIENCE SPECIFIC TO EROSION CONTROL)

INSPECTION FREQUENCY:

	SITE CONDITION	MINIMUM FREQUENCY
1	ACTIVE PERIOD	DAILY WHEN STORMWATER RUNOFF, INCLUDING RUNOFF FROM SNOWMELT, IS OCCURRING. EVERY 2 WEEKS IN DRY CONDITIONS.
2	PRIOR TO THE SITE BECOMING INACTIVE OR IN ANTICIPATION OF SITE INACCESSIBILITY.	ONCE TO ENSURE THAT EROSION AND SEDIMENT CONTROL MEASURES ARE IN WORKING ORDER. ANY NECESSARY MAINTENANCE AND REPAIR MUST BE MADE PRIOR TO LEAVING THE SITE.
3	INACTIVE PERIODS GREATER THAN SEVEN (7) CONSECUTIVE CALENDAR DAYS.	ONCE EVERY TWO (2) WEEKS AND AFTER STORMS TOTALING 0.25 INCH OR MORE.
4	PERIODS DURING WHICH THE SITE IS ACCESSIBLE DUE TO INCLEMENT WEATHER.	IF PRACTICAL, INSPECTIONS MUST OCCUR DAILY AT A RELEVANT AND ACCESSIBLE DISCHARGE POINT OR DOWNSTREAM LOCATION.

* HOLD A PRE-CON MEETING OF PROJECT CONSTRUCTION PERSONNEL THAT INCLUDES THE EC INSPECTOR.
* ALL INSPECTIONS MUST BE MADE IN ACCORDANCE WITH DEQ 1200 C PERMIT REQUIREMENTS.
* INSPECTION LOGS MUST BE KEPT IN ACCORDANCE WITH DEQ 1200 C PERMIT REQUIREMENTS.
* CHANGES TO THE APPROVED ESC PLAN MUST BE SUBMITTED TO DEQ IN THE FORM OF AN ACTION PLAN.

REV.	DESCRIPTION	DATE	C.E.G.	DSGN	DFTR
0	B2H EROSION AND SEDIMENT CONTROL PLANS - DRAFT	10-10-11	DKR	KTM	CAH
1	REVISE	11-22-11	DKR	KTM	KTM
2	REVISED FOR DRAFT 1200-C APPLICATION	3-30-12			KHK

REV.	DESCRIPTION	DATE	C.E.G.	DSGN	DFTR

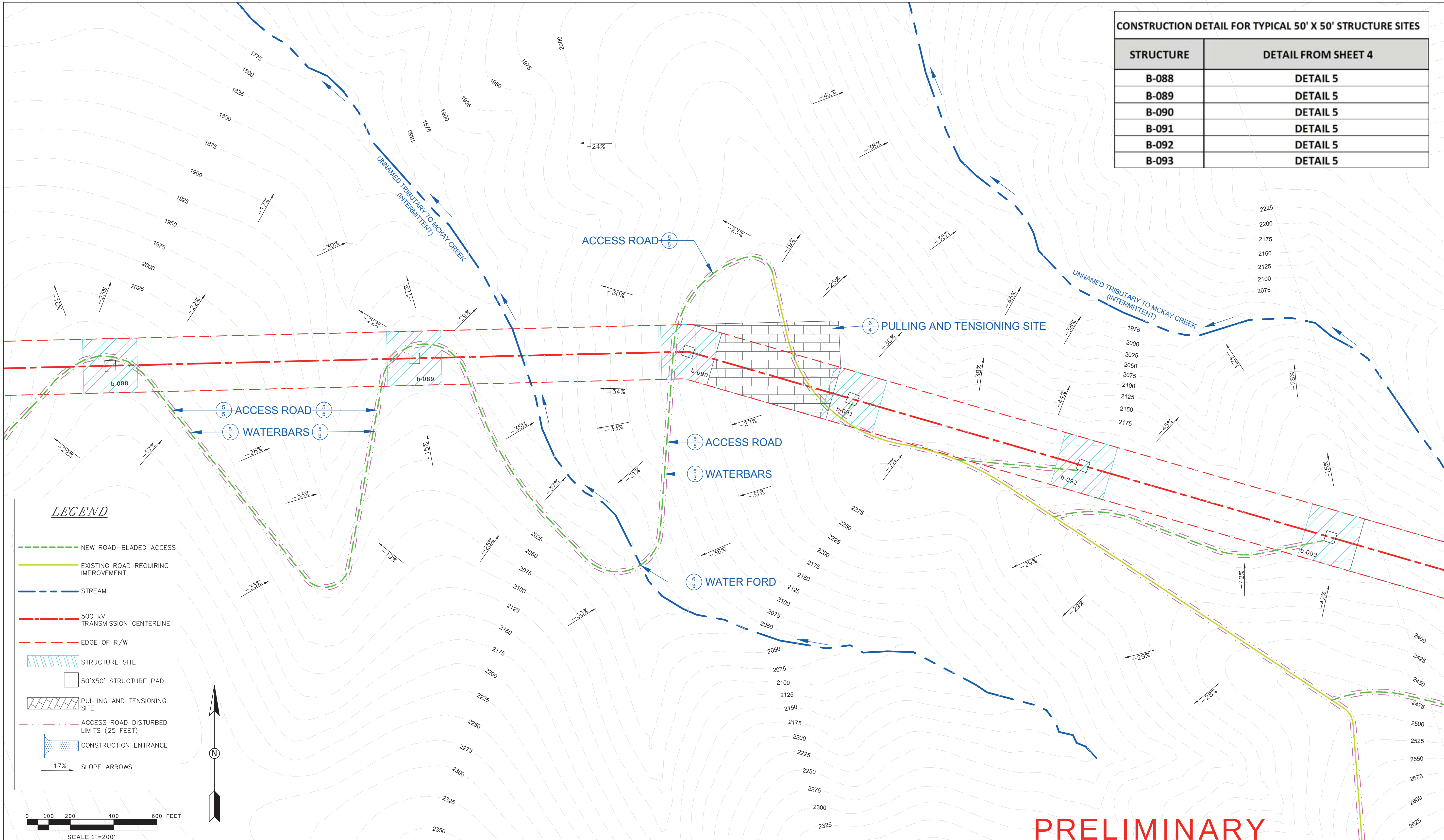
REFERENCES	DATE
DESIGNER: KTM	10-10-11
DRAFTER: CAH	10-10-11
C.E.G. DKR	10-10-11
SCALE: NTS	HORZ.
	VERT.

PROJECT INFORMATION
BOARDMAN TO HEMINGWAY 500kV LINE #XXX EROSION AND SEDIMENT CONTROL PLANS

TRANSMISSION DEPARTMENT
DRAWING #: TITLE SHEET
VAULT #: 23D-00000-00
SHEET #: 1 OF 5

C:\Users\knowles_keith\Desktop\BOARDMAN\SEC B2H 1 Mile 111711.dwg

CONSTRUCTION DETAIL FOR TYPICAL 50' X 50' STRUCTURE SITES	
STRUCTURE	DETAIL FROM SHEET 4
B-088	DETAIL 5
B-089	DETAIL 5
B-090	DETAIL 5
B-091	DETAIL 5
B-092	DETAIL 5
B-093	DETAIL 5



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REV.	DESCRIPTION	DATE	C.E.G.	DSGN	DFTR
0	B2H EROSION AND SEDIMENT CONTROL PLANS – DRAFT	10-10-11	DKR	KTM	CAH
1	REVISE	11-22-11	DKR	KTM	KTM

REFERENCES	DATE
DESIGNER: KTM	10-10-11
DRAFTER: CAH	10-10-11
C.E.G. DKR	10-10-11
SCALE: 1" = 200' HORZ. VERT.	

PROJECT INFORMATION

BOARDMAN TO HEMINGWAY 500kV LINE #XXX EROSION AND SEDIMENT CONTROL PLANS

TRANSMISSION DEPARTMENT

DRAWING #: PLAN

VAULT #: 23D-00000-00

SHEET #: 2 OF 5

Nov 22, 2011 - 1:16pm S:\ALL PROJECTS\Idaho B2H 500kV Line\SWPPP 1 Mile\

SEEDING FOR PERMANENT STABILIZATION SHALL BE PERFORMED IN ALL AREAS WHERE LAND DISTURBANCE HAS OCCURRED.

REESTABLISH VEGETATIVE COVER

1. IF TOPSOIL IS REMOVED, CARE WILL BE TAKEN TO ENSURE IT IS NOT MIXED WITH THE UNDERLYING SUBSOIL. TOPSOIL SHALL BE STORED IN A SEPARATE STOCKPILE. IT WILL BE RETURNED TO THE AREA IT WAS TAKEN FROM AND WILL NOT BE SPREAD IN ADJACENT AREAS.
2. SEED MIX WILL BE DETERMINED BY THE BUREAU OF LAND MANAGEMENT, US FOREST SERVICE, OR PRIVATE LAND OWNER.
3. SEEDING WILL OCCUR IN OCTOBER, NOVEMBER, FEBRUARY OR MARCH AND WILL BE EVALUATED FOR SUCCESS OF ESTABLISHMENT AFTER TWO GROWING SEASONS.

BASIC DESIGN AND CONSTRUCTION:

- SPREAD 4-6" OF TOPSOIL OR COMPOST OVER THE SITE BEFORE SEEDING OR PLANTING.
- FERTILIZE ACCORDING TO SOIL TEST RECOMMENDATIONS.
- MULCH WITH STRAW OR OTHER MATTING.
- WATER AS NEEDED TO KEEP SOIL MOIST.
- USE SEED MIX RECOMMENDATIONS FROM LOCAL SUPPLIERS. SEED MIXES SHOULD BE BASED UPON THE TIME OF YEAR SEEDING IS TAKING PLACE. USE LOW MAINTENANCE, NATIVE GRASSES. IF PLANTING IS DONE IN JULY OR AUGUST, IRRIGATION WILL BE NECESSARY.
- SHRUBS SHOULD BE PLANTED 2'-5' APART; TREES 6'-10' FOR WOODED AREAS.

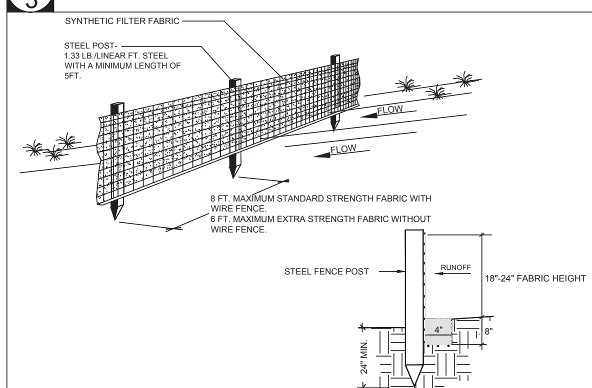
DESIGN CONSIDERATIONS:

MULCH SHOULD BE APPLIED IN AREAS WHICH CANNOT BE SEEDED DUE TO THE SEASON OR OTHER ISSUES. IT CAN ALSO BE APPLIED TO NEWLY SEEDED AREAS TO PROVIDE PROTECTION AND COVER UNTIL SEED IS ESTABLISHED OR TO EXPOSED SOILS THAT NEED IMMEDIATE COVER AND PROTECTION. SUITABLE ORGANIC MATERIALS (E.G. STRAW, WOOD CHIPS, SHREDDED BARK, COMPOST) WILL BE CHOSEN BASED ON LOCAL AVAILIBILITY AND EFFECTIVENESS. USE COMPOSTABLE BLANKETS ON STEEP SLOPES. THE MATERIAL SHOULD BE DRY AND FREE OF WEEDS AND SEEDS. IN DRY WEATHER THE MULCH MAY NEED TO BE ANCHORED WITH NETTING OR A FIBER AND TACKIFIER TO PREVENT IT FROM BLOWING AWAY.

MAINTENANCE:

- FERTILIZE AND WATER AS RECOMMENDED BY SUPPLIER.
- RE-SEED AREAS WHERE ADEQUATE COVER HAS NOT BEEN ESTABLISHED.
- [illegible]
- CONTRACTOR IS TO HAVE MATERIALS STORED ON HAND FOR RAPID RESPONSE TO EROSION CONTROL EMERGENCIES WITHOUT SUPPLY PROCUREMENT DELAYS.

1/3 SEEDING AND STABILIZATION



SILT FENCE CONSTRUCTION SPECIFICATIONS:

1. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
2. SILT FENCE DRAINAGE AREA OF 1/4 ACRE OR LESS PER 100 LF.
3. SILT FENCE WITH ROCK OUTLET SHALL BE APPLICABLE FOR DRAINAGE AREAS OF 1/2 ACRE OR LESS.
4. WIRE MESH REINFORCEMENT SHALL CONSIST OF 14 GAUGE WIRE X 6" SPACING.
5. SYNTHETIC FILTER FABRIC MIN. REQUIREMENTS:
   A. TENSILE STRENGTH - 90 LBS
   B. PERMITTIVITY - 0.05 SEC-1
   C. APPARENT OPENING SIZE - 30 US STD. SIEVE
   D. ULTRAVIOLET STABILITY - 70%
6. FILTER FABRIC SHALL BE FASTENED TO THE UP-SLOPE SIDE OF THE FENCE POSTS, SUPPORTED BY WIRE MESH. EXTEND WIRE MESH TO THE BOTTOM OF THE TRENCH. WIRE OR PLASTIC TIES SHOULD BE USED TO SECURE THE FABRIC AND WIRE MESH TO THE FENCE POSTS.
7. DO NOT ATTACH FILTER FABRIC TO EXISTING TREES.

MAINTENANCE NOTES:

1. INSPECT SILT FENCES AS PER INSPECTION FREQUENCY TABLE. MAKE ANY REPAIRS REQUIRED IMMEDIATELY.
2. SHOULD THE FABRIC OF THE SILT FENCE COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
3. [illegible] TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT.
4. ONCE THE DRAINAGE AREA HAS BECOME PERMANENTLY STABILIZED, ALL THE FENCE MATERIALS, AND ANY SEDIMENT DEPOSITS ARE TO BE REMOVED. THE DISTURBED AREA SHALL THEN BE GRADED SMOOTH AND PROPERLY SEEDED AND MULCHED.

2/3 SILT FENCE

DESCRIPTION :

[illegible]

DESIGN REQUIREMENTS:

- THE MINIMUM WIDTH SHALL BE 50 FEET WITH SLOPES OF 1-2%, WITH ADDITIONAL WIDTH AND/OR CONTROLS AS NEEDED TO REDUCE AND CONTAIN EROSION AND SEDIMENTATION ON STEEPER SLOPES.
- NEAR TURBIDITY TMDL AND 303(D) LISTED WATERBODIES, BUFFERS SHALL BE 50 FEET PLUS 25 FEET PER 5 DEGREES OF SLOPE.
- WHERE UNDISTURBED NATURAL BUFFER IS LESS THAN 50 FEET OR INFEASIBLE, SUPPLEMENT WITH ADDITIONAL EROSION AND SEDIMENT CONTROLS SUFFICIENT TO ACHIEVE SEDIMENT LOAD REDUCTION EQUIVALENT TO A 50-FOOT BUFFER.
- ALONG WATERBODIES THE WIDTH IS TO BE NO LESS THAN 75 FEET IN WIDTH.
- THE WATER FLOW THROUGH THE BUFFER IS TO REMAIN AS UNIFORM SHEET FLOW.
- THE AREA USED AS THE VEGETATIVE FILTER MUST BE DELINEATED PRIOR TO CLEARING AND GRUBBING.
- NO VEHICULAR PARKING OR DRIVING AND NO STORAGE OF ANY SUPPLIES IN THE VEGETATIVE BUFFER IS ALLOWED.

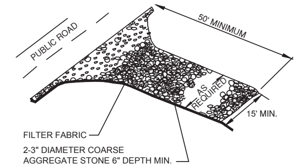
MAINTENANCE:

- FREQUENT INSPECTIONS ARE NECESSARY TO ENSURE UNIFORM SHEET FLOW. MINIMIZE ANY DEVELOPMENT OF CHANNELS.
- PERIODIC REGRADING AND SEDIMENT REMOVAL MAY BE NECESSARY.
- PLANT DENSITY MAY BE ENCOURAGED BY FERTILIZING AND PERIODIC WEEDING.
- RESEED AS NECESSARY.

GENERAL NOTES:

- STRUCTURAL BMPs WILL BE INSTALLED IN ANY LOCATION WITH GROUND DISTURBANCE WITHIN 50 FEET OF A WATER BODY.
- STRUCTURAL BMPs WILL BE INSTALLED AT GROUND DISTURBANCE LOCATIONS WITHIN 75 FEET OF A WATER BODY IF THE AREA BELOW THE DISTURBANCE IS SLOPED STEEPER THAN 15% OR CONTAINS LESS THAN 50% VEGETATIVE COVER.

3/3 VEGETATIVE BUFFER



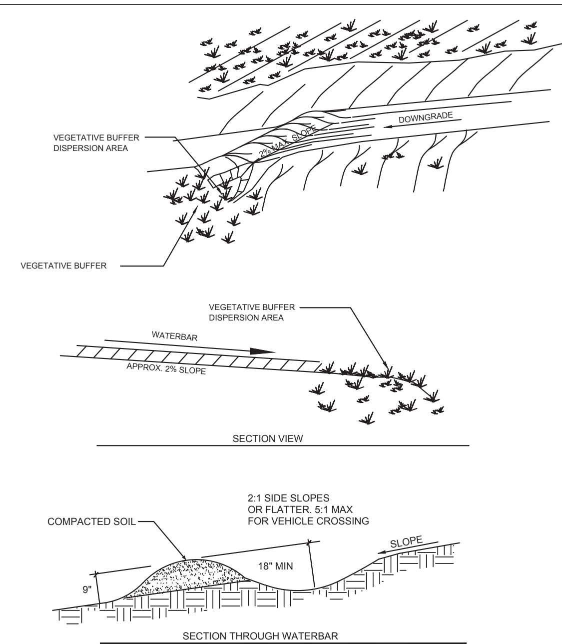
GENERAL NOTES:

1. AGGREGATE SIZE: 2-3" DIAMETER WASHED STONE
2. PAD THICKNESS: 6" MINIMUM
3. PAD WIDTH: 15' MINIMUM
4. PAD LENGTH: 50' MINIMUM
5. PAD LOCATION: LOCATE CONSTRUCTION ENTRANCES AND EXITS TO LIMIT SEDIMENT FROM LEAVING THE SITE AND TO PROVIDE MAXIMUM UTILITY BY ALL CONSTRUCTION VEHICLES. AVOID STEEP GRADES AND ENTRANCES AT CURVES IN PUBLIC ROADS.
6. A FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIP RAP AND SOIL FOUNDATION.
7. THE FILTER FABRIC MAY BE MADE OF WOVEN OR NONWOVEN MONOFILAMENT YARNS, AND SHOULD MEET THE FOLLOWING MINIMUM REQUIREMENTS:
   A. THICKNESS 20 - 60 MILS;
   B. GRAB STRENGTH 90 - 120 LB; AND,
   C. CONFORM TO ASTM D-1682 OR ASTM D-177.

MAINTENANCE NOTE:

MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOPDRESSING WITH 2 INCH STONE. AFTER EACH RAINFALL, INSPECT ANY STRUCTURE USED TO TRAP SEDIMENT AND CLEAN IT OUT AS NECESSARY. REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PAVED ROADWAYS.

4/3 TEMPORARY CONSTRUCTION ENTRANCE

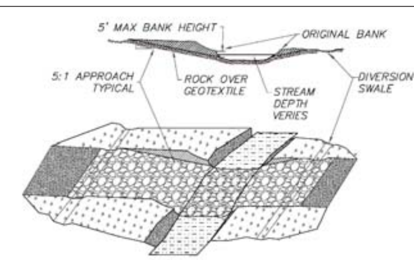


INSTALLATION FREQUENCY

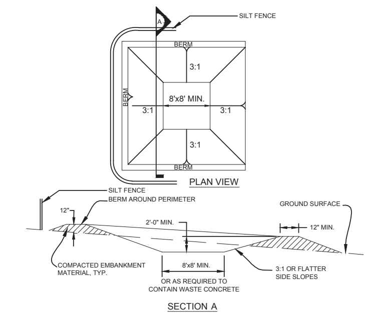
SLOPE (%)	SPACING (FT)
<5%	125
5 TO 10	100
10 TO 20	75
20 TO 35	50
>35	25

NOTE: IF AN ADEQUATE VEGETATIVE BUFFER IS UNAVAILABLE, AN ALTERNATIVE DISPERSION BMP SHALL BE IMPLEMENTED.

5/3 WATERBAR



6/3 WATER FORD



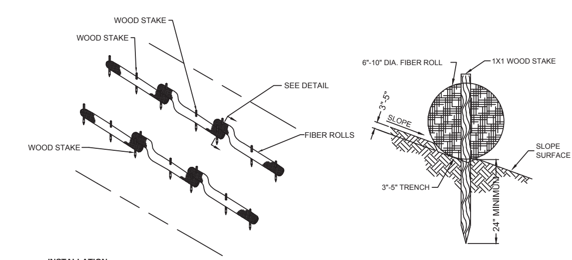
INSTALLATION NOTES

1. SEE PLAN VIEW FOR LOCATION OF CONCRETE WASHOUT AREA. SITE WASHOUTS AWAY FROM WATERBODIES.
2. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
3. EXCAVATED MATERIAL SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION.

MAINTENANCE NOTES

1. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
2. SENSITIVE AREAS MAY REQUIRE LINED WASHOUT STRUCTURES TO RECOVER, DISPOSE OF, OR RECYCLE EXCESS CURED CONCRETE. DO NOT BURY LINER. WHERE AGENCIES AND LANDOWNER APPROVES OF BURYING, MATERIAL MUST BE AT LEAST 100 FEET FROM SURFACE WATER AND GROUNDWATER, IN SMALL VOLUMES (1 PIT FOR EACH PAD), AND AT LEAST 3 FEET BELOW GRADE. WATER MUST INFILTRATE PRIOR TO CLOSING THE PIT, AND CREWS MUST COVER THE PIT DURING RAIN EVENTS TO PREVENT HIGH PH WASH WATER OVERFLOW.
3. INSPECT AT LEAST WEEKLY WHEN ACTIVELY USED AND COVER AS NEEDED TO AVOID OVERFLOW DURING STORMS.

7/3 CONCRETE WASHOUT



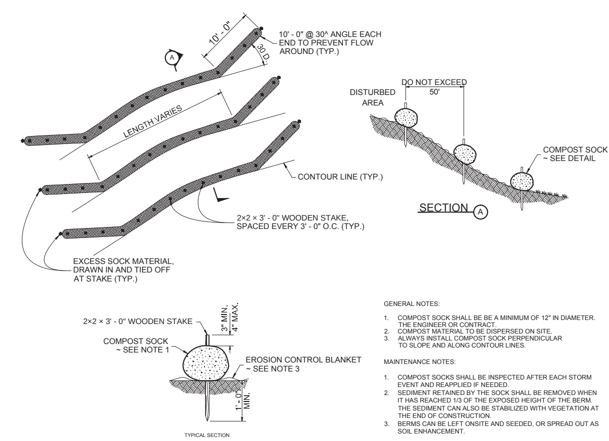
INSTALLATION

1. PREPARE THE SLOPE BEFORE THE INSTALLATION PROCEDURE IS STARTED.
2. SHALLOW GULLIES SHOULD BE SMOOTHED AS WORK PROGRESSES.
3. DIG SMALL TRENCHES ACROSS THE SLOPE ON CONTOUR, TO PLACE ROLLS IN. THE TRENCH SHOULD BE DEEP ENOUGH TO ACCOMMODATE HALF THE THICKNESS OF THE ROLL. WHEN THE SOIL IS LOOSE AND UNCOMPACTED,
4. THE TRENCH SHOULD BE DEEP ENOUGH TO BURY THE ROLL 1/3 OF ITS THICKNESS BECAUSE THE GROUND WILL SETTLE.
5. IT IS CRITICAL THAT ROLLS ARE INSTALLED PERPENDICULAR TO WATER MOVEMENT, AND PARALLEL TO THE SLOPE CONTOUR.
6. START BUILDING TRENCHES AND INSTALLING ROLLS FROM THE BOTTOM OF THE SLOPE AND WORK UP.
7. CONSTRUCT TRENCHES AT CONTOUR INTERVALS 25-30 FEET (8-10 M) APART DEPENDING ON THE STEEPNESS OF THE SLOPE. THE STEEPER THE SLOPE, THE CLOSER TOGETHER THE TRENCHES SHOULD BE.
8. LAY THE ROLL ALONG THE TRENCHES FITTING IT SNUGLY AGAINST THE SOIL. MAKE SURE NO GAPS EXIST BETWEEN THE SOIL AND THE STRAW WATTLE.
9. USE A STRAIGHT BAR TO DRIVE HOLES THROUGH THE ROLL AND INTO THE SOIL FOR THE WILLOW OR WOODEN STAKES.
10. DRIVE THE STAKE THROUGH THE PREPARED HOLE, AND INTO THE SOIL. LEAVE ONLY 1 OR 2 INCHES (25 OR 51 MM) OF THE STAKE EXPOSED ABOVE ROLL.
11. INSTALL STAKES AT LEAST EVERY 4 FEET (1.2 M) APART ALONG THE LENGTH OF THE WATTLE. ADDITIONAL STAKES MAY BE DRIVEN ON THE DOWNSLOPE SIDE OF THE TRENCHES ON HIGHLY EROSIVE OR VERY STEEP SLOPES.

INSPECTION AND MAINTENANCE

1. INSPECT AS PER FREQUENCY TABLE ON SHEET 1. MAKE SURE THE ROLLS ARE IN CONTACT WITH THE SOIL.
2. REPAIR ANY RILLS OR GULLIES PROMPTLY.
3. RESEED OR REPLANT VEGETATION IF NECESSARY UNTIL THE SLOPE IS STABILIZED.

8/3 FIBER ROLLS



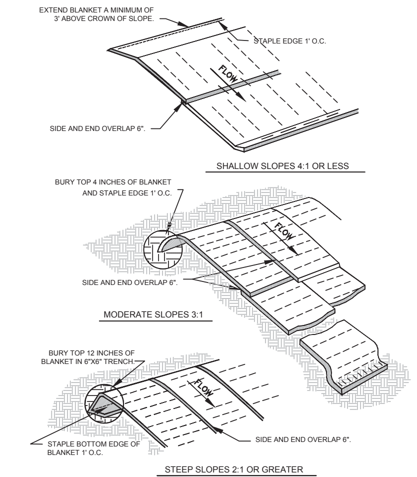
GENERAL NOTES:

1. COMPOST SOCK SHALL BE BE A MINIMUM OF 12" IN DIAMETER. THE ENGINEER OR CONTRACT.
2. COMPOST MATERIAL TO BE DISPERSED ON SITE.
3. ALWAYS INSTALL COMPOST SOCK PERPENDICULAR TO SLOPE AND ALONG CONTOUR LINES.

MAINTENANCE NOTES:

1. COMPOST SOCKS SHALL BE INSPECTED AFTER EACH STORM EVENT AND REAPPLIED IF NEEDED.
2. SEDIMENT RETAINED BY THE SOCK SHALL BE REMOVED WHEN IT HAS REACHED 1/3 OF THE EXPOSED HEIGHT OF THE BERM. THE SEDIMENT CAN ALSO BE STABILIZED WITH VEGETATION AT THE END OF CONSTRUCTION.
3. BERMS CAN BE LEFT ONSITE AND SEEDED, OR SPREAD OUT AS SOIL ENHANCEMENT.

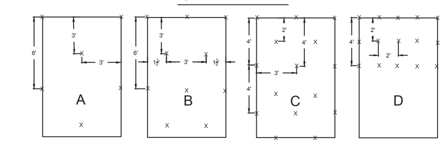
9/3 COMPOST ROLLS



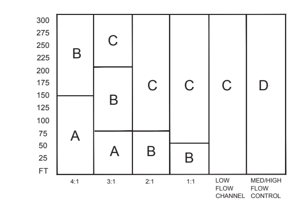
NOTES:

1. ON SHALLOW SLOPES BLANKETS MAY BE APPLIED ACROSS THE SLOPE.
2. ALL BLANKETS ARE REQUIRED TO BE STAPLED PER THE DETAIL.

STAPLE PATTERN

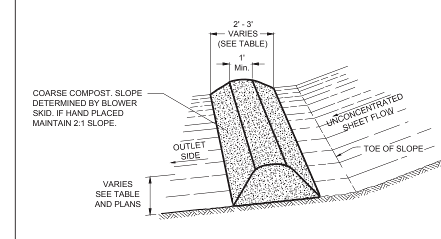


LENGTH AND SLOPE TABLE



*MINIMUM STAPLE PATTERN GUIDE AND RECOMMENDATION FOR SLOPE AND CHANNEL APPLICATION.

10/3 EROSION CONTROL MATTING



COMPOST FILTER BERM

GENERAL NOTES:

1. COMPOST FILTER BERMS ARE SEDIMENT CONTROL DEVICES FOR AREAS WHERE RUNOFF OCCURS AS SHEET FLOW. SEE SECTION 00280, OREGON STANDARD SPECIFICATIONS.
2. THE MAXIMUM DRAINAGE AREA FOR A CONTINUOUS BERM SHALL BE 1 ACRE PER 100 LINEAR FEET OF FILTER BERM.
3. WHERE POSSIBLE, BERMS SHOULD BE PLACED AWAY FROM THE TOE OF SLOPES A MINIMUM OF 5 FEET (10 FEET PREFERRED) TO ALLOW FOR ENERGY DISSIPATION AND SEDIMENT STORAGE.
4. PLACE THE BERMS PARALLEL TO THE CONTOURS WITH THE ENDS OF THE BERM TURNED UP.
5. THE BERM MAY BE VEGETATED WITH TEMPORARY OR PERMANENT SEEDING.
6. IF PLACED IN AN AREA WITH EXISTING VEGETATION, CUT VEGETATION TO 2-3" IN HEIGHT. DO NOT REMOVE THE EXISTING VEGETATION.

MAINTENANCE NOTES:

1. COMPOST SOCKS SHALL BE INSPECTED AFTER EACH STORM EVENT AND REAPPLIED IF NEEDED.
2. SEDIMENT RETAINED BY THE SOCK SHALL BE REMOVED WHEN IT HAS REACHED 1/3 OF THE EXPOSED HEIGHT OF THE BERM. THE SEDIMENT CAN ALSO BE STABILIZED WITH VEGETATION AT THE END OF CONSTRUCTION.
3. BERMS CAN BE LEFT ONSITE AND SEEDED, OR SPREAD OUT AS SOIL ENHANCEMENT.

COMPOST FILTER BERM DIMENSIONS AND SPACING BASED ON SLOPE

SLOPE	BERM SPACING	BERM DIMENSIONS: HEIGHT	BOTTOM WIDTH	TOP WIDTH
< 50:1	250 ft	1 ft	2 ft (min)	1 ft
50:1 - 10:1	125 ft	1 ft	2 ft (min)	1 ft
10:1 - 5:1	100 ft	1 ft	2 ft (min)	1 ft
3:1 - 2:1	50 ft	1.3 ft	2.6 ft (min)	1 ft
> 2:1	25 ft	1.5 ft	3 ft (min)	1 ft

11/3 COMPOST BERM

IDAHO POWER. An IDACORP Company

REV.	DESCRIPTION	DATE	C.E.G.	DSGN	DFTR
0	B2H EROSION AND SEDIMENT CONTROL PLANS – DRAFT	10–10–11	DKR	KTM	CAH
1	REVISE	11–22–11	DKR	KTM	KTM

REV.	DESCRIPTION	DATE	C.E.G.	DSGN	DFTR

PRELIMINARY

REFERENCES	DATE
DESIGNER: KTM	10–10–11
DRAFTER: CAH	10–10–11
C.E.G. DKR	10–10–11
SCALE: NTS	HORZ.
	VERT.

PROJECT INFORMATION

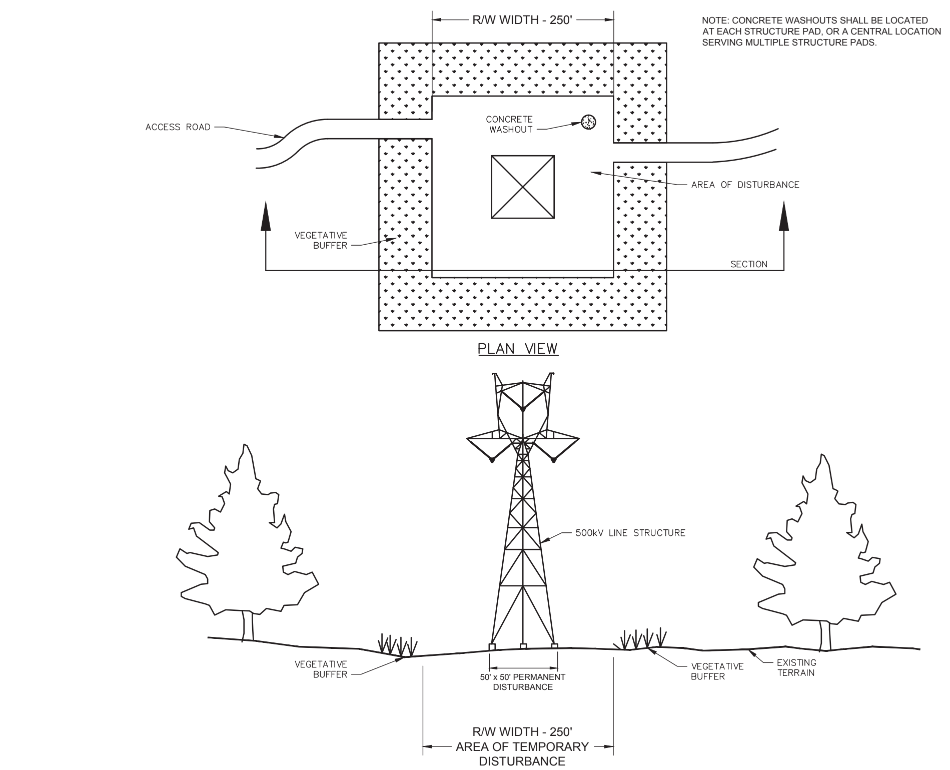
BOARDMAN TO HEMINGWAY 500kV LINE #XXX EROSION AND SEDIMENT CONTROL PLANS

TRANSMISSION DEPARTMENT

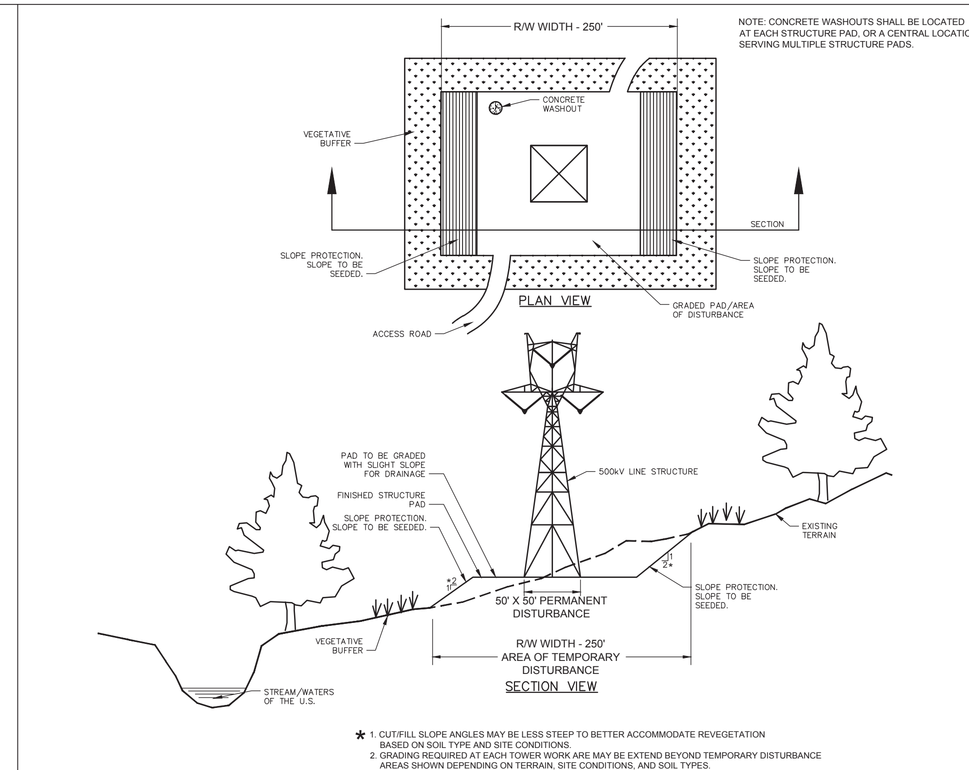
DRAWING #: DETAILS A

VAULT #: 23D–00000–00

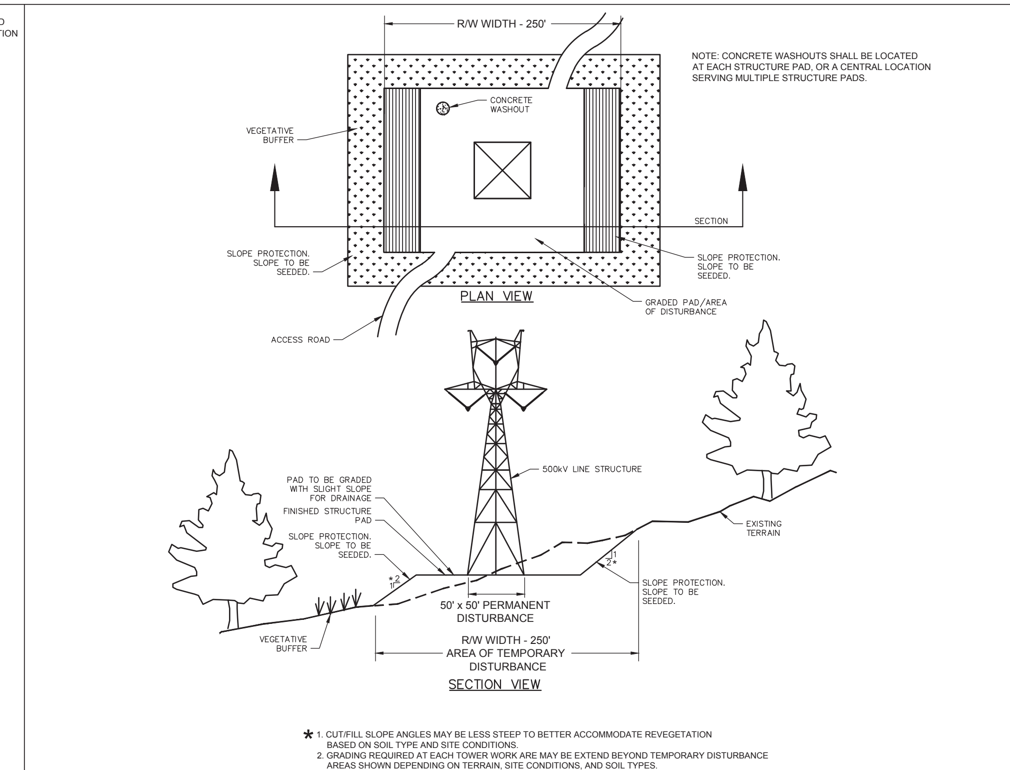
SHEET #: 3 OF 5



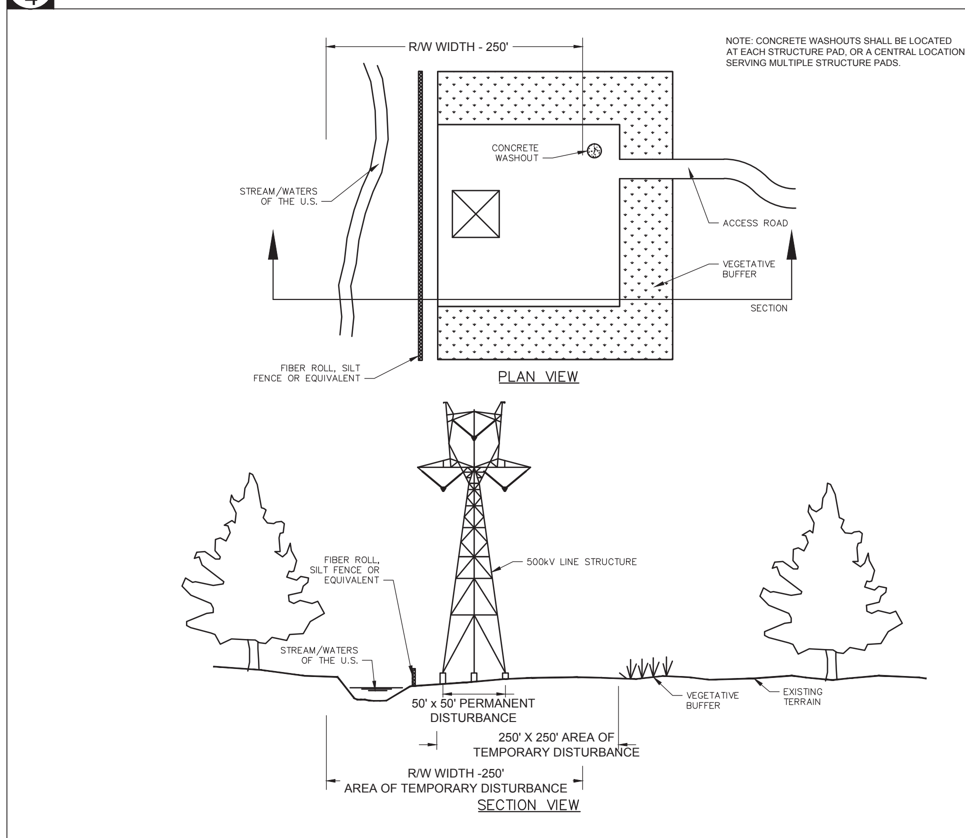
1/4 TYPICAL STRUCTURE SITE



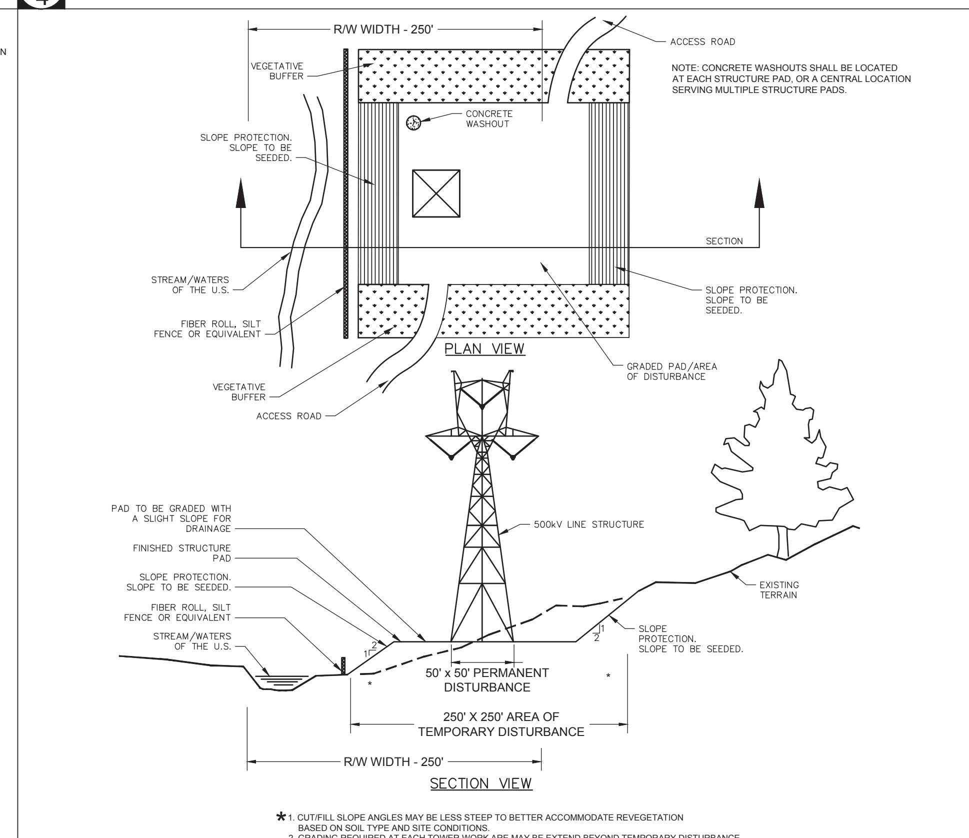
3/4 TYPICAL STRUCTURE SITE-ALTERNATE 2



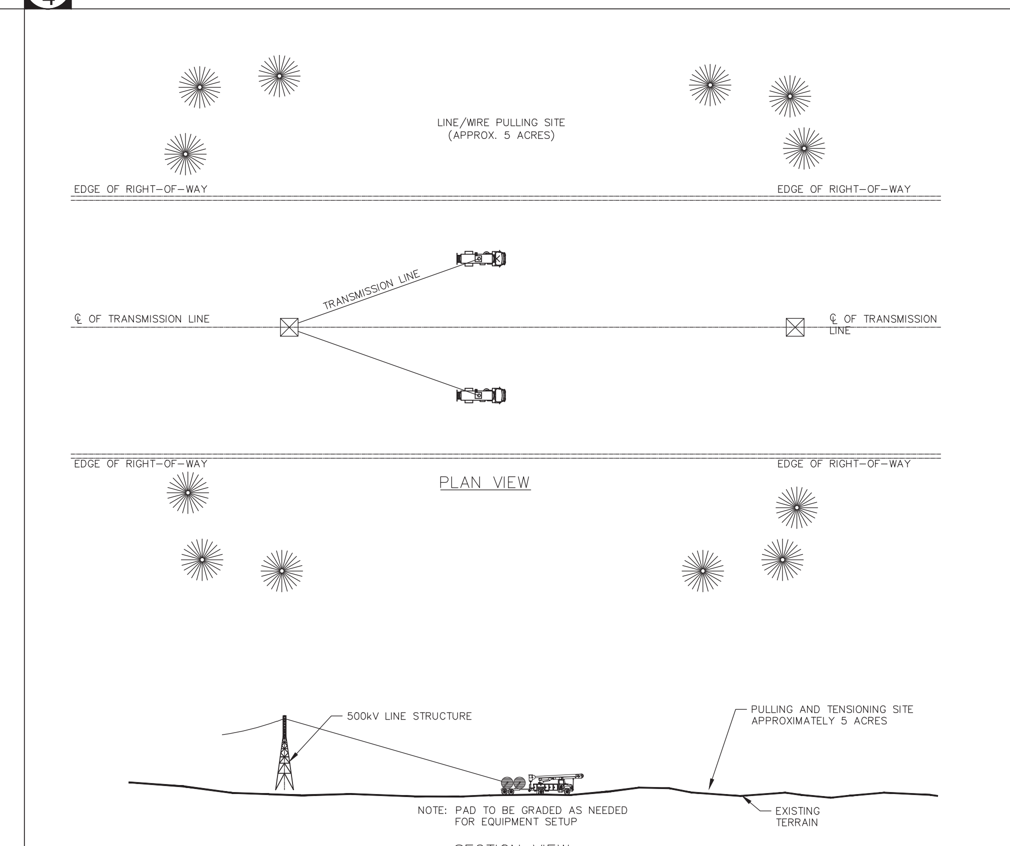
5/4 TYPICAL STRUCTURE SITE-ALTERNATE 4



2/4 TYPICAL STRUCTURE SITE-ALTERNATE 1



4/4 TYPICAL STRUCTURE SITE-ALTERNATE 3



6/4 PULLING AND TENSIONING SITE

IDAHO POWER.

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REV.	DESCRIPTION	DATE	C.E.G.	DSGN	DFTR
0	B2H EROSION AND SEDIMENT CONTROL PLANS – DRAFT	10-10-11	DKR	KTM	CAH
1	REVISE	11-22-11	DKR	KTM	KTM

REV.	DESCRIPTION	DATE	C.E.G.	DSGN	DFTR

PRELIMINARY

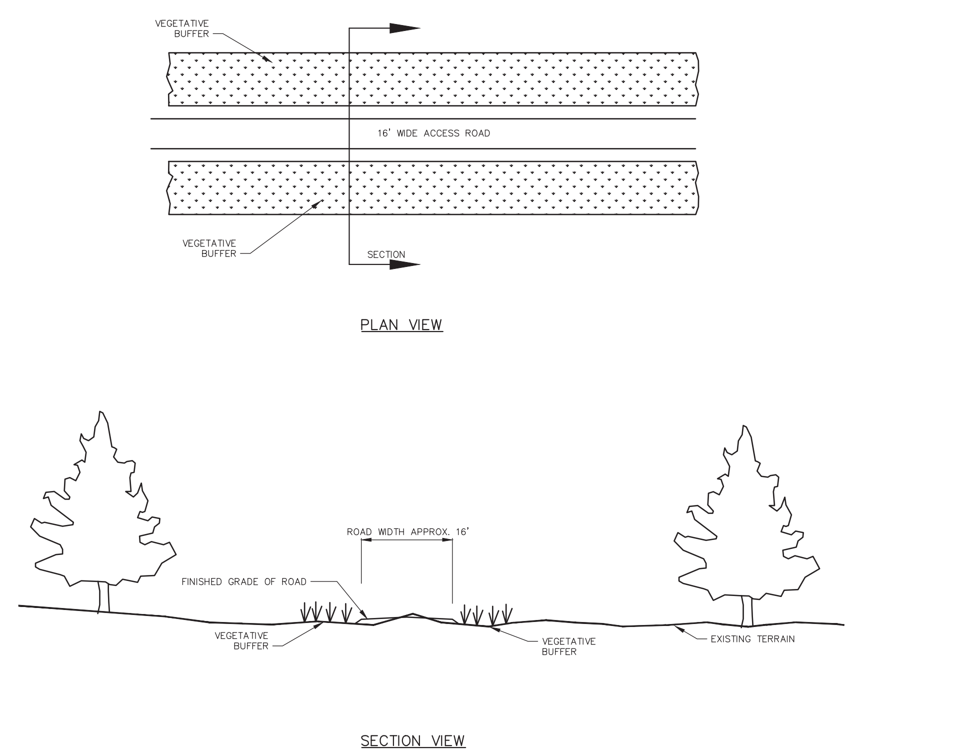
REFERENCES	DATE
DESIGNER: KTM	10-10-11
DRAFTER: CAH	10-10-11
C.E.G. DKR	10-10-11
SCALE: NTS	HORZ.
	VERT.

PROJECT INFORMATION

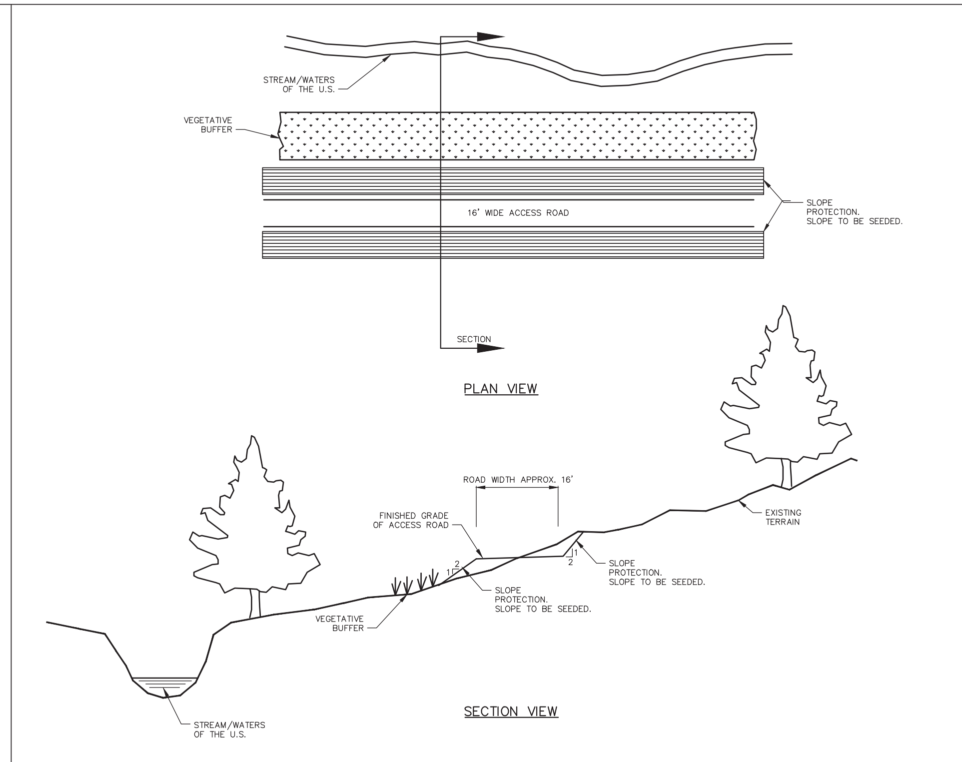
BOARDMAN TO HEMINGWAY
500kV LINE #XXX
EROSION AND SEDIMENT CONTROL PLANS

TRANSMISSION DEPARTMENT

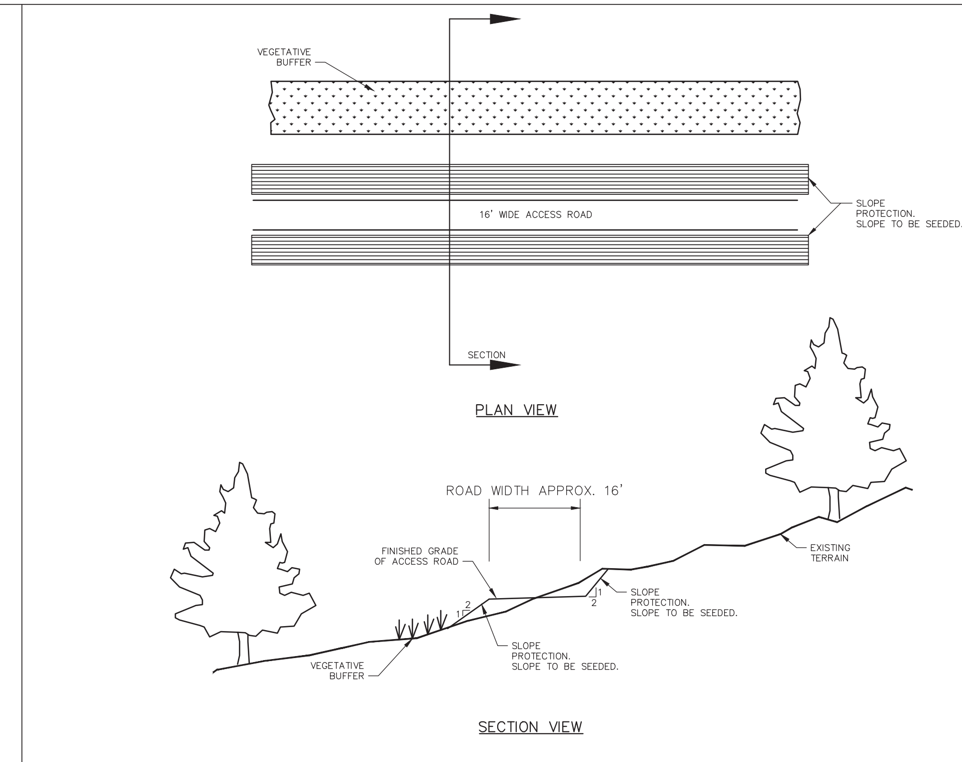
DRAWING #: DETAILS B
VAULT #: 23D-00000-00
SHEET #: 4 OF 5



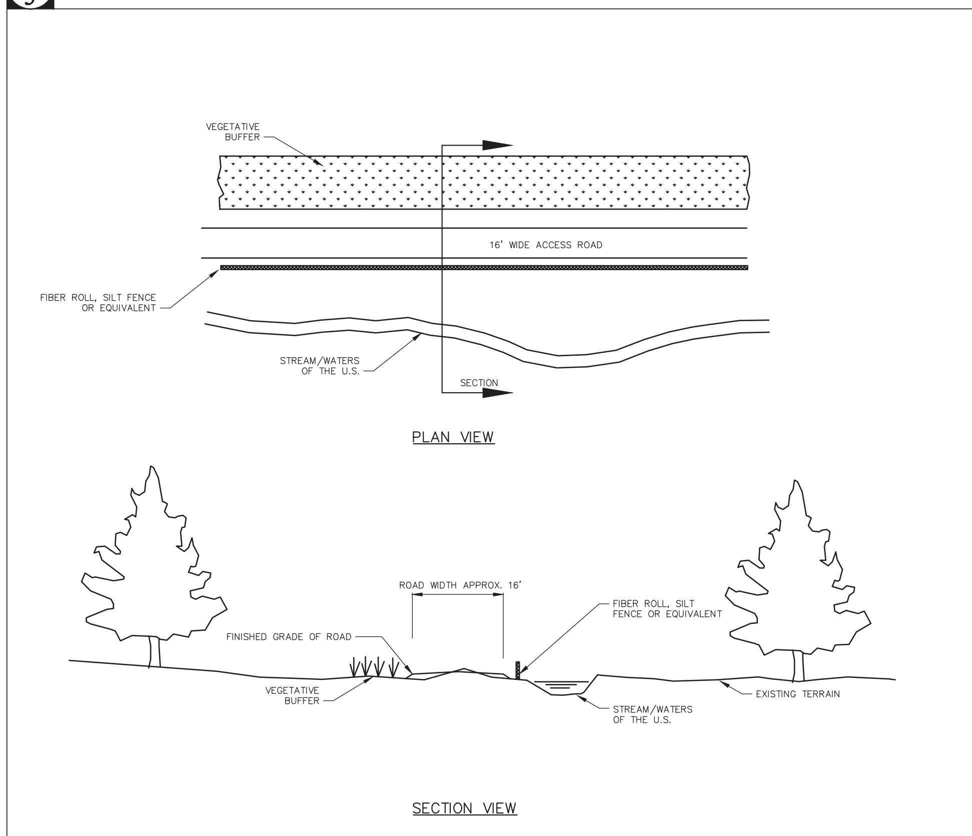
1/5 TYPICAL ACCESS ROAD INSTALLATION



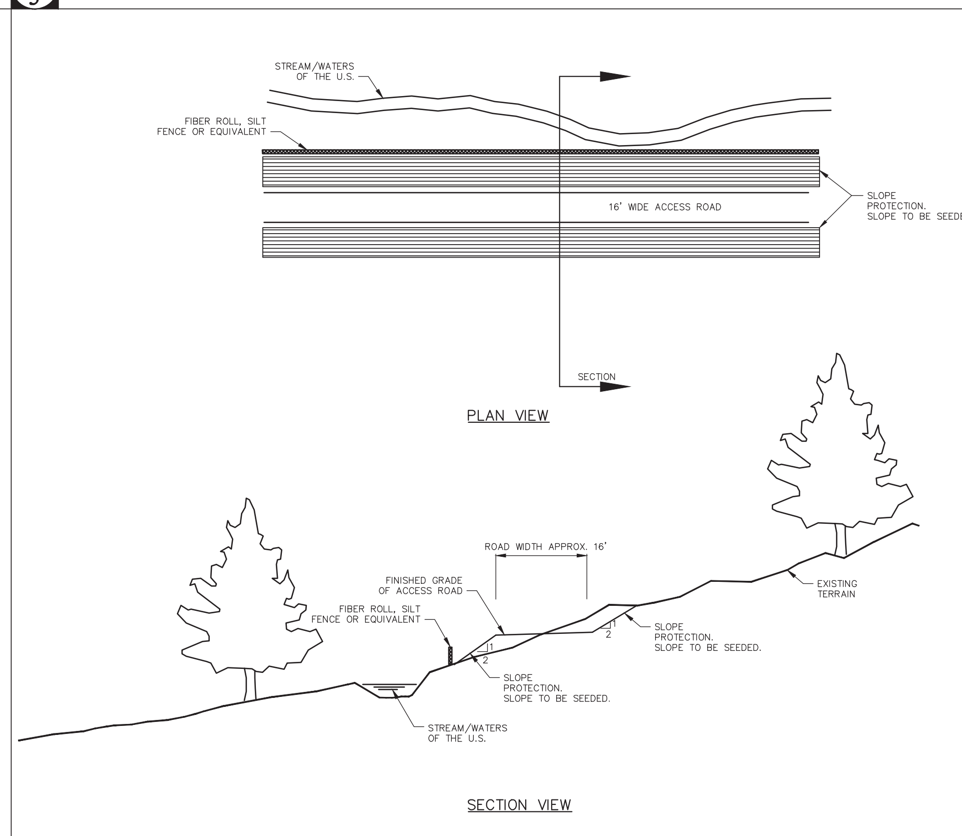
3/5 TYPICAL ACCESS ROAD INSTALLATION-ALTERNATE 2



5/5 TYPICAL ACCESS ROAD INSTALLATION-ALTERNATE 4



2/5 TYPICAL ACCESS ROAD INSTALLATION-ALTERNATE 1



4/5 TYPICAL ACCESS ROAD INSTALLATION-ALTERNATE 3

WATERBAR INSTALLATION FREQUENCY

SLOPE (%)	SPACING (FT)
<5%	125
5 TO 10	100
10 TO 20	75
20 TO 35	50
>35	25

PRELIMINARY

REV.	DESCRIPTION	DATE	C.E.G.	DSGN	DFTR
0	B2H EROSION AND SEDIMENT CONTROL PLANS – DRAFT	10-10-11	DKR	KTM	CAH
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REFERENCES	DATE
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C.E.G. DKR	10-10-11
SCALE: NTS HORZ.	
VERT.	

PROJECT INFORMATION
BOARDMAN TO HEMINGWAY
500kV LINE #XXX
EROSION AND SEDIMENT CONTROL PLANS

TRANSMISSION DEPARTMENT
DRAWING #: DETAILS C
VAULT #: 23D-00000-00
SHEET #: 5 OF 5

ATTACHMENT I-4
ODEQ 1200-C PERMIT ACKNOWLEDGEMENT

Oregon
John A. Kitzhaber, Governor

Department of Environmental Quality
Eastern Region Bend Office
475 NE Bellevue Drive, Suite 110
Bend, OR 97701
(541) 388-6146
FAX (541) 388-8283
TTY 711

December 27th, 2012

Sue Oliver
Energy Facility Analyst
Oregon Department of Energy
395 E. Highland Ave.
Hermiston, OR 97838

Re: Confirmation of Permit Application for
Boardman to Hemingway Transmission Line Project
1200-C Construction Stormwater Permit
Substation near Boardman to Hemingway substation
near Melba, ID

Dear Ms. Oliver:

On November 30th 2012, the Department of Environmental Quality received a National Pollutant Discharge Elimination System (NPDES) 1200-C permit application for stormwater discharge from the construction of Boardman to Hemingway Transmission Line Project (B2H). The application was submitted to Jackie Ray, Eastern Region Water Quality Permit Coordinator, in DEQ's Pendleton office. Payment for the permit application was received and processed by Ms. Ray on December 10th, 2012.

Now that payment has been received, the permit application is complete with the exception of a site certification from the Oregon Department of Energy (ODOE) and final review of revisions to the Erosion and Sediment Control Plan (ESCP). The permit application will be approved once the final alignment is determined; a final ESCP meets the permit requirements and pending the determination by the Energy Facility Siting Council that the B2H Project meets Oregon's land use standards.

I have given the ESCP a preliminary review. While the preliminary ESCP is incomplete pending some additional information, I expect that DEQ will be able to issue the NPDES 1200-C construction stormwater permit for the B2H Project within two to three weeks of receiving the site certificate from ODOE and receiving the final version of the ESCP.

Should you have any questions about the content of this letter, please contact me at 541-633-2033 or ratliff.krista@deq.state.or.us.

Sincerely,

Krista Ratliff
Natural Resource Specialist, Stormwater
DEQ - Eastern Region
475 NE Bellevue Dr Suite 110
Bend, OR 97701